Matias Latomäki

# Is the management following the (M&A) crowd?

A study on merger waves in the European M&A market 2005-2022.

School of Accounting and Finance
Master's thesis in finance
Master's Degree Programme in Finance

Vaasa 2024

**UNIVERSITY OF VAASA**
**School of Accounting and Finance**
**Author:** Matias Latomäki
**Title of the Thesis:** Is the management following the (M&A) crowd? : A study on managerial opportunism during merger waves in the European M&A market 2005-2022.
**Degree:** Master of Science in Economics and Business Administration
**Programme:** Master´s Degree Programme in Finance
**Supervisor:** Sami Vähämaa
**Year:** 2024 **Pages:** 58

**ABSTRACT:**
Previous research finds that mergers and acquisitions (M&As) generally do not create value for the acquiring companies, despite their continued popularity. Successful M&A value creation demands a strategic post-merger plan and careful consideration not to overpay. The data shows increased merger activity during higher stock-market levels, when M&A purchases are usually more expensive.

This study explores whether M&As are made opportunistically when high stock market levels or low interest rate levels make them attractive. It examines the influence of stock market and interest rate levels on the occurrence of M&As in the European market from 2005 to 2022, using data from listed companies in Europe (including the UK). The research employs Ordinary Least Squares (OLS) regression to analyze merger waves. The Eurostoxx600 index is used to measure stock market levels, and the Euribor rate is used to gauge general interest rate levels.

The results show a direct relationship between stock market performance and M&A volumes, indicating that higher stock prices encourage M&A activity. There is also a clear inverse relationship between implied volatility and M&A volumes. However, the relationship between interest rate levels and M&As is found to be inconclusive. The models suggest that stock-market levels and market fear generally influence M&A volumes, while the average deal value of completed deals remains unaffected. The findings suggest that management may act opportunistically in the M&A market, prioritizing their benefits, which may lead to value-destroying transactions.

This thesis enhances the existing knowledge by providing empirical evidence on how market conditions influence merger waves. The novelty of this paper lies in its long-term perspective on M&As. Previous studies often analyze M&As using a time series approach around the transaction date, which limits the time horizon. This paper adopts a longer timeframe to help explain why negative value M&As may occur and why M&As tend to happen in waves.

**KEYWORDS:** Mergers and acquisitions, merger waves, agency problems, management hubris, behavioural finance

**VAASAN YLIOPISTO**
**Laskentatoimen ja rahoituksen yksikkö**
**Tekijä:** Matias Latomäki
**Tutkielman nimi:** Is the management following the (M&A) crowd? : A study on managerial opportunism during merger waves in the European M&A market 2005-2022
**Tutkinto:** Kauppatieteiden maisteri
**Oppiaine**: Rahoitus
**Työn ohjaaja:** Sami Vähämaa
**Valmistumisvuosi:** 2024 **Sivumäärä:** 58

**TIIVISTELMÄ:**

Aiemmat tutkimukset osoittavat, että yritysostot ja -fuusiot (M&A) eivät yleensä luo arvoa ostaville yrityksille, huolimatta niiden suuresta suosiosta. Onnistunut arvonluonti yrityskaupalla vaatii strategisen suunnitelman ostetun yrityksen sulautumisen jälkeiselle ajanjaksolle ja tarkkaa harkintaa, ettei ostokohteesta makseta liikaa. Kuitenkin data osoittaa yrityskauppatoiminnan lisääntyvän korkeampien osakemarkkinatasojen aikana, jolloin M&A-ostot ovat yleensä kalliimpia.

Tämä pro gradu -tutkielma tarkastelee, tehdäänkö M&A-toimenpiteitä opportunistisesti silloin, kun korkeat osakemarkkinatasot tai alhaiset korkotasot tekevät niistä houkuttelevia. Tutkielma tutkii osakemarkkina- ja korkotasojen vaikutusta M&A-toiminnan esiintymiseen Euroopan markkinoilla vuosina 2005–2022, käyttäen aineistona listattuja yrityksiä Euroopassa (mukaan lukien Yhdistynyt kuningaskunta). Tutkimus hyödyntää OLS-regressiota (Ordinary Least Squares) yrityskauppojen analysointiin. Eurostoxx600-indeksiä käytetään osakemarkkinatasojen mittarina ja Euribor-korkoa yleisen korkotason mittarina.

Tulokset osoittavat suoran yhteyden osakemarkkinoiden suorituskyvyn ja M&A-volyymin välillä, mikä viittaa siihen, että korkeammat osakekurssit keskimäärin johtavat lisääntyneeseen rityskauppojen määrään. Lisäksi tämä paperi havaitsee selvän käänteinen suhteen implisiittisen volatiliteetin ja M&A-volyymin välillä. Tulokset korkotason ja yrityskauppojen määrän välisestä yhteydestä ovat epäselvät. Mallien tulokset viittaavat siihen, että osakemarkkinatasot ja markkinoiden pelko vaikuttavat yleisesti yrityskauppojen määrään, kun taas toteutuneiden kauppojen keskimääräinen arvoon indeksi- ja korkotasot eivät vaikuta. Tutkimustulokset viittaavat siihen, että johto saattaa toimia opportunistisesti yrityskauppamarkkinoilla, asettaen omat etunsa etusijalle, mikä saattaa johtaa arvoa tuhoaviin transaktioihin.

Tämä tutkielma laajentaa olemassa olevaa tietämystä tarjoamalla empiiristä näyttöä siitä, miten markkinaolosuhteet vaikuttavat yrityskauppojen määrään ja keskimääräisiin arvoihin. Tämän tutkielman omalaatuisuus on pitkäaikaisessa näkökulmassa yrityskauppatoimintaan. Aiemmat tutkimukset analysoivat usein yrityskauppoja aikavälillä, joka keskittyy pelkästään transaktioajankohdan ympärille. Tämä tutkimus ottaa pidemmän aikavälin näkökulman auttaakseen selittämään, miksi negatiivista arvoa tuottavia yrityskauppoja tapahtuu ja miksi yritykauppojen määrä esiintyy selkeinä markkina aaltoina.

**AVAINSANAT:** Yritysostot ja -fuusiot, yrityskauppa aallot, agenttiongelmat, johdon ylioptimismi, behavioraalinen rahoitus

## Table of contents

## Figures



## Tables

# 1 Introduction

Mergers and acquisitions (M&A) are important because they are a major way for companies of different sizes to grow, expand into new markets, reduce costs, and increase revenues. A merger is a situation where two companies unite their operations and create one unified company (Hargrave, 2021). An acquisition is a situation where a company buys most or all of the target firm's stock (Kenton, 2020).

A merger or an acquisition situation is one of the most critical choices for the management of any company to successfully complete. For most companies, these situations don't happen often, and the management is sometimes taking huge risks, possibly affecting the future of their careers. From shareholders' perspective the M&As should always increase the market capitalization of the company in the long-term, which doesn't always happen, despite the promises from management.

In their 2004 paper called "Market Valuation and Merger Waves" Rhodes-Kropf and Viswanathan find a possibility that M&As are conducted because the top-level management sees the company stock as overvalued and this overvaluation can be used in stock-for-stock transactions as a payment method. If this finding was to hold over time, it would have several implications for M&As. It would greatly affect the decade-old question of why M&A activity tends to go in waves. The finding would also affect shareholders' views of future M&As and the general views of M&A value creation.

Continuing the studies by Rhodes-Kropf and Viswanathan, Gugler et al. (2012) had similar findings. In their paper "The determinants of merger waves: An international perspective." they note that at the end of the 20th century, merger waves for listed firms took place in the United States, the United Kingdom, and Continental Europe. The height of the merger waves in each of the three regions roughly corresponded with the peaks of stock market booms (Gugler et al., 2012). The finding of historically high correlations between the stock market and merger waves supports the results of previous studies.

The paper by Gugler et al. (2012) highlights a clear correlation between the M&A market and the stock market that exists in Continental Europe. Gugler et al. (2012) create “The overvaluation theory” which argues that market optimism drives public M&A deal volume.

In a paper called “Riding the Merger Wave: Uncertainty, reduced monitoring, and bad acquisitions” Duchin and Schmidt (2013) study a large sample of 9,854 mergers from 1980 to 2009 found indications of increased degrees of uncertainty and lower-quality analysis for acquisitions made during merger waves as compared to those made outside of them. Duchin and Schmidt (2013) find that managers deciding to participate in the M&A market during a merger wave are less likely to be fired due to bad performance. This implies that negative outcomes in mergers and acquisitions (M&As) conducted outside of merger waves have a significantly greater impact on managers' careers. Duchin and Schmidt (2013) attribute this to the fact that managers can "share the blame with peers who also initiated mergers during the wave."

The effects from the phenomena perceived by Duchin and Schmidt (2013) could be a big reason for worse post-merger returns on in-wave mergers. Duchin and Schmidt (2013) find that the increased expense of outside oversight could provide agency-driven managers the opportunity to "get away" with making poor merger decisions. They also find that during merger waves management herding happens a lot, in which managers are pushed by career considerations to start mergers of declining quality to follow their peers (Duchin and Schmidt, 2013).

This paper will continue the merger wave literature and take a closer look into the question of whether there exists evidence that would point to a possibility of opportunism. This is done through a look at whether M&As are conducted more in volume or in higher values during merger waves either because of low interest rates or high stock prices.

## 1.1 Purpose of the study

The purpose of this study is to find out how big of a factor management opportunism, agency problems and hubris of the management are in the birth of merger waves. The novelty of the study is that most of the previous literature on M&A value creation looks at the problem through studies that focus on a very short timeframe. The consensus in previous studies in finance is that M&As on average don't create value for the buyer. The big question is to answer why M&As are still so common, despite this. Previous studies on finance have been able to find that M&As seem to go in waves, despite this finding going against most of finance's major theories. The main purpose of this study is to find out whether the stock index levels, or interest rate levels affect the average deal values or volume of M&As. The secondary purpose of this study is to evaluate the possible implications for value creation that opportunistic reasons for M&As have.

This study aims to contribute to previous M&A value creation studies from a new perspective using longer-term data available on M&As and combining it with different dependent variables. These variables include things such as interest rates and stock index levels. The idea is to utilize and separate different factors affecting the European deal volumes and average values the most. Eurostoxx600 is used as a measure of opportunities to do a stock-for-stock transaction. Interest rates are looked at from the perspective of possibilities for a merger with debt. The data section will utilize time series regression due to its simplicity and relevance for the type of study conducted.

## 1.2 Hypothesis

Rhodes-Kropf and Viswanathan (2004) find that deviations from fundamental values can have an effect on the birth of merger waves and cause a correlation between stock-market value and merger activity. This is a critical finding as many of the papers studying merger waves, either disregard the possibility of stock market having an effect due to efficient markets hypothesis or find inconclusive evidence due to a wrong kind of methodology. Rhodes-Kropf and Viswanathan (2004) highlight that most of the studies on

merger waves don't consider whether the M&A transactions were conducted using cash or stock. This is a key finding and a clear research gap in previous literature.

Gugler et al. (2006) studied four different types of theories on reasons for merger waves. The four theories included were industry shocks theory, q-theory, overvaluation and managerial discretion hypotheses. The last two theories are also called behavioral hypotheses, due to their explanations going against many theories of finance such as efficient markets theory. Based on the empirical study of the paper by Gugler et al. (2006) Q-theory is completely rejected. Industry shocks theory holds under specific conditions.

Gugler et al. (2006) conclude the paper with their most probable theory, which states that the rise in shareholder confidence suggests that stock prices are set to increase. These expectations include reasons why mergers in particular sectors or transactions executed by specific companies are believed to create value. This market confidence then enables executives to proceed with acquisitions that ultimately destroy shareholder value. During periods of stock market exuberance, there is a significant rise in the number of these detrimental mergers, culminating in a merger wave (Gugler et al., 2006). Gugler et al. (2006) clearly recognize overvaluation or inefficient market valuation as a key aspect in merger waves. Derived from the cited previous literature, the hypotheses for this paper are as follows.

$H_1$ = The management of public companies acts opportunistically in M&A markets when market conditions make it possible.

$H_2$ = M&A activity is affected by stock index levels.

$H_3$ = M&A activity is affected by interest rate levels.

The first hypothesis proposes that management in public companies may exploit favorable market conditions and thus act opportunistically in the M&A markets. This hypothesis builds on top of previously mentioned findings by Kropf and Viswanathan (2004) and Gugler et al. (2006). This hypothesis will be evaluated with regression results and the fit of the regression model. The second hypothesis of this paper is that M&A activity is affected by stock index levels. The third hypothesis is that M&A activity is affected by interest levels. The main difference between this paper and the one from Kropf and Viswanathan (2004) is that the former is focused more on transactions paid with cash. This paper replaces the perspective of cash-financed deals with debt-financed deals. This is done mainly because the question of how interest rate levels affect merger waves posits a clear research gap in the previous literature.

## 1.4 Structure of the thesis

The structure of the thesis is as follows. Chapter one is the introduction. Chapter two covers the most important theories related to M&As such as the efficient market hypothesis. Chapter three goes through the most relevant previous studies on M&As. Chapter four continues the literature review with a look at previous studies on merger waves. Chapter five explains the data and regression analysis. Chapter six goes through the findings and regression models. Chapter seven concludes the findings and offers suggestions for future research.

# 2 Theories of finance on M&As

Classic corporate finance has its implications for M&A value creation. There isn't value in a merger if the two companies aren't worth more together than when they are apart. According to Brealey et al. (2011), the present value (PV) of a merger should equal the present value of the merging companies. This theory implies that mergers wouldn't either increase or decrease shareholder value. The present value of the two merging companies is calculated as shown below. In the calculation, A means company A, B means company B, and AB means both companies merged.

$$PVAB = PVA + PVB$$

The calculation of a merger's costs and gains is slightly different. If it is assumed that the merged company is worth more than the two companies are worth separately, net present value (NPV) calculations can be used to check the hypothesis. The calculation itself is simple, but it requires that we have already calculated the gain and cost of the merger. In the formula, "ΔPVAB" is the gain, and "(Cash - PVAB)" is the cost of the merger.

$$NPV = Gain - Cost$$

$$NPV = \Delta PVAB - (Cash - PVB)$$

Two more calculations are necessary to get the gain and the cost numbers into the equation. These are done with two different formulas shown below.

$$Gain = PVB - (PVA + PVB) = \Delta PVAB \; Cost = Cash\ paid - PVB$$

Now there's a scientific frame for calculating merger gains. By using these calculations, calculating the gain and cost of a merger is easy. However, the theory itself assumes that the present values should not increase from a merger but stay the same since the companies' actual cashflows don't change. Late this paper will go into behavioral points of view of what usually happens to present value in mergers.

In any acquisition situation, it is very important to not overpay for the purchase, because value creation for the acquirer is calculated value received minus the price paid. In their book on company valuation, Goedhart et al. (2020) call this principle the conservation of value. The idea of the rule is simple. If higher discounted cash flows (DCF) increase value, then anything that doesn't increase future cash flows can't create value. This principle assumes that value should be unchanged in the case of an M&A transaction when the DCF model stays unchanged (Goedhart et al., 2020). The writers conclude that anything that doesn't increase growth or return on invested capital (ROIC) doesn't really create value.

The value received equals both the present value of future cash flows of a company and the intrinsic value of an acquired company with the current management and the same team. In this case, intrinsic value means the worth of the company based on the valuation done by the acquirer. The term intrinsic value is used mainly to distinguish the difference between the value used from the pure accounting book value of a company (Goedhart et al., 2020). This is because in a case where a company is substituting its equity for debt or just changing its accounting practices, the value of the company doesn't increase. The reason why the value of the company doesn't change when changing the financing is because the actual future cashflows don't change and are assumed to be distributed proportionally between investors. This is called Modigliani-Miller theorem and it states that capital structure is not a factor in company valuation, because company valuation is formed by present value of future earnings (Chen, 2022).

### 2.1 Efficient market hypothesis and M&A

Besides examining the corporate finance theories related to the advantages of M&A, it is crucial to assess the overall efficiency of the stock market. Market prices have a significant impact on both buyers and sellers involved in M&A transactions. In the case of a stock-for-stock merger, which is a prevalent merger type during periods of increased merger activity, market prices play a pivotal role in determining the price paid. From the

perspective of the target company, market prices hold substantial importance as they provide the buyer with an approximate valuation of the target's worth.

### 2.1.1 The efficiency of the markets

The efficient market theory states that the stock market is efficient when the stock prices reflect all the current information available in public for investors. The theory argues that an investor can't beat the market, because the stock prices already reflect all the available information perfectly. The theory was first introduced by Eugene Fama in 1965 in two independent articles. Later, in 1970 Fama's market efficiency theory got published in the Journal of finance. In the theory, Fama argues that when new information is available to investors, it immediately shows in the stock prices as well. The core idea of the theory is that when the information is made public, investors quickly reevaluate their stock holdings and simultaneously create a new fair market value (Fama, 1970).

The Efficient Market Theory posits that the stock market achieves efficiency when stock prices accurately reflect all publicly available information for investors. This theory contends that investors cannot outperform the market because stock prices already incorporate all relevant information perfectly. Eugene Fama introduced this theory in 1965 through two separate articles, and subsequently, it was published in the Journal of Finance in 1970. Within this theory, Fama argues that as soon as new information becomes accessible to investors, it promptly manifests in stock prices. The fundamental premise of the theory is that when information becomes public, investors swiftly reassess their stock holdings, thereby creating a new equitable market value (Fama, 1970).

Fama's theory includes multiple assumptions. The theory assumes that there are no transaction costs to trading in the market. It also assumes that everybody has access to the same information and that the information is free for everyone. There are three distinct variations of the efficient market hypothesis. The first one is the weak form. The weak form assumes that the prices of securities reflect all past public information, but don't reflect the new information that is not yet available publicly. The weak form argues

that technical analysis can't ever work, but a certain fundamental analysis could produce alpha. The second variation is called the semi-strong form. The semi strong form argues that neither fundamental analysis nor technical analysis can't work, because markets are so efficient. The third and last variation is called the strong form. According to the strong form of EMH, prices reflect both available private and public information perfectly. This theory assumes that even very private information such as the CEO's insights is already taken into consideration in the fair market value (Fama, 1970). In reality, because of the large amounts of assumptions that the hypothesis makes, it rarely holds.

### 2.1.2 The efficiency of the markets

The idea of EMH is very important to finance because many other theories require its implications for them to work. But in the real-world markets are never fully efficient. Even Fama (1970) himself writes that the frictionless market that the EMH suggests doesn't express a real market. EMH that market timing isn't possible, which looks contradictory to M&A in a merger wave sense for example.

Even the possibility of inefficiencies in the market has several implications for M&A transactions. This is because if a company is undervalued it makes it vulnerable to hostile takeovers. During a stock market bubble, there can also exist companies that appear overvalued even to the management of the company. This could encourage the management towards a stock-for-stock transaction. However, it still seems that the existence of stock market bubbles like the one in 1999, is the exception, not the rule (Malkiel, 2013).

## 2.2 Agency theory

The third very relevant theory to M&A transactions is agency theory. Agency theory is a theory that tries to explain the relationship between business principals and agents (Jensen & Meckling, 1976). From the mergers and acquisitions transaction perspective this paper looks at the shareholders as principals and executives of the company as agents.

The problem that the theory tries to explain is the relationship and different priorities between agents and principals in decision-making situations. In agency theory when agents aim to maximize their own utility, the probability of utility maximization for the principals is little. From a principal's perspective, utility-maximizing means maximizing the company's market capitalization and future cash flows. The agent's perspective can sometimes be very different. Agents may be looking to maximize their utility by running the company in a way that maximizes their bonuses or by taking smaller risks in a fear of getting fired (Jensen & Meckling, 1976).

The principals of a corporation can use certain methods to try to align the agent's interest with their own. According to the theory, principals can for example closely follow that the agent's behavior is aligned with their best interest. However, the monitoring of agents is usually truly made by audit firms, that check the reported numbers and the large and sometimes passive institutional owners with voting rights (Chen, 2022). Passivity is bad because it gives more room for agent problems. Principals can also use incentives like compensation to affect the agent's actions. However, both ways of battling agency problems usually cost the principals. The problem with audit firms as monitors of corporations are the conflicts of interest that come with the same accounting firms also selling advisory and consulting services to their auditing clients (Chen, 2022). For this reason, there's always some bias included in audit processes (Guiral et al., 2010, p. 163). Institutional ownership as a monitoring principle for the agents isn't perfect either. Institutions can sometimes be passive with their holdings. A study by Schmidt and Fahlenbrach (2017) shows that passive institutional investors are successful in relatively cheap monitoring activities. But they also find that increases in passive institutional investing indeed is bad for the shareholders. Also, Crutchley et al. (1999, p. 194) find evidence for active institutional ownership being correlated with lower agency costs.

The problem with agency problems gets even more complicated when we start to compare the principal-agent relationships between bondholders and shareholders. The simplified difference between bond- and shareholders is that debt holders get a fixed

amount and are “first in line” if the risk of company bankruptcy is realized. Stockholders on the other hand, are residual claimants on assets. This means a claim on the leftovers in a bankruptcy situation. This kind of specific agency problem is usually called agency costs of debt (Chen, 2022). In a risk sense this is the reason why equities are generally considered riskier. In an agency theory perspective, this means that in some situations the maximization of equity owners and bondholders’ utility may vary drastically. Generally put, the conflict between shareholders and bondholders comes from the fact that shareholders tend to benefit from a riskier corporate decision, while bondholders usually don’t. One possible solution for the agency problems between stock owners and bondholders include covenant bonds, where covenant may be used to decrease the possible dividend amounts for example. Restrictions like these are usually called restrictive covenants (Hayes, 2021).

There also exist situations where agents are faced with so-called bonding costs. This would happen in a situation where the agent must ensure the maximization of the principal’s utility without necessarily maximizing his/her own utility. A good example of this in an M&A context would be a manager who agrees to stay with a company even if the company is acquired. In a situation like this, the manager’s opportunity cost is other potential employment opportunities (Jensen & Meckling, 1976).

Agency costs face corporations around the globe every daily. In addition, they majorly affect the decisions behind M&A transactions. Jensen and Meckling (1976) found that the only way to completely eradicate agency costs is to have the CEO of the company own it fully. This means that even a slight dilution to the share of ownership will lead to agency problems. And since most of the evidence supports that more acquisitions are made by usually larger public companies, which are owned by thousands of shareholders these problems remain very relevant in the M&A transactions (Maksimovic, Phillips, and Yang, 2013).

Agency problems can be categorized into three main types (Brealey et al., 2011). The first type of agency problem is the one mentioned earlier, where the agency problem is between stockholders and the management of the company. The second type of agency problem is one where creditors and stockholders have an agency problem. This kind of problem might occur for example in a situation where the company invests in risky projects in the hopes of increased market capitalization. This can lead to a situation where if faced with a default, bondholders are the party suffering the most. The third type of agency problem is a situation where the conflict of interest is between stockholders and other stakeholders. These other stakeholders can be for example employees or customers. There may also be agency problems inside the company's management. One of these agency problems may exist between the top management and middle management relationship, where the top management is the principal (Brealey et al., 2011).

### 2.2.1 Implications of agency theory for M&A

Let's now evaluate management's motivations for transactions from an agency theory point of view. On paper, M&A transactions are just one of the tools for growth in the management's arsenal. However, major intermittent waves of companies closing deals worldwide seem to point out that the agents often tend to be very optimistic about certain transaction's effect on the corporation's net present value (NPV) during merger waves. Shleifer and Vishny (1988) study value maximization. In the study (Shleifer & Vishny, 1988) conclude that a major explanation behind of poor performance of the average M&A transaction under the acquirer's management indeed is the so-called divergence of interests, between agents and principles of a corporation.

In their book, Brealey, R. et al. (2011) find that managers prefer to run large businesses as opposed to smaller ones. This means that they may be more likely to take part in low NPV M&As, just for the sake of empire-building. There also seem to exist agency problems with entrenching investment. This means that some managers may prefer being part of an M&A transaction that requires the manager's own specific knowledge of a

certain topic, just for the sake of appearing important. This is despite a low NPV estimate for the transaction (Shleifer & Vishny, 1989). Some businesses may also have such a positive cash flow that it causes them to end up overinvesting, because of the lack of high NPV investment opportunities (Jensen, 1986). Agents may also be reluctant to disinvest, especially when jobs are at stake, even if it would economically make sense for the stakeholders.

### 2.3.2 Management compensation and M&A

A study by Grinstein and Hribar (2004) find that 39% of the acquiring firms reward their CEO for M&A transaction success. In the study, Grinstein and Hribar (2004) study a data sample of 327 large M&A deals that occurred between 1993 and 1999. They find that in about 50% of the cases compensation committees don't seem to give clear information on what the CEO bonuses from the transactions are based on. And in the other 50% of the cases, most of the bonuses are explained by the maximization of the company's size rather than shareholder wealth. Their data also seems to point out that on average, M&A deals where the CEO has more power lead to negative abnormal returns of -3.8%. On average, transactions with a lot of CEO power earn more negative returns, compared to deals with a lower level of CEO power. This implies losses for the shareholders' wealth in deals, where self-dealing perks exist for the CEO. The evidence points that surprisingly usual reason for M&As is empire building by the management and maximization of the market capitalization instead of profitability (Buckley & Ghauri, 2003).

Grinstein and Hribar (2004) conducted a cross-sectional analysis of the data. They find that CEOs indeed tend to receive higher bonuses when the acquisitions are bigger. However, the data also shows that more deal effort from the CEO also increases his/her bonus. The managerial power of the CEO on M&A decisions seems to explain most of the cross-sectional variation in the bonuses. Interestingly, the data points out that managerial power explains much more of the bonus than effort and performance. Their findings

are consistent with previous findings of CEO power being a significant driver of CEO compensation (Bebchuk et al., 2002). They conclude that even if the direct costs of the CEO bonuses seem small, the potential indirect costs to shareholders can be significant.

Faulkner and Yang (2010) studied variation in management compensation in the US. Their study finds that in addition to the industry and company size of peers, the compensation in peer firms also affects the amounts paid in the firm that uses peers to set their compensation. Compensation in peer firms especially affects the compensation in companies where the CEO of the firm is also the chairman of the board, the industry is very concentrated, and the firm is large (Faulkner and Yang, 2010). Faulkner and Yang (2010) also add that even after the law changes around transparency, the Securities and Exchange Commission had to demand more information on the transparency of compensation from 300 companies in the US. These findings on the transparency and agency problems with CEO compensation seem to be in line with previously cited studies on agency problems.

The agency problem reasons of public companies may also be one of the reasons why on average, private equity funds purchasing companies, tend to outperform public companies as acquirers (Bargeron et al., 2008). Literature, like the previously cited study by Renneboog et al. (2007) on public-to-private (PTP) transactions seems to correlate with the findings of this chapter. If the public organizations were running efficiently, how would the private equity funds create value by taking them private? While the problem has multiple answers, fixing the bloated compensation of the public company's management may often be a good start for the funds to seek out value. Interestingly, the same study by Bargeron et al. (2008) finds that private equity firms also pay less premiums on average for their acquisitions compared to public firms. This finding is studied more in chapter seven.

# 3 Studies on M&As in previous literature

In this segment, previous studies on value creation are addressed. According by Goedhart et al. (2020) one-third of acquisitions created value, one-third did not, and the results of the last third were inconclusive. This chapter tries to understand why that is.

## 3.1 Acquirers receive less value

According to empirical research, in large acquisitions two-thirds or more of the value created from a transaction goes to the selling company's shareholders (Goedhart et al., 2020). This means that according to the evidence, buyers in large deals only get one-third of the benefits. This is because the seller usually gets the gains (Goedhart et al., 2020). The reason for this seems to lie mostly in the premiums paid for acquisitions. If we apply the principle of value conservation mentioned in the theory of corporate finance chapter, we understand that to gain any value from an acquisition the value of the acquisition target needs to increase more than the amount of paid premiums and other costs. Studies point out that high premiums often equal negative returns when the deal is announced (Sirower, 1997). In figure 1 below, there are data from some transactions, where the high premiums ended up being worth it for the acquirer through value increases on the target (Goedhart et al., 2020).

**Selected Acquisitions: Significant Improvements**

%

| | Year | Value of improvements relative to target value[1] | Premium paid | Net value created relative to price[2] |
|---|---|---|---|---|
| Abbott Labs/Alere | 2016 | 45–55 | 35 | 10–20 |
| Tesoro/Western Refining | 2016 | 45–55 | 35 | 10–20 |
| RF Micro Devices/Triquint Semiconductor | 2014 | 60–70 | 10 | 50–60 |
| InBev/Anheuser-Busch | 2008 | 35–45 | 20 | 15–25 |
| Henkel/National Starch | 2007 | 60–90 | 55 | 5–25 |
| Kellogg/Keebler | 2000 | 45–70 | 15 | 30–50 |
| PepsiCo/Quaker Oats | 2000 | 35–55 | 10 | 25–40 |
| Clorox/First Brands | 1998 | 70–105 | 60 | 5–25 |

[1] Present value of announced performance improvements divided by target value.
[2] Net value created from acquisition divided by purchase price.

**Figure 1.** Selected Acquisitions: Significant Improvements (Goedhart et al., 2020, p. 588)

### 3.2 Pre-merger value drivers

Mitchell and Stafford (2000) have findings on acquirer underperformance. They find that on average acquiring companies destroy stock owner wealth by five percent compared to similar companies that don't partake in acquisitions. According to studies by Moeller et al. (2003), large acquisitions usually end up losing shareholder value. In the study, Moeller et al. (2003) find empirical evidence that large transactions lower the acquirer's stock price by 1 to 3 percent after the announcement. The study was conducted by examining over 12,000 acquisitions made by public firms between 1980 and 2001. In total, the shareholders lost around 218 billion dollars in market capitalization. The data also suggests that for some reason after the year 1997 losses associated with M&A announcements became larger. After the year 1997, a distinct merger wave can be perceived, which may have been a critical factor in M&A announcement losses for the acquirers. Fich et al. (2017) study the acquisition targets of large companies. In their study, they find that even large companies manage to produce more value when they buy smaller companies. This seems to go in hand with the findings of Goedhart et al. (2020) that big acquisitions on average do not create value for the acquirer's shareholders.

Goedhart et al. (2020) looks at data and pinpoint four value factors that differentiate successful large transactions. The research focuses on the acquirer's perspective. In companies where both the share price and earnings grew faster than the average in the industry for three consecutive years, the stock moves from the announcement of the acquisition were on average positive. Sirower (1997) finds that according to data, paying high premiums for a deal leads to a negative value. This indicates that even in large and important acquisitions, overpaying is hard to justify. Morck et al. (1992) find that on average, there exists a negative correlation between the number of bidders and acquirer stock returns. This finding supports the previous factor of low transaction premiums being beneficial for success. The last factor for large acquisition success is that on average, acquisitions of private companies seem to do

better. This finding also includes subsidiaries of large companies (Goedhart et al., 2020).

### 3.3 Post-deal implementation phase

Dionne (1988) lists a few guidelines for successful M&As. These factors include several concerning the post-deal phase. First which is to plan the integration carefully before even closing the deal. The idea here is to address possible disagreements as soon as possible. Another guideline for the post-deal phase is to meld the teams. Dionne (1988) also highlights the importance of maintaining surveillance and support after the deal is done. According to Dionne, there's a relevant possibility of the acquiring company just forgetting about the acquisition and losing focus on the long-term unification of operations.

Franks et al. (1991) find that the poor performance realized after an M&A transaction would be due to benchmark errors. Franks et al. (1991) do not find support for the argument of consistent mispricing at the time of the takeovers. Agrawal et al. (1992) find a statistically significant wealth loss of about 10% over the five years following the merger completion. This finding comes after they have taken into calculation the changes in beta. The authors conclude that the market anomaly of negative post-merger returns exists.

Implementation of calculated M&A value seems to be hard in practice. In the post-deal phase, the calculated cost savings, synergies, and other benefits need to be obtained (Haspeslagh & Jemison, 1991). Faulkner et al. (2012) have two key conclusions from their studies on M&A post-deal implementation. They find that integration is usually the most challenging phase of the M&A process, but simultaneously one where the management often seems to lack focus. Faulkner. et al (2012) highlight that obtained value is a result of the whole M&A process, not just the outcome of the acquisition phase or the implementation phase, but rather the outcome of both.

### 3.4 Does company size affect M&A success?

Most literature on the M&A topic focuses on public companies because more data is available. And while there are listed companies with smaller market capitalizations, many smaller companies are private. For this reason, a considerable amount of M&A data on small companies is from the perspective of small companies being the target for a larger company's acquisition. This finding is backed by a study by Schlingemann, and Stulz (2003), which finds that despite the way to finance the deal, smaller firms on average had 1.55% bigger acquisition gains than large companies. The results are the same for both private and public targets, meaning that the company form didn't affect the results.

Literature on M&A returns shows that on average smaller firms tend to get higher returns, even as acquirers (DePamphilis, 2018). The reasons that make smaller companies derive more value than large companies on average, are almost the same reasons that destroy value in large companies' transactions. According to DePamphilis (2018), the reasons include management compensation that encourages wrong things in large companies, larger ownership by management in smaller companies, and overconfidence of the management in big companies DePamphilis (2018) finds that the larger size of a company seems to have benefits in countries with bad laws and courts from the shareholder's perspective. In this kind of developing countries, research shows that larger companies seem to be better at dealing with corrupt governments due to reasons like prestige, size, and influence (DePamphilis, 2018).

Out of over 12,000 acquisitions by public firms studied by Moeller et al. (2003), evidence shows that firms with a small market capitalization gained a total of $8 billion while the large firms lost a total of $226 billion in a total of the 12,000 transactions studied. They studied cross-sectional variation in the announcement returns and found that the firms with smaller market capitalizations gain consistently more returns on average compared to large companies when it comes to M&A announcements. Also, Goedhart et al. (2020) has the same findings, though they conclude that most of the studies – like the one cited

earlier – use stock market data from a short period before and after the merger announcement as their main source.

# 4 Previous literature on merger waves

Global merger activity tends to go in waves. Definition of M&A waves is that they are periods when M&A activity is very intense (Faulkner et al., 2012). Merger waves also have a clear effect on the prices paid during a merger. According to Maksimovic et al. (2013), public firms achieve better acquisition gains in productivity during clear merger waves. This is a weird finding, because at first glance it doesn't make sense that buying when others are buying (and prices are very high) isn't supposed to generally create more value. The only way this finding truly makes sense is if the acquirers' own equity is even more "overpriced" than the targets. This reasoning goes completely against the efficient market hypothesis and possibly frames merger waves as either some kind of bubble symptom or even a bubble indicator. Maksimovic et al. (2013) find strong evidence that public firms are more likely to participate in mergers in general, but even more so during a clear merger wave. Alexandridis et al. (2012) find that during the fifth merger wave (1993-2000), managers bid more than previously, which in some cases led to overpaying. The implications of overpaying for an acquisition can be very problematic for acquirers' value creation.


**Figure 2.** Value and the number of Mergers and Acquisitions Worldwide (The Institute for Mergers, Acquisitions and Alliances, 2021)

Evidence points out that the force behind M&A waves is usually a generally positive economic outlook (Whitaker, 2016). M&A deal activity depends on factors like the state of the financial markets, GDP growth rate, and market demand (Whitaker, 2016). The level of profits and amount of excess cash for companies also influences merger activity. The line chart above (IMAA, 2021) shows the value of global M&As from 1985 to May 4th, 2021. From the chart, we can quickly notice that the biggest jumps in global deal values tend to be during stock market bubbles. First, one was the dot-com bubble in the late 1990s. Almost right after the bubble burst, the global M&A transaction value came crashing down. The interesting thing to note is that when the deal volume came from over $4000 billion to under $2000 billion the number of M&A transactions didn't drop as much in comparison. The number of deals made came from around 40,000 transactions to a little under 30,000 transactions, but the change itself was distinctly smaller. Similar findings can be made from the time of the financial crisis in 2007-2009.

Maksimovic et al. (2013) argues that mergers that occur during a merger wave usually indeed have increased efficiency improvements compared to the ones that occur outside of a clear merger wave. This is also consistent with other findings of stock liquidity and good credit ratings increasing the likeliness that a firm partakes in a merger. The study by Maksimovic et al. (2013) concludes that they can't prove that the efficiency gains for shareholders surpass the premiums paid on such deals during a stock market boom where prices can be high.

According to Whitaker (2016) timing of a transaction has a direct impact on the negotiation and pricing of the deal. In his survey, 115 M&A professionals said that the share price and valuation of the acquisition target are the most important value factors in a deal. Whitaker (2016) highlights that even the long-term effects of merger waves should be taken into consideration in M&As. He finds that opportunistic management sometimes considers short-term effects on merger waves, but way too rarely thinks about the long-term effects on the value.

### 4.1 Opportunism of the management

The puzzle of why merger waves happen is important, because of the previously mentioned implications for value creation. There are many reasons for merger waves. Becketti (1986) found that positive GDP growth is associated with merger waves. In this chapter, I will look at the evidence for the opportunism of the management in acquisition decisions. Shleifer and Vishny (2003) studied M&As and stock market valuations from a behavioral finance perspective. Their findings point out that there's a strong incentive for the management to get the stock overvalued so that they can make acquisitions with it. This points out that at least partly, the reason behind merger waves could be opportunism when the stock price is high. Also, the previously used line graph points out that merger activity is often high during a stock market boom.

In most of the literature studying the reasons for merger waves, there are four common explanations for them (Harford, 2003). The first of the explanations is the neo-classical hypothesis. The neoclassical hypothesis argues that M&As are a way of responding to shocks in different industries through reorganization. This industrial reorganization is then thought to create a clustering of M&A activity (Harford, 2003). The shocks can be either macro-environmental or industry-related shocks (Faulkner et al., 2012).

#### 4.1.1 The Q-theory

The paper "The Q-Theory of Mergers" by Jovanovic and Rousseau (2002) presents an extension of the Q-theory of investment and extends it to the M&A world. Jovanovic & Rousseau (2002) find that Q-ratio, which measures the market value of a company relative to the cost of replacing its capital, significantly influences enterprises' decision-making about M&A activities.

The corporations with higher Q-ratios are more inclined to acquire companies with lower Q-ratios, indicating that mergers are used to redirect funds towards more effective ob-

jectives. According to Jovanovic and Rousseau (2002), the correlation between M&A investments and the Q-ratio is approximately 2.6 times stronger. The heightened sensitivity arises from the inherent nature of M&A investments, which often entail substantial fixed costs but minimal marginal adjustment costs (Jovanovic & Rousseau, 2002).

The paper investigates previous times characterized by heightened merger activity, analyzing them through the lens of the Q-theory paradigm. The study finds that most merger waves, especially those that took place in the 1900s, 1920s, 1980s, and 1990s, align with periods of favorable prospects for reallocating resources. The paper by Jovanovic & Rousseau (2002) provides evidence that mergers and acquisitions are driven by economic efficiencies. However, the merger wave that took place in the 1960s is regarded as an anomaly, potentially impacted by other factors that are not considered in this theory (Jovanovic & Rousseau, 2002).

The paper by Jovanovic & Rousseau (2002) presents empirical evidence that supports the predictions stated by the Q-theory. The authors demonstrate a link between a higher variation in Q values among businesses and a higher frequency of mergers. This implies that mergers are not random occurrences, but rather motivated by the potential economic value and efficiency benefits they might offer. In their 2012 paper Gugler et al. have continued on the studies by Jovanovic & Rousseau (2002). According to the paper, merger waves pattern is the result of an underlying technological shock that has an effect on the entire economy, raising stock prices and, consequently Tobin's Qs (Gugler et al., 2012). According to the paper, because the technological shock is predicted to have a significant impact on the overall economy, mergers should be more beneficial for both publicly traded and privately held businesses. There is no reason to anticipate that unlisted firms would fail to react to a significant event that made mergers more profitable, even though they typically participate in less merger activity than listed companies. (Gugler et al., 2012).

### 4.1.2 Behavioral theory and managerial discretion theory

Both Harford (2003) and Gugler et al. (2012) present similar theories using different terminologies to explain managerial behavior as reasoning for mergers and acquisitions and merger waves. Harford uses the term behavioral model. Gugler et al. (2012) use a term managerial discretion theory. The idea of both of them is that when management of a company believes that the stock of their company is priced higher than its actual value, they may consider it advantageous for the shareholders to use this overvaluation in stock-for-stock transactions.

Gugler et al. (2012) explain that managers have more freedom to pursue expansion through mergers when market optimism is strong. During periods of a thriving stock market, mergers that would often result in substantial declines in the acquiring company's stock price are seen more favorably. Therefore, when market sentiment becomes more positive, there is a corresponding increase in the number of overvalued companies engaging in mergers, reflecting the same opportunistic conduct emphasized by Harford (2003). Both studies use different names to highlight the inclination of managers to take advantage of advantageous market conditions to engage in mergers. For the sake of this paper, both of these theories are referred to as behavioral theories. The behavioral theory is the main theory studied in this paper.

# 5 Data and methodology

This chapter provides an overview of the data utilized in this research and the methodologies employed for data collection. Furthermore, it offers more detailed insights into sample selection and screening procedures. The transaction data utilized in this study was acquired through Refinitiv Eikon database. The data spans from 2005 to 2022 and encompasses transactions from the European markets.

## 5.1 Data

As data factors in the model, the Euribor rate is utilized. As previously shown in the chapter about merger waves with the Federal funds rate, Euribor is used as a proxy for the general interest rate level inside Europe. Obviously, the financing costs and access to capital vary greatly between industries and companies. In this study, this doesn't affect the results negatively, because the idea is to see how general interest rate levels affect the amount of M&As especially M&As financed with debt.

As a proxy for stock market levels in Europe this paper uses Eurostoxx 600 Index. The study has index data of 17 years. Eurostoxx was chosen because it has fairly good weighting when it comes to Euro countries. Obviously, the Eurostoxx 600 has different weights for different countries according to which countries have the most companies with big market capitalizations. It is also to be noted that the index includes stocks listed in different currencies, which may cause a little skewness in the data. One thing to be noted about the study is that Eurostoxx also includes UK companies and through that UK Sterling currency factor.

The third type of data used in the study is M&A transaction data. Also derived from the Refinitiv database, multiple types of M&A data are used for the results to be considered justifiable. The paper looks at M&A volumes throughout the timeframe. Also, datasets of M&A average deal sizes are analyzed. M&A data includes only acquirers as the dataset is extensive as it is without acquired companies.

## 5.2 Methodology

Since the main question of this paper is to find out whether managements of European companies conduct M&As opportunistically, adjusting their inorganic growth strategies for stock overvaluations or cheap interest levels. We'll first start by pulling data of M&A transactions in Europe with a specific filter explained in the following chapter. After that the datasets from 2005 to 2022 on interest rate levels and general stock market levels is taken. After that, the data of control variables Euro area CPI and Dax volatility are collected. When all the time series datasets exist they are compared to each other. The key idea is to conduct two different regressions. One for M&A average deal volumes, average deal size, and stock market levels. Another one for M&A average deal values, average deal size, and stock market levels.

## 5.3 Screening the data

The sample for the study includes 1963 M&A transactions, that have been concluded in the Euro area (including UK) during the time period of 2005-2022. As mentioned previously the data chosen for the study includes acquirers only. For practical purposes, the data has been curated to be more well-suited for the study. Below are the criteria.

1. The acquirer is located in Europe.
2. Acquirer is stock listed.
3. Acquirer has been listed long enough for stock data.
4. Acquisition amount needs to be known.
5. The acquirer must own a majority stake after the transaction.
6. The deal must have been finished, not just announced.
7. Deal value needs to be somewhat significant (at least 1 million).
8. The date of the transaction must be between years 2005-2022.
9. The transaction must be financed either by stock or by debt.

10. The acquired company is located in Europe

Due to the previously mentioned filters on data, the final data sample is considerably smaller than the original one. This doesn't necessarily matter because it makes the final study a little more practical to conduct. These confines also make the results from the study more relevant to the general content of the study. Below we can see the descriptive statistics for the original raw data exported from Eikon Refinitiv.

**Table 1.** M&A data descriptive statistics (Refinitiv)

| Descriptive statistics | |
|---|---|
| | *Deal Value ($)* |
| **Mean** | 1281,17 |
| **Standard Error** | 148,08 |
| **Median** | 102,66 |
| **Mode** | 100,00 |
| **Standard Deviation** | 6560,98 |
| **Sample Variance** | 43046413,01 |
| **Kurtosis** | 237,48 |
| **Skewness** | 13,70 |
| **Range** | 145073,19 |
| **Minimum** | 1,00 |
| **Maximum** | 145074,19 |
| **Sum** | 2514935,01 |
| **Count** | 1963,00 |

From the statistics of the raw data, we can see the total number of observations. Due to most of the M&A raw data being written data, the descriptive statistics above is sufficient to show the full length of it. The raw data file includes multiple rows for things such as target macro industry, target nation and target industry, which are important for the screening reasons, but unnecessary for the study.

As M&A deals are a random occurrence, one of the biggest problems for the conducting of the study and regressions is how to change the data on M&As that have happened on random days to fit into continuity of stock index and rates data. Various approaches were considered. The use of monthly data is the most common way of showing data in interest rate markets and normal in stock markets, especially on the index level. Since macro variables are used as control variables and they are often also reported as monthly data,

this study chose to transform random M&A data into monthly data. This means that the data of M&As that had happened on random days had to be adjusted to month-level data. This was done by sorting the M&A realized deal values per month into monthly averages.

### 5.4 Descriptive statistics

This chapter provides an overview of the descriptive statistical measures regarding the monthly average transaction size, the monthly deal volume, the Euribor rate and the levels of the Eurostoxx 600 index. The M&A deal volume data, shown in descriptive statistics, indicates the number of deals done per month. This data was included in the descriptive statistics to make the deal value averages easier to understand. It is to be noted that the table below includes the final monthly data used for the study starting from January 2005 and ending in December 2022. Due to this, the count of the data is same as it pertains to the number of months.

**Table 2.** Deal size, volume, Euribor, Eurostoxx600 and V1XI descriptive statistics (Refinitiv)

| Descriptive statistics | | | | | |
|---|---|---|---|---|---|
| | *Monthly average deal size ($)* | *Deal volume monthly* | *Euribor rate* | *Eurostoxx 600* | *V1XI* |
| **Mean** | 1946,66 | 5,94 | 0,93 | 333,88 | 22,03 |
| **Standard Error** | 707,23 | 0,25 | 0,11 | 4,52 | 0,53 |
| **Median** | 435,87 | 5,00 | 0,22 | 342,03 | 19,64 |
| **Mode** | 0,00 | 5,00 | -0,33 | 286,60 | 17,59 |
| **Standard Deviation** | 10394,17 | 3,64 | 1,60 | 66,46 | 7,82 |
| **Sample Variance** | 108038812,17 | 13,24 | 2,57 | 4417,03 | 61,09 |
| **Kurtosis** | 169,77 | 0,74 | 0,37 | -0,57 | 5,23 |
| **Skewness** | 12,52 | 0,89 | 1,23 | -0,10 | 1,87 |
| **Range** | 145074,19 | 18,00 | 5,70 | 315,57 | 53,22 |
| **Minimum** | 0,00 | 0,00 | -0,58 | 172,71 | 11,46 |
| **Maximum** | 145074,19 | 18,00 | 5,11 | 488,28 | 64,68 |
| **Sum** | 420478,18 | 1284,00 | 200,24 | 72117,93 | 4757,99 |
| **Count** | 216,00 | 216,00 | 216,00 | 216,00 | 216,00 |

The monthly average deal size dataset has a significant standard deviation of $10 394,17, which is to be expected in data with a low monthly volume that is calculated as an average. The mean for monthly deal size is $1 946,66. The significant variation observed suggests a broad range of deal sizes, which reflects the diverse nature of the M&A market

where deals vary greatly in magnitude. The median deal size, at $435,87, is notably smaller than the mean, which explains the data better. The observed disparity suggests the presence of a distribution that is positively skewed, as evidenced by a skewness score of 12,52. This level of skewness indicates that the majority of M&A transactions are smaller deals, while a small number of large transactions are causing the average to increase. A Kurtosis value of 169,77 indicates a distribution that is highly peaked with thick tails, implying a strong probability of outlier transactions that are considerably greater than the mean.

The market has moderate activity, as seen by a mean monthly deal volume of $5,94 billion. The tiny standard error of the mean of 0.25 suggests that the sample mean is expected to be in close proximity to the population mean, assuring the sample's representativeness. The median value of 5 indicates that the prevailing number of monthly deals is rather low, so supporting the notion of a market characterized by a significant prevalence of smaller transactions rather than a market predominantly influenced by larger transactions.

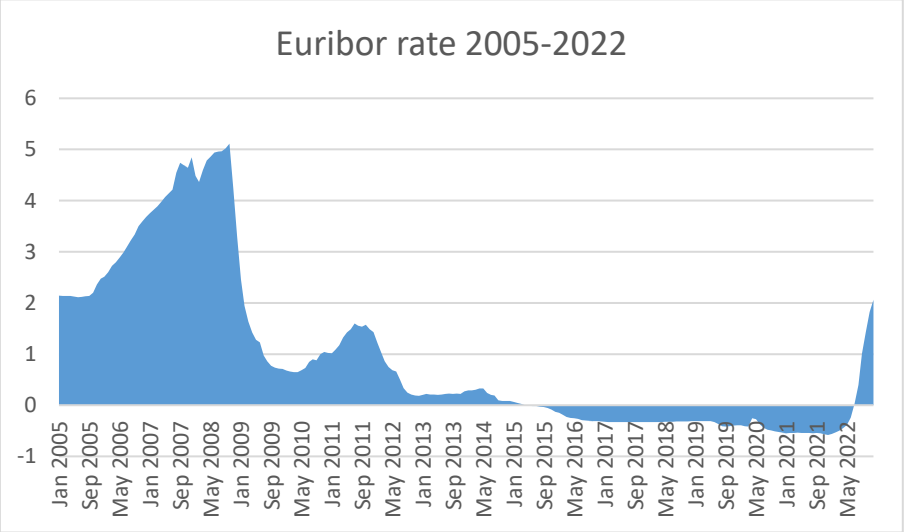


**Figure 3.** Euribor rate level 2005-2022

The average ECB Euribor interest rate is 0,93, accompanied by a standard deviation of 1,60, suggesting a degree of fluctuation in the rates observed over the examined

timeframe. The presence of a negative skewness value of -0,33 suggests that interest rates tend to be commonly observed below the mean, which can also be seen on the figure 3 presented above. The figure shows the interest rate throughout the study period. The characteristics of the interest data being either negative or very low, may have the potential to encourage borrowing and stimulate merger and acquisition (M&A) activity, as lower interest rates generally result in reduced costs associated with financing.

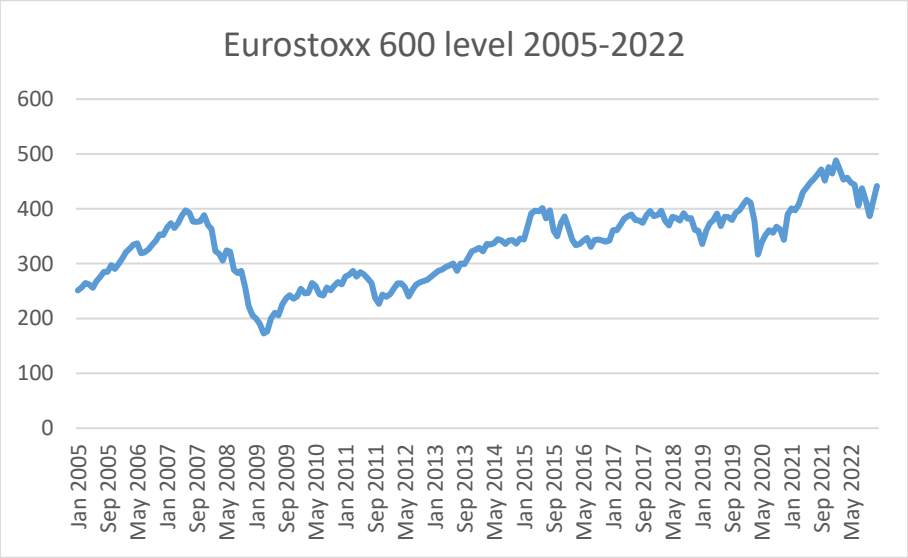


**Figure 4.** Eurostoxx600 level 2005-2022

The mean level of the Eurostoxx 600 data is 333,88, and its standard deviation is quite low at 66,46 in comparison to the mean. The index exhibits a lot less variability than the M&A deal sizes. The presence of a minor negative skewness of -0,10 and a kurtosis of -0,57 suggests that the distribution of index values is rather normal. In the figure 4 above, the full trend of the Eurostoxx 600 from 2005 to 2022 can be seen.

The time series regression calculated in this paper has two control variables. Control variables are employed to see the impact of other factors that may affect the correlation between the independent variables and the dependent variable (Atinc at al. 2011). By incorporating the control variables, the calculation can separate the impact of the independent variable of interest, ensuring that the observed effects are not attributable to

any other unobserved variables. These two variables in this paper are Euro area CPI and implicit volatility of the DAX Index.

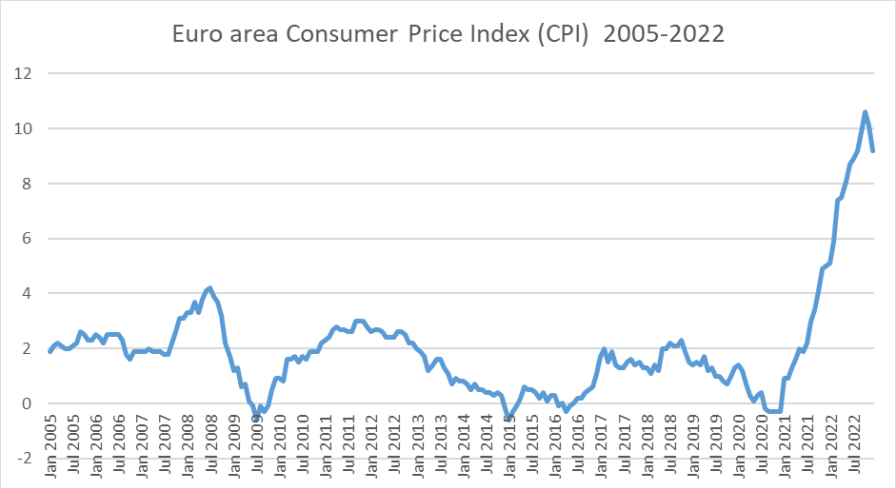


**Figure 5.** Euro area CPI 2005-2022

Euro area Consumer Price Index (CPI) was chosen to control the regression for inflation in the Euro area. CPI quantifies the fluctuation in the cost of goods and services as perceived by consumers. The Fisher Effect is an economic hypothesis that highlights the correlation between inflation and both real and nominal interest rates. The Fisher Effect explains that the actual interest rate is equal to the nominal interest rate minus the anticipated inflation rate. Consequently, when inflation rises, real interest rates decline, unless nominal rates also rise proportionally to inflation (Fisher, 1907). Because of its properties as a general inflation gauge, CPI was chosen as a control variable. By controlling CPI, this study can isolate the effect of other variables on the dependent variable more cleanly, without the confounding influence of inflation. The figure 5 above shows the levels of CPI between 2005 and 2022.

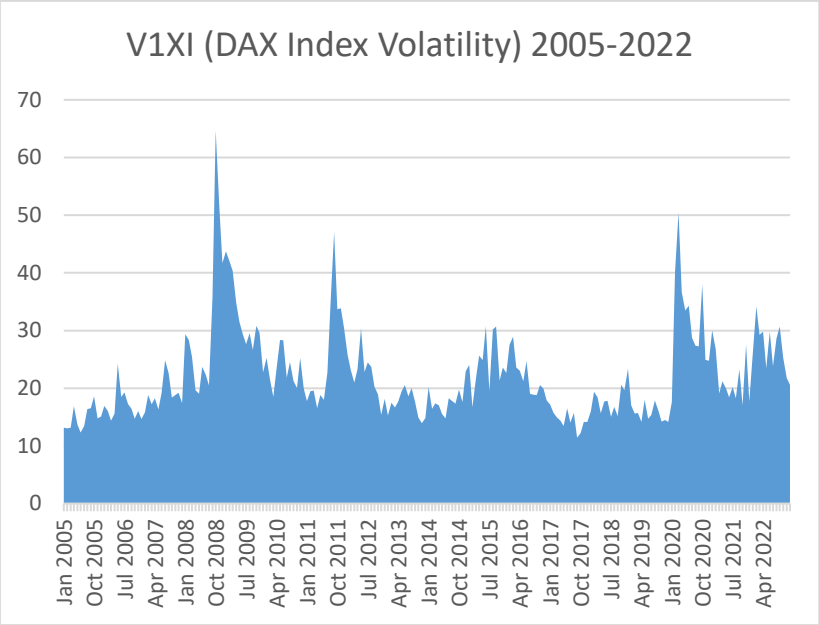


**Figure 6.** V1XI Index 2005-2022

The second control variable used is V1XI index. The V1XI (previously known as VDAX) index, also known as the DAX Volatility Index, quantifies the market's anticipation of the 30-day volatility of the DAX index. The DAX index comprises the 30 prominent German firms that are listed and traded on the Frankfurt Stock Exchange. Essentially, it measures the expected level of volatility by examining the values of DAX options that expire in the near future. Due to its properties as a proxy for stock market fear, V1XI indicates the anticipated level of uncertainty in the market by measuring the expected volatility of the DAX index in the upcoming period. If the Dax volatility increases, it signifies that investors anticipate higher levels of volatility. The historical levels of V1XI can be perceived in the figure 6 above.

By controlling implicit volatility, the regression model can provide a more nuanced view of how independence affects the dependent variable, across different states of market sentiment and volatility. General market fear could also affect the average deal value and volume of monthly realized M&As, which is why it is good to be tested for. If market fear influences both the dependent variable and the Eurostoxx 600 returns, running the re-

gression without it could lead to omitted-variable bias (OVB). In this way including volatility helps to adjust for OVB, leading to more accurate and reliable regression estimates. Reducing OVB, which is a form of endogeneity makes the causal claims more reliable (Wilms et al., 2021).

### 5.5 Limitations of the data and methodology

Due to transparency reasons, this chapter lists the limitations of the data and methodology chosen. This is important for future studies to better find possible research gaps, develop new methodologies, and continue the work of this paper. The first obvious limit of the paper is its geographical location. M&As happen around the world for various different reasons. This paper studies one continent and focuses on one of the many theories for merger waves called the behavioral theory. To analyze hubris, the paper looks at how average deal values related to Eurostoxx600 levels and Euribor rates. Naturally, this method makes the results very much headline numbers in the sense that results don't include company-level data.

As with any study method, the OLS has its problems as well. OLS regression's results are also very much dependent on the quality of control variables. The choice of control variables isn't simple either. Almost all data that is relevant for M&A deal values also affects Eurostoxx 600 in some capacity. Control variables can have a small correlation, but multicollinearity poses risks of interpretation challenges and statistical issues.

As the data for this study is sorted through a specific method, the ostensible number of observations for the paper looks much smaller than it is. The raw data of the paper includes over 1963 M&As as stated earlier. As other data used was monthly data, the daily M&A deal data was converted into monthly data through calculation of monthly averages. Due to mathematical formula of average and high variance of M&A deal volume between the months, the results are mainly directive. The average M&A deal value per month can be skewed by exceptionally high or low deal values included in the data. However, this doesn't derogate the study results as the randomness equals out over the study

period when the data regresses to the mean. This is just something good to acknowledge, when looking at the results.

# 6 Empirical research

The empirical research part of the study conducts two different regressions. One is conducted for the average monthly M&A deal value as the dependent variable. The other one uses the average M&A monthly volume as the dependent variable. The independent variables and control variables are the same in both models. The formula below demonstrates the regression model.

$$r = \beta_0 + \beta_1 Stoxx600 + \beta_2 Euribor + \beta_3 CPI + \beta_4 V1XI$$

R = is dependent variable, represents monthly average deal size in regression one and average monthly deal volume in regression two.
B0 = The Intercept
B1= is independent variable which represents Eurostoxx 600
B2= is independent variable which represents Euribor
B3= is a control variable which represents Euro area CPI
B4= is the second control variable which represents V1X1 (DAX IV)

R in the model represents the dependent variable. Due to the nature of this study, the dependent variable is either the average M&A deal value or the average deal volume depending on the model. β0 is the intercept of regression. β1 and β2 are the coefficients for the independent variables, which measure the change in the average deal size associated with a one-unit change in each respective variable, holding all other variables constant. β3 and β4 are the control variables of the paper.

Independent variables chosen for the paper are Eurostoxx 600 and Euribor rate. These are then studied against the dependent variables in two different time series regressions. The control variables chosen are Euro area CPI and V1XI. CPI and V1XI were chosen as the control variables because they are relevant to the experiment and capable of influencing the dependent variable. CPI and V1XI remain consistent, quantifiable, precise, and stable over the study period experiment.

**Table 3.** Variable description

| Variable | Predicted result (+ or -) | Variable description | Data source |
|---|---|---|---|
| Average deal value ($) | | Calculated average on realised deals per month | Refinitv |
| Average deal volume | | Calculated amount of realised deals per month | Refinitiv |
| Eurostoxx600 | + | Month over month (M/M) change | Yahoo Finance |
| Euribor rate | - | Rate | European Central Bank |
| Euro area CPI | + | Monthly headline CPI | European Central Bank |
| VX1I (DAX IV) | - | Monthly VX1I level | Yahoo Finance |

Table three presents a comprehensive summary of different regression variables, their projected outcomes, descriptions, and sources of data. The average deal value and average deal volume are calculated metrics that reflect the average value and volume of completed M&As every month. Calculations are based on the raw data sourced from Refinitiv, which is described at length in the earlier chapter. The Eurostoxx600, which is derived from Yahoo Finance, represents the month-over-month change and is expected to yield a favorable outcome.

In line with the hypothesis $\mathrm{H}_3$ of the paper and according to previously cited literature higher Euribor rate is anticipated to have a negative influence on the dependent variables in both of the regressions. In line with $\mathrm{H}_2$ and the literature review presented, the expected outcome is that Eurostoxx600 will have an impact on both of the regression models. The expected results are that the relationship between the dependent variable and Eurostoxx600 is positive in both studies.

The Euro area CPI is projected to have a positive impact on the average deal values and volumes as inflation can be seen as a proxy for the growth stage of an economic cycle (Ross, 2024). Finally, the VIX1 is expected to have a negative outcome, as the volatility of Dax is commonly used as a fear gauge, meaning that a higher VIX1 would imply higher market fear and thus fewer and smaller deals.

### 6.1 Unit root tests

The Augmented Dickey-Fuller (ADF) test is a statistical test designed to detect the existence of a unit root in a sample of time series data. A unit root's existence signifies non-stationarity, making the ADF test an approach for assessing the stationarity of economic and financial time series. ADF test method employs an autoregressive model and optimizes a methodology for larger and more intricate data sets. The null hypothesis of the ADF test posits that the time series possesses a unit root, indicating its non-stationarity. The alternative hypothesis posits that the time series is devoid of a unit root. For the purposes of time series regression used in this paper, ADF test is conducted on the data series to test the stationarity.

In the table four below, the results of the ADF test are visible. The p-values of average deal value and volume are equal to zero, and the t-statistics are far below the critical values at all levels of significance (1%, 5%, and 10%). This suggests that both the average deal value and volume remain constant at their respective levels. The p-values for Eurostoxx600 and Euribor are 0.581 and 0.393. The t-statistics for the independent variables of the study do not fall below the crucial values. This indicates that these series exhibit non-stationarity on their levels. The p-value of the first control variable CPI is 0.005. CPI's t-statistic is statistically significant at the 5% and 10% levels, but not at the 1% level. The p-value of the second control variable of the paper is 0. The t-statistic for V1XI is well below the threshold values, suggesting that the series is stationary at its level.

**Table 4.** Augmented Dickey-Fuller test

**Level**

| | Prob. | t-stat | 1 % | 5 % | 10 % |
|---|---|---|---|---|---|
| **Average deal value** | 0 | -14.783 | -3.460 | -2.874 | -2.573 |
| **Average deal volume** | 0 | -5.444 | -3.460 | -2.874 | -2.573 |
| **STOXX 600** | 0.581 | -1.401 | -3.460 | -2.874 | -2.573 |
| **Euribor rate** | 0.393 | -1.772 | -3.460 | -2.874 | -2.573 |
| **Eu CPI** | 0.005 | -3.684 | -3.461 | -2.875 | -2.574 |
| **V1XI (Dax IV)** | 0 | -5.152 | -3.460 | -2.874 | -2.573 |

**1st dif.**

| | Prob. | t-stat | 1 % | 5 % | 10 % |
|---|---|---|---|---|---|
| **Average deal value** | 0 | -13.252 | -3.461 | -2.874 | -2.574 |
| **Average deal volume** | 0 | -9.907 | -3.461 | -2.875 | -2.574 |
| **STOXX 600** | 0 | -13.869 | -3.460 | -2.874 | -2.573 |
| **Euribor rate** | 0 | -5.335 | -3.460 | -2.874 | -2.573 |
| **Eu CPI** | 0 | -6.874 | -3.461 | -2.874 | -2.573 |
| **V1XI (Dax IV)** | 0 | -13.336 | -3.461 | -2.874 | -2.573 |

The first difference in the ADF test is in the utilization of differencing to convert a non-stationary time series into a stationary one. By utilizing the ADF test on the initial difference, we ascertain the stationarity of the differenced series. All variables have p-values of zero, and the t-statistics are much lower than the critical values at all levels of significance (1%, 5%, and 10%). This suggests that all the variables exhibit stationarity when their first differences are considered. The values are well below the critical limits, suggesting that the series is stationary at its current level. As the ADF test statistic results are significantly negative and level the p-value is below a set significance, we can confidently reject the null hypothesis of a unit root as this would indicate that the first differenced series is stationary.

## 6.2 Correlations

A correlation matrix is a tool used to summarize the associations between different variables in a dataset. Strength and direction of correlations can be studied by computing the Pearson correlation coefficients for each variable pair. This initial understanding is extremely essential as it helps in determining which variables are likely to be significant

predictors in a regression model and to understand fundamental structure of the data used in this paper. Below in table 5 is the correlation matrix of the datasets used in the paper.

**Table 5**. Correlation matrix

| | Average deal value ($) | Average deal volume | Eurostoxx600 | Euribor rate | Euro area CPI | VX1I (DAX IV) |
|---|---|---|---|---|---|---|
| Average deal value ($) | 1 | -0.035 | 0.076 | 0.029 | 0.262 | 0.016 |
| Average deal volume | -0.035 | 1 | -0.194 | 0.505 | -0.035 | -0.123 |
| Eurostoxx600 | 0.076 | -0.194 | 1 | -0.316 | 0.269 | -0.239 |
| Euribor rate | 0.029 | 0.505 | -0.316 | 1 | 0.233 | 1.104 |
| Euro area CPI | 0.262 | -0.035 | 0.269 | 0.233 | 1 | 0.070 |
| VX1I (DAX IV) | 0.016 | -0.123 | -0.239 | 0.104 | 0.070 | 1 |

The correlation coefficient of -0,035 suggests a very weak inverse relationship between deal value and volume, indicating that larger deals do not necessarily occur more frequently. Average deal value and Euro area CPI have moderate positive correlation of 0,262, suggesting some degree of linear relationship. Eurostoxx600 and average deal volume have a moderate negative correlation (-0,194), indicating that as one increases, the other tends to decrease. Interestingly, Euribor and average deal volume have a negative correlation of -0,505, showing a significant inverse relationship. Euro area CPI and VIX1 have a negative correlation with average deal volume. As expected Eurostoxx600 has a negative correlation with Euribor rate, slightly positive correlation with CPI and a negative correlation with market fear V1XI.

### 6.3 OLS with average M&A deal value as dependent variable

This part of the paper provides a detailed examination of a regression model that investigates the influence of different financial and economic variables on the dependent variable monthly average deal size. The model incorporates the logarithmic lagged value of the Eurostoxx600, Euribor rate, Euro area CPI, and the V1XI. This model will examine the coefficients and their statistical significance and evaluate the overall model fit. In table 6 below, the results from the study can be seen. P-values range from 0,6226 to 0,9326. This suggests that none of the coefficients exhibit statistical significance at the usual

threshold of p < 0,05. The elevated p-values indicate a lack of evidence to support the claim that these variables have a substantial influence on the monthly average deal size.

**Table 6.** Time series regression monthly average deal size

**Monthly average deal size**
Least Squares time series regression

| Variable | Coefficient | T-statistics |
|---|---|---|
| C | -457,72 | -0,203 |
| Eurostoxx600 | -5599,09 | -0,335 |
| Euribor rate | -221,77 | -0,492 |
| Euro area CPI | 1442,42*** | 3,899 |
| VX1I (DAX IV) | -7,83* | -0,084 |
| Adjusted R-squared | 0,052 | |
| Observations | 214 | |

*The coefficient is statistically significant at 10 percent level
**The coefficient is statistically significant at 5 percent level
***The coefficient is statistically significant at 1 percent level

The model fit statistics offer insights into the explanatory capacity of the regression model. The adjusted R-squared value, which takes into account the number of predictors in the model, is 0,052. The value remains quite low, which hints at the model's limited ability to explain the changes in average deal value.

The F-statistic of the calculation is 3,954 (not included in the table). Generally this statistic holds importance in indicating the overall statistical significance of the model, but the low R-squared values contradict this conclusion. The substantial F-statistic suggests that as a whole, the independent factors have a certain degree of impact on the dependent variable. Nevertheless, the low R-squared values indicate that this influence is negligible and that the model only accounts for a small proportion of the variability in monthly average deal size.

This model is not particularly valuable because it only accounts for a little amount of the variability in the dependent variable. Due to the predictability power of the model being low, the results of the model are discarded. The final result of the regression is that

monthly changes in Eurostoxx600 and Euribor rate do not affect the average deal value of an M&A in dollar terms.

The observed results may be attributed to the calculation method employed, which involved deriving a monthly average. The M&A data sourced from Refinitiv includes a total of 1963 transactions, divided into monthly segments. This segmentation resulted in substantial variability in both average deal sizes and deal values across different months. It is possible that the majority of the variability in average M&A deal size can be ascribed to stochastic factors. The regression model applied demonstrated a poor fit.

### 6.4 OLS with deal volume as dependent variable

The second regression model incorporates the same independent variables and control variables as the first regression. The dependent variable is the average monthly volume of M&A transactions. The regression table 7 below presents the coefficients, t-statistics, significance levels, corrected R-squared, and the number of observations.

**Table 7.** Time series regression monthly average deal volume

**Monthly average deal volume**
Least Squares time series regression

| Variable | Coefficient | T-statistics |
|---|---|---|
| C | 6,652*** | 9,990 |
| Eurostoxx600 | 12,176** | 2,468 |
| Euribor rate | 1,299*** | 9,757 |
| Euro area CPI | -0,27** | -2,473 |
| VX1I (DAX IV) | -0,064** | -2.340 |
| Adjusted R-squared | 0,316 | |
| Observations | 214 | |

*The coefficient is statistically significant at 10 percent level
**The coefficient is statistically significant at 5 percent level
***The coefficient is statistically significant at 1 percent level

The constant term (C) has a coefficient of 6,652, with a t-statistic of 9,990. This indicates statistical significance at the 1% level. The high significance level implies a strong and reliable baseline effect. This implies that even when all independent variables are at zero, the monthly average deal volume is significantly different from zero.

The Eurostoxx600 index has a coefficient of 12,176 and a t-statistic of 2,468, and it is statistically significant at a 5% level. The positive and statistically significant correlation suggests that for every one-unit increase in the Eurostoxx600 monthly change, there is an associated increase of 12,176 units in the average monthly deal volume. This discovery implies that there is a positive connection between improved stock market performance in Eurostoxx600 and increased M&A volumes. This finding is consistent with hypothesis two and thus it is accepted.

The Euribor rate has a coefficient of 1,299 and a t-statistic of 9,757, indicating statistical significance at the 1% level. The presence of a positive and statistically significant correlation would imply that higher short-term interest rates are linked to higher levels of transaction activity. As the Euro area CPI was used as a control variable and it is a negative number, the interest levels' positive effect on M&A volume can’t be explained by higher inflation. Hypothesis Three is accepted. However, the results from the model should be interpreted with caution. The findings go against the notion of management opportunism when the rates are low. This finding could very likely be affected by the general low-interest rate period during the study period as visualized by Figure 3 on page 36 of this study. The study results don’t necessarily point to any kind of opportunism of the management to conduct M&As when the interest rate levels are low. To better test for the interest rate levels' affect on M&A deal volume, future studies should either take a different time period or completely different geographical location. This study doesn’t find markable signs of opportunism.

The coefficient of the Euro area CPI is -0,27 with a t-statistic of -2,473, indicating statistical significance at the 5% level. The inverse correlation indicates that higher inflation

rates are linked to a decline in the monthly average deal volume. Rising inflation can lead to higher expenses and more economic uncertainty, which can discourage the initiation of business transactions.

The VIX1 which has a coefficient of -0,064 and a t-statistic of -2,340, is considered statistically significant at the 5% level. The inverse correlation suggests that an increase in market volatility, which is generally considered a gauge for market fear, is linked to a decrease in the number of transactions. This result clearly shows that market volatility affects the amount of M&As conducted. This is a very important finding as this relates to the idea of management opportunism in the M&A market. Classic corporate finance theories on M&A (Goedhart et al., 2020) state that M&As only add value when they increase future cash flows of the company, meaning either revenue growth or an increase in ROIC. Under this assumption, M&A volumes shouldn't be affected by current market volatility as it is largely irrelevant for fundamental ROIC or growth reasons. This finding could be indicative of possible management opportunism or timing bias in the corporate M&A market. This finding presents an interesting foundation for possible future studies between M&A volumes and implied volatility of the stock market.

# 7 Conclusions & future research

The primary objective of this thesis was to examine the possible managerial opportunism in the European M&A market through merger waves. This study finds that stock market returns, and interest rate levels influence the number of M&A transactions. The results for the hypotheses two and three are clear. Both are accepted. The first regression finds that model fit for the regression remained low, with the adjusted R-squared only at 0,052. Due to the low R-squared and incoherent other findings, the results from the first regression are rejected.

The results indicate a clear relationship between stock market performance, as measured by the Eurostoxx600 index, and M&A volumes. Specifically, higher stock market levels are associated with an increase in M&A activities, supporting the hypothesis that stock market performance influences M&A volumes. This finding is consistent with the idea that elevated stock prices encourage M&A operations, potentially due to management acting opportunistically when market conditions are favourable.

On the other hand, the study found inconclusive results regarding the relationship between interest rate levels and M&A volumes. While the Euribor rate showed a positive correlation with transaction volumes, indicating that higher short-term interest rates might stimulate M&A activity, the results were not robust enough to conclusively support the hypothesis. This suggests that other factors, such as market volatility and economic conditions, may play a more significant role in influencing M&A activities than interest rates alone.

Another significant discovery is the negative correlation between market volatility, as assessed by the VIX1 index, and M&A volumes. Elevated market volatility, indicative of heightened market fear, is linked to a reduction in the quantity of M&A deals. This finding emphasizes the influence of market sentiment on M&A activity and indicates that increased market uncertainty discourages corporations from participating in mergers and acquisitions.

The study's geographic scope is restricted to the European market during a window of 17 years. Although this regional emphasis provides a comprehensive examination of M&A operations in Europe, it limits the generalizability of the results to other geographic areas. This study does not account for any differences in M&A behaviours due to distinct market dynamics or regulatory regimes. The chosen timespan and geographical area could explain the results from interest rates' effect on M&As, as the time window includes mostly negative or zero rates. In the future, a similar study should be done for a different geographical location and a different time series to get more conclusive evidence of the relationship.

The choice of variables in this study may not encompass all relevant aspects of market conditions. Additional factors, such as company-specific variables (such as business size and industrial sector) and broader economic indicators (such as GDP growth and inflation rates), may also have significant effects on M&A activity and should be taken into account in future studies. OLS regression model is employed to establish a linear approximation of the relationships between variables. The OLS model's simplicity may not adequately account for all intricacies of the M&A market and may potentially result in overly simplistic findings.

## References

Agrawal, A., Jaffe, J., & Mandelker G. (1992). The Post-Merger Performance of Acquiring Firms: A Re-examination of an Anomaly. The Journal of Finance, 47(4), 1605 – 1621. https://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.1992.tb04674.x

Alexandridis, G., Mavrovitis, C., & Travlos, N. (2012). How have M&As changed? Evidence from the sixth merger wave. The European Journal of Finance, 18(8), 663 – 688. https://doi.org/10.1080/1351847X.2011.628401

Atinc, G., Simmering, M. J., & Kroll, M. J. (2011). Control variable use and reporting in macro and micro-management research. Volume 15(1). https://doi.org/10.1177/1094428110397773

Bargeron, L., Schlingemann, F., Stulz R., & Zutter, C. (2008). Why do private acquirers pay so little compared to public acquirers? Journal of Financial Economics, 89, 375 - 390. https://www.sciencedirect.com/science/article/abs/pii/S0304405X08001025#!

Bebchuk, L., & Fried, J. (2003). Executive compensation as an agency problem. Journal of Economic Perspectives 17(3), 71 – 92. https://pubs.aeaweb.org/doi/pdfplus/10.1257/089533003769204362

Bebchuk, L., Fried, J., Walker, D. (2002). Managerial power and rent extraction in the design of executive compensation. The University of Chicago Law Review 69, 751–846. https://doi.org/10.2307/1600632

Becketti, S. (1986). “Corporate mergers and the business cycle.” Federal Reserve Bank of Kansas City. Economic Review, May: 13 – 26. https://www.kansascityfed.org/documents/1268/1986-Corporate%20Mergers%20And%20the%20Business%20Cycle.pdf

Bertone, S., Paeglis, I., & Ravi, R. (2015). (How) has the market become more efficient? Journal of Banking & Finance, 54, 72 – 86. https://doi.org/10.1016/j.jbankfin.2014.12.019

Besanko, D., Shanley, M., & Travlos, N. (2010). Economics of strategy. pp. 120 – 140.

Bhaumik, S., & Selarka, E. (2012). Does ownership concentration improve M&A outcomes in emerging markets? Evidence from India. Journal of Corporate finance,18(4), 717 – 726. https://doi.org/10.1016/j.jcorpfin.2012.04.001

Brealey, R., Myers, S. & Allen, F. (2011). Principles of corporate finance (10. ed., global ed.). McGraw-Hill/Irwin. pp. 879 – 881

Buckley, P., & Ghauri, P. (2003). International mergers and acquisitions: Past, present and future. Academia. https://www.academia.edu/15206525/International_mergers_and_acquisitions_Past_present_and_future?auto=citations&from=cover_page

Cai, Y. & Sevillir, M. (2012). Board connections and M&A transactions. Journal of Financial Economics, 103(2), 327 – 349. https://doi.org/10.1016/j.jfineco.2011.05.017

Capen, E., Clapp, R., & Campbell, W. (1971 Competitive bidding in High-Risk Situations. Journal of Petroleum Technology, 23, 641 – 653. https://www.cs.princeton.edu/courses/archive/spr09/cos444/papers/capen_et_al71.pdf

Chen, J. (2021). Agency Cost of Debt. Investopedia. https://www.investopedia.com/terms/a/agency-cost-of-debt.asp

Chen, J. (2021). Federal Funds rate. Investopedia. https://www.investopedia.com/terms/f/federalfundsrate.asp

Chen, J. (2021). Modigliani-Miller Theorem (M&M). Investopedia. https://www.investopedia.com/terms/m/modigliani-millertheorem.asp

Corporate Finance Institute (2021). Economies of Scope: Cost benefits from producing a greater variety of goods. https://corporatefinanceinsttute.com/resources/knowledge/economics/economies-of-scope/

Crutchley C., Jensen M., Jahera J., & Raymond, J. (1999). Agency problems and the simultaneity of financial decision making: The role of institutional ownership. International Review of Financial Analysis, 8(2), 4, 177 – 197. https://doi.org/10.1016/S1057-5219(99)00011-3

Gugler, K., Mueller, D. & Weichselbaumer, M. (2012). The determinants of merger waves: An international perspective. International Journal of Industrial Organization, 30, 1. https://doi.org/10.1016/j.ijindorg.2011.04.006

DePamphilis, D. (2018). Mergers, Acquisitions, and Other Restructuring Activities: An integrated approach to process, tools, cases, and solutions. Elsevier Academic Press. pp. 5 – 45.

Dogra, G., & Murugaboopathy, P. (2021). Global M&A volumes hit a new record in 2021, overtaking last year's haul. Reuters. https://www.reuters.com/business/global-markets-ma-2021-08-12

Doukas, J., & Zhang, W. (2016). Envy-motivated merger waves. European Financial Management, 22(1), 63–119. https://doi.org/10.1111/eufm.12045

Duchin, R., & Schmidt, B. (2012). Riding the merger wave: Uncertainty, reduced monitoring, and bad acquisitions. Journal of Financial Economics, 107(1), 69-88. https://doi.org/10.1016/j.jfineco.2012.07.003

Ekkayokkaya, M., & Paudyal, K. (2019). The importance of targets and value creation in vertical acquisitions. International Review of Finance, 21(2), 636 – 644. https://doi.org/10.1111/irfi.12280

European Central Bank (2023). Key ECB interest rates. https://data.ecb.europa.eu/main-figures/ecb-interest-rates-and-exchange-rates/key-ecb-interest-rates

Fama, E. (1970). Efficient capital markets: A review of theory and empirical work. A review of theory and empirical work. Journal of Finance 25(2), 384 – 418. https://doi.org/10.1111/j.1540-6261.1970.tb00518.x

Faulkner, D., Teerikangas, S. & Joseph, R. (2012). The Handbook of mergers and acquisitions. Oxford University Press. pp. 71–113, 195–199, 215–231 & 339–371

Fich, E., Nguyen, T., & Officer, M. (2013). “Large Wealth Creation in Mergers and Acquisitions” (paper presented at American Finance Association 2013 annual meeting, San Diego, CA, January 4–6, 2013, revised November 8, 2017) http://dx.doi.org/10.2139/ssrn.2020507.

Fisher, I. (1907). The rate of interest. New York, NY: Macmillan. https://socialsciences.mcmaster.ca/econ/ugcm/3ll3/fisher/RateofInterest.pdf

Finkelstein, S. & Cooper, C. (2013). Advances in Mergers and Acquisitions. Emerald Publishing Limited. pp. 125 – 130.

Frankel, M., & Forman, L. (2017). Mergers and Acquisitions Basics: The Key Steps of Acquisitions, Divestitures, and Investments, John Wiley & Sons, Incorporated, 2017. ProQuest Ebook Central. http://ebookcentral.proquest.com/lib/tritoniae-books/detail.action?docID=4833701.

Franks, J., Harris, R. & Titman, S. (1991). The post-merger share-price performance of acquiring firms. Journal of Financial Economics 29(1), 81 – 96. https://doi.org/10.1016/0304-405X(91)90014-B

Gaughan, P. (2013). Maximizing Corporate Value Through Mergers and Acquisitions: A Strategic Growth Guide. acquiring firms. John Wiley & Sons, Incorporated. ProQuest Ebook Central, pp. 128 – 136. http://ebookcentral.proquest.com/lib/tritonia-ebooks/detail.action?docID=1164805

Goedhart, M., Koller, T., & Wessels, D. (2020). Valuation measuring and managing the value of companies. John Wiley & Sons, Incorporated. pp. 27 – 53, 585 – 612.

Goel, A. M., & Thakor, A. V. (2010). Do envious CEOs cause merger waves? Review of Financial Studies, 23(2), 487-517.

Goold, M. & Campbell, A. (1998). Desperately seeking synergy. Harvard Business Review. https://hbr.org/1998/09/desperately-seeking-synergy

Grossman, Sanford J., & Hart, O. (1986). The costs and benefits of ownership: A theory of vertical and lateral integration. Journal of Political Economy 94(4), 691 – 719.http://nrs.harvard.edu/urn-3:HUL.InstRepos:3450060

Grinstein, Y., & Hribar, P. (2004). CEO compensation and incentives: Evidence from M&A bonuses. Journal of Financial Economics 73(1), 119 – 143. https://doi.org/10.1016/j.jfineco.2003.06.002

Guiral, A., Rodgers, W., Ruiz, E., & Gonzalo, J. A. (2010). Ethical Dilemmas in Auditing: Dishonesty or Unintentional Bias? Journal of Business Ethics, 91, 151–166. http://www.jstor.org/stable/40929034

Hargrave, M. (2021). Merger. Investopedia. https://www.investopedia.com/terms/m/merger.asp

Harford, J. (2005). What drives merger waves? Journal of Financial Economics, 77, 3. https://doi.org/10.1016/j.jfineco.2004.05.004

Haspeslagh., P., & Jemison, D. (1991). Managing Acquisitions: Creating Value through Corporate Renewal. New York: The free press. https://doi.org/10.2307/258765

Hayes, A. (2021). Bond Covenant. Investopedia. https://www.investopedia.com/terms/b/bond-covenant.asp

Hayes, A. (2021). Return on Invested Capital (ROIC). Investopedia. https://www.investopedia.com/terms/r/returnoninvestmentcapital.asp

Hayes, A. (2021). Vertical Integration. Investopedia. https://www.investopedia.com/terms/v/verticalintegration.asp

Hess, E., & Kazanjian, R. (2006). The Search for Organic Growth. Cambridge: Cambridge University Press. https://www.cambridge.org/core/books/search-for-organicgrowth/5A4294BA611A7567DEC17F137C2370CD

Jensen, M. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. The American Economic Review, 76(2), 323 – 329. http://www.jstor.org/stable/1818789

Jensen, M., & Meckling, W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. Journal of Financial Economics, 3(4), 305 – 360.https://doi.org/10.1016/0304-405X(76)90026-X

Jovanovic, B., & Rousseau, P. (2002). The Q-Theory of Mergers. American Economic Review American Economic Review, 92(2), 198-204. DOI: 10.1257/000282802320189249

Kenton, W. (2020). Acquisition. Investopedia. https://www.investopedia.com/terms/a/acquisition.as

Kenton, W. (2021). Conglomerate Merger. Investopedia. https://www.investopedia.com/terms/a/acquisition.asp

Kim, J., Haleblian, J., & Finkelstein, S. (2011). When Firms Are Desperate to Grow via Acquisition: The Effect of Growth Patterns and Acquisition Experience on Acquisition Premiums. Administrative Science Quarterly, 56(1), 26 – 60. https://www.jstor.org/stable/41410247

Kim, O., & Walker, M. (1984). The free-rider problem: Experimental evidence. Public Choice, 43, 3 – 24. https://doi.org/10.1007/BF00137902

Leland, H. (2007). Financial Synergies and the Optimal Scope of the Firm: Implications for Mergers, Spinoffs, and Structured Finance. The Journal of Finance, 62(2), 765–807. http://www.jstor.org/stable/4622286

Maksimovic, V., Phillips, G., & Yang, L. (2013). Private and Public Merger Waves. The Journal of Finance, 68(5), 2177 – 2217. https://www.jstor.org/stable/42002606

Malkiel, B. (2003). The Efficient Market Hypothesis and Its Critics. Journal of Economic Perspectives, 17(1), 59 – 82. https://www.aeweb.org/articles?id=10.1257/089533003321164958

Mankiw, G. (2001). Principles of microeconomics. Nelson Education, pp. 284 – 288.

Marks, M., Mirvis, P., & Brajkovich, L. (2001). Making Mergers and Acquisitions Work: Strategic and Psychological Preparation [and Executive Commentary]. The Academy of Management Executive, 15(2), 80 – 94. http://www.jstor.org/stable/4165737

Mitchell, M., & Stafford, E. (2000). "Managerial Decisions and Long-Term Stock Price Performance." The Journal of Business, 73(3), 287–329. https://doi.org/10.1086/209645

Moeller, S., Schlingemann, F., and Stulz, R. (2003). Do Shareholders of Acquiring Firms Gain from Acquisitions? (NBER Working Paper W9523, Ohio State University, 2003).

Pablo, A., Sitkin, S., & Jemison, D., (1996). Acquisition decision-making processes: The central role of risk. Journal of Management, 22(5), 723 – 746. https://doi.org/10.1016/S0149-2063(96)90020-3.

Rhodes-Kropf, M., & Viswanathan, S. (2004). Market valuation and merger waves. The Journal of Finance, 60(6), 2685-2718. https://doi-org.proxy.uwasa.fi/10.1111/j.1540-6261.2004.00713.x

Robinson, J. (1933). The economics of imperfect competition. London, Macmillan and Co., Ltd. https://archive.org/details/econoicsofimper0000robi_u6j3/page/n371/mode/2up

Ross, S. (2024, April 1). When is inflation good for the economy? Investopedia. https://www.investopedia.com/ask/answers/111414/how-can-inflation-be-good-economy.asp

Rozen, Z. (2017). Comparison of merger and acquisition (M&A) success in horizontal, vertical, and conglomerate M&As: industry sector vs. services sector. The Service Industries Journal. https://doi.org/10.1080/02642069.2017.1405938

Schmidt, C. & Fahlenbrach, R. (2017). Do exogenous changes in passive institutional ownership affect corporate governance and firm value? Journal of Financial Economics, 124(2), 285 – 306. https://doi.org/10.1016/j.jfineco.2017.01.005

Shleifer, A., & Vishny, R. (1989). Management Entrenchment The Case of Manager-Specific Investments. Journal of Financial Economics. https://doi.org/10.1016/0304-405X(89)90099-8

Shleifer, A., & Vishny, R. (1988). Value Maximization and the Acquisition Process. Journal of Economic Perspective, 2(1), 7 – 20. https://www.aeaweb.org/articles?id=10.1257/jep.2.1.7

Sirower, M. (1997). The Synergy Trap. New York: Free Press, 84 – 100.

Stigler, G. (1964). A Theory of Oligopoly. The Journal of Political Economy, 72(1), 44 – 61. https://www.jstor.org/stable/1828791stigler

Travlos, N. (1987). Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Return, Journal of Finance 42(4), 943 – 963. https://www.jstor.org/stable/2328300

Whitaker, S. (2016). Cross-Border Mergers and Acquisitions. John Wiley & Sons, Incorporated, pp. 30 – 45

Wilms, R., Mäthner, E., Lanwehr, R., & Winnen, L. (2021). Omitted variable bias: A threat to estimating causal relationships. Methods in psychology. https://doi.org/10.1016/j.metip.2021.100075