

**Creating Value by Combining Two Weak Firms:  
The Role of Routine Disruption in Mergers and Acquisitions**

A DISSERTATION  
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF MINNESOTA  
BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

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August 2012

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## Acknowledgements

I have dreamed about this moment of writing acknowledgements and I thank the Lord who made it possible for me to get to this point. I praise the Lord for his unchanging love even to me with such a changing faith.

I am so blessed to be surrounded by good people who, in many ways, have helped me throughout my journey in PhD program. First and foremost, I am deeply grateful to my advisor, J. Myles Shaver for his constant support, trustworthy guidance, and affectionate encouragement. This dissertation and my academic development have been shaped through my interactions with him. His insightful comments and questions have allowed me to build my arguments clearer and test it better. It has been such a great fortune to have him as my adviser whom I could respect and admire both as a person and a scholar. His scholarly conscience and perfection have truly inspired me over the years.

I would like to thank to my other committee members, Aks Zaheer, PK Toh, and Gerard McCullough for their guidance and support. They have greatly aided this dissertation by spending their precious time and effort reviewing my work and providing me with valuable comments.

In addition, I would like to acknowledge my two of my professors in Korea. First, Jaeyong Song invited me to this academic journey and trained me to experience how to conduct academic research for the first time. His intellectual horsepower and competence have kept instilled in me even after I came to U.S. Second, Dongyoub Shin, has been a great life mentor since I took his class in organization theory. He is a model of energy and joy and has provided me with abundant emotional support.

I am also grateful to my fellow PhD students in SMO department. Together, they have made my time and experience at Carlson much more memorable and valuable. My warmest thanks go to my unique cohort – Isil Yavuz and Kangyong Sun. Unlike other students, we could be much like family thanks to our single status and spent a lot of time together both on and off campus. Were it not for them, I would not have been able to survive in such an unfamiliar and cold weather in the earlier years of the doctoral program. Zeke Hernandez was my office mate for four years and he was not only a close friend but also a private mentor who helped me with proofreading and insightful comments. His sincerity in many aspects deeply affected me. Conversations with these guys have always made me laugh and get relaxed with lots of fun – Mazhar Islam, Jaume Villanueva, and Joel Malen. Adam Fremeth gave me many rational advices and Darcy Fudge Kamal helped me to prepare a final defense from California. Two special persons deserve my thanks – Ribuga Kang and Yoonhee Choi – stood by me with great supports and encouragements.

This list of thank-you would not be complete if I did not mention my friends in U.S. and Korea. They were sources of laughter, joy and support. Special thanks go to 1) *Carlson Koreans* – Wonhee Roh, Sunkyung Kim, Jaebum Kim, Eugene Kim, Sumi Jung, Yeonka Kim, Jayoung Koo, Siahn Mehng, Yongjun Choi, David Yoon, Sangwook Nam, Jinsung Park, and Taeyoun Park, 2) *Yonsei Koreans* – Woojin Yoon, Sunhyuk Kim, Chaerin Yoon, Jungyeon Lee, Jingoo Kang, and Jiyoung Kim, 3) *just Friends* –

Yoonjung Cho, Juhee Lee, Minjeong Kim, Hyelin Jung, Doyoun Lee, Minjin Choo, Jooyoung Hong, Hyejin Lee, Jungwon Cho, Jungeun Cha, Jinkyung Lee, Jieun Oh, Jooyoung Choi, Donghyun Choi, Wonshin Choi, and Eunyoung Cho, and finally 4) *Brothers and Sisters in Bethlehem Shepherd Group* – Frank Hutton, Mary Hutton, Suhyun Jung, Jackie McCourt, Tom Jones, Frederick Osei-Yeboah, Chelsey Craven, and Bitá Arman – especially for their constant prayers for my completing this work.

My deepest and heartfelt thanks go to my family. Especially my father and mother have been my biggest supporter and a never-drying source of encouragement. Their love and belief in me have always provided me with inspiration and been my driving force. I owe them everything. I also thank for my sister and brother – Sanghee and Jaekwang – for being such considerate and warm-hearted siblings and for sharing wisdom and giving me encouragement. I must thank Jaeyoun, my brother-in law for his care for my family as the eldest son-in-law for last 10 years. I would like to convey my thanks and love to Minjeong, Woojin, and Soomin who have been a source of joy for our family and my parents-in-law for their support and love. Finally, without Kiyoun, my husband, I could have not finished PhD program. His enduring love, support, and faith in God have made me complete this challenging journey. I thank him for the joy he gave me and the prayers for me which made me overcome hardships and mannerism. I am wholeheartedly grateful to him for being in my life and to Carlson where we met as a spiritual partner. Together, my family has shaped my life and made many of my achievement possible with their great love and support. It is for this reason that I dedicate this dissertation to my family.

## **Dedication**

*To my family with deepest gratitude and love*

## **Abstract**

I explore the conditions under which mergers of two poorly performing firms can create value and how such conditions behave differently in mergers including at least one well-performing firm. I argue that in mergers of poor performers, the greater the disruption of routines induced by the merger, the higher the post-merger performance. In this study, I conceptualize a merger as the combination of two firms' existing routines and propose that such a combination can provide the impetus necessary to break from the past by creating a new set of routines. When two weak firms merge, such a break from the past becomes desirable because the existing value creation system does not work properly and routine disruption becomes a necessary condition for deriving good post-merger performance. I test these ideas on a sample of M&As from multiple industries in the U.S. between 1994 and 2006. Using an industry-adjusted Tobin's q based on the "Chop-shop" approach as a criterion to classify firms into weak and strong categories, I find that disruption of routines is indeed desirable in mergers of poor performers while it should be minimized in mergers including a well-performing firm. This dissertation makes theoretical contributions by highlighting the role of a M&A in a firm's evolutionary process. It also has practical implications for managers and policymakers.

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## Chapter 1. INTRODUCTION

When General Motors and Chrysler announced their plans to merge in October 2008, analysts scoffed at the news. One commentator remarked, “*You’ve got to be kidding me. General Motors and Chrysler merge? If ever there was an example of the old saw, ‘Two wrongs don’t make a right,’ this, surely, is it*” (Newsweek, 2008). Similarly, when two troubled airlines, Delta and Northwest, announced their merger in April 2008, investors were unimpressed with the idea. As one analyst puts it, “*The bottom line is we have two big airlines that are struggling to make money and we’re going to end up with one really big airline that’s struggling to make money*” (Haugen, 2008).

General Motors explained its motivation for a merger as large-scale cost savings by getting rid of massive overhead. The two airlines also tried to justify their deal with the motives of market power and cost reduction (e.g., removing some of their fleets and laying off workers). However, industry observers seem to be suspicious of the idea of merging two weak firms, based on the conventional wisdom that no strength can come out of weakness. The following quote regarding a merger of Kmart and Sears well shows how these deals are perceived by the market:

*“The question is: can two weak retailers become one strong retailer? The combination of the two gives them greater buying power to compete with Wal-Mart and more importantly, fills in gaps in each store’s merchandise line. It’s an opportunity to transform two companies that once were great because each firm has struggled on its own; it remains to be seen whether the combined company can manage to keep up with thriving competitors. In any case, the merged company still faces an uphill battle against years of consumer perception that will have to be changed. Addressing and changing those perceptions will cost a lot of advertising dollars. Time will tell if the combined companies can pull it off.” – The New York Times, 2004*

Surprisingly, however, many mergers of poor performers do occur.<sup>1</sup> Even more surprising is the fact that almost half of these mergers perform well, as indicated by positive movement in their performance, compared to the pre-merger performance of merging firms. Understanding the circumstances under which combinations of weak firms create value can help us explain why such poor performers attempt to join forces, in spite of external cynicism regarding such mergers. Thus, I attempt to explain under what conditions weak performers are better off together than separate.

The assumption underlying the conventional cynicism regarding the merger of two weak firms is that the sources of poor performance will remain intact after the merger, and that firms will generally continue doing what they have been doing previously. We can find this assumption in many of the prior explanations of what drives M&A performance. The frequently cited sources of synergy in mergers fall under three categories. First, firms may spread fixed costs (e.g., factory) over multiple product lines by eliminating redundant operations (economies of scale). Second, firms may share resources, such as brand names or technology (economies of scope). Third, the acquirer may replace the target's incompetent management with its own superior management (market for corporate control). All of these explanations assume that at least one party brings distinctive strengths that are retained and exploited after the merger. Thus, existing

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<sup>1</sup> From an analysis of M&A agreements announced between 1994 and 2006 (source: SDC Platinum database), I found that approximately 31.8% of deals in the sample could be classified as mergers of two poorly performing firms. To determine if the combining firms were poor performers, I employed Tobin's q as a performance criterion and defined poor performers as those with profitability below a common benchmark. A similar criterion based on Tobin's q was used in other studies to classify firms into out- and underperformers (e.g., Lang, Stulz, & Walking, 1989; Servaes, 1991). A more detailed explanation of this can be found in Section 4.2 of this paper.

theories of M&A performance cannot explain how two weak performers can generate any synergy, since they both come into the merger from a position of weakness.

In this study, I propose to look at the unexplored aspect of mergers and solve the puzzle illustrated above. I conceptualize a merger as the combination of two firms' existing routines and propose that such a combination can provide the impetus necessary to break from the past by creating a new set of routines. By disrupting existing routines, a merger affects a firm's evolutionary process. Mergers, by nature, disturb the existing systems of the parties involved. For firms that have been performing satisfactorily, the disruption may be an undesired consequence of a merger, since it can hurt current existing routines. Therefore, strong firms may try to minimize the disruption by mergers and build upon their existing strengths. In contrast, poorly performing firms have relatively less to lose from disruptions, since their current value-generation mechanisms do not function properly. In fact, the disruption can "shake" the two weak firms out of what they have been doing and may provide an impetus for change, which is usually beneficial, but hard to implement, due to organizational inertia (Hannan & Freeman, 1984). Based on this logic, I propose that weak firms can perform well if they use merger-induced disruption as a turning point to overcome their inertia and enact change.

To expand these ideas, I present three factors as indicators of routine disruption that influence the performance of a merged firm: the influx of outsiders, power balance and resource unrelatedness. The first and second effects suggest that the composition of a top management team (TMT) and a board of directors (BOD) affect the performance

improvement of a merged company. The third effect suggests that a merger's success is influenced by the relatedness of the resources combined.

The necessity of routine disruption for performance improvement in a group of mergers between poor performers leads to seven hypothesized observations. First, a positive relationship between the influx of outsiders (executives who are from outside the merging firms) in a TMT and the performance of a merged firm will exist for a group of mergers between poorly performing firms. Second, a positive relationship between the influx of outsiders (directors who are from outside the merging firms) in a BOD and the performance of a merged firm will exist for a group of mergers between poorly performing firms.

Third, a positive relationship between the power balance in a TMT between merging firms and the performance of a merged firm will exist for a group of mergers between poor performers. Fourth, a positive relationship between the power balance in a BOD between merging firms and the performance of a merged firm will exist for a group of mergers between poor performers. Fifth, a positive relationship between the size equality of merging firms and the performance of a merged firm will exist for a group of mergers between poor performers.

Sixth, a negative relationship between primary industry overlap between merging firms and the performance of a merged firm will exist for a group of mergers between poor performers. Seventh, a negative relationship between geography overlap (measured as the overlap of a headquarters' locations at the city level) between merging firms and

the performance of a merged firm will exist for a group of mergers between poor performers.

I also expect the relationships described above not to hold or show an opposite direction in a group of mergers, including at least one well-performing firm. It is not a necessary condition for performance improvement if the mergers include at least one strong firm, although routine disruption would not necessarily hurt such combinations. Therefore, no formal prediction for such cases is made.

The empirical analysis is based on 298 M&A deals between US firms announced between 1/1/1994 and 12/31/2006. The data are collected from various sources that include the Thompson Securities Data Corporation Platinum Mergers and Acquisitions database, SEC filings, Standard and Poor's Compustat Annual Industry Files, Compustat/CRSP Merged, Compustat Segment Files, and Eventus. M&A performance is measured by the difference between pre-merger and post-merger performance. Because the performance measure is a continuous variable, the statistical technique employed in this analysis is ordinary least squares (OLS) regression.

By highlighting that mergers can function as an impetus for change, this study intends to develop a framework complementary to the extant M&A theories, which is necessary for thoroughly understanding the phenomenon of mergers. Although mergers between poor performers occur prevalently, no systematic empirical evidence exists on whether and when such mergers are successful. This study intends to eliminate that gap. In addition, by conceptualizing a merger as the combination of two firms' existing routines, and by suggesting that a merger can change firms' internal routines by affecting

the variation and selection processes of such routines, the theory I develop in this study highlights the role of an M&A in a firm's evolutionary process.

The dissertation proceeds as follows. Chapter 2 briefly reviews the literature on M&A performance and evolutionary theory. Chapter 3 presents the theoretical arguments of the dissertation and derives the hypotheses. Chapter 4 includes the data description and variable definitions for the empirical analyses. Chapter 5 presents the empirical results and also the results of the sensitivity analyses. Chapter 6 discusses the empirical results and concludes with a discussion of the contributions, limitations, and future directions of this research.

## **Chapter 2. BACKGROUND LITERATURE**

My dissertation explores how firms can disrupt their routines through M&As, and how such routine disruption affects their performance. In this review of the literature relevant to my dissertation, I summarize the key concepts and findings from two bodies of work: M&A and evolutionary theory. In each category, I first present a summary of the primary theories and the related empirical findings, and then highlight how my dissertation addresses the limitations of the prior research.

The purposes for reviewing the M&A literature are twofold. First, the review of the studies presents the general consensus on the meaning of M&A performance and its determinants. Second, the interpretation of the underlying assumptions in these prior studies helps us understand whether the existing theories are sufficient to answer the question I address in this study. On the other hand, the literature review on evolutionary theory aims to explicate the theory that I later develop.

My research makes important contributions to both fields of study: the literature on M&A performance and evolutionary theory. By suggesting that routine disruption can be helpful for certain types of combinations, I extend possible sources of value creation from M&As. I also suggest that an event like an M&A can change combining firms' internal routines by affecting the variation and selection processes of routines. In doing so, I provide a richer theoretical explanation for the conditions under which routines can change, and also the relationship between an M&A and firm evolution.



## **2.1. Mergers and Acquisitions**

As M&As become an important means for firms to expand, and as more and more firms engage in this activity, vast amounts of research have been devoted to studying this phenomenon (Cartwright & Schoenberg, 2006; Hitt, Harrison, & Ireland, 2001).

Therefore, various explanations for M&A performance have been provided. However, it is not my intention to review the vast literature on the determinants of M&A performance here. Instead, I will summarize a few representative sources of gains and losses, and then the aspects related to M&A that are associated with conflicting theoretical arguments and the empirical results developed in financial economics, strategic management, and organizational theory. I present the underlying assumptions in these explanations as possible reasons as to why the predictions for the same factors are different, depending on the field.

### **2.1.1. What determines value from M&As?**

Several sources of value creation from M&As have been discussed. First, cost efficiency through economies of scale and scope can be achieved by combining two firms. Economies of scale is a concept that refers to a reduction in unit cost as the scale of a given activity increases. It is realized by rationalizing excessive capacity. Economies of scale can be achieved in functional areas such as production, R&D, distribution, marketing or administrative activities by spreading fixed costs over an increased total volume (Shepherd, 1979).

Economies of scope is a concept that refers to cost savings as the variety of activities increases (Panzar & Willig, 1981). When a firm has indivisible resources, combining with another firm that owns overlapping parts allows the firms to spread their

resources over a broader range of products. By combining with a competitor, a firm can exercise increased market power. Kim and Singal (1993) found that prices increased on routes served by merging firms relative to a control group of routes unaffected by the merger when they examined price changes associated with airline mergers during 1985-1988. Two merging firms competing in the same product market have a higher potential for market power-related gains than two firms competing in dissimilar product-markets. When a firm with market power integrates vertically with another firm with market power, it can gain one additional benefit, known as double marginalization. An upstream firm can exercise its market power by setting a price that exceeds marginal cost. The downstream firm then buys these marked-up inputs and exploits its own market power “by applying its own markup - effectively marking up twice the marginal cost of the upstream supplier” (Besanko, Dranove, Shanley, & Schaefer, 2007: 130). Finally, the reduction of risk through diversifying shareholders’ portfolios and information asymmetry by identifying undervalued firms are often discussed as sources of value creation from M&As.

### **2.1.2. Indicator of the sources of value creation**

Here, I briefly review two aspects of M&As that affect value creation from M&As and have been studied in different fields with conflicting findings. I suggest that such inconclusive results can be resolved by considering the missing moderator or alternative sources of value creation from M&As.

#### ***Post-merger management turnover***

Whether a target firm's management stays or leaves after an M&A has been considered to affect value creation after an M&A. Two separate streams of research, each from financial economics and strategic management, have provided different predictions on this issue. Mergers in which the target's management is replaced are consistent with a managerial-discipline motive, as argued in financial economics. On the other hand, mergers in which the target's management is retained are consistent with a managerial-synergy motive, as argued in strategic management. The view in financial economics is that acquisitions are transactions that reflect the market for corporate control, and firms are taken over to discipline or replace their bad managers. If a particular firm underperforms, that firm's share price is low since dissatisfied shareholders sell their shares, and as a result, its management team is regarded as incompetent (it is not maximizing the value of the firm). The management of the firm is regarded as either unable or unwilling to make the changes necessary to ensure that the market properly values the firm (Almeder & Carey, 1991). A firm with a more competent management team vies for control of the assets of underperforming firms; thus, the management team takes its place by acquiring the poorly performing firm (Manne, 1965; Jensen & Ruback, 1983).

This theory clearly implies that the post-merger retention of executives from the target firm is, in general, undesirable. The replacement of the management team by the superior team of the acquiring firm is expected to improve the performance of the target firm. Empirical work shows that there are positive gains from a combination of the acquiring firm's and the target firm's assets, although most of the gains accrue to

shareholders of the target firm, and these results are consistent with what the theory implies.

Contrary to predictions of the “market for corporate control” approach, research in the strategic management field has found that managerial turnover is harmful to M&A performance (Cannella & Hambrick, 1993). The theoretical argument supporting this finding is referred to as the “managerial-synergy” theory (Trautwein, 1990), in which the target management is regarded as the key asset in an acquisition; thus, the acquirer’s management wants to work with target management, and not replace it. By taking a view of management capability as pre-existing resources within the target firm, replacement or simple dismissal of those resources is detrimental to post-merger performance. Instead, the skills of target management can be a complementary asset to the acquirer management’s expertise; therefore, it is better if they are retained. Matsusaka’s (1993) finding supports the managerial-synergy theory by showing that the market reacts positively to acquirers who retain target management and negatively to acquirers who remove target management.

Opposite predictions and findings from two theories provide us with an opportunity to explore the conditions that would moderate the relationship between post-merger management turnover and performance. The market for corporate control has a clear assumption about the pre-merger performance of the acquirer and target as performing well and poorly, respectively. Thus, the results from this perspective can be rephrased in a way to suggest that it is better to replace the management team of an underperforming target firm with a superior management team from the acquiring firm

that is performing well. On the other hand, managerial-synergy theory is unclear about what kinds of firms can be applied to the theory. This theory is silent as to whether both merging parties were initially performing poorly or well, or whether one of them was an underperformer or outperformer prior to a merger. For this reason, the two theories are not comparable, and further caution is required when comparing them. The consideration of pre-merger performance in combining firms makes it possible to include alternative sources of value creation – disruption of routine.

In addition, both theories focus on the target's management team. Namely, the theories examine only the effect of the executive officers' turnover of the target firm, and not that of the acquirer. The management team of the acquirer is assumed to be intact, although it is not true, in reality. As a result, the two theories are insufficient in providing predictions for the effect of management turnover in the acquiring firm.

### ***Resource relatedness***

Empirical work in the strategic management field has used the resource-based perspective of the firm and industrial organization theory to test the effect of relatedness on the performance of M&As (Chatterjee, 1986; Lubatkin, 1987; Seth, 1990; Shelton, 1988; Singh & Montgomery, 1987). Although there is still controversy over defining “relatedness” (Morck & Yeung, 1999), and the debate is at an impasse in the literature, it is generally agreed that the conceptual distinction between related and unrelated mergers is made by the source of value creation on which a combination is based. More specifically, it is considered as an unrelated merger if the value of the combination arises from risk diversification rather than cost efficiency. Measuring relatedness is still not an

easy task, but the most widespread measure of relatedness is whether two firms compete in a similar product market, or whether they have a commonality of functions such as R&D, production technology, or marketing, etc. (Seth, 1990).

Whether merging firms' resources are related or unrelated affects merger performance by exploiting different potential sources of value creation. Since Rumelt (1982)—who found related diversification strategies outperformed other diversification strategies on average, researchers with a resource-based perspective have argued for positive synergies by expanding into related activities that share similar resources (Penrose, 1959). Related mergers provide benefits in the form of economies of scale and scope. Commonality of functions, such as R&D, production, marketing, advertising, and distribution allows merging firms to exploit benefits through economies of scale and scope. Also, related mergers provide benefits arising out of market power. Merging firms competing in a similar product market have a higher potential for market power-related benefits than firms competing in dissimilar product markets (Seth, 1990).

On the other hand, based on the diversification literature, some scholars argue for the benefit of unrelated mergers. By merging unrelated businesses, firms can pool financial resources, and thus behave like a capital market for their business divisions (Khanna & Palepu, 2002; Scharfstein, 1998). Additionally, unrelated mergers are motivated by a desire to diversify risk by having portfolios of unrelated businesses.

Researchers have sought to test whether relatedness is better than unrelatedness, or vice-versa, and also whether relatedness plays a role in explaining the variance of M&A performance. Some find evidence for positive performance implications of the

degree of relatedness to the target firm's shareholders (Singh & Montgomery, 1987) and higher rents for narrowly vs. widely diversified firms (Wernerfelt & Montgomery, 1988), while others find that gains to a target firm's shareholders in unrelated mergers are significantly higher than those in related, non-horizontal mergers (Chatterjee, 1986). However, some researchers also observe that there are no significant differences in the total combined returns (for the acquirer and target together) between related and unrelated mergers (Seth, 1990), and find that horizontal mergers do not outperform vertical or conglomerate acquisitions (Lubatkin, 1987).

The evidence suggests an unclear relationship between relatedness and performance, but it does not mean that relatedness is not an important antecedent of M&A performance. This lack of consensus has been attributed partly to difficulties in the measurement of "relatedness." Taking methodological difficulties into account, some try to clarify this relationship by examining it in a narrow context (e.g., declining industries in Anand & Singh, 1997). Others argue that there may be alternative mechanisms for improved performance of the combined entity that do not depend on the exploitation of economies of scale or scope, and thus would not benefit from higher degrees of relatedness between firms (Singh & Zollo, 1999). In this study, I suggest one alternative mechanism – disruption of routines.

### **2.1.3. Limitations and ways to improve our understanding of M&A performance**

It is shown that there exists an abundant amount of literature explaining M&A performance variation. There would be little value in another study seeking to identify the

conditions that affect M&A performance, if not for two reasons, which form the basis of this paper. First, is there a way to reconcile the conflicting results found in prior studies? Second, is the conclusion made in prior studies equally valid for all M&As?

To answer the first question, I suggest considering the alternative sources of value creation from M&As. Teece (1982) asks why economies of scope cannot be achieved by coordinating several independent firms; that is, why must business units be brought into a firm for economies to be realized? He urges us to find a unique source of value from M&As that would not be available unless two firms are legally and physically combined. I propose that the disruption of routines through M&As can be an alternative source of value and is available only when two entities are legally combined. If we assess the value of an M&A based on its ability to disrupt routines and change the merging firms, the relationship between the factors listed above and performance would be clearer. To illuminate this aspect of M&A, I pay attention to a specific issue – the combination of two poorly performing firms. This is an ideal setting to test the role of an M&A as an impetus for change, as change is desirable for those firms; thus, they have more incentive to embrace it. At the same time, the context of merging two poor performers can provide an opportunity to explain the conditions under which this somewhat unusual combination can be successful.

Many of the existing arguments preclude why the merger of two struggling firms can be beneficial, inasmuch as they are based on some common underlying assumptions. The first underlying assumption is that at least one merging party was working well before the merger. Consider the market for corporate control. The notion of the market



for corporate control assumes that at least an acquiring firm is performing well with a competent management team, which can lead to improved efficiency and greater shareholder wealth for the target firm. The possibility that a management team of an acquirer can also be incompetent is excluded, and for the argument to make sense, it is assumed that the acquirer should perform well. Following this logic, value creation from combining two incompetent firms cannot be explained.

On the other hand, managerial-synergy theory is not explicit about its assumption on the pre-merger performance of two merging firms. However, we can find a clue that it blindly assumes that neither of merging parties was performing poorly prior to the merger. Executives from target firms are seen as part of the resources obtained in the merger, and are often perceived as valuable (Jemison & Sitkin, 1986; Pitts, 1976; Walsh & Ellwood, 1991). Due to this assumption, the second assumption is inevitable – disruption is bad. Therefore, in their study, Cannella and Hambrick (1993: 141) say, “The aftermath of an acquisition is already exceedingly disruptive (Hirsch, 1987) and we expect the loss of established leaders to have harmful consequences.” This might be different in a situation where disruption is no longer harmful to M&A performance. I argue that this is true if the combination is between two poor performers.

The second assumption is that all sorts of actions (e.g., disruption, replacement, change, etc.) occur only in a target firm. For example, the preexisting power and control structures in the “acquired firm” are often completely supplanted in post-acquisition periods (Gaddis, 1987). This happens because most research takes the perspective of an acquirer when it evaluates the effect of certain factors on M&A performance. In this way,

considering the possibility that change or disruption can also occur in an acquirer has been underemphasized in the literature.

The third barrier inhibits the standard approach from explaining M&A performance and the success of the merger between two poor performers. Specifically, the existing explanations do not consider the possibility that there can be alternative ways of value creation when two poor performers combine. The superiority of a related merger comes from its ability to exploit economies of scale or scope. Two related “poor” performers can still benefit from these sources of value creation by asset divestiture, but there remains some doubt since the asset (or resources) left after the divestiture is intact, and thus is still susceptible to the failing logic, which has been in the firm before the merger. In short, cost efficiency through economies of scale or scope can be a short-term benefit that does not contribute to solving the fundamental problems that poorly performing merging firms face. Instead, a combination of unrelated resources provides a benefit specific to the combination of poor performers. Unrelatedness is not usually conceived as a source of value creation, as risk reduction is rarely valued by shareholders. However, a combination of unrelated resources can provide the benefit of disrupting routines, which is often considered as a cost in an M&A other than the combination of two weak firms. It is important to note that relatedness is neither a necessary nor a sufficient condition unless a certain setting is specified, although it has been regarded as a necessary condition for good post-merger performance. The absence of relatedness does not mean that the merger will fail, since unrelatedness has an alternative source of value creation that does not depend on risk reduction.

#### **2.1.4. How do we measure value from M&As?**

In studying M&A phenomena, there exist multiple definitions of M&A performance and various approaches to measuring M&A performance, accordingly. In their review of M&A research published in top management and finance journals between 1970 and 2006, Zollo and Meier (2008) identify 12 different approaches to the problem of measuring M&A performance. Such existing approaches can be grouped in many ways (e.g., level of analysis, time horizon, etc.), but the essential distinction is whether the approach involves measuring the performance of an M&A per se or the overall impact of an M&A on firm performance. Research examining merger performance per se investigates integration process-related performance or the knowledge-transfer process. Sometimes whether the acquired unit is divested eventually is considered as M&A performance.

On the other hand, research with a broader perspective on M&A performance has paid attention to whether the value of the newly combined firm after a merger exceeds the sum of the values of the two merging firms when acting independently. In other words, instead of the performance of the transaction per se, the contribution of the transaction to the firm's overall performance is highlighted in this stream. Researchers pursuing this stream have typically relied on shareholder returns (i.e., stock market-based measures of performance) or a firm's operating performance (i.e., accounting-based measures of performance).

Cumulative abnormal returns are calculated as a stock market-based measure of performance using event study methodology and are the most frequently used analytical

approach for measuring M&A performance (e.g., Capron & Pistre, 2002; King, Dalton, Daily, & Covin, 2004). A large group of studies using this approach takes a short-term window to calculate financial returns to the shareholders, but long-term window event studies are also growing in popularity in finance journals. Conceptually, abnormal returns from a short-term window reflect the market's expectations on the value of the M&A.

Proponents of this measure argue that event study methodology has predictive validity – market participants may reasonably forecast subsequent acquisition performance (McNamara, Haleblian, & Dykes, 2008; Kaplan & Weisbach, 1992), showing a strong, positive relationship between abnormal stock returns at merger announcements and post-merger increases in operating cash flows (Healy, Palepu, & Ruback, 1992). Abnormal returns might capture long-term performance since changes in stock prices around the announcement of an acquisition reflect a change in the expectation of future earnings. Indeed, there is some evidence that stock price gains on announcements are related to subsequent cash flows (e.g., Healy et al., 1992). On the other hand, opponents of this measure argue that short-term event studies capture the cognitive heuristics (Duhaime, 1985; Schwenk, 1985; Tversky & Kahneman, 1974) about the announced deal, rather than the objective information on the potential from the transaction (Harrison, Oler, & Allen 2005). According to these critics, the market is not able to evaluate the real value of the announced deal, and thus its reaction to the transaction is systematically wrong. In general, how strongly people believe the market efficiency hypothesis (Fama, 1991; Jensen & Ruback, 1983) will affect their choice of this measure as M&A performance. Due to the weakness of the short-term window event

study, some researchers in corporate finance have recently emphasized the use of the long-term window (Barber & Lyon, 1997; Loughran & Vih, 1997).

Accounting-based measures of M&A performance encompass operating cash flows or return on assets (e.g., Ramaswamy, 1997). These measures capture actual firm performance rather than the expectation on firm performance. However, there is another limitation, since acquisition effects are not immediately realized or reflected in the financial statements of the company (Rhoades, 1994). Therefore, many confounding factors besides acquisition effects may affect firm performance.

Whether an M&A contributes to firm performance still remains a controversial issue. For example, studies have shown that acquirers on average, experience zero or negative short-term abnormal returns at an M&A announcement (e.g., Moeller, Schlingemann, & Stulz, 2005; King et al., 2004), while target firms usually experience positive returns. It is worthwhile to note that most of the research in strategic management has taken the viewpoint of the acquiring firm, examining financial returns to acquiring a company's shareholders. This practice makes sense, since the acquirer is usually the surviving entity after the merger, and accordingly generates ex-post measures of merger performance, comparable to an ex-ante measure of abnormal returns.

## **2.2. Evolutionary Theory**

To understand how the disruption of routines can be an alternative source of value creation from M&As, it is first necessary to understand evolutionary theory. Here, I highlight two parts from this theory – evolutionary process and the concept of routines.

### **2.2.1 Process of firm evolution**

Similar to other organizations, firms evolve, too. Evolutionary theory (Nelson & Winter, 1982) explains how firms adapt and change, based on their inherited characteristics. Firms evolve through the process of variation, selection, and retention. Since the theory I will develop later is based on the variation and selection process, I will briefly review these two processes. I follow the basic structure of explanation concerning the processes in Aldrich and Ruef (2006). Any departure from a routine (which I will explain shortly) or an existing way of doing is a variation. Such variations may be intentional or blind. Intentional variations occur when organizations attempt to generate alternatives and seek solutions to problems. They result from conscious responses to difficult situations, planning sessions, advice from outside consultants, and so forth. Intentional variations are less likely to deviate from current routines, and firms may be under more inertial force in the search for new routines, as the search is guided by higher-level routines based on past experience. Blind variations, by contrast, occur independently of conscious planning. They result from accidents, change, luck, conflict, malfeasance, and so forth (Brunsson, 1985; March, 1981). Blind variations are freer from inertia. Variations precede selection processes so that the selection criteria choose those routines that are most suitable. The higher the frequency is of the variation, whatever its source, the greater the opportunities exist for change.

With the existence of variation as raw materials, the selection process affects the firm's evolution by differentially selecting or selectively eliminating certain types of variations. Although management and business strategy scholars usually focus on selection systems that improve environmental fitness, a few internal selectors contribute

to the loose coupling of internal selection and environmental fitness. There are pressures toward stability and homogeneity (Campbell, 1969). Although the self-reinforcing process contributes to organizational stability, it can also lead to competency traps that inhibit the discovery of potentially adaptive alternatives (Levitt & March, 1988).

Secondly, there is the persistence of past selection criteria that are no longer relevant in a new environment (Campbell, 1994). Procedures that were once selected because they fit the context may be irrelevant, or even maladaptive to the current situation. Nevertheless, members may simply continue doing what they know best rather than search for more effective options. Finally, there may be the willingness of some organizational founders and leaders to accept a low performance threshold. Owners differ in the threshold of performance they are willing to accept (Gimeno, Folta, Cooper, & Woo, 1997).

Mechanisms through which variations are created and selections are made are susceptible to path-dependence. Unless variations are blinded, there is always the possibility that people follow past experience rather than search for new routines. Although new routines are introduced through the variation process, past selection criteria may reject new routines. As a result, the evolutionary argument stresses that a firm's irreversible investments and limited range of operating routines constrain its ability to develop and use capabilities within the firm. Indeed, firms tend to develop proximate capabilities that do not disrupt their existing routines and processes (Cyert & March, 1963). For example, Helfat (1994) finds path-dependence in a firm's R&D investment, which reflects incremental, localized adaptations, as firms search for new knowledge primarily in the neighborhood of their current knowledge bases. Path-

dependence found in a firm's evolutionary process is largely attributed to the nature of routines, which will be reviewed below.

### **2.2.2 Routine**

Evolutionary theory has put the concept of routines center-stage (Becker, 2004). Routines refer to repeated patterns of behavior bound by cognitive regularities (Cyert & March, 1963; Nelson & Winter, 1982). They range from well-specified technical processes for producing things, to less specific processes such as hiring and firing procedures, or policies for R&D (Nelson & Winter, 1982). Beyond defining what an organization can do, routines define what the organization knows, and the writings in this area tend not to distinguish between knowledge and action (Levitt & March, 1988; Nelson & Winter, 1982). Routines are embedded in an organization and its structures (Cohen et al., 1996; Inkpen & Crossan, 1995; Madhok, 1997; Teece & Pisano, 1994). Organizations are temporary repositories of competencies and routines. As organizational memory (Nelson & Winter, 1982), routines are to the organizational level what skills are to the individual level (Dosi, Nelson, & Winter, 2002). Organizations can be efficient structures for collective action, owing to routines (March & Simon, 1958). Moreover, routines guide searches and reduce the space of behavioral options that managers should scan (Shapira, 1994; Winter, 1985). In addition, they economize on the limited information processing and decision-making capacity of managers.

Organizations are likely to behave in the future according to previously used routines. Today's operating routines restrict an organization's available procedures to producing outputs, acquiring resources, selecting among lower-level routines, and



coordinating the activities of its members (Nelson & Winter, 1982: 109). Routines are persistent, heritable, and selectable “in the sense that organisms with certain routines may do better than others” (Nelson & Winter, 1982: 14). As the basis for competitive advantage in a particular market or markets (Dosi & Teece, 1998), firm routines affect a firm’s performance. Therefore, a firm’s routines can be viewed as either valuable assets or constraints for the firm, depending on its performance. In other words, profitable routines are regarded as valuable, due to their outcomes, whereas unprofitable routines are criticized as a source of bad performance. Although firms have unprofitable routines, changing such routines is formidable and unlikely.

Path-dependence is a very important characteristic of routines. The literature has repeatedly revealed the persistence and inflexibility of firm routines. These routines change in a path-dependent manner (David, 1997) and are shaped by history. Therefore, organizations’ behaviors are path-dependent in that organizations are likely to behave in the future following previously used routines. Given that routines are the basis of organizations, the path-dependence of routines contributes to the stability of organizations. However, the same nature of routines also leads to inertia. Although theory says that organizations start to find another way to achieve a task if an existing routine gives unsatisfactory results (Cyert & March, 1963; March & Simon, 1958), routines often persist despite negative performance feedback (Rumelt, 1995) since individuals often follow routines without devoting attention to them, and accordingly, the feedback is ignored. Exploitation processes can drive out exploration processes, thereby making it

difficult to develop new capabilities (Benner & Tushman, 2002; Burgelman, 1994; March, 1991).

Nevertheless, the literature acknowledges that routines can change. Routines can be simple rule-following behaviors at one point of time, but can involve adaptive and creative behaviors at another point in time (Becker, 2004). In his analysis of the documentation of a historical airplane disaster, Weick arrived at the conclusion that routines can be disrupted when participants in a routine start “acting in a manner that is more individual than collective” (Weick, 1990: 579). Although aspiration levels are known to be a powerful form of an actor-related trigger of routines (Cyert & March, 1963; Levinthal & March, 1981), we still know very little about the conditions under which changes in routines occur. My theory in this paper attempts to complement this lack of knowledge.

### **2.3. Related Studies**

The research question I address in this study is, “Under what conditions can the combination of two poorly performing firms create value?” As seen in section 2.1.3, the underlying assumptions in the existing explanations for M&A performance preclude them from adequately addressing this question, since the setting – the merger of two weak parties— is a unique circumstance that falls outside of these assumptions. Although there is no study that directly answers this question to my knowledge, there are some related pieces to this study.

In an effort to explain the variation of M&A performance, researchers have tried several ways to classify M&A deals and relate the gains from a merger to the type of deals. For example, some scholars classify the deals in terms of the level of relatedness

between an acquirer and a target firm, as seen above, while others do so determining whether the deal is made within a country or across countries (Harris & Ravenscraft, 1991). Among these methods, researchers in financial economics employ the pre-merger profitability of both an acquirer and a target as a criterion to classify M&A deals.

For example, Lang, Stulz, and Walking (1989) divide their sample between high q firms (those with a q ratio in excess of one) and low q firms to explore how the bidder's and the target's announcement period abnormal returns are related to the bidder and target q ratios. They find that tender offers associated with the largest increase in the combined value of the bidder and target equity are undertaken by high q bidders for low q targets, while tender offers that have the smallest total combined gain are generated from a combination of low q bidders and high q targets. This is consistent with Jovanovic and Rousseau's (2002) point that firms with a high q can profitably expand by buying assets. Using a different cut-off of the industry average rather than "one"<sup>2</sup> and larger samples, including both mergers and tender offers rather than just tender offers, Servaes (1991) mostly confirms Lang et al.'s (1989) results. These findings imply that better performing firms also make better acquisitions, and that more value can be created from taking over poorly performing companies.

In addition to the fact that Lang et al. (1989) employ a new way of looking at the variation of M&A performance, what is more interesting is that the pair of a low q bidder and a low q target in their sample generates the second best outcome in all types of

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<sup>2</sup> Lang, et al.'s (1989) motivation for this cut-off is partially based on the fact that under certain circumstances, firms with q ratios below one have marginal projects with negative net present values. However, q is also industry specific, and one may argue that managers should not be held responsible for adverse shocks to their industries. As such, the industry average may be a useful alternative cut-off point to separate high q firms from low q firms.

returns – bidders', targets', and combined returns<sup>3</sup>. Specifically, while the pairs of low q bidders and high q targets are always ranked lowest in all types of returns, the pairs of low q bidders and low q targets are always ranked second, being ahead of the pairs of high q bidders and high q targets (in both the bidder and combined gains) and the pairs of high q bidders and low q targets (in the target gain).

This result is quite surprising, considering the conventional view on the combination of two weak firms. Although Lang et al. (1989) attribute the difference in returns from different types of pairs to management capability<sup>4</sup> (e.g., the total takeover gain is highest for tender offers by well-managed bidders for poorly managed targets), they do not provide an explanation as to why the combination of two low q firms could sometimes be better than pairs including one high q firm, which seems to be inconsistent with their interpretation of the best and worst case. In this study, by bringing in a new source of value creation from an M&A – an impetus for change through the disruption of routines, I attempt to explain the success of combining two low q firms.

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<sup>3</sup> These are also true in Servaes (1991), except for the bidder's returns. In Servaes (1991), the combination of a low q bidder and a low q target generates the second worst (i.e., third best) outcome for the bidder's returns.

<sup>4</sup> "Tobin's q is an increasing function of the market's assessment of management's performance" (Lang, et al., 1989: 145).

### **Chapter 3. THEORY DEVELOPMENT AND HYPOTHESES**

When a firm is performing relatively poorly compared to its industry counterparts, managers of a firm are inclined to change what they have been doing to turn around poor performance. A firm, as a bundle of routines from the evolutionary perspective, draws upon routines for its performance (Dosi & Teece, 1998). Therefore, a firm's transformation typically begins with a break from existing routines. In other words, poorly performing firms can be better off if they change their unprofitable routines.

Although firms have unprofitable routines, changing existing routines is formidable and unlikely. The literature has repeatedly revealed the persistence and inflexibility of firm routines. The cognitive assumption of the routine-based perspective is bounded rationality, featured in the behavioral theory of the firm (Cyert & March, 1963), which is an important forerunner to the work on evolutionary economics by Nelson and Winter (1982). People often follow a routine without much ongoing consideration about the costs and benefits of the constituent elements of this routine. Firms experience resistance to change, as it is often opposed by organizational members (Coch & French, 1948). In the behavioral theory of a firm, a search is local and "simple-minded," learning takes the form of trial-and-error, and adaptations are induced by crises.

Evolutionary explanations of change emphasize the role of external catalysts, because evolutionary processes create internal selection systems promoting persistence rather than change. With respect to this notion, studies have shown that threat can unlock

inertia by motivating change (Huff, Huff, & Thomas, 1992; Lant, Milliken, & Bartra, 1992).

In this study, I argue that an event, such as a merger, can be a catalyst for firms and can function as an impetus for change in two ways. First, if a firm is defined as a bundle of routines, merging two firms means the combination of two distinct sets of routines. When two separate organizational routines that had previously defined the way of doing things within their respective firms come together, it is inevitable for them to collide to a certain degree and generate new routines by recombining existing routines from two firms. Collision between two different sets of routines generates various results spanning from the dominance of one firm's routines to the abolition of both firms' routines. In this way, a merger can interrupt and disrupt firms' internal systems.

Second, mergers can be an impetus for change by affecting the evolutionary processes of routines – creating more diverse variation and shifting selection criteria<sup>5</sup>. The higher the frequency is of the variation, whether intentional or blind, the greater the opportunities exist for change. Under normal conditions, creating variations are difficult, and variations that lie outside current practices are mostly overlooked, ignored, or negatively sanctioned. Nonetheless, potential sources of variation that break with routine are present (Aldrich, 1979), and mergers can serve as this source of variation. Although more variations occur, they do not play a useful role in inducing change unless a new variation is selected.

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<sup>5</sup> Shifting selection criteria implies “generating changes in internal diffusion, imitation, promotion, and incentive systems” (Aldrich & Ruef, 2006: 141).

Consistent selection criteria generally promote organizational reproduction by differentially selecting certain types of variations. Accordingly, for an avenue to be open to new practices, selection criteria should shift so that some variations that previously proved more beneficial than others are no longer positively selected. Explanations of organizational transformation typically begin with a search for discontinuity that has undercut support for existing selection criteria, such as a change in competitive conditions, new government regulations, a turnover in leadership, or a technological breakthrough (Aldrich & Ruef, 2006). In this study, I argue that merging with another firm can provide these changes that undercut support for existing selection criteria.

Whereas a number of scholars have observed that M&As create value through cost efficiency or risk reduction, studies have not paid enough attention to the possibility of mergers creating value for certain firms by enabling change. Here are a few exemplary studies that have illuminated such alternative sources of value creation from M&As. Amburgey and his colleagues find that M&As can provide momentum for organizational transformation (Amburgey & Miner, 1992; Kelly & Amburgey, 1991). Acquisitions are important vehicles for corporate strategic redirection and renewal (Jemison & Sitkin, 1986). Firms pursue very aggressive boundary expansion strategies, appearing to gain momentum as they acquire other firms.

Another line of research argues that M&As, as a mechanism to mine new capabilities, help firms develop new capabilities that both guard against obsolescence and resolve organizational inertia (Rosenkopf & Nerkar, 2001; Vermeulen & Barkema, 2001). In this study, I emphasize the role of a merger as an enabler of change. Following

the evolutionary definition of a firm and a merger, I adopt the definition of change as the disruption of existing routines, and I explore how such a disruption of routines can be achieved through mergers. Here, the disruption of routine is specifically defined as a situation in which the resulting firm has new routines that are different from either of the pre-merger firms. New routines can be created by a novel recombination of existing routines from merging firms and the introduction of new routines from outside.

Any kind of disruption through mergers is usually regarded as negative since disruption, by definition, means destroying the inherent value within individual businesses. Therefore, managers perceive disruption as something that should be prevented or minimized in the process of mergers. This is more so if mergers include at least one well-performing firm. Because well-performing firms have routines that already create value, the competitive value of novelty may not be large enough; thus, the disruption of existing routines may not be necessary for them.

On the other hand, change is desirable for underperformers, as their current routines do not generate substantial value. Therefore, the competitive value of the novelty that may be achieved by the disruption of underlying routines can be greater in a merger between underperformers whose routines are not working effectively. Unlike the conventional wisdom that a combination of two poor performers will not work well because they will continue what they have been doing prior to the merger, struggling firms may have a strong incentive to exploit the potential of a merger as an impetus for change. This is why mergers between two underperformers are a desirable context to examine whether a merger helps combining firms break with their past routines. If firms



do not have a strong incentive to utilize the merger as an opportunity to transform themselves – as in the case of a merger including at least one strong firm — it is difficult to uncover the potential of a merger as momentum for change since the disruption of routines is blocked at the source. For this reason, I choose a specific type of merger – the combination of two poor performers – as the context of this study.

Although a merger has the potential to be an impetus for change, and neither of the two combining underperformers is against pursuing such a potential, the occurrence of a merger in and of itself does not guarantee that the potential is realized. Two crippled firms may merely end up being a bigger-sized crippled entity unless certain conditions are met. Depending on the deal characteristics, firms' routines can be even more solidified or disrupted. In this study, I argue that the sources of path-dependence should be shaken to break the firms from the past. Three types of sources are suggested: a top management team, a power structure, and resources. Types of changes made to each source, accompanied with the merger, affect the evolutionary processes, and thus determine whether the existing routines are disrupted. If the sources of path-dependence experience changes in a way so that more variation is created and selection criteria are shifted, such a deal would help disrupt existing routines.

In the particular context of mergers between two struggling firms, I expect that such indicators of routine disruptions would generally lead to improved performance after a merger. This does not exclude the possibility that disruption of routines can actually harm firm performance. The disruption of current routines refers to a firm's break from the past and doing something different, but not necessarily better than the

past. Therefore, the disruption of existing routines itself does not guarantee value creation manifested by improved performance after a merger. The disruption of existing routines can make weak firms even worse. In other words, a break from the past cannot be a sufficient condition for performance improvement, even in the case of merging two poor performers.

However, what is clear is that a break with existing routines is a necessary condition for achieving more profitable routines, leading to better performance. It is obvious that two weak firms cannot improve their performance if they do not change what they have been doing. The absence of routine disruption inhibits performance increase, whereas routine disruption does not automatically lead to performance improvement; thus, the disruption of routines after a merger is a necessary condition for performance improvement when weak firms are combined. The necessary conditions do not identify when the merger will perform well. They only identify when the merger cannot perform well and provide guidance as to when mergers have the potential to perform well. In conclusion, I predict a positive relationship between routine disruption and performance improvement.

On the other hand, for a group of mergers, including at least one strong firm, the disruption of routines is neither a necessary, nor sufficient condition for performance improvement. Such mergers can still generate good performance in the absence of routine disruption, whereas the disruption of routines would not necessarily hurt. It is also possible that performance from the mergers of strong firms can be improved by the disruption of routines. Given the lack of clear direction in the relationship between the

disruption of routines and performance in the case of mergers – including at least one well-performing firm – no formal prediction for such cases is made in this study.

I develop these ideas further and propose a set of testable hypotheses in the following section. Given that the disruption of routines is a necessary condition for performance improvement in the case of mergers between poor performers, I explore how firms can disrupt their routines through mergers. As explained earlier, three sources of path-dependence should be tackled in order to bring about the disruption of routines. I propose that with more routine disruption, better performance is generated when 1) the proportion of outsiders in the post-merger management team (or board of directors) is higher; 2) the power is balanced between the two merging entities; and 3) the combining resources are unrelated.

### **3.1. Influx of Outsiders into Post-merger Management Team and Board of Directors**

Firms, as organizations, are characterized by a central authority and hierarchical control, allowing top management to create viable organizational alternatives in terms of incentive systems, formal rules, or planning procedures (Sydow, Schreyögg, & Koch, 2009). A few streams of research share an underlying premise that managers matter, and a linkage exists between the top executives of a firm and its strategy and performance. Cyert and March (1963) conceive a firm's top management team as the "dominant coalition" of individuals that sets a firm's direction by formulating the major strategies and allocating resources. Hambrick and Mason's (1984) upper echelon perspective suggests that organizations are a reflection of powerful actors in the organization; that is, leaders make decisions that reflect their own perspectives, which in turn, shape organizations in ways that resemble their views on risk, strategy, culture, and so on.

The top executives of a firm have two aspects. On the one hand, the way that executives make decisions is a routinized process, and these managerial routines are often considered as one of the main intangible assets that firms own. One of the motives behind mergers is often a desire to acquire capable chief executives from other firms.

On the other hand, leadership is normally a source of inertia (Rumelt, 1995). Not only do executives have their own ways of doing things (managerial routines in decision-making), but they are also attached to other existing routines in the firm. Top executives are committed to the status quo for several reasons. Executives often rely on a learned pattern of responses that is structurally and cognitively reinforced instead of based on employing new search efforts (March & Simon, 1958). If the incumbent executives are the architects of the status quo, they may feel a special attachment to it, as well as having a deep appreciation for its (original) functionality (Rumelt, 1995). For instance, in their analysis of the Intel case, Burgelman and Grove (1996:15) found that “emotional attachment on the part of the top management to the business” was intertwined with inertial self-perceptions. Furthermore, major change requires managers to deny prior commitments, thus lessening their ability to lead in the future. Hence, leadership is very inert to the status quo.

Given the role of top executives in the firm and their inert nature, it is inferred that the role of the top management team is important for a firm to change. Sydow et al. (2009) argue that in order for a firm to change, it is required to switch to a new regime of rules mandated by a change agent or a project group. For change to begin, the leadership must articulate a vision for change, alter incentives, take direct action where possible, and

shift power. Turnaround strategies typically include removal of the extant management (Bibeault, 1982; Westphal & Fredrickson, 2001).

If renewal in the top executive team is important for change, the type of renewal should be considered. Executive succession is one way of renewal made to the executive cadre. Succession can be done by insiders or outsiders. Research has generally reached the consensus that succession by insiders is not helpful for overcoming a firm's path-dependence. Scholars support this view by distinguishing succession into two types. If the succession occurs within the rules accepted in an organization or in an expected way, it is merely a turnover within an authority structure rather than a transformation (Cannella & Lubatkin, 1993). However, non-routine succession, such as top executives being forced out before reaching retirement age or apparent heirs being passed over for outsiders, may signal a major corporate restructuring (Cannella & Shen, 2001; Haveman, 1993). The assertion that insiders are susceptible to inertia, unlike outsiders, is strengthened by the relationship between the length of executives' tenure and the degree of their inertia. Hambrick, Geletkanycz, and Fredrickson (1993) find that executive teams having longer relative tenure within an organization and industry are more likely to experience a commitment to the status quo than executive teams having shorter relative tenure. The longer tenured teams are more likely to remain fixed to a course of action and are less likely to change strategies than their shorter tenured counterparts.

On the other hand, successions by outsiders have been considered to facilitate breaks from the past. Grusky (1969) and Helmich and Brown (1972) report that successions involving outsiders are more disruptive than those involving insiders. The

fact that insiders are less able or eligible to execute change than outsiders is also apparent in the well-known notion of the market for corporate control. When a firm suffers from poor performance, its incompetent management team (which is considered as unable to change the situation by themselves) is disciplined by a firm that has superior management capability (i.e., outsiders) through mergers and acquisitions. Here, an acquiring firm's management team works as outsiders who are not locked in unprofitable routines of the target firm and who can bring in its superior routines. The substitution of human capital in a top management team with that of an acquiring firm clearly indicates the substitution of routines (Cannella & Hambrick, 1993; Walsh, 1988). In addition, there is evidence that a financial market favors firms governed by outsiders, as insider-dominated firms have been considered as captured by managers, freeing them to pursue non-value-creating objectives. Matsusaka (1993) finds that the market reaction to a takeover announcement is negatively related to the ratio of insiders to outsiders on the bidder's board of directors. This finding implies that outsiders take relatively neutral positions due to their lack of long embeddedness in the firm. Also, turnaround strategies typically include removal of the extant management (Bibeault, 1982; Westphal & Fredrickson, 2001).

When two struggling firms are merged, neither of the two management teams is eligible to discipline the other firm since both of them are suffering from poor performance. The executives retained from the two firms would be more attached to the routines they had in their prior firms. Even when it is implicitly agreed on what both firms need, managerial path-dependence constrains executives' ability to discard their familiar routines and look for new routines. Instead, executives who are sourced

externally (from outside the two firms)<sup>6</sup> are more likely to disrupt the two firms' existing routines since they are free from both routines. Although it might be possible that the executives from outside can be affected by other insiders' proclivity toward existing routines, they might infuse their own experiences and perspectives so that breaks from the existing routines of the two firms can occur anyway. This view is supported by the prior finding that external succession creates more disruption than internal succession (Helfat & Bailey, 2005). Because top executives will not accept a deal that eventually plans to drop them, these arguments have implications for corporate governance in terms of actions taken to align agents and principals' interests. For example, if boards of directors desire to promote this kind of merger, they may need to provide special incentives for the top managers not to resist the merger (e.g., attractive severance packages, promises of stock in the integrated firm).

The reason as to why an influx of outsiders (when a new top management team is composed through a merger) can bring change to the firm is that they can stir up variation and selection processes with their different perspectives, and they have no dependence on the routines of a firm. Sitkin, Sutcliffe, and Schroeder (1994) argue that firms can introduce intentional variation through outside consultants, who often play a role in spreading new managerial practices, such as total quality management. Also new managers often try to look good by reorganizing things, and blind variation can occur in that process. Not only can they create more variation, but also outsiders shift selection

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<sup>6</sup> The influx of outsiders into a top management team after mergers and acquisitions is not a mere imaginary situation. From the data I collected, about 30% of cases could be classified as such deals with outsiders. See Table 1 for an example from the merger between Phone.com and Software.com. In this example, a new CEO after the merger came from the outside.

criteria. For variation to be consequential, new selection criteria should be chosen because consistent selection criteria generally promote the reproduction of routines by selecting certain types of variation.

Therefore, I argue that an influx of outside members into a top management team of a newly created entity will be likely to lead to more disruption of routines. As a result, the more dominated by outsiders a new merged entity is, the more improved performance is expected when two poor performers are combined. Conversely, an influx of outsiders into a post-merger management team is not a necessary condition for performance improvement if the merger includes at least one strong firm, even if it would not necessarily hurt either of them. Therefore, no formal prediction for such cases in terms of an influx of outsiders is made here.

*Hypothesis 1a: In mergers of poor performers, the more outsiders in the new top management team, the higher the post-merger performance.*

The same logic applies to the composition of a board of directors in a newly created firm and the post-merger performance.

*Hypothesis 1b: In mergers of poor performers, the more outsiders in the new board of directors, the higher the post-merger performance.*

### **3.2. Power Balance**

Power is defined here as “the capacity of individual actors to exert their will” (Finkelstein, 1992: 506). This definition is consistent with those of other scholars (Hickson, Hinings, Lee, Schneck, & Pennings, 1971; MacMillan, 1978; Pfeffer, 1981). The distribution of intra-organizational power and influence can affect transformation and change (Hannan & Freeman, 1984; Nelson & Winter, 1982).



A power differential is often found between two entities after a merger. Such a differential reflects the extent to which there can be unidirectionality of influence from an acquirer to a target (Stahl, Kremershof, & Larsson, 2011). The impact of a power differential between two entities involved in a merger “is not simply the overwhelming and domination of the smaller entity through sheer magnitude, but also the intensification of beliefs about superiority and inferiority” (Pablo, 1994: 810). If power is shared unequally between merging firms, the more powerful party becomes dominant, and the dominant party will stick to its own routines while discarding the routines of the other party and imposing its routines on the recessive party. There is evidence that having a dominant party is not helpful for variation. Pfeffer and Salancik (1978) find that dominant groups may constrain opportunities for variation to prevent challenges to their power and privilege. In addition, powerful groups may promote interpretive principles that shape people’s perceptions of what is necessary and possible (Burns & Dietz, 1992; Perrow, 1986). Likewise, the selection criteria would be chosen by the dominant party, which would continue to solidify the routines of the dominant party.

On the contrary, symmetry in power will generate a situation in which there is no relatively dominant party. In such a situation, both parties will insist upon their own routines to operations in a newly established firm, and a collision of two parties’ routines in some areas will be inevitable. In this case, no one party’s bundle of routines can rule a new firm due to equally matched power between the two parties. A clash of routines will make both parties depart from their current routines to a certain degree; thus, the two parties will experience a disruption of their existing routines.

The power of two parties is indicated by a proportion of people from each firm who takes positions in the top management team (or a board of directors) of a newly formed firm. Considering the impact that top executives usually have on the organization, it is obvious to expect that the party with most of the positions in the management team will be in control of a new firm. Other than the positions taken by outsiders, the rest of the positions in the top management team are filled by people either from an acquirer or a target firm. How such remaining positions are divided between the two parties indicates the power distribution between them. When a new management team is composed following a merger, the executive members from an acquiring firm usually take a greater part of the positions in a resulting management team. If this is the case, an acquirer, as the dominant party in the firm, is expected to impose its own routines on the new firm. After the merger is completed, managers of the acquired firm continue to operate the firm as they did previously. A target, with fewer seats in the management team, does not have enough power to offset the acquirer's dominance in terms of routines.

Finkelstein (1992) presents a set of dimensions (structural power, ownership power, expert power, prestige power) measuring top managers' power and suggests a measurement methodology to facilitate empirical inquiry. Because his study concerns examining power accrued to individual managers, it is not appropriate to apply the suggested measures directly to this study. Nevertheless, his insight behind the measures is noteworthy. One of the Finkelstein's dimensions relevant to this study is structural power. Finkelstein (1992) explains structural power as being related with the distribution of formal positions within an organization. Based on such an insight, I deem the

proportion of the executive positions (excluding the positions taken by outsiders) taken by each firm (i.e., acquirer and target firm) to show the size of the power that accrues to each entity.

If executive positions in a new management team are shared more equally, it indicates a balanced distribution of power between two parties in a newly combined firm. For the reasons argued above, equal representation indicating a power balance between two parties will lead to more of a disruption of the two firms' routines. In addition, equal representation implies that the top management team has more diversity in its composition. More diverse teams are believed to challenge each other, push for creative solutions, and innovate more (Finkelstein & Hambrick, 1996; Hambrick, Cho, & Chen, 1996).

Given that a balanced disruption is necessary for performance improvement in a merger between poor performers, a merged firm with a balanced power structure will be more likely to improve its performance. Therefore, I expect a positive relationship between equal representation and post-merger performance. Again, a power balance between two parties is not a necessary condition for performance improvement if the merger includes at least one strong firm, even if it would not necessarily hurt either of them. Therefore, no formal prediction for such cases in terms of power balance is made here.

*Hypothesis 2a: In mergers of poor performers, the more equal the representation in the new top management team, the higher the post-merger performance.*

The same logic applies to the composition of a board of directors in a newly created firm and the post-merger performance.

*Hypothesis 2b: In mergers of poor performers, the more equal the representation in the new board of directors, the higher the post-merger performance.*

Another indicator of power is a firm's size. The size differential between acquiring and acquired organizations will influence the post-acquisition process (Bastien & Van de Ven, 1986). Studies have been using size difference as a proxy for power differential (Asquith, Bruner & Mullins, 1983; Bastien & Van de Ven, 1986; Finkelstein & Halebian, 2002). The relative size of the acquiring and target firms indicates the relative power balance among the parties involved. The relative size of acquiring and acquired organizations indicates the relative power balance among the organizations involved. Specifically, the greater the mismatch in size, the more asymmetrical or unidirectional will be the transmission of organizational routines, from the larger to the smaller firm. When the acquirer is significantly larger than the target firm, the capability and tendency of the acquiring firm to exercise power and enforce its preferences upon the target is particularly strong (Pablo, 1994).

On the other hand, the greater the size equality, the greater the contest and bidirectional influence of the target and acquiring firms on each other (Bastien & Van de Ven, 1986). In the same manner with equal representation, when similar-sized parties are combined (i.e., a merger of equals), a power struggle usually occurs (Epstein, 2004). Most of the integration literature implies that a small unit is folded into a larger one when there is a significant difference in the sizes of the two firms. When two equally sized

firms are merged, one-sided integration would not happen, since both of them can influence the other to an equal degree. Therefore, I expect a positive relationship between size equality and post-merger performance.

*Hypothesis 2c: In mergers of poor performers, the greater the size similarity of the merging firms, the higher the post-merger performance.*

### **3.3. Relatedness**

I have just argued that the composition of a top management team and a board of directors after a merger influences the magnitude of change and merger performance, as a result. Changes in firms of any size, however, involve more than merely commanding change. It is unrealistic to assume that the evolution of a firm is completely under management's control. Although a top management team or a board of directors has a dominant effect over its firm, the scope for a firm to unlock path-dependence simply by order is clearly limited, due to the self-reinforcing nature of organizational processes (Sydow et al., 2009). Resources composing a firm are another factor affecting firm change. Capabilities or routines are tangible or intangible processes that develop through interactions with the firm's resources (Capron & Mitchell, 2009). More specifically, the level of resource overlap (e.g., industry overlap, geography overlap) between the two parties affects the degree of unbiased routine disruption.

The level of relatedness between two entities' resources affects the way the resources are utilized. Merging firms with overlapping resources creates value through exploitation, whereas those with unrelated resources usually do so through exploration (Madhok, 1997). Such a difference in the way value is created results in a different effect

on variation and selection processes. When similar resources are combined, firms are more likely to stick to the same method to make use of those resources, and thus end up adhering to the accompanying existing routines. It is less likely that a variation of routines occurs, or selection criteria shift.

Industry is the reservoir of unique resources (Powell, 1996). Firms within the same industry share similar resources and routines that are unique to the industry. Therefore, if two firms are from the same industry (e.g., Wells Fargo and Wachovia), the choice will be made between Wells Fargo's and Wachovia's ways since both parties' routines have been aligned within the same environment (i.e., the banking industry), in terms of where the merged firm will operate; thus, the merged firm would not feel the need to create variations. With no variation, selection merely becomes a process of choosing between two firms' routines; as a consequence, the firm's current routines are not disrupted. Also, firms that compete in the same industry share common frames of reference (Porac, Wade, & Pollock, 1999), standard procedures and communication channels (Henderson & Clark, 1990), and recipes on strategic thinking (Spender, 1989). In sum, familiarity with resources leads managers to routinely continue to work with the same resources (Karim & Mitchell, 2004). Resource rigidity positively affects routine rigidity (Gilbert, 2005).

On the other hand, obtaining new stocks of resources contribute to obtaining new capabilities or routines (Capron & Mitchell, 2010). By altering the firm's resource base, new strategic alternatives or "paths" for the firm are open (Helfat, 1997). If two merging firms combine unrelated resources within a newly merged entity, each entity needs to

handle its unfamiliarity with the resources, and both of them should put effort into exploring the new combination of these resources in their hands. Therefore, firms in such conditions are more likely to create value through exploring new alternatives. In the process of exploration, the environment in which the resulting entity belongs becomes different from both environments where each firm had originally belonged prior to the merger.

Neither of the old routines in the two firms is likely to be aligned with the new environment. Therefore, variations will start. In addition, changes in terms of which resources are available may create new selection pressures (Aldrich & Ruef, 2006). For example, if two merging firms are from different industries (e.g., Circuit City and Blockbuster), a combined firm will operate in a new market, and will thus face new competitors that are different from the players in the industries to which they originally belonged (e.g., Best Buy or Hollywood). In such a case, the merged firm should come up with new routines that can fit a new environment while breaking from both firms' previous routines at the same time. Increased diversity through combining unrelated resources creates alternative opportunities for learning and capability building.

For poor performers, related combinations are undesirable. Firms that remain within one industry have a narrow range of challenges and, as a consequence, learn less and are more likely to experience blind spots and holes in knowledge structures (Walsh, 1995). Firms with highly similar resources also have highly similar strategic capabilities and vulnerabilities in the marketplace (Chen, 1996). Therefore, if two struggling firms in the same industry merge, it is likely to double similarly unprofitable routines. However, it

is hard to expect that the disruption of any of the routines will happen, for the reasons argued above. Given that the disruption of routines is necessary for performance improvement in a merger between poor performers, a merged firm with related resources will be less likely to improve performance after the merger. Instead, the combination of unrelated resources can, in fact, provide a positive influence on performance. Again, resource differences between the two parties are not a necessary condition for performance improvement if the merger includes at least one strong firm, even if it does not necessarily hurt either of them. Therefore, no formal prediction for such cases in terms of resource overlap is made here. In this study, I employ two measures for resource overlap: industry overlap and geographic overlap.

*Hypothesis 3a: In mergers of poor performers, the higher the industry overlap, the lower the post-merger performance.*

*Hypothesis 3b: In mergers of poor performers, the higher the geographic overlap, the lower the post-merger performance.*

The theoretical relationships discussed so far are shown in Figure 1.



## Chapter 4. DATA AND RESEARCH DESIGN

### 4.1 Sample

To form the sample, I used the Thompson Securities Data Corporation Platinum Mergers and Acquisitions database as the source of acquisitions data. The database provides a comprehensive list of mergers and acquisitions by companies across countries, and many previous academic studies on M&As have used this source (e.g., Puranam, Singh, & Zollo, 2006; Puranam & Srikanth, 2007).

I initially gathered all M&A agreements between US firms announced between 1/1/1994 and 12/31/2006. The 1994 – 2006 period was chosen for the following reasons. First, researchers who use the SDC M&A database have reported that pre-1990 data are very patchy and not reliable (SRI, 2009). Second, the nature of M&As became different as the fifth merger wave started from 1992 in the US. Unlike the deals of the 1980s, those of the 1990s gave more importance to strategy than quick financial gains, and they were not dependent on much debt. Therefore, there was not much pressure to quickly sell assets to pay down debts (Gaughan, 2007). Third, SEC filings – data sources for explanatory variables, which will be explained in more detail below- are available only after 1/1/1994. Fourth, to allow for a minimum assimilation period of 3 years, the sample was restricted to those deals that were completed by 12/31/2007.

The SDC M&A database lists 333,798 completed M&A deals within this time span. From this initial list of M&As, I excluded any form of deal,<sup>7</sup> except for mergers and

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<sup>7</sup> The SDC assigns one code out of ten to each transaction, describing the specific form of the transaction: M (Merger), A (Acquisition), AM (Acquisition of Majority Interest), AP (Acquisition

acquisitions of stocks or assets. Also, the sample was limited to publicly traded firms so that financial data would be available. I included only completed deals and only cases where acquiring firms acquired 100% of the target's stocks, and the target firm did not remain as an independent entity after the deals. These restrictions provided me with 8,239 deals. Finally, I restricted the sample to US-based acquirers and target firms to insure data availability of SEC filings (especially 10-Ks and proxy statements) - the data sources for the explanatory variables, which I define shortly.

Limiting the study to a single country has the advantage of eliminating variation in country-level factors that simultaneously influence M&A performance and explanatory variables in this study – especially the composition of top management teams and boards of directors. Out of 8,239 deals, 4,075 deals include non-US acquirer or target firms<sup>8</sup>. Most of those deals are made by firms in Europe or Canada (Europe - 1,521, Canada - 854). Despite some similarities to mature markets similar to the US, the market for corporate control in Europe has unique characteristics (Moschieri & Campa, 2009).

With such differences, it is suggested not to assume that theoretical or empirical frameworks for M&As in the US automatically apply in Europe. Haspeslagh and Jemison (1991) also reports distinct features of M&As in Europe compared to those in the US, insofar as European acquisitions are mainly domestic, friendly, and often arranged through a private transaction, contrasting with the prevalence of hostile deals through public tender offers in the US. In addition, data on the top managers of non-US firms are not readily available. Although some databases (e.g., ORBIS and MintGlobal) provide a

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of Partial Interest), AR (Acquisition of Remaining Interest), AA (Acquisition of Assets), AC (Acquisition of Certain Assets), R (Recapitalization), B (Buyback), and EO (Exchange Offer).

<sup>8</sup> If its ultimate parent firm is foreign, the firm is regarded as foreign.

partial list of current executives in firms in foreign countries, they do not provide historical data, so it was impossible to collect data on a top management team and board of directors after the time of a deal completion.

In addition, given that top management positions are not quite equivalent across countries (Mayer & Whittington, 1999), it is inevitable to limit the study to the US context. This screening procedure resulted in a base sample of 4,164 US M&A deals. From the SDC database, data on the deal characteristics, such as the announcement and completion date, form of the deal, form of payment, deal attitude, number of bidders and premium paid to a target, along with the data on firm characteristics, such as total assets, market value, primary SIC code<sup>9</sup>, and city and state where the headquarters of the acquirer and target are located, are gathered.

Data to construct variables used in this study are obtained from the SDC, Standard and Poor's Compustat Annual Industry Files, Compustat/CRSP (Center for Research in Security Prices) Merged, Compustat Segment Files, Eventus, and SEC filings (10-Ks and proxy statements).

The effective sample consisted of 298 deals after the exclusion of 3,866 deals. Of the deals removed, either acquirers or targets' firm identifiers (CUSIP, GVKEY, PERMNO, etc.) were unavailable in any forms that were necessary upon which to draw data from the databases listed above. Also a deal was dropped from the sample if the acquirer did not acquire 100% of the stock or assets of the targets, or if it was a subsidiary acquisition so that the target firm remained after the acquisition. Because this

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<sup>9</sup> Data on total assets, market value and primary SIC codes are cross-checked with those from the Compustat Annual Industry Files.

study draws on multiple databases, firms in the sample had many missing pieces of data. In addition, many firms terminated their existence in less than three years after the deal was made, and the deals including such firms were also dropped, as the measurement of a dependent variable in this study requires three-year observations of financial data after the deal is completed. Finally, the deals were dropped if acquirers made other acquisitions (including foreign acquisitions) one year before and three months after the focal acquisition. If the same acquirers were engaged in the deals of the sample more than once, such deals were also dropped.

Table 2 shows information on the years of the announcement of deals in the sample. Tables 3a and 3b show the primary industries of the acquirers and targets at major group level and Table 3c and 3d show them at division level.

**\*\*INSERT TABLES 2, 3A, 3B, 3C, & 3D HERE\*\***

#### **4.2 Criteria for Strong and Weak Performers: Industry-adjusted Tobin's Q based on a "Chop-shop" Approach**

In a paper on the relationship between acquisition performance and the Tobin's q ratios of targets and bidders, Lang et al. (1989) used one as a cut-off point to separate high q firms from low q firms. In a successive research to that of Lang et al. (1989), Servaes (1991) used the industry-average as an alternative cut-off point to separate firms into high and low q's given that q is industry-specific. Following Servaes (1991), in this study, I used the industry-median q ratio as a cut-off point to classify firms as over- and underperformers. Because most firms in the sample are multi-business, I followed a "chop-shop" approach when calculating the industry-median q ratio. Below I explain

what Tobin's q is, the merits of the q ratio as a performance measure, and how I calculated the industry-median q ratio.

Tobin's q is defined as the ratio of the market value to the replacement cost of the same physical asset. The Q ratio has been considered to be significant and useful as the relationship between financial markets, and markets for goods and services (Tobin & Brainard, 1977); thus, the q ratio has been employed to explain diverse corporate phenomena (Chung & Pruitt, 1994). If the value of Tobin's q is one, then it can be inferred that the market value exactly reflects the recorded assets of the firm. If q is greater than one, this suggests that the market value reflects some unmeasured assets of the firm. Firms with a high q are encouraged to invest more in assets, because they are worth more than the price they paid for those assets. If q is less than one, this suggests that the market may undervalue the firm. I use this metric as a measure of a firm's performance. To calculate Tobin's q, I divide a firm's market value by a firm's book value of its total assets. A firm's market value is calculated as the sum of a firm's total assets and market value (=common shares outstanding\*share price) minus common equity. This is a modified formula<sup>10</sup> of Tobin's q, which is suggested in Kaplan and Zingales (1997). The data used in this calculation are from Compustat and the Compustat/CRSP Merged database.

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<sup>10</sup> The original formula for Tobin's q in Kaplan and Zingales (1997: 177) is the "market value of assets/book value of assets (item 6) where the market value of assets equals the book value of assets plus the market value of common equity less the sum of the book value of common equity (item 60) and balance sheet deferred taxes (item 74)." The modified formula used in this study does not include the item "balance sheet deferred taxes" in the numerator, due to many missing values in this item in the Compustat Annual Industry Files and Compustat/CRSP Merged databases. Since the values of the balanced sheet deferred taxes were negligible in most cases, the q ratios calculated without this item did not materially affect the estimates of q.

To calculate the industry-median Tobin's  $q$ , I used the "Chop-shop" method. This is a popular approach in finance (Berger & Ofek, 1995; Lang & Stulz, 1994; Shin & Stulz, 1998; Villalonga, 2002), although it has been less widely used in the strategy literature. By using the "chop shop" method, one can estimate the industry-median value by chopping the diversified firms into their divisions and comparing the value of firms to the  $q$  ratios that these firms would have if the stand-alone  $q$  ratio of each division were the median  $q$  ratio of the single-segment firms in its industry. This is referred to as the hypothetical  $q$  ratio. This approach was pioneered by LeBaron and Speidell (1987), who coined the term for the "chop-shop" approach. Researchers have used this method to calculate diversification discounts or premiums (Lang & Stulz, 1994; Villalonga, 2002).

Given that some firms in the sample are multi-business firms, this approach can estimate the industry-median value of sample firms more accurately by considering all of the industries where firms' divisions operate instead of only one primary industry of firms. By Statement 14 of the Financial Accounting Standards Board, companies have been required to disclose details of the operations of their business segments since 1976, and this information has been collected by Compustat.

Compustat Segment Files was used to identify all of the business segments<sup>11</sup> of each sample firm. The sales and total assets for each segment were drawn to be used as a multiplier. Also single-segment firms operating in each industry (identified at the 4-digit level of the first SIC code assigned to each segment) were defined as "pure-play" firms in

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<sup>11</sup> There are four types of segments in the Compustat Segment Files: Business, Operating, State and Geographic. In this study, only the Business Segment is considered, since the SIC code is assigned only for this type of segment.

that industry. This assignment follows the rationale of Villalonga (2002), who considers any firm in the Compustat company-level files that does not report more than one segment in the segment files as specialized. Segments with no SIC code or no sales data were dropped. The median of Tobin's q ratios was then calculated for each industry, using the pure-play firms. A weighted average of industry median values was calculated for each sample firm, using the segment sales for the weight, and this was the imputed q ratio of the firm.

The longer the period of low performance that is required for a firm to be labeled as a poor performer, the more certain it is that the pattern is truly significant, and not just a temporary anomaly (Bruton, Oviatt, & White, 1994). Using a very long period, however, can greatly reduce the usable sample size. Therefore, three consecutive years of average excess values (a firm's own q – Imputed q) prior to an M&A announcement was used to classify sample firms into over- and underperformers. A firm's excess value was defined as follows:

$$\text{Average excess value} = \frac{\sum_{t=1}^3 [q_t - iq_t]}{3}$$

where  $q_t$  = a firm's q ratio,  $iq_t$  = a firm's imputed q ratio in year t, respectively,

$$\text{and } iq_t = \sum_{i=1}^n (\text{Industry-median } q_{it} \times \frac{\text{Sales}_{it}}{\text{TotalSales}_t}) \text{ (t=year 1, year 2, and year 3,}$$

which correspond to one year, two years, and three years prior to the M&A announcement, respectively).

If its three-year average of such an excess value is greater than zero, a firm is deemed as an overperformer (strong firm); otherwise, it is classified as an underperformer (weak firm).

Table 4 contains the summary statistics of the number of segments where acquirers and targets belong, and Tobin's q ratios of acquirers and targets for three years prior to the M&A announcement. Table 5 shows how sample deals are classified, based on the three-year average excess q ratio.

\*\*INSERT TABLES 4 & 5 HERE\*\*

#### **4.3 Dependent Variable**

*M&A Performance*. Value creation from combining firms is synonymous with synergy from an M&A. It is said that synergy exists if the value of the merged entity exceeds the sum of the values of the two merging firms (Seth, 1990). Therefore, the dependent variable *M&A Performance* is measured as the difference between pre-merger and post-merger performance. For the same reasons, I chose Tobin's q as the basis for the criteria used to classify firms into strong and weak categories, and in order to be consistent with such criteria, I used Tobin's q ratio as a measure of performance. Since information regarding who will fill up the TMT and BOD is not completely available at the time of merger announcement, cumulative abnormal return around a merger announcement is not considered as an appropriate dependent variable of this study.

Following Ramaswamy (1997), pre-merger performance is calculated as the sales-weighted mean of the q ratio of both an acquirer and a target firm over a three-year period prior to their merger announcement. As Harrison, Hitt, Hoskisson, and Ireland noted, "Combining statements in the pre-acquisition period overcomes the bias toward



attributing merger related success or failure to performance differences that would have existed even if a merger had not occurred” (1991:181). Post-merger performance is calculated as the mean of the q ratio of the merged entity for the three years after the merger completion.

#### **4.4 Explanatory Variables**

In this study, the explanatory variables of interest include the proportion of outsiders in the resulting management team and the board of directors after a merger, the power balance between the two merging entities, and the resource relatedness between the two parties. I explain how I measure each variable in more detail below.

##### **4.4.1 Influx of outsiders**

*Outsiders’ Ratio Measure.* The primary independent variables of interest capture the proportions of outsiders relative to the total executive officers in a top management team and the total number of directors on the board of directors of a combined entity. An executive is considered as an outsider executive if the executive joined the merged firm after the merger<sup>12</sup> and was not an employee of the pre-merged entities in which he or she took office at the time of the merger (Shen & Cannella, 2002). An outsider director is defined similarly as the newly appointed director to the board of the merged entity after completion of the merger, and the director who was not on the boards of the pre-merged entities before the merger.

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<sup>12</sup> Given that there is often an influx of outsiders around a merger announcement and completion, the additional measurement of an outsider—an executive or a director who has been with the firm for one year or less when the merger is made—is used for a sensitivity test. The result was similar, but weaker.

The variable *Outsiders in TMT* captures the ratio of the number of executive positions taken by outsiders to the total number of executive positions in the top management team of a newly combined firm. To capture the executive officers composing a top management team of the merged firm and pre-merged entities, I draw on their 10-K, an annual report required by the US Securities and Exchange Commission (SEC), which provides a comprehensive summary of a public company's management and performance. In a 10-K, companies are required to report information on the company's history, executive officers, executive compensation, equity, subsidiaries, and audited financial statements. Item 4 of Part I or Item 10 of Part III of the registrant's annual report on the 10-K includes a separate item captioned, "Executive Officers of the Registrant."

Here, for the purpose of identifying executive officers, companies are required to "list the names and ages of all executive officers of the registrant and all persons chosen to become executive officers, indicate all positions and offices with the registrant held by each such person, state his term of office as officer and the period during which he has served as such" and "briefly describe the business experience during the past five years of each executive officer."<sup>13</sup> It is noteworthy that the firm can exercise discretion in decisions regarding how many people and whom to report as executive officers. I consider the list of the executive officers in the Form 10-K as reflecting the top management team of the firm. The information on "Executive Officers of the Registrant"

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<sup>13</sup> Source: Standard instructions for filing forms under the Securities Act of 1933, Securities Exchange Act of 1934 and Energy Policy and Conservation Act of 1975-Regulation S-K Subpart 229.400-Management and Certain Securities Holders.

in the Form 10-K has been used to define the top management team in previous studies (e.g., Gordon, Stewart, Sweo, & Luker, 2000).

I refer to the first 10-K after the closing of the merger. Based on the career history of each executive, I identify whether an executive is from the acquiring firm, the target firm, or from outside the merging firms. I exclude the members of the board of directors, including the chairman when counting the TMT, unless they are also executive officers, in order to avoid double counting those members, both in the TMT and BOD.

The variable *Outsiders in BOD* is measured as the percentage of the number of outsider directors on the board of directors. Directors of the merged firm and pre-merged entities are captured from their DEF 14A, an annual definitive proxy statement. It includes a separate item captioned, "Election of Directors." Here, for the purpose of identifying directors, firms are required to "list the names and ages of all directors of the registrant and all persons nominated or chosen to become directors, indicate all positions and offices with the registrant held by each such person, state his term of office as director and any period(s) during which he has served as such, describe briefly any arrangement or understanding between him and any other person(s) (naming such person(s)) pursuant to which he was or is to be selected as a director or nominee."<sup>14</sup>

#### **4.4.2 Power balance**

I measure the degree of the power balance between merging firms in three ways: equal representation in the top management team and the board of directors of a combined firm and the similarity in the size of pre-merged firms. Information on how

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<sup>14</sup> Source: Standard instructions for filing forms under the Securities Act of 1933, Securities Exchange Act of 1934 and Energy Policy and Conservation Act of 1975-Regulation S-K Subpart 229.400-Management and Certain Securities Holders.

positions in the TMT and BOD are shared between the acquirer and target firms is drawn from a firm's first 10-K and DEF 14A after the closing of the merger.

The variable *Deviation From Equal Representation in TMT* captures the degree of deviation from the perfect balance of power in a combined entity's TMT between two merging entities. It is measured as the absolute value of the difference between 0.5 and the proportion of the positions filled by the executives from the target firm relative to the executive positions taken by members from the target and acquiring firms. More specifically, I define this variable as  $|0.5 - (\text{the number of executive positions taken by members from a target firm} / \text{sum of the number of executive positions taken by members from the target and acquiring firms})|$ . Here, 0.5 stands for the ratio in which the case of equal representation can take.

Similarly, the variable *Deviation From Equal Representation in BOD* captures the degree of deviation from the perfect balance of power in a combined entity's BOD between two merging entities. It is measured as the absolute value of the difference between 0.5 and the proportion of the positions on the board filled by people from the target firm relative to the board positions taken by people from the target and acquiring firms. Namely, I define this variable as  $|0.5 - (\text{the number of director positions taken by members from a target firm} / \text{sum of the number of director positions taken by members from the target and acquiring firms})|$ . Sometimes a person who was an executive officer in an acquirer or target firm becomes a director in a combined firm, and such a case is also counted.

A third measure of the power balance between two merging firms is size similarity. As measurements of firm size, sales (e.g., Tallman & Li, 1996; Waddock, 1997), total assets (e.g., Asquith et al. 1983; Finkelstein & Halebian, 2002) and the number of employees (e.g., Bastien & Van de Ven, 1986) have been widely used. In this study, I use sales as a proxy for firm size<sup>15</sup>. This criterion helps internal consistency, as I used sales as a multiplier for segments in the chop-shop approach for the classification of firms into over- and underperformers and weight for calculating the weighted-means of pre-merger performance. I create the variable *Deviation From Equal Size*, which is measured as the absolute value of the difference between 0.5 and the proportion of a target's sales relative to the sum of a target's and an acquirer's sales prior to the merger. More specifically, this variable is calculated as  $|0.5 - (\text{the sales of a target firm} / \text{sum of the sales of a target and an acquiring firm})|$ . The sales of an acquiring firm and a target firm were gathered from the Compustat Annual Industry Files. I used sales as of the date of the most current figures prior to the date of the merger announcement.

Table 6 shows the descriptive statistics of the size of the TMT and BOD and the origins of executives and directors of a merged firm. Figure 2a-2d presents histograms of the numbers of executives and directors from a target firm and from outside.

**\*\*INSERT TABLE 6 AND FIGURE 2A-2D HERE\*\***

#### **4.4.3 Relatedness**

I employ two measures of resource relatedness in this study: industry overlap and geographical overlap.

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<sup>15</sup> Alternative firm size measures – total assets, market values, and the number of employees—were tested and the results did not change.

Existing measures of industry overlap typically rely on the Standard Industry Classification (SIC) system. To capture relatedness, researchers classify two businesses as unrelated if they do not share the same two-, three-, or four-digit SIC code, and vice-versa. This method has been directly applied to mergers and diversification studies, such as Morck, Shleifer, and Vishny (1990) and Berger and Ofek (1995), among others. Although there is some criticism on using the SIC-based measure of relatedness (first, they do not reveal relatedness types; second, they are discrete, and hence, do not measure the degree of relatedness; third, they are subject to classification errors), the method has been widely used to measure resource relatedness. Following Capron (1999), I regard two firms as related if such firms operate within the same industry, defined at the four-digit SIC code level. The variable *Industry Overlap* is coded as 1 if two firms operate within the same industry and zero, otherwise.

In addition to industry overlap, I use geographical overlap as a second measure of relatedness. The degree of geographic overlap has been used as an approximation of resource relatedness (Healy et al., 1992). Zollo (1997) uses geographical overlap of the branch networks of banks as a proxy for the degree of resource relatedness between merging banks. Following this insight, I create a dummy variable labeled as *Geography Overlap*, which has a value of one if the two firms' headquarters are located in the same city and zero, otherwise. Geographical overlap measured at the city level is more precise than one at the state level.

#### **4.5 Control variables**

Based on previous works of M&A performance, a set of deal characteristics is controlled.

The method of payment (i.e., cash or stock) used for the acquisition (Franks, Harris, & Mayer, 1988; Travlos, 1987; Walker, 2000) has been known to affect M&A performance. Moreover, controlling the method of payment is desirable in this study for an additional reason. If the firms classified as poor performers in this study are actually undervalued firms, routine disruption may not be a desirable turnaround strategy. Therefore, I need to rule out the possibility of misvaluation. There are indicators of misvaluation, such as the method of payment (stock versus cash) and the bid premium (Dong, Hirshleifer, Richardson, & Teoh, 2006). More highly valued bidders are more likely to use stock and are less likely to use cash as consideration. Rhodes-Kropf, Robinson, and Viswanathan (2005) find that cash targets are undervalued relative to stock targets.

Moreover, cash acquirers are less overvalued than stock acquirers. Also, more highly valued bidders are willing to pay more relative to the target market price, and low valuation targets receive higher premia relative to the market price (Dong et al., 2006). Fishman (1989) finds that cash offers in M&A transactions deliver positive information about the valuation of the acquirer's assets. I control for the method of payment (cash, stock, or mixed payment) by creating two dummy variables, *Pay in Stock* and *Pay in Cash*. If payment was made in 100% stock, then the variable *Pay in Stock* takes a value of one and zero, otherwise. If payment was made in 100% cash, then the variable *Pay in Cash* is coded as one and zero, otherwise. Information on the method of payment comes from the item "Percentage of consideration paid in cash" and "Percentage of consideration paid in stock" in the SDC Platinum's M&A database.

For the variable *Premium*, I referred to the item, “Premium 4 Weeks Prior to Announcement Date,” which is defined as the “premium of offer price to target closing stock price 4 weeks prior to the original announcement date” in the SDC Platinum’s M&A database. This is calculated as  $100 * [(Price\ paid\ per\ common\ share\ by\ the\ acquirer\ in\ the\ transaction - Target\ stock\ price\ 4\ weeks\ prior\ to\ the\ announcement\ date) / Target\ stock\ price\ 4\ weeks\ prior\ to\ the\ announcement\ date]$ . The four-week time lag has been used to obtain the value, which is not confounded by the takeover announcement and leakage of information right before the announcement (e.g., Nathan & O’Keefe, 1989). This way of measuring the acquisition premium has been widely used in prior acquisition research (e.g., Beckman & Haunschild, 2002; Kisgen, Qian, & Song, 2009).

The variable *Contested Bid* captures whether there exists more than one bidder. If there are a number of bidders, it can negatively impact the acquirer’s gains (Datta, Pinches, & Narayanan, 1992; Hayward & Hambrick, 1997). Competing bidders may drive up the premium paid to a target firm, so acquisitions with contested bidding usually result in lower gains for the acquirer than those with only one bidder (Barney, 1988; Varaiya & Ferris, 1987). Using the variable in line with Hayward (2002) and Capron and Shen (2007), I define a contested deal with a dummy variable *Contested Bid* as 1 if the number of bidders is greater than one as reported in the SDC and zero, otherwise.

For the variable *Attitude*, I referred to the SDC Platinum’s M&A database, which classifies acquisitions as either friendly or hostile, based on primary reference sources such as the *Wall Street Journal* and other various trade publications. The variable *Attitude* has a value of one if the acquisition was hostile and zero, otherwise.



Year dummies are also included. I created dummy variables to capture three time periods in the sample: *Year1994-1998* and *Year1999-2002*. The characteristics of the sixth merger wave that started in 2003 and came to an end in mid-2007 are distinguished from those of the fifth merger wave between 1992 and 2002. In this new wave of mergers, the driver was primarily the availability of abundant liquidity. Also, the market for corporate control is less competitive, so significantly lower premiums were paid to target firms, indicating more cautious and rational M&A decisions (Alexandridis, Mavrovitis, & Travlos, 2010). Mergers and acquisitions made in the turn-of-the-century dot-com boom from the end of the 1990s and into the early 2000s are also distinguished from deals in other periods. The dot.com bubble led investors to overvalue many firms, so it was implausible for acquirers that purchased such firms to recoup the purchase price (e.g., merger between AOL and Time Warner) (Marks & Mirvis, 2010). Thus, I created a dummy *Year1999-2002*, which has a value of one if deals were made between 1999 and 2002.

Another set of controls related to the characteristics of acquirers and targets are also included. Acquiring firms with higher levels of acquisition experience and with more sophisticated acquisition tools tend to integrate the acquired organization to a greater extent and are more likely to replace the top management (Zollo & Singh, 2004). Also, it is shown that acquisition experience has an effect on acquisition behavior (Haleblian, Kim, & Rajagopalan, 2006). For these reasons, acquisition experience has been used to explain M&A performance and integration (Franks, Harris, & Titman, 1991; Haleblian & Finkelstein, 1999; Hayward, 2002). Since both an acquirer and a target work together to

create value from a merger, I consider the acquisition experience of a target firm, as well. I pay equal attention to the prior acquisition experience of both an acquirer and a target. The variable *Acquisition Experience* is measured as the sum of the number of acquisitions made by an acquirer and a target for the three years prior to the announcement date of a focal acquisition. I only counted the acquisitions of public firms in the US in order to be consistent with the characteristics of the sample firms.

The ages of the merging firms are also controlled since they are considered to affect the level of the outsider's ratio in TMTs or BODs and/or firm performance. Prior studies show that the firm age predicts a CEO's origin – insider vs. outsider status – and indicates his/her tendency to initiate change (Dalton & Kesner, 1983; Datta & Guthrie, 1994; Guthrie & Datta, 1997; Schwartz & Menon, 1985). In addition, young firms usually have a higher failure rate than older firms, due to liabilities of newness. Older firms are usually more experienced, have greater reliability and legitimacy, benefit from learning, and are associated with the first mover advantage (McDougall & Oviatt, 1996).

Lastly, firm age may influence the firms' level of resource stocks and growth potential (Fischer & Pollock, 2004; Florin, Lubatkin, & Schulze, 2003). For these reasons, firm age is included as a control and is measured as the natural log of the number of years since a firm's founding. The variable  $\log(\text{Firm Age})$  captures the ages of an acquiring and a target firm at the time of merger completion. Namely, it is defined as the  $\log [(\text{Year of merger completion} - \text{Acquirer's founding year}) + (\text{Year of merger completion} - \text{Target's founding year})]$ . Since the age of firms in the sample vary from 1

to 194, I normalized it by taking the natural log. Information on firms' founding years is collected from Mergent<sup>16</sup> and a Google online search.

#### 4.6 Estimation Method

The unit of analysis in this study is an M&A transaction. The dependent variable to be estimated is M&A performance measured as the difference between post-merger and pre-merger performance. Predictors of interest are outsiders' ratios in a top management team and board of directors, the power balance between merging firms, and resource relatedness. To test the hypotheses, I used ordinary least squares (OLS) regression analysis, given the continuous nature of the dependent variable. Since the sample is "clean," in the sense that acquirers who engaged in more than one acquisition in the sample period were dropped from the sample, clustering the standard errors by an acquirer was unnecessary. Using the following base regression model, hypotheses were tested on the WW sample (a group of mergers between low performers) and the non-WW sample (a group of mergers, including at least one high performer) separately to compare the coefficient estimates of the variables.

$$\begin{aligned} \text{M \& A Performance} = & \beta_0 + \beta_1 \text{Outsiders in TMT} + \beta_2 \text{Outsiders in BOD} + \\ & \beta_3 \text{Dev. from Equal Re p. in TMT} + \beta_4 \text{Dev. from Equal Re p in BOD} + \\ & \beta_5 \text{Dev. from Equal Size} + \beta_6 \text{Industry Overlap} + \beta_7 \text{Geography Overlap} + \\ & \beta_8 \text{Pay in Cash} + \beta_9 \text{Pay in Stock} + \beta_{10} \text{Premium} + \beta_{11} \text{Contested Bid} + \\ & \beta_{12} \text{Attitude} + \beta_{13} \text{Year1994} - 1998 + \beta_{14} \text{Year1999} - 2002 + \\ & \beta_{15} \text{Acquisition Experience} + \beta_{16} \log(\text{Firm Age}) + \varepsilon \end{aligned}$$

For convenience, I will refer to the group of mergers between underperformers as the WW group, and those with at least one overperformer as the non-WW group.

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<sup>16</sup> [www.mergentonline.com](http://www.mergentonline.com)

Additionally, I conduct a Chow test (Chow, 1960) to determine whether the differences between the subsample model (a group of WW mergers and a group of non-WW mergers) coefficients are statistically significant.

## Chapter 5. RESULTS

Tables 7a, 8a, and 9a provide the descriptive statistics of the variables for the entire sample, the WW sample and the non-WW sample, respectively. Tables 7b, 8b, and 9b present the correlations among the variables in the entire, WW, and non-WW samples.

\*\* INSERT TABLES 7A-B, 8A-B & 9A-B HERE \*\*

I conduct t-tests to compare the mean scores of variables in the model for WW and non-WW mergers. Table 10 presents the results of the t-tests. On average, the performance of a merged firm improves more when a merger was made between poor performers compared to a merger including at least one high performer. This is a bit surprising, but it is confirmed again with an alternative measure of M&A performance in sensitivity analyses later in this chapter. In WW mergers, more dominance by one party over the other party on the board of directors tends to be observed, compared to non-WW mergers. WW mergers are more likely made with cash, compared to non-WW mergers. Finally, a significantly higher ratio of non-WW mergers was completed during the dot.com boom period.

\*\* INSERT TABLE 10 HERE \*\*

To check for multi-collinearity problems among the variables, I computed variance inflation factors (VIFs), but did not find any troubling cases. Across the models, the VIFs ranged from 1.06 to 1.53, and the average VIF was not significantly greater than 1 (Chatterjee, Hadi, & Price, 2000). Thus, I included all variables in the regressions.

The model is first estimated by pooling all data from all types of combinations and is then estimated on a subsample basis (WW vs. non-WW). The results from the Chow test, presented later, indicate that the subsamples exhibit different effects for the explanatory variables in this study.

By running the regression models with a full sample, I check if the sample used in this study is in line with those used in previous studies on M&A performance. Table 11a shows the results of multiple regression analyses of M&A performance with the entire sample. Model 1 includes only the control variables,<sup>17</sup> which generally exhibit the expected signs and significance. Consistent with prior literature, payment in stock has a negative effect on M&A performance. Also, the older an acquirer and a target are, the greater improvement in performance after an M&A they exhibit. Overall, deals made during the dot-com boom perform worse than those made during other periods of time in the sample.

\*\* INSERT TABLES 11A HERE \*\*

In Table 11b, I split the sample by types of combinations (WW and non-WW). Models 1-4 show the results for a group of WW mergers, and Models 5-8 present the results for a group of non-WW mergers, to test the predictions of Hypothesis 1a through Hypothesis 3b. I include only the control variables in Models 1 and 5, and all of the variables in the fully specified Models 4 and 8. I dropped variables related to TMT and BOD in Models 2-3 and Models 6-7, respectively, to address possible collinearity

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<sup>17</sup> Although *Deviation From Equal Size* is an independent variable in this study, the way it is constructed is a mirror of the relative size of two firms (=sales of target/sum of target's sales and acquirer's sales), which is a conventional control variable in M&A performance research. Thus, I include *Deviation From Equal Size* in all Models 1-4.

between compositions of TMT and BOD. Hypothesis 1a predicted that a higher ratio of outsiders in the top management team of a combined entity would result in better performance after an M&A in mergers between poor performers. In support of Hypothesis 1a, the outsider ratio in the TMT has a positive effect on M&A performance when it is included without BOD-related variables in Model 2 ( $p = 0.002$ ), as well as in the full Model 4 ( $p = 0.076$ ).

Since I am using a linear regression model, the coefficients are the same as the marginal effects and can be directly interpreted to assess the effect of a 1-unit change in each independent variable on the magnitude of change in a dependent variable. The magnitude of the coefficient estimate indicates that M&A performance (Tobin's  $q$ ) increases by about 0.01 when the new management teams have a 1% greater composition from the outside. Similarly, the outsider ratio in the BOD has a stronger positive effect on M&A performance in Model 3 ( $p = 0.004$ ), as well as in Model 4 ( $p = 0.038$ ), thus supporting Hypothesis 1b, which predicts that the ratio of outsiders on a board of directors in a merged entity will have a positive effect on M&A performance. The value of the coefficient estimate demonstrates that having a 1% greater composition from the outside (neither from an acquirer's nor a target's board) on a new board of directors will result in an approximately a 0.015 increase in the three-year average Tobin's  $q$  after an M&A. The joint inclusion of the four variables related to TMT and BOD in Model 4 significantly increased the value of the F-statistics relative to Model 1 (controls only) and Models 2-3 (TMT- and BOD-related variables, separately).

Although I did not make a formal prediction for the non-WW group, I expected to see differences in the magnitudes of the coefficient estimates or the significance of the variables in this group, compared to those in the WW group. Models 5-8 in Table 10b show the results for the group of non-WW mergers. The outsider ratio in the TMT has a negative effect on M&A performance when it is included without BOD-related variables in Model 6 ( $p=0.002$ ), as well as when it is included with all other variables in Model 8 ( $p=0.009$ ). This finding suggests that a higher ratio of outsiders in a new top management team harms the performance of a merged firm. Similarly, the outsider ratio on a BOD negatively affects M&A performance, both in Models 7 ( $p=0.090$ ) and 8 ( $p=0.062$ ), indicating that firm performance decreases if a new board of directors has a higher ratio of directors from the outside. The magnitude of the negative effect, which occurs with a greater BOD composition from the outside in the non-WW group, is much larger than that of a positive effect in the WW group. The value of the coefficient estimate reveals that having a 1% greater composition from the outside in a new top management team and a new board of directors will result in a decrease in the three-year average Tobin's  $q$  after an M&A of about 0.031 and 0.024, respectively.

In Hypothesis 2, I argued that a merged firm with balanced power between merging firms would improve their performance more than a merged firm with imbalanced power. At the operational level, Hypothesis 2a predicts that the more equal representation the new management team has, the higher the post-merger performance a merged firm will achieve. Because of the way the variable *Deviation From Equal Representation in TMT* is constructed, the negative sign of a coefficient estimate means a



positive correlation of the variable with M&A performance. The coefficients on *Deviation From Equal Representation in TMT* are not significant in both Models 2 and 4, thereby failing to support Hypothesis 2a. Hypothesis 2b predicts that equal representation from two merging firms on a new board of directors after M&A will have a positive effect on the performance of a merged firm. Although the signs of the coefficient estimates for the variable *Deviation From Equal Representation in BOD* are in the expected direction (negative) in both Models 3 and 4, the coefficients are not significant. The third measure of power balance was based on the sizes of the merging firms – total sales as of the date of the most current figures prior to the date of the merger announcement. The effect of the variable *Deviation From Equal Size* is not significant in all Models 1-4, thereby failing to support Hypothesis 2c. Hence, all of Hypotheses 2 regarding power balance receive no support in the data.

In the non-WW sample, the effects of the power balance showed mixed results. The effect of *Deviation From Equal Representation in TMT* is positive and significant on M&A performance (Model 8). This finding indicates that a merged firm performs better when one firm is more dominant over the other firm in non-WW mergers. *Deviation From Equal Representation in BOD*, however, negatively affects the performance of a combined firm, as shown in Models 7 and 8. This result suggests that in non-WW mergers, rather than in WW mergers, the more balanced power distribution between merging firms on a BOD leads to better performance of a combined firm after an M&A, contrary to my prediction.

Next, I examine the effect of relatedness between merging firms' resources. In Hypothesis 3a, I predict that better performance after an M&A can be achieved when two merging firms are from different industries if they are both poor performers in their industry. Also, I argued in Hypothesis 3b that if two firms were located in different cities prior to combining, their performance would improve more due to less overlap in their resources. Both the effects of industry and geography overlap are not significant, thereby failing to support Hypotheses 3a and 3b. In non-WW mergers, coefficients of the variables related to resource relatedness are not significant. Taken together, the results with respect to resource relatedness do not support Hypothesis 3.

\*\* INSERT TABLES 1 1 B HERE \*\*

I conducted the Chow test (Chow, 1960) to confirm that the differences in the coefficient estimates between the subsample models (a group of WW mergers and a group of non-WW mergers) were statistically significant. The Chow test is a test of equality between coefficients in two identical linear regression models, based on two different sets of data. Namely, the Chow test examines if the parameters (slopes and the intercept) of one group are different from those of the other group. The null hypothesis for each Chow test predicts that two groups of mergers have equal parameters for each variable, and the levels of significance found for the variables are not statistically different between the two types of mergers.

Rejection of the null hypothesis suggests that the two groups do not share the same intercept or slopes of the variables. The results of a Chow test indicated that the WW and non-WW groups do not have equal parameters for each variable, and the levels of significance found for the variables are statistically different between them

( $F_{17,264}=2.73$ ,  $p=0.0003$ ). For the additional test, I created an interaction term of the regressors with the dummy variable WW, and I then fit the model with this interaction. In Table 12, the M&A performance regression coefficients for the WW mergers are compared to those of the non-WW mergers (they are the same as the coefficient estimates on Models 4 and 8 in Table 11b). The third column of the table presents the results of each Chow test. Given the results of the Chow tests, the coefficients of the three independent variables – *Outsiders in TMT*, *Outsiders in BOD*, and *Deviation From Equal Representation in TMT* – are statistically different between the WW and non-WW groups.

A comparison of the regression coefficients of the outsider's ratio in the TMT and BOD between the two groups indicates that the difference between the two is statistically significant at the 0.01 level. More specifically, the higher ratio of outsiders in the TMT or BOD is beneficial for M&A performance in WW, but it is much more detrimental in non-WW groups. In addition, the effect of the power imbalance between merging firms in the TMT of a merged entity on firm performance is much greater and significant in the non-WW group than in the WW group. This shows that a power imbalance has a positive relationship with performance in the non-WW group, while it has a negative relationship in the WW group. It is interesting to note that the magnitudes of the coefficient estimates are much greater in the non-WW group than in the WW group, indicating greater effects of the variables of interest in non-WW mergers. The other two measures of the power balance (*Deviation From Equal Representation in BOD* and *Deviation From Equal Size*) seem to make no difference across the two groups.

\*\* INSERT TABLE 12 HERE \*\*

The results of Chow tests for the control variables merit additional attention. These control variables are the most frequently used ones in M&A performance research. It is known that stock payment in purchasing a firm has a negative effect on M&A performance due to overvaluation (Dong et al., 2006). This holds, however, only in the non-WW group, with the effect being much greater and significant. The effect of firm age is also different across the two samples at the 0.05 significance level. When merging firms are older at the time of merging, the performance of a combined entity is worse in WW mergers, but this is not the case in the non-WW group.

### **Summary of Key Results**

Table 13 provides a summary of the hypotheses and the corresponding findings. The results indicate strong support for Hypotheses 1a and 1b. I found no support for Hypotheses 2a, 2b, 2c, 3a, and 3b. Below I briefly review these findings.

**\*\* INSERT TABLE 13 HERE \*\***

Hypotheses 1a and 1b, which argued that a higher ratio of outsiders in the TMT and BOD of a newly combined firm leads to better performance through an M&A, respectively, received strong support. In mergers between underperformers, having more outsiders in the corporate governance system (i.e., TMT or BOD) clearly improved firm performance after an M&A. Contrary to this result, an influx of outsiders harms firm performance to a much greater degree if at least one of the merging firms is a strong firm. This difference is confirmed as significant with the Chow tests. I expected that a degree of power balance between merging firms would be positively associated with performance improvement through an M&A in Hypotheses 2a through 2c.

Although none of the measures of power balance had significant effects in the WW sample, a degree of power balance among the TMT was found to be negatively related to performance in the non-WW sample. In addition, the effect of this variable was different across subsamples (WW and non-WW) at a significant level ( $p < 0.05$ ). Contrary to my prediction, the effects of resource relatedness as measured by industry overlap (four-digit SIC code) and geography overlap (headquarters' location at the city level) were not significant in either group.

### **Sensitivity Analyses**

Two dimensions that appear important for robustness purposes are an alternative comparison group and alternative measures of M&A performance.

**WW vs. SS.** In this section, I compare the coefficient estimates of the variables between a group of WW mergers and a group of SS mergers. Non-WW mergers include three types of combinations: strong acquirer – strong target, strong acquirer – weak target, and weak acquirer – strong target. Among these, the combinations of strong-strong firms (SS) are the antipode of WW mergers. Therefore, a comparison of these two groups can give clearer insights about how WW cases behave differently. Table 14 presents the OLS regression results of a group of SS mergers ( $n=82$ ). Model 4 shows the results from the full model specification.

Overall, the results are the same as those from the non-WW mergers, except that the effects of the variables are much greater in this group than in the non-WW group. For example, the outsider ratio in the TMT has a greater negative effect on the performance of a merged firm in SS, compared to non-WW mergers – a 0.054 decrease in  $q$

performance with a 1% increase of the outsider's ratio in the TMT (vs. a 0.031 decrease in the non-WW group). Unlike in non-WW mergers, the effect of the variable *Outsiders in BOD* is not significant in SS mergers. The effects of the power balance are also greater in this group than those in the non-WW group, but in the same direction. The effect of *Deviation From Equal Representation in TMT* is positive and significant on M&A performance, but *Deviation From Equal Representation in BOD* negatively affects the performance of a combined firm.

The differences in the effects between the two groups (WW and SS) are greater than those between the WW and non-WW groups. The results from the Chow tests (Table 15) confirm this. Given the results of the Chow tests, the coefficients of three independent variables – *Outsiders in TMT*, *Outsiders in BOD*, and *Deviation From Equal Representation in TMT* – are statistically different between the WW and SS groups. A comparison of the regression coefficients of the outsider's ratio in TMT and BOD between the groups indicates that the difference between the two is statistically significant at the 0.01 level. Also, the effect of the power imbalance between merging firms in the TMT of a combined entity on performance is much greater in the SS group than the WW group (and in the non-WW group). As in the comparison with the non-WW group, the other two measures of the power balance (*Deviation From Equal Representation in BOD* and *Deviation From Equal Size*) seem to make no difference between groups of WW and SS. Overall, the contrast between WW and non-WW remains unchanged in the comparison between WW and SS. Rather, the differences are

more amplified in the comparison between a group of WW mergers and a group of SS mergers.

**\*\* INSERT TABLES 14 AND 15 HERE \*\***

**Alternative performance measure.** A review of empirical studies on M&As indicates that cumulative abnormal returns (CARs) have been a frequently used approach for measuring M&A performance (e.g., Capron & Pistre, 2002; Finkelstein & Halebian, 2002; Rhoades, 1994). There is some evidence that this ex-ante measure also predicts the ultimate performance of an acquisition (e.g., Healey et al., 1992). This approach has been extensively described elsewhere (e.g., Fama, Fisher, Jensen, & Roll, 1969; Hayward & Hambrick, 1997).

To calculate CARs, event study methodology is used (Brown & Warner, 1985). The event study method is based on the assumption that capital markets are efficient enough to estimate the effect of new information on the expected future profits of firms. The core assumption of event study methodology is that if information delivered to the market includes any surprising content, an abnormal return – the difference between the actual post-event return and the return expected in the absence of the event – will occur (MacKinlay, 1997). A positive abnormal return indicates that the stock market has revised its expectations upward of future returns from the stock; on the other hand, a negative return indicates that the market has lowered its expectations about the firm. The empirical literature is supportive of the idea that the market reaction at the time of a merger announcement is a reasonable indicator of longer-term realized firm performance. For example, Sirower (1997) found that acquirers' short-term returns at the time of an acquisition announcement were predictive of their long-term performance. Similar

findings were reported by Healy, Palepu, and Ruback (1992) and Kaplan and Weisbach (1992), suggesting that markets provide reasonable forecasts of subsequent acquisition performance.

Although this measure was not used in the main analyses<sup>18</sup>, it is worth discussing the results from regressions on cumulative abnormal returns as M&A performance. I use the standard event study methodology with the following market model to calculate the CAR (Brown & Warner, 1985; Fama & French, 1992) for the combined entity:

$$CAR_{i,(t1,t2)} = \sum_{t1}^{t2} AR_{i,t} = \sum_{t1}^{t2} (R_{i,t} - E(R_{i,t})) = \sum_{t1}^{t2} (R_{i,t} - (\alpha_i + \beta_i \times R_m)),$$

where  $AR_{i,t}$  is the abnormal return for stock  $i$  at time  $t$ ,  $R_{i,t}$  is the actual return on stock  $i$  at time  $t$ , and  $E(R_{i,t})$  is the calculated expected return for stock  $i$  at time  $t$ . The expected return is dependent on  $\beta_i$  for the systematic risk that correlates linearly to the average daily return  $R_m$  of the market portfolio in the event window. For a group weight, I used the size of a firm's sales as of the date of the most current figure prior to the date of the merger announcement.

Following this approach, I calculate a market model to estimate the expected performance of the firm's stock price around the time of the acquisition announcement. The market model adopted here estimates the relationship between firm returns and equally weighted market returns for the 301 trading days (roughly 1 year of trading),

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<sup>18</sup> Since the information on the composition of TMT/BOD is not completely revealed at a merger announcement in many cases (an exception is a CEO or chairman's appointment, which is usually announced together with a merger plan), a market reaction to the merger announcement cannot capture the effect of management and board change properly.



ending 46 days prior to the announcement of the merger. This 46-day interval seeks to remove the effect of take-over news that could already be incorporated in the market price of the acquiring firm. In this study, Eventus<sup>19</sup> was used to test the market reaction to the announcement of M&As.

Although most research examines only short event windows, this approach can cause some potential problems in that it implicitly ignores returns following the announcement (Agrawal & Jaffe, 1992). In addition, it may be reasonable sometimes to assume that information is revealed to investors slowly over a period of time (Rieck & Doan, 2007). Therefore, I decided to apply longer event window sizes.

Therefore, this study examines two event windows, including both short and long windows: 5 days [2 days prior to the announcement day and 2 days after the announcement day] and 256 days [-3, +252]. Using both long-term and short-term measures of returns as dependent variables enhances the robustness of the findings.

Tables 16a and 17a present the descriptive statistics for the two types of CARs by a subsample (WW and non-WW mergers). Tables 16b and 17b show the correlations of CARs with other variables. In general, WW mergers seem to earn higher returns from both short and long windows, compared to the returns that non-WW mergers obtain from M&As, which corresponds to the market's immediate assessment of the acquisition and more delayed responses, presumably incorporating post-acquisition developments,

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<sup>19</sup> Eventus<sup>TM</sup> is software that is designed for the specific purpose of event studies. Eventus<sup>TM</sup> is widely used in financial and economics research. It was developed by the US-based company Cowan Research LC – [URL:http://www.eventstudy.com](http://www.eventstudy.com). CRSP is the source of the firm and market returns data.

respectively. This result suggests that the market's expectations are higher for combinations of poor performers relative to those for non-WW mergers.

\*\* INSERT TABLES 16A, 16B, 17A, AND 17B HERE \*\*

Tables 18 and 19 present the results of the models with CARs as alternative measures of M&A performance. First, Table 18 re-estimates the models in Table 11b to include 256-day CARs as an alternative measure of the dependent variable. In general, the results for the hypothesized variables are consistent with those in Table 11b, but show weaker support. The effect of the outsiders' ratio in the TMT is not significant in WW mergers, while it is negative and significant in non-WW mergers, as was the case in Table 11b.

The effect of the outsiders' ratio in the BOD remains positive and significant in WW mergers, supporting Hypothesis 1b. Unlike the findings shown in Table 11b, the effect of deviation from the power balance, measured as the size of a firm's sales is negative and significant, thus supporting Hypothesis 2c. The effect of cash payment becomes positive and significant in WW mergers with 256-day CARs as a dependent variable, while the significance of the log of firm age disappears. The contrast between WW and non-WW mergers remains, but with weaker significance.

\*\* INSERT TABLES 18 AND 19 HERE \*\*

Second, Table 19 re-estimates the models in Table 11b with 5-day CARs as an alternative measure of the dependent variable. In general, the results for the hypothesized variables are consistent with those in Table 18, except for the effect of the power imbalance in BOD and premiums paid to targets. The effect of the variable *Deviation From Equal Size* is negative and significant, thereby supporting Hypothesis 3c, but it

remains similar in non-WW mergers, contrary to my prediction. It is interesting to see that the effect of premiums is significantly positive in WW mergers, which is inconsistent with the conventional wisdom shown in the results from the full sample (Table 11a).

## **Chapter 6. DISCUSSION**

In this dissertation, I addressed the question, “Under what conditions can mergers of poor performers create value?” and examined the role of routine disruption as a necessary condition for performance improvement in mergers of poor performers. Although mergers between poor performers seem to be prevalent, no systematic empirical evidence exists on whether and when such mergers are successful. Since WW mergers are unique in nature, the conditions under which mergers can create value cannot be the same as those that have been shown to affect performance in M&As generally. This study intends to fill this gap by suggesting an alternative conceptualization of a merger, identifying a set of conditions predicting success in the mergers of poor performers, and empirically testing those predictions.

The theoretical framework I developed suggests that mergers can disrupt existing routines and serve as an impetus for change by creating more diverse variation in routines and by shifting the selection criteria of those routines. Although mergers by nature disturb the existing systems of the parties involved to some degree, the desirable type of disruption in mergers of two poor performers is obtained only when certain conditions are met. I argue that such a disruption can be achieved by stirring up the sources of path-dependence in a firm: the composition of the top management team, the board of directors, and the firms’ resources. More specifically, I argue that mergers of poor performers can create value if the top management team or board of directors is composed in a certain way after the merger is completed, and if the resources that the two merging firms bring together into a combined entity are less related to each other. I

suggest the influx of outsiders, the power balance between merging firms, and resource unrelatedness as three indicators of routine disruption through M&As and hypothesize the effect of each indicator on the performance of a combined firm after an M&A. The results largely supported this line of thought.

Below I discuss the empirical findings in more detail. Then I discuss the contributions that this study hopes to make to the theoretical literature and to practice. Finally, I conclude with an assessment of the limitations of the study and suggestions for future research.

### **Discussion of Research Findings**

The general hypothesis of this dissertation is that more routine disruption through M&As leads to better performance in a group of WW mergers. I suggested three indicators of routine disruption through M&A: the influx of outsiders, the power balance between merging firms, and resource unrelatedness. I hypothesized the effect of each indicator on the performance of a combined firm after an M&A. The first indicator of routine disruption through an M&A is the ratio of outsiders in the top management team or the board of directors of a newly merged firm.

The empirical findings support my theoretical perspective on the relationship between the performance of a newly merged firm and the influx of outsiders into its top management team or board of directors in mergers of two poor performers. The higher ratio of outsiders composing the TMT or BOD after an M&A is associated with better performance outcomes in WW mergers. This finding suggests that executive officers or directors who are from an organization other than the merging firms indeed facilitate

more routine disruption inside a merged entity, leading to improvement in a firm's performance after an M&A.

Although previous studies have suggested that the origin of the successor is critical in explaining a firm's performance after an executive or director change, they are inconclusive about whether the relationship between outside successions on firm performance is positive or negative. It can be hypothesized that the appointment of an outsider has a negative effect on performance, since outside successions are more disruptive than inside successions; additionally, outsiders do not have the firm-specific human capital of insiders<sup>20</sup>.

My alternative hypothesis illuminates the positive side of appointing outsiders and suggests that outsiders can be change agents in that they may not be committed to the firm's past routines and policies. This study suggests one contingency where outsiders can play a positive role as change agents in an organization: that contingency is in organizations needing change, namely firms performing poorly. With the combination of two poor performers as the context of the study, this research extends such a contingency, and thus is complementary to the literature showing that poor performance predicts management turnover (Ocasio, 1994; Schwartz & Menon, 1985). While I do not model management turnover, my results have implications for studies that do by showing the possible outcomes of management change – routine disruption and performance.

The effect of an outsider's appointment is not significant, and the sign of the coefficient is in the opposite direction, in both SW and WS mergers. This result indicates

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<sup>20</sup> This firm-specific human capital includes expertise and knowledge involving "a firm's products, customers, competitors, and employees, as well as an informal network of people providing information and support" (Bonnier & Bruner, 1989: 100).

that an outsider's presence in a TMT or BOD is not a factor for performance improvement in SW and WS mergers, although such combinations also include poorly performing firms. However, it does not mean that outsider appointments are rarely observed in these mergers. Table 20 shows that WS mergers have a higher ratio of outsiders in TMT than WW mergers, and both WS and SW mergers show a higher ratio of outsiders on a BOD than in a group of WW mergers.

This finding implies that the non-significant effect of outsiders on firm performance in SW or WS is not due to the low number of outsider appointments made in their TMTs or BODs in the first place. Although a higher ratio of outsiders is observed in general in SW and WS mergers than in WW mergers, outsiders are not a necessary factor for improving performance in these cases. In combinations of poor performers, however, executives or directors (not from one of the merging parties, but from outside) are desirable options for management change.

The second indicator of routine disruption concerns how equally power is shared between merging firms in a combined entity. The effects of the power balance between merging firms is not significant with all three measures – *Deviation from Equal Representation in TMT*, *Deviation from Equal Representation in BOD* and *Deviation from Equal Size*. This finding suggests that more equality between merging parties in terms of the number of positions taken by the two firms in the TMT/BOD, or the sizes of the two firms, is not associated with more routine disruption. As one of the plausible reasons for this non-significant finding, I consider the overlooked contingency where the power balance between merging firms can actually be an indicator of routine disruption,

leading to improved performance for a group of WW mergers. If the outsider ratio is high enough that a group of outsiders form a third power group, the balance of power just within the merging parties may not be a material factor for the performance of a combined firm. Therefore, I test whether the outsiders' ratio in a TMT /BOD moderates the relationship between the power balance in a TMT/BOD and performance improvement<sup>21</sup>.

**\*\* INSERT FIGURES 3A AND 3B HERE \*\***

Figures 3a and 3b show how the outsider's ratio in a TMT moderates the relationship between a power imbalance in a TMT between merging firms and firm performance in WW and non-WW mergers, respectively. Figure 3a shows that the outsider's ratio in a TMT moderates the relationship between deviance from the power balance and M&A performance in WW mergers, such that the hypothesized negative relationship is observed when a new TMT has a low ratio of outsiders (below one standard deviation). This result indicates that in WW mergers, the power balance between merging firms positively affects the performance of a merged firm if the outsider's ratio in a TMT is relatively low.

In non-WW mergers, a positive relationship between the deviation from the power balance in a TMT and performance is observed when a new TMT has outsiders in it below the mean level (see Figure 3b). Namely, in non-WW mergers, the power balance between merging firms negatively affects the performance of a merged firm if the outsider's ratio in a TMT is relatively low. Likewise, the outsider's ratio on a BOD moderates the relationship between the deviance from the power balance and M&A

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<sup>21</sup> The variables were centered before they were entered as interaction terms.



performance in WW mergers, such that the hypothesized negative relationship is observed when a new BOD has a low ratio of outsiders (see Figure 3c). Taken together, these findings suggest that although the power balance has a non-significant main effect on M&A performance, it still affects M&A performance such that the smaller the ratio of outsiders in the merged entity, the stronger the relationship between the power balance and merger performance.

The third indicator of routine disruption, resource unrelatedness, does not have hypothesized effects with both measures – industry overlap and geography overlap. The coefficients for these variables are not significant. Moreover, the sign of the coefficients are opposite of the predicted direction. These findings suggest that resource relatedness is not a material factor in improving performance through M&As for a group of WW mergers. Actually, this result is consistent with prior literature, which has shown inconclusive evidence regarding the effect of relatedness on acquisition performance. However, there can be two potential explanations for a non-significant effect of relatedness in this particular setting.

First, it is probable that resource unrelatedness does not fully capture routine disruption, as intended. Industry overlap measured by 4-digit SICs or overlap of headquarters' locations at the city level is a coarse measure for the resource relatedness of two firms. Another possible explanation might be that the positive effect of resource unrelatedness as an indicator of routine disruption on merger performance may be cancelled out by its negative effect for other reasons. If two firms' businesses are related, based on the familiarity with the industry, the managers of each merging firm may better

uncover each other's hidden problems, may better understand what actions need to be taken after completion of the deal, and may more easily discover opportunities for synergy (Dundas & Richardson, 1982). This explanation might help interpret the results of the hypotheses regarding resource relatedness.

In sum, the results of this study suggest that routine disruption, manifested as the ratio of outsiders in a TMT/BOD and the power balance, plays a substantial role in the performance of WW mergers.

### **Contribution**

Although mergers between poor performers are a prevalent phenomenon, no systematic empirical evidence exists on whether and when such mergers are successful. By addressing what predicts the performance of such mergers, this study intends to eliminate that void. This research question illuminates a phenomenon that has not received much attention. Although there are a few prior studies involving the conditions under which acquisitions for financially distressed firms can work (e.g., Bruton et al., 1994), they do not consider cases where acquirers are also poorly performing firms. In addition, the conditions tested in the extant research do not differ much from those that have been found as predictors for performance in general acquisitions.

The results of this study are important for extending our understanding of WW mergers and M&A in general. I empirically document that WW mergers are not rare events, but occur regularly. In addition, I find that WW mergers systematically differ from mergers, where at least one firm is well performing. By showing that the presence of more outside executives or directors in a resulting TMT or BOD has a strong positive effect on improving the performance in WW mergers and an opposite effect in non-WW

mergers, this study suggests that routine disruption is indeed beneficial in WW mergers. Moreover, this study suggests what the desirable make-up of a TMT and BOD would be for routine disruption.

With the combination of two poor performers as the context of this study, the theory I develop in this research highlights how M&As can play a role in a firm's evolutionary process. By conceptualizing a merger as the combination of two firms' existing routines and by suggesting that a merger can change firms' internal routines by affecting the variation and selection processes of routines, I provide a richer theoretical explanation for 1) the conditions under which routines can change; and 2) the relationship between M&As and firm evolution. Also, by highlighting that mergers can function as an impetus for change, this study intends to develop a framework complementary to the extant M&A theories, which is necessary for a thorough understanding of the phenomenon of mergers. Finally, by suggesting that routine disruption can be helpful for certain types of combinations, I extend the possible sources of value creation from M&As.

This is an important and relevant topic, given that there have been many merger talks between poor performers since late 2008. Although the government has led several mergers, such as that between Bank of America and Merrill Lynch, the jury was out about the effectiveness of this deal in many cases, and this criticism seemed to be based on the conventional cynicism stated earlier. By providing alternative criteria to assess the value from the merger of two weak firms, this paper can provide many implications to the field of government policy, as well as competitive strategy. I argue that two weak firms

can, in fact, perform well if they use merger-induced disruption as an opportunity to change and show that they are committed to this change.

While the prior literature on post-merger integration sees this practice as disruptive and harmful, I suggest that in mergers between weak performers, disruption may actually be beneficial and desirable if it triggers organizational renewal. Finally, this study can contribute to the corporate turnaround literature. Mergers have not been considered as popular turnaround strategies for poor performers unless they are the target being disciplined by the acquirer. In contrast, this study implies that weak performers can take a more active role as acquirers (if an affordable poorly performing target is available), as such a transaction can create value by triggering change that would otherwise be harder to achieve.

### **Limitations**

This research has several possible limitations. First, routine disruption, the mechanism through which the variables of interest in this study affect performance in WW mergers, was not directly measured and tested. Instead, it was assumed that the three indicators – the influx of outsiders, the power balance, and resource unrelatedness – would result in routine disruption in a merged company, and thus a positive performance outcome would follow. Although an explanation on how routine disruption—manifested by three factors—is based on theoretical arguments, this remains a potential issue that I will address in future research.

Second, I examined only the first 10-K and DEF 14A after the closing of the merger to capture the make-up of the TMT and BOD of a merged company. Given that

there is the possibility that the initial set of executive officers or directors may not always reflect the set of executive officers or directors going forward, it would have been more comprehensive if I had examined the two periods – the first and second years after the closing of the merger. Since it is not unusual for firms to be engaged in another M&A in subsequent years after the focal transaction, however, investigating longer periods would not be desirable due to possible confounding factors.

A third potential limitation is that the study includes only US M&As between public firms, and therefore, the results may have limited generalizability. Although no finding is dependent on the country or public status of a firm, I will address this issue in future research, which will expand the scope of this study to other countries and private firms.

### **Directions for Future Research**

Both the limitations and the findings of this study present avenues for future research. In later work, I will build on the current research and will examine if the untested mechanism in this study is indeed at work. As one possible manifestation of routine disruption, strategic change after an M&A can be considered. I will examine if the indicators of routine disruption in this study eventually predict whether a merged firm executes strategic change, what type of strategic change it implements, and the characteristics of successful change. A composite measure of strategic change following Zhang and Rajagopalan's (2010) suggestion<sup>22</sup> might be a doable option.

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<sup>22</sup> Zhang and Rajagopalan (2010) suggested six dimensions of a strategy profile to create a composite measure of strategic change: (1) advertising intensity (advertising/sales); (2) research and development intensity (R&D/sales); (3) plan and equipment newness (net P&E/gross P&E);

I will also examine the effect of TMT/BOD composition on the decision of a poor performer to be merged with another firm as a turnaround strategy. In particular, examining how board ties (executives and directors who are on other firms' boards) affect the decision to merge with another firm, and the composition of the resulting TMT and BOD after closing a merger will be an interesting topic to study.

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(4) nonproduction overhead (selling, general, and administrative [SGA] expenses/sales); (5) inventory levels (inventories/sales); and (6) financial leverage (debt/equity). These dimensions are based on aspects of a firm's strategic profile (Finkelstein & Hambrick, 1990). Data on these six strategic dimensions can be obtained from Compustat.

## FIGURES

Figure 1. Conceptual Model

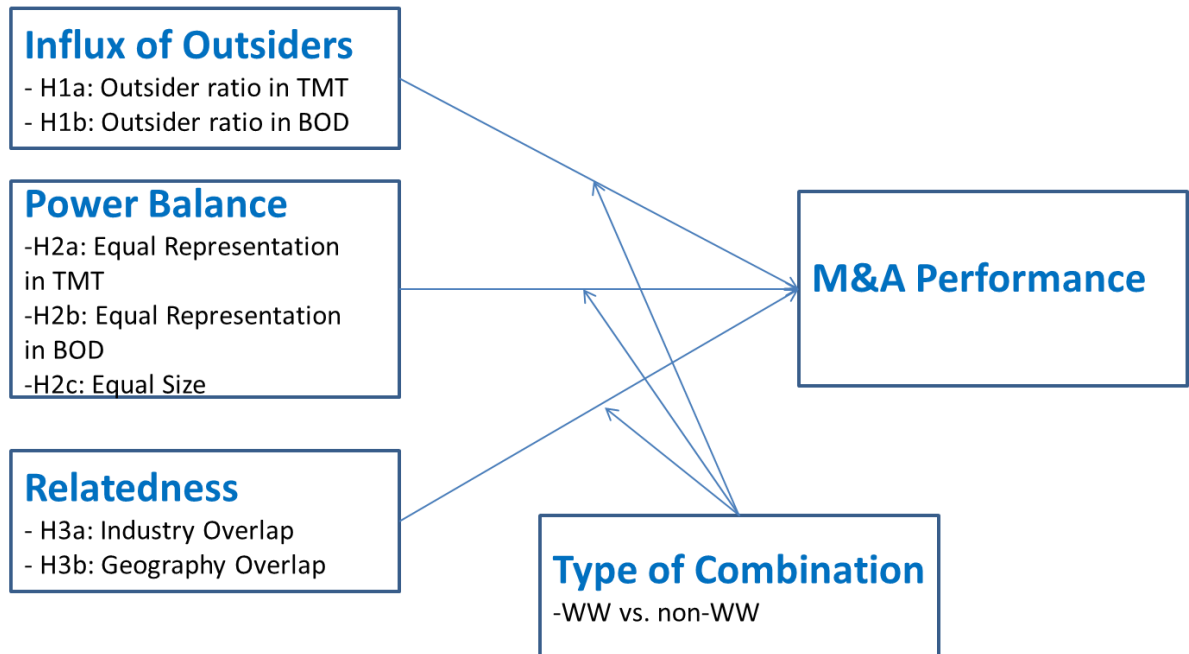


Figure 2a. Histogram of Number of Executives from Target

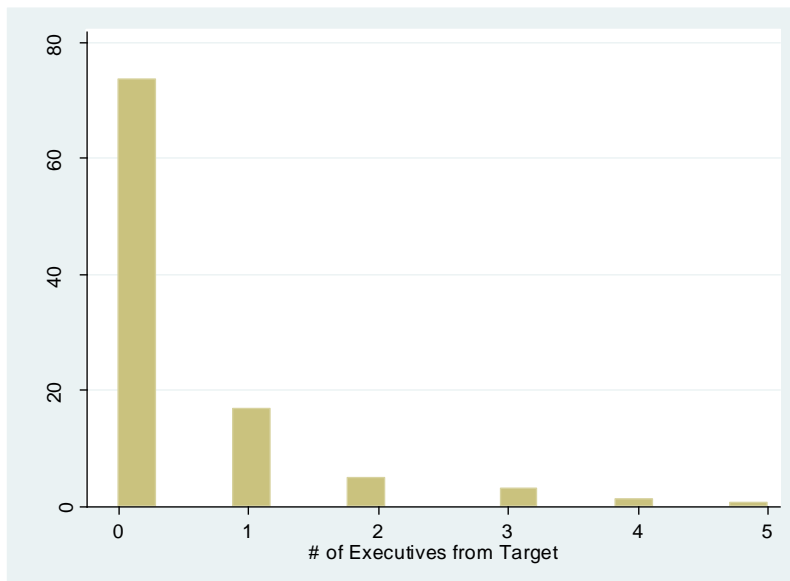


Figure 2b. Histogram of Number of Executives from Outside

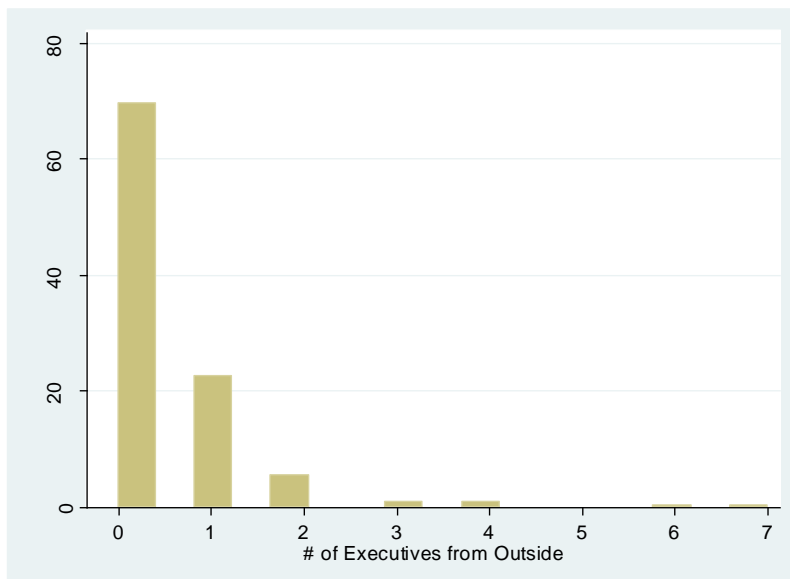




Figure 2c. Histogram of Number of Directors from Target

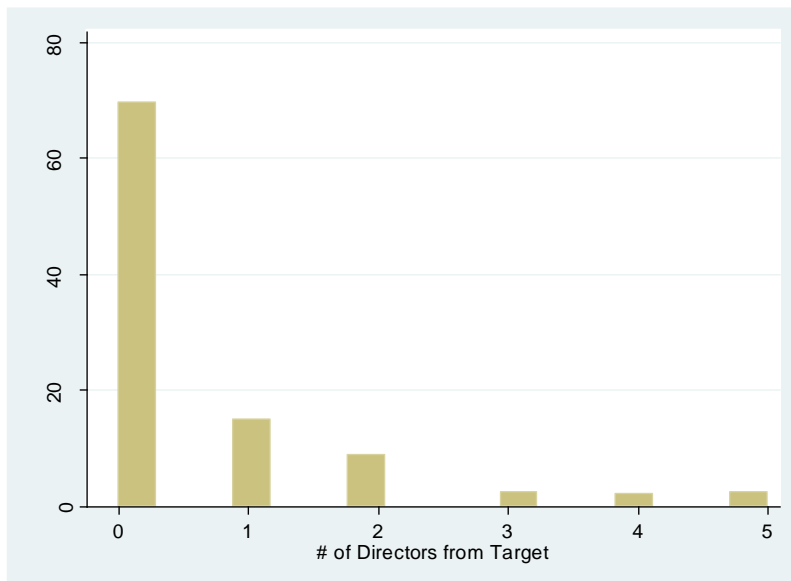


Figure 2d. Histogram of Number of Directors from Outside

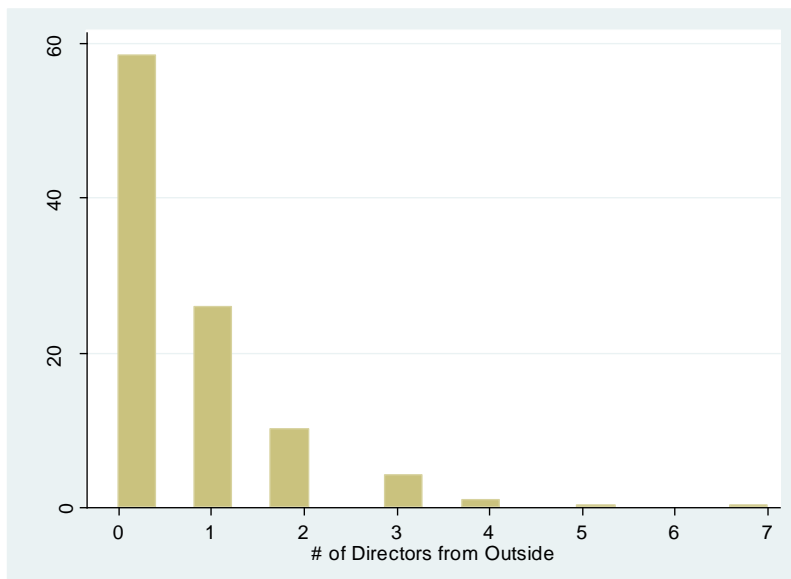
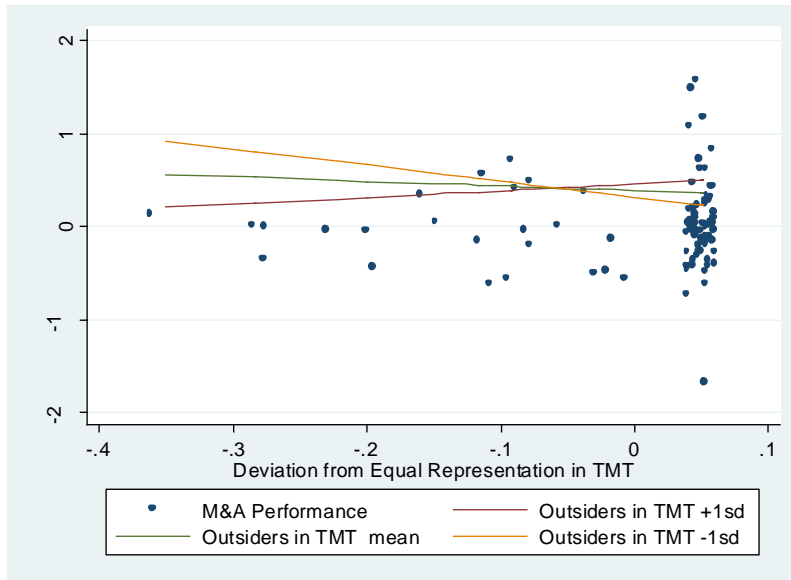


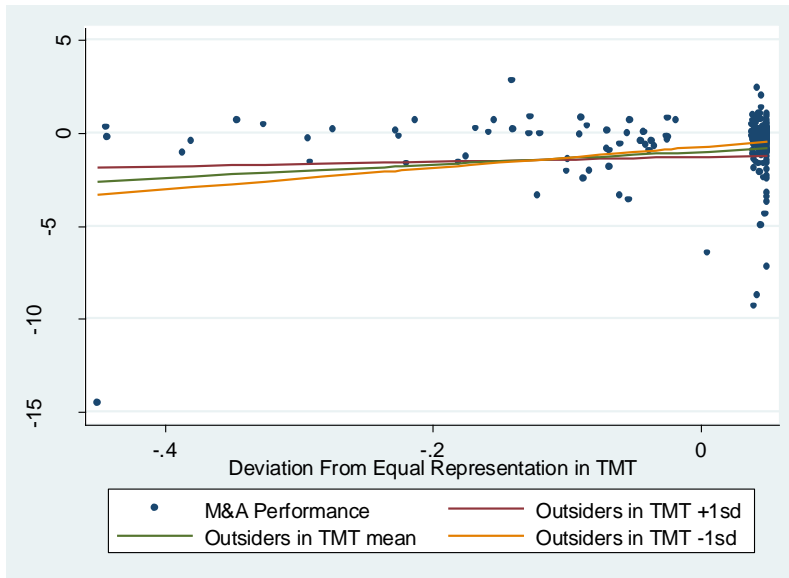
Figure 3a. Moderating Effect of Outsiders in TMT on the Relationship between Deviation from Equal Representation in TMT and M&A Performance in WW Mergers



Slope of *M&A Performance* on *Deviation From Equal Representation in TMT* at *Outsiders in TMT +/-1 1SD*

	Coef.	Std. Err.	t	P> t
High	0.706	0.599	1.18	0.243
Mean	-0.509	0.589	-0.86	0.390
Low	-1.725	0.946	-1.82	0.072

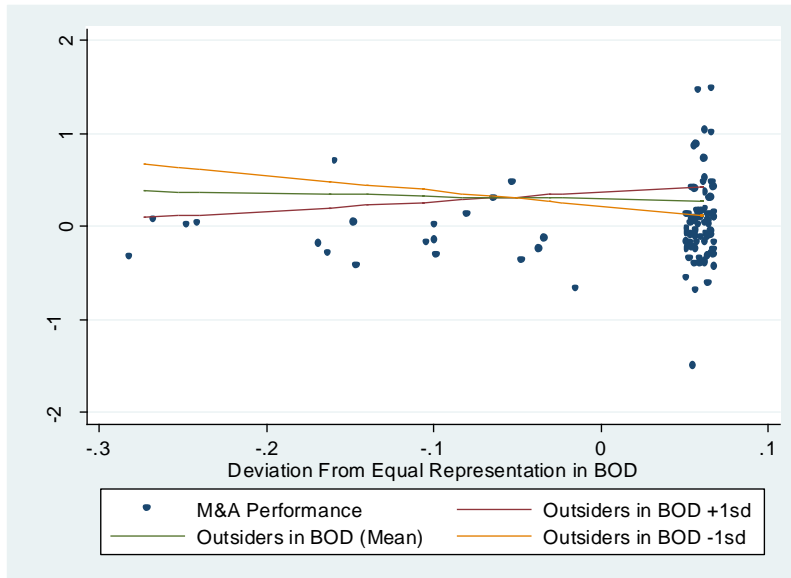
Figure 3b. Moderating Effect of Outsiders in TMT on the Relationship between Deviation from Equal Representation in TMT and M&A Performance in non-WW Mergers



Slope of *M&A Performance* on *Deviation From Equal Representation in TMT* at *Outsiders in TMT +/-1 1SD*

	Coef.	Std. Err.	t	P> t
High	1.288	2.019	0.64	0.525
Mean	3.495	1.356	2.58	0.011
Low	5.703	1.786	3.19	0.002

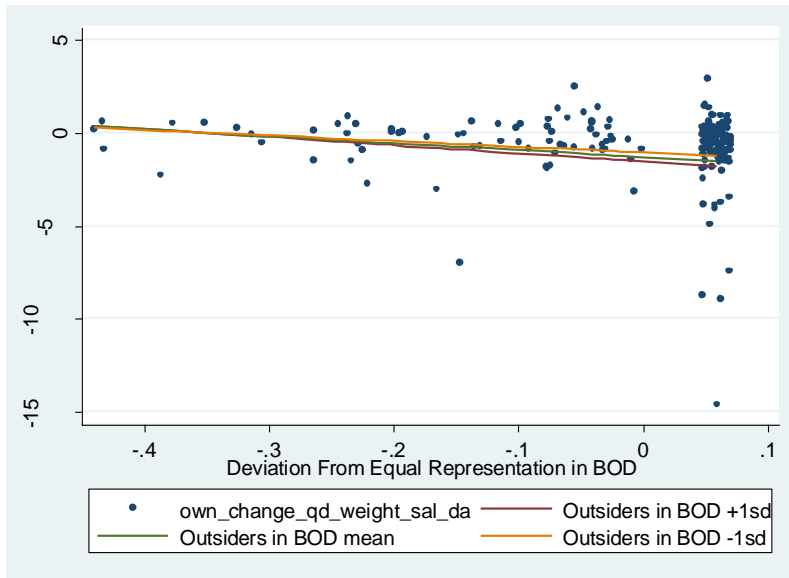
Figure 3c. Moderating Effect of Outsiders in BOD on the Relationship between Deviation from Equal Representation in BOD and M&A Performance in WW Mergers



Slope of M&A Performance on Deviation From Equal Representation in BOD at Outsiders in BOD +/-1SD

	Coef.	Std. Err.	t	P> t
High	1.000	0.899	1.11	0.269
Mean	-0.310	0.614	-0.5	0.615
Low	-1.620	0.830	-1.95	0.055

Figure 3d. Moderating Effect of Outsiders in BOD on the Relationship between Deviation from Equal Representation in BOD and M&A Performance in non-WW Mergers



Slope of *M&A Performance* on *Deviation From Equal Representation in BOD* at *Outsiders in BOD +/- 1SD*

	Coef.	Std. Err.	t	P> t
High	-4.344	1.372	-3.17	0.002
Mean	-3.672	1.287	-2.85	0.005
Low	-2.999	1.594	-1.88	0.061

## TABLES

Table 1. Example of influx of outsiders into post-merger top management team Phone.com and Software.com, completed on Nov 17, 2000 (Source: Proxy Statement of Nov 2001)

<b>Name</b>	<b>Age</b>	<b>Position</b>	<b>Previous Organization</b>
Donald Listwin	42	Chairman of the Board, Chief Executive Officer and President	Cisco Systems
John MacFarlane	35	Chief Technology Officer and Director	Software.com
Alan Black	41	Senior Vice President, Corporate Affairs and Chief Financial Officer	Phone.com
Michael Mulica	38	Senior Vice President, Office of Customer Operations, Sales	Phone.com
Allen Snyder	47	Senior Vice President, Office of Customer Operations, Customer Advocacy	Digital Equipment Corp
Kevin Kennedy	45	Chief Operating Officer	Cisco Systems

Table 2. Year when Deals were Announced (N=298)

<b>Year</b>	<b>Frequency</b>	<b>Percent</b>
1994	4	1.34
1995	17	5.7
1996	23	7.72
1997	28	9.4
1998	25	8.39
1999	40	13.42
2000	28	9.4
2001	30	10.07
2002	18	6.04
2003	22	7.38
2004	23	7.72
2005	26	8.72
2006	14	4.7
<b>Total</b>	<b>298</b>	<b>100</b>

Table 3a. Industry Description based on Primary Industry of Acquirer (at major group level)

Industry (defined at 2-digit SIC code)	Frequency	Percent
Oil and gas extraction	12	4.03
Mining and quarrying of nonmetallic minerals, except fuels	1	0.34
Building construction - general contractors and operative builders	5	1.68
Construction - special trade and contractors	1	0.34
Food and kindred products	5	1.69
Textile mill products	1	0.34
Apparel and other finished products made from fabrics and similar materials	1	0.34
Lumber and wood products, except furniture	1	0.34
Furniture and fixtures	2	0.67
Paper and allied products	3	1.02
Printing, publishing, and allied industries	7	2.36
Chemicals and allied products	16	5.38
Petroleum refining and related industries	1	0.34
Rubber and miscellaneous plastics products	2	0.68
Primary metal industries	5	1.68
Fabricated metal products, except machinery and transportation equipment	4	1.36
Industrial and commercial machinery and computer equipment	22	7.41
Electronic and other electrical equipment and components, except computer equipment	29	9.73
Transportation equipment	12	4.03
Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks	23	7.72
Miscellaneous manufacturing industries	5	1.68
Railroad transportation	1	0.34
Motor freight transportation and warehousing	1	0.34
Transportation services	1	0.34
Communications	9	3.02
Electric, gas, and sanitary services	9	3.02
Wholesale trade - durable goods	3	1.01
Wholesale trade - nondurable goods	3	1.01
Building materials, hardware, garden supply, and mobile home dealers	1	0.34
General merchandise stores	1	0.34
Food stores	3	1.01
Automotive dealers and gasoline service stations	1	0.34
Apparel and accessory stores	2	0.68
Eating and drinking places	2	0.67
Miscellaneous retail	4	1.36
Depository institutions	1	0.34
Nondepository credit institutions	1	0.34
Security and commodity brokers, dealers, exchanges, and services	2	0.67
Insurance carriers	12	4.04
Holding and other investments offices	10	3.36
Hotels, rooming houses, camps, and other lodging places	3	1.01
Personal services	2	0.68
Business services	54	18.14
Motion pictures	2	0.67
Amusement and recreation services	3	1.01
Health services	5	1.69
Engineering, accounting, research, management, and related services	4	1.35
<b>Total</b>	<b>298</b>	<b>100</b>

For description of primary industry in Table 3a-3d, I referred SIC manual's descriptions of major group and division.



Table 3b. Industry Description based on Primary Industry of Target (at major group level)

Industry (defined at 2-digit SIC code)	Frequency	Percent
Oil and gas extraction	13	4.37
Mining and quarrying of nonmetallic minerals, except fuels	1	0.34
Building construction - general contractors and operative builders	5	1.68
Heavy construction other than building construction - contractors	1	0.34
Food and kindred products	6	2.01
Apparel and other finished products made from fabrics and similar materials	1	0.34
Lumber and wood products, except furniture	1	0.34
Furniture and fixtures	2	0.67
Paper and allied products	2	0.68
Printing, publishing, and allied industries	9	3.04
Chemicals and allied products	15	5.05
Petroleum refining and related industries	1	0.34
Rubber and miscellaneous plastics products	4	1.34
Stone, clay, glass, and concrete products	2	0.68
Primary metal industries	1	0.34
Fabricated metal products, except machinery and transportation equipment	3	1.02
Industrial and commercial machinery and computer equipment	26	8.74
Electronic and other electrical equipment and components, except computer equipment	31	10.41
Transportation equipment	9	3.03
Measuring, analyzing, and controlling instruments; photographic, medical and optical goods; watches and clocks	23	7.72
Miscellaneous manufacturing industries	3	1.01
Railroad transportation	1	0.34
Motor freight transportation and warehousing	1	0.34
Transportation by air	1	0.34
Pipelines, except natural gas	1	0.34
Communications	10	3.36
Electric, gas, and sanitary services	7	2.35
Wholesale trade - durable goods	8	2.7
Wholesale trade - nondurable goods	2	0.67
General merchandise stores	2	0.67
Food stores	2	0.67
Apparel and accessory stores	2	0.68
Eating and drinking places	2	0.67
Miscellaneous retail	4	1.35
Depository institutions	1	0.34
Nondepository credit institutions	1	0.34
Security and commodity brokers, dealers, exchanges, and services	1	0.34
Insurance carriers	8	2.7
Insurance agents, brokers, and service	3	1.01
Real estate	1	0.34
Holding and other investment offices	11	3.7
Hotels, rooming houses, camps, and other lodging places	4	1.34
Personal services	1	0.34
Business services	53	17.8
Health services	5	1.69
Educational services	1	0.34
Engineering, accounting, research, management, and related services	6	2.02
<b>Total</b>	<b>298</b>	<b>100</b>

Table 3c. Industry Description based on Primary Industry of Acquirer (at division level)

<b>Industry</b>	<b>Frequency</b>	<b>Percent</b>
Construction	6	2.01
Finance	26	8.72
Manufacturing	139	46.64
Mining	13	4.36
Retail	14	4.7
Service	73	24.5
Transportation	21	7.05
Wholesale	6	2.01
<b>Total</b>	<b>298</b>	<b>100</b>

Table 3d. Industry Description based on Primary Industry of Target (at division level)

<b>Industry</b>	<b>Frequency</b>	<b>Percent</b>
Construction	6	2.01
Finance	26	8.72
Manufacturing	139	46.64
Mining	14	4.7
Retail	12	4.03
Service	70	23.49
Transportation	21	7.05
Wholesale	10	3.36
<b>Total</b>	<b>298</b>	<b>100</b>

Table 4. Number of Segments and Tobin's Q Ratio for Three Years prior to M&A Announcement

Variable	Obs.	Mean	SD	Min	Max
Acquiror's # of Segments in Year 1	298	2.181	1.407	1	8
Acquiror's # of Segments in Year 2	298	2.013	1.402	1	8
Acquiror's # of Segments in Year 3	298	1.983	1.430	1	9
Target's # of Segments in Year 1	298	1.624	1.031	1	8
Target's # of Segments in Year 2	298	1.487	0.940	1	8
Target's # of Segments in Year 3	298	1.487	0.940	1	8
Acquiror's Q Ratio in Year 1	298	2.157	1.831	0.721	16.741
Acquiror's Q Ratio in Year 2	298	2.641	4.388	0.354	58.041
Acquiror's Q Ratio in Year 3	298	2.621	3.258	0.329	38.419
Target's Q Ratio in Year 1	298	1.806	1.455	0.386	15.197
Target's Q Ratio in Year 2	298	1.878	1.544	0.572	13.111
Target's Q Ratio in Year 3	298	2.129	1.872	0.458	14.785

\* Year-1, Year-2, and Year-3 stand for one, two, and three years preceding merger announcement, respectively.

Table 5. SW Classification based on 3-year average median industry-adjusted Tobin's Q

Acquiror-Target	Frequency	Percent
Strong-Strong	82	27.52
Strong-Weak	75	25.17
Weak-Strong	46	15.44
Weak-Weak	95	31.88
Total	298	100

Table 6. Descriptive Statistics of Sizes and Origins of TMT and BOD in a Merged Entity

Variable	Obs	Mean	SD	Min	Max
TMT Size (Total # of Executives)	298	9.282	4.262	2	26
Executives from Acquiror	298	8.403	4.202	1	26
Executives from Target	298	0.440	0.905	0	5
Executives from Outside	298	0.446	0.883	0	7
BOD Size (Total # of Directors)	298	9.775	2.853	4	21
Directors from Acquiror	298	8.523	2.595	2	17
Directors from Target	298	0.594	1.128	0	5
Directors from Outside	298	0.661	1.000	0	7

Table 7a. Descriptive Statistics of Entire Sample (N=298)

Variable	Obs	Mean	Std. Dev.	Min	Max
1 M&A Performance	298	-0.473	1.509	-14.513	2.806
2 Outsiders in TMT	298	0.051	0.107	0	0.875
3 Outsiders in BOD	298	0.066	0.094	0	0.5
4 Deviation From Equal Representation in TMT	298	0.450	0.102	0	0.5
5 Deviation From Equal Representation in BOD	298	0.440	0.109	0	0.5
6 Deviation From Equal Size	298	0.306	0.134	0.001	0.499
7 Industry Overlap	298	0.430	0.496	0	1
8 Geography Overlap	298	0.067	0.251	0	1
9 Pay in Cash	298	0.295	0.457	0	1
10 Pay in Stock	298	0.268	0.444	0	1
11 Premium	298	46.967	76.903	-95.210	1176.000
12 Contested Bid	298	0.040	0.197	0	1
13 Attitude	298	0.023	0.152	0	1
14 Year1994-1998	298	0.282	0.451	0	1
15 Year1999-2002	298	0.399	0.491	0	1
16 Acquisition Experience	298	0.453	1.085	0	13
17 log(Firm Age)	298	4.101	0.698	2.303	5.796

Table 7b. Correlations in Entire Sample (N=298)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1 M&A Performance	1																	
2 Outsiders in TMT	-0.13	1																
3 Outsiders in BOD	-0.09	0.22	1															
4 Dev. From Equal Rep.in TMT	0.10	0.02	0.14	1														
5 Dev. From Equal Rep.in BOD	-0.04	0.08	0.03	0.43	1													
6 Dev. From Equal Size	-0.04	-0.03	0.07	0.37	0.40	1												
7 Industry Overlap	0.03	-0.02	-0.05	-0.05	-0.20	-0.14	1											
8 Geography Overlap	0.07	-0.04	-0.05	-0.12	-0.13	-0.05	-0.04	1										
9 Pay in Cash	0.08	-0.11	-0.07	0.14	0.31	0.35	-0.10	-0.09	1									
10 Pay in Stock	-0.21	-0.05	0.00	-0.24	-0.23	-0.09	-0.10	0.02	-0.39	1								
11 Premium	-0.05	0.00	-0.01	0.01	0.06	0.06	0.08	0.01	0.12	-0.05	1							
12 Contested Bid	0.02	-0.02	0.01	-0.03	0.05	-0.10	-0.01	0.01	0.02	-0.09	0.03	1						
13 Attitude	0.02	-0.05	-0.01	-0.09	0.03	-0.13	0.00	0.14	0.05	-0.09	0.07	0.19	1					
14 Year1994-1998	0.10	-0.02	-0.05	-0.03	0.03	-0.08	-0.06	-0.02	-0.16	0.19	-0.10	-0.05	0.05	1				
15 Year1999-2002	-0.17	0.04	0.11	0.02	-0.02	0.02	-0.02	0.00	-0.02	-0.06	0.17	-0.06	-0.08	-0.51	1			
16 Acquisition Experience	-0.05	-0.02	-0.06	0.09	0.01	0.15	0.08	0.05	-0.05	0.03	-0.03	-0.04	0.02	0.01	0.03	1		
17 log(Firm Age)	0.12	-0.15	-0.02	0.08	0.09	-0.01	-0.10	0.04	0.05	-0.17	-0.02	0.16	0.13	-0.01	0.09	-0.04	1	

Table 8a. Descriptive Statistics of WW Sample (N=95)

Variable	Obs	Mean	Std. Dev.	Min	Max
1 M&A Performance	95	0.001	0.449	-1.568	1.488
2 Outsiders in TMT	95	0.051	0.115	0	0.800
3 Outsiders in BOD	95	0.060	0.092	0	0.375
4 Deviation From Equal Representation in TMT	95	0.454	0.093	0.100	0.500
5 Deviation From Equal Representation in BOD	95	0.460	0.085	0.167	0.500
6 Deviation From Equal Size	95	0.295	0.132	0.014	0.490
7 Industry Overlap	95	0.442	0.499	0	1
8 Geography Overlap	95	0.063	0.245	0	1
9 Pay in Cash	95	0.411	0.495	0	1
10 Pay in Stock	95	0.242	0.431	0	1
11 Premium	95	46.405	41.058	-36.020	181.690
12 Contested Bid	95	0.063	0.245	0	1
13 Attitude	95	0.042	0.202	0	1
14 Year1994-1998	95	0.263	0.443	0	1
15 Year1999-2002	95	0.326	0.471	0	1
16 Acquisition Experience	95	0.347	0.597	0	3
17 log(Firm Age)	95	4.189	0.664	2.639	5.541

Table 8b. Correlations in WW Sample (N=95)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 M&A Performance	1																
2 Outsiders in TMT	0.26	1															
3 Outsiders in BOD	0.29	0.38	1														
4 Dev. From Equal Rep.in TMT	0.02	-0.13	0.06	1													
5 Dev. From Equal Rep.in BOD	0.05	0.04	0.06	0.16	1												
6 Dev. From Equal Size	0.06	-0.09	0.01	0.31	0.35	1											
7 Industry Overlap	-0.04	-0.09	0.00	-0.21	-0.32	-0.25	1										
8 Geography Overlap	0.12	-0.06	0.03	0.13	0.12	0.07	-0.23	1									
9 Pay in Cash	-0.04	-0.14	-0.23	0.13	0.32	0.39	-0.18	-0.04	1								
10 Pay in Stock	0.05	0.02	0.00	-0.18	-0.15	-0.22	0.09	-0.15	-0.47	1							
11 Premium	-0.02	-0.07	0.00	-0.03	0.09	0.17	0.18	0.17	0.05	0.01	1						
12 Contested Bid	-0.14	-0.10	-0.04	-0.07	0.03	-0.15	0.12	-0.07	0.05	-0.05	0.23	1					
13 Attitude	0.05	-0.09	-0.01	-0.16	0.10	-0.26	0.02	0.16	-0.07	-0.12	0.22	0.38	1				
14 Year1994-1998	0.15	0.02	-0.04	-0.03	0.03	-0.14	0.00	-0.06	-0.21	0.33	-0.14	-0.06	0.11	1			
15 Year1999-2002	-0.04	0.03	-0.05	0.06	-0.11	0.00	-0.03	0.10	0.01	-0.18	0.22	-0.09	-0.15	-0.42	1		
16 Acquisition Experience	0.12	-0.10	0.06	0.22	0.13	0.08	0.09	-0.01	-0.13	0.21	-0.04	-0.08	-0.12	0.09	-0.03	1	
17 log(Firm Age)	-0.20	-0.10	-0.02	0.08	-0.02	-0.04	-0.11	0.22	-0.01	-0.19	0.00	0.21	0.24	-0.05	0.07	-0.19	1

Table 9a. Descriptive Statistics of Non-WW Sample (N=203)

Variable	Obs	Mean	Std. Dev.	Min	Max
1 M&A Performance	203	-0.695	1.761	-14.513	2.806
2 Outsiders in TMT	203	0.051	0.104	0	0.875
3 Outsiders in BOD	203	0.068	0.095	0	0.500
4 Deviation From Equal Representation in TMT	203	0.448	0.106	0	0.500
5 Deviation From Equal Representation in BOD	203	0.430	0.118	0	0.500
6 Deviation From Equal Size	203	0.312	0.135	0.001	0.499
7 Industry Overlap	203	0.424	0.495	0	1
8 Geography Overlap	203	0.069	0.254	0	1
9 Pay in Cash	203	0.241	0.429	0	1
10 Pay in Stock	203	0.281	0.450	0	1
11 Premium	203	47.230	88.942	-95.210	1176.000
12 Contested Bid	203	0.030	0.170	0	1
13 Attitude	203	0.015	0.121	0	1
14 Year1994-1998	203	0.291	0.455	0	1
15 Year1999-2002	203	0.433	0.497	0	1
16 Acquisition Experience	203	0.502	1.248	0	13
17 log(Firm Age)	203	4.059	0.711	2.303	5.796

Table 9b. Correlations in Non-WW Sample (N=203)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1 M&A Performance	1																	
2 Outsiders in TMT	-0.21	1																
3 Outsiders in BOD	-0.14	0.14	1															
4 Dev. From Equal Rep.in TMT	0.12	0.09	0.17	1														
5 Dev. From Equal Rep.in BOD	-0.08	0.09	0.03	0.51	1													
6 Dev. From Equal Size	-0.04	0.00	0.10	0.41	0.44	1												
7 Industry Overlap	0.04	0.01	-0.08	0.01	-0.17	-0.09	1											
8 Geography Overlap	0.08	-0.02	-0.08	-0.21	-0.21	-0.11	0.04	1										
9 Pay in Cash	0.06	-0.10	0.02	0.14	0.30	0.35	-0.06	-0.11	1									
10 Pay in Stock	-0.25	-0.08	0.00	-0.26	-0.25	-0.04	-0.18	0.09	-0.35	1								
11 Premium	-0.05	0.02	-0.01	0.02	0.05	0.03	0.07	-0.02	0.15	-0.06	1							
12 Contested Bid	0.03	0.04	0.04	-0.01	0.05	-0.06	-0.09	0.07	-0.03	-0.11	-0.02	1						
13 Attitude	-0.01	-0.01	0.00	-0.05	-0.02	-0.03	-0.02	0.13	0.12	-0.08	0.04	-0.02	1					
14 Year1994-1998	0.12	-0.04	-0.05	-0.02	0.04	-0.06	-0.09	0.00	-0.13	0.13	-0.10	-0.05	0.01	1				
15 Year1999-2002	-0.18	0.05	0.17	0.01	0.02	0.02	-0.01	-0.04	-0.01	-0.02	0.17	-0.04	-0.02	-0.56	1			
16 Acquisition Experience	-0.04	0.00	-0.10	0.07	0.00	0.17	0.08	0.06	-0.02	-0.01	-0.03	-0.02	0.08	-0.01	0.04	1		
17 log(Firm Age)	0.15	-0.18	-0.01	0.07	0.11	0.01	-0.10	-0.04	0.06	-0.15	-0.03	0.13	0.04	0.00	0.12	0.00	1	

Table 10. Comparison of the Means of Variables for WW vs. Non-WW Mergers

Variable	WW	Non-WW	t-statistics
M&A Performance	0.001	-0.695	-5.283***
Outsiders in TMT	0.051	0.051	-0.005
Outsiders in BOD	0.060	0.068	0.654
Dev. From Equal Rep.in TMT	0.454	0.448	-0.483
Dev. From Equal Rep.in BOD	0.460	0.430	-2.494**
Dev. From Equal Size	0.295	0.312	1.017
Industry Overlap	0.442	0.424	-0.298
Geography Overlap	0.063	0.069	0.189
Pay in Cash	0.411	0.241	-2.867*
Pay in Stock	0.242	0.281	0.712
Premium	46.405	47.230	0.110
Contested Bid	0.063	0.030	-1.210
Attitude	0.042	0.015	-1.221
Year1994-1998	0.263	0.291	0.495
Year1999-2002	0.326	0.433	1.798*
Acquisition Experience	0.347	0.502	1.451
log(Firm Age)	4.189	4.059	-1.543
Observations	95	203	
*** p<0.01, ** p<0.05, * p<0.10			

Table 11a. OLS Regression Results – Entire Sample

Dependent Variable: <i>M&amp;A Performance</i>	Entire Sample			
	Model1	Model2	Model3	Model4
Outsiders in TMT		-1.758** (0.806)		-1.403* (0.825)
Outsiders in BOD			-1.073 (0.920)	-1.000 (0.938)
Dev. From Equal Rep.in TMT		1.416 (0.925)		2.103** (0.975)
Dev. From Equal Rep.in BOD			-1.386 (0.904)	-1.828* (0.947)
Industry Overlap		0.074 (0.178)	0.035 (0.181)	0.013 (0.180)
Geography Overlap		0.514 (0.344)	0.399 (0.346)	0.441 (0.344)
Dev. From Equal Size	-0.600 (0.696)	-0.931 (0.742)	-0.053 (0.749)	-0.518 (0.764)
Pay in Cash	0.055 (0.218)	0.052 (0.222)	0.099 (0.223)	0.099 (0.224)
Pay in Stock	-0.735*** (0.213)	-0.701*** (0.222)	-0.787*** (0.219)	-0.734*** (0.222)
Premium	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)
Contested Bid	-0.182 (0.449)	-0.150 (0.445)	-0.106 (0.449)	-0.076 (0.445)
Attitude	-0.291 (0.584)	-0.371 (0.585)	-0.328 (0.588)	-0.260 (0.584)
Year1994-1998	0.206 (0.227)	0.217 (0.226)	0.269 (0.228)	0.261 (0.226)
Year1999-2002	-0.487** (0.208)	-0.456** (0.207)	-0.443** (0.209)	-0.431** (0.207)
Acquisition Experience	-0.037 (0.080)	-0.057 (0.080)	-0.056 (0.080)	-0.069 (0.080)
log(Firm Age)	0.227* (0.126)	0.168 (0.128)	0.230* (0.127)	0.177 (0.128)
Constant	-0.850 (0.574)	-1.131 (0.697)	-0.416 (0.678)	-0.751 (0.722)
Observations	298	298	298	298
F-Statistics	3.028	2.859	2.600	2.815
R-squared	0.095	0.124	0.114	0.138
*** p<0.01, ** p<0.05, * p<0.10 (Standard errors in parentheses)				



Table 11b. OLS Regression Results – WW and Non-WW Sample

Dependent Variable: <i>M&amp;A Performance</i>	WW				Non-WW			
	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8
Outsiders in TMT		1.116*** (0.415)		0.797* (0.444)		-3.608*** (1.163)		-3.049*** (1.148)
Outsiders in BOD			1.536*** (0.518)	1.170** (0.554)			-2.177* (1.278)	-2.386* (1.269)
Dev. From Equal Rep.in TMT		0.177 (0.553)		0.072 (0.547)		1.961 (1.273)		3.768*** (1.352)
Dev. From Equal Rep.in BOD			-0.304 (0.628)	-0.414 (0.626)			-2.918** (1.206)	-3.871*** (1.268)
Industry Overlap		0.050 (0.105)	0.004 (0.106)	0.028 (0.107)		0.001 (0.248)	-0.090 (0.254)	-0.148 (0.246)
Geography Overlap		0.315 (0.207)	0.286 (0.205)	0.317 (0.204)		0.816* (0.477)	0.513 (0.480)	0.656 (0.468)
Dev. From Equal Size	0.379 (0.423)	0.430 (0.435)	0.318 (0.432)	0.414 (0.438)	-0.429 (0.966)	-0.826 (1.035)	0.900 (1.052)	0.118 (1.051)
Pay in Cash	-0.027 (0.116)	0.043 (0.116)	0.104 (0.122)	0.121 (0.121)	-0.062 (0.326)	-0.114 (0.326)	0.015 (0.325)	0.018 (0.321)
Pay in Stock	-0.008 (0.137)	0.057 (0.138)	0.068 (0.135)	0.081 (0.136)	-1.007*** (0.290)	-1.044*** (0.305)	-1.219*** (0.303)	-1.151*** (0.300)
Premium	-0.000 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
Contested Bid	-0.224 (0.216)	-0.148 (0.214)	-0.157 (0.212)	-0.141 (0.210)	-0.292 (0.717)	-0.224 (0.708)	-0.185 (0.715)	-0.009 (0.693)
Attitude	0.408 (0.281)	0.443 (0.281)	0.403 (0.278)	0.459 (0.280)	-0.450 (1.000)	-0.561 (0.987)	-0.655 (0.994)	-0.537 (0.963)
Year1994-1998	0.133 (0.123)	0.128 (0.120)	0.169 (0.119)	0.158 (0.119)	0.203 (0.325)	0.223 (0.319)	0.368 (0.325)	0.388 (0.315)
Year1999-2002	0.050 (0.116)	0.047 (0.114)	0.080 (0.114)	0.070 (0.113)	-0.581* (0.300)	-0.497* (0.294)	-0.406 (0.302)	-0.328 (0.294)
Acquisition Experience	0.050 (0.082)	0.062 (0.083)	0.040 (0.081)	0.061 (0.084)	-0.049 (0.098)	-0.065 (0.096)	-0.092 (0.097)	-0.104 (0.094)
log(Firm Age)	-0.137* (0.076)	-0.139* (0.076)	-0.154** (0.075)	-0.142* (0.075)	0.331* (0.173)	0.215 (0.174)	0.340** (0.172)	0.228 (0.170)
Constant	0.422 (0.355)	0.203 (0.427)	0.467 (0.451)	0.361 (0.493)	-1.346* (0.775)	-1.518 (0.931)	-0.450 (0.890)	-0.911 (0.930)
Observations	95	95	95	95	203	203	203	203
F-Statistics	0.932	1.356	1.484	1.521	2.710	3.019	2.771	3.497
R-squared	0.100	0.192	0.206	0.238	0.124	0.184	0.171	0.231
*** p<0.01, ** p<0.05, * p<0.10 (Standard errors in parentheses)								

Table 12. Results of Chow Tests (WW vs. Non-WW Mergers)

Variable	WW	Non-WW	Chow Test
Outsiders in TMT	0.797*	-3.049***	5.122***
Outsiders in BOD	1.170**	-2.386*	4.574**
Dev. From Equal Rep.in TMT	0.072	3.768***	-3.836**
Dev. From Equal Rep.in BOD	-0.414	-3.871***	2.134
Dev. From Equal Size	0.414	0.118	-0.368
Industry Overlap	0.028	-0.148	0.055
Geography Overlap	0.317	0.656	-0.615
Pay in Cash	0.121	0.018	-0.439
Pay in Stock	0.081	-1.151***	1.138***
Premium	-0.001	-0.001	0.003
Contested Bid	-0.141	-0.009	-0.350
Attitude	0.459	-0.537	0.117
Year1994-1998	0.158	0.388	-0.036
Year1999-2002	0.070	-0.328	0.265
Acquisition Experience	0.061	-0.104	0.236
log(Firm Age)	-0.142*	0.228	-0.614**
Observations	95	203	
*** p<0.01, ** p<0.05, * p<0.10			
Regression coefficients are shown in the table.			

Table 13. Predicted Effects and Findings

Hypothesis	Variable	Predicted Sign	Finding
H1a	Outsiders in TMT	Positive	Supported
H1b	Outsiders in BOD	Positive	Supported
H2a	Dev. From Equal Rep.in TMT	Negative	Not Supported
H2b	Dev. From Equal Rep.in BOD	Negative	Not Supported
H2c	Dev. From Equal Size	Negative	Not Supported
H3a	Industry Overlap	Negative	Not Supported
H3b	Geography Overlap	Negative	Not Supported

Table 14. OLS Regression Results – SS Sample

Dependent Variable: <i>M&amp;A Performance</i>	SS			
	Model1	Model2	Model3	Model4
Outsiders in TMT		-6.611*** (1.974)		-5.378** (2.073)
Outsiders in BOD			-2.282 (2.934)	-1.928 (2.724)
Dev. From Equal Rep.in TMT		7.749*** (2.625)		8.635*** (2.646)
Dev. From Equal Rep.in BOD			-4.835* (2.502)	-4.299* (2.401)
Industry Overlap		0.669 (0.479)	0.470 (0.546)	0.409 (0.495)
Geography Overlap		1.201 (1.698)	1.501 (1.859)	1.328 (1.684)
Dev. From Equal Size	-1.119 (2.185)	-2.434 (2.192)	1.091 (2.387)	-1.281 (2.282)
Pay in Cash	0.146 (0.736)	0.046 (0.676)	0.257 (0.749)	0.175 (0.690)
Pay in Stock	-0.944 (0.616)	-0.503 (0.630)	-1.080* (0.639)	-0.596 (0.628)
Premium	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)
Contested Bid	-1.108 (2.347)	0.015 (2.144)	-0.871 (2.317)	0.121 (2.123)
Attitude	-0.444 (1.672)	-0.231 (1.749)	-1.409 (1.908)	-0.464 (1.738)
Year1994-1998	0.512 (0.738)	0.273 (0.674)	0.153 (0.744)	0.170 (0.672)
Year1999-2002	-0.634 (0.634)	-0.610 (0.571)	-0.859 (0.650)	-0.721 (0.588)
Acquisition Experience	-0.021 (0.152)	-0.075 (0.137)	-0.058 (0.157)	-0.081 (0.141)
log(Firm Age)	0.554 (0.422)	0.215 (0.407)	0.673 (0.434)	0.274 (0.412)
Constant	-2.310 (1.830)	-4.027* (2.028)	-1.258 (2.127)	-2.979 (2.090)
Observations	82	82	82	82
F-Statistics	1.120	2.563	1.327	2.501
R-squared	0.136	0.349	0.217	0.381
*** p<0.01, ** p<0.05, * p<0.10				
(Standard errors in parentheses)				

Table 15. Results of Chow Tests (WW vs. SS Mergers)

Variable	WW	SS	Chow Test
Outsiders in TMT	0.797*	-5.378**	8.129***
Outsiders in BOD	1.170**	-1.928	5.510**
Dev. From Equal Rep.in TMT	0.072	8.635***	-7.361***
Dev. From Equal Rep.in BOD	-0.414	-4.299*	3.420
Dev. From Equal Size	0.414	-1.281	0.527
Industry Overlap	0.028	0.409	-0.569
Geography Overlap	0.317	1.328	-0.771
Pay in Cash	0.121	0.175	-0.379
Pay in Stock	0.081	-0.596	1.001*
Premium	-0.001	-0.001	0.003
Contested Bid	-0.141	0.121	-0.365
Attitude	0.459	-0.464	0.065
Year1994-1998	0.158	0.170	-0.442
Year1999-2002	0.070	-0.721	0.726
Acquisition Experience	0.061	-0.081	0.065
log(Firm Age)	-0.142*	0.274	-0.849**
Observations	95	82	
*** p<0.01, ** p<0.05, * p<0.10			
Regression coefficients are shown in the table.			

Table 16a. Descriptive Statistics of CARs in WW Sample (N=95)

Variable	Obs	Mean	Std. Dev.	Min	Max
5-days CAR	95	0.047	0.097	-0.179	0.421
256-days CAR	95	0.029	0.537	-1.676	1.940

Table 16b. Correlations of CARs with other Variables in WW Sample

	5-day CARs	256-day CARs	M&A Performance
5-day CARs	1		
256-day CARs	0.381	1	
M&A Performance (Q-based)	-0.031	0.193	1
Outsiders in TMT	0.084	0.035	0.259
Outsiders in BOD	0.162	0.207	0.287
Dev. From Equal Rep.in TMT	-0.132	0.081	0.019
Dev. From Equal Rep.in BOD	0.117	-0.013	0.054
Dev. From Equal Size	-0.264	-0.203	0.062
Industry Overlap	0.046	-0.068	-0.044
Geography Overlap	0.020	0.032	0.121
Pay in Cash	0.032	0.130	-0.035
Pay in Stock	-0.144	-0.031	0.052
Premium	0.297	0.019	-0.017
Contested Bid	-0.021	-0.011	-0.138
Attitude	0.076	0.022	0.053
Year1994-1998	-0.010	-0.012	0.146
Year1999-2002	0.227	-0.053	-0.040
Acquisition Experience	-0.154	0.057	0.116
log(Firm Age)	0.030	-0.058	-0.201

Table 17a. Descriptive Statistics of CARs in non-WW Sample (N=203)

Variable	Obs	Mean	Std. Dev.	Min	Max
5-days CAR	203	0.029	0.092	-0.218	0.457
256-days CAR	203	-0.043	0.609	-2.765	2.028

Table 17b. Correlations of CARs with other Variables in non-WW Sample

	5-day CARs	256-day CARs	M&A Performance
5-day CARs	1		
256-day CARs	0.256	1	
M&A Performance (Q-based)	0.022	0.260	1
Outsiders in TMT	0.139	-0.183	-0.207
Outsiders in BOD	-0.002	-0.072	-0.141
Dev. From Equal Rep.in TMT	-0.172	-0.173	0.117
Dev. From Equal Rep.in BOD	-0.002	-0.154	-0.085
Dev. From Equal Size	-0.254	-0.067	-0.037
Industry Overlap	-0.012	0.023	0.043
Geography Overlap	-0.046	-0.014	0.077
Pay in Cash	0.006	0.047	0.060
Pay in Stock	-0.103	0.073	-0.254
Premium	0.120	-0.024	-0.054
Contested Bid	0.010	-0.090	0.025
Attitude	0.001	-0.046	-0.006
Year1994-1998	0.033	-0.014	0.120
Year1999-2002	0.031	-0.072	-0.179
Acquisition Experience	-0.092	-0.032	-0.044
log(Firm Age)	0.024	0.005	0.148

Table 18. Results from OLS Regression and Chow Tests (Cumulative Abnormal Returns [-3,+252] as Dependent Variable)

Dependent Variable: <i>M&amp;A Performance</i>	WW				Non-WW				Chow Test
	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	
Outsiders in TMT		0.227 (0.503)		-0.260 (0.529)		-0.879** (0.426)		-0.834* (0.432)	0.989
Outsiders in BOD			1.673*** (0.610)	1.765*** (0.660)			-0.327 (0.471)	-0.088 (0.478)	1.979**
Dev. From Equal Rep.in TMT		0.811 (0.670)		0.652 (0.651)		-0.891* (0.466)		-0.710 (0.509)	1.145
Dev. From Equal Rep.in BOD			-0.612 (0.740)	-0.574 (0.746)			-0.796* (0.444)	-0.444 (0.477)	0.401
Industry Overlap		-0.144 (0.127)	-0.185 (0.124)	-0.175 (0.127)		0.030 (0.091)	0.008 (0.093)	0.015 (0.093)	-0.143
Geography Overlap		0.045 (0.251)	0.072 (0.241)	0.047 (0.243)		-0.104 (0.175)	-0.090 (0.177)	-0.120 (0.176)	0.241
Dev. From Equal Size	-1.536*** (0.497)	-1.840*** (0.527)	-1.748*** (0.509)	-1.871*** (0.521)	-0.504 (0.349)	-0.177 (0.379)	-0.193 (0.387)	-0.075 (0.395)	-0.854
Pay in Cash	0.289** (0.136)	0.285** (0.141)	0.405*** (0.143)	0.402*** (0.144)	0.163 (0.118)	0.107 (0.119)	0.180 (0.119)	0.121 (0.121)	0.078
Pay in Stock	-0.044 (0.161)	-0.018 (0.167)	-0.005 (0.159)	0.019 (0.162)	0.149 (0.105)	0.071 (0.112)	0.112 (0.111)	0.057 (0.113)	-0.107
Premium	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.001)	-0.000 (0.000)	0.001
Contested Bid	-0.199 (0.254)	-0.167 (0.259)	-0.143 (0.249)	-0.157 (0.250)	-0.351 (0.259)	-0.314 (0.259)	-0.295 (0.263)	-0.296 (0.261)	0.255
Attitude	-0.128 (0.331)	-0.129 (0.341)	-0.136 (0.327)	-0.107 (0.334)	-0.300 (0.362)	-0.293 (0.361)	-0.290 (0.366)	-0.295 (0.362)	0.448
Year1994-1998	-0.048 (0.145)	-0.070 (0.146)	-0.018 (0.141)	-0.025 (0.142)	-0.131 (0.117)	-0.125 (0.117)	-0.095 (0.120)	-0.109 (0.119)	0.029
Year1999-2002	-0.133 (0.137)	-0.162 (0.138)	-0.127 (0.134)	-0.128 (0.135)	-0.159 (0.108)	-0.147 (0.108)	-0.129 (0.111)	-0.136 (0.111)	0.043
Acquisition Experience	0.106 (0.096)	0.093 (0.101)	0.123 (0.096)	0.090 (0.100)	-0.002 (0.035)	-0.003 (0.035)	-0.009 (0.036)	-0.005 (0.036)	0.068
log(Firm Age)	-0.015 (0.089)	-0.039 (0.092)	-0.030 (0.088)	-0.044 (0.089)	0.039 (0.063)	0.019 (0.064)	0.044 (0.063)	0.021 (0.064)	-0.036
Constant	0.398 (0.417)	0.260 (0.517)	0.684 (0.531)	0.478 (0.587)	0.003 (0.280)	0.450 (0.341)	0.239 (0.327)	0.521 (0.350)	
Observations	95	95	95	95	203	203	203	203	
R-squared	0.129	0.169	0.228	0.242	0.044	0.087	0.063	0.091	
F-Statistics	1.249	1.165	1.689	1.556	0.880	1.273	0.898	1.162	
*** p<0.01, ** p<0.05, * p<0.10 (Standard errors in parentheses)									

Table 19. Results from OLS Regression and Chow Tests (Cumulative Abnormal Returns [-2,+2] as Dependent Variable)

Dependent Variable: <i>M&amp;A Performance</i>	WW				Non-WW				Chow Test
	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	
Outsiders in TMT		0.027 (0.082)		-0.071 (0.084)		0.136** (0.062)		0.125** (0.063)	-0.108
Outsiders in BOD			0.200** (0.097)	0.237** (0.105)			0.013 (0.069)	0.025 (0.070)	0.149
Dev. From Equal Rep.in TMT		-0.076 (0.109)		-0.103 (0.103)		-0.130* (0.068)		-0.175** (0.074)	0.088
Dev. From Equal Rep.in BOD			0.273** (0.117)	0.283** (0.118)			0.062 (0.065)	0.108 (0.070)	0.124
Industry Overlap		-0.022 (0.021)	-0.007 (0.020)	-0.011 (0.020)		-0.008 (0.013)	-0.007 (0.014)	-0.004 (0.014)	0.006
Geography Overlap		-0.031 (0.041)	-0.037 (0.038)	-0.037 (0.039)		-0.025 (0.026)	-0.014 (0.026)	-0.021 (0.026)	0.020
Dev. From Equal Size	-0.326*** (0.080)	-0.334*** (0.086)	-0.393*** (0.081)	-0.388*** (0.083)	-0.187*** (0.051)	-0.154*** (0.056)	-0.215*** (0.057)	-0.179*** (0.058)	-0.039
Pay in Cash	0.020 (0.022)	0.016 (0.023)	0.018 (0.023)	0.017 (0.023)	0.013 (0.017)	0.013 (0.018)	0.010 (0.018)	0.009 (0.018)	0.014
Pay in Stock	-0.050* (0.026)	-0.058** (0.027)	-0.047* (0.025)	-0.052** (0.026)	-0.020 (0.015)	-0.025 (0.016)	-0.018 (0.016)	-0.022 (0.016)	-0.028
Premium	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001***
Contested Bid	-0.058 (0.041)	-0.060 (0.042)	-0.063 (0.040)	-0.063 (0.040)	-0.005 (0.038)	-0.012 (0.038)	-0.009 (0.039)	-0.016 (0.038)	-0.012
Attitude	-0.050 (0.053)	-0.056 (0.055)	-0.066 (0.052)	-0.078 (0.053)	-0.016 (0.053)	-0.017 (0.053)	-0.012 (0.054)	-0.017 (0.053)	0.009
Year1994-1998	0.032 (0.023)	0.032 (0.024)	0.032 (0.022)	0.034 (0.023)	0.017 (0.017)	0.016 (0.017)	0.013 (0.018)	0.012 (0.017)	-0.012
Year1999-2002	0.026 (0.022)	0.023 (0.022)	0.033 (0.021)	0.034 (0.021)	0.012 (0.016)	0.008 (0.016)	0.009 (0.016)	0.005 (0.016)	0.044*
Acquisition Experience	-0.012 (0.015)	-0.006 (0.016)	-0.018 (0.015)	-0.016 (0.016)	-0.003 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.002 (0.005)	-0.013
log(Firm Age)	0.001 (0.014)	0.004 (0.015)	0.005 (0.014)	0.005 (0.014)	0.000 (0.009)	0.005 (0.009)	-0.001 (0.009)	0.004 (0.009)	0.005
Constant	0.089 (0.067)	0.123 (0.084)	-0.040 (0.084)	0.004 (0.093)	0.074* (0.041)	0.107** (0.050)	0.066 (0.048)	0.090* (0.051)	
Observations	95	95	95	95	203	203	203	203	
R-squared	0.311	0.328	0.404	0.415	0.102	0.142	0.111	0.153	
F-Statistics	3.785	2.785	3.874	3.461	2.179	2.227	1.676	2.104	
*** p<0.01, ** p<0.05, * p<0.10 (Standard errors in parentheses)									

Table 20. Mean of Outsider Ratio in TMT and Outsider Ratio in BOD by Subsample

Acquiror-Target	Mean of Outsider Ratio in TMT	Mean of Outsider Ratio in BOD
Strong-Strong	0.051	0.065
Strong-Weak	0.044	0.066
Weak-Strong	0.062	0.078
Weak-Weak	0.051	0.060
Total	0.051	0.066



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