Stock Performance and Acquisition Payment Methods

Supervisor:

Talina Sondershaus

Authors:

Bhiladvala, Simon

Dalaei, Roxana

Abstract

This thesis examines the influence of payment methods on bidder stock returns during acquisitions in the tumultuous United Kingdom market conditions from 2018 to 2022, specifically whether the choice between cash or stock payments yields any different cumulative abnormal return for the acquirers. Additionally, this thesis investigates whether the financial industry deviates from other sectors in the country. The chosen methodology for this thesis is an event study, examining the short-term cumulative abnormal returns around the announcement day for the acquisitions. The findings follow from previous research, with insignificant values indicating that the choice of payment method does not result in superior abnormal results. However, there is a subtle suggestion of improved outcomes when opting for cash transactions. Furthermore, the financial industry did not perform well during the study period and underperformed the rest of the industries, as market reactions were much better in other sectors.

Keywords: acquisitions, event study, payment method

Acknowledgements

We want to extend our appreciation to our supervisor, Talina Sondershaus, whose support and insights have helped guide us through the journey of this thesis. Additionally, we would like to express our thanks to Lund University School of Business and Economics for the amazing education they have provided.

_____   _____

Simon Bhiladvala   *Roxana Dalaei*

Table of context

1. Introduction

1.1 M&A and the Financial Industry

The dynamic and ever-evolving economic landscape, characterised by emerging trends, global realignments, and technological advancements, necessitates astute strategic decision-making by enterprises to adapt to continuous change. In this context, firms can take on strategic tools such as Mergers and Acquisitions (M&A) to fortify their positions. M&As denote transactions wherein two companies unite in some capacity. While the terms "mergers" and "acquisitions" are often used interchangeably, they carry distinct legal implications. In a merger, two companies of comparable size join forces to establish a new, singular entity. An acquisition occurs when a larger company acquires a smaller company, thereby assimilating the smaller company's operations or assets. M&A transactions can take on either a friendly or hostile nature, contingent upon the approval of the target company's board (Corporate Finance Institute, n.d.a), in the form of a tender offer or a hostile takeover (Corporate Finance Institute, n.d.b).

The focal point of our thesis lies in the complexity surrounding acquisitions. The driving forces behind such acquisitions can range from gaining a competitive edge, accessing new markets, and achieving cost synergies, to diversifying business operations (Patel, n.d.). The core of this thesis revolves around finding out the crucial role the choice of payment method plays in getting the most favourable response from the market. Payment methods used in M&A transactions, including cash transactions, stock exchanges, or a hybrid approach, introduce distinctive financial considerations and ramifications. Understanding the various consequences of these payment methods becomes crucial for stakeholders, including investors, analysts, and corporate decision-makers, as they navigate the intricate terrain of strategic financial decisions.

It is also extra intriguing to examine a specific industry in comparison to the rest of the sectors. M&A transactions usually happen in clusters and waves by industry. Unexpected shocks to an industry's structure can result in an increased number of acquisitions made in the same market (Mitchell & Mulherin, 1996). The financial industry in the United Kingdom (UK) distinguishes itself from its counterparts across the globe, by having a financial market known for its attractiveness to external investors and playing a vital role in the contribution of the UK economy over the last decades (Bank of England, 2022b). Financial markets, comprising activities in shares, bonds, currencies, and other financial instruments, play an important role in providing financing for companies, capital for governments, and

maintaining price stability. During prosperous periods, the financial markets serve as potent tools for global economic growth and societal development. Conversely, in times of downturn, such as witnessed during the last financial crisis that started in 2007, the repercussions can be profound, affecting millions of individuals (Bank of England, 2022a). The financial industry, distinguished for its dynamic nature and perpetual evolution, is therefore intriguing for further examination.

1.2 Problem Description

Considerable research has been undertaken within the domain of M&As; however, the scrutiny directed towards the UK market appears comparatively understated, given the nation's economic prominence. The period the thesis is examining, 2018-2022, starts when the financial industry in the UK is in distress. A possible upcoming Brexit is keeping all actors on their toes. The following effects of Brexit and the COVID-19 pandemic caused consequential effects on the economic landscape, thrusting the nation into a state of flux. This has elevated the importance of further research and in-depth analysis to understand the impact on the financial terrain of the nation (Petit & Beck, 2023).

The financial industry earned heightened interest due to its substantial magnitude and profound influence on the overarching national economy. Recent revelations disclose that nearly one-tenth of the UK's economic output is attributed to the financial market, positioning it as the fourth largest among OECD, Organisation for Economic Co-operation and Development, nations relative to the country's economic output. Nevertheless, the financial industry in the UK has faced a quandary since 2018, a negative trajectory attributed to the uncertainties surrounding Brexit. Resulting in a decline in cross-border trade with the European Union (Hutton, 2022). Although Brexit was officially declared on January 31, 2020 (Council of the European Union, n.d.), previous uncertainties had already cast adverse repercussions on the UK market in the preceding years (Bank of England, 2019).

Another pivotal event disturbing the global economy and pressuring the financial markets even heavier is the global pandemic, COVID-19, declared by the World Health Organization on March 11 2020 (World Health Organization, n.d.). This health crisis has not only impacted global well-being and lives but has also reverberated through worldwide production and economies. The consequential repercussions on financial markets are noticeable, exemplified by the Financial Times Stock Exchange (FTSE) index experiencing its most severe downturn since 1987. Creating huge uncertainty and increasing risk levels in the financial markets (Hu et al., 2020). Followed in 2022 by a full-blown invasion of Ukraine by Russia, affecting the global economy as well (Arce et al., 2023). The challenges posed by COVID-19 together

with the Ukraine invasion have prompted extensive policy interventions globally, spanning fiscal and monetary actions. These interventions, particularly manifest in fluctuating interest rates on government bonds, have profound outcomes on stock markets (Bank of England, 2022b). Such global distress usually leads to the financial industry suffering losses (Swedish House of Finance, n.d.). Even though financial markets usually see negative results during stressful times, they play a vital role in keeping the economy from crashing down. This is seen in the renowned study by Ben Bernanke (1983) examining the vital role banks played in the great depression.

This poses the question of whether the recent market trends in the UK will affect the M&A reactions or follow with the same results seen in previous research conducted in more stable markets. Peaking interest in investigating whether the data reflects a similar result in a more turbulent market.

1.3 Purpose

Through an empirical examination of the turbulent market conditions in the UK over recent years, this thesis aims to examine whether the choice of payment method yields equivalent returns as indicated by previous research. The study focuses on the meticulous analysis of abnormal returns associated with announcements of acquisitions, specifically for the acquiring firm, without delving into the causal factors behind these trends. The primary objective is to identify whether the outcomes of these transactions vary depending on the chosen payment method.

In addition, this thesis examines whether the financial industry in the UK, characterised by its significant scale and inherent volatility, shows distinct behavioural patterns in contrast to the broader national landscape. To achieve this, the event study methodology is used, calculating the cumulative abnormal returns (CAR) proximate to the announcement date of acquisitions.

The anticipation is set for noticeable results given the unique conditions of the political situation with the EU, the global pandemic, and the conflict in Ukraine that currently pressures the industry. In expectation of a different result than previous findings, the thesis aims to fill the gap in the research. Seeing that industries' and payment methods' reactions might differ during turbulent times.

The heightened uncertainty, disruptions in supply chains, reduced consumer confidence, and increased financial strain create an environment where standard economic dynamics undergo substantial alterations. Consequently, firms may face unique challenges and opportunities during crises, impacting their

performance and, consequently, stockholder returns. Factors such as government interventions, altered consumer behaviour, and shifts in market sentiment become more pronounced during crises, leading to potential divergences in outcomes compared to more stable economic periods. Therefore, understanding the distinct economic dynamics during crises is crucial for comprehending variations in stockholder returns.

The predicted findings are intended to offer practical insights for financial practitioners, policymakers, and researchers interested in improving M&A strategies to benefit shareholders and support corporate growth. This thesis focuses specifically on clarifying details on the acquiring side, setting it apart from the usual emphasis on the target side.

1.4 Research Questions

The research questions in this paper are based on the discussion and purpose, and are as follows: First, does the choice of payment method between cash or stock in an acquisition result in a significantly different CAR? Second, did the financial industry in the UK experience higher CAR in acquisitions during the period 2018-2022 than the other sectors? Lastly, does the significance of the payment method used in an acquisition play a similarly vital role in the financial industry?

1.5 Disposition

The rest of the thesis is structured as follows. The foundational framework is laid out in section *2*, where an in-depth review of previous research is undertaken to illuminate the rationale underpinning the choice of payment methods and the outcomes. This section is complemented by additional contextual information that contributes to a comprehensive understanding of the complexities within the financial industry. Section *3* presents the methodology used for the data analysis, with a detailed discussion of the event study methodology and the models used to calculate it. Section *4* describes the data collection process and the subsequent calculations performed thereon. Results are presented in section *5*, where numerical values are thoroughly analysed. This numerical review sets the stage for a comprehensive discussion in section *6*, where the various aspects of the work are intricately tied together. Finally, section *7* provides a brief summary of this research, its findings, and the broader implications thereof.

2. Theoretical Background

2.1 Payment Method

When acquiring another firm, the acquirer faces the strategic decision of employing either cash, stock, or a combination of both as the payment method. Travlos (1987) discerns a frequent use of cash in tender offers, primarily due to the desire to close the deal quickly. He also finds that stock transactions are more commonly used in mergers. A cash payment, typically financed through debt, is the trade of liquidity from the acquiring part per each share in the target firm. On the other hand, a stock payment involves the exchange of shares in the bidder's firm for shares in the target firm. Boone et al. (2014) conducted a study that identified a surge in the commonness of stock payments in the late 90s, subsequently witnessing a resurgence in cash payments. Despite the focus on these two methods, their research underscores the significance of recognizing a mixed payment approach as a distinct method. Consequently, this thesis intentionally excludes transactions incorporating a blend of both methods. Their findings indicate that such mixed-payment transactions are less commonplace within financial markets.

In the evaluation process of determining whether to utilise cash or stocks for financing the acquisition, the acquirer contemplates numerous factors to discern the most advantageous method. Simultaneously, from the seller's standpoint, the objective is to secure payment through the method deemed most favourable. There has been plenty of research on variables affecting the decision of method (Boone et al., 2014; Dong et al., 2006; Ghosh & Ruland 1998; Karampatsas et al, 2014; Martin, 1996; Shleifer & Vishny, 2003). They focus on the decisions made by the acquirer.

Fishman (1989) observes that opting for cash payments serves as a signalling mechanism, indicating confidence in the deal. This added confidence stems from the risk undertaken by the acquirer, particularly when the price may be overvalued. Conversely, paying with stocks is often considered a safer option as it distributes the risk between the acquirer and the shareholders of the selling company. Martin (1996) argues that acquiring firms tend to choose stock payments when anticipating substantial growth potential. He asserts that stock financing results in higher stock returns for the bidder. However, these firms tend to opt for cash payments when they possess significant liquidity. Cash payments are also prevalent in tender offers. Harford et al. (2009) and Usyal (2011) shed light on how the leverage of the acquiring firm influences the choice of payment method, revealing a decreased willingness to finance an acquisition through debt when overleveraged relative to the target's debt ratio. Overleveraged firms are less likely to

engage in acquisitions, and if they do, they are inclined to finance the transaction with equity. Other papers find the preference for using stock is when the acquirers' stock price is relatively high (Andrade et al., 2001; Dong et al., 2016; Faccio & Masulis, 2005; Ismail & Krause, 2010).

Previous research notes that acquiring firms' stock often experiences a negative price reaction in stock-financed acquisitions (Martin, 1996). The article further explains that poor acquiring firm performance is not confined to the announcement period; in both tender offers and mergers, post-acquisition returns are lower for stock-financed acquisitions than for cash-financed ones. Linn and Switzer (1994) find that acquiring firms exhibit significantly worse industry- and size-adjusted operating performance for up to five years following an acquisition. Hence, it is crucial to delve into the motivations of acquiring firms for utilising stock and/or cash financing.

Emery and Switzer (1999) find that the acquiring manager typically determines the payment method based on the highest expected abnormal return. The manager's decisions are influenced by signalling to the market, concerns about taxes, signalling adverse information, and asymmetric information about the target's value. The choice of method extends beyond internal factors, considering external reactions to the decision. Contributing to this area of study, Ho et al. emphasise the impact of market sentiments on the choice of payment method. Their research reveals that acquiring firms tend to favour stock payments in bullish market conditions, whereas target firms prefer cash payments when anticipating a downward market trend. Their analysis establishes a negative correlation between the abnormal returns of acquiring stock and market sentiment. Conversely, higher market sentiment is associated with elevated abnormal stock returns around M&A announcements (Ho et al., 2021).

Observing the actual returns made on the different methods is not clear in previous research. An article by Andrade and Stafford (2001) informs us that event studies indicate short-term shareholder gains from M&As, with a significant portion of these gains accruing to the target company. Travlos (1987) finds a negative connection between the amount of equity financing the acquisition and the returns. He continues that the returns in acquisitions financed by cash are similar to normal rates of return. Emery and Switzer (1999) also found a negative result when acquiring another company with stock for the bidders.

2.2 Financial Industry

The financial industry is an extensive sector providing an array of different services. In the midst of it all are banks, both investment and commercial banks. They provide fundamental services like financing,

deposits and transactions. Around all of that are services like asset management, insurance, equity trading and specialised entities like hedge funds, private equity etc. All of these services are provided by the web of actors in the financial industry (Mishkin & Eakins, 2018).

During the years 2018-2022, the financial industry was affected by a lot of global events. Starting off with a probable Brexit, the actors in this sector were heavily focused on precautions and stress testing for the upcoming event. The uncertainties put additional pressure on the forward interest rates and a decline in the sterling exchange rate. Which is major for a market heavily dependent on foreign investors. This shows a decreasing number of investments in 2018-2019 (Bank of England, 2019). The stock market also faced challenges, marked by a drop between 2020 and 2021. Despite a rough start to the period the market showed a healthy recovery in the subsequent two years. Shown in the demand by foreign investors, Foreign Direct Investment (FDI) for the industry peaking in Europe, making it the region's highest FDI per industry. The financial service industry also achieved the highest surplus in the world. Additionally, in Q4 2022, the banking sector emerged as the world's largest for cross-border banking (City of London, 2023).

2.3 London Stock Exchange

Understanding the efficiency and magnitude of the UK's market, the London Stock Exchange (LSE), creates an understanding of the landscape the acquiring firms are traded on. The LSE as it is known today originated from a list of prices for stocks and commodities in 1698 (London Stock Exchange Group, n.d.). Today the LSE, according to Yahoo Finance, is the 8th largest stock exchange in the world. Having an impressive market capitalization of 32 trillion dollars in January 2023 (Cheema, 2023). This substantial market presence suggests an assumption of market efficiency. The scale and liquidity further the assumption of a credible foundation for a reactive market to news and novel information. Seen in the reaction to the global events affecting the stock market. The FTSE100 index, during the period, started at the price of 7778.60 GBP and closed at 7451.70 GBP. With similar starting and ending prices, the expectation might be a stable period. That is not the case, though the market still went through turmoil during the period, showcased in a big drop down to 5190.80 GBP (Yahoo Finance, n.d.).

2.4 The Efficient Market Hypothesis

A well-known economic assumption is the Efficient Market Hypothesis (EMH), which is a cornerstone in a lot of research done in the last couple of decades. The EMH is still a controversial topic, and finding a definitive answer regarding its validity remains unsolved. The EMH distinguishes markets from being in

three groups of efficiency. Depending on the level of the market, we can assume different amounts of information being considered in the current prices of stocks. The strong form of the EMH observes an embodiment of all information available in the market price. Including the historical financial data which is the definition of the weak form, fresh public data shown in the semi-strong form, and additionally all the private information for the individual stock. It is claimed that a delay in the market reaction to event announcements is due to the lack of attention by the investors. Creating a controversial topic for how efficiently the market reacts to specific events. Being a heavily discussed topic, the questions remain without a clear answer (Titan, 2015). Observing a liquid market like the LSE gives the facts and data to argue for a strong efficient market. Providing a basis for the assumption included in the market model used in the thesis.

2.5 Hypothesis

The majority of previous research focuses on the perspective of target firms, although much of the market's reaction depends on the choice of payment made by the acquirers. Making the payment in cash signals a higher confidence and a greater financial capability made by the acquiring firm as stated by Fishman (1989). Since the acquiring firm is the dominant party in the strategic choice of payment method, they still do not seem to be in the spotlight

Therefore, with a focus on the acquirer's perspective, the hypothesis of this thesis follows that the CAR will tend to be more insignificant than previous studies. Furthermore, a normal, if not positive, CAR for acquisitions made by cash is expected. This follows from previous findings like Travlos (1987), continuing on with the acquirers that tend to use cash seem to be more financially healthy according to the articles in section *2.1*. Historical data and research, such as Emery and Switzer (1999), tend to tell us that stock payments trigger a negative reaction. The dilution of the stock value and the weaker signalling to the market of commitment both contribute to explaining the negative effects. This creates a result of lower abnormal returns and higher scepticism in the market of the acquisition, leading to the thesis' expectancy of a negative CAR.

Due to Brexit, COVID-19 and the invasion of Ukraine, the financial industry in the UK is not in the best condition. This adds more weight to the confidence shown in cash payments, which could result in a greater reaction in the market. The rough conditions may hit the volatile nature of the financial sector and thus test the optimism of investors. However, as stated by Mitchell & Mulherin (1996), a shock to the industry's structure can result in an increase in the number of M&A transactions during that period. This

suggests that there are many investment opportunities in the market. This leads to the hypothesis that acquirers who are financially stable enough during rough times are considered stable investments and shall therefore receive greater returns. Implying that the turmoil the financial industry found itself in, should have resulted in a more positive period for abnormal returns when announcing an acquisition than the other sectors.

3. Methodology

3.1 Event Study

There is extensive research on the market reactions to different events. The event methodology is used to understand how the market will react to different actions within the days around it. The results can be an indication of how investors and the market react to different types of occasions and lead to investing strategies for the future (MacKinlay, 1997). Using the methodology that became popular by Ray Ball and Philip Brown in 1968 in the analysis of stock reactions due to earnings (Ball & Brown, 1968). Also followed up by the year after when Fama et al. wrote in 1969 about the effects of stock splits and concurrent dividend increments (Fama et al, 1969). These papers have laid the groundwork for the methodology called CAR, a heavily used method in event studying. These types of events can range from mergers and acquisitions to earning reports and announcements of macro variables. Aiming to find a change in behaviour due to the announcement of the event (MacKinlay, 1997).

The empirical data is investigated in a manner of an event study, akin to the approach outlined in Dodd and Warner (1983). The methodology is fundamentally observing the abnormal reaction by the market on a firm's stock around the announcement of the specific event.

3.1.1 Event Period

With a background in our research question, the length of observation interval is one day, thus daily stock returns are used. An eleven-day event window is employed, consisting of five pre-event days, the event day, and five post-event days. This follows the same event period used in the well-referenced event study done by Brown and Warner (1985).

This creates space to analyse the effects of the acquisition before the announcement when information may leak and gives room for the market to react afterwards. This prior effect on the CAR is seen in the study conducted by Adnan and Hossain (2016), which indicates a possible information leak before announcement day. This leads to a favourable trading outcome in stocks, resulting in an unexpected additional return. It is crucial to consider the five days leading up to the event to account for its impact on stock prices during that period. Following the claim made in section 2.4, to consider a late reaction by the investors, the thesis includes five days after the announcement as well. Market reactions to announcements can exhibit both overreactions and underreactions, often adjusting in the subsequent days.

A comprehensive understanding requires consideration of these adjustments in the days following the initial reaction on the announcement day.

For each acquisition, an estimation window spans the 51 trading days leading up to the event window, with a gap of five days between the two periods. It is customary for the estimation window and the event window to be distinct, ensuring that estimators for the parameters of the normal return model remain uninfluenced by returns surrounding the event (MacKinlay, 1997). In those cases, both the normal returns and the abnormal returns would encapsulate the impact of the event, posing a challenge since the methodology assumes that the event impact should be specifically captured in the abnormal returns. The estimation window therefore ends with a four-day gap until the event period starts. The estimation window can also not start too early making the historical data irrelevant taking other historical events into consideration. On the other side, including enough days prior to creating a reliable result that doesn't let abnormal fluctuations influence the numbers too much. Therefore, the estimation window will start 60 days before the announcement and end ten days prior to the announcement day. Creating a window of 51 days is sufficient for basing the expectations without uncertainty.
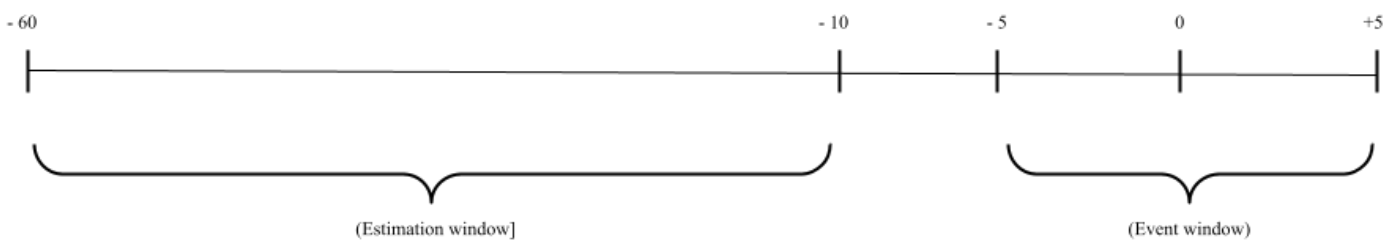
Figure 1. Timeline for our event study

3.2 Cumulative Abnormal Return (CAR)

CAR represents the difference between the calculated expected return and the actual realised return (Nasdaq, n.d.a). Calculating the CAR for the acquirer in contrast to its usual movement with the market. It is a robust and widely utilised metric for assessing the impact on stock prices over a specified period. The expected return is characterised as the anticipated return in the absence of conditioning on the event occurring. For firm i and event date t the AR is

$$AR_{it} = R_{it} - E\left(R_{it}|X_t\right), (1)$$

15

where AR_{it}, R_{it} and $E\left(R_{it}|X_t\right)$ are the abnormal, actual and normal returns respectively for time period t. X_t is the condition information for the normal return model. In this thesis, we model normal returns with the market model, where X_t is the market return. This is explained further in the next section *3.3 Model for Measuring Normal Performance.*

The sample CAR from t_1 to t_2, where t_1 is the first event day (in our case five days prior to announcement day) and t_2 is the last event day (five days post announcement day). The CAR from t_1 to t_2 is the sum of the included AR's (MacKinlay, 1997),

$$CAR_i(t_1, t_2) \ = \ \sum_{t=t_1}^{t_2} AR_{it}. \ (2)$$

There will always be downfalls with every simplistic model. Two renowned articles written by Stephen J. Brown and Jerold B. Warner in 1980 and 1985 discussed the results given by using CAR. They showcase simulations and compare the results to find the disparities, and inaccuracies in the information. This has resulted in heavy use of the articles' findings on how to adjust the testing method to adjust for errors in the output. The second article is more applicable to this thesis due to the focus on daily data whilst the first one analysed CAR in the monthly data points (Brown & Warner, 1985).

3.3 Model for Measuring Normal Performance

Several methods can be employed to compute the normal returns of a given security. These methods can be broadly categorised into two groups: statistical and economic. This study will use the market model, a statistical model, to calculate the expected return. Statistical models follow from statistical assumptions concerning the behaviour of asset returns and do not depend on economic arguments. In other words, the assumption that asset returns are jointly multivariate normal and independently and identically distributed through time is imposed. This distributional assumption is sufficient for the market model to be correctly specified. Despite the strength of this assumption, practical applications often do not encounter issues because the assumption is empirically justifiable. Results derived from normal return models typically remain robust even when there are deviations from this assumption (MacKinlay, 1997).

3.3.1 The Market Model

The market model is employed to estimate stock returns before the event windows, providing insights into the expected return during the acquisition period. The market model connects the return of a specific security to the return of the overall market portfolio. The linear specification of the model is derived from assuming the joint normality of asset returns. Compared to similar models, the market model decreases the volatility observed in ARs, leading to more reliable results (MacKinlay, 1997). This enhances the ability to identify abnormal movements. The effectiveness is reflected in the R^2 value.

For any security i the market model is (MacKinlay, 1997),

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}, \quad (3)$$

$$where$$

$$E(\varepsilon_{it} = 0) \ and \ var(\varepsilon_{it}) = \sigma^2_{\varepsilon_i}$$

Here, R_{it} and R_{mt} represent the period-t returns on security i and the market portfolio, respectively, while ε_{it} denotes the zero-mean disturbance term. α_i, β_i, and $\sigma^2_{\varepsilon_i}$ are the parameters associated with the market model. In applications, a broad-based stock index is used for the market portfolio. This study uses the FTSE100 index, as mentioned above in section *2.3*.

3.4 Regression

To examine the impact of payment method and industry on acquirer CAR and establish their significance in explaining these returns, a regression analysis using the method of least squares with cross-sectional data will be conducted. The method of least squares is a statistical approach that estimates linear relationships between the variables, minimising the sum of squared differences between observed and predicted values (Greene, 2002).

In this thesis, the method of least squares regression serves multiple purposes, including hypothesis testing and assessing the extent to which the chosen explanatory variables influence the response variable. Additionally, it plays a crucial role in determining the significance of the selected model and variables.

Constructing our regression model through the method of least squares requires specifying a dependent variable and integrating dummy variables essential for testing our thesis. In this study, acquirer CAR, measured as a percentage, is selected as the dependent variable.

3.5 T-test

In the pursuit of answering the research question posed in this study, a t-test will be used. A t-test is a statistical method used to determine if there is a significant difference between the means of two groups (Kim, 2015). The primary goal is to assess whether the observed variations in means exceed what could be attributed to random chance alone. Calculating t-statistics and comparing them to a predefined critical threshold is important for deciding if the observed difference is statistically significant. This process contributes to the investigation of the study's research question.

4. Data

4.1 Data Source and Data Collection

The data points utilised in this thesis have been sourced from Refinitive Eikon, a widely recognised data platform in modern research. Refinitive Eikon stands out as a prominent provider of financial market data and analytics, offering a comprehensive depiction of firms through market prices, trading data, and analytical tools widely employed by professionals in the financial industry. It is noteworthy that using Refinitive Eikon, a product of the London Stock Exchange Group, in this thesis implies that the data is directly gathered from the primary source.

The selection criteria involved the application of specific filters. Firstly, the period when the acquisition occurred between 1 January 2018 and 31 December 2022 was filtered. Secondly, only acquisitions that are fully confirmed and an acquired share of 100% are included. Thirdly, the headquarters of the acquirer must be located in the UK. Lastly, the payment method for the transactions is either cash or stock.

This led to a total of 211 acquisition events. However, 56 cases were missing crucial information, leaving us with a final dataset of 155 completed acquisitions for our study. Among these, 126 were financed with cash, and 29 with stock. Furthermore, 73 out of the 155 deals were within the financial industry.

4.2 Estimating Cumulative Abnormal Return (CAR)

As presented in section *3.4 Regression*, CAR is the dependent variable in this study. CAR is calculated in several different steps including the expected return of the stock, the actual return of the stock, the calculation of the AR for each security, and lastly the sum of the ARs to get the CAR over the period. CAR is then estimated for different time intervals within the event window which starts five days prior to the announcement day.

We obtained the announcement dates for each acquisition from the Refinitive Eikon database. Subsequently, we organised the data into intervals spanning from 60 days before to 10 days after the announcement day, using the announcement day as the reference (day 0). This dataset includes the price and index value for each security for each day within this 71-day period.

The actual return for each event day and each firm was calculated as the percentage change in price between two time periods, in this case between two event days. Accordingly, we got the return for each security, for each day in the estimation period -59 till +10.

The actual return is calculated as follows,

$$R_t = \left(\frac{P_t}{P_{t-1}} - 1\right) * 100. \text{ (4)}$$

Where R_t is the actual return for event day t, P_t represents the closing stock price of day t and P_{t-1} is the closing stock price of day t-1.

We used the index FTSE100 to calculate R_{mt}, the period-t returns on the market portfolio. Calculated the same principle as in equation 4. Using the market model to measure the normal return, the sample AR is

$$AR_{it} = R_{it} - \widehat{\alpha}_i - \widehat{\beta}_i R_{mt}. \text{ (5)}$$

Then the $CAR_i(t_1, t_2)$, i.e. the sum of ARs in the sample was calculated as in equation 2.

4.3 Model for Regression

Three regression models were constructed. All three models were defined with acquirer CAR as the dependent variable, each incorporating different dummy variables.

4.3.1 Regression Model 1

Regression model with CAR as the dependent variable, an intercept alpha and one dummy variable (*Cash_dummy*) for the choice of payment method. The dummy variable is set to one if the acquisition was entirely paid with cash and zero if it was fully paid with stocks. The regression model will hence be specified as

$$CAR_i = \alpha + \beta * Cash\_dummy_i. \text{ (6)}$$

20

If the acquisition is paid with stocks, the dummy variable becomes zero, and CAR_i equals alpha. In this scenario, CAR_i is essentially the ACAR for all acquisitions in the entire sample that were financed with stocks. Therefore, the intercept alpha represents the average CAR when the acquisition is stock-financed.

On the other hand, the beta parameter in the regression specifically measures how using cash instead of stocks influences both the ACAR for stock-financed acquisitions and, consequently, the overall CAR_i of the regression. In simpler terms, the beta parameter signifies the difference in ACAR between the two payment methods. Therefore, the dummy variable's coefficient is essential because it shows how the average outcome changes when the dummy variable shifts from 0 to 1. This indicates the typical impact or difference associated with that category while keeping other factors constant.

4.3.2 Regression Model 2

The second regression model will be similar to the first one, with CAR as the dependent variable, an intercept alpha and one dummy variable (*Finance_dummy*). Now the dummy variable considers if the acquirer is part of, or not part of the financial industry. It will take the value of one if the acquiring firm belongs to the financial industry, and zero otherwise. The regression model specification will be

$$CAR_i = \alpha + \beta * Finance\_dummy_i \quad . (7)$$

The alpha and beta parameters can be interpreted as before. Now we study if there is any significant difference in the acquirers' CAR, depending on whether the acquisition is made within the finance industry or not.

4.3.3 Regression Model 3

Regression with CAR as the dependent variable, an intercept alpha, two dummy variables (including both dummy variables from the previous regressions), and one interaction term with the two dummy variables. The regression model specification is now in equation 8.

$$CAR_i = \alpha + \beta_1 * Cash\_dummy_i + \beta_2 * Finance\_dummy_i + \beta_3 * Cash\_dummy_i * Finance\_dummy_i.$$
$$(8)$$

The intercept represents the average value of CAR when all dummy variables are zero, i.e. ACAR when the acquisition is stock-financed and the acquiring firm is not in the financial industry. β_1 represents the average effect of cash as the payment method, β_2 and represents the average effect of being a part of the financial industry on CAR. β_3 captures the effect of cash as the payment method in the financial industry, on the CAR_i for each firm i. Representing how the combined effect of the two differs from the sum of their individual effects.

4.4 Robustness Check

To ensure the reliability and validity of our findings, incorporating robustness checks in our study is crucial. When compared to the market model, adding the constant mean return model as a robustness check serves a specific purpose. The constant mean return model assumes a fixed average value throughout the dataset, providing a simplified baseline for comparison.

The constant mean return model, where we let μ_i be the mean return for asset i, is (MacKinlay, 1997)

$$R_{it} = \mu_i + \zeta_{it} \, , (9)$$

$$where$$

$$E(\zeta_{it}) = 0 \ and \ var(\zeta_{it}) = \sigma_{\zeta_i}^2 .$$

At which R_{it} is the period-t return on security i and ζ_{it} is the time period t disturbance term for security i with an expectation of zero and variance $\sigma_{\zeta_i}^2$. While the constant mean return model may be the most straightforward model, Brown and Warner (1985) observe that it frequently produces outcomes comparable to those of more intricate models. This lack of sensitivity is because choosing a more advanced model does not usually reduce the abnormal return's variance by much.

Contrasting results obtained under the market model with those under the constant mean return model allows us to evaluate the sensitivity of our findings to the complexity of the chosen model. If our conclusions hold consistently under both the market model and the constant mean return model, it suggests a degree of robustness, indicating that our results are not heavily influenced by the specific intricacies of the market model. Conversely, variations between the two models may trigger additional

investigation, allowing us to comprehend the reasons for these differences and gain a more detailed insight into the study's outcomes. This comparative analysis enhances the credibility of our research by demonstrating the reliability of our findings across different modelling approaches.

5. Empirical Results and Analysis

5.1 Abnormal Return

Table 1 presents the trends in daily average abnormal return (AAR) for acquiring firms' stocks around the announcement period, broken down by separate sample groups. Standard errors are reported in parentheses. The initial column (1) represents each of the eleven event days in our event window. Column (1) outlines the AAR for the entire sample of 155 transactions. The subsequent columns (2) and (3) further break down the results into subgroups based on the payment method, with 126 transactions for cash (2) and 29 transactions for stock (3). The final two columns represent subgroups that distinguish between AARs for securities where the firm is in the finance industry (4), or in the other industries (5). A total of 73 transactions were observed in the finance industry, and 82 transactions in the other industries.

Table 1

	AAR Market Model				
	(1)	(2)	(3)	(4)	(5)
Event day	Entire AAR	Cash payment AAR	Stock payment AAR	Finance industry AAR	All other industries AAR
-5	-0.143	-0.186	0.045	-0.090	-0.190
	(0.185)	(0.214)	(0.332)	(0.334)	(0.185)
-4	-0.226	-0.137	-0,611***	-0,395*	-0.075
	(0.147)	(0.173)	(0.224)	(0.237)	(0.181)
-3	0.581	0.549	0,721**	0.509	0,645***
	(0.364)	(0.441)	(0.345)	(0.757)	(0.149)
-2	0.231	0.253	0.134	-0.089	0,516**
	(0.173)	(0.188)	(0.444)	(0.249)	(0.238)
-1	0.015	-0.052	0.310	-0.138	0.152
	(0.199)	(0.220)	(0.470)	(0.373)	(0.179)
0	0.289	0.285	0.303	-0.135	0,666*
	(0.301)	(0.345)	(0.595)	(0.452)	(0.399)
1	0,563**	0.362	1.440	0.691	0.449
	(0.285)	(0.249)	(1.074)	(0.463)	(0.349)
2	-0.106	-0.247	0.507	0.094	-0.283
	(0.217)	(0.193)	(0.805)	(0.413)	(0.183)
3	-0,329*	-0.150	-1,106**	-0,728***	0.027
	(0.183)	(0.185)	(0.537)	(0.278)	(0.235)

4	0.069	0.118	-0.142	-0.107	0.226
	(0.162)	(0.190)	(0.251)	(0.250)	(0.209)
5	0.159	0.014	0,791*	0.046	0.260
	(0.234)	(0.267)	(0.448)	(0.432)	(0.220)
N	155	126	29	73	82

(*) Significant at 10% level. (**) significant at 5% level. (***) significant at 1% level.

Analysing the results for the entire sample (1), the AAR on the announcement day is 0.289, with a standard error of 0.301, indicating that the AAR is not statistically significant. Only two days within the event period exhibit a significant AAR for the entire sample. The first day after the announcement (+1) shows a significant AAR of 0.563 with a standard error of 0.285. The second significant day is day +3, where the AAR is -0.329, and the standard error is 0.183 Notably, day +3 shows a negative AAR, following the negative trend from the preceding day, possibly signalling a slight negative trend during those days.

The findings from Table 1 indicate a lack of significant AAR results in cash-financed acquisitions, in column (2). On day 0, the AAR for cash transactions is 0.285 with a standard error of 0.345. The absence of any significant days for cash acquisitions suggests that acquirers may not receive abnormal returns by choosing to pay with cash.

In contrast, column (3) for stock-financed acquisitions reveals more notable results. On the announcement day, stock transactions show an AAR of 0.303 with a standard error of 0.595. The table indicates four days with a significant AAR for stock payments. Day -4 shows a significant negative AAR of -0.611 with a standard error of 0.224. This is followed by day -3 with a positive AAR of 0.721 and a standard error of 0.345, representing two consecutive days of considerable abnormal returns significant enough to be linked to the announcement of the acquisition. Day +3 has a negative AAR of -1.106 with a standard error of 0.537, marking the most negative AAR in the table. However, on the last day of the event period for stock payments, the AAR is positive at 0.791 with a standard error of 0.448. The results suggest that stock payments show larger AARs with more significant outcomes. The differentiated results for stock transactions may be attributed to either a greater impact than previous research found or the influence of the smaller sample size.

The analysis proceeds by comparing the AARs between the financial industry and other sectors. On the announcement day, the calculated AARs are -0.135 and 0.666 for the financial industry and non-finance

sectors, respectively. Despite observing a negative abnormal return in the financial industry, this outcome does not attain statistical significance. Conversely, the remaining industries show a positive AAR with a noteworthy significance level of 10%. This implies that acquisition announcements have more pronounced and positive effects in sectors outside the financial sphere. Standard errors on the announcement day are comparable, with the finance industry having a slightly higher standard error of 0.452, in contrast to the rest, which has an error of 0.399.

The financial industry observed relatively modest numbers, and seven out of eleven days yielded negative AARs. Notably, there are only two significant days for the industry, the first is day -4, featuring a negative AAR of -0.395 and a standard error of 0.237. The second is day +3, having a negative AAR of -0.728 at a significance level of 1%, accompanied by a standard error of 0.278. This suggests a muted reaction in the financial industry, with more negative figures than positive ones. The non-financial sector shows a notably more favourable reaction to acquisition announcements. Positive abnormal returns are observed on eight out of the eleven event days. Apart from the announcement day, significance is notably detected on days -3 and -2. Three days prior yields an AAR of 0.645 with a standard error of 0.149, while the second day prior features an AAR of 0.516 with a standard error of 0.238. These substantially higher AARs suggest a definitive positive market reaction, further accentuated by their remarkably low standard errors, underscoring the precision of the positive market sentiment surrounding these events.

5.2 CAR

Figure 2, presented below, provides a comprehensive illustration of the CAR for the entire sample throughout the event period. Each day is defined by a calculated CAR, complemented by a 90% Confidence Interval (CI) represented by lines extending in both directions. The figure shows an initial subtle negative trend for CAR on the first day (-5), followed by an even lower CAR on day -4, demonstrating statistical significance. This pattern suggests a negative trajectory for the acquiring firm in the days preceding the announcement, prompting contemplation on whether this is an outcome of the impending announcement or indicative of the firm's inherent behavioural tendencies.
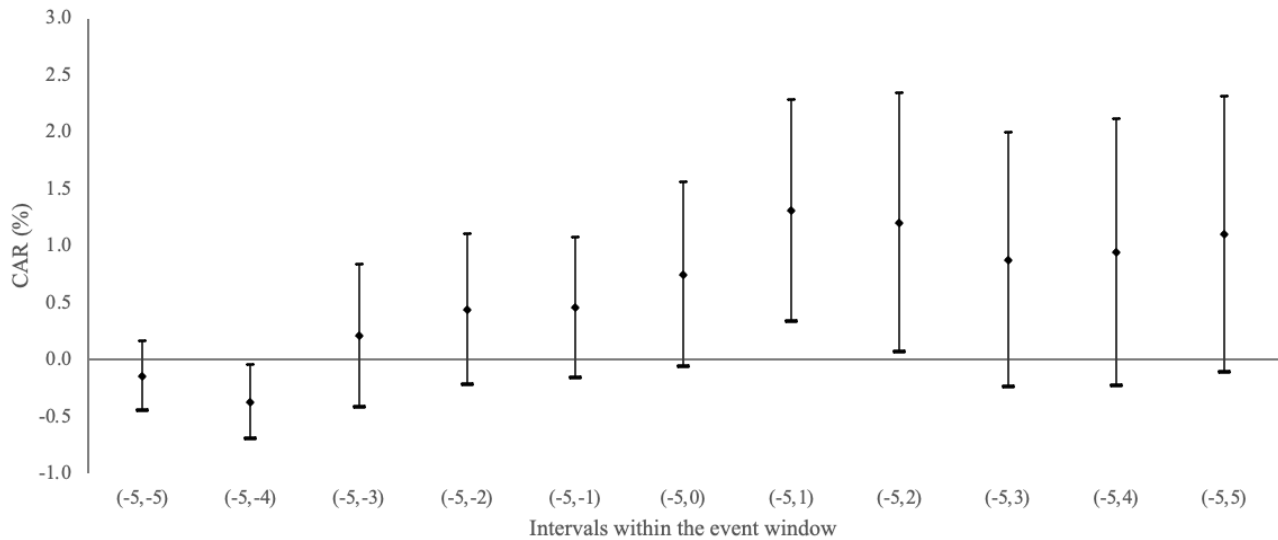
Figure 2. Plot of CAR using the market model with a 90% confidence interval, for different intervals from the first event day -5 until the last event day +5, for the entire sample.

Following the initial negative trend, CAR exhibits an upward trajectory, breaching above zero on day -3. This turn continues in a more positive CAR in the days leading up to the announcement, culminating in a positive observation on the announcement day itself. Day +1 has a statistically significant CAR too. Even on the second-day post-announcement, CAR maintains a significant positive response from the market. Subsequently, a marginal dip precedes stabilisation at an elevated level, indicating a visible pattern in the days following the announcement.
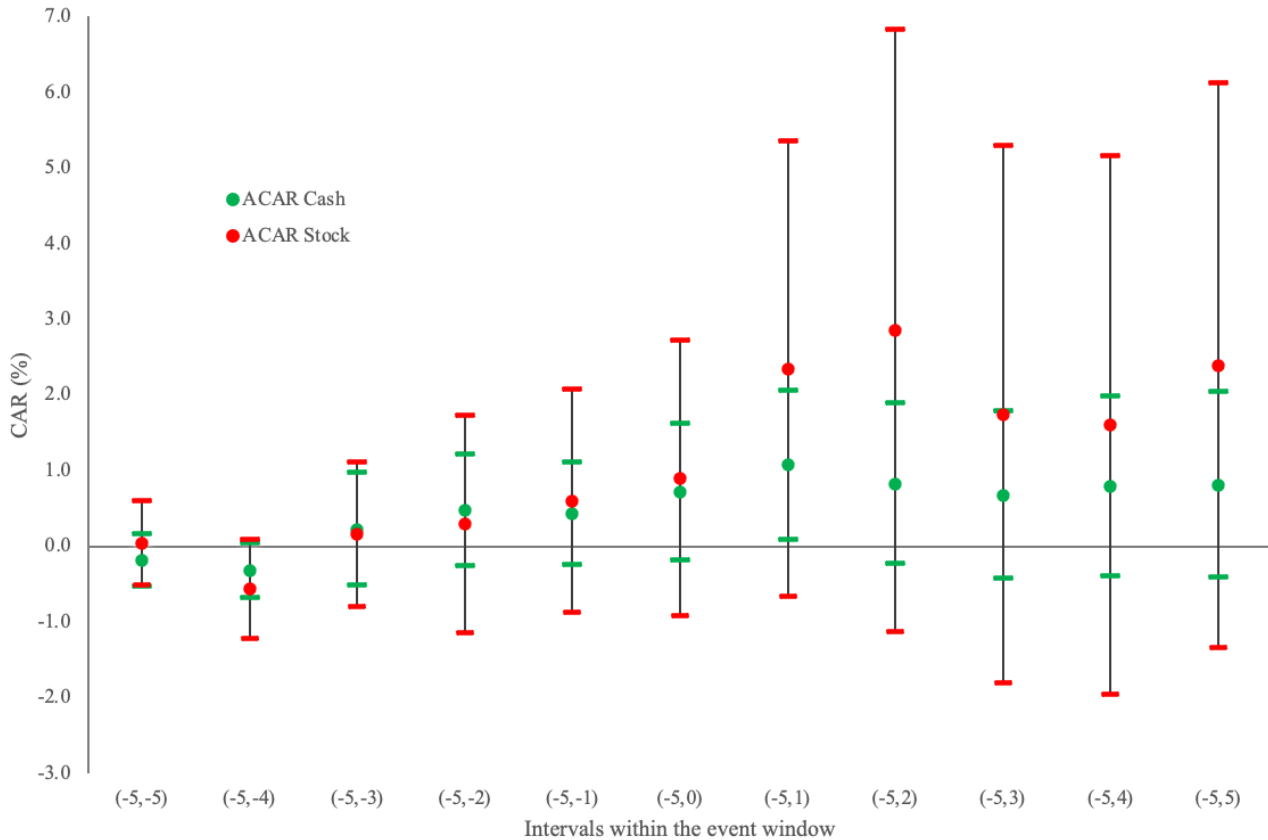
Figure 3. Plot of CAR using the market model with a 90% confidence interval, for the payment method cash and stock respectively.

Figure 3 conducts a comparative display of CAR between two distinct payment methods. The representation involves green-marked confident intervals denoting CAR for cash payments and red-marked confident intervals for acquisitions made with stock. Proceeding in a parallel pattern to the entire sample, the different payment methods exhibit similar trends in the days leading up to the announcement. Both methods show a slight negative trajectory initially, breaking above zero on day -3, signalling the start of a positive trend. The methods move in tandem until the announcement day when they diverge. Notably, stock payments demonstrate a substantial increase in CAR, sharply rising, while cash payments show a more modest improvement. Intriguingly, despite cash transactions yielding more modest results, they prove statistically significant. The insignificance in the higher results for stock payments is primarily due to elevated standard errors, introducing uncertainty.

In the final event days, both methods stabilise, consistent with the argument that new information is now incorporated into stock prices. However, stock acquirers continue to experience a more volatile CAR, indicating persistent uncertainty. The small sample size of stock acquisitions potentially explains some volatility, the CAR before the announcement for this method does not exhibit the same degree of movement, suggesting a genuine fluctuation in market response when financing acquisitions with equity.

5.2.1 Robustness Check

Now comparing the data from above with the data found when using the constant return mean model. Examining Figure 4, akin to the one illustrating the CAR from the market model with a 90% confidence interval, reaffirms the robustness of the findings. Analogous to Figure 2, this figure encapsulates a comparable initial downward trajectory during the first two days, -5 and -4, preceding a reversal above zero. This pattern mirrors the behaviour observed in the market model. The CAR subsequently demonstrates a gradual upward trend, culminating in a statistically significant positive CAR on the announcement day (0). This positive momentum extends to the subsequent two days, +1 and +2, both of which also register significant positive CARs. Stabilising in the latter three days, +3 to +5. It is noteworthy that the last day, despite indicating a stabilisation, attains statistical significance, signifying a sustained positive effect from the announcement.
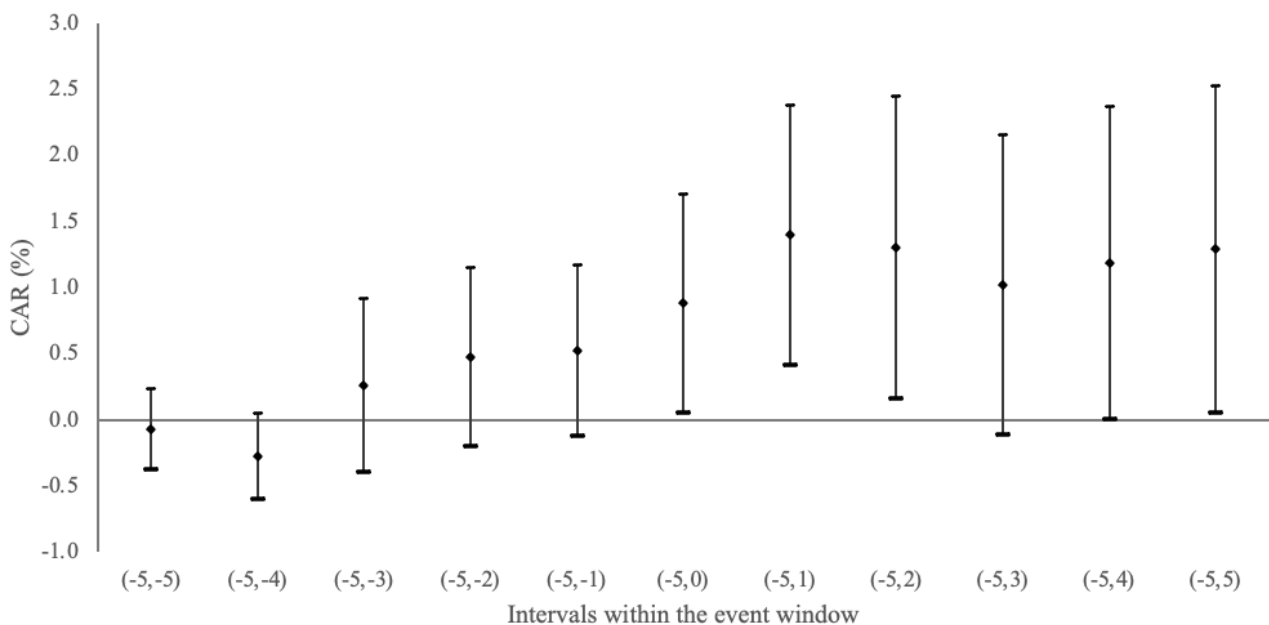
Figure 4. Plot of CAR using the constant mean return model with a 90% confidence interval, for different intervals from the first event day -5 til the last event day +5, for the entire sample.

Figure 4 effectively serves its purpose by strengthening the outcomes presented by the market model. The observed trend remains consistent, bolstering the validity of the results. Notably, the constant mean return model does not yield a significant result on day -4, which was significant in the market model. However, it compensates by revealing more significant positive results for days 0 to +2 and day +5, emphasising the complementary insights provided by different analytical models.

5.3 Regression Results

5.3.1 Regression Model 1

The first regression run was the model testing how/if the two different payment methods affect the acquirers' CAR. The results are presented in Table 2 below. Table 3 presents the results of ACAR for the subsample based on the two payment methods separately. Standard errors are reported in parentheses. These results help to analyse the regression results in Table 2.

Table 2

$$ACAR_{i(-5,t)} = \alpha + \beta * Cash\_dummy_i \,, where\ t =- 5,..., + 5$$

	(-5,-5)	(-5,-4)	(-5,-3)	(-5,-2)	(-5,-1)	(-5,0)	(-5,1)	(-5,2)	(-5,3)	(-5,4)	(-5,5)
Intercept	0.045	-0.566	0.155	0.289	0.599	0.902	2.342*	2.849*	1.743	1.601	2.392
	(0.428)	(0.448)	(0.887)	(0.928)	(0.863)	(1.140)	(1.374)	(1.600)	(1.573)	(1.652)	(1.708)
Cash_dummy	-0.231	0.242	0.070	0.190	-0.173	-0.190	-1.268	-2.022	-1.066	-0.806	-1.583
	(0.475)	(0.497)	(0.984)	(1.029)	(0.957)	(1.264)	(1.524)	(1.774)	(1.745)	(1.832)	(1.894)
R^2	0.155%	0.155%	0.003%	0.022%	0.021%	0.015%	0.450%	0.841%	0.243%	0.126%	0.454%
Mean Dependent	-0.143	-0.369*	0.213	0.444	0.459	0.748	1.311**	1.205*	0.877	0.946	1.105
	(0.185)	(0.194)	(0.383)	(0.400)	(0.372)	(0.491)	(0.594)	(0.693)	(0.679)	(0.713)	(0.738)

(*) Significant at 10% level. (**) significant at 5% level. (***) significant at 1% level.

Table 3

	(-5,-5)	(-5,-4)	(-5,-3)	(-5,-2)	(-5,-1)	(-5,0)	(-5,1)	(-5,2)	(-5,3)	(-5,4)	(-5,5)
Stock payment											
ACAR	0.045	-0.566	0.155	0.289	0.599	0.902	2.342	2.849	1.743	1.601	2.392
	(1.787)	(2.136)	(3.122)	(4.703)	(4.803)	(5.961)	(9.854)	(13.047)	(11.639)	(11.663)	(12.233)
Cash payment											
ACAR	-0.186	-0.323	0.226	0.479	0.427	0.712	1.074*	0.827	0.677	0.795	0.809
	(0.214)	(0.220)	(0.452)	(0.451)	(0.411)	(0.550)	(0.600)	(0.647)	(0.676)	(0.726)	(0.746)

(*) Significant at 10% level. (**) significant at 5% level. (***) significant at 1% level.

As indicated in Table 2, the dummy variable coefficient lacks significance in all time intervals. Therefore, there is no indication that the choice of payment method affects the acquirer's CAR. As it is there to explain the difference between the two.

An intriguing observation is found in the regression analysis of CAR for the period (-5,1) in Table 2, where a significant first-order intercept parameter is noted. It is worth noting that it is the intercept that demonstrates significance rather than the coefficient. When comparing this with Table 3, which displays ACAR and its standard error for separate payment method groups, interesting patterns emerge. The ACAR value for the cash payment group, though smaller than the value for the stock group, is significant in Table 3. However, in the regression presented in Table 2, the intercept representing ACAR for the stock payment group is found to be significant in two intervals (-5,1) and (-5,2). Strikingly, the regression coefficient indicating the difference between the groups' ACAR values is not significant. This discrepancy results from different standard errors for the two sample groups. The stock group exhibits higher and more variable standard errors compared to the cash group. The value for stock is insignificant in Table 3 but appears in Table 2 as significant with a lower standard error. Because in the regression, a higher total number of observations increases precision, resulting in a decrease in standard error.

5.3.2 Regression Model 2

The second regression aims to test how/if acquirer CAR is different for the financial industry compared to all other industries. The results are presented in Table 4 below. The regression results reveal that the intercept parameter is significant for event day intervals ranging from (-5,-1) to (-5,5). There is a noticeable upward trend in this intercept, spanning from one day prior to the announcement day to five days post-announcement. This trend signifies abnormal market reactions to the announcements. The intercept represents the ACAR for acquiring firms not affiliated with the financial industry.

Table 4

$$ACAR_{i(-5,t)} = \alpha + \beta * Finance\_dummy_i \text{ ,where } t = -5,..., +5$$

	(-5,-5)	(-5,-4)	(-5,-3)	(-5,-2)	(-5,-1)	(-5,0)	(-5,1)	(-5,2)	(-5,3)	(-5,4)	(-5,5)
Intercept	-0.190	-0.265	0.380	0.896	1.048**	1.714***	2.163***	1.880**	1.907**	2.133**	2.393**
	(0.255)	(0.267)	(0.527)	(0.549)	(0.509)	(0.668)	(0.813)	(0.952)	(0.929)	(0.973)	(1.007)
Finance_dummy	0.100	-0.220	-0.356	-0.961	-1.251*	-2.051**	-1.809	-1.432	-2.187	-2.520*	-2.734*
	(0.371)	(0.389)	(0.768)	(0.801)	(0.741)	(0.974)	(1.185)	(1.387)	(1.354)	(1.418)	(1.467)
R^2	0.047%	0.210%	0.140%	0.933%	1.827%	2.820%	1.501%	0.692%	1.678%	2.024%	2.220%
Mean Dependent	-0.143	-0.369*	0.213	0.444	0.459	0.748	1.311**	1.205*	0.877	0.946	1.105
	(0.185)	(0.194)	(0.383)	(0.400)	(0.372)	(0.491)	(0.594)	(0.693)	(0.679)	(0.713)	(0.738)

Conversely, the coefficient mostly displays negative signs across all time intervals, with significance observed around the announcement day and some at the end of the period. This suggests a counteracting effect on the positive CAR identified in the intercept. It implies that industries other than the financial industry exhibit higher (and more positive) ACARs, while the ACARs within the financial industry are comparatively smaller. The dummy variable coefficient shows significance in four of the time intervals, suggesting there is a difference in the acquirors' CAR within the finance industry compared to all other industries.

5.3.3 Regression Model 3

The third regression was run by including both dummy variables and their interaction. Table 5 shows the data from regression model 3. The finding in the table is bland with almost no significant values. The intercept represents the subsample group of acquisitions done with stock in the other industries. Secondly then is the dummy variable that takes into consideration the difference when cash is to finance the transaction. Implying, due to lack of significance, that there is not a remarkable change when the subsample groups are divided now into four different ones. The next dummy variable is the indication of whether the acquisitions are made in the financial industry in comparison to the rest. Here also indicates no significance at all. Lastly is the interaction term where both dummy variables interact and give a value when the acquisition is made in the finance sector with cash. The only significant value is the largest interval (-5,5), giving a negative result. Suggesting that the CAR is lower when the acquisition is made with cash in the financial industry. Given that the other regressions gave more significant values, it is then hinted that when dividing the acquisitions more the difference in CAR can not be explained more dependent on one factor.

Table 5

	(-5,-5)	(-5,-4)	(-5,-3)	(-5,-2)	(-5,-1)	(-5,0)	(-5,1)	(-5,2)	(-5,3)	(-5,4)	(-5,5)
$CAR_i = \alpha + \beta_1 * Cash\_dummy_i + \beta_2 * Finance\_dummy_i + \beta_3 * Cash\_dummy_i * Finance\_dummy_i$											
Intercept	-0.077	-0.777	0.613	1.187	1.170	1.038	1.967	1.586	0.937	0.856	1.172
	(0.620)	(0.648)	(1.284)	(1.337)	(1.239)	(1.623)	(1.968)	(2.294)	(2.246)	(2.354)	(2.422)
Cash_dummy	-0.137	0.617	-0.281	-0.350	-0.147	0.815	0.237	0.354	1.169	1.539	1.473

	(0.680)	(0.711)	(1.410)	(1.469)	(1.360)	(1.782)	(2.161)	(2.520)	(2.466)	(2.585)	(2.660)
Finance_dummy	0.235	0.409	-0.884	-1.734	-1.103	-0.263	0.725	2.441	1.559	1.439	2.360
	(0.862)	(0.901)	(1.785)	(1.859)	(1.723)	(2.257)	(2.737)	(3.190)	(3.123)	(3.273)	(3.368)
Interaction	-0.177	-0.765	0.653	0.959	-0.192	-2.215	-3.180	-4.860	-4.664	-4.917	-6.347*
	(0.956)	(1.000)	(1.981)	(2.063)	(1.911)	(2.504)	(3.037)	(3.540)	(3.465)	(3.632)	(3.738)
R^2	0.218%	0.734%	0.214%	1.085%	1.876%	3.359%	2.735%	2.817%	3.144%	3.372%	4.592%
Mean Dependent	-0.143	-0.369*	0.213	0.444	0.459	0.748	1.311**	1.205*	0.877	0.946	1.105
	(0.185)	(0.194)	(0.383)	(0.400)	(0.372)	(0.491)	(0.594)	(0.693)	(0.679)	(0.713)	(0.738)

(*) Significant at 10% level. (**) significant at 5% level. (***) significant at 1% level.

6. Discussion

6.1 AAR

As outlined in section *2.1*, the prevailing trend in acquisitions leans towards stock payments during bullish market conditions. However, in the context of the UK and the global landscape, scarred by events such as Brexit, the COVID-19 pandemic, and the Ukraine invasion, which have collectively placed the market under pressure, Ho et al. (2021) posit that acquiring firms tend to favour cash payments. This aligns with the findings of Travlos (1987), who observed a tendency towards cash payments in acquisitions and is consistent with the predominant sample in this thesis, where cash transactions constitute 81.29%. This high prevalence of cash transactions prompts a critical examination of its potential effects on the study results.

In addition to the dominance of cash transactions, the financial industry comprises 47.10% of the sample transactions. This underscores the significance and scale of the financial industry in the UK's economy and markets. Mitchell and Mulherin's (1996) assertion that M&A occurs in industry clusters resonates with the observed concentration in the financial sector. This clustering could be attributed to external shocks impacting the industry's structure, reinforcing the magnitude of acquisitions.

A closer analysis of the AAR for cash acquisitions reveals a lack of significant values, suggesting minimal abnormal behaviour and an alignment with the FTSE100. Moreover, stock-paid acquisitions do not show that significant AARs either. The four significant days were clustered in pairs with opposite signs for the coupled days. Not indicating any trend at all. The absence of noteworthy events in the AAR implies a non-eventful impact on acquiring firms, consistent with the EMH principles noted in section *2.4*, implying that the efficient LSE market should already have that baked into the firm's stock price. This absence of reaction may be attributed to the notion, as posed by Andrade and Stafford (2001), that gains predominantly accrue to the target firm, thereby minimising the effect on the acquiring firm.

The hypothesis of a better result in the financial industry is opposed in Table 2. There are not enough significant values to make any claims from the findings. The announcements do not seem to get enough reaction from the market to be seen in the data. The uncertainty the industry went through before and after Brexit could be the reason for a less optimistic market response. Considering cross-border investments are

major in the UK financial industry, the added riskiness with Brexit could have been the reason the market is seeing those results.

The rest of the industries reveal an unexpected outcome. Contrary to the above, the other industries had some significant positive days around the announcement. Indicating an optimistic and confident reaction by the investors. This leads to the question of why the other industries are considered to be more stable during the global uncertainties. This could be due to a lesser dependence on foreign investors than the financial industry has.

Analysing the AAR results also reveals patterns in standard errors, with higher values observed around the announcement day. This suggests that the announcement exerts a more pronounced influence on returns, leading to heightened volatility. Notably, stock payments exhibit greater reactions, as evidenced by substantially higher standard errors. Similarly, the financial industry displays greater volatility in AAR compared to other industries.

To summarise, the AAR is not indicative of many conclusions. Having a lot of insignificant values suggests not a sufficient pattern in the response by the markets. This might follow from previous findings that also suggest the insignificance of the acquirers' shares. Seeing no difference in the payment method, or for the financial industry which displays no evident reaction. On the other hand, the other sectors in the UK are seeing more positive reactions.

6.2 CAR

Examining the CAR for the entire sample provides foundational insights for the subsequent analysis of specific CARs. The initial negative trend observed in the CAR during the initial days is a recurring pattern throughout the CAR analysis. The trend may be attributed to the anticipation of a negative outcome by investors with insider knowledge. Another plausible explanation could be the behavioural dynamics of firms in anticipation of significant announcements. It raises questions about whether firms behave differently in the lead-up to such events, possibly leading to less market presence and investor concerns. However, as the CAR crosses zero it maintains a positive trajectory, suggesting a positive market response unfolding with the announcement. Notably, the most significant CAR for the entire sample occurs on day +1, indicating an immediate market reaction post-announcement. This stabilisation in the later event days aligns with the EMH, suggesting that the market has absorbed the new information, finding a new equilibrium, and incorporating it into stock prices.

Analysing the different CARs for the two payment methods, they follow similar patterns as the entire sample in the beginning. It is on the announcement day when they diverge from each other. Stock is seeing a more substantial increase but insignificant, attributed to much higher standard errors. This implies a more volatile response for stock acquisitions. This heightened uncertainty is reflected in the greater volatility and unpredictability associated with stock acquisitions. While stock payments exhibit a more positive average result, the exploration of factors contributing to the heightened uncertainty in stock payments becomes imperative. Stock is seen as a more secure payment method according to Fishman (1989), which could have been an argument for displaying stable decisions during the turbulence. Martin (1996) added that in anticipation of high growth, acquirers prefer to finance the transaction with equity and are also seeing higher returns. Giving the argument for the potential positive response by the market. This is not followed in the results with an insignificant result. On the contrary, Harford et al. (2009) and Usyal (2011) find that the tendency for financing the transaction with stock is more favourable for overleveraged firms. Due to the high leverage these bidders have, investors might be more critical of new acquisitions made. Travlos (1987), Emery and Switzer (1999), all found a negative trend for financing the acquisitions with stock. Ho et al. (2021) also described a higher possible return for stock acquisitions when the market is in an upward-moving trend. However, due to the shaky external market, this is not the case for the first couple of years in the period, only seeing more positive numbers for the nation in the latter two years. The thesis result was on the contrary, insignificant and tending more to the positive side. Therefore contradicting the findings in the previous research. This could be explained by the other findings of a more positive reaction to stock financing due to market sentiments and future outlooks. Factoring into the results contradicts the negative results previously seen. Indicating that with a turbulent market, stock acquisitions can tend to rely more on optimism about where the stock market is heading in the near future.

The significance found in acquisitions by cash, argues for an optimistic reaction in the market. According to Fishman (1989), the added confidence shown could be a positive signal for investors. Making the investors more willing to invest and making the announcement more positive. As reasoned in the hypothesis, section *2.4*, the financial market usually sees more negative results during economic global distress, which should argue that the signalling of being liquid during such times increases its reaction. Therefore the statement of paying in cash shows a greater stability out to the market, indicating a healthy financial situation for the acquirer. The results for cash also indicate a lot of insignificance, this follows from previous research. As mentioned above by Travlos (1987), financing the transaction with cash

usually results in normal rates of return. Therefore, observing similar results for cash acquisitions as previous research has found even in a more turbulent market.

This heightened uncertainty is reflected in the greater volatility and unpredictability associated with stock acquisitions. While stock payments exhibit a more positive average result, the exploration of factors contributing to the heightened uncertainty in stock payments becomes imperative. The reliability and predictability associated with cash payments are underscored, emphasising their significance as a reliable payment method for bidding firms.

To conclude, cash suggests positive results which can be attributed to the confidence shown or the financial healthiness of the firm. Though, stock financing is seeing normal returns which is contrary to previous findings. This could possibly be due to the market conditions, which the recent research suggests the reaction is responsive to.

6.3 Regression

From the first regression model, observing the payment methods, the results were not strong. Only in two of the time intervals, the intercept was found significant. Both the dummy variable and the coefficient showed no significance across all intervals. This implies that we found no significant linear relationship between the choice of payment method and the acquirers' firm performance in terms of rates of return during an acquisition. Although the values for the dummy coefficients were not significant, they were mostly negative, particularly for intervals including post-acquisition days. The negative trend for this coefficient could suggest that, overall, cash-financed acquisitions may experience lower CAR, compared to stock-financed. The hypothesis that cash-financed acquisitions should result in better performance is rejected in this regression. Therefore not following from the same finding as earlier research.

The second regression exhibited the positive result the other sectors had. Indicating that the other industries are behaving more optimistically to announcements. This might be because they were not as affected by Brexit, the pandemic and the war, or it might just be a more positive reaction in the other sectors. The analysis also finds a significant negative difference for the financial industry. Seeing how the financial sector has been affected during the period, might have resulted in less positive outlooks for the firms in it. Might be because of the heavy dependence the industry has on foreign investors. The results are either indicating that the industry performs worse normally due to its uniqueness to other industries, or because it has taken a harder toll by the global events affecting the economy.

The only finding from section *5.3.3* was that cash as the payment method in the financial industry has negative abnormal returns. This highlights that there are subtle and detailed aspects to the relationship that may not be immediately apparent. While the overall relationship between payment method and industry may not be statistically significant, there exists a specific and noteworthy influence when cash is employed in acquisitions within the financial sector.

On the contrary to the findings in *6.2*, the regression found not much difference in the choice of payment method on CAR. Observing similar results for both of the methods. On the other hand, the findings in this section suggest a difference between the industries. Noting a more negative result for the financial industry.

6.4 Limitations of this study

As the findings from the empirical data have been discussed, it is imperative to acknowledge the limitations and areas of improvement that have emerged. Having in mind the downfalls is crucial when drawing conclusions from the data to not give the data a more vital role than it has. Due to the process made in choosing a sample of acquisitions the population of the empirical analysis heavily contained acquisitions made in cash, resulting in a much smaller group of stock acquisitions. The ratio of the choices is in fact an indicator of the preferred choice, but is still affecting the reliability of the smaller group. Due to the gathering focused on the correct period and transactions, it did not have a focus on an equal sample. Having only 29 acquisitions made in stock will definitely give more room for outliers and fluctuations in the result. Therefore more volatile results observed above coming to stock acquisitions could either be explained by a different market response or due to the smaller size of data points. This is then compared to a more reliant sample group of 126 cash acquisitions. Creating an indifference in the comparison between the two groups.

Another limitation due to the sample group might have been shown in regression model three. When a regression is factoring the sample into smaller sample groups and increasing the number of coefficients, it usually results in insignificant results. Therefore making the observation uncertain if the lack of findings was due to the size of the sample or because there is no connection between the variables with the CAR.

7. Summary

7.1 Conclusion

The thesis aimed to investigate whether the choice of payment method made a difference to the bidders' stock returns when making an acquisition. The findings are mostly unremarkable, seeing that the different data outputs mostly observe insignificant values. Cash payments indicated a significant CAR but due to lack of evidence in other intervals and the regressions, there is not sufficient evidence of making any distinctions for the method. Consequently following previous research, the cash-financed transactions are following normal returns and a slight indication of a superior response than stock acquisitions. Therefore the financing decision does not alter in turbulent times for acquisitions. The thesis further investigates whether the financial industry in the UK behaved any differently due to the turbulence hitting the markets. Contradictory to the hypothesis, the findings show greater results for the other industries than for the financial industry. The negative evidence towards the financial industry can indicate higher sensitivity to the global economy, which plays a huge role in the sector. Additionally, there is an indication that cash acquisitions are performing worse in the financial industry, therefore distinguishing the results from the overall market. The empirical analysis also finds a much more volatile reaction when acquiring another firm with equity. The lack of significant CAR thus suggests a mixed response by investors. A lot of research seems to explain the reaction to stock acquisitions through sentiments and optimism in the future of the market.

7.2 Further Research

The financial industry's underperformance is evident, but a more nuanced understanding can be gained for the other industries. With the financial industry being inherently unique, it would be interesting to explore the other, more similar, industries to each other. Trying to explore the different actors and variables affecting their market responses. Contrary to the financial industry, the other industries exhibited significant returns around the announcement. Increasing interest in why these are viewed as more stable and optimistic. By dissecting the other industries in a comprehensive study would then be needed to understand the unique characteristics that drive this response in the markets.

References

Adnan, A., & Hossain, A. (2016). Impact of M&A Announcement on Acquiring and Target Firm's Stock Price: An Event Analysis Approach. *International Journal of Finance and Accounting*, vol. 5, no. 5, pp. 228-232

Andrade, G., Mitchell, M., & Stafford, E. (2001). New Evidence and Perspectives on Mergers. *The Journal of Economic Perspectives*, vol. 15, no. 2, pp. 103–120

Arce, O., Koester, G., & Nickel, C. (2023). One year since Russia's invasion of Ukraine – the effects on euro area inflation, https://www.ecb.europa.eu/press/blog/date/2023/html/ecb.blog20230224~3b75362af3.en.html [Accessed 1 January 2024]

Ball, R., & Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research*, vol. 6, no. 2, pp. 159–178, https://doi.org/10.2307/2490232

Bank of England. (2019). Financial Stability Report, July 2019 [pdf], https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2019/july-2019.pdf

Bank of England. (2022a). What are financial markets and why are they important?, https://www.bankofengland.co.uk/explainers/what-are-financial-markets-and-why-are-they-important [Accessed 20 December 2022]

Bank of England. (2022b). Financial Stability Report [pdf], https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2022/financial-stability-report-december-2022.pdf

Bernanke, B. (1983). Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression. *The American Economic Review*, vol. 73, no. 3, pp. 257-276

Boone, A. L., Lie, E., & Liu, Y. (2014). Time trends and determinants of the method of payment in M&As. *Journal of Corporate Finance*, vol. 27, pp. 296-304, https://doi.org/10.1016/j.jcorpfin.2014.05.015

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, vol. 14, no. 1, pp. 3–31, https://doi.org/10.1016/0304-405X(85)90042-X

Cheema, R. (2023). 21 Largest Stock Exchanges in the World, https://finance.yahoo.com/news/21-largest-stock-exchanges-world-154737743.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAALCOQAWwMeWz5hOrbq7FqC3HNwHKp7Vs-z2sq2PdZyhYvlHkn3DiIiLefZAIYzvFa0B2cPq_dlaP8w4aMwVu24bWzPCzV3n2cixNgeLV-E6u4otvHPh7F4vTKh8IEiiB0SPcA15DFQ7gUsXfgiYi6FsfeOfXTaOOpTAlmuz-AffP [Accessed 20 December 2023]

City of London. (2023). State of the sector: Annual review of UK financial services 2023 [pdf], https://assets.publishing.service.gov.uk/media/64ad6d32fe36e0000d6fa6a9/State_of_the_sector_annual_review_of_UK_financial_services_2023.pdf

Corporate Finance Institute. (n.d.a). Mergers & Acquisitions (M&A), https://corporatefinanceinstitute.com/resources/valuation/mergers-acquisitions-ma/ [Accessed 1 January 2024]

Corporate Finance Institute. (n.d.b). Tender Offer, https://corporatefinanceinstitute.com/resources/career-map/sell-side/capital-markets/tender-offer/ [Accessed 1 January 2024]

Council of the European Union. (n.d.). Timeline: EU-UK Withdrawal Agreement, https://www.consilium.europa.eu/en/policies/eu-relations-with-the-united-kingdom/the-eu-uk-withdrawal-agreement/timeline-eu-uk-withdrawal-agreement/ [Accessed 1 January 2024]

Dodd, P., & Warner, J. B. (1983). On Corporate Governance: A Study of Proxy Contests. *Journal of Financial Economics*, vol. 11, no. 1-4, pp. 401-438

Dong, M., Hirshleifer, D., Richardson, S., & Teoh, S. (2006) Does Investor Misvaluation Drive the Takeover Market? *The Journal of Finance*, vol. 61, no. 2, pp. 725-762

Eakins, S. G., & Mishkin, F. S.(2018). Financial Markets & Institutions, London: Pearson

Emery, G. W., & Switzer, J. A. (1999). Expected Market Reaction and the Choice of Method of Payment for Acquisitions. *Financial Management*, vol. 28, no. 4, pp. 73-86, https://doi.org/10.2307/3666304

Faccio, M., & Masulis, R. (2005). The Choice of Payment Method in European Mergers and Acquisitions. *The Journal of Finance*, vol. 60, no. 3, pp. 1345-1388, https://doi.org/10.1111/j.1540-6261.2005.00764.x

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The Adjustment of Stock Prices to New Information. *International Economic Review*, vol. 10, no. 1, pp. 1–21, https://doi.org/10.2307/2525569

Fishman, M.J. (1989). Preemptive Bidding and the Role of the Medium of Exchange in Acquisitions. *The Journal of Finance*, vol. 44, no. 1, pp. 41-57

Ghosh, A., & Ruland, W. (1998). Managerial Ownership, the Method of Payment for Acquisitions, and Executive Job Retention. *The Journal of Finance*, vol. 53, no. 2, pp. 785-798

Greene, W. H. (2002). Econometric Analysis, New Jersey: Prentice Hall.

Harford, J., Klasa, S. & Walcott, N. (2009). Do firms have leverage targets? Evidence from acquisitions. *Journal of Financial Economics*, vol. 93, pp. 1-14

Ho, C.-C., Tsai, P.-S., Tsai, P.-J., & Yen, T.-Y. & (2021). Market Sentiment and the Choice of Payment Method in Mergers and Acquisitions. *Journal of Corporate Accounting & Finance*, vol. 32, no. 3, pp. 139-154, https://doi.org/10.1002/jcaf.22501

Hu, M., Ji, Q., & Zhang, D. (2020). Financial markets under the global pandemic of COVID-19. *Finance Research Letters*, vol. 36, https://doi.org/10.1016/j.frl.2020.101528

Hussiani, M., Rigoni, U., Perego, P. (2022). The strategic choice of payment method in takeovers: The role of environmental, social and governance performance. *Business Strategy and the Environment*, vol. 32, no. 1, pp. 200-219, https://doi.org/10.1002/bse.3125

Hutton, G. (2022). Financial Services: Contribution to the UK Economy [pdf], https://researchbriefings.files.parliament.uk/documents/SN06193/SN06193.pdf

Ismail, A. & Krause, A. (2010). Determinants of the method of payment in mergers and acquisitions. *The Quarterly Review of Economics and Finance*, vol. 50, no. 4, pp. 471-484, https://doi.org/10.1016/j.qref.2010.06.003

Karmpatsas, N., Patmezas, D., & Travlos, N. (2014). Credit ratings and the choice of payment method in mergers and acquisitions, *Journal of Corporate Finance*, vol. 25, pp. 474-493, https://doi.org/10.1016/j.jcorpfin.2014.01.008

Kim, T. K. (2015). T test as a parametric statistic. *Korean Journal of Anesthesiology,* vol. 68, no. 6, pp. 540-546, http://dx.doi.org/10.4097/kjae.2015.68.6.540

London Stock Exchange Group. (n.d.). Our history. London Stock Exchange, https://www.londonstockexchange.com/discover/lseg/our-history [Accessed 1 January 2024]

MacKinlay, A. C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature*, vol. 35, no. 1, pp. 13–39

Martin, K. J. (1996). The Method of Payment in Corporate Acquisitions, Investment Opportunities, and Management Ownership. *The Journal of Finance*, vol. 51, no. 4, pp. 1227-1246, https://doi.org/10.1111/j.1540-6261.1996.tb04068.x

Mitchell, M. L., & Mulherin, J. H. (1996). The impact of industry shocks on takeover and restructuring activity. *Journal of Financial Economics*, vol. 41, no. 2, pp. 193-229, https://doi.org/10.1016/0304-405X(95)00860-H

Nasdaq. (n.d.a). Cumulative Abnormal Return, https://www.nasdaq.com/glossary/c/cumulative-abnormal-return [Accessed 1 January 2024]

Nasdaq. (n.d.b). Market model, https://www.nasdaq.com/glossary/m/market-model [Accessed 1 January 2024]

Patel, K. (n.d.). What is Merger and Acquisition: M&A Meaning, Definition, Examples, https://www.mascience.com/basics/what-is-merger-and-acquisition-m-a-meaning-definition-examples [Accessed 1 January 2024].

Petit, C. A., & Beck, T. (2023). Recent Trends in UK Financial Sector Regulation and Possible Implications for the EU, Including Its Approach to Equivalence [pdf], https://www.europarl.europa.eu/RegData/etudes/STUD/2023/740067/IPOL_STU(2023)740067_EN.pdf

Shleifer, A., & Vishny, R. (2003). Stock market driven acquisitions, *Journal of Financial Economics*, vol. 70, no. 3, pp. 295-311, https://doi.org/10.1016/S0304-405X(03)00211-3

Swedish House of Finance. (n.d.) Annual Report 2022 [pdf], https://www.hhs.se/globalassets/swedish-house-of-finance/media/annual-report/shof_digitalreport_highres.pdf

Țițan, A. G. (2015). The Efficient Market Hypothesis: Review of Specialized Literature and Empirical Research. *Procedia Economics and Finance*, vol. 32, pp. 442-449, https://doi.org/10.1016/S2212-5671(15)01416-1

Travlos, N.G. (1987). Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns, *The Journal of Finance*, vol. 42, no. 4, pp. 943-963, https://doi-org.ludwig.lub.lu.se/10.2307/2328300

Uysal, V.B. (2011). Deviation from the target capital structure and acquisition choices. *Journal of Financial Economics*, vol. 102, pp. 602-620

Yahoo Finance. (n.d.). FTSE 100 (^FTSE), https://finance.yahoo.com/quote/%5EFTSE?p=%5EFTSE [Accessed 1 January 2024]

World Health Organization. (n.d.) Coronavirus disease (COVID-19) pandemic, https://www.who.int/europe/emergencies/situations/covid-19 [Accessed 1 January 2024]