# "Short-Term Shareholder Value in Real Estate Acquisitions: An Empirical Event Study of U.S. and European Acquiring Firms"

Bernardo Carassiti

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António Martins

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**ABSTRACT**

**Author:** Bernardo Carassiti - 156323142

**Title:** "Short-Term Shareholder Value in Real Estate Acquisitions: An Empirical Event Study of U.S. and European Acquiring Firms"

**Key Words:** Mergers and Acquisitions (M&A), Event Study, Real Estate Sector, Cumulative Abnormal Returns (CARs), Market Reaction, Acquiring Firms, Shareholder Value, U.S. and Europe, Stock Price Run-Up, Market Expectations

**Palavras-chave:** Fusões e Aquisições (F&A), Estudo de Eventos, Setor Imobiliário, Retornos Anormais Acumulados (RAAs), Reação do Mercado, Empresas Adquirentes, Valor para o Acionista, Estados Unidos e Europa, Valorização Pré-Anúncio das Ações,Expectativas do Mercado

**English – Short Summary of Objective:**

This study investigates the short-term stock market reaction to M&A announcements by real estate firms in the U.S. and Europe, using event study methodology. It aims to assess whether these deals create or destroy shareholder value and to identify firm-level factors, like pre-announcement stock price changes, that explain CAR variatio

**Portuguese – Resumo Breve dos Objetivos:**

Este estudo analisa a reação de curto prazo do mercado a anúncios de fusões e aquisições no setor imobiliário nos EUA e na Europa, usando a metodologia de estudo de eventos. O objetivo é avaliar se essas operações geram ou destroem valor para os acionistas e identificar fatores, como a valorização prévia das ações, que explicam a variação dos RAAs.

**Resumo (PT)**

Este estudo analisa a reação de curto prazo do mercado de capitais a anúncios de fusões e aquisições (M&A) no setor imobiliário, com foco nas empresas adquirentes nos Estados Unidos e na Europa. Utilizando a metodologia padrão de estudo de eventos, foram calculados os retornos anormais cumulativos (CARs) em várias janelas de tempo para avaliar se os anúncios de M&A geram ou destroem valor para os acionistas. Com base em uma amostra de 56 transações no setor imobiliário — incluindo um subconjunto de 42 negócios realizados apenas nos EUA — os resultados mostram retornos anormais negativos e estatisticamente significativos para as adquirentes, com o efeito mais forte observado na janela [-2, +2]. A análise de regressão cross-sectional revela que apenas a valorização do preço das ações antes do anúncio explica significativamente a variação nos CARs, indicando que as expectativas do mercado desempenham um papel fundamental nas reações dos investidores. Os resultados são consistentes com o estudo de Moeller, Schlingemann e Stulz (2005), que identificam destruição de valor para empresas adquirentes em uma amostra ampla dos EUA. Notavelmente, este estudo encontra uma reação negativa ainda mais acentuada no setor imobiliário, com um CAR de -1,7% para adquirentes dos EUA, em comparação com -1,0% em Moeller et al., destacando os desafios específicos do setor, como incertezas de avaliação e riscos de integração. Em geral, os resultados sugerem um ceticismo persistente do mercado em relação a anúncios de aquisições, reforçando a importância de uma comunicação transparente e de estratégias disciplinadas na execução de negócios.

**Abstract (EN)**

This study examines the short-term stock market reaction to merger and acquisition (M&A) announcements in the real estate sector, focusing on acquiring firms in both the United States and Europe. Using a standard event study methodology, cumulative abnormal returns (CARs) are calculated across multiple event windows to assess whether M&A announcements create or destroy shareholder value. Based on a sample of 56 real estate transactions, including a U.S.-only subsample of 42 deals, the results show consistently negative and statistically significant abnormal returns for acquirers, with the strongest effect observed in the [-2, +2] window. Cross-sectional regression analysis reveals that only the pre-announcement stock price run-up significantly explains CAR variation, suggesting that market expectations play a key role in shaping investor reactions. The findings are consistent with Moeller, Schlingemann, and Stulz (2005), who report similar value destruction for acquiring firms in a broad U.S. sample. Notably, this study finds a more pronounced negative reaction in the real estate sector, with a CAR of -1.7% for U.S. acquirers, compared to -1.0% in Moeller et al., highlighting the sector-specific challenges of real estate M&A such as valuation uncertainty and integration risks. Overall, the results suggest a persistent market skepticism toward acquisition announcements, underscoring the importance of transparent communication and strategic discipline in deal-making.

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# INTRODUCTION

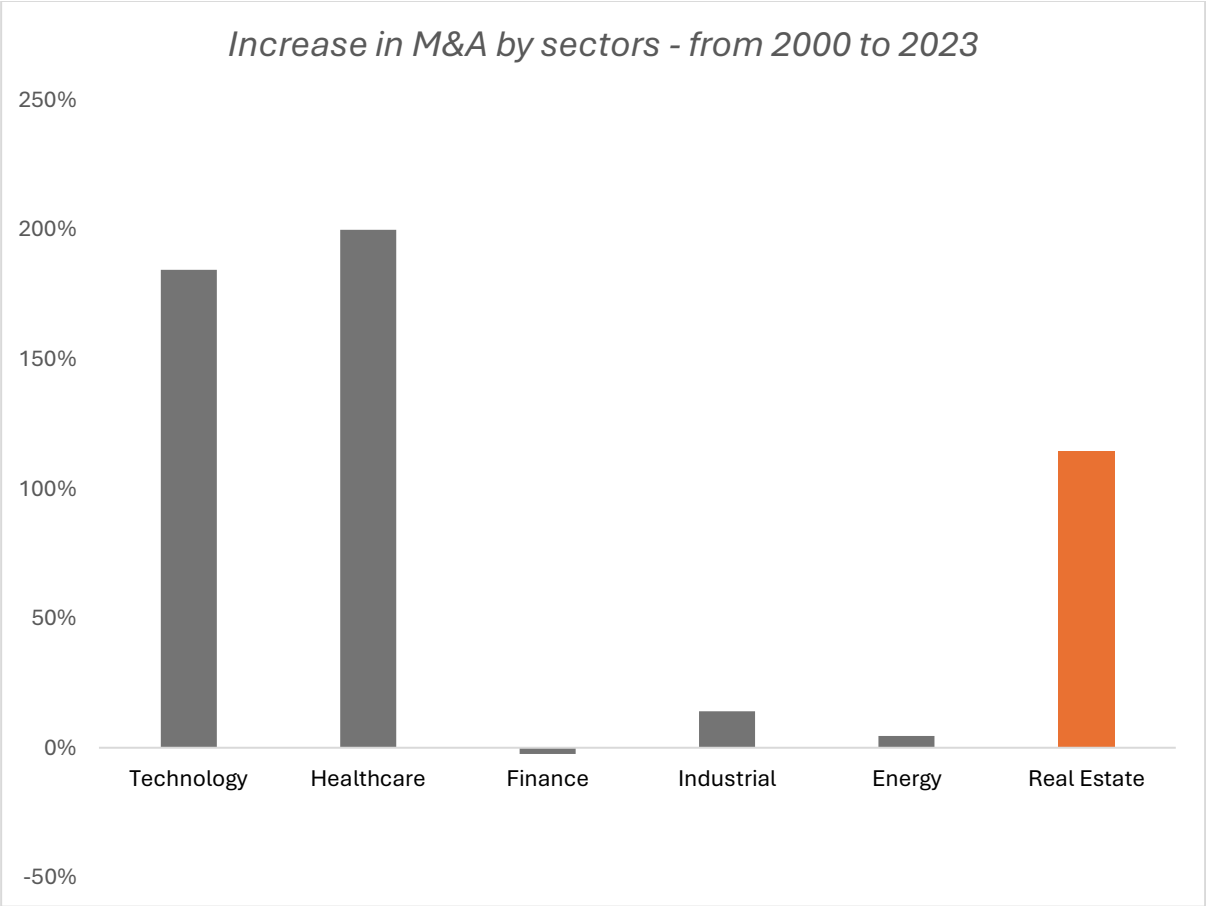
Mergers and acquisitions form an integral part of business growth strategy because they enable a company to increase market share, realize economies of scale and improve operational efficiency. Mergers and acquisition activity in the real estate industry is not just prompted by the capital requirements of the business, but also by strategic imperatives to consolidate ownership. Consolidation is especially fruitful in real estate when a company buys properties that are clustered around its current holdings. Location allows operational synergies, facilitates management, and increases the value of a portfolio by clustering properties that can be developed or refined in tandem. Companies are therefore motivated to grow where they are already located, fuelling targeted acquisition strategies.

Mergers and acquisitions (M&A) activity in the real estate sector has more than doubled over the past two decades, with global deal value increasing from $112 billion in 2000 to $240 billion in 2023, representing a growth of approximately 114%. This performance places real estate among the fastest-growing sectors in terms of M&A value. In comparison, technology saw an increase of 185% (from $299B to $851B), healthcare rose by 200% (from $162B to $486B), while industrials grew by only 14% (from $283B to $323B). Notably, the financial sector actually declined by about 2%(from $377B to $368B), and energy posted a modest growth of ~5% (from $279B to $292B).

Such numbers highlight increasing strategic use in real estate through acquisition and merger activity fueled by high-value asset consolidations, pursuit of scale economics, and operational efficiency targeting in a capital-intensive setting. Over 790,000 M&A transactions have been registered worldwide since 2000, with over $57 trillion in combined value reported as per data from IMAA (Institute for Mergers, Acquisitions and Alliances), while continued contributions from the real estate sector have made up an increasing portion (IMAA; sector estimates using Refinitiv and PwC data).

Figure 1 below illustrates the above results graphically.

***Figure 1: Increase in M&A by sector – From 2000 to 2023***




*This graph shows increased volume of M&A deals in Technology, Healthcare, Finance, Industrial, Energy and Real Estate sectors between 2000 and 2023*

The main goal of this thesis is to investigate the effect of M&A deals on stock returns of real estate firms by computing cumulative abnormal returns (CARs) for acquiring companies. This examination would identify which party gains most from M&A deals. Moreover, the research would look into which factors drive CARs, namely, deal type, firm attributes, and market conditions, through a regression model. Lastly, findings from the real estate market would be compared to another study that tests returns from M&A deals within a universal market. This is not an empirical test but a qualitative comparison to assess whether M&A deals in real estate produce higher or lower returns compared to other markets.
The objective of this research is to identify whether or not acquisition deals in real estate business create value for shareholders of acquiring firms.

The key research questions of this study are:

1. Do M&A transactions generate positive or negative abnormal returns for acquiring firms in the real estate sector?

To achieve this, the process followed involves computing Average Abnormal Returns (AAR) and Average Cumulative Abnormal Returns (ACAR), and testing their statistical significance using a t-test to determine whether the results are significantly positive or negative. This analysis is conducted across different event windows, with a particular focus on pre- and post-announcement periods, to capture the market's reaction over time.

2. What are the possible determinants of CARs in real estate M&A deals?

The cross-sectional regression is employed to test whether differences in the characteristics of firms are able to account for variation in reactions to M&As, quantified using CAR_total across a [-2, +2] window.

3. How do M&A returns in the real estate sector compare to those in the broader market?

The analysis draws on the findings of the study *"Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave"* by Moeller, Schlingemann, and Stulz (2005), which examined over 12,000 U.S. M&A transactions between 1998 and 2001. The authors found that acquiring firms often experience significantly negative abnormal returns on the announcement date, indicating short-term value destruction for shareholders.

The research sheds important light into M&A transaction wealth and how efficiently markets process information related to an acquisition. The findings will help investors make informed M&A transaction decisions for the real estate market. Corporate decision-makers can further utilize these findings to craft acquisition plans that best deliver shareholder value.
By comparing real estate M&A performance to that of other industries, our study adds to the general finance literature dealing with M&A efficiency and value creation. The results can also provide insight to regulatory authorities governing real estate investments, so that M&A transactions foster market stability and equitable competition.

This thesis is structured as follows:

**Chapter 1: Introduction**

**Chapter 2: Literature Review** provides an overview of existing research on M&A transactions, event study methodologies, and market efficiency theories. It discusses empirical findings on the impact of M&A announcements on stock prices and factors influencing post-acquisition performance.

**Chapter 3: Methodology** outlines the research design, data collection process, and analytical techniques employed to estimate abnormal returns and examine their determinants. The chapter details the use of event study methodology and regression analysis.

**Chapter 4: Empirical Analysis and results** presents the results of the study, comparing CARs for acquirers and targets and identifying significant factors affecting these returns. It also discusses the comparative performance of real estate M&A deals versus those in other industries.

**Chapter 5: Conclusion and Recommendations** summarizes the key findings, highlights practical implications for investors and firms, and suggests directions for future research.

By employing a rigorous empirical approach, this study aims to contribute to the ongoing discourse on the financial impact of M&A transactions in the real estate sector and beyond.

# LITERATURE REVIEW

## 2.1 Introduction to Mergers and Acquisitions (M&A)

Mergers and acquisitions (M&A) represent a fundamental strategy through which firms seek growth, market expansion, technological enhancement, or competitive advantage. An **M&A deal** involves the consolidation of two or more companies through various financial transactions, including mergers, acquisitions, tender offers, and management buyouts (DePamphilis, 2019).

A **merger** occurs when two companies agree to combine operations to form a new entity, often implying equality between the firms involved. By contrast, an **acquisition** happens when one firm takes over another, absorbing its business operations without forming a new legal entity. In acquisitions, the acquiring firm typically retains its name and organizational structure, while the acquired company ceases to exist independently.

M&A transactions can be further classified into several categories:

- **Horizontal M&A**: Involving companies operating in the same industry and often direct competitors, aiming to achieve economies of scale and increased market share.
- **Vertical M&A**: Between companies operating at different stages of the supply chain, intending to secure resources or distribution channels.
- **Conglomerate M&A**: Occurring between companies in unrelated business activities, often for diversification purposes (Gaughan, 2017).

Additionally, M&A deals can be friendly or hostile depending on whether the target company's management agrees to the terms of the deal. Friendly mergers typically facilitate smoother integration processes, whereas hostile takeovers may involve management resistance and litigation, potentially increasing deal costs and integration challenges (Sudarsanam, 2003).

These different types of M&A can have varying impacts on shareholder value, operational efficiency, and post-deal financial performance, depending on strategic fit, integration effectiveness, and market conditions. Understanding the theoretical foundations of M&A transactions is crucial for evaluating their subsequent financial outcomes.

### 2.2 Empirical Evidence: Impact of M&A on Acquirers

The central aim of this study is to explore the effect of M&A transactions on the revenue performance of acquiring companies, specifically within the real estate sector in the United States and Europe.

Extensive empirical evidence suggests that M&A deals do not consistently generate positive abnormal returns for acquiring firms. Studies show that, particularly in the window around the deal announcement, acquiring firms often experience **negative cumulative abnormal returns (CAR)**. This phenomenon has been observed across multiple sectors, including real estate.

Reimer (2023) analyzed several European real estate M&A transactions and found statistically significant negative CARs for acquiring firms. Similarly, Huerta-Sanchez, Ngo, and Pyles (2020) found that for U.S. REITs, acquisitions typically led to neutral or negative market reactions.

Moreover, Hossain, Duong, Mamun, and Docherty (2023) confirmed that in broader M&A contexts, especially under external financial shocks, acquiring firms tend to show non-significant or negative CARs around deal announcements. These findings are consistent with earlier studies, such as Moeller, Schlingemann, and Stulz (2004), who demonstrated that large acquirers often destroy shareholder value by overpaying for targets.

In addition, research by Andrade, Mitchell, and Stafford (2001) underscores that while target firm shareholders benefit significantly from M&A transactions, the benefits for acquirers are more nuanced and often negative. Their findings reveal that the premium paid to target firms is rarely fully recouped by the acquiring firm's shareholders, reflecting inefficiencies or managerial overconfidence.

Thus, across both U.S. and European markets, empirical studies align in suggesting that M&A announcements are often perceived skeptically by investors, resulting in negative CARs for acquirers. These observations are vital in understanding the real economic consequences of corporate consolidation strategies.

### 2.3 Methodological Approach: Event Study and CAR Measurement

To assess market reactions to M&A announcements, the **Event Study** methodology is the most widely employed approach. Introduced by Fama et al. (1969) and refined by MacKinlay (1997), event studies measure the abnormal returns generated by securities over a specified event window surrounding a corporate event.

An **abnormal return** (AR) is the difference between the actual return of a stock and its expected return based on a market model. Abnormal return are computed as the difference between actual return and expected returns, with the latter estimated using the CAPM model with 5 Factors Fama-French. The **Cumulative Abnormal Return (CAR)** aggregates these abnormal returns over the event window, usually spanning a few days before and after the announcement (e.g., (-2,+2) or (-5,+5) days around the event). The choice of event window length and estimation period can significantly influence results. Short windows (e.g., 3 to 5

days) are preferred to minimize confounding effects from unrelated news. Longer windows may capture delayed market reactions but risk incorporating noise (Binder, 1998).

In M&A studies, a significantly negative CAR suggests that the market expects the acquisition to destroy value for the acquirer's shareholders, possibly due to overpayment, integration challenges, or strategic misalignment. Event study methodology thus remains a cornerstone in corporate finance research for objectively measuring market sentiment towards major corporate events.

### 2.4 Theoretical Framework: Efficient Market Hypothesis (EMH) and Hubris

The **Efficient Market Hypothesis (EMH)**, introduced by Fama (1970), posits that asset prices fully reflect all available information. Under the semi-strong form of EMH, any public news, such as an M&A announcement, should be immediately incorporated into stock prices, leaving no opportunity for investors to earn abnormal profits through public information.

In the context of M&A, the EMH implies that:

- Target firm shareholders typically experience positive abnormal returns, as bidders often pay a premium to acquire the firm.
- Acquirer shareholders, however, often see neutral or negative abnormal returns, reflecting the risk of overpayment, integration issues, or managerial hubris (Roll, 1986).

The semi-strong form of EMH is thus consistent with the empirical observation that acquirer CARs are frequently negative around deal announcements. Furthermore, the **Hubris Hypothesis** (Roll, 1986) suggests that acquirers overestimate potential synergies, leading to value destruction which the market promptly recognizes and prices in.

Recent studies, such as those by Moeller et al. (2004) and Hossain et al. (2023), reinforce this theoretical framework by showing that negative CARs are especially pronounced in large acquisitions and during periods of economic instability. This evidence aligns with behavioral finance theories suggesting that managerial biases can lead to systematic overpayment in M&A transactions.

Consequently, observing significantly negative CARs in acquiring firms around M&A announcements supports the notion that financial markets are efficient in processing

information and reacting accordingly. These insights are crucial for investors, managers, and policymakers aiming to understand the financial dynamics underlying corporate mergers and acquisitions.

### 2.5 Determinants of CARs

In M&A event studies, understanding the cross-sectional variation in cumulative abnormal returns (CARs) is essential to uncover how firm-specific characteristics influence market reactions. This study specifically focuses on three explanatory variables: market capitalization, pre-announcement stock price run-up, turnover, wether the acquiring is REIts or not REITs, wetherthe market pre deal was bullish or bearish. The selection of these variables is grounded in established finance literature.

**Market Capitalization** (MarketCap) is often used to proxy for firm size. Several studies suggest that firm size can significantly affect abnormal returns around corporate events. Moeller, Schlingemann, and Stulz (2004) document that larger acquiring firms tend to experience significantly lower CARs compared to smaller acquirers. This finding is commonly attributed to agency problems, where managers of larger firms might pursue value-destroying acquisitions to build empires, or to a lower growth potential already embedded in larger organizations. Additionally, larger firms might attract more analyst coverage and investor scrutiny, making the market less forgiving of strategic mistakes.

**Pre-announcement Stock Price Run-Up** (RunUp) measures the stock performance prior to the M&A announcement and is interpreted as a proxy for the market's anticipation of the deal. Schwert (1996) finds that substantial price increases before the announcement are indicative of information leakage or market speculation. A positive run-up could signal that investors have already partially priced in the anticipated synergies of the deal, potentially leading to a muted or even negative CAR upon announcement. Conversely, a lack of a significant run-up might suggest that the deal was a surprise, possibly leading to a stronger positive reaction if perceived favorably.

**Turnover**, defined as the trading volume relative to shares outstanding, serves as a proxy for stock liquidity. Datar, Naik, and Radcliffe (1998) show that liquidity affects the pricing of financial assets and can influence how quickly and efficiently new information is incorporated into stock prices. Stocks with higher turnover are generally more liquid and thus might adjust

more rapidly to news events such as M&A announcements. High turnover may also reflect greater investor attention, leading to more pronounced abnormal returns around the event date.

**REITs dummy**, is a binary variable equal to one if the acquiring firm is a Real Estate Investment Trust (REIT) and zero otherwise. REITs differ from traditional firms in several important ways, including their tax treatment, dividend distribution requirements, and regulatory constraints. These differences may lead investors to assess acquisitions by REITs differently, particularly regarding future cash flows and risk profiles. The inclusion of this variable helps isolate whether the market systematically reacts to M&A activity by REITs in a manner distinct from non-REIT firms.

**Market yield**, is a dummy representing overall market sentiment in the 100 trading days prior to the event window. It equals one during bull markets—periods of general upward movement in returns—and zero during bear or neutral conditions. This variable controls for macro-level optimism or pessimism that could influence how investors interpret acquisition announcements, recognizing that identical corporate actions may generate varying reactions depending on prevailing market conditions.

## RESEARCH DESIGN

The methodology employed in this study follows a structured and rigorous approach to assess the impact of M&A transactions on acquiring firms in the real estate sector, focusing on the U.S. and European markets. The research is based on quantitative techniques, notably the Event Study methodology, supplemented by cross-sectional regression analysis to investigate the determinants of abnormal returns.

### 3.1 Data Collection and Sample Selection

The dataset construction involved meticulous retrieval from authoritative financial databases. M&A deal information was retrieved from Refinitiv Eikon Deal Screener, applying stringent filters for public companies in the real estate sector, limiting the selection to 100% acquisition transactions and excluding mergers. This produced two datasets: a U.S.-only sample of 42 observations and a combined U.S. and Europe sample totaling 56 observations.

Daily stock prices and returns were collected from CRSP for U.S. firms and Compustat Global for European firms. Market indices used for market model estimations were sourced from the

respective databases, ensuring local market alignment. Supplementary financial data for the regression analysis, including market capitalization, pre-deal stock price RunUp, and turnover ratios, were consistently retrieved from Compustat Global and CRSP.

The data collection process began by accessing Refinitiv Eikon Deal Screener, where all M&A transactions were retrieved by applying several specific filters. First, only deals involving public companies were considered, ensuring that market data would be available for analysis. Second, transactions were restricted to the real estate sector as it is the sector of interest of this paper. Third, the analysis is restricted to acquisitions where the acquirer is buying 100% of the equity in the target firm to avoid bias from the potential influence of continuing target firm management involvement that may exist in the case of partial acquisitions. Since this aggregated transaction form is less influenced by the target's actions compared to other forms, this ensures that the CARs captured represent the market's response to the acquirer independently. These selection criteria generated a comprehensive sample of U.S. and European real estate acquisitions. Two distinct samples were constructed: the first comprising only U.S. transactions, resulting in 41 observations, and the second comprising both U.S. and European transactions, leading to a total of 56 observations. This bifurcated approach allows for comparative insights between domestic and international deal dynamics.

### 3.2 Methodology

The expected returns were calculated using the CAPM with 5 factors Fama-French. It has been used an estimation window of 100 trading days (from -132 to -32 trading days relative to the announcement date) in order to estimate expected returns over the entire 165 trading days period. The Fama-French 5-Factor model is an extension of the standard market model that supposes that the excess return on a security is linearly related to the market risk premium (Mkt-RF), along with four other factors: size (SMB), value (HML), profitability (RMW), and investment (CMA). Each of the factors measures a distinct aspect of firm characteristic or risk that may affect returns. Including these factors, the model seeks to provide a greater explanation of cross-sectional stock return variation and represent an improvement on the explanatory capabilities of the Capital Asset Pricing Model (CAPM). It follows the equation:

***Equation 1***

$$R_i - R_f = \alpha + \beta_m(R_m - R_f) + \beta_{SMB} \cdot SMB + \beta_{HML} \cdot HML + \beta_{RMW} \cdot RMW + \beta_{CMA} \cdot CMA + \varepsilon$$

The parameters were estimated for each firm using Ordinary Least Squares (OLS) regression over the specified estimation window.

Following the estimation of the market model parameters, Abnormal Returns (AR) were computed as the difference between the actual and expected returns for each firm and trading day:

***Equation 2***

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t})$$

Subsequently, the Cumulative Abnormal Return (CAR) for each firm over a specified event window was calculated by summing the daily ARs within that window:

***Equation 3***

$$CAR_{\mathrm{i}} = \sum_{t=T1}^{T2} AR_{\mathrm{i},t}$$

The Average Cumulative Abnormal Return (ACAR) across all firms for a given event window was obtained as follows:

***Equation 4***

$$ACAR = \frac{1}{N} \times \sum_{i=1}^{N} \sum_{t=T1}^{T2} AR_{\mathrm{i},t}$$

The Event Study was conducted across five distinct event windows to assess market reactions of different durations relative to the announcement date: (-32, +32), (-21, +21), (-14, +14), (-7, +7), and (-2, +2) trading days. For each event window, CARs were individually computed for every acquiring firm.

Each individual firm thus has one CAR for each event window, ACARs are derived by averaging CARs for each day across the sample. This methodology ensures that temporal patterns in abnormal returns are fully captured both at the firm-specific and sample-wide levels.

To evaluate the statistical significance of the abnormal returns, t-tests were applied to ACARs. The t-statistic allowed for determining whether the average abnormal returns significantly differed from zero, offering insights into market perceptions of M&A transactions.

Beyond the event study analysis, an additional cross-sectional regression was conducted to investigate the factors influencing CARs. The regression model specified was:

***Model 1***

$$CAR_i = \beta_0 + \beta_1 \cdot \log(mcap_i) + \beta_2 \cdot runup\_final_i + \beta_3 \cdot avg\_turnover\_final_i + \beta_4 \cdot reits\_dummy_i + \beta_5 \cdot market\_yield_i + \varepsilon_i$$

where the natural logarithm of the acquiring firm's market capitalization measured prior to the M&A announcement, represents the pre-announcement stock return over a defined period, and indicates the average trading volume scaled by outstanding shares.

Market capitalization was included to capture the size effect, hypothesizing that larger firms might experience different market reactions compared to smaller firms due to better diversification or resource access. The RunUp variable was used to proxy for market expectations or insider information potentially embedded in pre-announcement stock price movements. Lastly, turnover was employed to measure liquidity effects, assuming that more liquid stocks might exhibit different sensitivity to corporate events.

All financial variables were extracted from Compustat Global for European firms and from CRSP for U.S. firms to ensure consistency and reliability. The regression analysis was performed separately for the U.S.-only sample and the full sample including both U.S. and European observations, enabling comparative analysis across different geographical contexts.

### 3.3 Descriptive Statistics of Abnormal returns of the Sample

To provide a clearer overview of the dataset used in the empirical analysis, descriptive statistics are first presented for the abnormal returns (ARs) observed across the entire sample of acquiring firms, as well as for the subsample composed exclusively of U.S. based acquirers. The full sample consists of 56 M&A deals completed over the period from 2010 to 2025, while the U.S.

subsample includes 42 deals. This breakdown allows for a preliminary comparison of how stock prices responded to acquisition announcements across different market environments.

In addition to the AR distributions, descriptive statistics are also reported for two dummy variables that will later be employed in the regression analysis to segment the sample. These dummy variables capture specific characteristics of the deals or acquiring firms and are used to distinguish between subsamples based on economically meaningful criteria. Presenting their descriptive statistics in advance helps to better understand the structure of the dataset and the composition of the groups compared in the econometric models. By examining measures such as the mean, standard deviation, and distribution across categories, it becomes possible to detect potential patterns or imbalances in the data that may later influence the interpretation of the regression outcomes.

Table 1: Whole Sample

| Number of Deals | REITs | Non-REITs | Bull Market | Bear Market |
|---|---|---|---|---|
| 56 | 41 | 15 | 30 | 26 |

*This table reports the Whole Sample characteristics*

Table 2: USA Subsample

| Number of Deals | REITs | Non-REITs | Bull Market | Bear Market |
|---|---|---|---|---|
| 42 | 37 | 5 | 24 | 18 |

*This table reports the USA Sample characteristics*

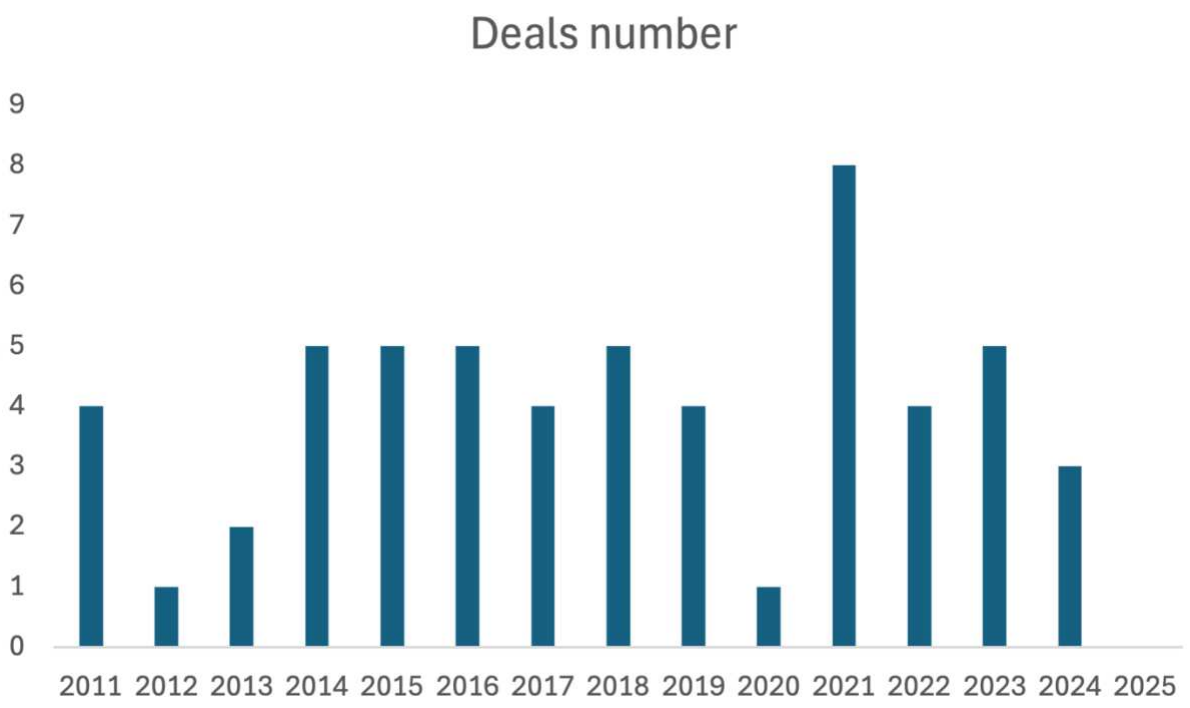
Table 3: AR Descriptive Statistics

| AR Window | Average | Standard Deviation |
|---|---|---|
| ARs (-32, -2) | 0,0000101 | 0.016 |
| ARs (-32, -2) USA | -0,0000803 | 0.016 |
| ARs (-2, +2) | -0,0029642 | 0.026 |
| ARs (-2, +2) USA | -0,0055877 | 0.026 |
| ARs (+2, +32) | -0,0002049 | 0.018 |
| ARs (+2, +32) USA | -0,0003619 | 0.015 |

*This table reports descriptve statistics of abnormal returns (ARs) of acquiring firms over pre, post and during event windows in different subsambles.*

In figure 2 it is shown the distrbution of acquisition deals of my total sample through the years intercurring from 2010 to 2025. Number of deals is pretty constant during the years with a drop in 2020 due mainly to Covid-19 pandemic and a quick recovery in 2021.

**Figure 2: Distribution of acquisition delas during timespan 2010-2025**




*This graph shows the destribution of deals proper to my total sample of study during time span intercurring from 2010 to 2025.*

# EMPIRICAL ANALYSIS AND RESULTS

This chapter presents the results of the empirical analysis conducted to evaluate the presence and magnitude of abnormal stock returns associated with M&A announcements, with a particular focus on acquiring firms. The aim of this research is to assess whether acquisition activities generate value for acquiring firms, as reflected in their short-term stock price performance. The analysis examines the impact of M&A deals in both U.S. and European financial markets, providing a cross-regional perspective on market efficiency and investor behavior.

The financial data used for the event study, including stock prices and market indices, were collected as described in the Data section of the Methodology chapter. The methodology employed to compute abnormal returns is based of a 5 factors Fama-French market model, and the coding framework developed to process and analyze the event windows has been detailed in the respective sections. The empirical testing primarily revolves around the application of t-tests to assess the statistical significance of Average Cumulative Abnormal Returns (ACAR) across various event windows.

## 4.1 Empirical evidence of Impact of M&A on Real Estate acquirors

To explore whether cumulative market reactions unfold over a longer time horizon, the analysis proceeds with a series of t-tests on the Average Cumulative Abnormal Returns (ACAR). These are computed for five symmetric event windows centered around the announcement date: (-32;+32), (-21;+21), (-14;+14), (-7;+7), and (-2;+2). Each of these windows serves a specific analytical purpose. The broader windows allow for the detection of both anticipatory effects, where the market may begin to react before the formal announcement, and delayed reactions, which may reflect a lag in investor response. Conversely, the narrower windows are aimed at capturing the most immediate market response, thereby isolating the purest informational effect of the M&A announcement.

Table 4: ACAR of acquirer firms for different periods and for different subsamples

| ACAR Window | Total Group | USA Subsample |
|---|---|---|
| (-32, +32) | -0.00701*** | -0.01404*** |
| | (-47.6785) | (-45.2298) |
| (-21, +21) | -0.00842*** | -0.01619*** |
| | (-58.3674) | (-45.8146) |
| (-14, +14) | -0.00702*** | -0.01275*** |
| | (-36.4551) | (-28.2336) |
| (-7, +7) | -0.00978*** | -0.01958*** |
| | (-34.8467) | (-33.7252) |
| (-2, +2) | -0.00952*** | -0.01699*** |
| | (-21.8179) | (-21.3875) |

*This table reports the average cumulative abnormal returns (ACAR) of acquiring firms over different event windows and subsambles. T-statistics in parentheses. Superscripts ***, ** and * denote significance at 1%, 5% and 10% respectively.*

Aside from this primary window analysis, the two distinct time periods also underwent regression: a pre-event window (−12,−2) and an post-event window (+2,+12). This strategy permits a finer examination of how abnormal returns are not only around the announcement, but also in the run-up to, and in the after of, the event. By narrowing the window to include only periods outside the day of the announcement, the analysis identifies whether markets start to prepare for the M&A transaction in advance (through leakage of information or speculation), whether there are lingering effects or reversals in the post-announcement period, or both. The strategy differentiates the timing, direction, and magnitude of cumulative abnormal returns (CARs), revealing information that is lost when the analysis is restricted to alternative event windows that incorporate the announcement day.

Table 5: ACAR of acquirer firms for pre, during and post event windows and for different subsamples

| ACAR Window | Whole Sample | USA Sample |
|---|---|---|
| (-12, -2) | 0.000035 | -0.00125*** |
| | (0.5853) | (-7.2866) |
| (-2, +2) | -0.00952*** | -0.01699*** |
| | (-21.8179) | (-21.3875) |
| (+2, +12) | 0.00359*** | 0.00038*** |
| | (33.9414) | (5.3108) |

*This table reports the average cumulative abnormal returns (ACAR) of acquiring firms over pre, post and during event windows in different subsambles. T-statistics in parentheses. Superscripts ***, ** and * denote significance at 1%, 5% and 10% respectively.*

The results presented in Tables 4 and 5, provide a consistent and multifaceted picture of how the market reacts to acquisition announcements made by acquiring firms, based on the total sample. Table 4 reports the Average Cumulative Abnormal Returns (ACARs) across a series

of symmetric event windows centered on the announcement date, ranging from wide windows such as (−32,+32) to very narrow intervals like (−2,+2). For each window, the table displays the average abnormal performance of the acquiring firms' stocks, along with the corresponding t-statistics that measure the statistical significance of these abnormal returns. Across all event windows, the ACARs values are negative and highly statistically significant. This confirms that, on average, acquisition announcements are associated with a robust negative market reaction in the stock prices of acquiring firms.

Moreover, Table 4 reveals that this negative effect is persistent and tends to increase in magnitude as the window narrows around the announcement date. The strongest effect is observed in the (−2,+2) window, where the ACAR reaches -0.00952 and is supported by a very large t-statistic of -21.82. This narrowing pattern suggests that the abnormal return is not the result of a slow and extended decline in prices but rather of a sharp and concentrated market reaction occurring at the time of the announcement itself. The consistency of the effect across various symmetric windows adds robustness to this conclusion, as the significance does not depend on a specific event window definition.

While Table 4 confirms the presence of a negative and significant reaction, it does not provide insight into the structure and timing of this reaction, whether it builds up before the announcement, how immediate it is, and what happens in the immediate post. Table 5 addresses these questions by decomposing the event window into three distinct sub-periods: a pre-announcement window (−12,−2), a core announcement window (−2,+2), and a post-announcement window (+2,+12). This breakdown allows for a more detailed temporal analysis of how the abnormal returns are distributed over time.

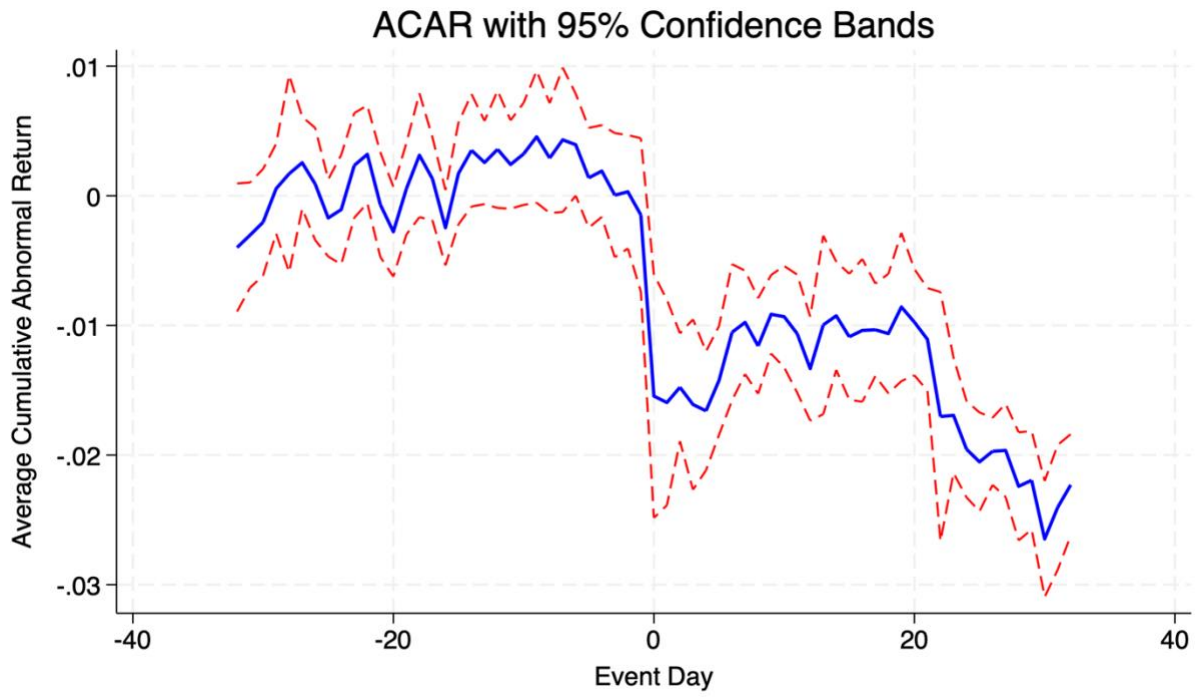
According to Table 5, the entire negative market reaction is concentrated within the announcement window. During the (−2,+2) period, the ACAR is strongly negative and highly statistically significant, corroborating the findings from Table 4. In contrast, the pre-announcement period (−12,−2) shows a near-zero ACAR (0.000035), with a t-statistic close to zero, indicating no significant abnormal returns in the days leading up to the event. This suggests that there is no clear evidence of market anticipation or information leakage before the public release of the announcement. In the post-announcement period (+2,+12), the ACAR becomes positive and statistically significant (0.00359), implying a partial recovery of returns following the initial negative shock. This rebound may reflect a correction of an initial overreaction or a gradual reassessment of the long-term value implications of the acquisition.

To complement the statistical findings from the tables, figure 3 as well as the figures in appendix offer a dynamic and intuitive visual representation of how abnormal returns evolve over time. The graph plots the average cumulative abnormal return (ACAR) for each event day in a window that spans from approximately 32 trading days before the announcement to 32 trading days after. The blue line shows the cumulative evolution of abnormal returns, while the red dashed lines depict the 95% pointwise confidence intervals, based on the cross-sectional standard errors across firms.

From this graph, one can observe that the ACAR remains relatively stable and centered around zero during the pre-event period. This visual evidence is fully consistent with the pre-announcement results from Table 5, where no statistically significant effect is detected. Around the event date (day 0), however, the graph shows a clear and sudden drop in cumulative abnormal returns. This sharp downward movement confirms that the market reaction is immediate and concentrated within a very short window around the announcement. After this initial decline, the curve flattens out and begins to trend slightly upward, reflecting the post-event adjustment captured in Table 5. Although the cumulative returns do not return to pre-event levels, the slowdown in the rate of decline suggests that the strongest part of the negative reaction is short-lived.

In summary, the results from Tables 4 and 5 and the ACAR graph provide a coherent and comprehensive account of how the market, in the total sample, responds to acquisition announcements. The event triggers a statistically and economically significant negative abnormal return, concentrated in the immediate window surrounding the announcement. There is no evidence of a market response prior to the event, which suggests the absence of information leakage or anticipatory trading. Furthermore, the presence of a partial post-event recovery indicates that the market may revise its initial negative assessment over time, possibly as more information becomes available or as initial uncertainty dissipates. The graphical analysis further reinforces this narrative by illustrating that the effect is abrupt, precisely timed, and only partially persistent**.** Altogether, this integrated evidence supports the view that financial markets react efficiently and immediately to acquisition announcements, with the impact being largely absorbed within a short window around the event.

*Figure 3*




*This graph shows the trend of ACARs around acquisition announcment in the total sample used in the study*

### 4.2 Robustness check: Subsample Analysis: U.S. vs. European Markets

This section of the analysis narrows the focus to a geographically specific subsample composed exclusively of U.S.-based acquiring companies. The subsample includes 42 firms that have completed M&A transactions and forms a crucial component of this research, which aims to understand how merger and acquisition (M&A) announcements affect the short-term stock performance of acquiring firms in both the United States and Europe. By isolating the U.S. sample, the analysis allows for a more targeted assessment of how markets in a single, highly developed financial environment react to corporate control events such as M&A deals.

The empirical results obtained from the U.S. subsample offer a nuanced and compelling view of how acquisition announcements are interpreted by a relatively efficient and information-sensitive segment of global financial markets. Drawing from Tables 4 and 5, the evidence suggests a strong, negative, and timely market reaction to such announcements when the acquiring firm is based in the United States. This behavior is consistent across multiple event window specifications and confirms the hypothesis that, in the U.S. context, acquisition

announcements are generally perceived as value-destroying or, at the very least, value-diluting in the short term.

Table 4 presents the Average Cumulative Abnormal Returns (ACARs) for symmetric windows centered on the announcement date, ranging from broad intervals such as (−32,+32) to narrow windows like (−2,+2). For every window considered, the ACARs are not only negative but also highly statistically significant, with t-statistics large enough to strongly reject the null hypothesis of no abnormal performance. The most concentrated and severe market reaction is found in the (−2,+2) window, where the ACAR reaches -0.01699 with an extremely high level of significance. This indicates that investors respond rapidly and decisively to the announcement, pricing in their expectations almost immediately. The persistence of significant negative ACARs even in wider windows further demonstrates that the announcement effect is not a short-lived anomaly but a structural response with lingering implications for firm valuation.

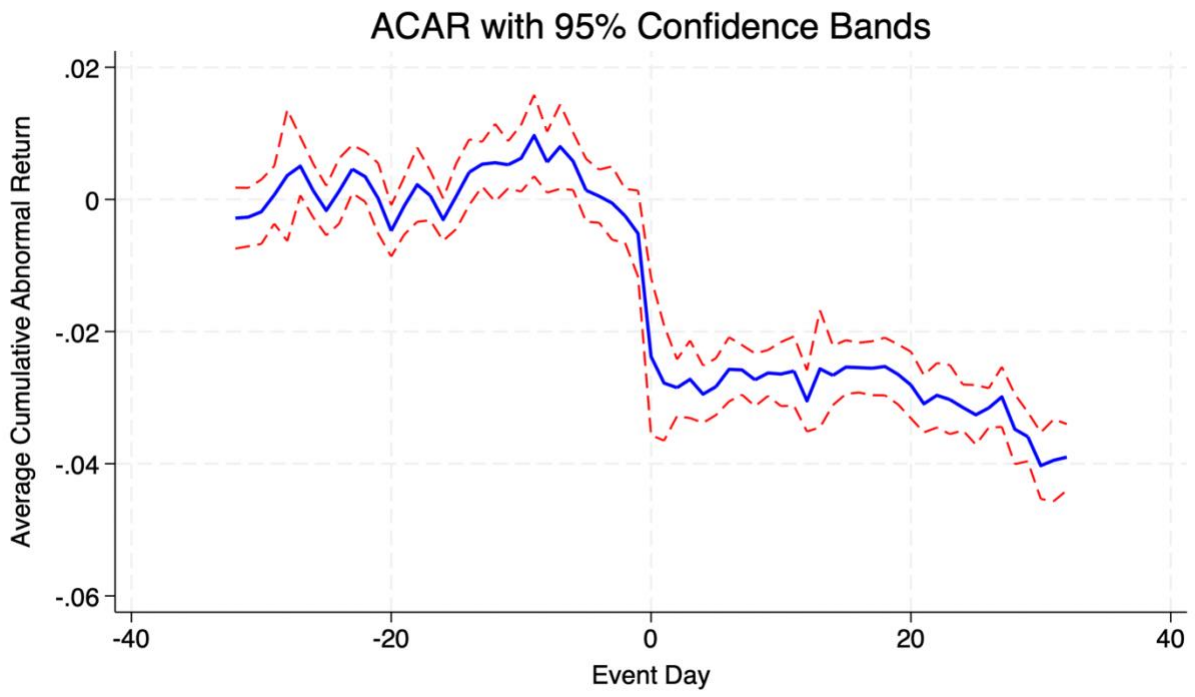
Beyond simply confirming that the market reaction is negative and significant, Table 5 allows for a more refined understanding of when and how that reaction materializes. By decomposing the full event period into pre-announcement (−12,−2), announcement (−2,+2), and post-announcement (+2,+12) phases, the table highlights important timing asymmetries. The U.S. subsample stands out in that it exhibits a statistically significant negative ACAR even before the announcement takes place. In the pre-event window, the ACAR amounts to -0.00125 with a t-statistic of -7.28, suggesting that prices begin to decline modestly before the official disclosure of the deal. This anticipatory movement may be explained by the presence of speculative trading, informal information leakage, or market rumors that precede the public announcement. Such behavior is consistent with the semi-strong form of the Efficient Market Hypothesis, which allows for partial adjustment in anticipation of known information events, especially in markets where investor sophistication and news coverage are high.

During the announcement window (−2,+2), the strongest reaction is observed, reinforcing the idea that most of the price adjustment occurs instantaneously upon the event being made public. The abruptness of this adjustment reflects high market efficiency in absorbing new information. Interestingly, the post-announcement window shows a small but statistically significant positive ACAR of 0.00038, which points to a degree of market correction or partial reassessment following the initial negative impact. While the magnitude of the recovery is limited, its presence indicates that investors may revise their expectations in the days following

the announcement, possibly in response to additional disclosures, clarification from management, or evolving market sentiment.

The ACAR graph adds further context by visually capturing the downwar sloping of returns from 32 days before to 32 days after the event. The graph aligns closely with the numerical findings. In the days leading up to the event, the blue ACAR line begins to trend downward, reflecting the pre-event weakness identified in Table 5. Around day 0, a sharp and sudden drop becomes visible, indicating the concentrated impact of the announcement itself. This visual inflection point highlights the speed and magnitude of investor reaction in the U.S. market. Following the announcement, the curve begins to stabilize and shows a slight upward trajectory, consistent with the modest positive ACAR found in the post-event phase. Although the confidence bands displayed in the graph are pointwise and not suitable for formal hypothesis testing, they support the interpretation that the observed pattern is unlikely to be random noise.

***Figure 4***




*This graph shows the trend of ACARs around acquisition announcment in the USA subsample used in the study*

Taken as a whole, the results from the U.S. subsample not only mirror the main findings from the total sample but also strengthen their validity. The presence of significant pre-event movement, a concentrated reaction during the announcement, and a slight post-event rebound creates a rich and internally coherent narrative of market behavior. Moreover, the consistency

of these patterns across multiple methodological approaches, symmetric windows, phase-based windows and graphica representations confirms the robustness of the results. As such, the U.S. subsample analysis functions as an effective robustness check for the main empirical conclusions. It demonstrates that the observed effects are not idiosyncratic to the global sample or driven by country-specific distortions, but rather reflect generalizable dynamics of how well-informed, liquid, and institutionally mature markets react to major corporate events such as acquisitions. By reproducing the main effects in a distinct yet economically important market context, the U.S. analysis increases confidence in the external validity of the findings. In doing so, it not only confirms the presence of a significant acquisition announcement effect but also helps clarify its timing, structure and possible drivers, offering a comprehensive view of how market participants process and react to strategic corporate decisions in real time.

### 4.3 Cross-Sectional Analysis of Determinants of CARs

In order to examine whether firm-specific characteristics can help explain the heterogeneity in market responses to merger and acquisition (M&A) announcements, a cross-sectional regression analysis was conducted using the cumulative abnormal return over the event window (-2, +2) as the dependent variable. This short-term window is typically used in event studies to isolate the immediate market reaction to new public information, in this case, the M&A deal announcement. The purpose of this regression is to identify whether differences in firms' financial and market characteristics can systematically account for the variation in abnormal returns observed across acquiring firms.

***Model 2***

$$CAR_i = \beta_0 + \beta_1 \cdot \log(mcap_i) + \beta_2 \cdot runup\_final_i + \beta_3 \cdot avg\_turnover\_final_i + \beta_4 \cdot reits\_dummy_i + \beta_5 \cdot market\_yield_i + \varepsilon_i$$

The model includes three explanatory variables, each selected for their relevance in the context of M&A valuation and market behavior. The first variable, the logarithm of market capitalization (*log_mcap*), serves as a proxy for firm size. Larger firms are often more diversified, more liquid, and more widely covered by analysts, which, according to the semi-strong form of the Efficient Market Hypothesis (EMH), should enable faster and more efficient incorporation of public information into prices. As a result, one might expect that larger firms exhibit lower abnormal returns due to diminished information asymmetry and more efficient price adjustment mechanisms. Conversely, smaller firms may elicit stronger market reactions due to greater uncertainty and information opacity.

The second variable, *runup_final*, captures the cumulative abnormal return over the pre-announcement window (-60, -2). This variable is particularly important in M&A event studies, as it reflects the market's anticipatory behavior before the official disclosure of the deal. A significant runup may suggest information leakage, speculation, or rational investor expectations based on observable firm behavior (e.g., acquisition patterns, rumors, strategic positioning). From a theoretical standpoint, one might expect a negative relationship between pre-announcement runup and post-announcement CARs if early price movements "steal" the effect of the announcement. However, if the runup reflects correct expectations or positive sentiment, its continuation into the post-announcement window may result in a positive relationship.

The third variable, *avg_turnover_final*, represents the average stock turnover over the same pre-event window. This is used as a proxy for stock liquidity and trading activity. High turnover can reflect either a high level of investor attention or speculative behavior, both of which may influence the magnitude of abnormal returns. In theory, higher liquidity might lead to more efficient pricing, reducing overreactions or underreactions to new information. However, the direction of the expected impact is ambiguous and largely empirical.

The fourth control variable, *reits_dummy*, is a dummy variable that takes on a value of one when the acquiror is a Real Estate Investment Trust (REIT) and zero otherwise. Structurally, REITs differ from non-REIT firms along a number of dimensions, including their treatment for tax purposes, their requirements for dividend distribution, and their investment policy. These firms are generally subject to particular regulatory restrictions and tend to be in asset-intensive industries, and thus might affect how their announcements of acquisitions elicit a response from the market. The addition of *reits_dummy* controls for the special attributes of REITs that might influence abnormal returns during M&A events. For instance, because REITs must distribute a high percentage of earnings in dividends, market participants might view acquisitions by REITs differently, with special attention to implications for future cash flows and risk profiles. Accordingly, including this variable makes it possible to test whether reactions to M&A activity differ systematically for REIT acquirors relative to other firms.

The fifth variable, *market_yield*, is a dummy variable representing the general condition of the market during the 100 days preceding the pre-event window, i.e., days -132 to -32 relative to the announcement date. Its numerical value is one if the bull condition is present (a broad-based

upward movement in returns) and zero when the bear condition is experienced (declining or flat performance). This variable accounts for the general sentiment in the lead-up to the transaction that might affect investor interpretations of M&A announcements. For example, under conditions when markets are considered bull, acquisitions might be seen more positively by investors as they see them as associated with expansion opportunities, while during bear conditions, similar announcements might be seen as more risk-based and ill-informed. Accounting for *market_yield* controls for macroeconomic or broad-based optimism and pessimism affecting firm-level abnormal returns while acknowledging that identical firm actions might spark different responses based on general conditions in the marketplace.

Table 6: CARs explenatory variables

| **Variables** | |
|---|---|
| (log_mcap) | -0.00078<br>(-0.11) |
| (runup_final) | 0.14596**<br>(2.31) |
| (avg_turnover$_{f}inal$) | -0.00080<br>(-0.36) |
| (market_yield) | 0.01315**<br>(2.16) |
| (reits_dummy) | 0.02584<br>(1.51) |
| ($_{c}ons$) | -0.03919<br>(-0.33) |

*This table reports the variables that could affect cumulative abnormal returns (CAR) of acquiring firms. T-statistics in parentheses. Superscripts ***, ** and * denote significance at 1%, 5% and 10% respectively.*

Table 6 displays results for a regression that looks at factors that drive CARs for acquiring firms within the context of the general finding that average CARs tend to be statistically significant and negative in and around M&A announcement dates. This regression attempts to determine firm- and market-level variables that could explain variation in these generally negative announcement effects.

Among explanatory variables, runup_final, representing acquirer stock performance in advance of the announcement, is significantly and positively related to CARs (coefficient = 0.14596, t-statistic = 2.31). This suggests that firms that have seen more pre-announcement increases in their stock prices experience smaller negative abnormal returns when they announce their acquisitions. One possible explanation is that an upward run-up is an indicator of optimism or

information leakage and is building some anticipated synergies or value into the stock prior to its announcement. Consequently, the announcement produces less extreme but still generally negative reaction.

Concomitantly, *market_yield* as a proxy for general market performance is also significantly and positively associated with CARs (coefficient = 0.01315 and t-statistic = 2.16). This indicates that acquisitions made in good market conditions result in less negative abnormal returns. Positive market conditions might increase investor optimism and hence alleviate the negative stock price reaction normally associated with acquisitions. The remaining variables in the model, *log mcap* (size of firm), *avg_turnover_final* (liquidity), *reits_dummy* (industry classification), and constant are all not statistically significant, meaning that all these variables do not significantly explain the variation in CARs. For instance, firm size's coefficient is close to zero and insignificant (−0.00078, t-statistic = −0.11), implying that both large and small acquirers have similar announcement effects. Similarly, stock liquidity and REIT status do not have significant explanatory power in this context.

In aggregate, these results support the broad finding that acquiring firms have statistically significant and negative CARs surrounding M&A announcements. But while regression results show that negativity is not constant, being moderated through variables including pre-announcement returns and general economic conditions, it highlights the influence of economic and aggregate market sentiment and expectations on investor responses to firms' acquisition policies.

### 4.4 Comparison of results obtained with the market trend

A pivotal benchmark for understanding the stock market reaction to merger and acquisition (M&A) announcements in general markets is the study by Moeller, Schlingemann, and Stulz (2005), titled *"Wealth Destruction on a Massive Scale? A Study of Acquiring-Firm Returns in the Recent Merger Wave."* Analyzing more than 12,000 U.S. M&A transactions between 1998 and 2001, the authors find that acquiring firms experience significant negative cumulative abnormal returns (CARs) around the announcement date. Specifically, they report an average three-day CAR of approximately -1.0%, with the effect being even more pronounced for large acquirers, supporting the hubris hypothesis and concerns regarding agency costs. Furthermore, the study highlights that the aggregate shareholder value destruction amounted to over $240

billion, emphasizing the substantial economic implications of M&A activities perceived unfavorably by the market.

These findings are remarkably consistent with the empirical results obtained in the present study, which focuses specifically on M&A transactions in the real estate sector across U.S. and European markets. In particular, this thesis reports a cumulative abnormal return of -1.7% over the narrow (-2, +2) event window for USA subsample, which is both larger in magnitude and highly statistically significant (p-value $< 0.001$). Moreover, the negative reaction persists across wider event windows such as (-7, +7) and (-32, +32) days, confirming a sustained adverse market sentiment. When focusing solely on U.S. acquirers, the negative abnormal returns are even slightly more pronounced, further reinforcing the notion of market efficiency and critical investor assessment.

The comparative analysis between Moeller et al. (2005) and the results presented in this thesis suggests that negative stock price reactions to acquisition announcements are not merely a feature of a specific industry like real estate but rather a widespread phenomenon observable across different sectors and time periods. Although the magnitude of the CARs in the real estate sector for the US standalone subsample, appears somewhat larger (-1.7% versus -1.0%), the direction and statistical significance of the results are fully aligned. This difference in magnitude could reflect the particular challenges associated with real estate M&A transactions, such as valuation uncertainties and integration complexities. Nonetheless, the overarching conclusion remains consistent: markets tend to penalize acquiring firms upon the announcement of acquisition deals, signaling pervasive investor skepticism regarding the acquirers' ability to create shareholder value through M&A activities. Thus, both studies collectively reinforce the critical need for acquirers to adopt disciplined acquisition strategies and transparent communication practices to mitigate adverse investor reactions.

# CONCLUSION AND RECOMMENDATIONS

## 5.1 Summary of Key Findings

This thesis investigated the short-term stock market reaction to acquisition announcements made by acquiring firms in the real estate sector, with a comparative lens on both U.S. and European markets. Utilizing a standard event study methodology, the analysis focused on identifying statistically significant abnormal returns and the firm-specific determinants that potentially drive such performance.

The findings consistently indicate a negative market reaction to M&A announcements. The Average Cumulative Abnormal Returns (ACARs) were significantly negative across all tested event windows, with the most substantial effect observed in the (-2, +2) window, where the mean ACAR was -1.0% ($p < 0.001$). These results remained robust when focusing solely on the U.S. acquirers, confirming the presence of a consistent and enduring negative market sentiment (ACAR mean = -1.69%, $p < 0.001$).

The results of this study are broadly consistent with the predictions of the Efficient Market Hypothesis (EMH), particularly in its semi-strong form. According to the EMH, stock prices should incorporate all publicly available information almost instantaneously, leaving no room for abnormal profits through the use of such information once it is released. In the context of acquisition announcements, which represent material public information, the EMH implies that any market reaction should occur immediately upon the announcement, and not before or after, unless there is private information or market inefficiency.

The findings in both the tables and the ACAR graph strongly support this view. The cumulative abnormal returns remain close to zero throughout the pre-announcement period, indicating that there is no systematic information leakage or anticipation effect by the market, at least in the total sample. This aligns well with the EMH, which assumes that the market does not consistently react to information that has not yet been made public. The presence of a mild negative pre-announcement effect in the U.S. subsample could be attributed to market speculation, more intense media coverage, or simply greater trading volume and sensitivity in U.S. markets. Nonetheless, the effect is not large enough to contradict the broader consistency with the EMH.

Most importantly, the sharp drop in cumulative abnormal returns precisely around the announcement date, as documented in both Table 1, Table 2, provides direct evidence of a swift and significant market reaction to new public information. This immediate adjustment of prices is a core tenet of the EMH. The partial recovery observed in the post-announcement period does not contradict the EMH, but rather suggests a possible initial overreaction or a reassessment of the deal's implications as more details emerge or as investor sentiment stabilizes.

In conclusion, the observed return patterns characterized by informational neutrality before the event, immediate and strong reaction at the time of the announcement, and only modest adjustment afterward are fully consistent with the semi-strong form of the Efficient Market Hypothesis. They support the view that financial markets are generally efficient in processing public information related to corporate events such as mergers and acquisitions.

A complementary regression analysis on the U.S.-only sample examined the cross-sectional variation in CARs. Among the variables considered—firm size (log_mcap), pre-announcement stock price run-up (runup_final), and average turnover (avg_turnover_final)—only the runup variable proved statistically significant (coefficient = 0.146, t-stat = 2.31). This suggests that market expectations, as reflected in pre-announcement performance, are predictive of the immediate post-announcement reaction. Between the two dummy varibales, only the ine explaining if the announcment come in a situation of bullis or bearish markets (market_yield) is statistically significant (coefficient = 0.013, t-stat = 2.16). The overall explanatory power of the model was modest, with overall marginal statistical significance.

### 5.2 Further Implications

These findings carry several theoretical and practical implications. From a theoretical standpoint, the evidence reinforces the semi-strong form of the Efficient Market Hypothesis (EMH), suggesting that financial markets rapidly incorporate publicly available information, such as M&A announcements, into asset prices. The observed persistence of negative CARs across extended windows also aligns with the hubris hypothesis, which posits that managerial overconfidence can lead to overvalued acquisitions and subsequent market corrections.

Practically, the study signals caution to corporate managers pursuing M&A strategies, especially in capital-intensive and valuation-sensitive sectors like real estate. The consistently negative market response indicates that investors may perceive these deals as value-destroying,

particularly in the absence of clearly communicated synergies or strategic justification. The significant role of pre-announcement stock performance also suggests that investor sentiment and expectations can influence market reactions, underscoring the importance of managing market communication effectively.

### 5.3 Limitations of the Study

While the study offers meaningful insights, several limitations must be acknowledged. First, the sample size is relatively limited, especially regarding the European subsample, which may constrain the generalizability of the results. Second, the analysis is confined to short-term stock market reactions; longer-term effects, such as post-merger integration outcomes or changes in firm fundamentals, were not explored. Third, the explanatory variables used in the regression were limited to firm-level financial metrics. Important deal-specific characteristics such as method of payment, target firm status (public vs. private), and cross-border nature were not included due to data availability constraints.

Moreover, while the runup variable emerged as significant, the regression model's explanatory power remains modest, suggesting the presence of other unobserved factors influencing market reactions. Lastly, the use of a symmetric event window and the assumption of normally distributed returns, although standard in event studies, could mask more complex dynamics in investor behavior.

### 5.4 Suggestions for Future Research

Subsequent research may overcome these limitations by increasing both the geographic scope of the sample and the length of the sample time period. Including M&A deals either from emerging markets or alternative industries may give added context to gauge whether the observed patterns are industry-specific or more general. Analyzing post-merger performance over medium- to long-run horizons may further add depth to whether short-run skepticism is indeed warranted.

Increasing the set of explanatory factors in the regression model may also provide more insightful information. Measures like the relative size of the deal to the acquirer market capitalization, the acquisition finance structure, ownership structure, acquirer-target cultural or geographical gap may provide a better explanation for the heterogeneity in CARs. Also, with the addition of qualitative factors like managerial incentives, sentiment analysis of the

investors, or the tone of the press coverage around the announcement, the gap between quantitative finance measures and the perception of the market may be bridged. Another potential avenue for future research is to include partial acquisitions—deals wherein the acquirer acquires less than 100% of the equity in the target firm. Most studies now concentrate on full takeovers, but ignoring partials may miss significant dynamics. By modeling both full and partial acquisitions in the sample and including a dummy variable to differentiate the two, researchers could test whether the market reacts differentially based on the form the transaction takes. This would enable the examination of whether the retention of the target's management, joint control, or restricted integration in partials independently or interactively affect investor expectations and ensuing CARs. This would give a richer perspective on the role of deal structure in influencing market response and potentially identify subtler determinants of abnormal return variation.

## BIBLIOGRAPHY

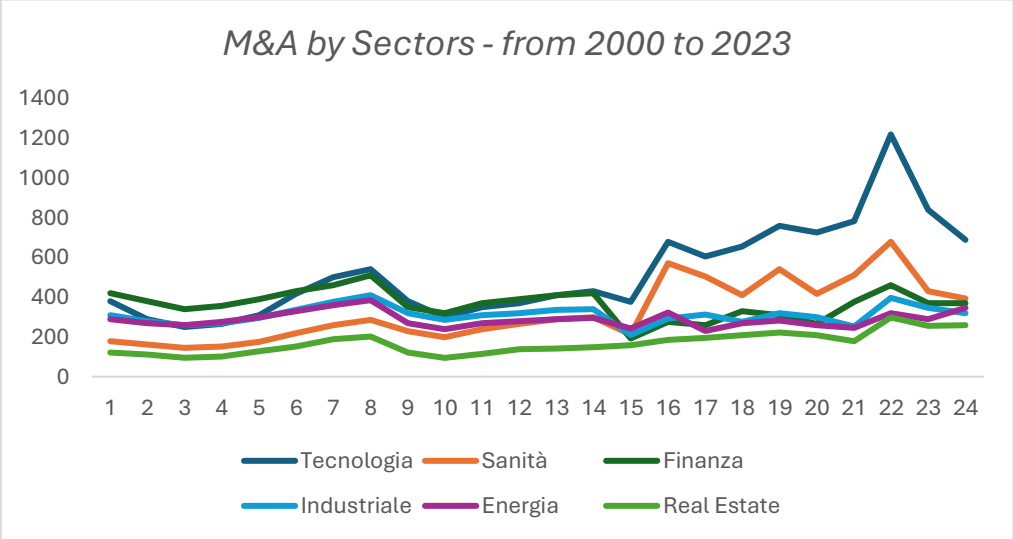

- Andrade, G., Mitchell, M., & Stafford, E. (2001). New evidence and perspectives on mergers. *Journal of Economic Perspectives, 15*(2), 103–120. https://doi.org/10.1257/jep.15.2.103
- Binder, J. (1998). The event study methodology since 1969. *Review of Quantitative Finance and Accounting, 11*(2), 111–137. https://doi.org/10.1023/A:1008295500105
- Bruner, R. F. (2004). *Applied mergers and acquisitions*. Wiley.
- Datar, V. T., Naik, N. Y., & Radcliffe, R. (1998). Liquidity and stock returns: An alternative test. *Journal of Financial Markets, 1*(2), 203–219. https://doi.org/10.1016/S1386-4181(97)00004-9
- DePamphilis, D. (2019). *Mergers, acquisitions, and other restructuring activities* (11th ed.). Academic Press.
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance, 25*(2), 383–417. https://doi.org/10.2307/2325486
- Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review, 10*(1), 1–21. https://doi.org/10.2307/2525569
- Gaughan, P. A. (2017). *Mergers, acquisitions, and corporate restructurings* (7th ed.). Wiley.
- Hossain, M. I., Duong, H. N., Mamun, A., & Docherty, P. (2023). Collateral shocks and M&A decisions. *Journal of Corporate Finance, 80*, 102377. https://doi.org/10.1016/j.jcorpfin.2023.102377
- Huerta-Sanchez, D., Ngo, T., & Pyles, M. K. (2020). Equity versus asset acquisitions in the REIT industry. *The Journal of Real Estate Research, 42*(1), 1–23. https://doi.org/10.1080/08965803.2020.12090572
- MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature, 35*(1), 13–39.
- Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004). Firm size and the gains from acquisitions. *Journal of Financial Economics, 73*(2), 201–228. https://doi.org/10.1016/j.jfineco.2003.07.002
- Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2005). Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *The*

*Journal of Finance, 60*(2), 757–782. https://doi.org/10.1111/j.1540-6261.2005.00745.x

- Reimer, C. (2023). *Analysis of acquirer abnormal returns in listed European real estate M&A transactions* (Master's thesis). MIT Center for Real Estate.
- Roll, R. (1986). The hubris hypothesis of corporate takeovers. *The Journal of Business, 59*(2), 197–216. https://doi.org/10.1086/296325
- Schwert, G. W. (1996). Markup pricing in mergers and acquisitions. *Journal of Financial Economics, 41*(2), 153–192. https://doi.org/10.1016/0304-405X(95)00865-B
- Sudarsanam, S. (2003). *Creating value from mergers and acquisitions: The challenges*. Pearson Education.

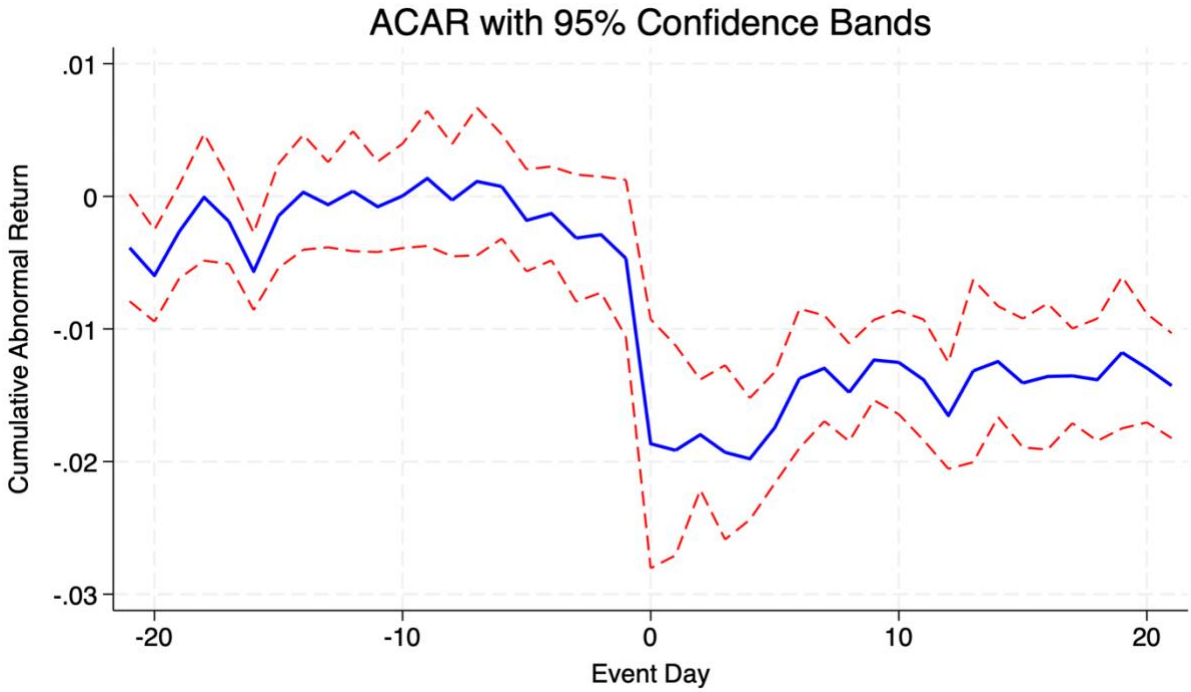
# APPENDICES

***Figure 5***



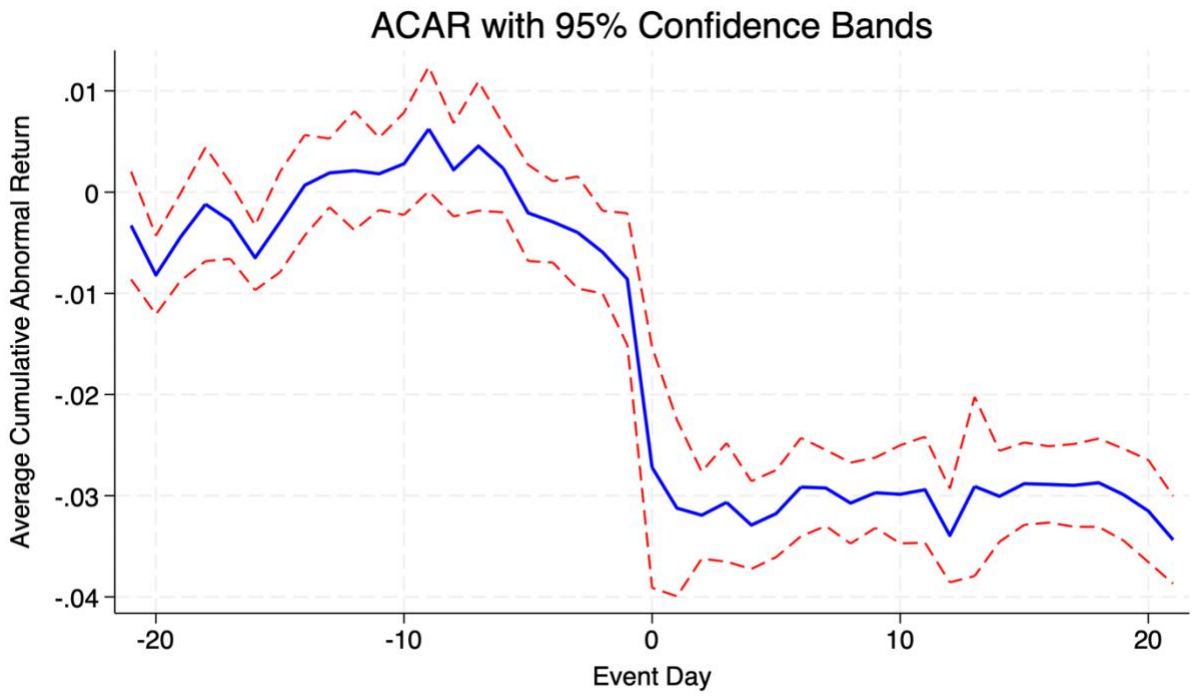

*This graph shows M&A deals in different sectors from 2000 to 2023*

***Figure 6***



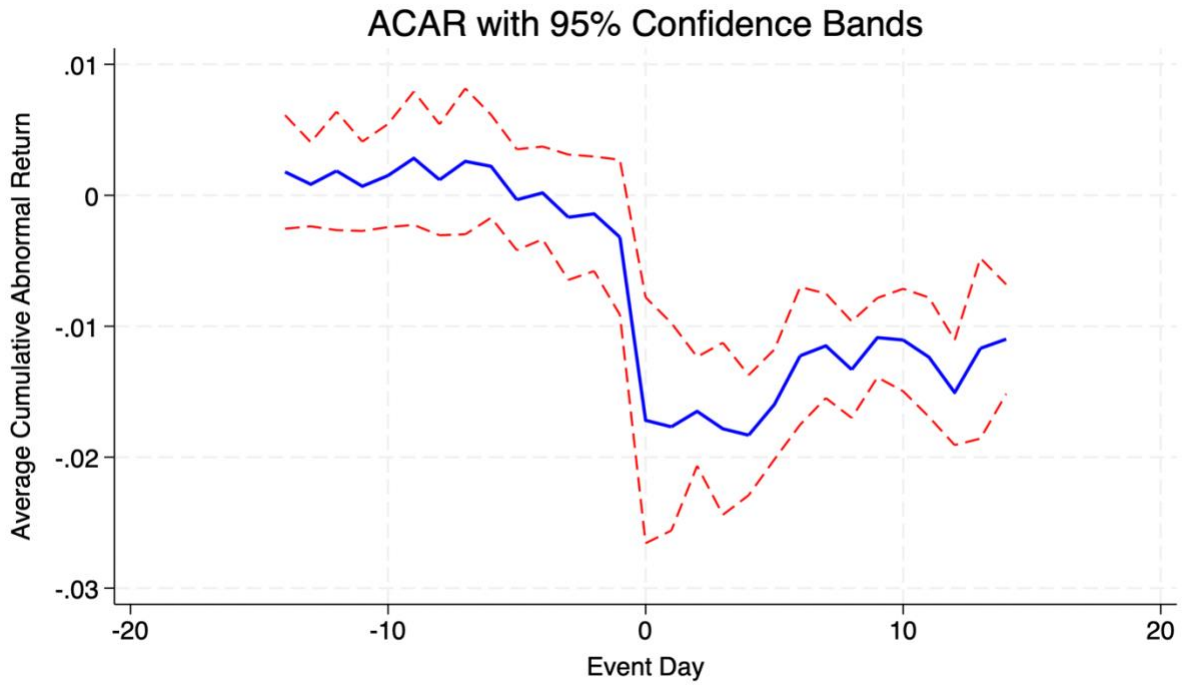

*This graph shows the trend of ACARs around acquisition announcment in the total sample used in the study. In particular event window (-21;21)*

***Figure 7***



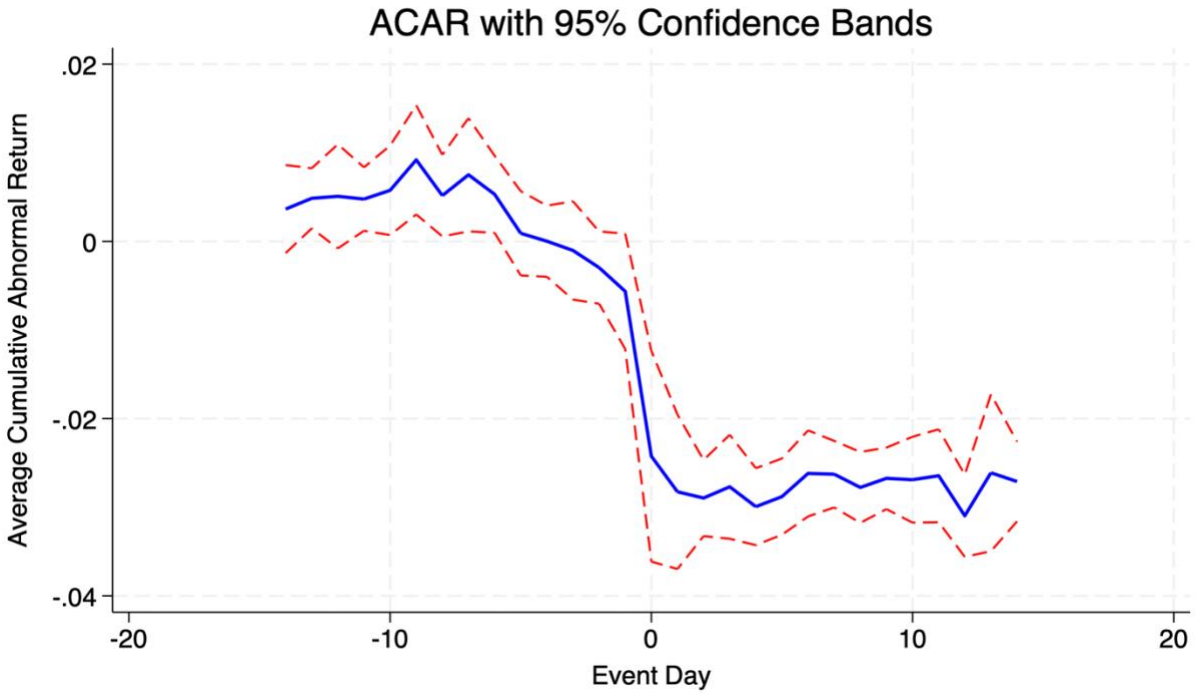

*This graph shows the trend of ACARs around acquisition announcment in the USA subsample used in the study. In particular event window (-21;21)*

***Figure 8***



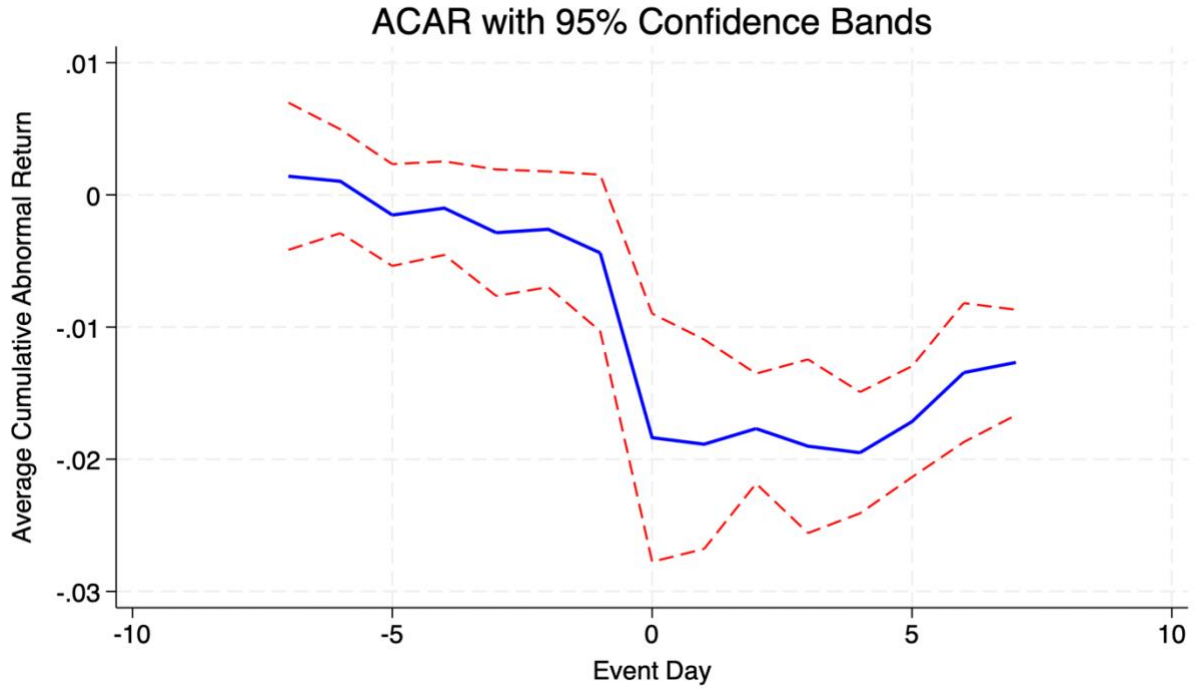

*This graph shows the trend of ACARs around acquisition announcment in the total sample used in the study. In particular event window (-14;14)*

***Figure 9***



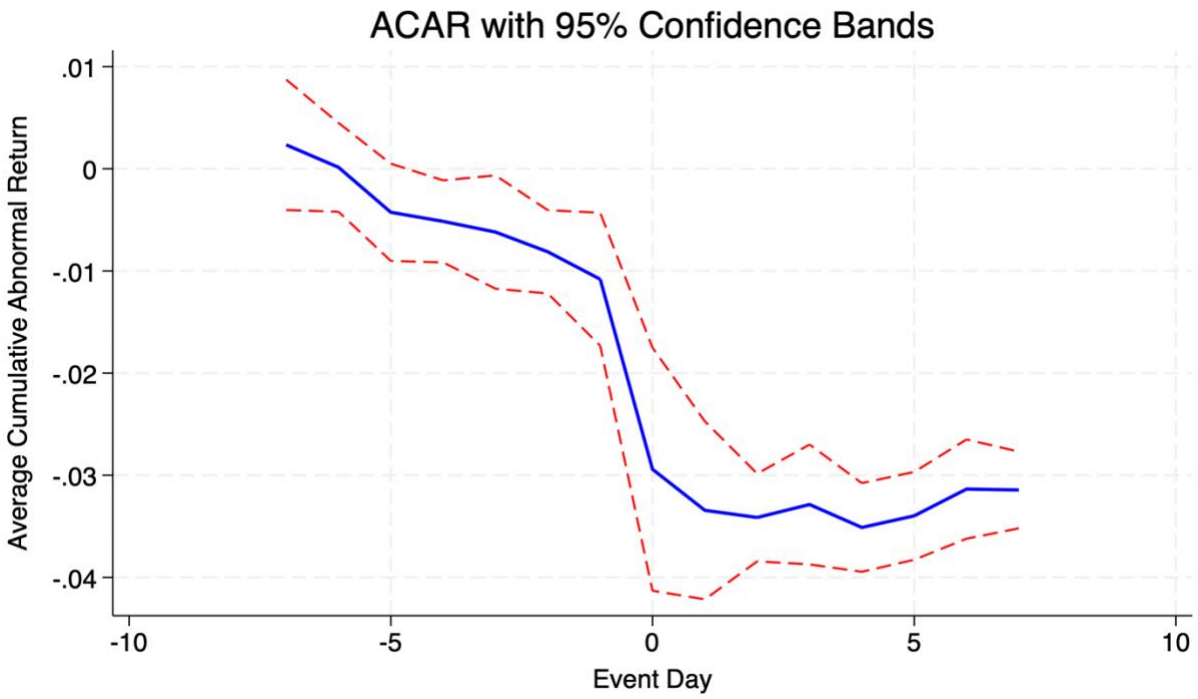

*This graph shows the trend of ACARs around acquisition announcment in the USA subsample used in the study. In particular event window (-14;14)*

***Figure 10***



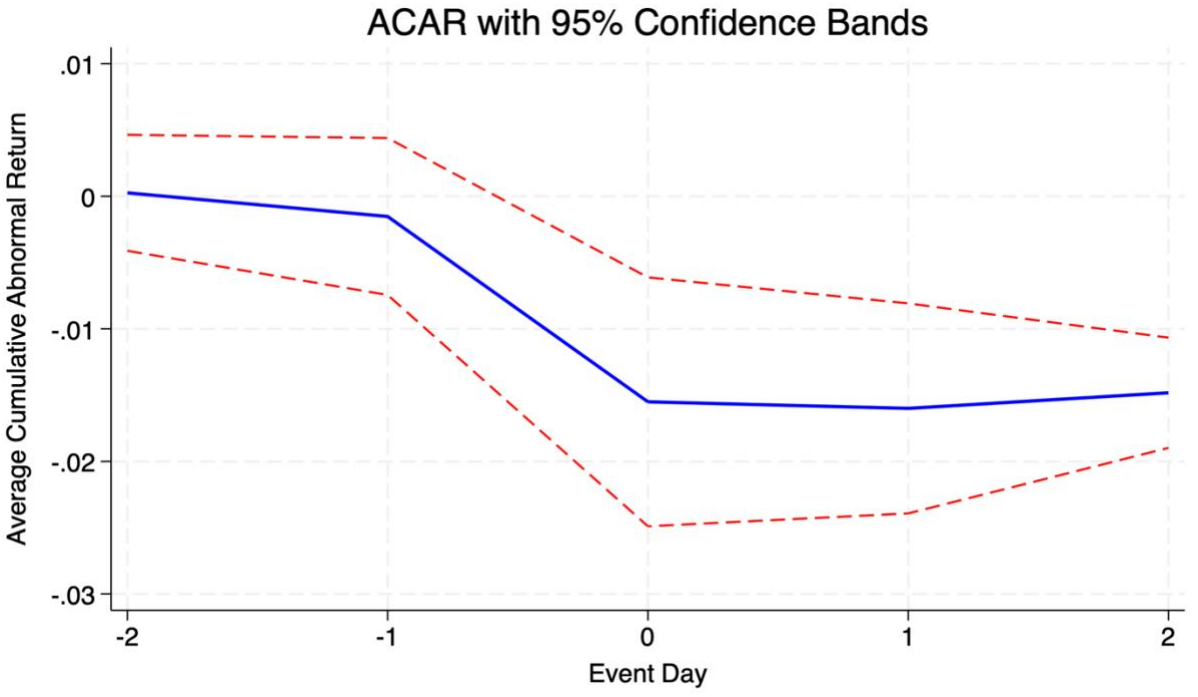

*This graph shows the trend of ACARs around acquisition announcment in the totalsample used in the study. In particular event window (-7;7)*

***Figure 11***



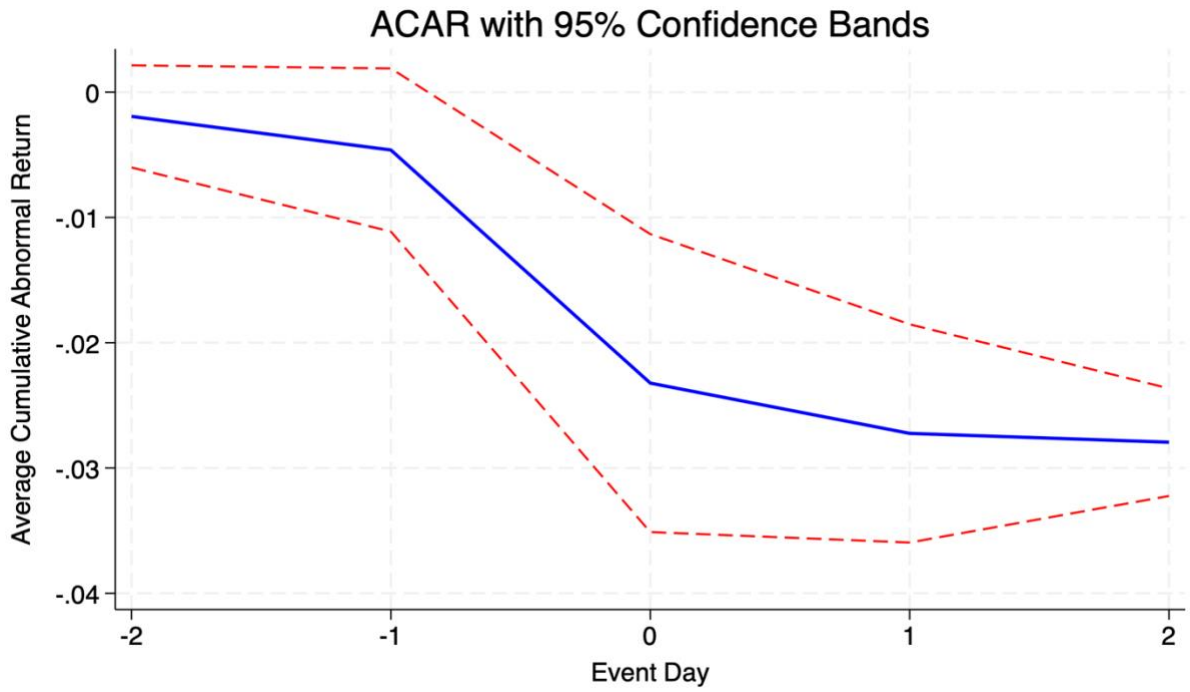

*This graph shows the trend of ACARs around acquisition announcment in the USA subsample used in the study. In particular event window (-7;7)*

***Figure 12***




*This graph shows the trend of ACARs around acquisition announcment in the total sample used in the study. In particular event window (-2;2)*

***Figure 13***




*This graph shows the trend of ACARs around acquisition announcment in the USA subsample used in the study. In particular event window (-2;2)*