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The Determinants of Premiums Paid in Acquisitions

An analysis of the role of firm characteristics and motives for acquisition in determining the acquisition premium

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Abstract

This paper analyses 291 transactions involving at least 20% of the shares of public target firms in the USA and Europe between 2010 and 2019, in an attempt to understand the key drivers behind premiums paid to the market exchange price of the target. Drivers such as synergy; agency; misvaluation, and managerial effectiveness have previously been shown to affect the acquisition premium, and these relationships are now tested on new data, and under different macroeconomic conditions. Through the use of a model that accounts for unobservable effects across years, industries, as well as accounting for multiple firm and transaction characteristics, it is observed that a change of control has a significantly positive influence on the premium paid in a transaction; that potential strategic synergies attract higher acquisition premiums than potential financial synergies; that when the price level of the overall market is inflated, acquisition premiums are significantly lower than when the market is falling, and that target managerial performance, as proxied by cumulative abnormal returns to the target, is positively related to the acquisition premium, in contrast to previous studies. The observed relationships differ in subsamples drawn from select sectors within the overall sample. Managerial hubris is found to be present in an analysis of the technology, media, and telecommunications sectors.

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1. Introduction

In 2019 alone, the total value of merger and acquisition transactions in the United States and Europe was US$2 trillion, or around 5% of the combined Gross Domestic Product of the two regions (Bloomberg Finance L.P.). Of this US$2 trillion, it is reported that approximately US$900 billion was accounted for through premiums to the market exchange prices of the targets. With such a significant portion of total deal value allocated towards paying a premium to the market price for a target's shares, an important question surfaces - what is the rationale behind paying above the market consensus price for a firm during an acquisition?

Many academics have attempted to understand and quantify the determinants of acquisition premia in public companies, and as such, multiple rational, behavioral, and irrational theories have been suggested. While each study attempts to explain that their view is correct, I believe it is prudent to assume that the acquisition premia phenomenon has its roots somewhat planted in all of the available theories, and that extenuating factors, such as market sentiment, industries examined, and the state of the overall economy can influence which theory is more prominent at any given time.

The synergy hypothesis has been widely quoted as a key driver of acquisition premia, and is supported by the logical reasoning that should new efficiency gains be achieved through a combination of two sets of business resources, then the value of the combined entity should outweigh the sum of the parts, leading to the idea that acquiring managers are willing to offer a price above market value of the target, as long as the price is below the potential gains to be realized through business combination. Much controversy surrounds this view as, although relevant and logical, it relies on the assumption that the valuation of potential synergies is accurate and achievable. This leads to a behavioral motivation for acquisition premia, which is managerial hubris. If an acquiring manager believes that his valuation of the target is correct, and that he can achieve synergies that could not be achieved without business resource combination, then he is inclined to offer a higher price per share than that observable in the market for target shares. The risk of this is that the manager's predictions may be based on an overestimation of his own abilities, meaning that the premium paid in the acquisition is in fact overpayment due to a behavioral bias, rather than a rational bid based on achievable value creation.

A different explanation is based on a theory of inefficient markets and relies on the idea that while observable prices for target shares in the market are very volatile, the underlying intrinsic values assigned to firms by potential acquirers are more stable. This implies that while overall market fluctuations may have magnified effects on some target firms, the intrinsic values assigned to these firms by acquiring

managers are not very sensitive to market movements. The implication of this line of reasoning is that when markets are very optimistic, and somewhat overvalued due to positive market-wide investor sentiment, the intrinsic valuations of specific firms are not as sensitive, and therefore in periods of high market sentiment, potential acquirers are not willing to proportionately increase the premiums paid in acquisitions.

The decade after the financial crisis, from 2010 to 2019 has been interesting from many economically relevant points of view. It has been characterized by one of the longest bull market rallies in history, with the MSCI World Index earning more than a 100% return in the decade. Additionally, interest rates have reached all-time lows, with developed market government bonds consistently earning less than 3% per annum, much lower than the 5% yield observed on the 10-year US Treasury Bond in 2007, before the financial crisis. This combination of large financial flows into equities, and extraordinarily low rates at which to borrow funds, provides an interesting framework under which to revisit and reanalyze previously predicted relationships between firm characteristics and the subsequent premiums paid to acquire target firms. Previous literature focuses largely on the merger waves of the late 1980's and the late 1990's, but there has been little focus on revisiting historical acquisition motives using new data in an arguably unique period of economic activity. Low interest rates, coupled with high equity valuations imply that investors have a large amount of funds to invest, and as such, this may influence the historical relationships between premia paid in acquisitions and the target firms themselves.

This study aims to revisit previously identified determinants of acquisition premia and analyze whether or not they are relevant in the decade between 2010 and 2019, in Europe and the United States, which jointly account for approximately two-thirds of annual global M&A activity.

I aim to answer the following questions:

- Does the right to control the target firms provide adequate motivation to pay a higher premium in acquisition?
- Do strategic synergies provide more motivation for acquisition than financial synergies?
- Do acquirers look to acquire poorly performing firms in the hope of turning them around under new management?
- Does the price level of the overall market affect the premium paid by acquirers in an acquisition?

The rest of this paper is structured as follows:

Chapter 2 provides a review of previous theories and empirical findings relating to the payment of acquisition premia; *Chapter 3* provides a logical development of the hypotheses to be tested in this study; *Chapter 4* outlines the methodology implemented, and a description of the data decisions made; *Chapter 5* provides the results of the empirical analysis of acquisition data, a discussion of the results observed, and further analysis into the drivers of the acquisition premium for certain subsamples of transactions; *Chapter 6* concludes the analysis and provides final comments on the observed relationships.

2. Motives for Acquisition

2.1 Agency

Agency theory of acquisitions rests on the idea that there exists a divergence of interests between the managers of a firm and those who have a residual claim on firm cashflows, the shareholders (Fama and Jensen, 1983). In this context, managers act as agents, while shareholders are principals. The primary objective of managers is to maximize shareholder value, and the value of a firm lies, ultimately, in the investment, financing, and dividend decisions implemented by management (Damodaran, 2005). However, principal-agent theory suggests that managers, instead of acting to achieve this objective for shareholders, make decisions which enhance their own utility, such as attempting to acquire multiple firms to build 'an empire', even if such acquisitions are value destroying for the firm. The decision-making process in a firm can be split into two categories, decision management, and decision control. Firm managers are responsible for decision management, which is the initiation and implementation of decisions, while the shareholders are responsible for decision control, which is the authorization and subsequent monitoring of the implemented decisions (Fama and Jensen, 1983).

Shareholder-value enhancing decisions taken by management can take several forms. Revenue may be increased through adjusting how existing corporate resources are utilized, in order to maximize the efficiency and productivity of these resources. The reinvestment rate of surplus cashflows may be increased, so that sufficient capital flows into profitable opportunities, resulting in sustainable firm growth. The reinvestment strategy may be altered so that funds flow to projects that earn the highest return on capital of all project options. Finally, the financing mix may be adjusted to reduce the cost of capital, which will both increase the number of potential projects that are profitable and will also increase the value of the firm as a whole (Damodaran, 2005). The issue is that while such decisions are required to enhance shareholder value, their implementation may be to the detriment of managers' self-interests. Jensen (1999) provides an example of agency issues in practice, in the context of mergers and acquisitions. Managers of a firm with surplus free cashflow, and few internal investment opportunities have two choices, either to distribute the cashflows to shareholders, or to use it for external growth. Such a case existed with large oil firms in the late 1970's. It was observed that instead of paying out the free cashflow to shareholders, oil firms instead acquired other businesses to diversify their operations. For example, Exxon bought Vydec, an office equipment firm, and Mobil acquired Marcor, a retailer. These acquisitions turned out to destroy firm value, as the managers of the oil companies had no experience in the lines of business their targets operate in. The choice to use excess cashflow to acquire targets, rather than payout

the cashflow to shareholders presents a principal-agent conflict. Shareholders, the principal, may prefer to receive the cash payout in comparison to an acquisition, but managers, the agents, refrain from paying out excess free cashflow, in favor of value-destroying acquisitions which advance their own power hungry interests at the expense of shareholders.

The solution to the principal agent issue is strict monitoring of managerial decisions by shareholders. Monitoring, however, involves time, effort, and money, and so shareholders may be reluctant to undertake strict monitoring of managers. Monitoring costs may be mitigated through aligning the incentives of managers with those of shareholders. If the managers of a firm are simultaneously shareholders of the firm, then the self-interests of managers will be in line with those of all shareholders. In such a case, the managers of firms will, by acting in their own self-interest, carry-out decisions that maximize shareholder value (Fama and Jensen, 1983).

An alternative to this is found through the appointment of a board of directors who oversee the decisions made by firm managers. This goes someway to ensuring the alignment of interests between shareholders and managers, as in theory, the board will reject any decision that does not enhance shareholder value. In practice though, the most influential members of the board are the internal managers, as they have specific, valuable information about the firm. A board of directors is only effective in isolation if it limits the ability of internal firm managers to influence the direction of the firm (Jensen, 1999). In other words, board independence is key to successful monitoring, otherwise the internal managers will still have a conflict of interest.

2.1.1 Implications for Acquisition Premium

The agency theory implies that firms with high free cash flows, and low internal growth opportunities will look to grow through external acquisition. Further to this, such acquirers are willing to pay higher premiums to the market value of a target during an acquisition, as managers perceive this as more in line with their own interests than distributing the cash to shareholders (Jensen, 1999; Gondhalekar, Raymond Sant and Ferris, 2004). These interests are as mentioned earlier, the perceived power one gains through managing a larger firm. Targets in an agency setting are characterized by low free cashflows, and high internal growth opportunities (Jensen, 1999), as the cashflow available in the acquirer firm can then flow into the growth opportunities available to the target firm.

Hayward and Hambrick (1997) find that in the context of target firms, agency cost mitigation, where managers are themselves large shareholders in the firm, can increase the premium paid in an acquisition, as the managers hold out for a higher offer price from acquirers so as to gain as a shareholder of the firm.

2.2 Synergy

Synergy is the value added to the overall firm through a combination of the corporate resources of the acquirer and target, in such a way that improves the efficiency of both sets of resources (Damodaran, 2008; Haunschild, 1994; Laamanen, 2007).

2.2.1 Operating Synergies

Operating synergies are a common rationale cited by strategic acquirers as motivation for an acquisition (Damodaran, 2008). A strategic acquirer is one who operates in the same, or similar line of business as the target, and therefore sees an acquisition as a way to streamline operations and drive productivity.

Operating synergies are those which enable a firm to reduce operating expenses, increase operating income, drive future growth, or provide a combination of all three. They can be summarized into four general categories. Economies of scale occur when a combination of two firms from the same industry results in large overhead costs being spread over a larger revenue base, reducing the costs of production, and driving an increase in operating income. These are most prevalent when the industry is characterized by large initial fixed asset requirements, but relatively low recurring or variable costs, because the high fixed costs are averaged out over a large number of units, while the variable costs remain low. Pricing power is a case where a combination of two firms from the same industry leads to lower competition within the industry. The combined firm will benefit from higher market share and, if significant enough, may be able to charge higher prices as a result of the combination. This leads to higher margins, and therefore better profitability for the combined firm. Combining functional strengths can be shown in the following example. The acquisition of a firm with strong marketing strategy, by a competitor firm with an excellent distribution network but poor brand recognition, would create significant value for the new combined entity, as the strengths of each firm can be combined when forming the new entity, resulting in a stronger, more valuable firm. Growth into new markets is a common synergistic benefit. An easy way for a US-based firm to expand into South Africa would be to simply acquire a South African firm with strong brand recognition in the region. The US firm can now increase sales of their products without having to build a brand up from the bottom in South Africa, while the South African firm benefits from a capital injection, and expertise. The value of the combined entity increases as a result of the acquisition (Damodaran, 2008).

2.2.2 Financial Synergies

Financial acquirers are defined as acquirers with no pre-existing complementary business operations. These acquirers are typically not in a similar industry to the target and look for value creating opportunities through lowering the cost of capital and adjustments to the financing mix rather than through combining business assets to streamline productivity (The Appraisal Foundation, 2017). The allure of a financially motivated acquisition is that often such acquirers will have access to cheaper capital than a strategic acquirer.

The benefits of financial synergies can be sorted into the following categories. Excess cash utilization is where a large firm with many investment opportunities acquires a smaller firm with limited projects, but a large cash balance. The value of the combined firm may increase as the firm with many opportunities will benefit the entire combined firm by using the relatively inexpensive new internal financing to finance profitable opportunities it otherwise would not have been able to undertake. Surplus debt capacity is a situation where an acquisition of a relatively unlevered firm with stable cashflows will increase the debt capacity of the new combined firm, allowing access to cheaper financing and increasing the debt ratio. This creates value through increasing the tax shield of debt, while also decreasing the cost of capital up to a certain point. Tax benefits occur when the acquisition of a firm making net losses may allow the acquirer to shield the combined firm from income taxes, by using the losses of the target to reduce their own tax burden, thereby creating value for the new combined entity (Damodaran, 2008).

2.2.3 Additional Notes on Synergy

There is another classification of acquirer in terms of synergistic benefits, and this is conglomerate acquirers. These acquirers are usually larger operating companies whose primary motivation for acquisition is diversification of revenue streams. While such acquirers may benefit somewhat from operational efficiencies, there are limited prospects for business resource combination, as, by definition, the target is assumed to operate in a different industry to the acquirer. The diversification benefit relates to lower risk and uncertainty in business cashflows, and therefore a lower cost of capital, leading to higher combined business value. The lack of operating synergy means that conglomerate acquirers more closely resemble financial acquirers, rather than strategic acquirers (The Appraisal Foundation, 2017).

It is important to note that the three classifications outline above, namely strategic, financial, and conglomerate acquirers, need not be distinct, mutually exclusive classifications. It may be the case that a private equity fund, classified as a financial acquirer, chooses a target because it will aid operating

efficiency for a firm already in their portfolio. This leads to a case where the acquisition, on the surface, is financial, but the underlying motivation of the transaction is more characteristic of a strategic acquisition.

Another example of the unclear boundaries between the three classifications is a case where a large strategic acquirer, due to size and influence as a large firm, may be able to negotiate access to financing on terms that are as favorable as those available to financial acquirers. This leads to a case where an acquisition based on operating synergies has extra value added through financial synergies too, allowing for the overall value created by the business combination to be greater than if a pure financial acquirer, or pure strategic acquirer were to complete the transaction instead (The Appraisal Foundation, 2017).

2.2.4 Implications for Acquisition Premiums

The larger benefits attributable to strategic synergies compared to financial synergies imply that the acquisition premium paid in strategically motivated mergers will be higher than those paid in mergers characterized by financial or conglomeration motives.

2.3 Hubris

Hubris theory suggests that acquiring firms pay more for targets than the potential gains that can be realized from the combined entity. This is based on the idea that acquiring managers overestimate the value they are able to extract from acquisitions, and as such, are subject to overpayment (Roll, 1986; Berkovitch and Narayanan, 1993).

When looking for a potential acquisition target, a firm will compare the market value of the target to the value they believe could be achieved if the entity was combined with their own. The issue is that there is an inherent assumption that the value the acquirer places on the target is in fact a fair value for the target, that the value the combined entity will realize is as high as that which was assumed by the acquirer (Roll, 1986). If the manager exhibits hubris, then the bid made will be much larger than the realistic gains to be made through acquisition, so this is an irrational motivation behind acquisitions.

2.3.1 Implications for Acquisition Premiums

The hubris theory suggests that acquiring managers overestimate their ability to correctly predict target firm value, and to correctly manage the target firm to achieve their predicted value (Hayward and Hambrick, 1997). This means that the premiums paid in acquisitions where the acquiring managers suffer from hubris will be larger than those paid in acquisitions where the acquiring managers do not exhibit hubris.

2.4 Management Effectiveness

As alluded to earlier, the management team, under the control of shareholders and the board of directors, are responsible for the investment, financing, and dividend decisions of a firm. These decisions can either create, or destroy firm value (Damodaran, 2005). For those acquirers who believe they can improve the way a firm is run with their own managerial ideas, and create extra value for a firm, there is an incentive to pay more than the current market price for the shares acquired. It follows that there are now two values of the firm. The first is the status quo value, which is the current market price for a publicly traded firm and is representative of the market consensus of the firm's value under current management. The second is a potential value, which is the value that prospective buyers assume they can achieve once new strategies and policies, that arise through a change in management, are implemented (Damodaran, 2005). For an acquisition to be a success, the price paid per share should fall somewhere in between the potential value and the status quo value. A buyer who offers a premium to the market price that is greater than the value he intends to add to the firm will destroy value in the long run, as the market price of the firm will never rise to the price paid in the acquisition. The final acquisition price will lie in between these two values, so that the shareholders of the target and the acquirer each receive a portion of the total value created through the acquisition. The price will depend on the relative bargaining power of the two parties involved. In an environment where there are many anti-takeover regulations, or where other bidders are present, the target has more bargaining power, and as such, the premium paid may be higher, eroding the potential additional value created by a new management team. In an environment where bidder bargaining power is high, the final acquisition price will be closer to the status quo value, and therefore the buyer has the potential to capture the large majority of gains available through a change in management (Damodaran, 2005; Walkling and Edmister, 1985).

2.4.1 Implications for Acquisition Premiums

The market value of the target will be lower when current management is performing poorly, and the potential value that could be achieved by optimal management will be significantly higher than the value under current management. Therefore, the premium an acquirer is willing to pay when the current management is particularly ineffective will be higher than when the target management performs well.

2.5 Misvaluation

The stock market is subject to alternating periods of over-and under valuation through time (Simonyan, 2014). Varaiya (1987) states that one possible motivation for acquisition is undervaluation gains. This is when the market is over-bearish on its forecast of the target's future cashflows, and such a view would imply that the acquirer predicts higher future cashflows than those implied by the general market. This theory is based on a model of inefficient markets developed by Shleifer and Vishny (2003) that suggests that market prices reflect investor sentiment levels of the overall market, rather than efficient opinions on individual firm valuations. Diligent acquirers, however, should be able to correctly identify the true value of the target, and understand that a portion of the current target market price is due to market-wide investor sentiment, and not movement in the underlying value of the target. Therefore, periods of over -or undervaluation will not affect the prices that acquirers are willing to pay for a target firm (Simonyan, 2014).

2.5.1 Implications for Acquisition Premiums

In periods of market undervaluation, where investor sentiment about the overall market is low, if acquirers correctly identify the intrinsic value of a target, they will be willing to pay close to this intrinsic value in the acquisition, so the premium paid in such circumstances will be higher, as the market price for the target is uncharacteristically suppressed, due to macroeconomic factors which do not affect the intrinsic price of the individual security as much as they do the overall market. In addition, periods of high stock market prices are related to periods of increased merger activity, so in periods where investor sentiment is high, the anticipation of acquisition premiums will drive up firm valuations in the market, and price-in part of the premium that would be paid in acquisitions, so reported premiums will therefore be lower in periods of high stock market prices (Simonyan, 2014).

2.6 Review of Empirical Findings

In support of the agency theory of acquisitions, Gondhalekar, Raymond Sant and Ferris (2004) find that the ratio of bidder free cashflows to assets increases the acquisition premium by a significant 1.05%, and that firms that exhibit both high cashflows and low market to book ratios, are likely to pay, on average, an acquisition premium that is 19 percentage points higher than that paid by firms with low free cashflows and high market to book ratios.

Recent acquirer performance increases the premium in acquisitions significantly by 0.004%, media praise for acquirer CEO increases the premium significantly by 0.16%, and acquirer CEO pay relative to peers

increases the premium significantly by 0.15%, while the total hubris factor increases the acquisition premium by 0.17%, providing evidence that hubris does influence acquisition premiums (Hayward and Hambrick, 1997).

The premium paid for acquisitions in the same industry is 28% higher than those across different industries (Gondhalekar, Raymond Sant and Ferris, 2004). While Gorbenko and Malenko (2014) find that strategic bidders pay 27% higher premiums than other bidders, on average, and that strategic bidders value their targets 5 percentage points higher than financial bidders, on average.

The market to book ratio decreases the premium paid in acquisition by 3.8 percentage points (Walkling and Edmister, 1985), 8.3 percentage points (Laamanen, 2007), 8.4 percentage points (Dong, Hirshleifer, Richardson and Teoh, 2006), 0.071 percentage points (Simonyan, 2014) and 0.5 percentage points respectively (Bugeja and Walter, 1995). This shows evidence of management ineffectiveness, as firms where management has performed well will have higher market to book ratios, reflecting more efficient use of firm resources, therefore reducing the premium an acquirer would pay to manage the firm differently (Dong, Hirshleifer, Richardson and Teoh, 2006). Additionally, there is evidence of misvaluation here, as firms may have very high market values in periods of strong investor sentiment, while their book values remain stable.

The price level of the S&P500 at the time of an acquisition reduces the acquisition premium by 0.85 percentage points (Slusky and Caves, 1991). While the return on the market reduces acquisition premia by 0.67 percentage points, and higher investor sentiment will reduce the premium in an acquisition by 0.09 percentage points (Simonyan, 2014). This is evidence of the misvaluation theory of acquisitions.

Dyck and Zingales (2004a) find that when control is sought in a transaction, the premium paid to the market price is 9.5 percentage points higher than when a non-controlling interest is acquired, while Walkling and Edmister (1987) find a 15.5 percentage point higher premium for the purchase of a controlling stake compared to a non-controlling stake.

3. Hypothesis Development

It is noted above that managerial effectiveness, and the ability to change how a firm is run can provide value (Damodaran, 2005). An acquisition that results in a change of management policy, and allows an adjustment to the investment, financing, and dividend decisions can only be brought about through a change in control of the rights to approve such decisions. Therefore, I suggest the first research question, and test on the empirical data:

H1: The change of control variable will have a significantly positive relationship with the acquisition premium in the regression model.

This may be researched with the use of a dummy variable representing whether or not a transaction resulted in a change of control for the target firm. Previous literature on this topic is clear and suggests a positive relationship between a change in control and the acquisition premium paid. In a pioneering study, Barclay and Holderness show that higher fractional share ownership allows the shareholder more influence in the election of directors, and they go on to find a significant positive relationship between the fractional ownership traded, and the premium paid per share (Barclay and Holderness, 1989). It follows, from this Barclay and Holderness study, that if the premium paid per share is positively related to the fraction of shares traded, the premium will be higher if, as a result of the transaction, control transfers from seller to buyer, as this requires a larger portion of shares to be purchased.

Synergy is a major motive for acquisition (Berkovitch and Narayanan, 1993), and strategic acquisitions have been shown in previous literature to attract higher premiums than financially motivated acquisitions.

The classification of acquirers, and the benefits of acquisition that flow to each, draw us to the next research question and empirical test:

H2: A variable indicating a strategic acquisition will have a significantly positive relationship with the acquisition premium in the regression model.

To study this, one can create a variable which categorizes transactions into either financial, strategic, or conglomerate motivations, and analyze the difference in premiums paid in each category. Previous literature states that due to the operational synergies available to strategic buyers, they are inherently willing to pay more for a target than a financial bidder. That is, the gains to be made through a combination of business resources of related entities is higher than the potential gains to be made through a restructuring of the balance sheet, except in a few specific cases (Gorbenko and Malenko, 2014).

Managerial effectiveness theory outlines that firms who have performed particularly poorly in the months pre-acquisition will command higher premiums, as acquirers believe the gains to be extracted by providing their influence on the target are higher when current management is inadequate. Misvaluation theory outlines that during periods of over-and undervaluation of the stock market, the premiums paid in acquisitions will be affected, as stock prices are more volatile than the expected future cashflows of the target. This leads to the third research question and empirical test:

H3a: Target firm cumulative abnormal returns in the months leading up to an acquisition will have a significantly negative relationship with the acquisition premium in the regression model.

H3b: The positive Index return dummy variable will have a significantly negative relationship with the acquisition premium in the regression model.

This hypothesis can be tested in the context of misvaluation, or managerial ineffectiveness. I propose to test for managerial ineffectiveness through the use of cumulative abnormal returns to the target in the months preceding the acquisition announcement, as used by Bugeja and Walter (1995). Negative cumulative abnormal returns over the three months pre-announcement is a signal by the market that the firm is underperforming expectations, and as such, the market is taking a particularly negative view on its future success, this is therefore a proxy for poor managerial performance. In a misvaluation context, I will employ a measure of index price level in the months preceding the announcement, as used by Simonyan (2014) to analyze the effect of market sentiment on the acquisition premium. There is limited and conflicting evidence in previous literature around this point. In line with what I expect to find during empirical analysis based on the rationale outlined above, in a sample of over 2000 transactions occurring between 1985 and 2005, an inverse relationship between overall stock market returns and the premium paid in acquisitions was observed (Simonyan, 2014). This brings to light the undervaluation theory, that an acquirer will base their valuation on the fundamental value of a specific firm under normal market conditions, so that when the stock market as a whole is suppressed, the premium paid in acquisition will be higher. In addition, the construction of the acquisition premium measure means that this will be the case from a mathematical point of view, *ceteris paribus.*

A conflicting view is suggested by Barclay and Holderness (1989), whose results show that if stock returns are higher leading up to the acquisition, then the premium paid in the transaction will be higher. The explanation and rationale for this result is that the costs of holding a large block, when a firm is exhibiting poor performance, are higher than when just a small portion of shares are owned. Costs involved here

include a lack of diversification, leading to higher exposure to the potential losses from financial distress, as well as the extra attention needed to steer management and the firm towards a healthy position. Such costs would not be incurred by an owner of a small percentage of shares, as they would have limited influence over the running of the firm (Barclay and Holderness, 1989). While their use of the share performance variable was in the context of measuring the financial health of a firm, the result observed in their study is directly applicable to this particular research question.

4. Data and Methodology

4.1 Description of Variables

The dependent variable used in the empirical analysis is the Block Premium (BP), which is calculated according to the method used by Barclay and Holderness (1989) and Dyck and Zingales (2004a).

$$Block\ Premium\ = \frac{P_{block} - P_{market}}{P_{market}} \qquad (1)$$

Where:

P_{block} is the price per target share paid in the acquisition.

P_{market} is the target's price per share observable in the market, one-month pre-announcement.

In Dyck and Zingales (2004a) as well as Barclay and Holderness (1989), the research question is based on private benefits of control, so they compare the offer price to the market price a few days after the announcement of the acquisition. In my study however, the focus is not on private benefits of control, but rather the determinants of the acquisition premium in general, and as such, the market price one month pre-announcement is used instead, so as to capture the effect of potential synergistic gains which may be a motive for acquisition. These would not be captured if the post-announcement market price is used, as an efficient market would assimilate the synergistic gain into the market price post-announcement. Further to this, we use a market price that predates the announcement sufficiently to ensure that the premium is computed relative to a market price that is not already affected by rumors of a potential acquisition (Gomes and Marsat, 2018). This measure is preferred to the return-based measure employed in some similar studies, as it is unaffected by the perceived likelihood of an acquisition being a success (Chatterjee, John and Yan, 2011). An event study would be an inappropriate alternative method of analysis in this case, as this paper aims to identify key drivers of the acquisition premium, rather than the distribution of gains to target and acquirer shareholders as a result of the premium paid.

Table 1 provides a description of variables used in the empirical analysis in chapter 5, as well as motivation for the inclusion of each variable. All variables used draw their motivation from previous literature and have been shown to contribute to the rationale of an acquisition premium in previous studies.

Table 1: Description of Variables

Description of variables that form part of the regression analysis in *Table 5*. All data was collected from Standard & Poor's Capital IQ database.

Variable	Description	Motivation
1 Month Block Premium	Premium to the market exchange price of the target one-month pre-announcement. Shown in *(1).*	A standard measure of acquisition premium in previous studies.
90-Day Stock Return	Return on the target's share price -120 days to -31 days from the announcement date.	A key research question for this paper.
90-Day Cumulative Abnormal Returns	Target's market model Cumulative Abnormal Returns from -120 to -31 days from announcement. Based on S&P500 index returns for USA firms, or MSCI EAFE index returns for European companies.	Measure of managerial effectiveness. Used in Bugeja and Walter (1995).
Change of Control	Indicator variable equal to 1 if control changes as a result of the transaction.	A key research question for this paper.
Industry Group	Industry group of the target, based on 4-digit GICS code, as provided by S&P's Capital IQ database.	To control for unobservable differences across industry groups.
Log (Revenues) Target	Log transformation of the last twelve months' revenues of the target 31 days before announcement, in USD.	Used to proxy firm size in previous studies.
Market to Book Value	Ratio of market value to book value for the target firm, 1-month pre-announcement.	Used in previous studies to measure misvaluation and managerial effectiveness (Dong et al, 2006).
Merger Type	Categorical variable either strategic, financial, or conglomerate, based on Industry group, 4-digit GICS code of the acquirer and target.	A key research question for this paper.
Positive Index Return	Indicator variable equal to 1 if the return on the relevant index from -120 days to -31 days pre-announcement is positive.	A key research question for this paper. Based on Simonyan (2014).

Table 1 Continued

Variable	Description	Motivation
Target Stock Price Volatility	Standard Deviation of daily log-normal stock returns over 6 months, ending 1-month pre-announcement. As provided by S&P's Capital IQ database.	Gondhalekar et al (2004) use this as a proxy of managerial hubris.
United States	A dummy variable indicating that the target is a firm listed in the United States, as opposed to Europe.	To measure differences across regions.
Year	The year in which the announcement was made.	To control for unobservable differences across years.

4.2 Regression Model

I will employ an Ordinary Least Squares regression analysis to test the collected data for the hypothesized relationships between the Block Premium and the various explanatory variables. The regression model is defined as follows:

$$BP_i = \alpha_i + \beta_1 Ctrl_i + \beta_2 Conglomerate_i + \beta_3 Strategic_i + \beta_4 IndPstv_i + \beta_5 Return90_i + \beta_6 CAR90_i + \beta_7 TargLRev_i + \beta_8 TargM2B_i + \beta_9 TargVol_i + \beta_{10} US_i + Year_i + IndGrp_i \quad (2)$$

Where:

BP_i is the Block Premium for transaction *i*, calculated as shown in *(1)*.

$Ctrl_i$ is a dummy variable that indicates if there is a change in control from the transaction.

$Conglomerate_i$ is a dummy variable that indicates if the acquisition was an operating firm acquiring another operating firm in a different 4-digit GICS industry group. The base case is where the transaction involves a financial firm, indicated by the 2-digit GICS code '40', acquiring a firm in any other GICS industry group.

$Strategic_i$ is a dummy variable that indicates if the acquisition was an operating firm acquiring another operating firm in the same 4-digit GICS industry group. The base case is where the transaction involves a financial firm, indicated by the 2-digit GICS code '40', acquiring a firm in any other GICS industry group.

$IndPstv_i$ is a dummy variable indicating if the index return from -120 to -31 days pre-announcement is positive.

$Return90_i$ is the return on the target's share price from -120 to -31 days pre-announcement.

$Car90_i$ is 90-day cumulative abnormal returns as specified in *Table 1*.

$TargLRev_i$ is the logarithmic transformation of the target's last twelve months' revenues.

$TargM2B_i$ is the target's market to book ratio.

$TargVol_i$ is the 6-month standard deviation of stock price returns up to 1 month before the announcement.

US_i is a dummy variable indicating if the region of incorporation of the target is the United States.

Also included in the model are control variables $Year_i$ and $IndGrp_i$ which represent the year of the acquisition announcement, and the industry group of the target, based on 4-digit GICS code, respectively. These are added to control for variation present across years or industry groups rather than the individual variation of transactions (Haunschild, 1994).

4.3 Data

Data was collected on transactions from Standard and Poor's Capital IQ database that fit the following criteria:

1. Both the target and the buyer must be incorporated in either the United States or in Europe.
2. The transaction takes place between 2010 and 2019, as this is the time period under observation in this paper. Motivation for this is provided earlier in the introduction.
3. The target must be a public company at the time of acquisition and at least 6 months after the announcement so that the market price is observable., and unaffected by the news of delisting.
4. The transaction must represent a transfer of at least 20% of the target's shares, as this is the imposed cut off for large block transactions. Lower equity stakes may not command a premium due to the limited ability of such stakes to provide significant influence on firm decisions, they are therefore excluded from the analysis.
5. The transaction must be successful, so as to exclude characteristics common to deals that subsequently fall through, which may impair our analysis.
6. The price paid per share in the transaction must be available, as this is an important input for the acquisition premium calculation.
7. The total transaction value must exceed US$50 million, which reduces noise and uncertainty around the acquisition of small firms.

Observations were dropped where Capital IQ's data for all explanatory variables was not available for those specific transactions. The final dataset, having imposed the above criteria is 291 transactions. This sample size is consistent with previous literature, which have used as few as 63 transactions for analysis (Barclay and Holderness, 1989).

5. Empirical Analysis and Results

5.1 Summary Statistics

5.1.1 The Block Premium

Figure 1 shows that the Block Premium, as calculated in *(1)* is widely distributed around 0. The premium ranges from -79% to 171%, while the majority of observations are positive. *Table 2* shows the average premium during each year included in the sample. The overall average Block Premium for the sample is 19.77%. The highest average premium was 27.46% in 2016, while 2018 exhibited the lowest premiums in the sample, at 10.28%. *Figure 2* shows the annual development of the average annual premium, outlining that the annual average premium fluctuates within a range of 10% either side of the total mean. This suggests no particularly large differences across years. *Table 3* splits the sample by 4-Digit Global Industry Classification Standard, and provides an average premium based on each industry. We see that premiums are highest for target firms in the Semiconductors and Equipment industry group, where the average acquisition attracts a premium of 50.04%. Acquisitions of firms in the Energy and Pharmaceuticals & BioTechnology industry groups attract similarly high premiums during acquisitions, attracting an average premium of 33% and 44% of their pre-announcement market prices respectively. The observations are evenly distributed across industry groups, with no group contributing more than 12% of total observations. Differences across years and industries motivate the inclusion of industry and year fixed effects on the regression model.

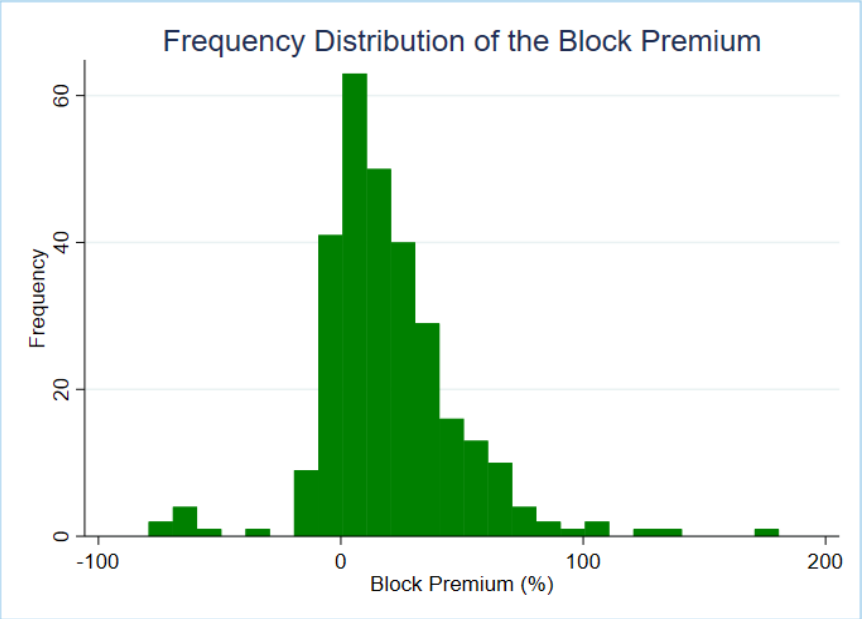

Figure 1: Graph Showing the Distribution of Block Premiums in the Sample

Table 2: Average BP Per Year

Table showing the distribution of observations of the Block Premium across years. Also shown are the average BP for each year. BP is calculated as shown in *Equation (1).* The last column shows the proportion of total observations in the sample that were announced in each year.

Year	Transactions	Average BP (%)	% of Total Transactions
2010	23	22.96	8
2011	30	23.80	10
2012	35	18.60	12
2013	19	22.72	7
2014	34	21.70	12
2015	22	23.13	8
2016	34	27.36	12
2017	46	13.60	16
2018	31	10.28	11
2019	17	18.01	6
Total	291	19.77	100

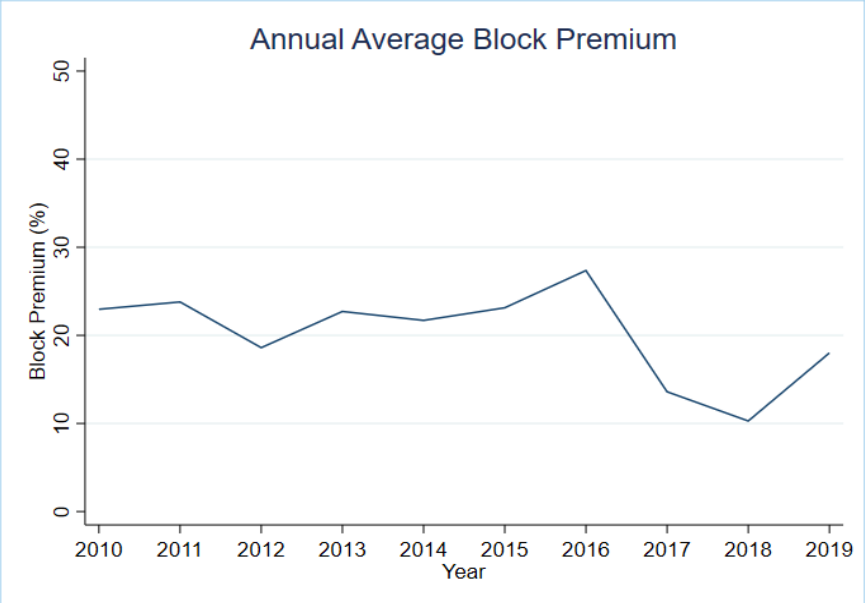

Figure 2: Graph Showing the Annual Average Block Premium

Table 3: Summary Statistics for Industry Groups

Table showing the distribution of observations of the Block Premium across 4-Digit Global Industry Classification Standard codes, as provided by S&P Capital IQ database. Also shown are the average BP for each Industry Group. BP is calculated as shown in *Equation (1).*

Target Industry Group (4-Digit GICS Code)	Transactions	Average BP (%)	% of Total Transactions
Automobiles & Components	5	1.58	2
Banks	24	27.94	8
Capital Goods	27	14.57	9
Commercial & Professional Services	9	10.86	3
Communication Services	7	11.18	2
Consumer Durables & Apparel	10	18.20	3
Consumer Services	6	7.59	2
Diversified Financials	11	3.77	4
Energy	15	32.62	5
Food, Beverage & Tobacco	11	17.74	4
Health Care Equipment & Services	14	20.68	5
Materials	18	15.75	6
Media & Entertainment	19	22.17	7
Pharmaceuticals & BioTechnology	10	44.34	3
Real Estate	35	14.68	12
Retailing	12	20.21	4
Semiconductors & Equipment	4	50.04	1
Software & Services	21	28.41	7
Tech Hardware & Equipment	10	27.02	3
Transportation	9	20.93	3
Utilities	14	7.27	5
Total	291	19.77	100

5.1.2 Explanatory Variables

Table 4: Summary Statistics

Summary statistics for variables included in the regression model outlined in *Equation (2)*. Block Premium relates to the dependent variable used in this analysis, outlined in *Equation (1).*

Variable	Mean	St Dev	Median	Min	Max
Block Premium (%)	19.77	29.22	15.38	-79.29	171.43
90-Day Cumulative Abnormal Returns (%)	-2.18	17.32	-2.15	-90.14	119.04
Percentage Traded in Block (%)	53.43	26.34	48.34	20.00	100.00
Target's 90 Day Stock Return (%)	8.46	21.93	4.90	-37.03	181.09
Target's Market to Book Ratio	2.88	7.42	1.46	0.12	95.06
Target Stock Price Volatility (%)	40.99	26.90	34.10	0.00	199.31
LTM Revenues (US$ Mn)	1586.70	6337.40	211.98	0.89	81413.61
N	291				

Table 4 shows selected statistics which describe the explanatory variables used in the model outlined in *(2)*. On average, for the sample, firms earned cumulative abnormal returns of -2.18% from 120 days pre-announcement to 31 days pre-announcement. The average size of the equity block traded was 53.43%, ranging from 20% in the smallest transactions, to 100% in the largest. The mean market to book value in the sample is 2.88. The average firm in the sample has revenues in the 12 months pre-announcement of US$1.6 Billion, with the smallest firm in the sample earning US$890 000, and the largest earning US$81.4 Billion in the twelve months leading up to the announcement. This shows that the size of firms in the sample varies widely, allowing for the observation of the effects of premiums across a wide range of firms, not just firms that belong to a specific size decile. Note that while revenues in US$ Mn are shown in *Table 4*, this is to explain the size of firms in the sample. The regression model uses the logarithmic transformation of target revenues, as this measure more closely approximates a normal distribution. Control was transferred in 59% of transactions in the sample, and the pre-announcement index return was positive in 66% of transactions. 47% of transactions were classified as strategically motivated acquisitions, and 27% were financially motivated.

5.2 Results and Discussion

5.2.1 Change of Control

As alluded to in Section 2 of this paper, I expect to find that a change of control in a transaction will, all else equal, result in a higher premium in a transaction compared to when control is not transferred. *Table 5*, the table showing the results of the regression models tested, shows that this is indeed the case for this sample. In *Regression 1* the variable indicating a change of control in a transaction has a significantly positive effect on the block premium, in such a case, the premium paid increased in a transaction by 13.26 percentage points, compared to a transaction where control is not transferred, all else equal. This is significant at the 1% level. In the full model, *Regression 4*, a similar effect is observed, a change of control is accompanied by an increase in the premium paid in a transaction of 14.34 percentage points, in comparison to a transaction where control does not change hands, all else equal. This is, again, significant at the 1% level. These results show support for Hypothesis 1, that acquiring firms are willing to pay more in a transaction if they can subsequently gain control of the target. This is consistent with previous studies by Dyck & Zingales (2004a) and Walkling and Edmister (1985) who find that the effect is 9.5 percentage points and 15.5 percentage points respectively, and can be attributed to the fact that control allows the acquirer to make decisions on behalf of shareholders, and to run the firm how they see fit, and as such, there is an incentive to gain control, as observed by a willingness to pay a higher premium to obtain it.

5.2.2 Synergistic Motivation

Theory suggests that acquisitions motivated by strategic synergistic gains, those that arise through an increase in value through the combination of business resources towards more efficient production, will attract higher premiums than when the motive is financial synergies, such as acquisitions where the acquirer believes they can add value to the combined entity through access to less expensive debt. Results of this test are shown in *Regression 2*, where it is observed that a strategically motivated acquisition will attract a premium that is 8.03 percentage points higher than a financially motivated acquisition, all else equal. This is significant at the 10% level. It follows that acquirers in the same industry as their target believe they can derive more value through combining the resources of the two firms towards higher productivity, and as such, they value the target at a higher price than that of a financially motivated acquirer, and are therefore willing to pay a higher premium to successfully acquire the target. Acquisitions classified as being motivated by conglomeration, where a firm in a non-financial industry acquires a firm in a different industry to itself, also attract a significantly higher premium than a financially motivated acquisition, with such transactions commanding a premium to the pre-announcement exchange price of 10.99 percentage points, all else equal. This is significant at the 5% level.

Table 5: Regression Results

Table 5 shows results of OLS regression on data outlined above. The results from the full model, specified by *Equation (2)* are shown in *Regression 4*, while the results of each of the three hypotheses outlined in Section 3 are shown in regressions (1), (2), and (3) respectively. The dependent variable in all cases is the Block Premium, which is a measure of Offer price per target share in the transaction to the market price 1-month pre-announcement, as outlined in Equation (1) above. All regressions control for variation due to Industry Groups, and effects of the year of the announcement. Heteroskedasticity Robust Standard Errors shown in parentheses.

VARIABLES	(1)	(2)	(3)	(4)
Change of Control Dummy	13.26***			14.34***
	(3.83)			(3.80)
Conglomerate Acquisition		10.99**		11.48**
		(4.65)		(4.52)
Strategic Acquisition		8.03*		9.35**
		(4.59)		(4.21)
90-Day Positive Index Return Dummy			-5.02	-6.12*
			(3.37)	(3.35)
Target's 90 Day Stock Return (%)			-0.01	0.01
			(0.07)	(0.06)
90 Day Cumulative Abnormal Returns (%)			0.43**	0.47***
			(0.18)	(0.16)
Log Target's Revenues (US$ Mn)				0.27
				(1.00)
Target's Market to Book Ratio				-0.22
				(0.17)
Target Stock Price Volatility (%)				0
				(0.12)
United States Dummy	10.73*	10.72*	7.04	12.11*
	(6.39)	(6.45)	(6.58)	(6.48)
Constant	24.67	22.93	30.54**	13.57
	(19.39)	(20.49)	(14.99)	(15.63)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Group Fixed Effects	Yes	Yes	Yes	Yes
Observations	291	291	291	291
Adjusted R-squared	0.09	0.06	0.10	0.16

Significance at the 10%, 5%, and 1% level shown by *, ** and *** respectively.

The results observed here are in line with previous literature, as Gorbenko and Malenko (2014) and Gondhalekar, Raymond Sant and Ferris (2004) find strategically motivated acquisitions to earn 27% and 28% higher premiums respectively.

In the full model, *Regression 4*, strategic acquisitions attract a more significant, and higher premium, as they earn a premium that is 9.35 percentage points higher than a financial acquisition, all else equal. This is significant at the 5% level. Conglomerate acquisitions attract a premium that is 11.48 percentage points higher than a financially motivated acquisition in the full model, also significant at the 5% level. These results provide strong support for Hypothesis 2, as strategic synergy motivated acquisitions are indeed associated with higher premiums than a financial synergy motivated acquisition, due to reasons such as economies of scale, higher pricing power, and ease of growth into new markets (Damodaran, 2005).

5.2.3 Firm Performance

Managerial effectiveness, as a motivation for acquisitions, states that a firm that performs poorly in the months before an acquisition will attract a higher premium, as new managers believe the value of the firm under their own guidance will be greatly improved. This is tested through the use of cumulative abnormal returns to the target firm over a period from 120 days pre-announcement to 31 days pre-announcement, a measure of the market's view on managerial performance. The results in *Regression 3* show that a 1 percentage point increase in cumulative abnormal returns will increase the Block Premium by 0.43 percentage points all else equal. This is significant at the 5% level. The results are robust in the full model specification, as shown in *Regression 4*, where a 1 percentage point increase in cumulative abnormal returns increases the premium paid in an acquisition by 0.47 percentage points, statistically significant at the 1% level. This is not in line with what I expected to find, and goes against the managerial effectiveness theory, thereby rejecting Hypothesis 3a. The results suggest that, instead of acquiring managers paying larger premiums for firms performing poorly, as they believe their own methods will provide more success, acquiring managers actually look favorably upon firms that perform well in the months leading up to an announcement, as a sign of potential continued future success. An acquirer will pay a higher premium for an outperforming firm, as they believe that the outperformance will continue into the future, and the combined entity will benefit from the continued growth the target exhibits. This is consistent with the findings of Barclay and Holderness (1989).

Misvaluation theory suggests that when the stock market is in a period of overvaluation, there are stocks whose market price will increase as a result of positive market wide investor sentiment alone, instead of an improvement in their intrinsic value. *Regression 3* shows that when the relevant index exhibits a

positive return from 120 days pre-announcement to 31 days pre-announcement, the premium paid in the transaction is lower than when the index exhibits a negative return in the same period. This result is statistically significant at the 10% level in the full model, *Regression 4*, where a positive return on the index in the period pre-announcement results in the premium being 6.12 percentage points lower, all else equal. The negative effect is in line with what we expect to be the case, as shown in Hypothesis 3b, and gives support to the idea that the overall level of market sentiment is inversely related to the premiums paid in an acquisition, as suggested by Simonyan (2014). The economic reasoning behind this result is that part of the gains to be made through acquisition will already be priced into the market value of the target if the stock market is in a period of overvaluation.

5.2.4 Control Variables

The regression implemented in this paper finds no other significant relationships between the explanatory variables and the block premium. This is a surprising result, as the variables included have all shown, in previous literature, to significantly affect the premium paid in acquisitions. The coefficient on Ln (Revenues) is expected to show that the premium is reduced for larger firms, where revenues are a proxy for firm size. This is because an identical percentage premium, for a large firm, means a larger dollar amount, and therefore an acquirer with a limited amount of funding for the acquisition is willing to pay less percentage premium to the market price for a larger firm, all else equal. Market to book ratio is used in previous studies as a measure of misvaluation and these studies suggest that firms that have high market to book ratios may be somewhat overvalued, and therefore the premium paid in a transaction for such a firm will be lower (Dong, Hirshleifer, Richardson and Teoh, 2006). However, both of these measures are insignificant in the full model.

We observe in all 4 regressions shown in *Table 5* that targets that are from the United States attract premiums that are around 10 percentage points higher compared to European targets. This is significant at the 10% level in Regressions (1) (2) and (4). The result provides an important insight into acquirer's perception of premiums paid in acquisitions and suggests that acquirers are willing to pay more for firms from the United States than for their European counterparts, up to 12.11 percentage points more in the full model, *Regression 4*, all else equal. This is potentially due to higher competition present in the USA market, with acquirers having to pay a higher premium to be the winning bidder.

5.3 Difference in Means

In this section, the full sample of 291 transactions is split into mutually exclusive subsamples and the difference in the mean of the Block Premium between the subsamples is compared and tested for significance, as an additional test of drivers of the Block Premium.

Table 6: T-test for Difference in Means Comparisons

Table 6 shows T-tests for difference in means of the Block Premium variable as outlined in *Equation (1)* across several subgroups of observations. Columns show the difference in the mean Block Premium for the comparison groups; the standard error of the T test; the P-value of the T-test, and the significance level of the test. Panel (A) provides results where T-tests are implemented on the entire sample of 291 observations. Panel (B) provides results for the same T-test mean comparisons of the Block Premium, but the sample is restricted to observations where the final stake is below 50%. In both panels, CAR represents 90-day cumulative abnormal returns on the target's stock from 120 days pre-announcement to 31 days pre-announcement.

Comparison	Difference in Means (%)	Standard Error	P-Value	Significance Level
Panel (A)				
Full Sample				
2010-2014 v 2015-2019	3.79	3.42	0.27	
Europe v USA	-8.91	4.48	0.05	**
Small v Large Firm	2.90	3.43	0.40	
Negative v Positive CAR	-8.31	3.43	0.02	**
Value v Growth	-0.59	3.71	0.87	
Minority v Majority Stake	-12.82	3.36	0.00	***
Panel (B)				
Stake less than 50%				
2010-2014 v 2015-2019	-6.01	4.45	0.18	
Europe v USA	-11.85	6.36	0.06	*
Small v Large Firm	0.99	4.55	0.83	
Negative v Positive CAR	-11.49	4.37	0.01	***
Value v Growth	-6.10	4.81	0.21	

Significance at the 10%, 5%, and 1% level shown by *, ** and *** respectively.

5.3.1 Full sample

Panel A of *Table 6* provides comparisons of the mean Block Premium across the full sample used in this paper. It is observed that acquisitions for targets that are incorporated in the United States of America attract significantly higher premiums, on average, than their European counterparts. The average premium paid in an acquisition of a US firm in this sample attracts a premium that is 8.91 percentage points higher than the average premium paid for a European firm. This result is significant at the 5% level. This may be due to increased competition in the US market, forcing acquirers to pay higher premiums in order to be the winning bidder in a transaction.

Target firms that experience positive cumulative abnormal returns in the months leading up to an acquisition announcement are observed to receive higher premiums than firms exhibiting negative cumulative abnormal returns pre-acquisition. This is in line with what was found in *Regression 4*, and as previously mentioned, is contrary to what is predicted in previous literature relating to the managerial effectiveness theory of acquisitions, suggested by Bugeja and Walter (2005). Firms with positive cumulative abnormal returns, or firms which have outperformed the market's expectation in the months pre-announcement, attract a premium that is 8.31 percentage points higher than those firms who have underperformed the market's expectations, and therefore have exhibited negative cumulative abnormal returns in the same time period. This result is significant at the 5% level, and suggests that acquiring managers are willing to pay higher premiums for firms which are performing better than expected, possibly in a bid to receive some of the gains available through a sustained increase in the target's share price, rather than attempting to acquire poor performing firms in an attempt to alter the management decisions and create new value.

We also observe, as is expected through the results in *Table 5* regarding the change of control variable, that majority stakes, identified as those which involve the transfer of more than 50% of the target's shares, require a premium that is 12.82 percentage points higher than minority stake transactions, providing further evidence for the existence of a premium for control of a target firm.

5.3.2 Significant Influence Acquisitions

An acquisition of a stake in a target that exceeds 20% of shares outstanding but is less than the majority control conferred through owning more than 50% of a firm is defined as a stake through which significant influence can be implemented. The owner of such a stake may have a seat on the board of directors, and be able to influence the decisions of management, but does not hold the rights to change the firm policies outright (IAS 28 — Investments in Associates, 2003). Panel B of *Table 6* presents mean comparison tests for the Block Premium focusing on only those acquisitions in the sample which confer significant influence, not outright control, in an attempt to identify differences in the characteristics affecting acquisition premiums for this subsample of observations. There is no significant difference in the mean acquisition premium paid for firms in the first half of the decade compared to the second half, which is consistent with what was observed for the full sample of acquisitions.

In line with what was observed in Panel A, the premium paid for firms incorporated in the United States of America is higher than the premium paid for European firms, although in this subsample, the mean premium is 11.85 percentage points higher, suggesting that acquirers looking at significant influence

stakes are more inclined to pay higher premiums for US firms than buyers who acquire large majority stakes.

In the subsample of significant influence stakes, the difference in premiums paid for firms exhibiting outstanding performance, compared to firms which underperform is more pronounced than in the full sample as shown in Panel A. firms that outperform their expectation in the 3 months pre-announcement receive a premium that is 11.49 percentage points higher than firms which underperform their expectation in the same period. This result is significant at the 1% level. From this result, it is inferred that a motive for the acquisition of a non-majority, but significant stake is to show support for the firm under current management, and attempt to gain on the future success of the firm under current management, rather than influence an improvement in management policies.

5.4 Sector Analysis

Table 7 shows results of applying the full regression model in (2) to certain sectors within the sample. There are limited observations in each of the regressions calculated in *Table 7* and as such, one should be careful when drawing inferences from the results.

5.4.1 Energy, Industrials, Materials & Utilities

Regression 5 in *Table 7* provides insight into the determinants of the Block Premium for the Energy, Industrials, Materials and Utilities sectors. It is observed that for this subsample, seeking a change of control requires a premium that is 22.72 percentage points higher than a transaction where control does not change hands. This result is significant at the 1% level and shows that these sectors require higher premiums from acquirers who wish to gain control. An explanation for this may be larger gains to be made through exercising the rights of control, such as changing management policies or adjusting the dividend policy of the firm. It is observed in the full sample that the relationship between a change in control and the Block Premium is 14.34 percentage points, suggesting that the effect of a change of control is amplified for the sectors examined here. This result serves to further confirm Hypothesis 1.

A positive return on the index in the months leading up to the announcement of an acquisition exhibits, for this subsample, a negative and significant effect. The results show a 16.71 percentage point reduction in the Block Premium when the index return is positive compared to when the index return is negative in the 3 months pre-announcement. This result suggests that when the overall stock market is at high price levels, the premium paid in an acquisition is lower than it would be when the stock market is suppressed, which is consistent with the findings of Simonyan (2014). This result shows that Hypothesis 3b is

supported in this subsample of observations, as well as in the full sample. The explanation for this is that in periods of overvaluation of the stock market, while intrinsic firm values are stable, the market price of a firm is increased, thereby reducing the premium paid in comparison to the market price during an acquisition. This effect seems to be magnified in the sectors included in this subsample, implying that firms in these sectors have intrinsic values that are relatively insensitive to market fluctuations in comparison to the full sample.

The market to book ratio of the target, an additional measure of misvaluation, is shown to negatively affect the block premium. A 1 unit increase in the Market to Book ratio will decrease the Block Premium by 0.45 percentage points, a result which is significant at the 10% level. This suggests that firms that have high market prices, and are expected to grow rapidly in the future, attract lower premiums, as the potential future gains to be made through acquisition are already somewhat included in the market price, therefore acquirers are willing to pay less of a premium, as the market price already reflects a larger part of the value they aim to extract. This is in line with the findings of Walkling and Edmister (1985) and Dong, Hirshleifer, Richardson and Teoh (2006).

5.4.2 Consumer Staples, Consumer Discretionary & Healthcare

Regression 6 in *Table 7* provides results of the full regression model shown in *(2)* when applied to a subsample of observations limited to the Consumer Staples, Consumer Discretionary, and Healthcare sectors. An interesting observation is that, contrary to the results in the full model, a change of control has an insignificant effect on the premium paid in an acquisition for this subsample. A strategic acquisition, identified as those where the target and the acquirer are in the same 4-Digit GIC code, attracts a premium that is 17.11 percentage points higher than financial acquisitions, all else equal. This result is significant at the 10% level and serves to further confirm Hypothesis 2 for this subsample. The effect is greater than the 9.35 percentage point effect shown in the full model and implies that the gains to be made from strategic mergers are amplified in the sectors included in *Regression 6*.

Consistent with the full model, cumulative abnormal returns to the target's stock significantly affect the Block Premium. A 1 percentage point increase in cumulative abnormal returns increases the Block Premium by 0.48 percentage points all else equal, significant at the 10% level. This again shows the opposite of what was expected in Hypothesis 3a and serves to provide evidence against the managerial effectiveness theory of acquisitions, using cumulative abnormal returns as a proxy for managerial performance.

Table 7: Sector Regression Results

Table 7 shows results of OLS regressions for specific sectors within the full sample of data. The regression model as outlined in *(2)* is used in each regression in this table. *Regression 5* shows results for observations from Energy, Industrials, Materials and Utilities sectors, classified through 2-Digit GIC codes. *Regression 6* shows results for observations from Consumer Staples, Consumer Discretionary, and Healthcare Sectors, classified through 2-Digit GIC codes. *Regression 7* shows results for observations from Technology, Media, and Telecommunications Sectors, classified through 2-Digit GIC codes. The dependent variable in each case is the Block Premium, as outlined in *(1),* measuring the offer price per target share in the transaction in relation to the market price of the target 1-month pre-announcement. All Regressions control for variation due to the year of the announcement. The independent variables are described in *Table 1.* Heteroskedasticity Robust Standard Errors shown in parentheses.

VARIABLES	(5)	(6)	(7)
Change of Control Dummy	22.72***	8.24	8.49
	(7.59)	(7.33)	(5.84)
Conglomerate Acquisition	15.59	10.82	0.56
	(11.28)	(10.08)	(6.70)
Strategic Acquisition	-0.26	17.11*	15.82**
	(7.82)	(9.44)	(7.51)
90-Day Positive Index Return Dummy	-16.71*	-1.53	-0.97
	(9.28)	(7.07)	(5.96)
Target's 90 Day Stock Return (%)	0.2	-0.02	-0.06
	(0.29)	(0.21)	(0.18)
90 Day Cumulative Abnormal Returns (%)	0.5	0.48*	0.45***
	(0.39)	(0.25)	(0.15)
Log Target's Revenues (US$ Mn)	0.4	-1.77	-2.87
	(2.08)	(2.37)	(2.70)
Target's Market to Book Ratio	-0.45*	-0.26	-1.33*
	(0.26)	(0.19)	(0.70)
Target Stock Price Volatility (%)	0.01	-0.05	0.82***
	(0.16)	(0.44)	(0.26)
United States Dummy	8.35	25.43	24.31
	(10.42)	(22.37)	(20.04)
Constant	14.09	11.92	16.20
	(24.94)	(25.62)	(19.77)
Year Fixed Effects	Yes	Yes	Yes
Observations	76	65	58
Adjusted R-squared	0.44	0.05	0.39

Significance at the 10%, 5%, and 1% level shown by *, ** and *** respectively.

5.4.3 Technology, Media and Telecommunications

Regression 7 in *Table 7* provides results for the regression of the model specified in (2) using the observations that are part of the Technology, Media and Telecommunications sectors within the overall sample. The change of control variable is insignificant in this subsample, which is not in line with what was observed in the full model, *Regression 4*. Amongst other explanations, this may be due to the limited observations used in the regression.

The coefficient for the strategic merger variable is significant at the 5% level and shows that a strategically motivated acquisition will attract a premium that is 15.82 percentage points higher than a financially motivated acquisition, all else equal. This serves to suggest that the benefits from a strategic acquisition are greater in the sectors included in this subsample than in the average sector in the full sample.

90-day cumulative abnormal returns to the target's stock from 120 days pre-announcement to 31 days pre-announcement are found, as is the case in the full sample, to increase the Block Premium, and in this case will increase the Block Premium by 0.48 percentage points for each 1 percentage point increase in cumulative abnormal return to the target. The result is significant at the 1% level.

Similar to *Regression 5*, it is observed that the target's market to book ratio decreases the Block Premium by 1.33 percentage points for each 1 unit increase in market to book ratio, significant at the 10% level. This result provides support for the misvaluation theory of acquisition motives, when market to book ratio is used as a proxy of misvaluation, consistent with the findings of Dong, Hirshleifer, Richardson And Teoh (2006).

Gondhalekar, Raymond Sant and Ferris (2004) employ target stock price volatility as a potential measure of CEO hubris, suggesting that acquiring managers that are infected with hubris will likely choose to acquire targets that have high volatility, as they are risker firms, and allow the manager to showcase his own managerial skills in improving the way the firm is run. In this subsample, we find evidence to support this view, as target stock price volatility has a significant effect on the Block Premium at the 1% level. A 1 percentage point increase in target stock price volatility in the 6 months leading up to an acquisition announcement will increase the acquisition premium by 0.82 percentage points, all else equal, providing evidence for the theory that managerial hubris is a motivating factor for acquisitions, as suggested in Gondhalekar, Raymond Sant and Ferris (2004) and Roll (1986). This is particularly present in the technology, media and telecommunications sectors as these are characterized by higher uncertainty in future cashflows than for example the industrials sector, and as such, managers who exhibit hubris believe

they can greatly improve cashflow stability in an uncertain environment, and are prone to being influenced more by hubris in their decision making in these particular sectors. As alluded to earlier, it is important to note that these regressions are based on small sample sizes, 58 observations in this case, and therefore it may be possible that inference drawn from the results presented in *Table 7* are inaccurate.

5.5 Robustness Check

Table 8: Robustness Check 1-Week Pre-Announcement Block Premium

Table 8 shows results of the robustness check on the full regression model as outlined in *Equation (2). Regression 8* uses the Block Premium based on the 1-week pre-announcement market price of the target stock instead of the 1-month pre-announcement market price of the target stock as is shown in *Equation (1).* The regression results control for variation due to Industry groups, and effects of the year of the announcement. The independent variables shown here are described in *Table 1.* Heteroskedasticity Robust Standard Errors shown in parentheses.

VARIABLES	(8)
Change of Control Dummy	11.79***
	(3.39)
Conglomerate Acquisition	6.71*
	(3.83)
Strategic Acquisition	8.32**
	(4.16)
90-Day Positive Index Return Dummy	-4.28
	(3.27)
Target's 90 Day Stock Return (%)	0.04
	(0.06)
90 Day Cumulative Abnormal Returns (%)	0.41***
	(0.12)
Log Target's Revenues (US$ Mn)	-0.29
	(0.84)
Target's Market to Book Ratio	-0.14
	(0.21)
Target Stock Price Volatility (%)	0.06
	(0.11)
United States Dummy	9.2
	(6.01)
Constant	17.31
	(14.61)
Year Fixed Effects	Yes
Industry Fixed Effects	Yes
Observations	291
Adjusted R-squared	0.16

Significance at the 10%, 5%, and 1% level shown by *, ** and *** respectively.

Table 8 above provides the results from *Regression 8*, which employs the same regression model as used in *(2),* except that the Block Premium is measured using the market price of the target share 1-week pre-announcement, instead of 1-month pre-announcement, as used in *(1).* The purpose of *Regression 8* is to test the robustness of the results observed earlier in this paper, and to see if the observed relationships between the Block Premium and its determinants hold when the construction of the Block Premium is adjusted. As can be seen in *Table 8*, the results presented earlier in the paper do seem to hold when the 1-week market price is used in the Block Premium calculation. We observe that a change of control, consistent with *Regression 4* and *Hypothesis 1*, does continue to have a significant effect on the Block Premium paid during an acquisition. Both conglomeration and strategically motivated mergers continue to show significantly positive effects in comparison to financially motivated acquisitions, and this is supportive of *Hypothesis 2.*

Consistent with *Regression 4*, the cumulative abnormal returns of the target are seen to significantly influence the acquisition premium. However, these provide further support against *Hypothesis 3a,* as the effect is positive, implying that acquirers pay higher premiums for firms that outperform, which is contrary to the managerial effectiveness theory, using cumulative abnormal returns as a proxy of managerial performance.

Overall, *Regression 8* serves to confirm that the results shown in the full model, *Regression 4*, are indeed robust.

In addition to this, a test of variance inflation factor scores of the variables in *Regression 4,* shows that no independent variable has a variance inflation factor above 2, indicating very limited influence of multicollinearity within the results provided in this paper. This further serves to ensure the robustness of the results in *Regression 4*.

6. Conclusions

This paper set out to analyze the determinants of premiums paid above the market exchange price in the acquisition of a large percentage block of target shares, as well as understanding the rationale behind acquiring managers paying such a premium. Previous literature argues that acquisition premiums are the result of a combination of rational and irrational behavior by acquiring firm managers.

One theory suggests that premiums paid in acquisitions are the result of a difference in current value and potential value. Acquiring managers compare the current value of a firm to the perceived potential value under optimal management and are willing to pay a premium to the current market price, should the potential value outweigh the current value. This is based on the managerial effectiveness argument presented by Dong, Hirshleifer, Richardson and Teoh (2006). Roll (1986) provides an irrational element to this argument, as it inherently assumes that the acquiring manager believes the potential value derived on the basis of his analysis is correct. This leads to a behavioral element of acquisition premiums, the hubris theory, where acquiring managers believe their abilities are of a higher standard than is actually the case. In this instance, the premium paid in an acquisition will be higher than is reasonable, and the combined entity will most likely lose value as a result of the transaction.

Fama and Jensen (1983) attempt to explain acquisition premiums through the idea that managers act in their own self-interests, instead of the interests of shareholders, unless strict monitoring and incentive alignment is in place. In such a situation, one would find that managers engage in value-destroying acquisitions in an attempt to build an empire of firms, which would provide individual utility to the manager, instead of distributing excess cashflows to shareholders, maximizing their value.

An alternative motivation for acquisition premiums is the synergies to be gained through a combination of firm resources. Damodaran (2005) illustrates that two firms, if suited for combination, can increase in value beyond just the sum of the parts, due to the efficiency gains available from business combination. This is a justifiable rational for an acquisition premium, but further rests on the idea that the value of potential synergies which is arrived at by the acquiring manager is in fact a reasonable value.

This paper tested three main hypotheses relating to acquisition premium determinants. The first is that acquiring managers are willing to pay higher premiums to the market price of the target firm in order to acquire control of the firm. The second, is that acquisitions motivated by operational synergies, where a combination of business resources of firms in the same industry group can provide operational efficiency, will prove more enticing for acquiring managers than a financially motivated acquisition, where the

acquirer believes value can be created through adjustments to the capital structure of the target, and as such, strategically motivated acquisitions will attract a higher premium than their financially motivated counterparts. The third hypothesis aimed to test whether acquiring managers place importance on the performance of the target firm pre-acquisition. A firm which performs poorly provides space for a better manager to create value, and therefore such a firm should, in theory, attract higher premium. In addition to this, when the market is in a bullish run, and share prices are potentially inflated above their intrinsic values, acquiring firm managers should continue to compare their opinion of target firm intrinsic value, to the value currently shown in the market. Therefore, in periods of high stock market price levels, acquisition premia will be lower than in periods of low stock market prices.

Hypothesis 1 is found to hold true in this study, with the prospect of a change in control requiring managers to pay a premium that is 14 percentage points higher than when the acquirer does not seek control. This result is amplified in certain sectors, with the Energy, Industrial, Materials and Utilities subsample, as well at the Technology, Media, and Telecommunications subsample exhibiting higher required premiums to purchase a controlling stake.

Hypothesis 2 is consistently supported in the study, as it is observed that strategic acquisitions require the acquirer to offer an extra 9.35 percentage points to the market price in a successful acquisition, compared to a financially motivated acquirer. This holds true in the subsamples analyzed, and points towards the fact that strategic acquirers are willing to pay more in an acquisition, suggesting that their valuations of the target firm are higher than that of a financial acquirer.

Hypothesis 3a is not supported in this study, as it is observed across the full model, and the subsamples that higher cumulative abnormal returns to the target in the months leading up to an acquisition do in fact increase the acquisition premium. This result is contrary to previous literature which finds that, as a measure of managerial effectiveness, target cumulative abnormal returns should exhibit a negative relationship with the acquisition premium. The result suggests that for this sample, acquiring managers are motivated to gain from the continued success of current managers, rather than attempting to gain through improving the way the target firm is run. *Hypothesis 3b* is somewhat supported in the analysis. A positive return on the index pre-announcement exhibits a consistently negative relationship to the Block Premium throughout the analysis, although the relationship is only statistically significant in a selection of the regression analyses implemented.

The results presented in this paper contribute to the vast number of studies that attempt to explain the reasoning behind the size of premiums paid in firm acquisitions. It provides an analysis based on an up to date sample of transactions, in a period characterized by unprecedented economic conditions, with investor sentiment rapidly increasing, and interest rates at all-time lows. The findings confirm some previously studied factors, that acquirers pay more for control, and that strategic acquirers are willing to pay higher premiums than financial acquirers. The study also rebuffs the theory of managerial effectiveness suggested in previous works, and illustrates that acquirers are motivated to try benefit from the future success of target firms under their current management teams, rather than attempting to turn around underperforming firms.

This paper is limited to assessing target firm characteristics, as many acquirers in the sample are not public firms. Future research could include specific bidding manager characteristics, the social links between target and acquirer board of directors, as well as the quality of the advisors on the deal. This may provide valuable insight into the remaining unexplained variation of observed acquisition premia. Additionally, a larger sample size may allow for more accurate inference into the effects of acquisition motives and their individual influence on the acquisition premium, particularly within certain sectors.

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