

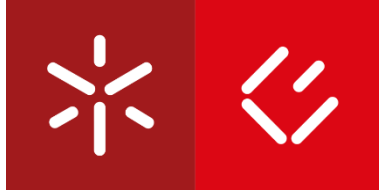
Universidade do Minho
Escola de Economia e Gestão

**The impact of toeholds on the distribution
of M&A gains**

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Dissertação de Mestrado

Mestrado em Finanças

Trabalho efetuado sob a orientação do

Professor Doutor Gilberto Loureiro

outubro 2023

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ACKNOWLEDGMENTS

First, I would like to express my sincere gratitude to my supervisor, Professor Gilberto Loureiro, for his invaluable guidance, insightful suggestions, and patience throughout this process. His support was a cornerstone in the successful completion of this thesis.

I would like to extend my appreciation to my family and all the individuals who have supported me during this journey. Your encouragement and belief in my abilities have been immensely appreciated.

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

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RESUMO

Perante a dinâmica em constante mudança das Fusões e Aquisições, este estudo explora o potencial de sinergias quando um adquirente possui uma participação inicial, um *toehold*, na empresa-alvo antes do anúncio da aquisição. Esta pesquisa foca-se nos resultados contrastantes entre adquirentes com e sem *toehold*, dando particular atenção às sinergias criadas e ao tamanho da participação inicial.

Um conjunto de dados que abrange 1774 transações de Fusões e Aquisições de países da OCDE entre 2005 e 2019 serve como base para esta análise. O estudo utiliza a metodologia de estudo de evento de MacKinlay, avaliando os CARs (Retornos Anormais Acumulados) em intervalos de 3, 5 e 11 dias. Um portefólio ponderado por valor foi usado para calcular o retorno Anormal Médio Acumulado (CAAR).

Os resultados corroboram a ideia de que a presença de uma posição inicial amplifica o CAR do adquirente em torno do período de anúncio, com um efeito mais pronunciado para participações iniciais maiores (acima da mediana). No entanto, o impacto afirmativo dos *toeholds* na criação de sinergias ainda está para ser confirmado de forma definitiva.

Palavras-chave: Retornos Anormais Acumulados; Fusões e Aquisições; *Toehold*

ABSTRACT

Amid the changing dynamics of Mergers & Acquisitions, this study delves into the potential of increased synergies when an acquirer has an initial stake, a toehold in the target company before the acquisition announcement. This research focuses on the contrasting outcomes between acquirers with and without toehold, giving particular attention to the synergies created and the size of the toehold.

A dataset encompassing 1774 M&A deals from OECD countries spanning 2005-2019 serves as the foundation for this analysis. The study employs the MacKinlay event study methodology, evaluating CARs over 3, 5, and 11-day intervals. Value-weighted portfolio constructions used for cumulative average abnormal return (CAAR).

Results corroborate the idea that toehold presence amplifies Acquirer CAR around the announcement periods, with a more pronounced effect for larger (above-median) toeholds. However, the affirmative impact of toeholds on synergy creation is yet to be definitively confirmed.

Key words: Cumulative Abnormal Returns; Mergers & Acquisitions; Toehold

TABLE OF CONTENTS

1.	Introduction.....	1
2.	Literature Review	5
	2.1 Mergers and Acquisitions History	5
	2.2 Value Creation	6
	2.3 Toehold	8
3.	Hypothesis.....	11
4.	Methodology.....	12
	4.1 Event Study.....	12
	4.2 Dependent Variable of Interest.....	14
	4.3 Control Variables	14
	4.4 Model.....	15
5.	Sample and Data	17
6.	Results	24
	6.1 Univariate Analysis	24
	6.2 Multivariate Analysis	27
	6.3 Additional Analysis: The Case of US Acquirers	33
7.	Conclusion	37
8.	References.....	39
9.	Appendix.....	43
	Appendix A – List of Variables	43

LIST OF TABLES

Table 1: Distribution of M&A's transaction by year 18

Table 2: Distribution of M&As transaction by Acquirer Country 19

Table 3: Distribution of M&As transaction by Target Country 20

Table 4: Toehold statistics by region 20

Table 5: Descriptive Statistics for the variables used 21

Table 6: Univariate Analysis 25

Table 7: Wilcoxon Signed-Rank Test 26

Table 8: Multivariate Analysis – Acquirer CAR 28

Table 8: Multivariate Analysis – Above-median Toehold 30

Table 9: Multivariate Analysis – Combined CAAR 32

Table 10: The Case of US Acquirers 35

1. INTRODUCTION

Mergers and Acquisitions (M&A) represent a critical component of corporate strategy, leading to growth, market expansion, and competitive positioning.

The global economy has seen an escalating number of M&A transactions over the past few decades, reflective of businesses need to adapt to changing market conditions (Andrade, Mitchell, & Stafford, 2001). M&A activities can offer multiple benefits such as cost efficiencies, synergies, and increased market share. However, they are complex processes, involving various strategic decisions that significantly impact the value creation and distribution of gains from these transactions (Bradley, Desai, & Kim, 1988; Jensen & Ruback, 1983).

Most of the empirical research tends to suggest that in the initial stages following M&A transactions, shareholders of target companies often realize more substantial gains. This finding is underpinned by extensive research showing that shareholders in target firms receive considerable premiums over the pre-announcement market price of their shares (Bradley, Desai, & Kim, 1988; Betton, Eckbo, & Thorburn, 2008). Moreover, target firms typically witness positive abnormal returns around the announcement date of an M&A deal, further solidifying this observation (Jensen & Ruback, 1983; Schwert, 1996; Andrade, Mitchell, & Stafford, 2001).

Conversely, the empirical evidence regarding acquiring firms presents a more complex picture. Several studies report minimal or even negative abnormal returns around the announcement period, possibly reflecting market perceptions of the acquirer overpaying for the target or anticipating potential integration difficulties (Agrawal, Jaffe, & Mandelker, 1992; Moeller, Schlingemann, & Stulz, 2004; Martynova & Renneboog, 2008). However, it is essential to note that acquirers frequently engage in these transactions driven by long-term strategic imperatives, such as market expansion, cost efficiencies, or new technology acquisition, which could yield significant benefits over time (Ravenscraft & Scherer, 1987; Hitt, Hoskisson, & Ireland, 1990).

To encapsulate, the consensus in empirical research suggests that shareholders of target firms often reap more immediate benefits, while the returns for acquiring firms can be more nuanced, contingent on various factors, and often realized over a longer-term horizon (Bruner, 2004; Goergen & Renneboog, 2004).

In the broad landscape of M&A strategies, acquiring a preliminary stake in a company, a toehold, emerges as a distinctive approach. Characterized by the acquirer's preliminary, minority purchase of the target company's shares, less than 50%, this strategy can be an important step towards a comprehensive acquisition or takeover (Dodd & Warner, 1983). This strategy allows the acquiring firm to establish an initial foothold or 'toehold' in the target organization, creating a platform for potential strategic benefits such as curtailing takeover costs, accruing information, and discouraging competitive bidders (Bris, 2005).

However, the debate remains among scholars regarding the effects on M&A gains distribution when a toehold is acquired before the acquisition announcement. While some researchers argue that toehold strategies increase shareholder value (Betton & Eckbo, 2000), others suggest that the existence of toehold is positively associated with the frequency of observing target company management resistance, this is consistent with the idea that small prior ownership positions are associated with hostile bids (Jennings & Mazzeo, 1993).

Bradley, Desai, and Kim (1988) further elaborated on this skewed distribution of gains, suggesting that strategic approaches such as the establishment of a toehold can significantly influence the division of benefits. This conclusion was supported by Betton, Eckbo, and Thorburn (2009), who demonstrated that a toehold, or a minority stake in the target company before a full acquisition, could potentially reshape the allocation of gains.

Studies by Franks and Harris (1989) and Jarrell and Poulsen (1989) examined this phenomenon, exploring the rationale behind the existence of a toehold and its influence on the bidder's and target's gains. Their findings indicate that a toehold can function as a strategic tool, potentially reducing the number of shares required for the acquisition and enhancing the bidder's valuation.

Aktas, de Bodt, and Roll (2011) extended this discussion, indicating that toeholds might even create greater synergies when compared to transactions where the bidder has no prior stake. This perspective suggests that the presence of a toehold could be instrumental in rebalancing the division of gains in M&As.

Further research by Grossman and Hart (1980) and Shleifer and Vishny (1986) underscores that a toehold can inflate the bidder's valuation, thus potentially deterring competition. This

strategic positioning can keep potential competitors at bay and mitigate the free-rider problems, giving the bidder an edge in the acquisition race.

Ouimet (2012) extends the discussion around toeholds by illustrating how they can enable the bidder to assess the target's value and expected synergies before deciding on a full-scale acquisition. This strategic maneuver is especially useful when the gains from a merger are uncertain, providing the bidder with a preliminary insight into the viability of the acquisition.

Jennings and Mazzeo (1993) present another perspective, suggesting that a toehold can decrease resistance from the target company's management, thereby facilitating the acquisition process. Furthermore, Boone and Mulherin (2007) emphasize that a larger toehold can significantly increase the probability of a successful acquisition, offering the bidder a strategic advantage.

These diverse viewpoints reveal the strategic importance of toeholds in M&As, suggesting that their presence can dramatically reshape the dynamics of the acquisition process and the distribution of gains. However, further research is required to fully understand the nuances of toehold strategies and their impacts on different types of M&As across various geographic regions and industry sectors.

In this study, I primarily aim to examine whether the creation of synergies is amplified when a toehold exists, as opposed to deals where the bidder has no prior stake. Simultaneously, I intend to discern if bidders with larger toeholds enjoy a comparative edge in realizing higher Cumulative Abnormal Returns (CAR) during the acquisition announcement, compared to companies without a stake in the target firm.

In terms of methodology, I will calculate the CARs by following the MacKinlay event study methodology, using three distinct windows of 3, 5, 11 days. Then following the Bradley, Desai, and Kim (1988) and Wang and Xie (2009) methodology to form a value-weighted portfolio for the Cumulative Average Abnormal Returns (CAAR) analysis, which will help us assess the level of synergy created.

After computing the CARs, I will split the dataset into different subgroups, one with deals involving a toehold, and the other without any toehold prior to the acquisition announcement. The sample will exclusively encompass deals conducted by public companies, and the analysis period will span transactions from 2005 to 2019. This timeframe allows us to examine data

across several M&A waves and a diverse set of market conditions, including the 2008 global financial crisis and the subsequent recovery.

The study is organized as follows, Section 2 presents a succinct review of related literature, analyzing the historical context and evolution of M&As, how returns are distributed post-acquisition, and what past studies reveal about the presence of toeholds. In Section 3, presents the hypotheses to be tested and outline the methodology for the event study. Section 4 presents the methodology and variables used in this research. Section 5 is dedicated to presenting the data and tools for its collection, encompassing a range of geographies from Europe to Asia.

In Section 6, I discuss and analyze the empirical results. The final section, Section 7, summarize the conclusions and acknowledge the limitations of this study. By the end of this research, I hope to provide comprehensive insight into the complex dynamics of M&As, the role of toeholds, and their impacts across different geographical locations and market conditions.

2. LITERATURE REVIEW

In this section I will present the main studies related to M&A and Toeholds. I will historically frame this type of transactions, enumerate the main reasons for them to happen, and what are, typically, the post-merger results.

2.1 Mergers and Acquisitions History

M&As have served as a crucial strategic tool for corporate growth and restructuring for over two centuries.

Academic studies consistently reveal that M&As occur in cyclical patterns, referred to as 'waves'. Martynova and Renneboog (2008) propose that such waves are typically ushered in by technological or industrial revolutions, given a conducive macroeconomic and political environment.

The inaugural wave, colloquially known as 'The Great Merger Wave', occurred at the close of the 19th century. This period was characterized by significant technological advancements and coincided with a phase of economic expansion and regulatory transformation. The wave was responsible for the establishment of several monopolies and concluded in synchrony with an equity market crash.

The second wave spanned from 1910 to 1929, primarily involving smaller companies overlooked during the first wave. This led to the formation of oligopolies and was curtailed by another equity market crash, marking the onset of the Great Depression.

The third wave occurred from the 1950s to 1973, coinciding with post-World War II economic revitalization and the enforcement of stringent antitrust regulations. This period witnessed the genesis of substantial conglomerates, with the wave culminating in a stock market downturn and an economic slowdown.

The fourth wave of M&As unfolded during the 1980s, mirroring the economic recovery from a recession. A shift in antitrust policies, deregulation in the financial services sector, the advent of innovative financial products, and advancements in technology primarily drove this wave. However, as with preceding periods, this wave also concluded with a stock market crash.

The fifth wave initiated in 1993 was powered by the flourishing IT industry and the bullish financial markets. The principal catalyst was the strategic adjustments made by corporations in response to the process of globalization. This wave, in line with its predecessors, terminated with a stock market downturn.

The sixth wave, transpiring from 2003 to 2008, was likewise precipitated by the recovery of the economy and stock market. This wave was abruptly interrupted by the 2008 financial crisis.

The seventh and current wave is characterized by strategic M&As in the aftermath of the global financial crisis. Amid sluggish economic recovery post-2008, corporations found it challenging to achieve organic growth, prompting them to resort to M&A activities to fuel expansion.

2.2 Value Creation

The academic discussion on M&As is robust and varied, encompassing aspects such as the division of gains, created synergies, geographical influences, payment method implications, size impact, and industry effects on value creation.

The central theme in M&A literature is the division of gains between the acquiring and target companies and the potential synergies. These are commonly identified as significant determinants of M&A success (Bruner, 2004).

Several studies done in the United States have shown that target firms generally enjoy more substantial benefits from M&As than bidders (Bradley et al., 1982; Dodd and Ruback, 1983; Eckbo, 1983; Dodd, 1980; Asquith, 1983; Schwert, 1996).

In Europe, the pattern of target firms benefiting more from M&A transactions continues to hold (Goergen and Renneboog, 2004). Campa and Hernando's (2006) analysis of the M&A activity in the European financial industry shows that while target shareholders' returns are positively impacted upon transaction announcement, the returns for the acquiring company's shareholders are slightly negative.

These findings indicate that the division of gains and synergies is influenced by factors such as negotiation power, relative size, and the strategic fit of the firms involved (Aktas et al., 2010).

The benefit of such synergies is often the driving force behind M&As, with the promise of cost reductions, increased market power, or improved efficiency serving as compelling motivations (Seth, 1990). Additionally, Loureiro and Silva (2022) discovered that stronger regulations in favor of minority shareholders amplify synergy benefits and contribute to reduce the average uneven distribution of M&A gains.

The method of payment in M&As is a pivotal determinant in assessing the perceived value of a transaction. Empirical evidence underscores a distinct inclination towards cash deals, which consistently demonstrate superior value creation when juxtaposed against stock-for-stock exchanges (Andrade et al., 2001; Bradley and Sundaram, 2006; Savor, 2006; Moeller et al., 2007; Yook, 2003; Wang and Xie, 2009).

The relative scale of the merging entities markedly sways the M&A outcomes. Research by Moeller et al. (2004) posits that acquisitions involving smaller, sub-optimally performing entities are more likely to reap benefits in comparison to those involving larger, top-tier firms. Such insights evoke concerns regarding the potential erosion of shareholder value in the backdrop of extensive acquisitions. Furthermore, sizeable transactions often find themselves under the microscope of regulatory authorities, introducing potential delays and casting a shadow over the success probabilities (Berkovitch and Narayanan, 1993).

The industrial landscape of the merging firms is another salient variable sculpting M&A value creation. Indicators such as competition intensity, pace of technological evolution, and regulatory oversight heavily influence the potential for a successful M&A. Harford (2005) elucidates that industry-specific attributes can drive merger waves, emphasizing the nuanced roles different sectors play in M&A dynamics. As a case in point, the volatile nature of high-tech sectors, fueled by rapid innovations, often presents different M&A dynamics than more stable sectors, such as utilities.

The disposition of the target company towards the acquirer is integral in determining how synergies are shared post-acquisition. Hostile takeovers typically necessitate higher premiums compared to friendly acquisitions, shedding light on the intricate web of determinants that mold M&A results (Martynova and Renneboog, 2008).

In the realm of M&As, the distribution of gains between the acquiring and target companies can significantly vary across different geographic regions. This variability can be attributed to

several factors, including differing business practices, regulatory frameworks, and cultural nuances, among others.

Scholars such as Rossi and Volpin (2004) have drawn attention to the cross-country determinants of M&As, indicating that the country's institutional characteristics can influence the nature of these transactions and their outcomes. Similarly, Bris and Cabolis (2008) highlighted the value of investor protection in cross-border mergers, suggesting that stronger investor protection in the bidder's country can lead to higher firm value.

Moeller and Schlingemann (2005) emphasized that the geographical distance between the acquirer and target can also influence the distribution of M&A gains. They argue that deals involving companies from the same geographical region tend to yield higher announcement returns for the acquirer.

A study by Beuselinck and Deloof (2014) further explored this concept, demonstrating that corporate governance practices, which vary by country, can impact the distribution of gains in cross-border M&As. They found that acquirers from countries with better governance structures tend to extract more benefits from M&As.

2.3 Toehold

A toehold position signifies an acquisition in which an investor retains a minority stake in the target company. This strategy is commonly employed when an investor aims to establish a presence in the target company prior to full acquisition.

Numerous studies have assessed the value creation potential of this strategy. Though it certainly encompasses elements that can facilitate transactions and thereby be advantageous, it also brings with it certain risks.

Various scholars have suggested that utilizing a toehold as an acquisition strategy could effectively counter the free-rider problem as discussed by Shleifer and Vishny (1986), and Chowdhry and Jegadeesh (1994). This problem, as defined by Grossman and Hart (1980), arises when minor shareholders of a target company assume their actions will not significantly influence a potential acquisition and hence prefer to await a higher premium later. Consequently, no one steps forward due to the higher premium needed to purchase the

majority stake from the shareholders, eliminating any potential gains from the acquisition. The existence of a toehold can solve this problem if the benefits outweigh the costs of offering a higher premium.

Having a toehold also mitigates the risk of rival bids. The presence of a toehold discourages potential competition, as a non-toehold bidder would need to acquire more than 50% of the target company's stock, which becomes increasingly difficult in the face of a rival toehold bidder (Betton & Eckbo, 2000).

Additionally, possessing a toehold often prompts a more aggressive bidding approach, which can increase the risk of the winner's curse for a non-toehold bidder, compelling them to be more conservative in their bids. This allows a toehold bidder to be more assertive and pay less in an auction, thereby reducing their risk of the winner's curse (Betton & Eckbo, 2000). As Bulow et al. (1999) state, "Owning a toehold can help a bidder win an auction, and win very cheaply" (p.428).

Despite the outlined advantages, this strategy's popularity has decreased in recent years. After peaking in the 1980s, its application has visibly declined (Betton et al., 2009) and today it represents a minor fraction of all transactions.

The decline may be attributed to the risks associated with a pre-acquisition toehold. One such risk is the potential for a failed transaction. If the acquisition doesn't succeed, the bidder is left with the shares they initially acquired, which could lead to losses if the target's value decreases (Goldman & Qian, 2005).

Another risk relates to perceived intent. While a bidder usually attempts a friendly takeover before resorting to a hostile one, possessing a toehold could make the target company's management suspicious, complicating the friendly acquisition process and potentially turning it hostile (Betton, Eckbo & Thorburn, 2009).

Hostile behavior from management can also reduce the likelihood of the bidder receiving a termination fee. In cases where the target company is bought by a rival bidder, the bidder is entitled to compensation from the target. However, if the target's management is hostile, the chances of the bidder receiving this compensation are diminished, which poses an additional risk of this strategy (Officer, M., 2003).

Examining the wealth created, most studies have deduced a positive correlation between toehold ownership and a positive CAR, suggesting that this strategy enhances value for the bidder company. For instance, Carroll and Griffith (2010) found that hostile bidders with a toehold in the target company earned substantial abnormal returns of 4.98%, compared to a mere 0.06% for companies without a toehold. Similar conclusions were drawn by Chowdhry and Jegadeesh (1994), Farinha and Miranda (2003), and others who found evidence of positive impacts on returns for the bidder company due to the presence of toeholds. However, not all studies agreed with these findings, highlighting the ongoing debate around this strategy's effectiveness.

3. HYPOTHESIS

H1: The presence of a toehold prior to the announcement of the deal results in higher CARs for the buying company compared to companies without a toehold

As previous literature shows, there are reasons to believe that there is a positive relation between the toehold size and a positive abnormal return to the bidder. As Betton, Eckbo and Thorburn (2009) found that as the size of the toehold increases, the probability of another bidder to enter the contest decreases. Other reason that may explain this positive relation is the fact that the toehold increases the bidder valuation, keeping other competitors away and overcome the free-rider problems. Jennings and Mazzeo (1993) also argue that the presence of a toehold reduces the resistance by the target's managements, increasing the probability of a successful acquisition for the bidder. The larger the toehold, the greater the influence and knowledge that the bidder will have on the target company.

H1.1: Bidders with larger toehold prior to the acquisition earn higher abnormal returns

Following H1 and the literature, it is important to understand whether, in addition to knowing whether the bidder with toehold benefits in the announcement, if the size of the toehold is directly proportional to the returns earned, following Betton, Eckbo and Thorburn (2009) the size of the toehold pushes away potential bidders, increasing the likelihood of a successful transaction.

H2: The presence of a toehold before the acquisition is associated with deals with higher synergies. i.e., higher combined CARs of bidder and target

Synergies are one of the main reasons for M&A. I can assume that the two parties will more easily negotiate an acquisition and will have a positive Combined Cumulative Abnormal Return (Bradley, Desai, and Kim (1988)). In this hypothesis, I want to test whether the existence of a toehold prior to the announcement of the acquisition allows the combined CARs to be greater than in cases where there is no toehold. When there is a toehold, the bidder will have more information about the target and therefore a better sense of the value of the synergy, thus increasing the likelihood of gains being greater for both.

4. METHODOLOGY

4.1 Event Study

The aim of this study is to analyze the impact of mergers and acquisitions (M&A) on the value of the acquiring and target companies, and to measure the synergies created through these transactions. To achieve this, I use the event study methodology proposed by MacKinlay (1997), which allows us to analyze the abnormal returns generated by the announcement of M&A deals. I consider three event windows: (-1,+1), (-2,+2), (-5,+5) days around the announcement date.

To estimate the normal returns, I use an estimation window of (-255,-25) days prior to the announcement date, which is expected to capture the normal behavior of the stock prices without any influence from the M&A announcement.

I use a market model to estimate the expected returns of the companies, which is given by:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{it}$$

Where,

$R_{i,t}$ is the stock return of firm i in the moment t ;

α_i and β_i are the parameters of the market model;

$R_{m,t}$ is the daily market index return in moment t ;

ε_{it} is the error term with expected value equal to zero.

I then calculate the abnormal returns, which is the difference between the actual return and the expected return over the event window:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

Where,

$AR_{i,t}$ is the abnormal return of firm i in the moment t

$R_{i,t}$ is the stock return of firm i in the moment t

$E(R_{i,t})$ is the expected return of firm i in the moment t

The values are computed using 3 different event windows of 3 days (-1, +1), 5 days, (-2, +2), 11 days (-5, +5) days.

To calculate the Cumulative Abnormal Return for the acquirer and target,

$$CAR_{i(t_1,t_2)} = \sum_{t_1}^{t_2} AR_{i,t}$$

Where,

CAR $_i$ is the cumulative abnormal return;

AR $_i$ is the abnormal return of firm i in the moment t ;

t is the period of time;

To compute the Cumulative Average Abnormal Returns for all the companies.

$$CAAR_{i(t_1,t_2)} = \frac{1}{N} \sum_{i=1}^N CAR_{i(t_1,t_2)}$$

Where,

CAAR $_i$ is the cumulative average abnormal returns

CAR $_i$ is the abnormal return of firm i

t is the period of time

N is the number of events

To measure the synergies created by the M&A deals, I follow the methodology proposed by Bradley, Desai, and Kim (1988) and Wang and Xie (2009), and form a value-weighted portfolio of the acquiring and target companies, using the market capitalization to determine each weight. It is important to subtract the value of the toehold that the bidder has on the target

from the target capitalization. I then compute the combined CAR for the portfolio, which is given by:

$$\text{Combined } CAR_i = \frac{(CAR_{acquiror_i} * MV_{acquiror_i}) + (CAR_{target_i} * MV_{target_i}) * (1 - \text{Toehold})}{MV_{acquiror_i} + MV_{target_i} (1 - \text{Toehold})}$$

Where,

$CAR_{acquiror_i}$ is the cumulative abnormal return of Acquirer i

CAR_{target_i} is the cumulative abnormal return of target i

MV_{target_i} is the market value of target i six days prior to the deal

$MV_{acquiror_i}$ is the market value of Acquirer i six days prior to the deal

4.2 Dependent Variable of Interest

A toehold, which represents an initial stake or partial ownership before full acquisition, often signifies an acquirer's strategic intentions and insights about the target. It serves as a pivotal determinant in shaping the dynamics and outcomes of mergers and acquisitions. To accurately capture this data, I sourced our information from SDC Platinum.

It is noteworthy that for the scope of our research, I considered toehold percentages ranging from 0% up to, but not including, 50%. This range ensures I focus on partial ownerships that do not confer majority control, thus preserving the nuances and implications of toehold positions in M&A scenarios.

4.3 Control Variables

In these models, various control variables are incorporated. Log value t-1 denotes the natural logarithm of the acquirer's market value and calculated one year before the deal. Relative size t-1 refers to the ratio of the transaction value to the acquirer's market value by the end of the year before the M&A announcement.

The model also integrates deal-specific variables. The Cash variable is set to '1' when the payment method is solely cash and '0' otherwise. The Same Industry variable is equated to '1' if both the acquirer and target belong to the same industry. Industry alignment is determined by the 4-digit Standard Industrial Classification (SIC) code, with a match in these codes signifying an industry-matched deal. The Cross-Border is a dummy variable represented and equals 1 if it's a cross-border deal, 0 otherwise. The variable Attitude represents the attitude towards the deal, which is '1' if the attitude is friendly, and 0 otherwise and its represented by β_6 .

Furthermore, the model incorporates year, industry, and country dummy variables to account for fixed effects, which are vital in controlling biases potentially impacting the dependent variable due to specific factors.

4.4 Model

To investigate whether the toehold results in positive abnormal returns for the bidder, target, or their combined entity, I propose the subsequent regressions. With the Cumulative Abnormal Returns (CARs) as the dependent variable, I test the null hypothesis that the event does not influence the firm's value.

$$\begin{aligned} \text{Combined } CAR_i = & \alpha + \beta_0 \text{Toehold}_i + \beta_1 \text{Log value}_{i,t-1} + \beta_2 \text{Relative Size}_{i,t-1} + \\ & \beta_3 \text{Cash}_i + \beta_4 \text{Same Industry}_i + \beta_5 \text{CrossBorder}_i + \beta_6 \text{Attitude} + \delta \text{Year Dummies} + \\ & \gamma \text{Industry Dummies} + \lambda \text{Country Dummies} + \epsilon_i \end{aligned}$$

In this model, α is the intercept. The coefficient β_0 corresponds to Toehold, which is our primary explanatory variable. The term Log Value (i,t-1) signifies the natural logarithm of the acquirer's total market value, which was computed one year prior to the deal, and its effect on CAR is measured by the coefficient β_1 . The term Relative Size(i,t-1) is the ratio of the transaction value to the acquirer's market value by the end of the year before the M&A announcement, and its influence is denoted by β_2 .

The model also incorporates deal-specific variables. The variable "Cash" is binary, taking the value '1' if the payment is made entirely in cash and '0' otherwise, with its effect on CAR represented by β_3 . The variable "Same Industry" is another binary measure, which is '1' if both the acquirer and target are in the same industry (based on the 4-digit SIC code) and '0' otherwise; its impact is depicted by β_4 . The Cross-Border is a dummy variable represented by β_5 and equals 1 if it's a cross-border deal, 0 otherwise. The variable Attitude is also a binary measure, which is '1' if the attitude towards the deal is friendly, and 0 otherwise and its represented by β_6 .

Moreover, the model accommodates fixed effects to account for time-specific, industry-specific, or country-specific influences that could bias the dependent variable. These effects are captured by δ for year-specific nuances, γ for industry-specific nuances, and λ for country-specific nuances.

Finally, the term ϵ_i encapsulates unobserved factors or random errors influencing the CAR.

5. SAMPLE AND DATA

The details on M&A announcements were gathered via the Refinitiv SDC Platinum database. Financial variables, including market value and the Total Return Index, were sourced from Refinitiv Datastream.

This study spans from 2005 to 2019, a period intentionally chosen to encapsulate various economic cycles, providing a clearer insight into the consistent efficacy of the strategy.

For this analysis, are only considered deals where both the target and acquirer were publicly listed companies, with a transaction value exceeding \$1 million, and which had successfully concluded. Furthermore, it was imperative that, after the deal, the bidder retained over 50% ownership of the target. This analysis covers transactions worldwide, focusing on scenarios where the bidder, initially holding between 0% and 50% of the target company, finalized the deal owning a majority of 50% or more.

Emphasizing the global nature of our study, were used only deals from OECD countries. However, countries without adequate data or with fewer than five observations were excluded, ending up with a total of 1774 transactions.

Table 1 provides a detailed distribution of M&A transactions from 2005 to 2019, showcasing completed deals involving public companies in OECD countries.

Altogether, the dataset encompasses 1774 transactions. Notably, 2006 experienced the peak in the volume of deals, with a total of 240 transactions, making it the year with the highest number of deals. Conversely, 2013 observed the fewest transactions, amounting to just 56, marking it as the year with the least activity. A discernible decline in the volume of transactions is evident post the 2008 financial crisis. The numbers fell from 138 deals in 2008 to 122 in 2009. While there was a marginal recovery in the subsequent year, 2010, with the count rising to 131, it dipped again to 94 in 2011.

Table 1 - Distribution of M&A's transaction by year

Table 1 presents a year-by-year distribution of Mergers and Acquisitions (M&A) transactions spanning from 2005 to 2019. This tabulation provides a count of the completed M&A transactions for each specific year within the specified timeframe. The transactions included in this table, totaling 1,774 deals, encompass both those with and without a toehold. It is noteworthy that the sample consists exclusively of finalized transactions between public companies located in the Organisation for Economic Co-operation and Development (OECD) countries. The year-wise frequency column, labeled "Freq.", lists the number of such M&A deals for every individual year.

Year	Freq.
2005	187
2006	240
2007	213
2008	138
2009	122
2010	131
2011	94
2012	103
2013	56
2014	99
2015	108
2016	82
2017	68
2018	78
2019	55
Total	1774

Table 2 presents a distribution of M&A transactions based on the country of the acquiring company. This table encompasses a total of 1774 transactions, which include completed deals involving public companies from OECD countries. Among the countries listed, the United States emerges as the most dominant with a substantial 756 transactions, indicating its major role in the M&A landscape during the period under review. Japan follows suit with a significant 228 transactions, while Canada has 313 acquisitions. On the other end of the spectrum, several countries, such as Belgium, Finland, Hong Kong, Iceland, Netherlands, New Zealand, and Norway, recorded fewer than 10 transactions each, with Belgium and Finland having 9 and 8 deals, respectively. Countries like Chile, Colombia, and Greece each contributed to 5 transactions. The diverse distribution underscores the varying degrees of M&A activity across different OECD countries, with some nations playing a much larger role in the global M&A scene than others.

Table 2 - Distribution of M&As transaction by Acquirer Country

Table 2 displays the number of acquisitions categorized by Acquirer country. The sample encompasses 1774 transactions, inclusive of those with and without toehold. These figures represent completed deals involving public companies from OECD countries

Country	Freq.
Australia	110
Belgium	9
Canada	313
Chile	5
Colombia	5
Denmark	14
Finland	8
France	33
Germany	31
Greece	5
Hong Kong	8
Iceland	5
Ireland-Rep	6
Israel	13
Italy	17
Japan	228
Netherlands	6
New Zealand	6
Norway	8
Poland	7
South Korea	28
Spain	12
Sweden	18
Switzerland	18
Turkey	7
United Kingdom	98
United States	756
Total	1774

Table 3 offers insights into the distribution of M&A transactions based on the country of the target company. From the given sample of 1,774 transactions, which includes completed deals between public companies within OECD nations, the United States stands out as the most sought-after target destination, accounting for 771 transactions. This is followed by Canada, which has been the target in 316 deals. On the other hand, several countries, such as Chile, Colombia, Greece, Poland, and Spain, have been targeted in fewer transactions, with each having 5 or 6 deals to their name.

Table 3 - Distribution of M&As transaction by Target Country

Table 3 displays the number of acquisitions categorized by target country. The sample encompasses 1774 transactions, inclusive of those with and without toehold. These figures represent completed deals involving public companies from OECD countries

Australia	105
Canada	316
Chile	5
Colombia	5
Denmark	13
Finland	8
France	32
Germany	25
Greece	6
Israel	11
Italy	9
Japan	242
Netherlands	13
Norway	10
Poland	5
South Korea	37
Spain	6
Sweden	21
Switzerland	17
Turkey	15
United Kingdom	102
United States	771
Total Geral	1774

Table 4 shows information on the size of the toehold. Companies from the European Union have the highest toehold (32.27%).

On the other hand, South America has the lowest toehold (17.95%). The average toehold is 26.90%, which is in line with the reviewed literature, Betton, Eckbo and Thorburn (2009) affirm that toeholds are rare and large.

Table 4 - Toehold statistics by region

Table 4 details the statistics pertaining to the existence of a toehold prior to the announcement of transactions, broken down by the region of the acquirer. For each region, the table displays the "Average Toehold" column that showcases the mean toehold percentage for the given region. The regions covered include Oceania, EU 27, United Kingdom, Rest of Europe, Asia, South America, and North America.

Region	Freq.	Average toehold
Oceania	6	21.30%

Table 4 (continued)

Region	Freq.	Average toehold
EU 27	34	32.27%
United Kingdom	8	24.58%
Rest of Europe	16	25.58%
Asia	157	27.29%
South America	6	17.95%
North America	48	22.34%
Total	275	Average 26.90%

The table 5 presents summary statistics. First, information on the cumulative abnormal returns (CAR) for the acquirer, target, and combined returns for deals with and without a toehold in different event windows and then presents company and deal control variables.

For acquirers without a toehold, the mean CAR values oscillate between -0.005 in a (-2, +2) window to -0.001 in a (-5, +5) window. However, with a toehold, this narrative shift, the mean CAR in the (-2, +2) window rises to 0.007. The median values, which persistently linger around -0.001 to 0.001 across varying windows.

Targets, traditionally the beneficiaries in M&A transactions, report mean CAR values between 0.018 to 0.029 without a toehold. However, when a toehold comes into play, these gains are somewhat moderated, with a mean CAR between 0.012 and 0.016 across different event windows.

When evaluating the combined CAR values, they range from 0.002 in a (-5, +5) window to 0.004 in a (-1, +1) window without a toehold. With toehold, the mean CARs across event windows are slightly higher.

While the summary statistics provide initial insights, it is paramount to subject these observations to rigorous statistical testing. Upcoming univariate analyses test will delve deeper into toehold standalone influence, and subsequent multivariate regressions will account for potential confounding factors.

Table 5 – Descriptive Statistics for the variables used

Table 5 presents an overview of the cumulative abnormal returns (CARs) for the Acquirer, Target, and Combined entities. It further incorporates details regarding the deal and company variables. Further descriptions of all the variables can be consulted in Appendix A. The table provides key statistical insights for all the variables, including the total count (N), average, median, and variability. The data is based on three distinct event periods: (-1, +1), (-2, +2), and (-5, +5), paired with an estimation duration of (-250, -25)

	CARs	N	Mean	Median	St Dev.
Acquirer	No Toehold				
	(-1, +1)	1499	-0.002	-0.007	0.091
	(-2, +2)	1499	-0.005	-0.010	0.080
	(-5, +5)	1499	-0.001	-0.005	0.112
	Toehold				
	(-1, +1)	275	0.002	0.000	0.099
	(-2, +2)	275	0.007	0.001	0.070
	(-5, +5)	275	0.001	-0.001	0.088
	Target	No Toehold			
(-1, +1)		1499	0.029	0.020	0.151
(-2, +2)		1499	0.023	0.020	0.142
(-5, +5)		1499	0.018	0.015	0.144
Toehold					
(-1, +1)		275	0.016	0.006	0.065
(-2, +2)		275	0.014	0.006	0.059
(-5, +5)		275	0.012	0.003	0.098
Combined		No Toehold			
	(-1, +1)	1498	0.004	0.002	0.110
	(-2, +2)	1498	0.003	0.001	0.121
	(-5, +5)	1498	0.002	0.002	0.125
	Toehold				
	(-1, +1)	275	0.007	0.005	0.070
	(-2, +2)	275	0.009	0.003	0.063
	(-5, +5)	275	0.007	0.001	0.092
		Company Controls	N	Mean	Median
Acquirer	Size	1774	6.5440	6.7440	1.9011
Target	Size	1774	4.8221	4.7755	2.0012

Table 5 (continued)

	Deal Controls	N	Mean	Median	St Dev.
	Method of Payment	1774	0.4120	0	0.4220
	Cross-Border	554	0.2301	0	0.3010
	Same Industry	1774	0.5463	1	0.3225
	Relative Size	1774	0.3980	0.2124	0.6559

6. RESULTS

6.1 Univariate Analysis

This chapter begins with a univariate analysis, focusing on the difference in means test between companies that held a toehold prior to the acquisition announcement and those that did not. This initial assessment provides a foundational understanding, which then progresses to a multivariate framework. By incorporating multiple variables, it aims to offer a detailed perspective on the determinants influencing M&A outcomes, as detailed in the methodology chapter.

The table 6 offers a comparative view of mean CARs for Acquirer, Target, and Combined companies, considering the presence or absence of a toehold. This variation was discerned by closely observing the differences in means provided in the table.

For Acquirer companies without a toehold, the CARs are negative across all event windows and hover close to 0%. When contrasted with companies that have a toehold, there's a significant positive mean difference in all event windows, which is statistically notable at both the 5% and 10% levels.

When it comes to Combined companies, those without a toehold manifest a positive trend in their CARs. Meanwhile, their counterparts with a toehold present positive mean difference, with two of them achieving statistical significance at 5% and 10% levels.

From the information given by Table 6, it's evident that Acquirer companies exhibit positive results in the presence of a toehold, and these results are statistically compelling. In the case of Target companies, while the CARs lean towards the positive coefficients, the incorporation of a toehold seems to cause a downturn, though this shift lacks statistical significance. As for Combined companies, having a toehold generally corresponds to an increase in CARs, and this increment is statistically significant for two of the event windows.

For a more comprehensive analysis, it's pertinent to also evaluate the median differences through the Wilcoxon Signed-Rank test.

Table 6 - Univariate Analysis

Table 6 provides the mean of the CARs for the Acquirer, Target and Combined companies divided between companies without Toehold and companies with toehold for the three event windows: (-1, +1), (-2, +2), and (-5, +5). The market model approach is used to estimate the window for (-250, -25), as detailed in the methodology section. All variables are clearly defined and elaborated upon in the methodology section. Alongside each variable, coefficients are displayed, with the p-value indicated in parentheses. The symbol 'N' denotes the total number of observations. Three significance levels are marked: ***, **, and *, signifying 1%, 5%, and 10% levels of significance, respectively.

	Without Toehold		With Toehold		
Acquirer CARs	Mean	N	Mean	N	Difference
(-1,+1)	-0.0021	1499	0.0024	275	0.0045*
(-2, +2)	-0.0053	1499	0.0068	275	0.0121**
(-5, +5)	-0.0011	1499	0.0010	275	0.0021*
Target CARs	Mean	N	Mean	N	Difference
(-1,+1)	0.0292	1499	0.0159	275	-0.0133
(-2, +2)	0.0232	1499	0.0141	275	-0.0091
(-5, +5)	0.0182	1499	0.0122	275	-0.0060
Combined CARs	Mean	N	Mean	N	Difference
(-1,+1)	0.0035	1499	0.0074	275	0.0039*
(-2, +2)	0.0034	1499	0.0086	275	0.0052**
(-5, +5)	0.0022	1499	0.0065	275	0.0043

Table 7 presents the median Cumulative Abnormal Returns (CARs) for Acquirer, Target, and Combined companies, both with and without a toehold. Additionally, the table incorporates results from the Wilcoxon Signed-Rank test to determine the significance of median differences.

For Acquirer companies without a toehold, the median CARs register negative values across all three event windows. In contrast, when a toehold is present, the medians gravitate towards 0%, even showing a marginal positive tilt for the (-2, +2) event window. This pattern implies a more favorable performance associated with a toehold. Significantly, the difference during the (-2, +2) window reaches statistical relevance at the 10% level.

Regarding Combined CARs, in a sample without the presence of a toehold, the median CARs are near 0%, hinting at a neutral to marginally positive trend. The introduction of a toehold

maintains this pattern, with the medians staying positive and closely aligned with those observed in the toehold-free scenarios. Although median disparities between both conditions are relatively subtle, the event windows (-1,+1) and (-2,+2) indicate statistically relevant positive differences at the 10% level, suggesting a nuanced improvement with a toehold's presence. In essence, the findings indicate a favorable influence of toehold presence on CARs. However, the level of statistical significance isn't substantial enough to draw a definitive conclusion.

To gain a deeper insight into the role of toehold and its influence in dictating M&A results, the next step will be to expand the analysis using a multivariate regression. This method will allow for a broader evaluation of the influence of toeholds by including other significant variables in the analysis.

Table 7 - Wilcoxon Signed-Rank Test

*Table 7 showcases the results from the Wilcoxon Signed-Rank test, which explores the influence of a toehold's presence on the CARs for Acquirer, Target, and Combined companies. The three event windows examined are (-1, +1), (-2, +2), and (-5, +5). The market model approach is utilized to estimate the window for (-250, -25), as comprehensively outlined in the methodology section. All incorporated variables are meticulously defined and expanded upon in the same section. Along with each variable, the table displays its coefficients; the corresponding p-values are shown in parentheses. The letter 'N' indicates the total count of observations. Significance is marked at three levels: ***, **, and *, which correspond to 1%, 5%, and 10% significance levels, respectively.*

	Without Toehold		With Toehold		
	Median	N	Median	N	Difference
Acquirer CARs					
(-1,+1)	-0.007	1499	0.000	275	0.007
(-2, +2)	-0.010	1499	0.001	275	0.011*
(-5, +5)	-0.005	1499	-0.001	275	0.004
Target CARs					
(-1,+1)	0.020	1499	0.006	275	-0.014
(-2, +2)	0.020	1499	0.006	275	-0.014
(-5, +5)	0.015	1499	0.003	275	-0.012
Combined CARs					
(-1,+1)	0.002	1499	0.005	275	0.003*
(-2, +2)	0.001	1499	0.003	275	0.002*
(-5, +5)	0.002	1499	0.001	275	-0.001

6.2 Multivariate Analysis

As stated before, the univariate analysis is important but the results do not consider the influence of other variables. To complement the previous analysis, it is important to perform a multivariate analysis to determine the explanatory power of the independent variables on the firm's CARs, but this time considering other factors known to influence the dependent variable.

The multivariate regression below examines whether there is a positive relationship between the presence of a toehold and the returns of the Acquirer company. This relationship was previously observed in a univariate analysis, which indicated this advantage. However, the results from the multivariate analysis are considered more robust due to the inclusion of other independent variables beyond just the toehold.

In each table, the hypotheses are tested for the acquirer and combined CARs across all three event windows – 3 days, 5 days and 11 days. These regressions also incorporate the control variables and the fixed effects detailed in the methodology section.

H1: The presence of a toehold prior to the announcement of the deal results in higher CARs for the acquiring company compared to companies without a toehold

For the event windows (-1,+1), (-2, +2) and (-5, +5) the coefficients for toehold are 0.0017 ($p=0.0151$), 0.0022 ($p=0.0122$), and 0.0141 ($p=0.0685$), respectively. This indicates that firms with a toehold can expect a favorable outcome. This finding aligns well with Carroll and Griffith (2010), who documented that deals where a toehold is present have positive abnormal returns of 4.98%, reinforcing the significance of toeholds in M&A success and Le and Shultz (2007), that defend that toehold benefits bidders and increases the probability of a takeover success.

Moreover, cash deals show a positive association with CAR, emphasizing its importance in M&As. The relationship is most significant in the two shortest event windows, 3 days and 5 days, with a coefficient of 0.0022 ($p=0.01070$) and 0.0032 ($p=0.0077$). The relation remains positive and significant in the (-5, +5) window with a coefficient of 0.0046 ($p=0.0641$). Consistent with the studies on this topic (Huang and Walkling, 1987; Loughran and Anand, 1997; Draper and Paudyal, 1999; Andrade et al., 2001).

In contrast, the relative size paints a varied picture. Its association with CAR in the (-5, +5) window is notably negative with a coefficient of -0.0255 (p=0.0225).

The Log Value reveals a subtle negative trend in the (-5, +5) window with a coefficient of -0.0035 (p=0.0644), suggesting that there is a negative impact on the 11 days event window. Yet, other event windows do not present strong evidence to solidify this observation.

The cross-border, same industry and attitude variables do not have a significant impact on the dependent variable.

Based on these results, the hypothesis 1, that aims to examine if the presence of a toehold prior to the announcement of the deal results in higher CARs for the acquiring company compared to companies without a toehold, is supported. The data indicates that companies with a toehold experience higher returns surrounding the deal announcement. This is reflected in the positive coefficients and significant p-values across all the event windows. Furthermore, the findings are in line with previous literature who have documented the positive impact of toeholds on M&A success and the benefits for bidders.

Table 8 - Multivariate Analysis - Acquirer CAR

Table 8 displays the outcomes from a multivariate regression analysis, evaluating the influence of toehold on the Acquirer CARs across three event windows: (-1, +1), (-2, +2), and (-5, +5). In this analysis, control variables such as method of payment (specifically cash), relative size, log value, and attitude are included. The estimation window for (-250, -25) is determined using the market model approach, detailed in the methodology section.

*Every variable, including the control variables, is comprehensively described in the methodology section. Coefficients are listed beside each variable, with the p-value shown in parentheses. 'N' stands for the total number of observations. Significance levels are indicated by ***, **, and *, representing 1%, 5%, and 10% significance thresholds, respectively.*

The inclusion of fixed effects is marked with "Yes", and their omission is indicated by "No".

Variables	(-1, +1)	(-2, +2)	(-5, +5)
Toehold	0.0017** (0.0151)	0.0022** (0.0122)	0.0141* (0.0685)
Cash	0.0022** (0.0107)	0.0032*** (0.0077)	0.0046* (0.0641)
Relative Size	0.0008 (0.1233)	0.0005 (0.1142)	-0.0255** (0.0225)

Table 8 (continued)

Variables	(-1, +1)	(-2, +2)	(-5, +5)
Log Value	-0.0004 (0.1225)	-0.0005 (0.1144)	-0.0035* (0.0644)
Attitude	0.0015 (0.2450)	0.0018 (0.1115)	-0.0060 (0.1465)
Cross-Border	0.0025 (0.1260)	0.0053 (0.1125)	0.0067 (0.1020)
Same Industry	0.0001 (0.1443)	0.0003 (0.1114)	-0.0021 (0.1442)
Constant	-0.0355* (0.0588)	-0.0322* (0.0549)	0.0457 (0.4381)
Observations	1774	1774	1774
R-squared	0.065	0.088	0.055
Industry	Yes	Yes	Yes
Country	Yes	Yes	Yes
Year	Yes	Yes	Yes

Test values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

H1.1: Bidders with larger toehold prior to the acquisition earn higher abnormal returns

In the shortest term, during the (-1, +1) event window, companies possessing a larger toehold (above median) have a noteworthy positive effect on CAR, with a coefficient of 0.0020 ($p=0.0120$). This relationship persists in the (-2, +2) window with a coefficient of 0.0035 ($p=0.0181$) and also in the larger window (-5,+5) with a coefficient of 0.0015 ($p=0.0143$), the coefficients are positive and significant across all event windows. These results go in line with Betton and Eckbo (2000) who found that as the size of the toehold increases, the lower the probability of other bidders trying to enter the acquisition. Additionally, Chowdhry and Jegadeesh (1994) defend that the size of the bidder's toehold is positively correlated with the value of the acquisition gains.

Moreover, the payment method, specifically cash, consistently correlates positively with CAR across all event windows. The relationships are demonstrated by coefficients of 0.0047 ($p=0.0135$) for (-1, +1), 0.0024 ($p=0.0122$) for (-2, +2), and 0.0145 ($p=0.0252$) for (-5, +5), these

findings go in line with previous literature (Huang and Walkling, 1987; Loughran and Anand,1997; Draper and Paudyal, 1999; Andrade et al., 2001).

The attitude towards the deal consistently portrays a positive association with CAR across all windows, but do not show any significance.

On the other hand, the relative size of the companies showcases a recurrent negative tie with CAR, displaying negative coefficients across all event windows, but the results show no significance. Same applies to Log Value. Also, the same industry dummy and Cross-Border do not display any significance.

Based on the data presented, we can conclude that there is evidence supporting H1.1, bidders with a larger toehold prior to the acquisition tend to earn higher abnormal returns. This assertion is grounded in the consistent positive and significant coefficients for toehold across all event windows. Furthermore, the findings align with existing literature.

Table 9 - Multivariate Analysis – Above-median Toehold

*Table 9 displays the outcomes from a multivariate regression analysis, evaluating the size of the toehold influence on the Acquirer CARs across three event windows: (-1, +1), (-2, +2), and (-5, +5). In this analysis, control variables such as method of payment (specifically cash), relative size, log Value, and attitude are included. The estimation window for (-250, -25) is determined using the market model approach, detailed in the methodology section. Every variable, including the control variables, is comprehensively described in the methodology section. Coefficients are listed beside each variable, with the p-value shown in parentheses. 'N' stands for the total number of observations. Significance levels are indicated by ***, **, and *, representing 1%, 5%, and 10% significance thresholds, respectively. The inclusion of fixed effects is marked with “Yes”, and their omission is indicated by “No”.*

Variables	(-1, +1)	(-2, +2)	(-5, +5)
Above-median Toehold	0.0020** (0.0120)	0.0035** (0.0181)	0.0015** (0.0143)
Cash	0.0047** (0.0135)	0.0024** (0.0122)	0.0145** (0.0252)
Relative Size	-0.0023* (0.0532)	-0.0028* (0.0625)	-0.0129** (0.0140)
Log Value	-0.0004 (0.1822)	-0.0003 (0.2112)	-0.0010 (0.1120)
Attitude	0.0125 (0.1782)	0.0129 (0.1122)	0.0180 (0.1515)

Table 9 (continued)

Variables	(-1, +1)	(-2, +2)	(-5, +5)
Cross-Border	0.0033 (0.1500)	0.0045 (0.2201)	0.0801 (0.1050)
Same Industry	0.0001 (0.1255)	0.0002 (0.1544)	0.0001 (0.1321)
Constant	-0.1108* (0.0780)	-0.1202* (0.0633)	-0.0011* (0.0561)
Observations	275	275	275
R-squared	0.301	0.330	0.361
Industry	Yes	Yes	Yes
Country	Yes	Yes	Yes
Year	Yes	Yes	Yes

Test values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

H2: The presence of a toehold before the acquisition is associated with deals with higher synergies. i.e., higher combined CARs of bidder and target

Across all the event windows, namely (-1, +1), (-2, +2), and (-5, +5), the toehold coefficient suggests a beneficial effect on the combined CAR. However, in all these cases, the positive value does not achieve statistical significance.

Moving to the mode of payment, cash consistently demonstrates a positive influence on the combined CAAR. For the (-1, +1) window, the coefficient is 0.0249 and it's statistically significant at the 5% level ($p=0.0104$). This trend is also evident in the (-2, +2) window with a coefficient of 0.0219 ($p=0.0064$) and the (-5, +5) window with a coefficient of 0.0242 ($p=0.0079$).

Regarding the relative size of the companies, in the (-1, +1) window, the relationship is mildly positive with a coefficient of 0.0018, but this is not statistically significant ($p=0.1023$). Similarly, in the (-2, +2) window, the coefficient is 0.0022 ($p=0.1153$). In the (-5, +5) window, the relationship turns negative with a coefficient of -0.0046 ($p=0.1223$).

Considering the logged value of the acquiring company, in the (-1, +1) window, the coefficient is 0.0001 and is not statistically significant ($p=0.1435$). This minimal influence continues in the

(-2, +2) and (-5, +5) windows with coefficients of 0.0001 (p=0.1737) and -0.0002 (p=0.1810) respectively.

The attitude towards the deal in the (-1, +1) window yields a coefficient of 0.0020 but lacks statistical significance (p=0.145). In the (-2, +2) window, the coefficient is 0.0010 (p=0.125), and notably in the (-5, +5) window, the coefficient of 0.0140 is statistically significant (p=0.0865).

For cross-border acquisitions, the coefficients for the (-1, +1), (-2, +2), and (-5, +5) windows are 0.0053 (p=0.1280), 0.0035 (p=0.1155), and 0.0078 (p=0.1230) respectively, suggesting no significant impact on combined CAAR.

The industry dummy variable is consistently negative but lacks statistical significance across all windows, with the (-1, +1) window showing a coefficient of -0.0001 (p=0.1225).

To conclude, when examining the association between toeholds and acquisition synergies measured by combined CARs, the data does not provide statistically significant support, leading to the rejection of hypothesis H2.

Table 10 - Multivariate Analysis - Combined CAAR

*Table 10 displays the outcomes from a multivariate regression analysis, evaluating the influence of toehold on the Combined CAARs across three event windows: (-1, +1), (-2, +2), and (-5, +5). In this analysis, control variables such as method of payment (specifically cash), relative size, log Value, and attitude are included. The estimation window for (-250, -25) is determined using the market model approach, detailed in the methodology section. Every variable, including the control variables, is comprehensively described in the methodology section. Coefficients are listed beside each variable, with the p-value shown in parentheses. 'N' stands for the total number of observations. Significance levels are indicated by ***, **, and *, representing 1%, 5%, and 10% significance thresholds, respectively. The inclusion of fixed effects is marked with "Yes", and their omission is indicated by "No".*

Variables	(-1, +1)	(-2, +2)	(-5, +5)
Toehold	0.0125 (0.1012)	0.0110 (0.1231)	0.0090 (0.1120)
Cash	0.0249** (0.0104)	0.0219*** (0.0064)	0.0242*** (0.0079)
Relative Size	0.0018 (0.1023)	0.0022 (0.1153)	-0.0046 (0.1223)
Log Value	0.0001 (0.1435)	0.0001 (0.1737)	-0.0002 (0.1810)

Table 10 (continued)

Variables	(-1, +1)	(-2, +2)	(-5, +5)
Attitude	0.0020 (0.145)	0.0010 (0.125)	0.0140* (0.0865)
Cross-Border	0.0053 (0.1280)	0.0035 (0.1155)	0.0078 (0.1230)
Same Industry	-0.0001 (0.1225)	-0.0001 (0.1273)	-0.006 (0.1124)
Constant	-0.1320* (0.0923)	-0.1225* (0.0825)	0.1241* (0.0980)
Observations	1774	1774	1774
R-squared	0.080	0.091	0.085
Industry	Yes	Yes	Yes
Country	Yes	Yes	Yes
Year	Yes	Yes	Yes
Test values in parentheses *** p<0.01, ** p<0.05, * p<0.1			

6.3 Additional Analysis: The Case of US Acquirers

The global mergers and acquisitions landscape is influenced by cultural, regulatory, and market factors that can lead to varied distributions of M&A gains among the parties involved.

This analysis delved deep into understanding the role of toeholds in shaping the distribution of M&A gains, an intriguing observation emerged: a preponderance of U.S. firms in our sample. The United States, with its robust financial markets, mature regulatory frameworks, and dynamic business ecosystem, might harbor unique M&A dynamics that set it apart from other regions.

To this end, this additional analysis seeks to analyze specially the influence of the US acquirers that hold a toehold before the acquisition announcement. The Dummy Toehold x US variable shows the interaction between the acquirer being from the US and having toehold in the target company prior to the acquisition. This interaction term is relevant as it tests the combined effects of these factors on CARs.

The consistently positive coefficients hint that US acquirers with a toehold could witness a positive trend in their CARs, potentially due to factors such as reduced information asymmetry, increased confidence, or favorable market perception. However, the significance levels, is around 10%. For the Acquirer CARs, the coefficients for the event windows (-1,+1) and (-2,+2) are 0.0147 (p=0.0877) and 0.0146 (p=0.0583), respectively. In the Combined CARs, the coefficients for the (-2,+2) and (-5, +5) event windows are 0.0152 (p=0.0799) and 0.0250 (p=0.0678) respectively. The rest of the coefficients are positive but non-significant. The overall significance level is does not allow to draw a definitive conclusion.

Another important variable in our analysis is the Dummy US, which categorizes acquirers based on their geographical origin, specifically distinguishing U.S. acquirers from those based outside the U.S. This variable displays positive coefficients for the Acquirer's CARs and negative for the Combined CARs. However, the significance of these results isn't particularly strong, with relevance only seen in the 5-day and 11-day event windows for the Acquirer's CARs.

Cash variable, representing the payment method. Deals where the method of payment used is cash tend to be perceived more favorably, as evidenced by the positive coefficient and its significance. The positive influence of the cash payment method on M&A returns aligns with the broader analysis, reinforcing its relevance in driving favorable outcomes.

The variable Toehold indicates whether an acquirer had a stake in the target firm before the acquisition announcement. For the Acquirer's CAR in the (-1, +1) window, the coefficient stands at 0.0145, and for the (-5, +5) window, it's 0.0115. Both are statistically significant at the 5% level. In the (-2, +2) window, the coefficient is 0.0082, which is significant at the 10% level. On the other hand, while the coefficients for the Combined CARs remain positive, their significance is less marked. They only achieve a significance level of 10% for the 5-day and 11-day event windows.

Cash remains a significant driver of CARs, consistent with prior analyses, showing a positive effect and significance across event windows.

In conclusion, our regression analysis suggests that there is a potential influence of companies based on the US holding a toehold prior to the acquisition. However, the data doesn't provide a definitive answer, underscoring the need for further nuanced research in this domain.

Table 11 – The Case of US Acquirers

Table 11 displays the outcomes from a multivariate regression analysis, evaluating the differential impact of being a U.S. bidder as opposed to a non-U.S. bidder on both the Acquirer and Combined CAARs across three event windows: (-2, +2), (-5, +5), and (-5, +5).

The Dummy Toehold x US is the variable that serves as the primary variable of interest, capturing the distinction between U.S. and non-U.S. acquirer interecating with Acquirers with and without toehold. The positive or negative sign of the coefficient indicates whether U.S. acquirers, on average, experience higher or lower CAARs than their non-U.S. counterparts. The analysis also includes control variables such as method of payment (specifically cash), attitude, relative size, and log Value.

Every variable, including the control variables, is comprehensively described in the methodology section. Coefficients are presented beside each variable, with the corresponding p-value given in parentheses. 'Observations' denotes the total number of observations used in the regression. Significance levels are demarcated by ***, **, and *, which correspond to the 1%, 5%, and 10% significance thresholds, respectively.

For categorical variables like Industry, Country, and Year, the inclusion in the regression is indicated by "Yes".

Variables	Acquirer			Combined		
	(-1, +1)	(-2, +2)	(-5, +5)	(-1, +1)	(-2, +2)	(-5, +5)
Dummy Toehold x US	0.0147* (0.0877)	0.0146* (0.0583)	0.0119 (0.1173)	0.0151 (0.1196)	0.0152* (0.0799)	0.0250* (0.0678)
Dummy US	0.0042 (0.1225)	0.0082* (0.0839)	0.0068* (0.0770)	-0.0024 (0.1019)	-0.0016 (0.1322)	-0.0006 (0.1440)
Toehold	0.0145** (0.0179)	0.0149* (0.0676)	0.0115** (0.0275)	0.0153 (0.1099)	0.0148* (0.0595)	0.0247* (0.0678)
Attitude	0.0152 (0.1330)	0.0145 (0.1278)	0.0130 (0.1121)	0.0160 (0.1200)	0.0157 (0.1196)	0.0230 (0.1010)
Cash	0.0150** (0.0182)	0.0155** (0.0179)	0.0118*** (0.0072)	0.0154*** (0.0097)	0.0150*** (0.0098)	0.0253** (0.0180)
Relative Size	0.0067* (0.0735)	0.0063* (0.0750)	0.0069 (0.1745)	0.0088* (0.0905)	0.0085* (0.0920)	0.0011* (0.0725)
Log Value	-0.0039 (0.1290)	-0.0041 (0.1275)	0.0079 (0.1260)	0.0003 (0.1165)	0.0001 (0.1180)	-0.0004 (0.1015)
Same Industry	0.0002 (0.1655)	0.0001 (0.1670)	-0.0011 (0.1555)	0.0007 (0.1305)	0.0005 (0.1320)	0.001 (0.1375)
Cross-Border	-0.0039 (0.1275)	-0.0038 (0.1290)	0.0075 (0.1265)	0.0003 (0.1180)	0.0001 (0.1165)	-0.0004 (0.1010)

Table 11 (continued)

Variables	(-1, +1)	(-2, +2)	(-5, +5)	(-1, +1)	(-2, +2)	(-5, +5)
Constant	0.1232*** (0.0065)	0.1238*** (0.0070)	0.1395** (0.0205)	0.0895** (0.0170)	0.0902** (0.0178)	0.1530** (0.0110)
Observations	1774	1774	1774	1774	1774	1774
R-Squared	0.0730	0.0650	0.0710	0.0550	0.0470	0.0490
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes

Test values in parentheses

*** p<0.01, ** p<0.05, * p<0.1

7. CONCLUSION

The main goal of this study is to investigate if the presence of a toehold enhances the creation of synergies compared to scenarios where the bidder holds no prior stake at the target company. The size of the toehold is also a subject of study.

The dataset includes 1774 M&A transactions featuring publicly listed firms from the OECD countries between the years 2005 to 2019.

The univariate analysis, which examined the influence of toehold presence on the Acquirer CAR and Combined CAAR, revealed a positive effect. Specifically, the presence of a toehold positively impacts the CAR for both the Acquirer and the Combined entities. However, with the level of significance and the limitations of the univariate analysis require a more robust and complete regression to support the initial findings.

So, in addition to the univariate analysis, a multivariate analysis was conducted to test the hypothesis by incorporating control variables and fixed effects into the regression. The findings from this analysis were in line with the univariate results.

The research confirms the positive influence of toehold presence on the Acquirer CAR. This impact was especially evident around the announcement days, where the results were positive and statistically significant.

Also, the toehold size (above-median) positively impacts the Acquirer CAR across all the event windows. This finding aligns with prior research by Betton and Eckbo (2000) and Chowdhry and Jegadesh (1994).

However, it was not possible to confirm the positive effect of the toehold presence in creating synergies. The results were not statistically significant.

Considering the pronounced presence of U.S. companies in the sample and the dynamic nature of the U.S. market, having an acquirer from the U.S holding a toehold prior to the acquisition announcement, displays a positive effect on CARs. However, the data doesn't provide a definitive answer, underscoring the need for further nuanced research in this domain.

In summary, these results show the impact of toeholds in acquisition contexts, indicating their impact, particularly on the Acquirer CAR in the short term.

However, it is evident that some of these findings lack robustness. For instance, results for the impact of toehold on synergies created by the combined CAR does not show any significance. Also, the additional analysis to test the impact on Acquirer CAR of the interaction between bidders based in the US and the presence of a toehold, only shows significance at the 10% level and not in all even window.

A notable limitation of this research is its exclusive focus on public companies. While this approach offers the advantage of accessing reliable accounting and financial data, especially concerning the percentage of the toehold, it narrows the sample size. This constraint overlooks many private firms where public entities often hold a stake before acquiring.

Future research should dive deeper into the geographical differences between companies and the presence of the toehold considering the different regulation and minor investors protection laws of each country.

Additionally, understanding the nuances between the presence of a toehold prior to an acquisition and the nature of the M&A transaction. It would be enlightening to understand whether there's a clear difference in the strategic motivations or outcomes when the acquisition is vertical, implying integration along the supply chain, versus horizontal, suggesting consolidation within the same industry.

Moreover, introducing new methodologies to evaluate the long-term effects of toehold is crucial. One potential approach would be to employ Buy-and-Hold Abnormal Returns (BHARs) following the methodology by Lakonishok, J., Shleifer, A., & Vishny, R. W. (1994). This would provide a more comprehensive understanding of toehold's influence on sustained performance.

8. REFERENCES

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9. APPENDIX

Appendix A – List of Variables

Variable	Definition	Sources
Cumulative Abnormal Return	The cumulative abnormal returns were calculated over three distinct event windows: 3-day (-1, +1), 5-day (-2, +2), and 11-day (-5, +5). These calculations were done for Acquirers, Targets, and the combined entities.	Datastream
Toehold	Dummy variable: Equals 1 if the size of the toehold before the acquisition announcement is above the median (28.4%), and 0 otherwise.	SDC
Above-median Toehold	Dummy variable: Equals 1 if there is a presence of toehold before the acquisition announcement, and 0 otherwise.	SDC
Dummy US	Dummy variable: Equals 1 if the entity is from the US, and 0 otherwise.	SDC
Dummy Toehold x US	Interaction term representing the presence of a toehold in a US-based acquirer.	SDC
Attitude	Dummy variable: Equals 1 if the offer attitude is friendly, 0 otherwise.	SDC
Cash	Dummy variable: Equals 1 if the method of payment used is cash, and 0 otherwise.	SDC
Relative Size	The value of the deal divided by acquirer market value.	SDC and Datastream
Log Value	Natural logarithm of Acquirer market value.	Datastream
Same Industry	Dummy variable: Equals 1 if the deal is in the same industry, and 0 otherwise.	SDC
Cross-Border	Dummy variable: Equals 1 if it is a cross-border deal, and 0 otherwise.	SDC