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Acquirer Shareholder Value Creation in United States Mergers & Acquisitions

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by

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ABSTRACT

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Mergers and acquisitions remain the primary corporate growth strategy for executives around the world. While deals continue to rise in popularity, their success in generating value for participating firms remain uncertain. A vast majority of merger and acquisition research focuses on this disparity and considers whether they create or destroy value for stakeholders. In this thesis, I examine the value generated to shareholders by US acquisitions and mergers announced between 2005 and 2009. Utilizing the event study methodology, I evaluate cumulative abnormal returns (CAR) for acquiring firms to analyze the wealth effects of merger and acquisition announcements. CAR is a direct measure of the change in shareholder wealth resulting from an event because CAR represent the difference between the return conditional on the event and the expected return. I find that acquiring firm shareholders realized average cumulative abnormal returns of -1.572% during a five-day event window centered around the event announcement, and -3.905% during a two-month event window. Furthermore, when distinguishing the characteristics of deals that impact the returns to shareholders, transaction value has a statistically significant negative correlation with CAR. The results of this thesis support previous literature findings that the returns to shareholders of the acquiring firms are often not significant and sometimes negative.

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CHAPTER ONE

INTRODUCTION

A. Background Information

Executives seeking growth for their firms consider a multitude of strategies, yet mergers and acquisitions remain the primary approach to reach this goal. Although deals can be appealing to help reduce costs, increase sales, and gain access to new technologies or geographic region, research continues to suggest the failure rate is between 70 and 90% for mergers and acquisitions (Christensen et al. 2011).

 Regardless of the high risk associated with deals, mergers and acquisitions continue to grow in value and frequency. 2015 is regarded as the biggest year ever for mergers and acquisitions, reaching a record high deal value of $4.7 trillion (KPMG LLP, 2016). According to KPMG's survey of 550 mergers and acquisitions professionals, deals are expected to accelerate and continue to increase in value and size. Furthermore, the survey found that 91% of executives plan to execute one or more acquisition in the next 12 months, compared to 82% in 2015 (KPMG LLP, 2016). A primary reason executives are selecting mergers and acquisitions as the predominant growth strategy for their firms is the current economic environment "where S&P 500 Earnings Per Share projections have continued to decline, demonstrating weakening confidence in organic growth" (KPMG LLP, 2016, p.16). Respondents to KPMG's survey also cited enhancing technologies, extending their geographic reach, entering new lines of business, and expanding their customer base as motivations for acquisitions.

As a result of the high-risk nature of mergers and acquisitions, there are multiple factors that are critical to a deal's success. Key elements of a successful merger or acquisition include a prompt and well-executed integration strategy, accurate transaction value, thorough due diligence, and positive external conditions (Christensen et al. 2011 and KPMG LLP 2016). Strategic fit serves as the most important criterion for a successful deal, focusing primarily on ensuring the acquirer and target company have compatible business models. In addition, cultural fit is important for long-term success and integration of the consolidated companies.

Although the specific motivations for deals vary, the ultimate goal is to boost performance and increase firm value. It is important to consider the various parties that can be affected by a deal because not all parties may benefit equally, and in fact, different groups of stakeholders may simultaneously be inversely impacted from a merger or acquisition. The first, and probably most obvious group affected, is the employees of both companies. While some employees may be promoted or see no change in employment status, deals can also lead to companies laying off large sums of people due to a new technology or method to reduce costs, therefore decreasing value to employees. Another group subject to a deal's effects is the consumers of the product or services offered by the company. It may be assumed that customers would experience an increase in value from a deal, if new technologies were introduced to expand or improve product offerings, but it must also be considered that a merger or acquisition may drive up prices for consumers, leading to an adverse effect. The final party that experiences changes in firm value from a deal is the company's shareholders. Shareholders of companies participating in deals could

be impacted by changes in share prices from a deal. Depending on the success of the merger or acquisition, and the overall perception of the deal from shareholders, it could result in value creation or destruction. Theoretically, a rise in share prices would lead to value creation and a decrease in share prices would result in value destruction for the shareholders. To evaluate the influence of a deal on company shareholders, the stock price is used. Stock price is an optimal tool to analyze the value of a firm because it is theorized that a stock price represents the "expected present value of future net cash flows" (Thorbecke, 1997, p.635). As mentioned above, for the shareholders, it is desirable for the company to see a rise in its stock price because it contributes to total shareholder return, which is a measure of the company's performance (Deelder, Goedhart and Agrawal, 2008). Share price appreciation indicates that there is value creation for the firm and investors feel positively about the company's performance in the future. This thesis will specifically focus on the impact of mergers and acquisitions on company shareholders as a result of the deal announcement.

B. Research Question

Although mergers and acquisitions remain the primary source of strategic growth, there is consistent concern about whether deals result in value creation or value destruction for the participating firms (Farinós, Herrero and Latorre 2014). It is important to continue to evaluate the impact of deals to determine whether mergers and acquisitions are worth the risk that is undertaken. This thesis will focus primarily on the immediate value created for shareholders. One method of assessing the potential value creation or destruction for shareholders that results

from a deal is examining the participating companies' stock prices. Stock prices reflect the company's current value, but can also represent growth over a given time period (Investopedia.com 2014). To determine the effect of a merger or acquisition on a company's stock price, abnormal returns will be evaluated because they represent the returns generated over a period of time that differ from the expected return.

In order to further understand the impact of mergers and acquisitions on the participating companies and their shareholders, this thesis addresses the following question: Do acquisitions create or destroy value for the shareholders of the acquiring firms?

To answer this question, a sample of 50 acquisitions was taken from Thomson One's event database. The sample was based on multiple criteria and covered the time period of 2005-2015. To determine the effect of the acquisition on the acquiring firm's shareholders, an event study was employed to establish whether the acquiring company experienced significantly different returns from what was expected for the specified time period around the merger announcement date. To calculate returns, the company stock prices over a given time period were collected for a sample of acquisitions that occurred in the United States between 2005 and 2009. Furthermore, from these stock prices and market data, expected returns and actual returns were calculated. Abnormal returns are constructed by finding the difference between the observed return and the predicted return. The abnormal return is the variance in the return conditional on the acquisition (Kothari and Warner, 2007).

Furthermore, if a large amount of variance exists within the returns across the time period cumulative abnormal returns can be calculated by summing the average returns over multiple periods (Brooks, 2013). In addition to abnormal returns, a test statistic can be calculated off the cumulative abnormal returns to determine if the change in company stock returns for the given event period is significant.

C. Motivation and Significance of Thesis

Mergers and acquisitions continue to serve as a primary avenue for companies seeking to achieve synergies and to generate added value to the organization. Synergies are defined as the effects "arising between two or more agents, entities, factors, or substances that produce an effect greater than the sum of their individual effects" and added value is "used in several ways to indicate an enhancement to a product or an entity" (Eliasson, 2011, p.1). A common representation of this in mergers and acquisitions is 1+1=3. It demonstrates that synergies and value added suggest that the combination of two firms should create a combined effect greater than the individual entities.

Although deals remain the prominent means to attain greater value for firms and their stakeholders, failure is more likely than success. In the context of mergers and acquisitions, success would be indicated by value creation to company stakeholders. It is important to actively evaluate the effects mergers and acquisitions on participating companies to establish whether deals should continue to be a common corporate growth strategy.

A significant portion of current mergers and acquisition literature focuses on the wealth effects generated by deals, but primarily examines the effects realized by the

acquired company. While it is assumed that an acquiring company will experience positive financial effects as a result of an acquisition, it is important to determine if this, in fact, is true.

The significance of this thesis is to assess the wealth effects of acquisitions on acquiring companies, and whether those effects led to value creation or destruction. Ultimately, this can lead to a conclusion as to whether these deal were a productive source of corporate growth, and contribute to the body of research mergers and acquisitions and their wealth effects.

D. Structure of Thesis

This thesis is organized into six chapters. Chapter I is the introduction, which outlines the research, provides background information on the topic and identifies the research question. Chapter II examines previous research conducted on mergers and acquisitions. Relevant literature includes a background on mergers and acquisitions, a discussion of the motivations for deals, and whether deals create or destroy value for participating firms. Chapter III presents the analytical framework employed for the thesis. This chapter considers event study methodology and how abnormal returns and cumulative abnormal returns are utilized to evaluate the effect of acquisitions on the shareholders of a company. Chapter IV provides an in-depth discussion of the data. This section discusses the source of the data and summarizes the sample of acquisitions. Chapter V analyzes the data on multiple dimensions, and presents the findings. Finally Chapter VI assesses the findings, and draws conclusions based on the research. Furthermore, this section will evaluate

the limitations to the analysis, possible implications of the findings, and potential

avenues for further research.

CHAPTER II

LITERATURE REVIEW

There has been extensive research on the implications of mergers and acquisitions and its wealth effects. Chapter II focuses on two different aspects of mergers and acquisition literature. First, it provides background information on mergers and acquisitions, specifically the varying motivations for initiating deals, different potential payment structures, and characteristics of successful deals. A discussion of the various parties affected by a deal is also included. Next, this section reviews previous research conducted on the financial impacts of deals on participating companies through the evaluation of stock prices and returns.

A. **Introduction**

As a function of their rising popularity and high risk, mergers and acquisitions attract the interest and attention of researchers and executives from a variety of backgrounds. According to Cartwright and Schoenberg (2006), attention from a broad range of disciplines enables merger and acquisition research to incorporate the "financial, strategic, behavioral, operational and cross-cultural aspects of this challenging and high risk activity" (p. 2). The authors note research on the cultural and psychological features has grown in recent years, but the majority of merger and acquisition research remains concentrated on financial and market studies, focused on the US and UK markets. Based on a comprehensive review of relevant literature, the following discussion highlights important background information and terms related to mergers and acquisitions and findings from prior research on the wealth effects from deals.

B. Background Information on Mergers and Acquisitions

Mergers and acquisitions are complex growth strategies that involve multiple parties. Sherman's (2010) book entitled, *Mergers & Acquisitions: From A to Z,* as well as Clayman, Fridson and Troughton's (2015) book written for the CFA Institute on mergers and acquisitions provide a comprehensive background on deals. According to Sherman (2010), a merger involves two or more companies joining as peers. In a merger, the buying firm typically retains its original identity and absorbs the assets and liabilities of the selling firm. There are multiple classifications of mergers that are related to the business activities of the two parties merging. A horizontal merger occurs when the companies are in the same line of business, and are often competing with one another. A vertical merger transpires when two companies are in the same line of production. Finally, a conglomerate merger results when two companies in unrelated lines of business join together (Clayman, Fridson and Troughton, 2015). An acquisition can be defined as one company acting as the buyer, or the acquirer, and another company acting as the seller, or the target company (Clayman, Fridson and Troughton, 2015).

There are multiple forms of payment that companies can use to pay for the transaction. They include cash, securities purchase and asset purchase. In a securities, or stock, purchase transaction, the "seller's shares are not necessarily combined with the buyer's existing company, but are often kept separate as a new subsidiary or operating division" (Sherman, 2010, p. 3). In an asset purchase transaction, the assets sold to the buyer become additional assets of the company. The hope of the acquiring company is that the value of the assets purchased from

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the target company will surpass the price paid, and ultimately enhance shareholder value over time (Sherman, 2010).

There has been a significant amount of prior research on executives' motivation for mergers and acquisitions. In KPMG's survey of 550 mergers and acquisitions professionals, it was concluded that the "top factor by far was an organizational desire to fortify their competitive position" (KPMG LLP, 2016, p. 6). To become more competitive and create value for stakeholders, it is often assumed that synergies are the optimal means to that end. As discussed earlier, synergies are defined as "the source of the tangible expected improvement in earnings that occurs when two businesses merge" (Walker, Hansell, Kengelbach, Bathia and Dawson, 2016).

While synergies are often a broad objective of executives, the desire to participate in a deal can also be examined more specifically by considering the reasons for mergers and acquisitions separately. Sherman (2010) discusses the specific motivations for each. For a merger, the author identifies multiple objectives including the desire to add a new product line, enter a new market, or increase distribution reach geographically or demographically (Sherman, 2010). Sherman adds the following as potential motivations for mergers: obtain tax benefits, redistribute excess capital for more cost-effective uses, increase the scale of production for current products, advance technology, "restructure industry value chain, and respond to competitive cost pressures through economies of scale and scope" (Sherman, 2010, p. 11-12). Furthermore, although firms often initiate a merger as a growth strategy, deals can also be motivated by the necessity to stay afloat and survive bad times. A merger or acquisition can help a company avoid

bankruptcy or shutting down. In his analysis of the reasons why mergers are initiated, Sherman (2010) also adds that deals may be driven by a key trend in a specific industry. For example, in the banking and telecommunications industries, robust competition is driving deals, whereas shifting consumer preferences are motivating deals in the food and beverage industry. In the health-care industry, Sherman (2010) cites the pressure to control costs as the main factor driving deals, whereas a general reduction in demand, specifically a declining federal defense budget, is motivating deals in the defense contract and aerospace industries (p. 7).

In addition to mergers, Sherman (2010) evaluates the reasons for initiating acquisitions. As a result of the nature of acquisitions, the motivations need to be considered separately for the buying and selling company. For the seller, Sherman (2010) states that a company desiring great access to the resources of the buyer, an inability to compete as an independent entity or the desire or necessity to reduce costs can all act as motivations to initiate an acquisition. According to Sherman (2010), there are multiple factors that drive an acquisition for the buyer which include: "revenue enhancement, cost reduction, vertical and/or horizontal operational synergies or economies of scale, growth pressures from investors, underutilized resources, desire to reduce competition, need to gain market share in new geographic region, diversify new products and services" (p. 10-11). Furthermore, Christensen et al. (2011) suggest that a company may elect to partake in an acquisition to reinvent its business model and fundamentally redirect itself, as well as to improve the company's performance (p. 2). The varying motivations for mergers and acquisitions enable deals to meet a variety of objectives, and ultimately

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contribute to why mergers and acquisitions are the primary strategy of corporate development regardless of the risk the company may be undertaking.

C. Drivers of Value Creation in Mergers and Acquisitions

Mergers and acquisitions remain at the forefront of inorganic growth strategies for executives seeking to improve performance and create value for their companies. The support for deals by executives demonstrates the monetary, strategic, and social importance they have in corporate finance. Although many believe deals are the optimal approach to generating inorganic growth, mergers and acquisition performance remains disappointing. In an effort to understand why mergers and acquisitions frequently underperform, it is critical to evaluate the factors that drive a successful deal. There is a vast amount of literature that attempts to understand the low success rates of mergers and acquisitions, and the commonalities amongst value-returning deals.

Through a survey of previous research, it is evident there are countless factors deemed relevant to a successful deal, but certain characteristics are more critical and most commonly connected with merger and acquisition performance. Gomes, Angwin, Weber and Tarba (2013) surveyed an abundance of merger and acquisition literature to understand which factors are most critical to success in the pre-acquisition and post-acquisition periods. Gomes et al. (2013) asserts it is critical to make the distinction because the process of mergers and acquisitions must be taken into consideration. The first factor Gomes et al. consider is the actual selection of a strategic partner for the merger or acquisition. The strengths and weaknesses of each company should be evaluated to ensure "strategic and organizational fit"

(Gomes et al., 2013, p.19). In order to assess the fit of the company, Gomes et al.

recommends the following dimensions be examined: "strengths and weaknesses,

future investment requirements, quality of the target company's management team,

and implementation barriers including cultural differences and human resources

implications such as top management turnover" (Gomes et al., 2013, p.19).

Furthermore, the actual size of the participating companies should be weighed as

this can have implications on the overall fit.

Another factor the authors deliberated in their review of literature to be of

importance for a deal's performance is the transaction price. From a financial

perspective, the authors concluded that if the buying firm pays a price that is

considered too high, it would greatly increase the failure rate. Gomes et al. (2013)

cite research by Goold, Campbell and Alexander (1994, p.220), who found "one of

the most common and most important sources of value destruction in corporate

development is paying too much. Often the acquirer destroys value by paying too

much, making it very difficult to achieve an adequate return." In addition to the

possibility of being unable to attain a positive return due to paying an excessive

price, stakeholders of the buying company may perceive the deal as a poor growth

strategy, and thus will respond negatively.

Post-acquisition critical success factors are also of importance to ensure value

creation. Gomes et al. (2013) emphasize the integration period is of primary

significance for a successful merger or acquisition. The authors highlight multiple

elements of integration including the overall strategy and pace. First, as a function of

the multi-dimensional nature of mergers and acquisitions, integration strategies

should reflect the specific features of the deal. By tailoring the integration approach to the deal, executives can exploit the strengths and areas of growth for both firms. In addition to the overall strategy of the integration period, the speed of implementation is associated with the merger and acquisition performance. Gomes at al. (2013) found that although it can be discomforting for executives, it is optimal for the integration of both companies to be as quick as possible. The authors state, "Proceeding slowly may cause uncertainty to build and rumor to thrive. Morale can suffer, and customers get forgotten" (Gomes et al., 2013, p.24). They reinforce the importance of a swift integration period by asserting, "The costs of losing the momentum of a business are much greater than the costs associated with mistakes through quick decisions" (Gomes et al., 2013, p.24). This demonstrates the potential loss of value to shareholders that could result slow implementation.

In their study of European mergers and acquisitions and their shareholder value creation, Campa and Hernando (2004) consider key value drivers for deals. The authors suggest the presence of synergies, whether through cost reduction, removal of duplicate activities, or development of economies of scale, is of critical importance. Mergers and acquisitions with higher levels of synergies have proven to return higher value compared to unrelated mergers because there is a higher "degree of relatedness between the buyer and seller [which] is positively associated with returns" (Campa and Hernando, 2004, p. 58). Another value driver for deals discussed by the authors is value investment. While not as thoroughly researched as other characteristics of successful mergers and acquisitions, this theory proposes that value investment will likely create value for the participating firms. Campa and

Hernando (2004) define value investment as, "when buyers purchase apparently cheap firms (low book-to-market ratios)" (p.61). The authors found that acquiring companies following this approach obtained positive cumulative abnormal returns, while buyers purchasing companies with high book-to-market value ratios experienced a negative stock market reaction.

As demonstrated by the review of the literature on factors driving performance of mergers and acquisition, it is evident that deals are multi-dimensional and require careful planning and integration to ensure value generation to shareholders.

D. Prior Research on Mergers and Acquisitions Wealth Effects

The complex phenomenon of mergers and acquisitions has attracted an abundance of executives and researchers from a wide array of disciplines. A large emphasis of current research focuses on the features that define a successful deal versus one that fails because, contrary to their popularity, mergers and acquisitions continue to deliver a mixed performance for the expansive range of stakeholders involved. While it is imperative to consider the defining factors that drive a successful deal, research also must be performed to evaluate the value that deals are creating, or not, for companies. The research on this topic is most relevant for this thesis, as its primary focus is to determine if acquiring firms are realizing positive returns following an acquisition. The remainder of this literature review examines wealth creation or destruction following a merger or acquisition.

Cartwright and Schoenberg (2006) consider this phenomenon and discuss the mixed performance of deals, with a primary focus on acquisitions. The authors highlight discrepancies between returns experienced by target and acquiring firms.

Cartwright and Schoenberg (2006) cite research by Agrawal and Jaffe (2000) who found that target companies typically achieve positive short-term returns, whereas acquiring companies are more likely to face negative returns in the short-term. In addition to considering the short-term effects on stock prices, Cartwright and Schoenberg (2006) assessed stock prices over a longer time period, as this is more indicative of the firm's long-term value. For target firms, the research by Agrawal and Jaffe (2000) reveals that "the abnormal returns accruing to acquiring firms in the years following an acquisition are negative or, at best, not statistically different from zero" (Cartwright and Schoenberg, 2006, p.6). The performance of acquisitions for the buying companies is also mediocre, with 35-45% of acquirers experiencing positive returns in the two to three years post-deal (Cartwright and Schoenberg, 2006). In addition to evaluating post-acquisition wealth effects in the form of stock prices, Cartwright and Schoenberg (2006) also discuss whether the original objectives of a deal were met as a measure of success. The authors found that internal managers of acquiring firms conclude that only 56% of acquisitions can be deemed successful against the initial objectives set out for the deal. These results emphasize the mixed performance of deals and the necessity to continue to evaluate mergers and acquisitions in more depth to determine if they are worth the potential risk.

In a study conducted by Chan, Ge and Lin (2015), the authors collected data on 7,047 deals that occurred between January 1996 and December 2010 to analyze the effect of mergers and acquisitions announcements on cumulative abnormal returns. In their research, the authors found that a majority of target firms experience

positive cumulative abnormal returns following a deal announcement. Furthermore, the authors estimated the mean return for target firms to be 16.62%, which they found to be significantly higher than the cumulative abnormal returns for acquirers (Chan, Ge and Lin, 2015, p. 1077). From these results, it appears shareholders of target firms view acquisitions optimistically and expect positive returns. In the study, the authors also found that acquisition announcements for the acquirers have varied perceptions by investors. Circumstances that typically lead to beneficial results include whether the acquisition involves firms within the same industry and whether the transaction is funded by cash or debt (Chan, Ge and Lin, 2015, p. 1060). Chan, Ge and Lin's research highlights the discrepancies in the returns of the buying firm and acquired firm, and the role that investors' perceptions may play in the variation.

Furthermore, McKinsey & Company conducted a study on 231 deals in the global telecommunications, European banking, and global petroleum sectors to address the assertion that "at least half of all the big mergers, acquisitions, and alliances that make headlines fail to create significant shareholder value" (Bieshaar, Knight and van Wassenaer, 2001). The study found that deals with an "expansionist" approach, with objectives like opening new distribution outlets or expanding the combined companies' reach result in the greatest increase in stock value. In contrast, "transformative" deals, which are intended to diversify, are more likely to destroy value (Bieshaar, Knight and van Wassenaer, 2001). This demonstrates that mergers and acquisitions with the goal of fundamentally changing the company have less favorable market reactions than deals that aim to develop or grow current assets of

both companies. Another finding of the study was that when all else was held equal, the markets performed best for acquisitions compared to mergers. McKinsey's research provided a wide array of findings in regards to the actual nature of the deal and its probable performance.

Moffett and Naserbakht (2013) evaluated the financial effects of mergers and acquisitions in the United States banking industry through analysis of stock price behavior of firms involved in 154 deals that occurred between 2000 and 2010. The authors utilized event study methodology to investigate the financial impacts of mergers and acquisitions on the target and acquiring banks. The authors constructed an estimation window of -60 to +60 days, and ensured no other special events occurred during this time period, enabling them to measure the stock market reaction through actual returns. The authors cite Neely and de Cossio (1987) and Trifts and Scanlon (1987) who concluded that during the week a merger proposal is announced, target banks often achieve a substantial rise in stock price, while the bidding banks experience a smaller drop in the stock price (Moffett and Naserbakht, 2013). Conversely, in their study Moffett and Naserbakht (2013) found average actual returns for both target and acquiring banks increased in the short-term as a result of merger and acquisition announcements contradicting the majority of previous research on the effect of deals on stock prices. One possible explanation for this dissimilarity is that Moffett and Naserbakht analyzed the actual returns of the stock price instead of the abnormal return like most other research on mergers and acquisitions.

Trifts and Scanlon (2014) evaluated the effects of interstate bank mergers on the acquiring and target firms' shareholders. Through their study of 17 acquired and 14 acquiring banks participating in 21 deals, the authors found that "shareholders of acquired banks earn large, statistically significant abnormal returns while shareholders of acquiring banks earn insignificant abnormal returns around the announcement of the merger" (Trifts and Scanlon, 2014, p. 311). In addition to examining the effects on the firms' shareholders, Trifts and Scanlon (2014) also analyzed the cumulative abnormal returns bases on the size of the bank. The authors concluded from their study that smaller banks involved in interstate mergers experienced considerably larger returns compared to larger banks. Trifts and Scanlon (2014) discuss multiple explanations for this discrepancy including the platform in which they are traded, predominately whether the companies are traded on the New York Stock Exchange or over the counter. The authors also suggest there may be market segmentation for bank acquisitions, which could lead to larger banks competing at a higher level than smaller banks. This could potentially lead to investors believing that large banks involved in mergers and acquisitions will not be affected by a deal as much because "they are not materially altering the geographic scope of their operations," whereas interstate bank mergers "appear to represent valuable new opportunities for geographic market expansion" (Trifts and Scanlon, 2014, p.311). Trifts and Scanlon's (2014) research suggests that the market's reaction will vary for the target and acquiring company, as well as based on the size of the company.

Campa and Hernando (2004) examine the value generated to shareholders from 262 mergers and acquisitions announcements involving European Union companies between 1998 and 2000. The authors utilized event study methodology and constructed seven different windows to evaluate cumulative abnormal returns: three pre-announcement windows, one short-term window around the announcement day, a window including the announcement day and thirty days prior, and two windows including post-announcement returns. Similar to other merger and acquisition literature, Campa and Hernando (2004) found target firms experienced a price run-up one month prior to the announcement and an announcement effect with cumulative abnormal returns of 5% and 4% respectively. Furthermore, the authors concluded the cumulative abnormal returns post announcement were not significant for the targets. For the acquiring companies, Campa and Hernando (2004) found no significant cumulative abnormal returns pre- or post-announcement, but did see vague indication of a price run-up effect. When the authors analyzed the cumulative abnormal returns of their entire sample, they found 60% of target firms experienced positive cumulative abnormal returns, while approximately 55% of acquiring firms experienced negative cumulative abnormal returns. Of the cumulative abnormal returns displayed by the acquiring companies, none appeared to be statistically significant. Campa and Hernando (2004) findings reinforce the likely pattern of value creation for shareholders of target companies, but more ambiguous wealth effects for shareholders of acquiring companies

E. Conclusion

Research on mergers and acquisitions has grown in prevalence and scope, encompassing more elements of deals as a function of the rise in both frequency and value of deals across the globe. While the findings are mixed, a majority of the research discussed above concludes that target firms typically experience some amount of positive returns following a deal, but such returns are more elusive for acquiring firms. The aim of this thesis is to further examine the uncertainty of returns for acquiring companies and determine if acquisitions are a worthwhile strategy for corporate growth.

CHAPTER III

ANALYTICAL FRAMEWORK

Chapter III discusses the analytical framework utilized to examine the wealth

effects of mergers and acquisitions on company shareholders. In Section I, the event

study methodology is explained, and the event study windows are defined for this

thesis. Section II defines abnormal returns as a primary measure to establish

whether an event led to a systematic difference in a company's returns. Section III

discusses cumulative abnormal returns, a second measure to estimate the return as

a result of an acquisition. Section IV states the hypothesis for this study.

A. Event Study

As this thesis aims to evaluate the effect of mergers and acquisitions on a

company's wealth, while specifically focusing on the returns to shareholders for the

acquiring company, it is necessary to use an analytical framework that can measure

the impact of the deal on the company. In order to do so, an event study was

employed. Economists use event studies to assess the effect of an economic event on

a company's value using financial market data because they analyze return behavior

for a sample of companies experiencing a similar type of event (Kothari and Warner,

2007). Event studies are most commonly utilized to measure the impact of earnings

announcements, stock splits, dividend announcements, and merger and acquisition

announcements (Moffett and Naserbakht, 2013). This methodology is widely used

because event studies operate on the assumption that markets are efficient, and

therefore the asset prices of a company will reflect an economic event immediately

(Campbell, Lo and MacKinlay, 1997). Therefore, an event's economic impact on a

firm can be measured using a company's stock prices over a given time period,

called the event window. For this thesis, two separate event windows were utilized.

The first event window was defined to assess the immediate effect of the merger

announcement and included stock prices from two days prior to the deal to two

days post deal. The second event window analyzes the short-term effect of the

merger announcement and includes stock price from 30 days prior to 30 days post.

In addition to the event window, the estimation window, which is utilized to predict

the expected return, was calculated for each company. The estimation window for

the immediate event window (-2 to +2) included stock prices from 90 days prior to

30 days before the deal announcement. For the second event window (-30 to +30),

the estimation window included stocks prices from 120 days prior to 60 days prior.

Figure 1 displays the formal definition of the estimation, event, and post-event

windows.

Figure 1: Formal Definition of Event Study Windows
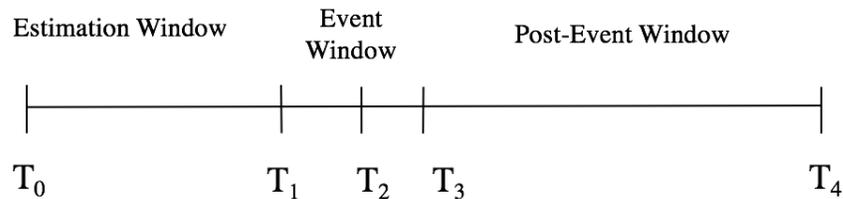
Source: Exhibit constructed by author, inspired by Campbell, Lo & McKinley (1997)

Immediate Window	**Short-Term Window**
Where:	**Where:**
$T_0 = -90\ days$	$T_0 = -120\ days$
$T_1 = -30\ days$	$T_1 = -60\ days$
$T_2 = -2\ days$	$T_2 = -30\ days$
$T_3 = +2\ days$	$T_3 = +30\ days$
$T_4 = +2\ years$	$T_4 = +2\ years$

B. Abnormal Returns

Utilizing the event study methodology, abnormal returns are used to measure the impact of an acquisition on the acquiring company. According to Nasdaq, abnormal returns can be defined as "the component of the return that is not due to systematic influences (market-wide influences). In other words, the abnormal return is the difference between the actual return that is expected to result from market movements (normal return)" ("Abnormal Returns" 2016). Abnormal returns are used because, in addition to the deal, there are multiple factors that could influence a company's stock price that would not be captured by actual returns. Through the examination of stock price behavior of US banks that participated in acquisitions, Moffett and Naserbakht (2013) found "the observed changes in the stock price of a bank during the event window cannot be attributed exclusively to that announcement since stock prices are affected by a multitude of factors other than the announcement of the merger proposal" (p. 109). Furthermore, Kothari and Warner (2007) assert that as the abnormal return represents "the difference between the return conditional on the event and the expected return unconditional on the event," it is a "direct measure of the (unexpected) change in security holder wealth associated with the event" (p.9). The following equation displays the calculation for abnormal returns where AR_{it}, R_{it} and $E(R_{it})$ are abnormal returns, actual returns and expected returns, respectively:

$$AR_{it} \; = \; R_{it} \; - \; E(R_{it})$$

To calculate expected returns, the constant-mean-return model or market model can be used. The constant-mean-return model assumes that an "asset's return over

time is independent and identically normally distributed with a constant (time invariant) mean and variance" (Campbell, Lo and MacKinlay, 1997, p. 151). In contrast, the market model assumes that the return on an asset is dependent "on the return on the market portfolio and the extent of the security's responsiveness as measured by beta. The return also depends on conditions that are unique to the firm" ("Market Model" 2016). This thesis will use the market model to determine expected returns because it is the most widely used approach to construct expected returns as it is a more realistic representation of a company's stock price (Brooks, 2013).

C. Cumulative Abnormal Returns

To evaluate the effect of the merger over the entire event window, daily abnormal returns are aggregated to calculate cumulative abnormal returns. By accumulating the abnormal performance from the entire event window, the overall impact on the firm is more easily defined, and can be tested for significance. The following equation shows the calculation for cumulative abnormal returns (CAR) starting at time t_1 through time t_2 as the summation of abnormal returns.

$$CAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_t$$

From cumulative abnormal returns, a test statistic can be constructed to determine if the difference in a company's returns following an acquisition announcement is statistically different from the predicted return.

D. Hypothesis

When utilizing an event study framework, the goal is to observe the level of abnormal returns resulting from a firm event. For this thesis, the null hypothesis is that abnormal returns will be equal to zero, and therefore the acquisition had no effect on the company's stock price. Furthermore, the alternative hypothesis is that abnormal returns will not be equal to zero, thus there was an effect on the firm's stock price as a due to an acquisition.

DATA

Chapter IV discusses the data utilized for this thesis. Section A explains the criteria developed to select the sample, and section B examines the sample more specifically by evaluating the companies in the sample by transaction size and industry.

A. Introduction to Data

To evaluate the effect of an acquisition on shareholder wealth, a sample of acquisitions will be examined. The sample was selected from Thomson Reuter's event database using the following criteria: deals completed in the past ten years, USD currency and deals that are defined as "merger" or "acquisition." This produced a population of 31,097 mergers and acquisitions that occurred from 2005 to 2015. To reduce the population further and control for multiple external factors, an additional series of criteria was developed. First, the target and acquirer companies had to be headquartered, or predominately located, in the United States only. This was in an effort to reduce the effect of any country-specific regulations and laws for mergers and acquisitions, as well as limit the impact of varying market and economic conditions of multiple countries. Furthermore, the United States was specifically selected because "the U.S. continues to be the favored M&A (mergers and acquisitions) destination because of its relatively healthy economy" (KPMG LLP, 2016, p.9). Next, the data was filtered to include deals that had been fully completed. While it could be valuable to examine deals that are still in the process of implementation and integration or deals that ultimately failed to materialize, for

consistency, in this study, all acquisition transactions had to be completed. A final

criterion for inclusion in the sample is the value of the transaction had to exceed

$1.5 billion. This is to ensure that all acquisitions were of substantial size, and a

significant event in a company's news.

A stratified random sample of 50 deals from 2005 to 2009 was selected. Within

the sample, ten acquisitions were selected from 2005, 2006, 2007, 2008 and 2009 to

provide an equal distribution of acquisitions across the five years. The following

information was taken from the Thomson Reuters SDC Platinum Database for each

acquisition: year, date announced, date effective, target name, acquiring name, and

value of transaction.

In addition to the acquisition information, stock prices for each day within a

selected time period were collected to evaluate whether the deal resulted in wealth

creation for the shareholders. For each acquisition, the acquiring firm's stock price

was found using Yahoo Finance. Stock prices for every trading day one-year prior to

one-year post of the date announced were collected. If the market was not open on

the day the acquisition was announced, data from the next trading day thereafter

was used. The company's dividends, if applicable, were automatically accounted for

in the adjusted closing price, which was used to calculate the returns.

To assess the effect of a deal on the company's stock prices through an analysis

of abnormal returns, the expected return of each company must be found. Expected

return is expressed as a function of the company's stock potential return outcomes

and associated probabilities (Teall, 1958). To accomplish this, market data was

collected for the same 24-month time period for each individual acquisition.

B. Discussion of Sample

As previously mentioned, the sample for this thesis was randomly selected and included 50 acquisitions that had their official deal announcements between 2005 and 2009. The acquisitions covered a range of industries including consumer retail, energy service, financial services, health care/life sciences, industrial goods, real estate/gaming/leisure, and technology/media/telecommunications. To categorize the companies by industry, Wall Street Journal's summary information for each company was utilized. Table 1 displays the distribution of acquisitions across the various industries.

Table 1: Distribution of Sample Across Industries

Industry	# of Companies from Sample
Consumer Retail	9
Energy Service	5
Financial Services	9
Health Care/Life Sciences	6
Industrial Goods	2
Real Estate/Gaming/Leisure	3
Technology/Media/Telecommunications	16

Roughly 30% of the companies in the sample belong to the technology, media and telecommunications industry. The financial services and consumer retail industries each had approximately 20% of the sample, whereas companies in the energy service and healthcare/life sciences industries comprised 10% each. Industrial goods and real estate/gaming/leisure had the smallest representation in the sample. Of the 50 companies in the sample, 47 are S&P500 companies. Prominent acquiring companies include Proctor and Gamble, Hewlett Packard, Verizon, AT&T, Boeing, Wells Fargo & Co, Bank of America, Berkshire Hathaway,

Cisco Systems, Dow Chemical Company, Walt Disney, Johnson and Johnson, Microsoft, Oracle, Pfizer, Comcast, and MetLife.

The ten largest acquisitions had transaction values of greater than $18 billion. The acquiring companies in these deals included Pfizer Inc., Proctor & Gamble, Exxon Mobile Corporation, Bank of America, Verizon Wireless, Boston Scientific Corporation, CVS Pharmacy, Comcast Corporation, and Chevron Texaco Corporation.

CHAPTER V

RESULTS

Chapter V presents the findings of the event study. First, cumulative abnormal returns and test-statistics are presented for each event window. Next, the acquisitions were characterized by transaction value and industry to determine if these variables impacted the wealth effects of the acquisition. Finally, regression analyses were completed to examine the relationship between the acquisition announcement cumulative abnormal returns, as well as acquirer characteristics.

A. Cumulative Abnormal Returns

As discussed earlier, cumulative abnormal returns is a metric utilized in an event study to evaluate the effect of a deal on a company's stock during the event window. It demonstrates the differences between the expected return and the actual return of the company's stock resulting from the acquisition announcement. Test statistics for each acquisition's cumulative abnormal returns were calculated to determine whether the cumulative abnormal returns experienced by the company were significantly different from zero. Table 2 displays the cumulative abnormal returns and test-statistics for the event window measuring the immediate effect (-2 days to +2 days) of the deal announcement.

Table 2: CAR for Immediate Event Window

Company	CAR	T-Statistic
Procter & Gamble Co	-6.592%	-3.500**
SBC Communications Inc	-1.430%	-0.3181
Boston Scientific Corp	-1.253%	-0.247
Duke Energy Corp	-5.694%	-1.994**
Federated Department Stores (M)	5.394%	0.694
ChevronTexaco Corp	-2.414%	-0.361
Bank of America Corp	-4.113%	-1.632
MetLife Inc	-3.469%	-1.598
Verizon Communications Inc	-0.546%	-0.895
Cisco Systems Inc	-2.393%	-0.908
Boeing Co	0.345%	0.135
Capital One Financial Corp	-5.356%	-0.551
Thermo Electron Corp	-2.036%	-0.665
Motorola Inc	3.984%	2.191**
Home Depot Inc	4.842%	1.61
Bank of America Corp	-0.858%	-0.908
Johnson & Johnson	-4.059%	-2.326**
Rite Aid Corp	-4.168%	-0.321
Walt Disney Co	-3.932%	-1.184
CVS Corp	-8.299%	-1.151
Coca-Cola Co	2.549%	2.183**
Transocean Inc	8.599%	1.802*
National Oilwell Varco Inc	-5.795%	-0.699
Oracle Corp	-2.657%	-0.987
Microsoft Corp	-1.970%	-1.212
Bank of America Corp	-2.563%	-1.467
Cisco Systems Inc	0.643%	0.365
UnitedHealth Group Inc	-0.638%	-0.229
IHOP Corp	12.853%	1.512
Berkshire Hathaway Inc	3.535%	1.078
Hewlett Packard Co	-6.559%	-0.731
The JM Smucker Co	-0.264%	-0.085
The Dow Chemical Co	-6.895%	-1.436
CVS Health Corp	0.011%	0.005
CME Group Inc	-5.052%	-0.923
International Paper Co	-14.759%	-1.455
Boston Properties Inc	-0.470%	-0.199
Wells Fargo & Co	20.842%	2.361**
Brocade Commun Sys Inc	-25.954%	-1.116
Verizon Wireless Inc	2.179%	0.486
Oracle Corp	3.971%	1.113
DirecTV Group Inc (ATT)	0.581%	0.377
MetLife Inc	-11.400%	-8.581**
Exxon Mobil Corp	-7.042%	-1.564
Comcast Corp	16.778%	1.931*
Simon Property Group Inc	0.972%	0.216
Walt Disney Co	-2.704%	-0.976
Xerox Corp	-17.273%	-0.995
Pfizer Inc	-16.278%	-1.473
Express Scripts Inc	18.211%	1.044
Average CAR for Sample	**-1.572%**	

**Significant at the .05 level, *Significant at the .10 level

Table 2 shows 33 of the 50, or 66%, of acquisitions led to some level of negative cumulative abnormal returns for the buying company. Negative cumulative abnormal returns demonstrate a negative stock market reaction, and could indicate investor concerns about the "expected value resulting from future synergies or wealth redistribution among stakeholders" (Campa and Hernando, 2004, 47). Of the 33 acquisitions that realized negative cumulative abnormal returns, four companies had cumulative abnormal returns significant at the .05 level during the event window. These companies include Proctor & Gamble Co, Duke Energy Corp, MetLife Inc., and Johnson & Johnson. MetLife Inc.'s shareholders experienced the most substantial negatives returns when compared to the expected return. The test-statistic for this acquisition was equal to

-8.581, which demonstrates the high level of confidence that the null hypothesis, which states cumulative abnormal returns are not equal to zero, is false.

Furthermore, Table 2 reports that 17, or 33%, of acquiring companies realized positive cumulative abnormal returns following the purchase of another company. This suggests a positive market reaction, and shareholders' positive expectations for the acquisition. Of the 17 acquisitions, three had cumulative abnormal returns significant at the .05 level. The acquiring companies in these acquisitions are Coca-Cola Co., Motorola Inc., and Wells Fargo & Co. An additional two acquisitions experienced cumulative abnormal returns that were significant at the .10 level for shareholders. The buying companies in these deals involved Transocean Inc. and Comcast Corporation.

A similar analysis of cumulative abnormal returns was conducted to assess the short-term (-30 days to +30 days) wealth effects a result of the deal announcement. Table 3 reports the cumulative abnormal returns and test statistics for each acquiring company during this event window.

Table 3: CAR for Short-Term Event Window

Company	CAR	T-Statistic
Procter & Gamble Co	2.259%	0.326
SBC Communications Inc	-5.810%	-0.999
Boston Scientific Corp	8.782%	0.719
Duke Energy Corp	-2.081%	-0.34
Federated Dept. Stores	1.108%	0.092
ChevronTexaco Corp	-2.118%	-0.193
Bank of America Corp	-11.528%	-2.441**
MetLife Inc	-1.690%	-0.231
Verizon Communications Inc	-9.565%	-1.379
Cisco Systems Inc	4.296%	0.506
Boeing Co	1.835%	0.215
Capital One Financial Corp	-0.981%	-0.084
Thermo Electron Corp	-12.542%	-1.65*
Motorola Inc	-1.923%	-0.179
Home Depot Inc	3.465%	0.419
Bank of America Corp	-10.434%	-2.184**
Johnson & Johnson	14.104%	2.532**
Rite Aid Corp	-17.201%	-0.918
Walt Disney Co	14.240%	1.339
CVS Corp	-34.122%	-1.981**
Coca-Cola Co	3.225%	0.685
Transocean Inc	3.708%	0.289
National Oilwell Varco Inc	-35.346%	-1.407
Oracle Corp	3.375%	0.26
Microsoft Corp	3.812%	0.646
Bank of America Corp	-0.357%	-0.072
Cisco Systems Inc	-11.020%	-1.46
UnitedHealth Group Inc	9.636%	0.909
IHOP Corp	10.069%	0.718
Berkshire Hathaway Inc	0.680%	0.054
Hewlett Packard Co	6.009%	0.531
The JM Smucker Co	-8.721%	-0.67
The Dow Chemical Co	-17.139%	-1.739
CVS Health Corp	-16.659%	-1.548
CME Group Inc	-25.498%	-1.052
International Paper Co	-11.688%	-0.744
Boston Properties Inc	-5.641%	-0.509
Wells Fargo & Co	67.610%	1.884*
Brocade Commun Sys Inc	-12.588%	-0.424
Verizon Wireless Inc	20.169%	2.186**
Oracle Corp	-2.752%	-0.165
DirecTV Group Inc	-19.188%	-1.851*
MetLife Inc	-24.917%	-1.674*
Exxon Mobil Corp	-0.577%	-0.087
Comcast Corp	-2.788%	-0.199
Simon Property Group Inc	-4.654%	-0.356
Walt Disney Co	-9.929%	-0.975
Xerox Corp	-34.209%	-1.547
Pfizer Inc	-23.881%	-1.467
Express Scripts Inc	3.932%	0.154
Average CAR for Sample	**-3.905%**	

**Significant at the .05 level, significant at the .10 level

As seen in Table 3, 31 acquisitions resulted in negative cumulative abnormal

returns during the short-term event window. Of the 31 acquisitions, five companies

realized cumulative abnormal returns that were statistically significant from zero.

These companies included Bank of America (both acquisitions in the sample),

Thermo Electron Corp, CVS Corporation, Direct TV Group, and MetLife Inc. It is

important to note that the only acquisition that had significant negative cumulative

abnormal returns in both event windows is MetLife Inc. When compared with the

cumulative abnormal returns experienced by the companies during the immediate

event window, there are two fewer companies in the sample that had negative

cumulative abnormal returns. Although there were fewer acquisitions that resulted

in negative cumulative abnormal returns in the short-term event window, there was

an additional company that experienced statistically significant cumulative

abnormal returns. Furthermore, through the comparison of the average of

cumulative abnormal returns for the entire sample for the different event windows,

it is evident the cumulative abnormal returns realized in the short-term event

window were of a larger magnitude than the cumulative abnormal returns in the

immediate event window. The immediate event window's average cumulative

abnormal is equal to -1.572%, whereas the average for the short-term event

window is -3.905%. This highlights substantial intensification in magnitude of the

negative cumulative abnormal returns realized by the companies in the short-term

event window. Possible explanations for this could be poor integration strategies or

investors' belief that the buying company will not be better off as a result of the

acquisition.

Moreover, Table 3 reports that 19 of the acquiring companies realized

positive cumulative abnormal returns in the 60 days surrounding the deal

announcement. Of these companies, three had statistically significant cumulative

abnormal returns. These companies include Johnson & Johnson, Wells Fargo & Co,

and Verizon Wireless Inc. Wells Fargo is the only company to experience cumulative

abnormal returns statistically significant from zero during both event windows.

Furthermore, Johnson & Johnson realized significant negative cumulative abnormal

returns during the immediate event window, but significant positive cumulative

abnormal returns in the short-term event window, indicating the market's response

can vary greatly between event windows.

In addition to assessing the cumulative abnormal returns of each individual

acquisition, it can be beneficial to determine whether the entire sample of

acquisitions experienced cumulative abnormal returns at a statistically significant

level. If the entire sample was significant, it would demonstrate that when the

cumulative abnormal returns of all 50 study acquisitions were averaged, they were

statistically different from zero. To evaluate whether the cumulative abnormal

returns were significant for the entire sample of acquisitions, a t-test on average

cumulative abnormal returns was run.

The following estimation model was used to run the regression:

$$CAR_i = \propto_i + \in_i$$

Table 4 displays the regression analysis for the entire sample of acquisitions.

Table 4: Regression Analysis for Immediate Event Window

Variable	Coefficient
Constant	-0.0157
	(0.012)
Observations	50
R-squared	0.000
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

As shown in Table 4, the negative coefficient implies that when averaged together, the cumulative abnormal returns realized by the 50 acquiring companies were negative however the cumulative abnormal returns for entire sample were not statistically different from zero during the immediate event window. The extremely low r-squared suggests there is a large amount of unexplained variation within the sample. In the context of this research, it indicates there is a vast amount of variance amongst the cumulative abnormal returns that the acquiring companies experience.

Table 5 displays the regression analysis of cumulative abnormal returns for the entire sample during the short-term event window

Table 5: Regression Analysis for Short-Term Event Window

Variable	Coefficient
Constant	-0.0390
	(0.0229)
Observations	50
R-squared	0.000
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 5 shows the cumulative abnormal returns for the entire sample were not statistically significant during the short-term event window. Similar to the immediate event window, the companies in the sample on average experienced negative cumulative abnormal returns, which is indicated by the negative coefficient. Furthermore, the comparison of the negative coefficients of the regression analyses of both event windows underpins the assertion that the companies realized more negative cumulative abnormal returns in the short-term event window than the immediate event window.

Although it would be beneficial to continue the evaluation of the cumulative abnormal returns for both event windows, the rest of this analysis will only focus on the cumulative abnormal returns realized in the immediate event window. It is recommended for future research to evaluate the wealth effects of mergers and acquisitions on companies during multiple event windows.

B. Evaluation of Impact of Transaction Value on CAR

In addition to evaluating whether cumulative abnormal returns were significant for each acquiring company, this study examined the roles of specific variables that have historically been known to cause variances in returns. The first characteristic of the acquisitions tested was transaction value. Transaction value indicates the size and magnitude of the acquisition, and can presumably affect the market's response to a merger or acquisition announcement. Although the sample was limited to acquisitions with transaction values over $1.5 billion, there is still a large variance in acquisition size within the sample. This is evidenced by the smallest transaction size being equal to $1.931 billion, and the largest equaling $67.286 billion. Tables 6 and 7 display the sample of acquisitions in ascending order of transaction value. Panel A includes the lowest ten transaction values from the sample. Panel B includes the second quintile; Panel C includes the third quintile, and Panels D and E are comprised of the 20 highest transaction values. As demonstrated in Panel A of Table 6, none of the acquisitions with the ten lowest transaction values resulted in statistically significant cumulative abnormal returns. Furthermore, of the next ten acquisitions in Panel B, two acquisitions have cumulative abnormal returns significant at the .05 significance level. These acquisitions have transaction values of $3.88 billion and $4.1 billion. In Panel C, which covers acquisitions with transaction values between $7 billion and $11.7 billion, one acquisition had cumulative abnormal returns that were significant at the .05 significance level. In Panel D, four acquisitions had statistically significant cumulative abnormal returns. Three acquisitions, which had transaction values of $15.11 billion, $15.54 billion, and

$16.6 billion, were significant at the .05 level. One acquisition, with a transaction value of $17.30 billion, was significant at the .10 level. Finally, in Panel E, which contains the largest acquisitions, two acquisitions had cumulative abnormal returns that were significant. An acquisition with a transaction value of $23.5 billion experienced positive cumulative abnormal returns that were significant at the .10 significance level, and an acquisition with a transaction value of $59.01 billion realized negative cumulative abnormal returns at the .05 significance level.

Table 6: Differences in CAR by Transaction Value

Company	Transaction Value	CAR	T-Statistic
PANEL A			
IHOP Corp	1,931.602	12.853%	1.511
Boeing Co	2,057.10	0.345%	0.135
Simon Property Group Inc	2,325.00	0.972%	0.216
Brocade Commun Sys Inc	2,410.448	-25.954%	-1.116
UnitedHealth Group Inc	2,425.343	-0.638%	-0.229
CVS Health Corp	2,637.421	0.011%	0.005
Cisco Systems Inc	3,090.519	0.643%	0.365
Bank of America Corp	3,300.00	-0.858%	-0.908
The JM Smucker Co	3,300.00	-0.264%	-0.085
Rite Aid Corp	3,470.00	-4.168%	-0.321
PANEL B			
Home Depot Inc	3,475.355	4.842%	1.61
Motorola Inc	3,880.468	3.984%	2.191**
Boston Properties Inc	3,949.00	-0.470%	-0.199
Walt Disney Co	3,958.354	-2.704%	-0.976
Coca-Cola Co	4,100.00	2.549%	2.183**
Berkshire Hathaway Inc	4,500.00	3.535%	1.078
Express Scripts Inc	4,675.00	18.211%	1.044
International Paper Co	6,000.00	-14.759%	-1.455
Microsoft Corp	6,333.117	-1.970%	-1.212
Cisco Systems Inc	6,865.722	-2.393%	-0.908
PANEL C			
Oracle Corp	7,305.203	3.971%	1.113
National Oilwell Varco Inc	7,513.454	-5.795%	-0.699
Walt Disney Co	7,531.739	-3.932%	-1.184
CME Group Inc	7,555.372	-5.052%	-0.923
Oracle Corp	8,056.049	-2.657%	-0.987
Xerox Corp	8,374.197	-17.273%	-0.995
Verizon Communications	8,495.595	-0.546%	-0.895
Duke Energy Corp	8,832.943	-5.694%	-1.994**
Thermo Electron Corp	10,291.785	-2.036%	-0.665
MetLife Inc	11,694.656	-3.469%	-1.598

**Significant at the .05 level, *Significant at the .10 level

Table 7: Differences in CAR by Transaction Value (contd.)

Company	Transaction Value	CAR	T-Statistic
PANEL D			
Hewlett Packard Co	12,565.034	-6.559%	-0.731
SBC Communications Inc	14,732.64	-1.430%	-0.318
Wells Fargo & Co	15,112.754	20.842%	2.361**
Capital One Financial Corp	15,132.87	-5.356%	-0.551
DirecTV Group Inc (ATT)	15,243.05	0.581%	0.377
The Dow Chemical Co	15,513.132	-6.895%	-1.436
MetLife Inc	15,543.544	-11.400%	-8.581**
Federated Department Stores	16,465.871	5.394%	0.694
Johnson & Johnson	16,600.00	-4.059%	-2.326**
Transocean Inc	17,298.661	8.599%	1.802*
PANEL E			
ChevronTexaco Corp	18,718.509	-2.414%	-0.361
Bank of America Corp	21,000.00	-2.563%	-1.467
Comcast Corp	23,500.00	16.778%	1.931*
CVS Corp	26,293.576	-8.299%	-1.151
Boston Scientific Corp	27,861.289	-1.253%	-0.247
Verizon Wireless Inc	28,100.00	2.179%	0.486
Bank of America Corp	35,810.268	-4.113%	-1.632
Exxon Mobil Corp	40,298.142	-7.042%	-1.564
Procter & Gamble Co	54,906.807	-6.592%	-3.500**
Pfizer Inc	67,285.695	-16.278%	-1.473

**Significant at the .05 level, *Significant at the .10 level

From the analysis of Tables 6 and 7, it is apparent that six of the nine statistically significant (at the .05 or .10 levels) acquisitions, or 66%, have transaction values that are amongst the highest twenty (Panels D and E) with four of the six having negative CAR values. This would suggest that acquisitions with higher transaction values are more likely to result in lower cumulative abnormal returns.

To determine if the size of the transaction is correlated with the acquiring firm's cumulative abnormal returns during the event period, a linear regression was

run with transaction value as the dependent value, and cumulative abnormal returns as the dependent variable for the sample of 50 acquisitions.

The following estimation model was used:

$$CAR_i = \propto + \beta_0 \; transaction \; value + \in_i$$

Table 8 displays the regression output.

Table 8: Regression Analysis of Transaction Value

Variables	Coefficient
Transaction Value	-0.0013*
	(0.001)
Constant	0.0011
	(0.016)
Observations	50
R-squared	0.043
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 8 shows the coefficient on transaction value of the acquisitions has a statistically significant negative correlation with cumulative abnormal returns. This indicates that as transaction value increases, cumulative abnormal returns are likely to become more negative. This relationship is displayed in Figure 2.

Figure 2: Transaction Value vs. Cumulative Abnormal Returns
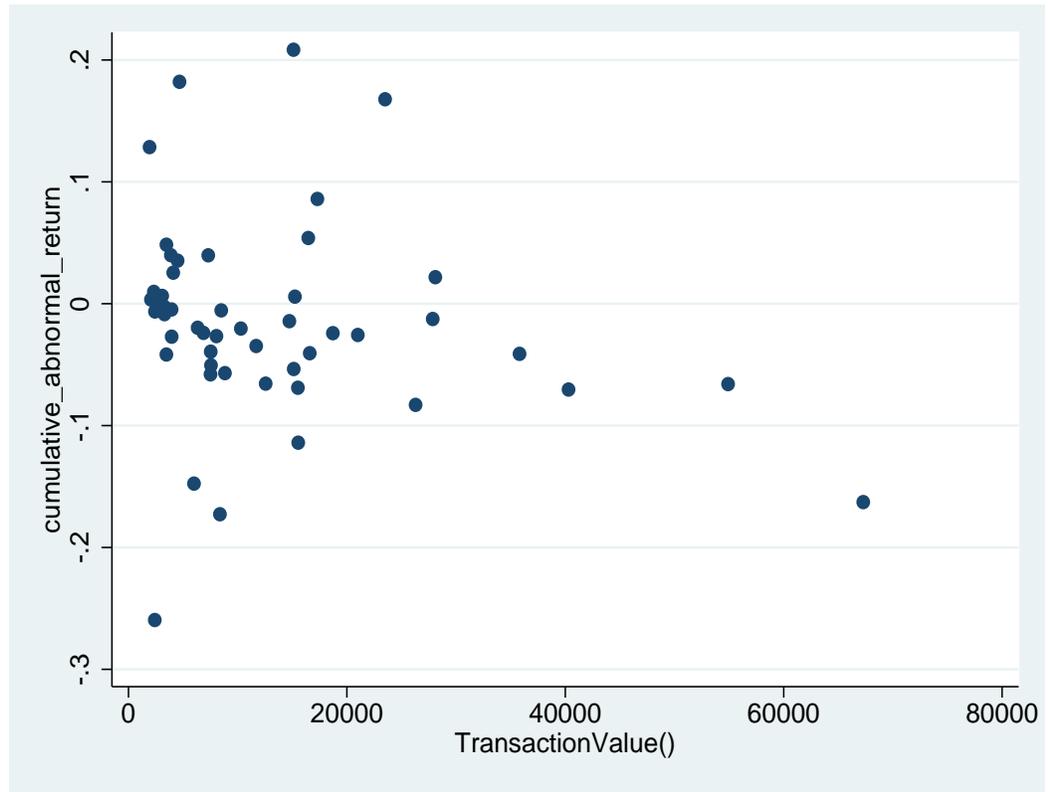
Figure 2 demonstrates that, while there are outliers present and some unexplained variation indicated by a low r-squared, a downward trend is evident. This is a noteworthy observation, as it appears that the largest acquisitions, defined by transaction size, resulted in value destruction for shareholders.

C. Evaluation of Impact of Company Industry on CAR

In addition to evaluating the role that transaction value plays in the cumulative abnormal returns realized by acquiring firms, the company industry can also be considered. For this thesis, the companies fell into seven major industries. Table 9 displays the company name, the respective industry, cumulative abnormal return, and the test statistic for each acquisition that falls under the consumer retail,

energy service, health care/life sciences, industrial goods, and real

estate/gaming/leisure industries.

Table 9: Differences in CAR by Industry

Company	Industry	CAR	T-Statistic
CVS Health Corp	Consumer Retail	0.011%	0.005
The JM Smucker Group	Consumer Retail	-0.264%	-0.085
Rite Aid Corp	Consumer Retail	-4.168%	-0.321
Home Depot Inc	Consumer Retail	4.842%	1.61
Coca-Cola Inc	Consumer Retail	2.549%	2.183**
International Paper Co	Consumer Retail	-14.759%	-1.455
Federated Dept. Stores	Consumer Retail	5.394%	0.694
CVS Corp	Consumer Retail	-8.299%	-1.151
Proctor & Gamble Co	Consumer Retail	-6.592%	-3.5**
National Oilwell Varco Inc	Energy Service	-5.795%	-0.699
Duke Energy Corp	Energy Service	-5.694%	-1.994**
Transocean Inc	Energy Service	8.599%	1.802*
Chevron Texaco Corp	Energy Service	-2.414%	-0.361
Exxon Mobil Corp	Energy Service	-7.042%	-1.564
UnitedHealth Group Inc	Health Care/Life Sciences	-0.638%	-0.229
Express Scripts Inc	Health Care/Life Sciences	18.211%	1.044
Thermo Electron Corp	Health Care/Life Sciences	-2.036%	-0.665
Johnson & Johnson	Health Care/Life Sciences	-4.059%	-2.326**
Boston Scientific Corp	Health Care/Life Sciences	-1.253%	-0.247
Pfizer Inc	Health Care/Life Sciences	-16.278%	-1.473
Boeing Co	Industrial Goods	0.345%	0.135
The Dow Chemical Co	Industrial Goods	-6.895%	-1.436
IHOP Corp	Real Estate/Gaming/Lesiure	12.853%	1.512
Simon Property Group Inc	Real Estate/Gaming/Lesiure	0.972%	0.216
Boston Properties Inc	Real Estate/Gaming/Lesiure	-0.470%	-0.199

**Significant at the .05 level, *Significant at the .10 level

Table 10 reports the company name, industry, cumulative abnormal return,

and the test statistic for each acquisition that falls under the financial services and

technology/media/telecommunications industries.

Table 10: Differences in CAR by Industry

Company	Industry	CAR	T-Statistic
Bank of America Corp	Financial Services	-0.858%	-0.908
Berkshire Hathaway Inc	Financial Services	3.535%	1.078
CME Group Inc	Financial Services	-5.052%	-0.923
MetLife Inc	Financial Services	-3.469%	-1.598
Wells Fargo & Co	Financial Services	20.842%	2.361**
Capital One Financial Corp	Financial Services	-5.356%	-0.551
MetLife Inc	Financial Services	-11.400%	-8.58**
Bank of America Corp	Financial Services	-2.563%	-1.467
Bank of America Corp	Financial Services	-4.113%	-1.632
Brocade Commun Sys Inc	Technology/Media/Telecom	-25.954%	-1.116
Cisco Systems Inc	Technology/Media/Telecom	0.643%	0.365
Motorola Inc	Technology/Media/Telecom	3.984%	2.191**
Walt Disney Co	Technology/Media/Telecom	-2.704%	-0.976
Microsoft Corp	Technology/Media/Telecom	-1.970%	-1.212
Cisco Systems Inc	Technology/Media/Telecom	-2.393%	-0.908
Oracle Corp	Technology/Media/Telecom	3.971%	1.113
Walt Disney Co	Technology/Media/Telecom	-3.932%	-1.184
Oracle Corp	Technology/Media/Telecom	-2.657%	-0.987
Xerox Corp	Technology/Media/Telecom	-17.273%	-0.995
Verizon Communications	Technology/Media/Telecom	-0.546%	-0.895
Hewlett Packard Co	Technology/Media/Telecom	-6.559%	-0.731
SBC Communications Inc	Technology/Media/Telecom	-1.430%	-0.318
DirecTV Group Inc	Technology/Media/Telecom	0.581%	0.377
Comcast Corp	Technology/Media/Telecom	16.778%	1.931*
Verizon Wireless Inc	Technology/Media/Telecom	2.179%	0.486

**Significant at the .05 level, *Significant at the .10 level

As seen in Tables 9 and 10, acquisitions with cumulative abnormal returns statistically different from zero are distributed across five of the seven industries. These include: consumer retail, energy service, health care/life sciences, financial services, and technology/media/telecommunications. Thus, none of the acquisitions in the industrial goods and real estate/gaming/leisure industries had statistically significant cumulative abnormal returns. The consumer retail and financial services industries had the highest number of statistically significant acquisitions with two, which were all significant at the .05 level. The acquiring firms in the consumer retail industry are Coca-Cola Co and Proctor & Gamble Co. For the financial services industry, Wells Fargo & Co and MetLife Inc. were the buying companies with significant cumulative abnormal returns. Each had nine acquisitions in the

respective industries, which equates to 22% of the acquisitions in consumer retail and financial services having significant cumulative abnormal returns. Furthermore, these industries account for 44% of all statistically significant acquisitions. Health care/life sciences has one acquisition with significant cumulative abnormal returns at the .05 level, which was Johnson & Johnson. In addition, energy service also had one acquisition with cumulative abnormal returns, which was for Duke Energy Corporation. These industries each account for 11.1% of the overall sample of statistically significant acquisitions.

Further analysis was completed to determine whether a company's industry is a significant variable in determining the cumulative abnormal return an acquiring company will realize following an acquisition. A regression was run with industry as the independent variables and cumulative abnormal returns as the dependent variable. Industry dummy variables were used for the regression to allow for the analysis of each industry.

The following estimation model was used for the regression:

$$CAR_i = \propto_i + \ \beta_0 \ Consumer \ Retail + \ \beta_1 Energy \ Service + \ \beta_2 Financial \ Serivces$$
$$+ B_3 Health \ Care \ \& \ Life \ Sciences + \beta_4 Industrial \ Goods$$
$$+ \ \beta_5 Real \ Estate \ \& \ Gaming \ \& \ Leisure$$
$$+ \ \beta_6 Technology \ \& \ Media \ \& \ Telecommunications + \in_i$$

Table 11 displays the regression output for company industry and cumulative abnormal returns.

Table 11: Regression Analysis of Company Industry

INDUSTRY	Coefficient	Robust Std. Error
Energy Service	-0.001	0.0358
Financial Services	0.0143	0.0382
Health Care/Life Sciences	0.0136	0.4992
Industrial Goods	-0.0091	0.0357
Real Estate/Gaming/Leisure	0.0682	0.0435
Technology/Media/Telecommunications	0.0004	0.0331
Constant	-0.0237	0.0226
Observations	50	
R-squared	0.041	
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		
Consumer Retail Industry omitted		

Table 11 demonstrates there is no significant correlation between a company's industry and cumulative abnormal returns. This is further supported by the coefficients of each industry, as they are very low in magnitude.

D. Conclusion

Through an in-depth analysis of the data and results, it is evident that on average, the sample of acquisitions resulted in negative cumulative abnormal returns for the acquiring firm's shareholders. While the entire sample did not experience significant cumulative abnormal results resulting from an event announcement, there were nine acquisitions that realized statistically significant cumulative abnormal returns during both the immediate and short-term event windows. Furthermore, it was found that there is a significant negative correlation between the transaction value of acquisitions and cumulative abnormal returns. The conclusions drawn about the relationship between event announcements and cumulative abnormal returns to the shareholders of the acquiring firms are consistent with previous literature on mergers and acquisitions that find acquiring firms experience insignificant, but often negative returns resulting from a deal. Furthermore, they demonstrate the necessity of further research on factors that influence the wealth effects of mergers and acquisitions to buying firms.

CHAPTER VI

CONCLUSION

A. Summary of Findings

Mergers and acquisitions remain the primary means of corporate growth for companies seeking to generate inorganic growth. While their popularity is on the rise, the performance of deals is mixed. Prior research on mergers and acquisitions has relied on the response of the stock market to indicate the wealth effects that arise from a deal. The stock market reaction following a merger or acquisition announcement represents the changes in expected returns, or future cash flows, that will be realized by the shareholders of the involved firms. Thus, the market reaction serves as a proxy for the expected value investors believe will result from a deal. In this thesis, I evaluated the value generated to shareholders by US acquisitions and mergers announced between 2005 and 2009. Utilizing event study methodology, two event windows centered around the announcement date were constructed and cumulative abnormal returns were analyzed.

Through a comprehensive analysis of the data, the following conclusions were reached. First, it was found that a majority (over 60%) of acquisitions led to negative cumulative abnormal returns for the shareholders in both event windows. Of this majority, only less than five acquisitions led to CARs that were statistically different from zero. Therefore, it can be concluded that merger and acquisition announcements led to insignificant cumulative abnormal returns, which were more than likely negative for the shareholders of the acquiring firms. When comparing the cumulative abnormal returns of the immediate event window (-2 days to +2 days)

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and the short-term event window (-30 days to +30 days), it was found that shareholders of the acquiring firms experienced cumulative abnormal returns that were of a higher magnitude during the short-term event window. Possible explanations for this could be that over a longer period of time, investors' confidence about the expected value generated by the deal decreases. Another conclusion drawn from the analysis of data is there are characteristics of mergers and acquisitions that are related to the deal's performance. This thesis examined two of those characteristics: transaction value and industry. Transaction value had a significant, negative correlation with cumulative abnormal returns indicating that as transaction value increases, cumulative abnormal returns were likely to become more negative. Furthermore, it was concluded that company industry did not have any significant correlation with cumulative abnormal returns.

B. Limitations of Research

This thesis examines the value generated resulting from a merger or acquisition announced between 2005 and 2009 involving US firms. It focuses primarily on the market's reaction to the announcement and consequently how shareholders are impacted. While this is indicative of what investors believe the expected value will be resulting from the deal, there are multiple other stakeholders affected by a merger or acquisition. Possible stakeholders include employees of the firms and customers. This thesis neglects to evaluate the value returned to these groups, and is thus not a complete analysis of the deal's performance.

Furthermore, this thesis evaluated 50 US mergers and acquisitions that occurred between 2005 and 2009. There are two implications of the sample used: size and time period. First, the sample size was very small, and therefore may not accurately represent the wealth effects of the population of mergers and acquisitions. In addition, it can be more difficult to detect significance in a sample when it is small. This could result in significant differences among the data going unnoticed. In addition to the size of the sample, the time period from which the data was collected likely has implications. The time period 2005-2009 was chosen based on the lack of available data for the analysis, but includes the financial crisis of 2008, which had substantial and widespread detrimental effects on the stock market. While it can be assumed that all companies in the sample were negatively impacted by the financial crisis, there are some industries that were likely affected more than others. It is difficult to control for these confounding effects, which may have skewed the data in a particular direction.

C. Suggestions for Future Research

There are multiple possible avenues for future merger and acquisition research. One possible approach would be to evaluate the value generated from a deal through multiple event windows. This thesis looked at an immediate window and a short-term window centered around the deal announcement, and found a substantial difference in the returns realized by shareholders. It would be valuable to examine this variance more carefully, and expand it to other event windows as well to identify what factors drive the differences in value created

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over varied time periods. Another potential avenue for future research would be to examine the effects of mergers and acquisitions in different countries. This thesis limited the sample to include only deals involving US companies, but it could be interesting to determine if the value generated by deals varies across countries as a result of regulation, investor perceptions, or other reasons. A final suggestion for future research involves broadening the value analysis to groups other than shareholders. This could provide a more comprehensive understanding of how mergers and acquisitions impact different stakeholders, and provide a more thorough examination of the value generated by mergers and acquisitions.

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TABLES AND FIGURES

Table 1: Distribution of Sample Across Industries

Industry	# of Companies from Sample
Consumer Retail	9
Energy Service	5
Financial Services	9
Health Care/Life Sciences	6
Industrial Goods	2
Real Estate/Gaming/Leisure	3
Technology/Media/Telecommunications	16

Table 2: CAR for Immediate Event Window

Company	CAR	T-Statistic
Procter & Gamble Co	-6.592%	-3.500**
SBC Communications Inc	-1.430%	-0.3181
Boston Scientific Corp	-1.253%	-0.247
Duke Energy Corp	-5.694%	-1.994**
Federated Department Stores (M)	5.394%	0.694
ChevronTexaco Corp	-2.414%	-0.361
Bank of America Corp	-4.113%	-1.632
MetLife Inc	-3.469%	-1.598
Verizon Communications Inc	-0.546%	-0.895
Cisco Systems Inc	-2.393%	-0.908
Boeing Co	0.345%	0.135
Capital One Financial Corp	-5.356%	-0.551
Thermo Electron Corp	-2.036%	-0.665
Motorola Inc	3.984%	2.191**
Home Depot Inc	4.842%	1.61
Bank of America Corp	-0.858%	-0.908
Johnson & Johnson	-4.059%	-2.326**
Rite Aid Corp	-4.168%	-0.321
Walt Disney Co	-3.932%	-1.184
CVS Corp	-8.299%	-1.151
Coca-Cola Co	2.549%	2.183**
Transocean Inc	8.599%	1.802*
National Oilwell Varco Inc	-5.795%	-0.699
Oracle Corp	-2.657%	-0.987
Microsoft Corp	-1.970%	-1.212
Bank of America Corp	-2.563%	-1.467
Cisco Systems Inc	0.643%	0.365
UnitedHealth Group Inc	-0.638%	-0.229
IHOP Corp	12.853%	1.512
Berkshire Hathaway Inc	3.535%	1.078
Hewlett Packard Co	-6.559%	-0.731
The JM Smucker Co	-0.264%	-0.085
The Dow Chemical Co	-6.895%	-1.436
CVS Health Corp	0.011%	0.005
CME Group Inc	-5.052%	-0.923
International Paper Co	-14.759%	-1.455
Boston Properties Inc	-0.470%	-0.199
Wells Fargo & Co	20.842%	2.361**
Brocade Commun Sys Inc	-25.954%	-1.116
Verizon Wireless Inc	2.179%	0.486
Oracle Corp	3.971%	1.113
DirecTV Group Inc (ATT)	0.581%	0.377
MetLife Inc	-11.400%	-8.581**
Exxon Mobil Corp	-7.042%	-1.564
Comcast Corp	16.778%	1.931*
Simon Property Group Inc	0.972%	0.216
Walt Disney Co	-2.704%	-0.976
Xerox Corp	-17.273%	-0.995
Pfizer Inc	-16.278%	-1.473
Express Scripts Inc	18.211%	1.044
Average CAR for Sample	**-1.572%**	

Table 3: CAR for Short-Term Event Window

Company	CAR	T-Statistic
Procter & Gamble Co	2.259%	0.326
SBC Communications Inc	-5.810%	-0.999
Boston Scientific Corp	8.782%	0.719
Duke Energy Corp	-2.081%	-0.34
Federated Dept. Stores	1.108%	0.092
ChevronTexaco Corp	-2.118%	-0.193
Bank of America Corp	-11.528%	-2.441**
MetLife Inc	-1.690%	-0.231
Verizon Communications Inc	-9.565%	-1.379
Cisco Systems Inc	4.296%	0.506
Boeing Co	1.835%	0.215
Capital One Financial Corp	-0.981%	-0.084
Thermo Electron Corp	-12.542%	-1.65*
Motorola Inc	-1.923%	-0.179
Home Depot Inc	3.465%	0.419
Bank of America Corp	-10.434%	-2.184**
Johnson & Johnson	14.104%	2.532**
Rite Aid Corp	-17.201%	-0.918
Walt Disney Co	14.240%	1.339
CVS Corp	-34.122%	-1.981**
Coca-Cola Co	3.225%	0.685
Transocean Inc	3.708%	0.289
National Oilwell Varco Inc	-35.346%	-1.407
Oracle Corp	3.375%	0.26
Microsoft Corp	3.812%	0.646
Bank of America Corp	-0.357%	-0.072
Cisco Systems Inc	-11.020%	-1.46
UnitedHealth Group Inc	9.636%	0.909
IHOP Corp	10.069%	0.718
Berkshire Hathaway Inc	0.680%	0.054
Hewlett Packard Co	6.009%	0.531
The JM Smucker Co	-8.721%	-0.67
The Dow Chemical Co	-17.139%	-1.739
CVS Health Corp	-16.659%	-1.548
CME Group Inc	-25.498%	-1.052
International Paper Co	-11.688%	-0.744
Boston Properties Inc	-5.641%	-0.509
Wells Fargo & Co	67.610%	1.884*
Brocade Commun Sys Inc	-12.588%	-0.424
Verizon Wireless Inc	20.169%	2.186**
Oracle Corp	-2.752%	-0.165
DirecTV Group Inc	-19.188%	-1.851*
MetLife Inc	-24.917%	-1.674*
Exxon Mobil Corp	-0.577%	-0.087
Comcast Corp	-2.788%	-0.199
Simon Property Group Inc	-4.654%	-0.356
Walt Disney Co	-9.929%	-0.975
Xerox Corp	-34.209%	-1.547
Pfizer Inc	-23.881%	-1.467
Express Scripts Inc	3.932%	0.154
Average CAR for Sample	**-3.905%**	

Table 4: Regression Analysis of CAR for Immediate Event Window

Variable	Coefficient
Constant	-0.0157
	(0.012)
Observations	50
R-squared	0.000
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 5: Regression Analysis of CAR for Short-Term Event Window

Variable	Coefficient
Constant	-0.0390
	(0.0229)
Observations	50
R-squared	0.000
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 6: Differences in CAR by Transaction Value

Company	Transaction Value	CAR	T-Statistic
PANEL A			
IHOP Corp	1,931.602	12.853%	1.511
Boeing Co	2,057.10	0.345%	0.135
Simon Property Group Inc	2,325.00	0.972%	0.216
Brocade Commun Sys Inc	2,410.448	-25.954%	-1.116
UnitedHealth Group Inc	2,425.343	-0.638%	-0.229
CVS Health Corp	2,637.421	0.011%	0.005
Cisco Systems Inc	3,090.519	0.643%	0.365
Bank of America Corp	3,300.00	-0.858%	-0.908
The JM Smucker Co	3,300.00	-0.264%	-0.085
Rite Aid Corp	3,470.00	-4.168%	-0.321
PANEL B			
Home Depot Inc	3,475.355	4.842%	1.61
Motorola Inc	3,880.468	3.984%	2.191**
Boston Properties Inc	3,949.00	-0.470%	-0.199
Walt Disney Co	3,958.354	-2.704%	-0.976
Coca-Cola Co	4,100.00	2.549%	2.183**
Berkshire Hathaway Inc	4,500.00	3.535%	1.078
Express Scripts Inc	4,675.00	18.211%	1.044
International Paper Co	6,000.00	-14.759%	-1.455
Microsoft Corp	6,333.117	-1.970%	-1.212
Cisco Systems Inc	6,865.722	-2.393%	-0.908
PANEL C			
Oracle Corp	7,305.203	3.971%	1.113
National Oilwell Varco Inc	7,513.454	-5.795%	-0.699
Walt Disney Co	7,531.739	-3.932%	-1.184
CME Group Inc	7,555.372	-5.052%	-0.923
Oracle Corp	8,056.049	-2.657%	-0.987
Xerox Corp	8,374.197	-17.273%	-0.995
Verizon Communications	8,495.595	-0.546%	-0.895
Duke Energy Corp	8,832.943	-5.694%	-1.994**
Thermo Electron Corp	10,291.785	-2.036%	-0.665
MetLife Inc	11,694.656	-3.469%	-1.598

Table 7: Differences in CAR by Transaction Value (contd.)

Company	Transaction Value	CAR	T-Statistic
PANEL D			
Hewlett Packard Co	12,565.034	-6.559%	-0.731
SBC Communications Inc	14,732.64	-1.430%	-0.318
Wells Fargo & Co	15,112.754	20.842%	2.361**
Capital One Financial Corp	15,132.87	-5.356%	-0.551
DirecTV Group Inc (ATT)	15,243.05	0.581%	0.377
The Dow Chemical Co	15,513.132	-6.895%	-1.436
MetLife Inc	15,543.544	-11.400%	-8.581**
Federated Department Stores	16,465.871	5.394%	0.694
Johnson & Johnson	16,600.00	-4.059%	-2.326**
Transocean Inc	17,298.661	8.599%	1.802*
PANEL E			
ChevronTexaco Corp	18,718.509	-2.414%	-0.361
Bank of America Corp	21,000.00	-2.563%	-1.467
Comcast Corp	23,500.00	16.778%	1.931*
CVS Corp	26,293.576	-8.299%	-1.151
Boston Scientific Corp	27,861.289	-1.253%	-0.247
Verizon Wireless Inc	28,100.00	2.179%	0.486
Bank of America Corp	35,810.268	-4.113%	-1.632
Exxon Mobil Corp	40,298.142	-7.042%	-1.564
Procter & Gamble Co	54,906.807	-6.592%	-3.500**
Pfizer Inc	67,285.695	-16.278%	-1.473

Table 8: Regression Analysis of Transaction Value

Variables	Coefficient
Transaction Value	-0.0013*
	(0.001)
Constant	0.0011
	(0.016)
Observations	50
R-squared	0.043
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 9: Differences in CAR by Industry

Company	Industry	CAR	T-Statistic
CVS Health Corp	Consumer Retail	0.011%	0.005
The JM Smucker Group	Consumer Retail	-0.264%	-0.085
Rite Aid Corp	Consumer Retail	-4.168%	-0.321
Home Depot Inc	Consumer Retail	4.842%	1.61
Coca-Cola Inc	Consumer Retail	2.549%	2.183**
International Paper Co	Consumer Retail	-14.759%	-1.455
Federated Dept. Stores	Consumer Retail	5.394%	0.694
CVS Corp	Consumer Retail	-8.299%	-1.151
Proctor & Gamble Co	Consumer Retail	-6.592%	-3.5**
National Oilwell Varco Inc	Energy Service	-5.795%	-0.699
Duke Energy Corp	Energy Service	-5.694%	-1.994**
Transocean Inc	Energy Service	8.599%	1.802*
Chevron Texaco Corp	Energy Service	-2.414%	-0.361
Exxon Mobil Corp	Energy Service	-7.042%	-1.564
UnitedHealth Group Inc	Health Care/Life Sciences	-0.638%	-0.229
Express Scripts Inc	Health Care/Life Sciences	18.211%	1.044
Thermo Electron Corp	Health Care/Life Sciences	-2.036%	-0.665
Johnson & Johnson	Health Care/Life Sciences	-4.059%	-2.326**
Boston Scientific Corp	Health Care/Life Sciences	-1.253%	-0.247
Pfizer Inc	Health Care/Life Sciences	-16.278%	-1.473
Boeing Co	Industrial Goods	0.345%	0.135
The Dow Chemical Co	Industrial Goods	-6.895%	-1.436
IHOP Corp	Real Estate/Gaming/Lesiure	12.853%	1.512
Simon Property Group Inc	Real Estate/Gaming/Lesiure	0.972%	0.216
Boston Properties Inc	Real Estate/Gaming/Lesiure	-0.470%	-0.199

Table 10: Differences in CAR by Industry (contd.)

Company	Industry	CAR	T-Statistic
Bank of America Corp	Financial Services	-0.858%	-0.908
Berkshire Hathaway Inc	Financial Services	3.535%	1.078
CME Group Inc	Financial Services	-5.052%	-0.923
MetLife Inc	Financial Services	-3.469%	-1.598
Wells Fargo & Co	Financial Services	20.842%	2.361**
Capital One Financial Corp	Financial Services	-5.356%	-0.551
MetLife Inc	Financial Services	-11.400%	-8.58**
Bank of America Corp	Financial Services	-2.563%	-1.467
Bank of America Corp	Financial Services	-4.113%	-1.632
Brocade Commun Sys Inc	Technology/Media/Telecom	-25.954%	-1.116
Cisco Systems Inc	Technology/Media/Telecom	0.643%	0.365
Motorola Inc	Technology/Media/Telecom	3.984%	2.191**
Walt Disney Co	Technology/Media/Telecom	-2.704%	-0.976
Microsoft Corp	Technology/Media/Telecom	-1.970%	-1.212
Cisco Systems Inc	Technology/Media/Telecom	-2.393%	-0.908
Oracle Corp	Technology/Media/Telecom	3.971%	1.113
Walt Disney Co	Technology/Media/Telecom	-3.932%	-1.184
Oracle Corp	Technology/Media/Telecom	-2.657%	-0.987
Xerox Corp	Technology/Media/Telecom	-17.273%	-0.995
Verizon Communications	Technology/Media/Telecom	-0.546%	-0.895
Hewlett Packard Co	Technology/Media/Telecom	-6.559%	-0.731
SBC Communications Inc	Technology/Media/Telecom	-1.430%	-0.318
DirecTV Group Inc	Technology/Media/Telecom	0.581%	0.377
Comcast Corp	Technology/Media/Telecom	16.778%	1.931*
Verizon Wireless Inc	Technology/Media/Telecom	2.179%	0.486

Table 11: Regression Analysis of Company Industry

INDUSTRY	Coefficient	Robust Std. Error
Energy Service	-0.001	0.0358
Financial Services	0.0143	0.0382
Health Care/Life Sciences	0.0136	0.4992
Industrial Goods	-0.0091	0.0357
Real Estate/Gaming/Leisure	0.0682	0.0435
Technology/Media/Telecommunications	0.0004	0.0331
Constant	-0.0237	0.0226
Observations	50	
R-squared	0.041	
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		
Consumer Retail Industry omitted		

Figure 1: Formal Definition of Event Study Windows

Estimation Window   Event Window   Post-Event Window
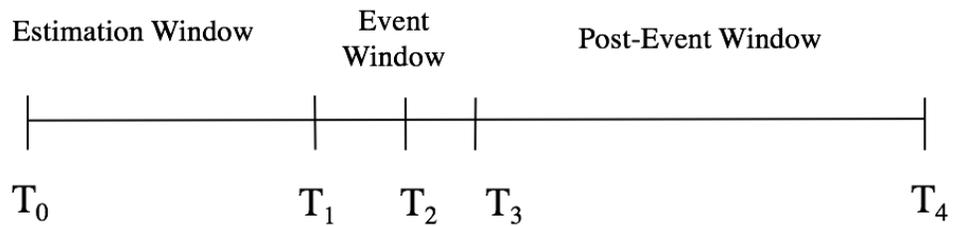
T_0 T_1 T_2 T_3 T_4

Figure 2: Transaction Value vs. Cumulative Abnormal Returns