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Why Pay More? The Effects of CEO Creativity and Overconfidence on Acquisition Premiums

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Abstract

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This study explores the effect of CEO characteristics, specifically creativity and overconfidence, on M&A premiums. Acquisition premiums, defined as the transaction cost paid by acquiring firms above the actual value of the target firm which they are acquiring, are an important but insufficiently studied concept in the finance and strategy literatures. Drawing from upper echelons theory, this study posits that acquiring firms with highly creative and overconfident CEOs will pay higher acquisition premiums due to the CEOs ability to recognize non-obvious synergistic value and their high willingness to pursue it. Considering that acquisition events are highly uncertain, it is argued the divergent thinking and domain-relevant knowledge held by creative CEOs will help them to find hidden synergistic opportunities not recognized by other managers, and similarly that overconfident CEOs will over-estimate their abilities to realize these synergies. Combined with uncertainty about the 'correct' valuation of target firms, the effect will be that creative and overconfident CEOs pay higher premiums due to higher expected returns. The results support our hypotheses that creativity is positively related with acquisition premiums, and that this relationship is

strengthened by competition and when the acquiring CEO leads a high-tech firm. The hypotheses concerning CEO overconfidence and acquisition premiums are not supported. This paper provides an important academic contribution as the first paper to intersect the creativity and acquisition premium literatures in order to explain acquisition premiums.

Keywords: Mergers and Acquisitions, Acquisition Premiums, Creativity, Overconfidence, Upper Echelons Theory

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1. Introduction

When AT&T announced that they would acquire Time Warner on October 22nd, 2016, the telecoms giant indicated that they would pay $85.4 billion for the acquisition, or $107.5 per share. Just one month prior, on September 22nd, 2016, the Time Warner stock price had closed at only $75 per share (Yahoo Finance). What caused AT&T to seemingly overpay on their acquisition by over a 40% margin?

This phenomenon is called 'acquisition premium', and it is all too common in the mergers and acquisitions (M&A) market. Acquisition premiums paid in American M&A transactions average around 30 to 50 percent, with many having 100 percent premiums over stock value (Laamanen, 2007). Data from the present study is consistent with these findings. On top of this, there is also significant empirical evidence showing that high acquisition premiums lead to poor post-merger firm performance (Hayward & Hambrick, 1997; Sirower, 1994; Varaiya & Ferris, 1987). Acquisition premiums are common, and they often result in poor firm performance. This begs the question: Why do acquiring firms pay more in acquisitions than target firms are actually worth?

Acquisition premiums have become a topic of interest in the finance and strategic management fields since the 1990's, however the corpus of

literature remains incomplete. Considering the significant prices of these premiums and the negative effects that they can have on post-merger performance, there has been surprisingly little academic research on antecedents of acquisition premiums. Research proposing the potential realization of synergies (Sirower, 1997; Slusky & Caves, 1991) and the effect of the external environment (Beckman & Haunschild, 2002; Haunschild, 1994; Malholtra, et. al (2015) as reasons for high acquisition premiums have found inconsistent results. The most promising emerging perspective draws from upper echelons theory and proposes that the role of the acquiring firms' CEO may be a significant determining factor for M&A premiums. As M&A valuations are highly uncertain situations, the subjective judgements and decisions made by CEO's are likely to have a great effect on the transaction price of acquisition (Malholtra et al., 2015).

This paper proposes that CEO creativity and CEO overconfidence are driving factors in acquisition price premium decisions. This paper argues that CEO creativity will be positively related to acquisition premiums because a creative CEO's divergent thinking abilities and domain relevant skills will help them to recognize non-obvious, hidden synergy potential in acquisitions. Furthermore, this paper will argue that CEO overconfidence is also positively related to acquisition premiums as CEO's overestimate their ability to achieve post-acquisition synergies. Finally, the moderating effects

of bidding competition and also on the industry type of the acquiring firm (specifically, whether or not it is in a high-tech industry), will be considered.

This paper is the first to intersect both the literatures of creativity and acquisition premium, and thus should be understood as a preliminary study into a new and potentially fruitful academic perspective. Although CEO creativity has not yet been hypothesized as a determining factor of acquisition premiums, the growing need for firms to achieve innovation through M&A's (Kim, et al., 2011) make this an important direction of study. Therefore, proposing creativity as a cause of acquisition premium represents the major contribution of this study. This paper represents an extension of the dissertation by Midub Kang entitled "The Effect of CEO's Individual Creativity on M&A Target Evaluation and Acquisition Premium" (Kang, 2020) and I am grateful to him for allowing me to continue his work.

II. Theory and Hypotheses

2.1. Acquisition Premiums

Over the last three decades, acquisition premium has become an important topic of study in both the strategic management and corporate finance fields. As mergers and acquisitions are a significant driver of capital flow in markets, the study of price premiums in these transactions is

important. Despite this, research has shown that acquiring firms consistently pay premiums above the market value of the firms that they are acquiring. (Varaiya & Ferris, 1987; Laamanen, 2007) Even more surprising is that acquisition premiums are consistently found to be related to negative post-acquisition performance (Hayward & Hambrick, 1997; Sirower, 1994; Varaiya & Ferris, 1987). Despite these counterintuitive results, extant research on the determinants acquisition premiums over the last three decades has been lacking.

Within the acquisition premium literature, three different literature streams propose unique hypotheses in order to explain premiums. These are the post-acquisition synergy perspective, the external environment perspective, and the CEO perspective.

The first perspective on the causes of acquisition premium is the potential for post-acquisition synergies. Synergies refer to the efficiencies, economies of scale, and decreased redundancies which may occur when two firms combine their resources and capabilities. The synergy perspective is thus routed in the resource-based view of the firm, which contends that firm performance is dependent on the deployment of unique, inimitable, and rare resources to economic ends (Barney, 1991). The most influential early contribution to this literature is Sirower's (1994) paper which studied the effect of acquisition premiums on post-merger performance. Sirower found

that high acquisition premiums adversely affected shareholder returns for up to four years after mergers. (Sirower, 1994). Similarly, the synergy perspective argues that when an acquiring firm acquires a target firm, the additional value stemming from the potential of synergy creation drives acquisition premiums up. (Slusky & Caves, 1991). In line with the synergy perspective is the capabilities-based perspective on acquisitions, which argues that buying firms seek to acquire firms in order to gain new capabilities from, or to improve the capabilities of target firms (Malholtra, et al. 2015). Kim, et al. (2011) argue that firms are pressured to innovate and to acquire new capabilities and resources through M&As. While the synergy perspective of M&A premium is theoretically sound, it has received inconsistent empirical support. Slusky & Caves (1991) found that 'real' synergies (as measured by the relatedness of business) are not related to synergies, whereas financial synergies (ie. debt), are. In fact, Sirower found that high acquisition premiums adversely affected shareholder returns for up to four years after mergers. (Sirower, 1994).

Even without considering the inconclusively of its empirical support, the synergies perspective is limited by its fundamental assumption that synergies are necessarily related to business activity or industry relatedness. With the exception of Slusky & Caves (1991), all other authors of the synergies perspective assumed that synergies necessarily arose

when the acquiring and target firm operated in the same industry, or had related business activities. This overly simplistic view of synergies represents the greatest weakness of this perspective. This paper will challenge this fundamental assumption by positing that while industry relatedness might be related to superficial, 'obvious' synergies, deeper, value-adding synergies can be recognized only by creative and overconfident CEOs.

Shifting the perspective away from simply the acquiring and target firms, researchers in the external environment began to consider external factors such as interorganizational networks which may influence M&A premiums. This perspective is rooted on the assumption that M&A events are fundamentally uncertain, with information asymmetries arising between acquiring firms, target firms, and broader market actors (Laamanen, 2007). Institutional isomorphic theory dictates that in uncertain situations, mimetic isomorphism will cause organizations to model themselves after and copy the decisions of other organizations (DiMaggio & Powell, 1983). Due to the high levels of uncertainty and subjectivity surrounding M&A valuation, acquiring firms are therefore likely to 'anchor' their decisions onto the previous decisions made by other firms. (Tversky & Kahneman, 1974; Beckman & Haunschild, 2002; Haspeslagh & Jemison, 1991). For example, the previous M&A experience of firms which are associated with a focal

firm through board member interlocks was found to decrease acquisition premiums for the focal firm (Beckman and Haunschild, 2002). In addition to board member interlocks, Haunschild (1994) found the and advising influence of investment banks which had previously overseen similar acquisitions influenced focal acquisition premiums, especially when target firms have highly uncertain valuations. In fact, even the acquisitions of firms which are entirely unassociated with the focal firm can influence M&A premiums. Malholtra et. Al. (2015) found that acquisition premiums are related to previous acquisition premium decisions in the same market. This suggests that previous M&A events in the external environment acted as anchors for focal acquisition decisions, as effect were stronger for acquisitions that were more recent and similar in size.

This perspective, focusing on external environment effects on firm acquisition premiums, falls victim to neglecting the individual decision-making capacities of CEO's and their firms. While arguments from this perspective are empirically convincing, authors in this perspective have failed to theorize and adequately account for firm-specific factors which determine acquisition premiums.

The final perspective on the determinants of acquisition premium evokes upper echelons theory by focusing on the individual characteristics of the CEO of the acquiring firm. Upper echelons theory maintains that

organization outcomes can be viewed as "reflections of the values and cognitive biases of powerful actors in the organization" (Hambrick & Mason, 1984). Specifically, the characteristics of the CEO and the top management team are highly influential in determining firm decision-making (Hambrick & Mason, 1984). In the context of M&A literature, the result is that acquisitions are regarded as individual decisions of CEOs (Roll, 1986). Fralich & Papadopolous (2018) found that higher CEO power correlated with lower acquisition premiums. Both Roll (1986) and Hayward & Hambrick (1997) provide evidence that CEO overconfidence (or 'hubris') positively influences premiums (this is examined in further detail in 2.3. Individual Overconfidence). This paper seeks to contribute to this CEO-based perspective of acquisition premium by positing that CEO creativity and overconfidence will positively affect acquisition premium prices.

2.2. Individual Creativity

In the context of business organizations, creativity is recognized as a critical antecedent of innovation (Mumford & Gustafson, 1988) and is therefore of interest to both practicing managers and business scholars. In literature spanning from psychology to strategic management, creativity has been studied on multiple levels of analysis, including that of the organization (Bharadwaj & Menon, 2000; Woodman et al, 1993), the team (Hoever et al.,

2017; Park et al., 2020), and the individual (Harrison & Dossinger, 2017). While research on individual creativity in organizations has focused largely on worker creativity, this paper argues that CEO's roles and responsibilities necessitate creativity. This is because the creative process, or "the combination of idea generation and option evaluation" (Basadur et al., 1982), closely matches the roles and responsibilities of CEOs, particularly in the highly uncertain context of mergers and acquisitions.

Individual creativity is associated with a variety of related characteristics and personalities (Helson, 1996). Lumsden & Findlay (1986) refer to creativity as the "constellation of personality and intellectual traits shown by individuals". Among these traits associated with creativity, divergent thinking and domain specific knowledge are of particular relevance to the present study.

Divergent thinking is a creative process which allows individuals to imagine novel solutions to problems, which are essentially creative in their novelty (Runco, 2007). Divergent thinking is classified as being explorative, free-form, and playful. It has been defined as both "the ability to generate multiple associations to an idea in a random, unorganized way" (Kleibeuker, et al. 2013) and as "the kind of thinking that leads to original ideas." (Runco & Acar, 2012)

The concepts of divergent thinking, and its counterpart convergent

thinking, were first examined by J.P. Guilford in his 1956 work, *The Structure of Intellect*. According to Guilford, in the case of convergent thinking, there is "usually one conclusion or answer that is regarded as unique, and thinking is channeled or controlled in the direction of that answer. . . In divergent thinking, on the other hand, there is much searching or going off in various directions" (Guilford, 1956). Guilford adds divergent thinking is associated with originality, elaboration, and spontaneous flexibility and is used in creative processes where there is no one unique, correct solution (Guilford, 1956).

Creativity and divergent thinking are closely related concepts. Creative solutions are by nature unique, novel, and unconventional, which are the same solutions arrived at by divergent thinking processes. In their study of creative individuals, Gibson, et al. (2008) found that creative individuals show higher divergent thinking than non-creative individuals, and that "creative people have superior ability to conceptualize novel products and combine ideas in original ways." (Gibson, et al. 2008). According to Williams (2004), "divergent thinking is essential to creative performance in organizations", and the terms creativity and divergent thinking are in fact often used synonymously in psychology literature. While not all researchers agree that divergent thinking and creativity are synonymous, there is general agreement that the two concepts are at least

closely related. Runco & Acar (2012) argue that while divergent thinking is not equivalent to creativity, it is indeed a reliable, valid indicator of creative potential. For these reasons, divergent thinking is understood as one of the foundations of individual creative ability (Runco, 2007).

Domain relevant skills (also referred to as domain specific knowledge) is another integral component of individual creativity (Amabile, 1988; Amabile, et al., 1996). Domain relevant skills can include facts, knowledge, technological skills, or special talents in a particular domain, occupation, or expertise. (Amabile et al., 1996). Amabile (1988) claims that domain-relevant skills are a crucial component of her componential theory of individual creativity and form the "basis from which any performance must proceed". Creativity is related to the idea of domain relevant skills because decision-making response possibilities stem from an individual's experience, and their former relevant knowledge guides their cognitive pathways as they solve tasks and make decisions (Amabile, 1988). Domain relevant skills allow individuals to break their cognitive sets and performative scripts, in turn allowing them to explore unconventional, creative pathways and outcomes (Amabile, 1988). Other scholars argue that not only is domain specific expertise significant, but it is in fact a necessary condition for creativity (Baer, 2015). While creativity is not required for domain-specific knowledge, domain-specific knowledge is in fact required

for creativity.

This paper posits that when CEOs are highly knowledgeable in a specific industry or field, their uncertainty about the valuation of the target firm will decrease. Knowledge decreases information asymmetries, as CEOs with domain-specific expertise will be able to more accurately assess the resources, capabilities, and investments of the target firm based on their experience in their own firm. This proposition is supported by Fralich & Papadopoulos (2018) who found that knowledgeable CEOs reduce acquisition premiums.

We posit that the higher the individual creativity of the acquiring firm's CEO, the higher the premium paid in the acquiring bid will be. The mechanisms which facilitate this relationship are the CEO's divergent thinking and domain specific knowledge, as well as information asymmetries. As the value of acquisition target firms is uncertain, M&A situations often create information asymmetries between the three key main stakeholders: the acquisition firm, the target firm, and the market (Laamanen, 2007). For this reason, CEOs responsible for price bidding are unlikely to be able to accurately value the target firms

Furthermore, we posit that CEOs with high levels of creativity will have biases and preferences which further increase the premium paid for acquisitions. In the case of divergent thinking, we argue that creative CEOs

will be more likely to imagine novel, synergistic outcomes of their acquisitions. Divergent thinking will allow creative CEOs to consider potential 'hidden' synergies and positive business outcomes that other non-creative CEOs could not. The possibility of attaining these novel synergies will drive up the prices that creative CEOs are willing to pay for acquisition premiums. Additionally, the domain specific skills that creative CEO's have will make them more well-versed and knowledgeable in their field, being able to overcome information asymmetries better than other market actors can. In the case that information asymmetries cause a target firm to be undervalued, a creative CEO with high domain relevant skills will be able to more accurately assess the true, higher value of the target, resulting in a higher acquisition premium.

Hypothesis 1: The creativity of the acquiring firm's CEO will be positively related to the acquisition premium price.

2.3. Individual Overconfidence

CEO Overconfidence (otherwise referred to as CEO Hubris) is also posited to influence acquisition premiums. As upper echelons theory predicts, there are various studies which find firm level effects of CEO overconfidence. For instance, Humphrey-Jenner, et al. (2014) found that

overconfident CEOs were more likely to take compensation in the form of stock options. Malmendier and Tate (2008) found that corporate investment portfolios were influenced by CEO over-confidence, as CEOs were more likely to invest only when their firms had cash and were not reliant on raising external funds. Examining overconfident CEOs in acquisition scenarios, Ferris, et al. (2013) found that overconfident CEOs made more offers and bid on unrelated firms more frequently than non-overconfident CEOs.

Applying CEO overconfidence to the context of M&A premiums, it was found that overconfidence is positively related with the payment of bid premiums (Roll, 1986; Hayward & Hambrick, 1997). Roll (1986) developed the 'hubris hypothesis' as the first to recognize that hubris, or 'excessive pride or self-confidence', influences premiums. Roll argued that "If there actually are no aggregate gains in takeover, the phenomenon [of premiums] depends on the overbearing presumption of bidders that their valuations are correct" (Roll, 1986). Additionally, since M&As are rare events, any given CEO may perform only a few of them in their career and are therefore unable to adequately learn from past misevaluations (Roll, 1986).

Building on the hubris hypothesis, Hayward & Hambrick (1997) confirmed that excessive CEO hubris increased acquisition premiums. The underlying logic is that CEOs with high hubris (i.e., those who are overconfident) will overestimate their ability to realize positive performance

outcomes in post-acquisition situations. Therefore, overconfident CEO's will over-invest in acquisitions as they see them as worthwhile investments considering the positive post-acquisition performance which they are confident that they can achieve (Doukas & Petmezas, 2007). Chatterjee & Hambrich (2011) found similar results pertaining to CEO Narcissism, a concept which is highly related to overconfidence. Particularly in the context of valuation uncertainty of M&As, CEOs are likely to turn to intuition for making decisions, rather than rationality (Doukas & Petmezas, 2007). Not only were acquisition premiums higher for overconfident CEOs, but in fact acquisitions made by such CEO's exhibited poorer long-term performance than those made by rational CEO's (Doukas & Petmezas, 2007). Considering these results, we hypothesize that over-confident CEO's will overestimate their post-acquisition managerial ability, and therefore be willing to pay higher acquisition premiums in order to try to achieve improved performance in the future.

Hypothesis 2: The overconfidence of the acquiring firm's CEO will be positively related to the acquisition premium price.

2.4. Bidding Competition

The presence of bidding competition, or other potential acquiring

firms, is posited to positively affect the primary relationships between CEO creativity, CEO overconfidence, and acquisition premiums. In competitive decision-making situations, focal actors are required to "consider the contingent decisions of competitive actors" when making their own purchasing decisions (Zajac & Bazerman, 1991). Those who fail to consider the actions of competitors are liable to failures termed 'competitive blind spots', including the 'winners curse' (Zajac & Bazerman, 1991). The winners curse refers to the phenomenon wherein bidding competition drives up auction prices, resulting in the final 'winning' bid paying a price which is well above the market value of the auction target (Kagel, et al. 1989). Competitive blind spots including the winners curse exist due to uncertainty – when both the intentions of competitors and the value of the target item are uncertain, bidding competition is likely to result in high auction prices (Zajac & Bazerman, 1991).

The context of mergers and acquisitions is highly uncertain because the true value of the target firm is difficult to know with certainty. Thus, the presence of bidding competition is likely to increase the acquisition price, as potential acquiring firms are likely to succumb to competitive blind spots, including the winners curse. For these reasons, we hypothesize that:

Hypothesis 3a: The presence of bidding competition will positively

moderate the relationship in H1.

Hypothesis 3b: The presence of bidding competition will positively moderate the relationship in H1.

2.5. High-Tech Firms

This paper posits that the effect of CEO Creativity on acquisition premiums will be particularly pronounced in firms operating in high-technology focused industries. This is because constant innovation, invention, and reinvention are necessary for firm performance in the constantly changing environments of high-tech industries (Lapierre & Giroux, 2003). Rapid technological advancement and short product life cycles (Kim, et al. 2013) necessitate creativity in high-technology industries more so than in other sectors.

Considering the importance of creativity for survival and success in high-tech firms, the individual creativity of the CEOs of these organizations is likely to be of high importance. We posit that when CEOs are highly creative, and when the firm which they run is high-tech, the premium paid during acquisition is likely to be higher than it would be if the firm were not high-tech. In other words, whether or not an acquiring firm operates in a high-tech industry will affect the extent to which individual CEO creativity

influences acquisition premiums.

Hypothesis 4: The relationship in H1 will be positively moderated if the acquiring firm is a high-tech firm.

III. Methodology

3.1. Sample and Data

Our hypotheses are tested using data from M&A deals of public US firms from 2017 to 2019. This period of study was selected to be as recent as possible, while also avoiding the economic influences of the Coronavirus pandemic in 2020. Only acquisitions in which both the target and acquiring firms were publicly traded were considered in this study to ensure that firm value data could be accurately measured by stock prices. To avoid the effects of cross-border or cross-cultural factors, only US domestic acquisitions are considered. Data on 546 M&A events was collected from the SDC platinum database in our initial sample. Stock repurchases and instances where the acquiring and target firms were the same were removed. Next, the WRDS EXECUCOMP database was used to collect data on CEO's stock option ownership, and the COMPUSTAT database was used to collect stock price data. COMPUSTAT was then used again to obtain target firm

data in order to calculate values for the control variables. Finally, CEO letter to shareholder data was collected from sample company websites, or from annualreports.com. Only acquisitions with available data from every one of these sources were included in the study. Due to low levels of data availability for many firms across these multiple databases, the final sample size was reduced from 546 to 144 firms.

The results were calculated using a hierarchical multiple linear regression using IBM's SPSS. A total of five linear models were regressed and will be presented in this section.

3.2. Variables

Dependent Variable – Acquisition Premium

Acquisition Premium is defined as the acquiring price minus the target firm's pre-announcement market value, divided by the target firm's pre-announcement market value (Sirower, 1994; Laamanen, 2007). Data for the acquisition premium ratio relative to the target market price are derived from the SDC database. Acquisition rumors and information leakages can affect stock value of both target and acquisition firms, causing them to vary greatly in the period directly before the acquisition announcement. To avoid these effects, acquisition premium is often measured using the transaction value as a function of the target's market value 4 weeks before the M&A

announcement. This measure avoids possible exogenous price effects in the weeks leading up to the transaction and is consistent with other studies in the acquisition premium literature (Hayward & Hambrick, 1997, Malhotra et al., 2015).

Independent Variable – CEO Creativity

Individual CEO creativity data is derived through content analysis of CEO letters to shareholders, in the annual reports of acquiring firms published in the year of acquisition announcement. The content analysis methodology measures the frequency of nine keywords and their root words, divided by the total number of words in the CEO letters (Kang, 2020). The nine keywords are presented in table 1. Results were manually reviewed by the author to ensure their validity. This ensured that words such as 'inventory' would not be incorrectly coded as 'invent', or that 'value creation' would not be incorrectly coded as representing creativity. Data from CEO letter to shareholders were compiled directly from firms' 'investor relations' pages from their website, or from the website annualreports.com which stores the annual reports of public companies. Letters from the year of the M&A event were analyzed. While US public companies are required to publicly publish their 10K annual results documents, they are not required to publish a letter to shareholders. Typically, annual reports (and CEO letter

to shareholders) are only presented as additional, optional marketing materials which are included with, or to complement the 10K form. In the instances where annual reports did not contain letters to shareholders, the firms were removed from the sample.

By nature, creativity is both subjective and intangible, making it difficult to measure empirically. While this measurement of content analysis of CEO letters is by no means perfect, it can be considered a sufficiently accurate representation of the CEO's perception of their own creativity.

Content Analysis Keywords (9)	Creativity, Creation, Invent, Unique, Novel, Explore, Transform, Innovate, Unconventional

Table 1. Content Analysis Keywords

Independent Variable – CEO Hubris

CEO Hubris was measured using a measure called Holder67, first developed by Malmendier and Tate (2005, 2008, 2011) which has since been widely adopted in finance and strategy literature (Ahmed & Duellman, 2013; Humphrey-Jenner et al., 2014). Holder67 uses the timing of

executive stock option exercises to identify overconfidence. Holder67 measures whether CEOs continue to hold exercisable stock OPTIONS despite them being at least 67% in-the-money, for at least 2 years in a measurement of the previous five. When stocks are fully vested and exercisable (i.e., in-the-money), only CEOs who are confident in their ability to increase future firm performance (and therefore continue to increase the value of their stock options) will continue to hold their shares. Otherwise, rational non-overconfident CEOs would be expected to sell their shares. Holder67 is coded as a dummy variable with 1 for overconfident CEOs, and 0 for otherwise.

This measure is valid because CEO compensation, and therefore CEO wealth, is often highly related to company stock options (Malmendier & Tate 2005). Following agency theory, the sale of executive stock options is often restricted, thus making CEO's wealth largely dependent on the performance of the firm (Malmendier & Tate 2005, 2011). This means that CEO's portfolios are relatively undiversified, and that rational CEO's will sell their in-the-money stock options at the end of the vesting period. CEOs with high hubris, however, will continue to hold the stock if they are confident in their ability to achieve firm performance in the future.

Control Variables

Control variables for acquisition deal value, and whether payment was made via stock swaps are controlled for using data from the SDC database. Stock swap is measured as a binary variable, coded for 1 if present and 0 if not. Target firm characteristics including target sales, earnings per share, net income, debt, assets, value, and return on investment are controlled for using data from COMPUSTAT.

4. Results

Table 2 presents a summary of the descriptive statistics for our variable. 144 M&A events are included in our final sample. Consistent with previous findings that US acquisition premiums are generally 30−50% above the value of target firms (Laamanen, 2007), the mean acquisition premium value in our sample is 29.67%. Table 3 presents the correlations between variables in our study. Note that while *Creativity* is correlated with *Acquisition Premium* at .300, *CEO Confidence* is correlated at only .116, suggesting an initial low correlation between acquisition premiums and CEO overconfidence.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std.Dev.
Acq. Premium	144	29.67	29.14
CEO Creativity	144	36.24	32.66
CEO Confidence	144	0.354	0.479
Target Sales	144	3655.12	8605.86
Target EPS	144	0.97	5.93
Target N.I.	144	186.47	675.01
Target Debt	144	1770.62	5448.78
Target Asset	144	4136.39	9213.82
Target Value	144	5500.26	11139.45
Target ROE	144	1176.72	4646.69
Deal Value	144	7764.29	16083.53

Table 4 shows the results of the hierarchical multiple regression analysis. Model 1 tests for the effects of our control variables on the dependent variable. Model 2 introduces the independent effect of CEO creativity on acquisition premium, in order to test hypothesis 1.

Table 3. Matrix of Correlations

Variable Name	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Acquisition Premium	1.000															
(2) Creativity	0.300	1.000														
(3) Creativity x Competition	0.264	0.108	1.000													
(4) Creativity x High Tech	0.332	0.817	0.057	1.000												
(5) Confidence	0.116	0.086	0.065	0.140	1.000											
(6) Confidence x Competition	0.179	-0.079	0.455	0.014	0.282	1.000										
(7) Target Sales	0.008	0.138	0.032	0.083	0.031	-0.051	1.000									
(8) Target EPS	-0.019	-0.001	-0.015	-0.055	0.077	-0.013	0.157	1.000								
(9) Target Net Income	-0.053	-0.027	-0.037	-0.039	0.129	-0.038	0.474	0.249	1.000							
(10) Target Debt	-0.088	0.004	-0.037	0.023	0.055	-0.039	0.492	0.218	0.813	1.000						
(11) Target Assets	-0.030	0.018	0.056	-0.018	0.050	-0.058	0.474	0.150	0.690	0.754	1.000					
(12) Target Value	0.028	0.070	0.147	-0.006	0.094	-0.066	0.646	0.166	0.394	0.361	0.543	1.000				
(13) Target ROE	0.089	0.279	0.034	0.251	-0.070	-0.032	0.454	-0.009	-0.067	-0.017	0.148	0.451	1.000			
(14) Deal Value	-0.001	0.265	0.272	0.192	-0.002	0.068	0.497	0.077	0.277	0.154	0.428	0.520	0.487	1.000		
(15) Stock Swap Dummy	-0.182	-0.317	0.041	-0.453	-0.106	-0.108	-0.105	-0.095	-0.130	-0.121	-0.031	-0.018	-0.006	-0.161	1.000	
(16) Industry Relatedness	-0.093	0.069	-0.033	-0.016	-0.028	-0.150	-0.081	0.091	-0.010	0.081	0.063	0.009	0.029	0.000	0.156	1.000

Table 4. Regression Results

Model	(1)	(2)	(3)	(4)	(5)
CEO Creativity		**0.305*** **	0.089		
		(3.352)	(0.642)		
CEO Creativity x High Tech			**0.250*** **		
			(1.705)		
CEO Creativity x Competition			**0.311*** **		
			(3.766)		
CEO Overconfidence				0.100	-0.013
				(1.171)	(0.584)
CEO Overconfidence x Competition					**0.161* **
					(1.802)
					(1.802)
Target Sales	0.013	0.007	0.067	0.016	0.031
	0.099)	(0.055)	(0.548)	(0.123)	(0.238)
Target EPS	-0.011	-0.003	0.013	-0.015	-0.014
	(-0.127)	(-0.041)	(0.166)	(-0.166)	(-0.164)
Target N.I.	0.069	0.100	0.190	0.047	0.073
	(0.435)	(0.648)	(1.291)	(0.295)	(0.461)
Target Debt	-0.266	-0.297	**-0.392** **	-0.249	-0.284
	(-1.430)	(-1.651)	(-2.274)	(-1.334)	(-1.527)
Target Assets	0.146	0.167	0.208	0.146	0.165
	(0.928)	(1.105)	(1.449)	(0.933)	(1.060)
Target Value	0.036	0.068	0.022	0.019	0.035
	(0.286)	(0.563)	(0.193)	(0.152)	(0.275)
Target ROE	0.124	0.056	0.096	0.131	0.135
	(1.106)	(0.509)	(0.901)	(1.174)	(1.220)
Deal Value	-0.161	**-0.222* **	**-0.349*** **	-0.153	-0.190
	(-1.344)	(-1.892)	(-3.004)	(-1.270)	(-1.572)
Industry Relatedness	-0.048	-0.082	-0.021	-0.048	-0.023
	(-0.549)	(-0.963)	(-0.208)	(-0.551)	(-0.264)
Stock swap (dummy)	Included	Included	Included	Included	Included
N	144	144	144	144	144
Adj. R2	0.002	0.073	0.168	-0.006	-0.016

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Hypothesis 1 is supported, with *Creativity* showing a positive coefficient (.305) at a significance level of $P < 0.01$. This supports the argument that CEO creativity positively is related to acquisition premiums. Model 3 examines the positive moderating effects of bidding competition and acquiring firm tech concentration on the relationship in hypothesis 1. The moderator variable effects show positive correlations for both bidding competition (0.311) and high tech (0.250) on the relationship between creativity and premiums, both with statistical significance of $P < 0.01$. Thus, both hypotheses 3a and 4 are supported.

Model 4 demonstrates, however, that hypothesis 2 is not supported. The variable CEO Overconfidence was not found to have a statistically significant effect on acquisition premiums. Hypothesis 3b is tested in model 5, where the moderator variable of bidding competition is introduced to the primary relationship in hypothesis 2. With a positive coefficient, but a significance level of only $P > 0.1$, this hypothesis receives only partial support.

In summary, hypotheses 1, 3a, and 4 are supported, while hypothesis 2 is rejected and hypothesis 3b is partially supported. These results support the argument that CEO Creativity is positively related with acquisition premiums but fail to support the argument that CEO overconfidence is related in this same way.

5. Discussion and Conclusion

This study has attempted to bridge the gap between the theoretical perspectives in the acquisition premiums literature by combining CEO-level effects with the traditional synergies perspective, arguing that creative and overconfident CEO's will be more likely to recognize and realize post-acquisition synergies. It also attempted to intersect the literatures surrounding individual creativity and overconfidence with acquisition premiums. Unfortunately, the empirical study has left us with incomplete results. While our theorization that CEO creativity increases acquisition premiums is strongly supported by the data, our hypotheses relating to CEO overconfidence and premiums did not receive this same support.

Despite these bittersweet results, this paper has nonetheless provided an important contribution to the acquisition premium literature, as the first study to empirically link CEO-level creativity with acquisition premiums. Despite our hypotheses about CEO overconfidence not being supported, our findings about creativity and acquisition premium represent an important contribution. While creativity is often studied in strategic management literature, as it pertains to individuals, teams, and organizations, this is the first study which has used the effect of creativity as an explanation for the phenomenon of acquisition premiums.

The limitations of this study should also be addressed. By far the greatest limitation of this study is the internal validity of the measurements of the two independent variables. Both individual overconfidence and creativity are highly personal and subjective concepts, which makes them difficult to quantify and operationalize in an experimental setting. While the Holder67 variable by Malmendier and Tate (2005, 2008, 2011) has been widely adopted in the hubris literature (Humphrey-Jenner et al., 2014) it is by no means a perfect measure of CEO overconfidence as there are numerous factors which may influence a CEO's stock-option exercise decision making. Similarly, our measure of creativity is prone to critique, as critics may argue that letters to shareholders are not written by CEO's themselves, but rather written by other staff and are merely given to CEO's to read over and sign, thus questioning the validity of this method as a measurement of the individual creativity of the CEO. However, there are few more reliable measurements of individual creativity available, especially for a study of this large scale. While interviews and other more in-depth, subjective measurements might provide more valid results, these methods were not feasible in the scope of this study. Furthermore, given the highly significant ($P < 0.01$) results of our creativity variable, we are further convinced of its validity.

Further research in this area may want to focus on increasing sample

sizes, sampling outside of the US context, and finding stronger measurements of the independent variables. The present study represents the first intercept between the literatures of creativity and acquisition premiums; thus, it should be understood as a preliminary survey. I warmly welcome more scholars to continue investigating this area in the future.

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VII. 초 록

본 연구는 CEO 특성, 특히 창의성과 자신 과잉이 인수 합병 할증료에 끼치는 영향을 분석한다. 취득할 대상 기업의 실제 가치 이상으로 취득하는 기업이 지불하는 인수 거래 비용으로 정의되는 취득 할증료는 중요하다. 그러나 재무 금융 및 전략 문헌에서 충분히 연구되지 않은 개념이다. 상위계층이론을 바탕으로 한 이번 연구는 창의성과 자신감을 가진 CEO를 많이 보유한 기업이 인수할 경우 CEO들이 시너지 효과가 있는 것을 인지하고 높은 추진 의지로 인해 더 향상된 인수 할증료를 지불하게 될 것으로 내다보고 있다. 인수 합병이 매우 불확실하다는 점을 고려하면, 창의력이 높은 CEO가 보유하고 있는 다양한 사고 영역 관련 지식은 다른 CEO들이 인식하지 못하는 '숨겨진' 시너지 기회를 찾는 데 도움이 될 것이다. 마찬가지로 자만심을 가진 CEO들이 이러한 시너지를 실현할 수 있는 능력을 과대평가할 것이라는 주장도 있다. 대상 기업에 대한 '올바른' 평가에 대한 불확실성과 함께, 창의적이고 자신감 넘치는 CEO들이 기대 수익률 증가로 인해 더 높은 인수할증료를 지불하게 될 것이다. 창의성이 인수할증료와 긍정적으로 연관돼 있다는 가설과 인수의 CEO가 첨단기술 기업을 이끌 때 인구 경쟁이 존재할 때 이 관계가 더 강해진다는 것을 뒷받침하는 결과가 나타났다. CEO의 과신 및 인수할증료에 관한 가설은 뒷받침되지 않는다. 본 논문은 인수할증료를 설명하기 위해 창의성과 인수 프리미엄 문헌을 교차하는 최초의 논문으로서 중요한 학술적 기여를 제공한다.

주어: 인수 합병, 인수할증료, 창의성, 과신 과잉, 상위계층이론

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