MASTER THESIS- BUSN89
Department of Business Administration
Lund University
Spring 2012

Acquisition Premia of Distressed Targets

- Analysis of the Motives behind the Acquisition of Distressed Targets -

Supervisor: Maria Gårdängen

Authors: Jasmin Behnke
Amalia Foukaki

Abstract

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Seminar date: 2012-06-01

Course: Degree Project Master level in Corporate and Financial Management, (15 ECTS).

Authors: Jasmin Behnke
Amalia Foukaki

Supervisor: Maria Gårdängen

Key words: Acquisition Premium; Distressed Targets; Synergy Realization; Transaction Value; Managerial Inefficiency; Tax Benefits; Financial Distress

Purpose: After confirming the fact that distressed targets achieve on average higher acquisition premia than non-distressed ones, the purpose of the thesis is the investigation of an acquirer's possible rational motives of paying a premium for a distressed target. Particularly, faster synergy realization, lower transaction value, removal of managerial inefficiency, tax benefits and reduction of financial distress are examined.

Methodology: This study is implemented through a quantitative approach, making use of a multivariate regression model. Statistical test are employed in order to assess the significance of the results, followed by an analysis and discussion of the statistical output.

Theoretical Perspectives: The study is intensively built upon prior research and literature on acquisitions. General principles for acquisition value creation and rational pricing are explored, with a subsequent focus on the aforementioned applicability on distressed targets.

Empirical Foundation: European transactions realized in EURO, during the period 1999-2007 are examined. The data was obtained by the Reuters 3000 database.

Conclusions: The findings of the study conclude that paying a high premium for a distressed target can indeed be justified, but only as long as the acquirer has the right management team with suitable turnaround skills on board - since the reduction of managerial inefficiency is found to be statistically and economically the most important factor in explaining the premium paid for financially distressed acquisition targets.

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1 Introduction

The introductory chapter provides an insight into the topic and the research purpose. Explanatory aspects are presented, introducing the reader into the study and the specific problem being examined. The chapter ends with a discussion of the research delimitations and the thesis outline.

1.1 Background

After almost filing for bankruptcy in the middle of the year, due to a funding gap of its life insurance subsidiary, Mannheimer Holding AG, a German insurance company, released an ad-hoc announcement on the 23.12.2003 disclosing an expected annual loss of almost EUR 200 million for the financial year 2003. This substantial loss would reduce the company's equity significantly to less than half of the share capital at the time. Fresh money was essential for the company's survival as Mannheimer Holding AG was no longer able to meet the obligatory solvency requirements as demanded by the insurance supervisors. Highlighting the dramatically distressed situation of the insurer, the company was dropped off the SDAX[1] while its share price collapsed down to EUR 3.5 in comparison EUR 21.6 at the beginning of the year.

Being aware of Mannheimer's severe condition, UNIQA Versicherungen AG, an Austrian insurance group, stepped in and offered to support Mannheimer's capitalization and restructuring plan by increasing its shareholding from 20% to 87%. By acquiring 67% UNIQA would infuse EUR 79.5 million into the failing company. The majority of Mannheimer's shareholders accepted the offer instantly, as the company's extensive capital needs left no other alternative than restructuring with the help of a financially robust major shareholder. UNIQA appeared to be a strong partner capable of supporting Mannheimer Holding AG financially (Uniqagroup, 2003 and Wallstreet-online, 2003).

[1] Equity index for small cap companies in Germany

With a share price of EUR 3.5 the market value of the 67% stake in question was worth EUR 25.7 million one week before the announcement, meaning that UNIQA was willing to pay a premium of EUR 53.7 million equaling 210%, opening room for questioning UNIQA's motivation.

1.2 Problem Discussion

Despite the complexity involved in any M&A deal, both for a distressed or a non-distressed target, it is evident that the two cases differ substantially. A distressed acquisition consists a very risky investment, due to the distress itself (Ernst & Young, 2010) and therefore the difficulty to assess the target's fundamental value and business potential (Bruyland and De Maeseneire, 2011). A steep due diligence is more than important in order to avoid misjudgment of the required post-merger restructuring effort (Bruyland and De Maeseneire, 2011). Underestimation of the related costs and required managerial or financial resources introduce risk in a restructuring's success and can easily lead to overpaying. Moreover, limited available comparables and lack of familiarity with the distressed business can threaten the quality of the distressed acquisition (Carapeto et. al., 2009). The overall high complexity lies on special regulatory issues and the threat of powerful creditors in creditor friendly regimes, but also in the high time pressure, as distressed companies have a tendency to fail quickly (Ernst & Young, 2010). Distressed acquisitions need to be planned and executed faster than non-distressed ones (Carapeto et. al. 2009) as value fades away over time (Deloitte, 2009). To conclude, a reconsideration of the deal is needed if the acquirer's confidence in its ability to handle the opportunities and risks that come with a distressed acquisition is not strong enough (Ernst & Young, 2010).

In general, due to the high risk related to acquiring a distressed target one would expect a lower acquisition premium than for non-distressed acquisitions or even a discount. Limited availability of buyers, more complicated processes and time pressure should further result in less competition and subsequently in a higher bargaining power of the buyer over the seller (Deloitte 2009). Especially for bankrupt

firms which are subject to adverse selection and face limited demand in the market, discounts in takeovers have been observed by Jory and Madura (2009). Those discounts, meaning a price paid below an asset's fundamental value, are known in literature as fire sales (Eckbo, 2009). Supporting the aforementioned findings, Coval and Stafford (2007) studied stock transactions of financially distressed mutual funds and found that prices of extensive selling are below their fundamental value.

Ang and Mauck (2011) also intended to prove the existence of fire sales in the distressed takeover market but observed contradicting results by finding a 12.09% higher acquisition premium achieved by distressed targets compared to non-distressed ones, using the stock price near the announcement date as a reference point. However, they also state that they do not see this result indicating a higher bargaining power of the target, considering the use of a higher reference point for the target's value as a more likely explanation. Irrationality can lead managers to see the 52-week high share price as a suitable reference point, resulting in the target's current share price to appear depressed and giving acquirers the impression of getting a "bargain". Nevertheless, the examined announcement return by Ang and Mauck reveals that the market does not agree to the managers' view of a perceived discount.

Besides the influence of behavioral issues on acquisitions of distressed targets, rational motives are also discussed in literature. As Ernst & Young (2010) point out, a distressed acquisition can be an opportunity with high potential, because of the possibility to acquire discounted assets -fire sales hypothesis- on the one hand, and because of synergistic gains on the other hand. Those may concern beneficial business combination such as market power, market or product extensions, economies of scale and scope, cash flow diversification benefits, access to the target's resources, similar to a non-distressed acquisition (Bruton et. al., 1994). On the top of those, acquirers of distressed targets can particularly benefit from highly motivated acquired workforce, since the acquisition is seen as a rescue, easing remarkably the integration process. Such an argument is based on Larsson and Finkelstein (1999) findings that an acquisition's performance depends on strategic potential, organizational integration and employee cooperation. Distressed targets are assumed to be easier to integrate due to significantly lower employee resistance,

and hence an enhanced and faster synergy realization is expected. Theodossiou et. al. (1996) also contribute that generally smaller companies, which in fact have a higher probability of financial distress, are indeed easier to integrate and therefore suitable acquisition candidates.

Utilization of the acquirer's managerial skills and expertise is argued to be another rational motive for acquiring a distressed target (Bruton et. al., 1994). In a related research Turetsky (2003) also supports the idea that distressed targets may hold assets and resources that could be more efficiently used by the acquirer, independently on the target's financial constraints, meaning that elimination of management's inefficiency and utilization of target's sales potential could notably benefit the acquirer.

A further motive for acquiring a distressed firm is provided by Clark and Ofek (1994) by suggesting that financially distressed targets are actually better candidates for restructuring, taking into account the tax motives, concessions and financial distress costs reductions.

1.3 Purpose and Research Question

Until today, research about distressed acquisitions remains limited and mostly focused on comparison between healthy and bankrupt targets (e.g. Hotchkiss and Mooradian, 1998). Besides, most research in distressed acquisitions is either conducted with global or US data, pointing towards research potential of European transactions. For this reason, the focus of the study is on European M&A market covering the aforementioned gap.

Furthermore, to contribute to prior research, the intention of the thesis is the investigation of an acquirer's possible rational motives of paying a premium for a distressed target. In particular, it will be tested whether a better and faster synergy realization, a lower absolute money value of the transaction in comparison to a non-distressed acquisition, the removal of managerial inefficiency, the use of tax benefits

or the reduction of the target's financial distress can be observed after the acquisition and hence be interpreted as a motivation for an acquirer. To the authors' current knowledge, no similar research in this field has been conducted so far.

The goal of the study is to contribute to the scientific knowledge but also provide practical insights, useful in real case M&A transactions. The findings may present answers to academics concerning distressed M&A pricing.

1.4 Delimitations

This analysis does not distinguish between bankrupt and just distressed companies, meaning that the special regulations for bankrupt targets are not taken into account. Indicative such a policy is the court's involvement, influencing the transaction price. In addition, the acquisition of a bankrupt target is more time-consuming, increasing the risk of further weakening of its value and more costly for the acquirer due to required compliancy with the bankruptcy code (Graham et. al., 2001).

Furthermore, only strategic acquirers are assumed, e.g. buyers that have a strategic interest in the target, excluding financial buyers like private equity and hedge funds from the observed transactions. The underlying reasoning for this choice is an assumed difference in synergy realization in case of financial buyers compared to strategic ones, leading to possible distorted results.

Finally, due to unavailability of data, especially for transactions that occurred further in the past, the analyzed sample focuses mainly on the period around the fifth merger wave (1998-2001) (Gaughan, 2007) and the most recent development in the acquisition market.

1.5 Thesis Outline

In chapter 2 the underlying data sample of the thesis is presented and the findings of Ang and Mauck (2011) concerning the different acquisition premia of distressed and non-distressed targets are confirmed. Chapter 3 provides the theoretical framework and the hypotheses development, driven by an analysis of motives for M&A in general and especially for the acquisition of distressed targets. The chosen methodology and methodological problems are discussed in chapter 4, while chapter 5 introduces the empirical findings of the performed regression. Chapter 6 continues with the analysis and discussion of the results. The conclusion of the study together with further research suggestions is presented in chapter 7.

2 Research Trigger

In this chapter the collected data for the analysis is described together with the definition of distressed acquisition targets. With this sample an analysis of the paid premia is examined, confirming the findings of Ang and Mauck (2011) that distressed targets indeed achieve a higher acquisition premium than non-distressed targets on average.

2.1 Data Collection

For the data collection Reuters 3000 database is used, including all available European transactions completed form 1999 until 2007. The year 2007 is selected ascertaining that the time span after the acquisition was sufficient in order to examine the post-deal outcome three years after the acquisition.

Europe is defined as including the oldest members of the European Union, those being Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden and United Kingdom. Those countries are considered to be the most active and representative ones for the European market. Exclusively transactions in EURO are selected, to avoid currency exchange disturbances, also providing another reason for not including the most recent members of the European Union. In addition, only transactions which are defined by Reuters 30000 as M&As qualify to be included in the sample, excluding the ones characterized as investments, and hence making sure that the acquirer obtains control over the target and is indeed able to influence the post-merger performance.

In order to analyze the targets' premium and the post-acquisition performance, a focus on publicly available data is necessary, limiting the sample in publicly traded targets and acquirers. Due to this restriction and missing information about the acquired stake, as well as double transactions (an acquirer buying a target in short

follow-up transactions) the available transactions for further analysis amount to 216 deals.

DataStream 5.0 as well as the targets' and acquirers' annual reports are used for the collection of supplementary needed market and accounting data.

2.2 Excluded Observations

After determining the premium for each transaction, six of them were considered outliers as the calculated premium amounted to unreasonably high values (more than 1000%) and needed to be excluded.

2.3 Target Classification and Sample

After a broad review of relevant studies, it is determined that the definition of distress is highly subjective. For instance, Ang and Mauck (2011) distinguish distressed targets as companies whose net income was negative in the year prior to the acquisition. Balcaen et. al. (2011) also use net negative income, but for three consecutive years, to define serious distress. Other proxies that are being used for distress classification are negative cumulative operating earnings over a three year period (Gilbert et. al, 1990), net income and ROI (Bruton et. al., 1994) and cash-flow to total debt ratio (Beaver, 1966).

The most widely used proxy for distress is the interest coverage ratio. Sengupta and Faccio (2011) use the interest coverage ratio, defined as EBIT to total interest payments and reflecting a company's inability to serve its debt payments. Rajan and Zingales (1995) and Asquith et. al. (1994) share the same logic, while more specifically Pindado and Rodrigues (2005) and Bruyland and De Maeseneire (2011) consider an interest coverage ratio of below one, one year prior to the acquisition, as a measure of financial distress. Finally, Bhagat et. al. (2005) use alternatively a

negative or zero net income or an interest coverage of less than or equal to one, for a period of one year, to define distress.

As net income solely focuses on operational performance, while the interest coverage ratio also takes financial issues into account (Carapeto et.al., 2009), both measures are used as proxies for distress in this study, considered suitable criteria after being widely used as distress determinants in pervious literature. Particularly, companies disclosing a negative net income and an interest coverage ratio below one the year prior to the acquisition are classified as distressed.

From the initial sample of 45 transactions that were publicly traded and met our distress criteria, six of them had to be further excluded due to data unavailability. In order to examine whether this introduces bias in the sample, characteristics such as the transaction dates, the sector of operation and the country of a firm's origination were scrutinized. It was observed that there is no pattern regarding sectors or countries. Concerning the transaction dates, it was the case that data availability was substantially reduced as further in the past the transaction was materialized. This was partially expected and therefore acceptable. In general, no specific patterns were observed concerning the excluded transactions, leading to a final sample of 39 distressed acquisitions.

2.4 Observed Premia

For the calculation of premium the definition of Ang and Mauck (2011), Rau and Vermaelen (1998) and Laamanen (2007) is used in the study. They all define it as:

$$\text{Premium} = (\text{Offer Price} - \text{Reference}) / \text{Reference},$$

where the reference equals the fundamental value of the target, meaning its market value.

The choice of the reference point is found to be widely diverse in prior research, ranging from two months to a few days before the announcement date. Being in line with the methodology used by Ang and Mauck (2011) the market value one week prior to the announcement is chosen as reference point. The purpose of choosing one week is to exclude the effect of rumors, as they are already incorporated in the target's share price, to the extent that an acquisition is expected by the market (Crawford and Lechner, 1996). Additionally, the usage of one week as a reference point also takes into account that distressed targets tend to fail quickly; therefore a share price close to the announcement should reflect the timely value of target more precisely. In fact, prior literature analyzes the returns around the announcement dates of acquisitions, assuming market efficiency (Agrawal et. al., 1992). Thus, the target's value one week before the announcement can be expected to reflect its fundamental value.

In those transactions of the sample where the acquisition stake equals less than 100%, the reference value is defined as market value of the target times the acquired stake.

By conducting the aforementioned analysis with the 216 publicly available transactions, an average premium of 36.4% is observed. Indicative, Laamanen (2007) found a 43.6% average premium for a sample of solely US acquisitions, also using a reference point of one week before the deal announcement. Particularly, the average acquisition premium for distressed targets examined in this thesis amounts to 61.0%, indicating a 26.7% difference in comparison to the 34.3% premium achieved by non-distressed firms. The observed higher premium paid in distressed acquisitions confirms the findings by Ang and Mauck (2011), who derive a 12.09% higher acquisition premium for distressed targets. Likewise, Clark and Ofek (1994) support such an outcome, arguing that paying a high premium for a distressed target can be justified by a combination of potential gains.

3 Literature Review and Hypotheses Development

This chapter provides an overview over the theoretical framework relevant for the thesis. General opportunities of value creation via merger and acquisitions are presented, followed by a discussion about takeover premia determinants. The hypotheses are developed by discussing possible motivations for the acquisition of distressed targets.

3.1 Value Creation through M&As

Prior research provides very diverse results about the value creation through M&As in general. Although Agrawal et. al. (1992) provide empirical evidence that stockholders of acquiring firms lose on average, acquisition motives can be categorized into two types: value-maximizing and non-value-maximizing ones, meaning acquisitions initiated by either rational or managerial personal motives (Seth, 1990b).

According to Jensen and Ruback (1983), acquisitions generate gains for both targets and bidders. Supporting this, Devos et. al. (2008) find that the average gain from mergers is 10.03%, which mainly arises from operational synergies (8.38%). According to their findings, reduced capital expenditures rather than enhanced operational improvements primarily explain these synergy gains. Seth (1990a) and Jackson (2007) conclude that different acquisition strategies benefit from different value creating sources. Related acquisitions create value through economic and operating efficiencies, such as economies of scale and scope as well as increased market power resulting in increased cash flows, although mergers motivated by market power are often prohibited by antitrust authorities (Devos et. al., 2008). Economies of scope and scale lead to cost reductions due to either lower production costs of different products or decreased unit costs with increasing output. Utilization of specialized resources can be another value creating source of related acquisitions (Chatterjee, 1986). Unrelated acquisitions, on the other hand, mainly benefit from coinsurance effects, when the target’s income streams are not perfectly correlated

with those of the acquirer, leading to an increased debt capacity due to reduced financial distress costs (Jensen and Ruback, 1983).

According to Lubatkin and O'Neill (1987) acquisitions can be motivated by risk reduction. Due to the complexity and uncertainty of those investments, acquisitions in general introduce higher risk in a company, except for related mergers which can achieve a risk reduction. Chatterjee and Lubatkin (1990) argue that if the risk reduction achieved by an acquisition cannot be duplicated by shareholders, it is a source of value creation. However, risk reduction like financial diversification was not found to be value creating (Seth, 1990a).

By stating that acquisitions based on risk reduction can be interpreted as managers' personal motivation of reducing the risk of their employment, Amihud and Lev (1981) also find no support of value creation through risk reduction.

Besides managerial risk aversion as a trigger for acquisitions, they can also be motivated by other, non-value generating motives such as hubris (Rau and Vermaelen, 1998). In the presence of such personal motives, the combined value after the takeover drops, while the target's value rises and the acquirer's falls (Roll, 1986). Previous success leads overconfident managers to overestimate their ability to generate earnings, hence prompting them to undertake low-quality, value-destroying takeovers (Malmendier and Tate, 2008).

3.2 Determinants of Takeover Premium

The premium in an acquisition is the incremental value a buyer pays above the target's market value, justified by the expected synergies gained through the combination of the two entities and the control right to exploit them. In order to create value the premium needs to be lower than the post-merger realized synergies (Gaughan, 2007). Jackson (2007) states that paying a higher price over the fundamental value of a target is reasonable if the acquisition leads to an increase in revenues or improved profitability.

Factors that are found to determine the acquisition premium are the competition in the takeover market, the target's ability to resist the takeover, the relative target valuation, the received tax advantages and managerial hubris (Slusky and Caves, 1991; Hayward and Hambrick, 1997; Roll, 1986; Finnerty, 2002; Walkling and Edmister, 1985).

Baker et. al. (2009) and Walkling and Edmister (1985) state that the premium depends on the negotiation process and hence the bargaining powers of the parties, however the price in the end needs to be attractive for the seller. A higher competition by multiple bidders generally leads to a higher takeover premium, of an average 33,5% increase (Walkling and Edmister, 1985).

Gondhalekar et. al. (2004) find that firms with a higher internal cash generation ability and low market-to-book ratios tend to pay higher premia. Related to the Free Cash Flow hypothesis developed by Jensen (1986), these companies generally face fewer available investment opportunities and hence look for external growth through acquisitions.

The existence of a premium in general is highly subjective depending on the point of view from the beholder (Ang and Mauck, 2011) and hence giving space for irrationality and mispricing. Baker et. al. (2009) argue that the 52-week high stock price serves as "psychological anchor" when acquirers determine the fundamental value of a target. They provide empirical evidence that the bidder's offer price is highly determined by the 52-week high, although they fail to prove a relation between the target's 52-week high and the value gains from the merger. Furthermore, as acquisitions consists individuals' decisions, the managers' role and hence possible managerial hubris are highly important in the acquisition process and in particular in the determination of the transaction price (Roll, 1986; Hayward and Hambrick, 1997). Rau and Vermaelen (1998) state that overconfident managers tend to overestimate the potential synergy realization and are therefore more likely to overpay.

3.3 Motivation for Acquiring Distressed Targets

Carapeto et. al. (2009) provide empirical evidence that acquisitions of distressed and bankrupt targets are followed by a positive announcement effect for the acquirer, supporting the findings of Hotchkiss and Mooradian (1998) that acquisitions of bankrupt targets do create value. Extending this statement, Bruton et. al. (1994) and Clark and Ofek (1994) argue that distressed targets attract less potential buyers resulting in a reduced bargaining power of the target and a lower possibility for a "winner's curse". Therefore the hazard of overpaying is lower, which supports the purpose of the thesis to analyze rational motives for paying a premium for a distressed target.

3.3.1 Faster Synergy Realization

An acquirer can generate value with a distressed firm by improving its processes and business model (Deloitte, 2009). An acquisition of a distressed target may provide several sources of value creation, such as economies of scale and scope independent of the target's past performance, increased market share, improved technologies, elimination of overlapping function and higher leverage due to coinsurance effect (Turetsky, 2003; Bruton et. al., 1994; Bruyland and De Maeseneire, 2011; Jory and Madura, 2009), meaning similar combination potential as for non-distressed acquisitions discussed in chapter 3.1. Bruyland and De Maeseneire (2011) support the idea that distressed targets may present attractive investment opportunities as they provide a higher restructuring potential than non-distressed firms. Furthermore, a target in a distressed situation perceives an acquisition as a rescue and is hence associated with less employee resistance (Larsson, 1990). Such higher employee cooperation can result in a higher synergy realization according to Larsson and Finkelstein (1999). Related to this, Hotchkiss and Mooradian (1998) find substantial operating improvements in mergers with bankrupt targets, unlike non-bankrupt transactions, due to cost savings.

H1: Less employee resistance and hence faster and more profitable post-merger integration in acquisitions of distressed targets gives acquirers an incentive to pay a premium for distressed targets.

3.3.2 Lower Absolute Price

The probability of larger firms to end up in a distressed situation is generally smaller due to better access to external financing and proportionally lower financing costs (Theodossiou et.al., 1996). At the same time Beaver (1966) also finds that smaller firms are less solvent. Related to this, Carapeto et. al. (2009) and Bhagat et. al. (2005) examine that acquisitions of distressed companies usually involve smaller firms leading to smaller transaction values and Peel and Wilson (1989) prove that the lower the distressed company's size the higher its probability of being acquired. As acquisitions of bigger targets are associated with higher costs of transaction and integration (Palepu, 1986), Clark and Ofek (1994) argue that an acquirer is more likely to pay a higher premium (in percentage) for a target relatively small to its own size due to a smaller impact on the post-merger performance. This means that the money value paid for a smaller target is lower in comparison to bigger ones, even if the premium expressed in percentage is higher.

H2: Acquisitions of distressed targets involve smaller transaction values and therefore smaller premia in terms of money value.

3.3.3 Removal of Inefficiency

Although inefficiently managed companies are often performing poorly and suffer from financial distress, Turetsky (2003) and Bruton et. al. (1994) state that they are preferred takeover targets. This means that managerial inefficiency increases the probability of being acquired (Theodossiou et.al., 1996) and hence of the management being replaced. While Hotchkiss (1995) finds evidence that the post-

bankruptcy performance remains poor if the management of a bankrupt firm stays in place, Denis and Denis (1995) examine that the replacement of management after remarkable decline in operating performance leads to significant improvements of operations, mainly due to reduced workforce, capital expenditures and assets. Especially a replacement with outsiders, associated with turnaround skills and infusion of new talent, are a common observed phenomenon (Schwartz and Menon, 1985) giving support to a possibly beneficial influence of the acquirer's management on the target's operations.

Besides a simple reduction of managerial inefficiency, a distressed firm may furthermore hold assets and resources which are valuable for the acquirer despite the target's financial situation (Turetsky, 2003). Hotchkiss and Mooradian (1998) prove that corporate takeovers help to deploy assets in a more efficient use. Due to prior relation with the target or just better information about its value and assets (Hotchkiss and Mooradian, 1998), the most value creating buyers for firms in bankruptcy are found to be operating in the same industry (Shleifer and Vishny, 1992). In line, Clark and Ofek (1994) and Carapeto et. al. (2009) prove that distressed companies are usually acquired by firms in the same industry. Correspondingly, Bruton et. al. (1994) support previous findings that related acquisitions of distressed targets are characterized by a higher performance than unrelated acquisitions due to utilization of acquirer's specialized knowledge.

H3: Acquirers are motivated to pay a premium for distressed targets if they can use the target's assets more efficiently.

3.3.4 Tax Benefits

Although only little evidence for tax benefits is found by Devos et. al. (2008) when examining acquisition gains, Hoenig et. al. (2010) state that acquirers do examine future tax costs associated with the target, while also taking into consideration tax benefits like the use of net operating losses. Also Clark and Ofek (1994) and

Crawford and Lechner (1996) point out that the utilization of tax loss carry forwards can be an advantage of distressed acquisitions.

H4: The use of the target's tax loss carry forwards is a motive to pay a premium for a distressed target.

H5: An increased post-merger tax shield motivates an acquirer to pay a premium for a distressed target.

3.3.5 Decreased Financial Distress of the Target

Acquisitions can resolve financial distress inside and outside bankruptcy and can therefore serve as an effective alternative to bankruptcy (Hotchkiss and Mooradian, 1998; Jensen, 1991). A financially solvent bidder may reduce the financial distress costs of a distressed target by supporting the target with its strong financial position (Clark and Ofek, 1994). Supporting these findings, Slusky and Caves (1991) observe that decreasing financial distress with an infusion of capital can be even more beneficial for the combined entity than operating synergistic gains.

H6: Benefits related with reduced financial distress costs motivate an acquirer to pay a premium for a distressed target.

4 Methodology

In this chapter the chosen methodology is presented by describing the used regression model and the examined variables. A discussion of methodological problems follows.

4.1 Research Approach

The thesis aims to empirically examine rational motives for an acquirer to pay a premium for a distressed target. In particular, this study tests whether a better and possibly faster synergy realization, a lower absolute transaction price in comparison to a non-distressed acquisition, the removal of managerial inefficiency, the use of tax benefits like the use of tax loss carry forwards or the reduction of financial distress of the target can be observed after the acquisition and hence can be interpreted as a motivation for an acquirer. This is achieved through a quantitative study of European M&A transactions between 1999 and 2007.

4.2 Regression Analysis

4.2.1 Choice of Regression Model

Despite the fact that this study examines the performance of the combined entity three years after the transaction, no use of time series data is made. In fact, the data is transformed into strictly cross sectional one; by analyzing the average growth rates instead of each year's performance. Thus, an entity's three-year performance is examined in terms of annual average growth rates, essentially eliminating the need for panel data analysis and at the same time controlling for size differences of the acquirers. The main reason for this approach of not performing a panel data analysis is that the small size of the study's sample, springing from limited data availability, renders such an analysis inappropriate. The limited degrees of freedom and the short

time horizon indicate that a panel data regression is unfeasible (Baltagi, 1995), as it would require a higher data sample of transactions and a longer post-merger performance inspection. However, neither expanding the observed transaction sample nor extending the time horizon are possible options. As discussed later in the paper, performance changes three years after a transaction are considered to have only a weak connection to it. Hence, panel data regression is generally not a suitable approach for this kind of study and would provide statistically unreliable conclusions.

On the other hand, a multivariate linear regression with cross-sectional data is judged appropriate and econometrics software packages such as Eviews, SPSS and Minitab are used to perform the analysis. More specifically, the method of Ordinary Least Squares (OLS) is employed, for which several assumptions need to hold in order to arrive at BLUE (Best Linear Unbiased Estimate).

The most important of the aforementioned assumptions is the normal distribution of the residuals, tested through the Jarque-Bera normality test (see Appendix A). After the exclusion of three outliers the requirement is fulfilled, as is also the assumption for no covariance of the residuals to any of the independent variables (see Appendix B).

4.2.2 Dependent Variable

The dependent variable examined in our regression model is the perceived premium of each transaction in the analyzed sample. The premium is defined as

$$\text{Premium} = (\text{Offer Price} - \text{Reference}) / \text{Reference},$$

where the reference equals the fundamental value of the target, meaning its market value.

The market value one week prior to the announcement is chosen as reference point (Ang and Mauck, 2011), in order to exclude the effect of rumors. On the other hand, it

needs to be taken into account that distressed targets tend to fail quickly, which implies that a share price close to the announcement should reflect the timely value of target more precisely. In those transactions of the sample where the acquisition stake equals less than 100%, the reference value is defined as market value of the target times the acquired stake.

4.2.3 Independent Variables

Faster Synergy Realization

According to Turetsky (2003) the ability of a distressed target to generate sales is a crucial determinant for its acquisition, as well as for potential synergistic effects. Therefore, an increase in the combined entity's sales is expected, leading to an analysis of sales growth rate~~s~~ three years after the acquisition as a possible outcome of the expected faster and better synergy realization. The time horizon of three years is chosen to capture the time needed to raise synergies, following the examined time span for synergy realization by Larsson and Finkelstein (1999). Improvements after this time period are not considered to be connected with the acquisition and are hence seen to be more likely to occur due to other effects.

To measure performance improvement associated with acquisitions three different variables are examined. EBITDA to total sales is a widely used performance measure for operational improvements and therefore a suitable proxy for combination effects (Clark and Ofek, 1994; Carapeto et. al., 2009; Hotchkiss and Mooradian, 1998; Sengupta and Faccio, 2011). Likewise, return on equity and EBITDA to total assets are common performance ratios (Sengupta and Faccio, 2011; Carapeto et. al., 2009; Bouwman et. al., 2009). To reflect performance improvements the average growth in each variable three years after the acquisition is examined.

Low Absolute Price

As already pointed out, the analyzed premium in this thesis is expressed in percentage and hence, does not reflect the actual money value of the transaction. In order to examine the relation between the premium in percentage and the total transaction value, the natural logarithm of the latter is used. By taking the natural logarithm, size differences are resolved and heteroscedasticity problems reduced.

Removal of Managerial Inefficiency

Peel and Wilson (1989) find that the lower the distressed company's fixed asset turnover (sales to total assets), reflecting managerial inefficiency, the higher the probability of being acquired. Besides asset turnover also inventory turnover (inventory to sales) is a commonly used proxy for managerial efficiency (Theodossiou et.al., 1996; Carapeto et. al., 2009; Sengupta and Faccio, 2011; Turetsky, 2003). However, as the analyzed data is not focused on manufacturing companies but also contains acquisitions in the financial sector, inventory turnover is expected to be less representative for managerial efficiency and therefore only asset turnover three years after the acquisition is analyzed.

Tax Benefits

The analysis regarding the use of tax loss carry forwards being a motivation to pay a premium is introduced by using a dummy variable. This dummy variable captures whether the use of tax loss carry forwards is stated in the acquirer's annual report the year after the acquisition by coding such a usage as 1, otherwise 0.

As the interest expenses on debt paid on a corporate level are deductible from the taxable income, the subsequent tax shield provides an incentive for a higher leverage (Lewellen and Lewellen, 2003). To examine the existence of a higher tax shield for the acquirer after the transaction, the average change in the interest expenses of the acquirer the year prior and three years after the acquisition is observed.

Reduced Financial Distress

As financial distress costs are priced into the interest rates that a debtor is obliged to pay (Merton, 1974), the change in interest rate of the target before the acquisition and the one of the combined entity afterwards is examined in order to scrutinize the reduction of financial distress after the acquisition. This variable is analyzed as a dummy, meaning 1 reflects a reduction of financial distress, when a reduced interest rate is observed after the acquisition and 0 represents an unchanged or even increased interest rate.

4.3 Methodological Problems

After the performance of the regression it is realized that the model suffers from heteroscedasticity, which in cross-sectional regressions means that the residual variance depends on the independent variables. This is resolved by running the regression again with White's heteroscedasticity correction test.

By setting up a covariance matrix of the independent variable, the highest correlation is observed between EBITDA to total assets and EBITDA to sales with 0.642 (see Table 4.3.1). Since they are both measures of performance this correlation is expected. However, as the correlation is below 0.8 no severe disturbances by running the regression with both variables are considered to be introduced (Brooks, 2008). Furthermore, it is proven that the model does not face multicollinearity problems since the observed variance inflation factor (VIF) is below 10 (O'Brien, 2007) (see Appendix C).

Table 4.3.1 Correlation Matrix

	Av. ATO growth (ATO^3)	Av. EBITDA / total assets growth	Av. EBITDA / sales growth	Reduced financial distress	Av. interest expense growth	Av. ROE growth	Av. sales growth	Use of tax loss carry forwards	Transaction value
Av. ATO growth (ATO^3)	1.000								
Av. EBITDA / total assets growth	-0.048	1.000							
Av. EBITDA / sales growth	-0.090	0.642	1.000						
Reduced financial distress	0.149	-0.177	-0.063	1.000					
Av. interest expense growth	-0.068	0.025	0.096	-0.192	1.000				
Av. ROE growth	0.313	0.356	0.329	-0.033	-0.004	1.000			
Av. sales growth	0.351	0.459	0.398	0.089	0.157	0.327	1.000		
Use of tax loss carry forwards	-0.151	-0.150	-0.005	0.325	-0.145	-0.059	-0.184	1.000	
Transaction value	-0.113	0.208	-0.044	0.009	0.049	0.093	0.029	-0.110	1.000

This table presents the correlation between the independent variables which are later used in the regression to examine the presence of multicollinearity problems.

Source: Authors' Composition

Finally, the Ramsey's RESET test for linearity indicates the replacement of asset turnover with asset turnover^3, due to a better subsequent explanatory power of the overall model (see Appendix D). At the same time, return on equity is excluded for the exact opposite reason, that being a very low explanatory power and actually introduction of distortion in the model.

Since no control variables are considered necessary or even useful, the model is already deemed optimally specified and finalized after the Ramsey's RESET test.

4.4 Methodological Discussion

4.4.1 Validity

As Bryman and Bell (2003) define, a study's high validity ascertains that it does measure what it is designed to examine and therefore safe conclusions can be drawn based on it. Hence, after taking into consideration the approaches used thus far by other researchers, necessary measurement adjustments are made, judged as the most suitable ones, in order to serve the purpose of this specific study.

Despite the fact that acquisition premium has not been analyzed as a dependent variable before, according to the authors' knowledge, it is considered the most suitable proxy for the examination of the connection between the premium paid for a target and post-merger changes in performance - or any other benefits for the acquirer. In order to conclude which factors render rational motivation for an acquirer to pay a premium for a distressed target, the use of premium as a dependent variable is indeed judged to be the most appropriate.

As far as the independent variables are concerned, the proxies used for the underlying hypotheses in this study, as well as the used methodological approach, have been used in several studies in the past. Furthermore, the used data fit the study best, as the average change in performance measures such as sales or EBITDA to sales, provide a comparable insight into the acquisition effect of the analyzed transactions. The absolute ratios and figures disclosed by the companies are not judged suitable to be analyzed, since comparisons between the different transactions would not make sense and therefore could not lead to statistically valid conclusions.

4.4.2 Reliability

According to Bryman and Bell (2003), the reliability of a model is as important as its validity and concerns the data collection and the used methods, ascertaining that a

repetition of the study would lead to the same results. For this study, it is made sure that the relevant information is reliable by examining only public transactions. The data is collected from Reuters 3000, Datastream and annual reports. The aforementioned databases have access to primary information about the companies, provided directly by those, while annual reports are systematically audited and need to fulfill certain accounting requirements and meet defined standards according to IFRS. For all those reasons the information used in the study is considered trustworthy.

For the methodology part, established econometrics software (Eviews, SPSS and Minitab) is used for the performance of OLS. A series of statistical tests are run to prove the reliability of the regression's outcome. Though, despite the fact that the performed residual test confirms the appropriateness of OLS as the used method, the limitation of the sample size raises questions concerning representativeness and presents potential for further research with a bigger sample. Due to the focus on European transaction conducted in EURO, in combination with the requirement of publicly available data and the definition of distress, the sample size of this study is limited to 39 observed transactions. Under the aforementioned constraints the sample of this study exhausts all available information, but further research can be conducted with a different geographical focus to ensure an enriched data availability. Additionally, by abandoning the constraint of including only transaction in EURO, the time horizon can be extended to transactions closed before the implementation of the EURO.

5 Empirical Findings

In this chapter the empirical findings of post-merger performance of the analyzed acquisitions are presented by comparing and contrasting the different outcomes for distressed and non-distressed transactions. Using these findings as an input for the following regression concerning distressed acquisitions, the statistical results are illustrated.

5.1 Observed Post-merger Performance: Distressed vs. Non-distressed

Before conducting the main methodological approach, a primary analysis of the first findings are presented, reflecting a comparison of the post-merger three-year average performance change between distressed and non-distressed acquisitions (see Table 5.1.1).

Table 5.1.1 Comparison of Post-Merger Performance

Acquisition	Premium in %	Av. sales growth	Av. EBITDA/sales growth	Av. EBITDA/total assets growth	Av. ROE growth	Av. ATO growth	Av. interest expense growth	Use of tax loss carry forwards	Reduced financial distress
Distressed	61,04%	6,61%	2,24%	0,99%	0,43%	2,43%	9,78%	53,49%	65,12%
Non-distressed	34,44%	10,11%	-2,37%	-0,44%	-6,66%	0,67%	18,40%	-	53,33%

This table presents the average acquisition premium, the post-merger 3-year-average performance change, the post-merger 3-year-average growth in interest expenses, the use of tax loss carry forwards as well as the reduction of financial distress of the analyzed distressed and non-distressed acquisitions.

Source: Authors' Composition

The examination of the average sales growth reveals that sales for distressed acquisitions grow, but less than in comparison to non-distressed ones. It is considered that the relative smaller firm size of distressed targets – with an average market capitalization of almost 10 times lower than non-distressed ones (see Appendix E) – reasonably make a smaller impact on the sales of the combined entity. Furthermore, these findings indicate that market power enhancement might not be

one of the primary rational motives for choosing to acquire a distressed target instead of a non-distressed one. This in turn leads to the suggestion that post-merger sales growth will not motivate an acquirer to pay a premium for a distressed target, meaning that a low explanatory power of this variable is expected.

Moving to the performance measures, all three of them show that the post-merger performance of the non-distressed acquisitions on average suffers, while the distressed ones are followed by profitability improvements, contributing to the same results found by Clark and Ofek (1994). The findings also give support to Larsson and Finkelstein (1999) and Larsson (1990) that distressed acquisitions may be associated with higher synergy realization due to lower employee resistance as the acquisition is perceived as a rescue by the involved employees. After all, the worse pre-merger profitability of a distressed target offers a higher potential for later improvements, while on the other hand the already efficient operations of a non-distressed target may be distorted by the transaction and influenced by integration problems, resulting in a performance decline.

Regarding the hypothesized lower absolute transaction volume in money value, it was confirmed that distressed acquisitions are on average almost 4 times smaller than non-distressed ones, with transaction values of EUR 734 m and EUR 2.9 bn, respectively. Therefore, the study's underlying rationale for H2 is that distressed targets involve smaller transaction values and hence equal to smaller premia in money terms, while the premia in percentage still might be higher.

By observing a higher asset turnover growth for the distressed acquisitions, support is given to the assumed removal of managerial inefficiency as potential rational reasoning for acquiring distressed companies. Hence, it is indicated that acquirers of distressed targets are able to generate higher sales with the acquired assets by optimizing inefficient operations while non-distressed acquisitions achieve only minor improvements, pointing towards already efficient operations.

Concerning the potential tax benefits, a growth in the interest expenses for the distressed as well as the non-distressed acquisitions gives support for a leverage increase and hence a higher tax shield of the combined entity in both cases. Though,

non-distressed acquisitions appear to be more leveraged than distressed ones, as is indicated by a higher interest expenses growth rate. This can be linked to the bigger size of those targets and therefore to the fact that more funds are required for their acquisition.

Utilization of tax loss carry forwards after the acquisition was disclosed only by 53.49% of the distressed companies' acquirers. Since slightly more than half of the observed transactions report such a policy, the use of these tax benefits does not seem to be an acquisition motive and therefore a low explanatory power of this variable may be expected for the justification of the premium for distressed targets.

Finally, for a 65.1% of the distressed targets, the post-merger interest rate decreased in comparison to their pre-merger stand-alone interest rate. As interest rate is used as a proxy for financial distress, this observed decrease points towards perceived benefits of reduced financial distress for the target and hence the combined entity, by taking advantage of the acquirer's more robust financial situation.

5.2 Regression Results

The observed empirical findings concerning distressed acquisitions, discussed in the previous chapter, are further examined in a multivariate regression to scrutinize the relation between the hypothesized variables and acquisition premia. The performance of the aforementioned regression shows an overall significance of the model. Furthermore, an adjusted R^2 of 72% points out that this percentage of the premium's variance is explained by the hypothesized independent variables.

Table 5.2.1 Regression Output

Variable	Coefficient	Std. Error	t-Statistic	P-value
C	-1,790 **	0,737	-2,427	0,0214
Av. ATO growth (ATO^3)	63,321 ***	3,572	17,727	0,0000
Transaction value	0,140 ***	0,042	3,362	0,0021
Av. interest expense growth	-0,879 **	0,381	-2,305	0,0283
Av. EBITDA / total assets growth	0,884	3,982	0,222	0,8259
Av. EBITDA / sales growth	0,717	1,520	0,471	0,6407
Use of tax loss carry forwards	0,140	0,185	0,754	0,4570
Av. sales growth	-0,705	1,079	-0,654	0,5181
Reduced financial distress	-0,556 **	0,203	-2,747	0,0101

R-squared	0,7825	Adjusted R-squared	0,7246	Prob(F-stat)	0,0000 ***

This table reports the output of the regression model in order to examine the impact of presented independent variables on the dependent variable, it being the paid acquisition premium for distressed targets. White's heteroscedasticity corrected standard errors are used to derive the above Coefficients, Standard Errors, t-Statistics and P-values. *** and ** designate a statistical significance at the 1% and 5% level, respectively.

Source: Authors' Composition

The performed regression results in the following equation:

$$ACQUISITION\ PREMIUM = -1.790 + 63.321 \times Average\ ATO\ growth\ (ATO^3) + 0.140 \times Transaction\ Value - 0.879 \times Average\ Interest\ Expense\ Growth - 0.705 \times Average\ Sales\ Growth - 0.556 \times Reduced\ Financial\ Distress$$

Paying a closer look to each hypothesized variable, asset turnover is found to be statistically and economically the most important factor, as the premium is mainly explained by asset turnover^3 with a coefficient of 63.3, expressing an exponential relation between the combined entity's growth in asset turnover and the paid premium. To highlight the extent to which each independent variable explains the

variance of the acquisition premium, the marginal contribution of each one is determined according to Gujarati (2003) (see Table 5.2.2). Therefore, out of the total 72% of the premium's variance that is explained by the model, 58% is attributable to asset turnover[3]. The statistical outcome generally supports H3.

Table 5.2.2 Determination of the Marginal Contribution of Each Dependent Variable

	without Variable		Contribution of the Variable to R^2
	R^2	adj. R^2	
Average ATO Growth (ATO[3])	0,20126	0,02090	0,58134
Transaction Value	0,71480	0,65040	0,06780
Reduced Financial Distress	0,73687	0,67745	0,04573
Average Interest Expense Growth	0,73647	0,67696	0,04613
Use of Tax Loss Carryforwards	0,77943	0,72963	0,00316
Average Sales Growth	0,77996	0,73027	0,00264
Average EBITDA/Sales Growth	0,78064	0,73110	0,00196
Average EBITDA/Total Assets Growth	0,78169	0,73240	0,00090
Total Model	**0,78260**	**0,72462**	

The table presents the marginal contribution of each independent variable in explaining the variance of the dependent variable, derived by conducting the methodology by Gujarati (2003). According to this methodology, eight regressions are run excluding each time one independent variable. The difference between the R^2 of each partial model and the one of the total model indicates the contribution of each variable.

Source: Authors' Composition

Concerning the money value of the transaction a negative coefficient is expected, as it is hypothesized that a higher premium in percentage might be offered for a smaller target. This higher percentage premium would be affordable for the acquirer since, due to the smaller size of distressed targets and hence a smaller transaction value, the acquirer pays a lower absolute deal price and premium in terms of money value. The relation between premium paid and absolute transaction value is found to be indeed statistically significant. However, a positive coefficient is derived by the model

and hence does not confirm the hypothesized inverse relation, meaning that H2 is not supported. Possible explanations for the unexpected results will be provided later in the paper.

Similarly to the transaction value, the derived coefficient of the tax benefit is from an economic point of view different than expected. Although statistically significant, the result concerning the change in interest expenses indicates that transactions involving high premiums are followed by a decrease in interest expenses, meaning a reduction in tax shield. Furthermore, the use of tax loss carry forwards which shows a positive relation with the dependent variable as expected, is found statistically insignificant. In short, H4 and H5 are not supported.

The observed variables regarding synergy realization, meaning sales, EBITDA to sales and EBITDA to total assets, are expected to show a positive relation with the premium paid for a distressed target. For the variables reflecting profitability, those being EBITDA to sales and EBITDA to total assets, the coefficients are as expected but statistically insignificant according to the regression output. Likewise, sales are presented statistically insignificant while being also associated with an inverse coefficient. Overall, the results indicate that the paid premium is not explained by synergistic gains following a transaction, hence H1 is not supported.

The output concerning a reduction of financial distress is unexpected as well. Since such a reduction is a dummy variable coded as 1, while no change or increase in financial distress is coded as 0, a positive coefficient is anticipated. Although significant from a statistical point of view, the model points towards a negative relation, indicated by a negative coefficient. H6 is not supported and possible explanation for the contradicting result has to be examined as well.

For the explanation of the unexpected coefficients, the data was checked for possible distortions, due to the limited sample size and hence potential higher impact of single transactions. Though, no bias is observed in the data, supported by a lack of unsystematic relations linked with isolated disturbing transactions. However, because of the aforementioned limited sample size, it is still presumed that a broader sample might be needed in order to confirm the observed results. Nevertheless, due to the

high marginal contribution of asset turnover[3] in the regressed model, the impact of managerial inefficiency is judged to be a representative and reliable finding of the study.

6 Analysis and Discussion

In this chapter the empirical findings are discussed by mainly focusing on the impact of the ability to improve managerial efficiency on acquisition premia. Furthermore, unexpected significant results of the regression analysis are argued as well as factors that are not covered by the model, but may have an influence on the acquisition premium, are pointed out.

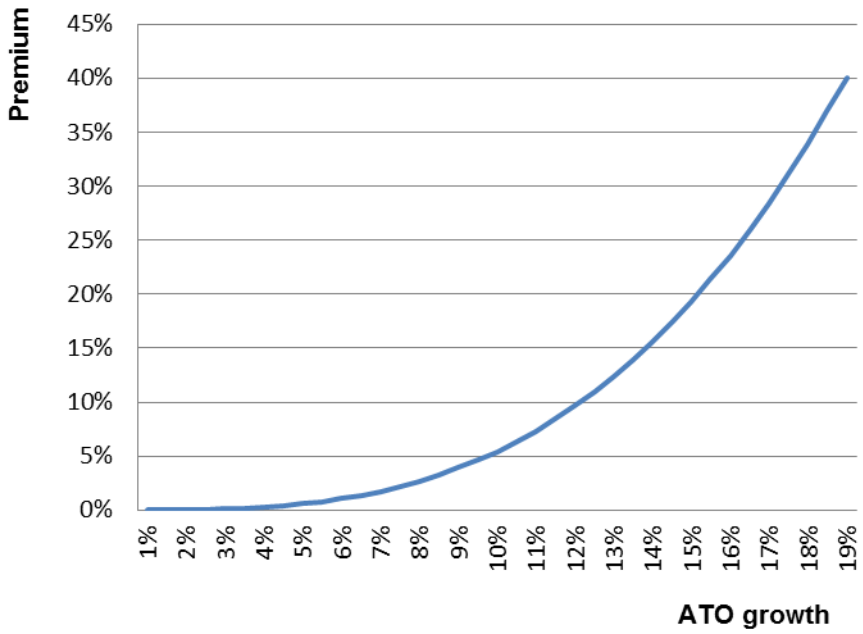
6.1 Impact of Managerial Inefficiency on Distressed Acquisitions

As Theodossiou et. al. (1996) state, a company's managerial inefficiency increases its probability of being targeted for an acquisition. For a distressed player, more specifically, Peel and Wilson (1989) prove that the lower the fixed asset turnover the higher the acquisition probability. Additionally, Turetsky (2003) and Bruton et. al. (1994) explain that inefficiently managed companies which are often performing poorly and suffer from financial distress are indeed preferred takeover targets due to the high restructuring potential they present. Their performance is relatively easily boosted and their distress is subsequently reversed after the replacement of the inefficient management. In fact, distressed targets are more likely to be poorly managed and hence a higher distress is accompanied by a potential for restructuring success (Clark and Ofek, 1994).

A target's potential for inefficiency removal, which in this study is measured by asset turnover, is a crucial motive for an acquirer to buy the target and subsequently to pay a premium for it. The study's results confirm the removal of inefficiency as a rational motivation in the determination of the acquisition premium, which is moreover supported by prior research. Hotchkiss and Mooradian (1998) argue that corporate takeovers promote the deployment of assets in a more efficient usage. Considering the fact that acquirers often operate in a related industry and have prior connection with the targets, it comes naturally that they hold good quality information and are capable of improving the average operating performance after acquiring a distressed target.

In fact, Schwartz and Menon (1985) indicate the change in management as one possible response to financial distress, while Denis and Denis (1995) add that replacement of management after remarkable decline in operating performance leads to significant improvements of operations. Such a replacement, commonly forced after an acquisition, may introduce new talent and turnaround skills into the company, at the same time that underperforming assets are proved to be valuable in the hands of a buyer who utilizes them more efficiently. Under this logic, paying a higher premium for a target with a low asset turnover that will subsequently be boosted after the transaction is justified, as empirical results prove the realization of such an expectation.

Exhibit 5.2.1 Relation of ATO Growth to Paid Premium



The exhibit presents the impact of the potential post-merger ATO growth on the willingness of the acquirer to pay a premium for a distressed target.

Source: Authors' Composition

Furthermore, the relation between asset turnover growth and paid premium is presented by the regression model to be exponential, indicating that acquirers are more willing to pay a relative higher premium for a distressed target if they are able to

improve the target's operations substantially. On the other hand, small improvements appear to be less crucial in motivating the payment of a premium (see Exhibit 5.2.1).

6.2 Discussion of Unexpected Results

While the observed synergy realization measures (sales growth, EBITDA to sales and EBITDA to total assets) as well as the use of tax loss carry forwards are found to be statistically insignificant and hence unable to explain the variance in paid acquisition premium, the explanatory power is left to transaction value, tax shield and financial distress, besides asset turnover. However, for these variables an opposite relation was hypothesized than derived by the statistical model. Therefore, the meaning and explanation of these findings are further discussed.

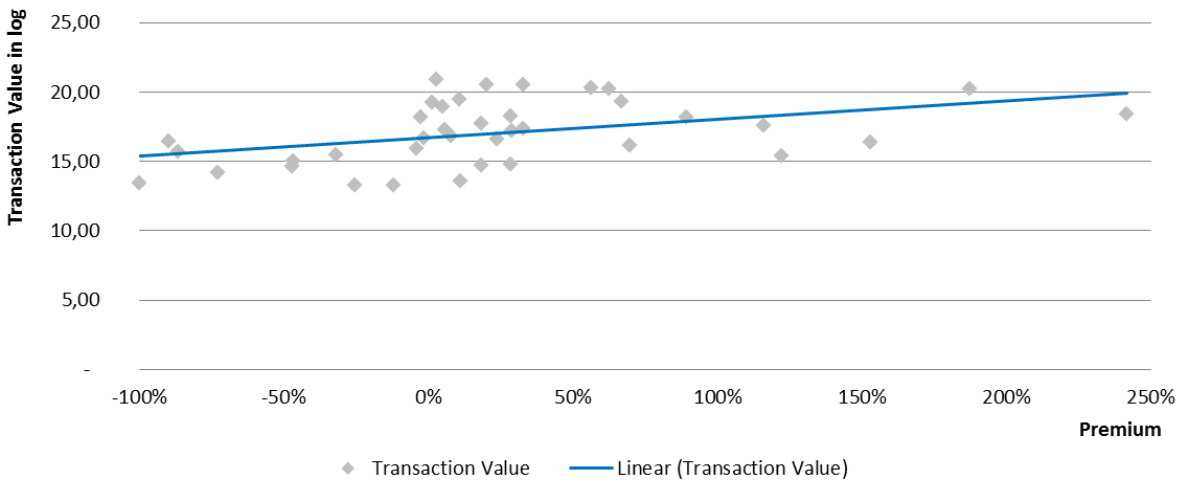
6.2.1 Transaction Value

The total absolute price of the transaction, meaning the amount of money paid for a transaction, is hypothesized to be inversely related to the dependent variable. An acquirer that has to pay a smaller amount for the acquisition of a target is assumed to be more willing to pay a higher premium – in terms of the deal's percentage. In such a case a higher premium (in percentage) paid for a target with a low market capitalization equals to a lower money value. Therefore, such an acquisition is more affordable for the acquirer in comparison to a transaction involving a target with a higher market capitalization, which actually equals to an elevated money value despite a possibly lower premium percentage. Clark and Ofek (1994) confirm this argumentation by stating that an acquirer is more likely to pay a higher premium (in percentage) for a relatively small target, due to a slighter impact on the post-merger performance. Therefore, an inverse relationship between the transaction value and the paid premium is expected, or alternatively a negative coefficient. The regression model though, indicates a positive relationship between the absolute price paid for a target and the percentage of the premium.

A possible explanation for this outcome is considered the fact that a high premium percentage might actually end up leading to a high acquisition value, in terms of paid money as well. Hence, if a high premium contributes in driving the transaction value up, a positive relationship and subsequently a positive coefficient is justified.

To scrutinize the above explanation, an exhibit examining the relation between transaction value and paid premium is employed, which indeed points out that the high-value transactions are the ones accompanied with a high percentage premium (see Exhibit 6.2.1.1). Thus, it can be argued that such a relation exists.

Exhibit 6.2.1.1 Relation of Transaction Value to Paid Premium



The exhibit illustrates the pattern between the premium paid for a distressed target and the transaction value indicating a positive relation.

Source: Authors' Composition

6.2.2 Tax Shield

While Finnerty (2002) finds that received tax advantages might be a motivation for a buyer to pay a premium, the outcome of this study does not support such a finding. Although an average increase of interest expenses is observed in this study for distressed acquisitions, an inverse relationship between post-merger interest

expenses of the combined entity and paid premium is found. The outcome relates to the findings of Devos et. al. (2008), as they observe only little evidence for tax benefits in acquisitions and hence state that tax benefits do not provide crucial acquisition gains. However, the outcome concerning the variable interest expenses needs to be seen in a dual perspective. In the context of this study interest expense growth is used as a proxy for tax shield, however this measure also serves as an indicator for leverage. Interpreting this result in the context of leverage, points towards a negative relation between premium paid and post-merger indebtedness of the combined entity, which relates to the findings of Clark and Ofek (1994). They argue that high post-merger leverage is associated with worse post-merger performance meaning in turn that a reduced post-merger leverage is accompanied with performance improvements and therefore provides a motive for paying a premium.

In sum, it can be argued that even if acquisitions include tax advantages, these gains do not motivate acquirers to pay more for a distressed target. However, the possibility of the combined entity to reduce its leverage right after the acquisition and hence diminish immediately the financial distress will benefit acquirers and serves as a motivation to pay a premium.

6.2.3 Financial Distress

By examining the change between the interest rate of the target before the acquisition and the one of the combined entity afterwards as a proxy for financial distress, this study reveals that the reduction of financial distress is quite diffuse with only 65% of the analyzed targets experiencing a lower post-merger interest rate. Additionally, the regression model illustrates a negative relation between a reduction in financial distress and the paid premium. This result indicates that if financial distress could get reduced after the merger, the acquirer has paid a smaller premium. Due to this inverse relation, the reduction of financial distress in the form of reduced interest rates cannot be seen as a motive to pay a higher premium, in fact it is to be interpreted as a consequence.

This inverse relation can be backtracked to the fact that if a distressed target is highly leveraged its likelihood of being acquired is reduced (Turetsky, 2003; Crawford and Lechner, 1996; Stevens, 1973). Furthermore, Crawford and Lechner (1996) find that leverage has a negative impact on acquisition premium, as unused debt capacity would be valuable to an acquirer. Hence, if a highly leveraged firm gets still acquired, a lower premium will be offered for such a target. Clark and Ofek (1994) argue that a financially solvent bidder may reduce the financial distress costs of a distressed target by supporting the target with its strong financial position. However, this financial distress reduction is better reflected in the change of absolute interest expenses as discussed in the previous chapter. Though, the reduction of a target's financial distress through providing access to a cheaper possibility of funding is a side effect which is not considered being worthy to pay a premium.

6.3 Uncovered Premia Determinants

Since the regressed model explains 72% of acquisition premium's variance of the examined sample, the remaining 28% is hence influenced by other factors discussed in this section.

As mentioned earlier, valuation problems or even errors, might have a large impact on the perception of the target's value as well as potential acquisition gains due to the lack of information (Gilson et. al, 2000) and comparables (Ernst & Young, 2010). These issues combined with the high complexity and the accompanied time pressure of acquiring distressed companies might lead the acquirer to overpay.

Besides valuation errors, managerial hubris may have an influence on acquisition premia since overconfident managers tend to overestimate potential synergy realization (Rau and Vermaelen, 1998) and their ability to successfully restructure a distressed target (Bruyland and Maeseneire, 2011). Therefore, in the presence of hubris acquirers are more likely to pay a higher premium which is not solely based on rational motives.

Another important factor determining acquisition premia is the competitive situation in the acquisition market and the bargaining power of each party (Baker et. al., 2009; Walkling and Edmister, 1985). As Walkling and Edmister (1985) observe, in case of a counter bidder the premium increases on average by 33.5%. Related to this finding, Hotchkiss and Mooradian (1998) prove that in acquisitions of bankrupt targets there are more often multiple bidders involved than in non-distressed acquisitions, while on the other hand distressed targets might achieve lower premium if their bargaining power is affected due to their severe situation (Clark and Ofek, 1994).

Furthermore, the acquirer's financial situation and future perspectives play a role in determining the size of the premium. Due to Gondhalekar et. al. (2004) findings related to the Free Cash Flow hypothesis, firms with a higher internal cash generation ability and low market-to-book ratios tend to pay higher premia, indicating that firms with more available funds and less organic growth opportunities are less reluctant to pay more.

Finally, the financial structure of the deal itself can as well have an impact on the price paid. Since a cash deal means an immediate taxation for the seller, while the taxation on a stock swap is deferred, cash deals normally are associated with a higher transaction value indicating a higher premium paid (Brown and Ryngaert, 1991).

All these uncovered factors which may influence the acquisition premium are not considered rational motives for an acquirer to pay more, since they represent a more passive effect and not an active decision. Therefore, they are not modeled into the regression; however they need to be taken into consideration when interpreting the study's outcome.

7 Conclusion

With the purpose to investigate acquirer's possible rational motives of paying a premium for a distressed target, the study confirms the findings by Ang and Mauck (2011) that distressed targets achieve higher takeover premia, by observing an average premium of 61.0% for distressed targets, compared to a 34.3% for the non-distressed ones. In particular, the study aims to test the impact of a better and faster synergy realization, a lower absolute money value of the transaction in comparison to a non-distressed acquisition, the removal of managerial inefficiency, the use of tax benefits and the reduction of the target's financial distress on acquisition premium.

The reduction of managerial inefficiency is found to be statistically and economically the most important factor in explaining the premium paid for financially distressed takeover targets. Furthermore, the analyzed exponential relation between the reduction of managerial inefficiency and premium paid points towards the fact that acquirers are more willing to pay a relative higher premium for a distressed target if they are able to improve the target's operations substantially. The size of the transaction value, as well as the reduction of financial distress in the form of reduced financial leverage, are also found to impact the acquisition premium but are of considerably less importance. Finally, although improved operations in the sense of sales growth and profitability are observed for distressed transactions, no statistical relation with paid premium is found. A similar outcome is derived concerning the impact of tax benefits.

The study's findings concerning improved post-merger managerial efficiency of distressed transactions attests the statement of Clark and Ofek (1994) that the economy as a whole benefits from distressed acquisitions, emphasizing the importance of post-merger value creation and increased efficiency, following effective asset deployment. Putting this into perspective, the authors conclude that an acquirer should only consider paying a premium for a distressed target if operational inefficiencies of the target are detected and its assets could be used in a more efficient way. Operational inefficiencies due to general distress of the industry, for example, might not be likely to be resolved easily after the merger and hence need to

be analyzed carefully in advance. In such a case, competitive constraints might prevent a more efficient deployment of assets.

In fact, the high complexity of distressed acquisitions, involving not only time pressure but also valuation difficulties due to a lack of comparability, highlights the necessity of having the right management team on board. A management being capable of screening potential distressed targets and assessing the target's fundamental value to prevent the acquirer from overpaying, is a key factor for a successful acquisition. Furthermore, to ensure that the acquirer will be able to resolve the target's financial distress after the acquisition and hence benefit from the transaction, the role of its management team is stressed once again. Even after the completion of the deal, time pressure is still an issue in distressed acquisitions, forcing the management to react quickly and make crucial strategic decisions. Therefore, managerial acuity and special turnaround skills are essential.

Since the post-merger success of a transaction and the justification of the acquisition premium are highly dependent on the judgment of the acquirer's management – and even more vital for distressed acquisitions – a well-functioning corporate governance system is important. Either effective monitoring by the board of directors, or an efficient incentive system could serve this purpose and hence prevent acquisitions initiated due to hubris and personal motives.

Finally, from a shareholder's point of view, the assessment of an acquirer's corporate governance system should be part of the approval process of any acquisition, besides taking the suitability of the target into account. Especially, in case of a distressed acquisition a shareholder should be aware of the hazard introduced by potential misaligned incentives, increasing the overall riskiness of such a transaction.

7.1 Proposals for Further Research

Concerning the study's research focus, it is pointed out that it remains highly under researched and therefore offers plenty of space for future scrutiny.

Although the selected proxies are based on extensive investigation of previous literature, there is still a possibility that different proxies may be judged as more suitable ones for future research. For instance, leverage, which is not taken into account in this study since it was not considered as an active rational motive to pay a premium but more as a passive reasoning to pay less, appears in the results to play a role in the determination of premium. A research controlling the leverage of the target and acquirer before the transaction, as well as the one after the merger, might disclose a deterministic relation with the paid premium.

Furthermore, a larger sample size is considered constructive in order to confirm the output of the study. Perhaps a global sample, instead of focusing on European transactions, might give more general results. At the same time, a longer time span of examined transactions – since the restriction of deals solely held in EURO will be withdrawn- might reveal relations noticeable over a longer history of acquisitions and currently underestimated by the study.

Finally, it might be interesting to examine the role of corporate governance in acquisitions that a significant removal of managerial inefficiency is observed, since this study highlights the importance of managerial skills.

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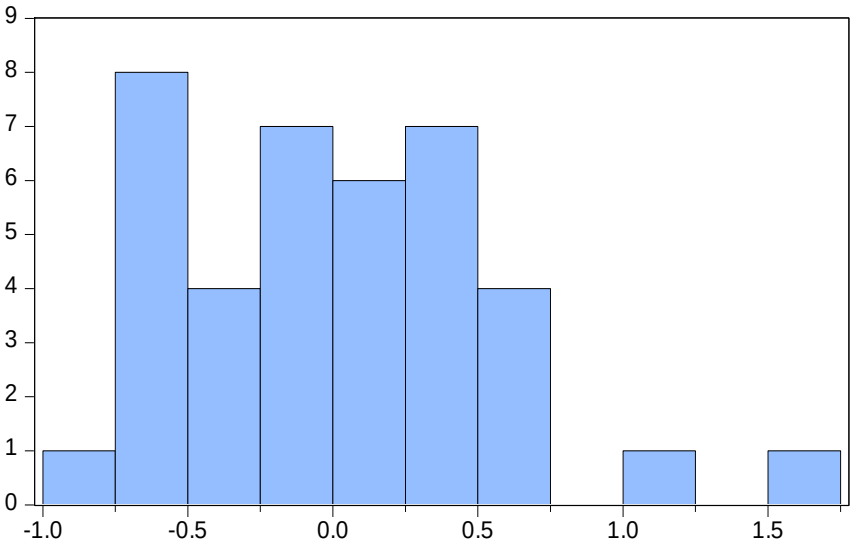
9 Appendix

Appendix A: Jarque-Bera Test for Normality



Series: Residuals
Sample 1 39
Observations 39

Mean	3.77e-16
Median	-0.042966
Maximum	1.551916
Minimum	-0.852563
Std. Dev.	0.524481
Skewness	0.627267
Kurtosis	3.313184
Jarque-Bera	2.716903
Probability	0.257059

To prove the normal distribution of the sample a Jarque-Bera test is performed, giving the illustrated result. The normality assumption is supported.

Source: Authors' Composition

Appendix B: Covariance Test of Residuals to Independent Variables

	Av. ATO growth (ATO³)	Av. EBITDA / total assets growth	Av. EBITDA / sales growth	Reduced financial distress	Av. interest expense growth	Av. sales growth	Use of tax loss carry forwards	Transaction value	Residual
Av. ATO growth (ATO³)	1.000000								
Av. EBITDA / total assets growth	-0,04821	1.000000							
Av. EBITDA / sales growth	-0,09045	0.641673	1.000000						
Reduced financial distress	0.149637	-0,177	-0,06291	1.000000					
Av. interest expense growth	-0,06824	0.025245	0.095851	-0,19214	1.000000				
Av. sales growth	0.350896	0.459777	0.398307	0.089334	0.156543	1.000000			
Use of tax loss carry forwards	-0,151	-0,15014	-0,00535	0.325300	-0,14529	-0,18367	1.000000		
Transaction value	-0,11262	0.208436	-0,0443	0.009827	0.049874	0.029113	-0,11005	1.000000	
Residual	2.75E-16	3.51E-16	-3.45E-16	-1.34E-15	-3.72E-16	1.48E-16	-1.55E-15	-8.21E-15	1.000000

To prove that the residuals of the used regression model are not correlated with the independent variables a covariance test is performed. As illustrated no covariance is found.

Source: Authors' Composition

Appendix C: Multicollinearity Test (VIF)

	Correlations			Collinearity Statistics	
	Zero-order	***Partial***	***Part***	***Tolerance***	***VIF***
Average Sales Growth	0,2240	-0,1100	-0,0510	0,5680	1,7600
Average EBITDA/Sales Growth	-0,0350	0,0950	0,0440	0,5150	1,9410
Average EBITDA/Total Assets Growth	0,0970	0,0640	0,0300	0,4430	2,2590
Average Interest Expense Growth	-0,2400	-0,4180	-0,2150	0,8870	1,1270
Reduced Financial Distress	-0,0630	-0,4170	-0,2140	0,7700	1,2990
Transaction Value	0,1650	0,4880	0,2600	0,8650	1,1560
Use of Tax Loss Carryforwards	-0,1410	0,1200	0,0560	0,8030	1,2450
Average ATO Growth (ATO^3)	0,7840	0,8530	0,7620	0,7550	1,3250

The multicollinearity of the independent variables is tested through the variance inflation factor test, giving no support for multicollinearity problems.

Source: Authors' Composition

Appendix D: Ramsey RESET Tests

Ramsey RESET Test (ATO)

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	4.415616	29	0.0001
F-statistic	19.49767	(1, 29)	0.0001
Likelihood ratio	20.05458	1	0.0000

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	6.609370	1	6.609370
Restricted SSR	16.43986	30	0.547995
Unrestricted SSR	9.830494	29	0.338983
Unrestricted SSR	9.830494	29	0.338983

LR test summary:

	Value	df
Restricted LogL	-38,49348	30
Unrestricted LogL	-28,46619	29

Unrestricted Test Equation:

Dependent Variable: PREMIUM

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2,122385	0,806335	-2,632138	0,0135
Average ATO Growth (ATO^3)	2,043818	1,952728	1,046647	0,3039
Transaction Value	-0,263828	3,3191	-0,079488	0,9372
Average Interest Expense Growth	0,785314	1,481238	0,530174	0,6
Average EBITDA/Total Assets Growth	-0,417782	0,249299	-1,675825	0,1045
Average EBITDA/Sales Growth	-0,753405	0,388738	-1,938081	0,0624
Use of Tax Loss Carryforwards	-0,436259	1,146332	-0,380569	0,7063
Average Sales Growth	0,081759	0,210299	0,388773	0,7003
Reduced Financial Distress	0,146839	0,047551	3,08801	0,0044
FITTED^2	0,266842	0,060431	4,415616	0,0001

R-squared	0,795545	Mean dependent var	0,381702
Adjusted R-squared	0,732093	S.D. dependent var	1,124855
S.E. of regression	0,582222	Akaike info criterion	1,972625
Sum squared resid	9,830494	Schwarz criterion	2,399179
Log likelihood	-28,46619	Hannan-Quinn criter.	2,125669
F-statistic	12,5378	Durbin-Watson stat	1,663142
Prob(F-statistic)	0		

To test the linearity of the used regression model Ramsey RESET test is performed giving the illustrated result. The test presents that at least one variable is not defined optimally and hence needs to be adjusted.

Source: Authors' Composition

Ramsey RESET Test (ATO³)

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.793986	29	0.4337
F-statistic	0.630414	(1, 29)	0.4337
Likelihood ratio	0.838715	1	0.3598

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.222399	1	0.222399
Restricted SSR	10.45307	30	0.348436
Unrestricted SSR	10.23067	29	0.352782
Unrestricted SSR	10.23067	29	0.352782

LR test summary:

	Value	df
Restricted LogL	-29,66361	30
Unrestricted LogL	-29,24425	29

Unrestricted Test Equation:

Dependent Variable: PREMIUM

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1,7821	0,8059	-2,2113	0,0351
Average ATO Growth (ATO^3)	28,2197	44,7771	0,6302	0,5335
Transaction Value	0,1339	0,0469	2,8567	0,0078
Average Interest Expense Growth	-0,7664	0,3779	-2,0280	0,0518
Average EBITDA/Total Assets Growth	1,9309	2,8423	0,6794	0,5023
Average EBITDA/Sales Growth	0,2848	1,4888	0,1913	0,8496
Use of Tax Loss Carryforwards	0,1748	0,2174	0,8040	0,4279
Average Sales Growth	-0,6745	1,1769	-0,5731	0,5710
Reduced Financial Distress	-0,4901	0,2380	-2,0596	0,0485
FITTED^2	0,1074	0,1353	0,7940	0,4337

R-squared	0,787222	Mean dependent var	0,381702
Adjusted R-squared	0,721187	S.D. dependent var	1,124855
S.E. of regression	0,593954	Akaike info criterion	2,012526
Sum squared resid	10,23067	Schwarz criterion	2,43908
Log likelihood	-29,24425	Hannan-Quinn criter.	2,16557
F-statistic	11,92134	Durbin-Watson stat	1,943508
Prob(F-statistic)	0		

After adjusting the model by changing ATO to ATO^3 the linearity of the model is tested once more, confirming the right specification of the model.

Source: Authors' Composition

Appendix E: Market Capitalization of Distressed and Non-Distressed Targets

Distressed Acquisitions

Announcement Date	Completion Date	Target	Acquirer	Market Cap of the Target 1 Week before Annoucement
11.08.2004	11.08.2004	Grande Paroisse SA	Total SA	1.365.430.000,00
21.01.2002	28.02.2002	Stonesoft e-solutions Oy	Novo Group Oyj	139.240.000,00
17.11.2006	27.12.2006	Rhein Biotech	Crucell NV	48.560.000,00
16.05.2002	28.06.2002	GroupeCyber	Alten	10.440.000,00
26.05.2006	26.05.2006	E Pairis SA	Thrace Plastics Co SA	6.910.000,00
29.05.2000	02.11.2000	DUC	VERNEUIL FINANCE	14.320.000,00
01.11.2007	01.11.2007	Hamatech AG	Singulus Technologies AG	82.800.000,00
14.02.2006	14.02.2006	Nomatica	eXpansys Southern Europe	1.550.000,00
14.10.2004	01.12.2004	Turun Arvokiinteistot Oyj	Nordea Bank AB	2.100.000,00
05.04.2005	12.08.2005	Liberty Surf Group SA	Telecom Italia SpA	272.890.000,00
24.06.2004	30.06.2005	Laboratoires Dolisos	Boiron SA	79.070.000,00
04.09.2006	25.10.2006	Phoenix-Metrolife S.A.	Credit Agricole SA	185.100.000,00
21.05.2002	21.06.2002	Gevaert (check Jan 2001)	Almanij NV	1.224.550.000,00
14.02.2005	18.07.2005	Terra Networks SA	Telefonica SA	1.882.590.000,00
29.04.2002	09.08.2002	Consors Discount Broker AG	BNP Paribas	563.590.000,00
09.02.2007	18.04.2007	I.NET SpA	BT Group PLC	202.740.000,00
27.03.2000	07.06.2000	Kulmbacher Brauerei AG	Bayerische BrauHolding AG	48.380.000,00
27.10.1999	27.10.1999	Intertechnique	Zodiac SA	420.260.000,00
27.02.2004	27.02.2004	Maternus Kliniken AG	WCM Beteiligungs- und Grundbesitz-AG	7.200.000,00
19.12.2003	19.04.2004	Bac Majestic	Millimages	4.140.000,00
29.11.2001	06.02.2002	U S U Softwarehaus AG	Openshop Holding Ag	43.030.000,00
30.07.2007	06.11.2007	Getronics NV	Koninklijke KPN NV	687.790.000,00
16.07.2001	04.09.2001	Devote NV	Ordina NV	13.320.000,00
15.07.2002	09.10.2002	On Banca SpA	Unicredito Italiano SpA	64.650.000,00
06.04.2005	17.05.2005	MLPC International	Arkema	7.330.000,00
21.05.2004	10.09.2004	Nedcon Groep NV	Voestalpine AG	23.870.000,00
08.11.2004	13.07.2005	VA Technologie AG	Siemens AG	750.480.000,00
24.07.2006	26.10.2006	Elit Group	Sage Overseas Limited	25.830.000,00
08.01.2001	08.01.2001	Liberty Surf Group SA	Tiscali SpA	566.220.000,00
29.09.2005	14.03.2006	Telindus Group NV	Belgacom SA	402.750.000,00
19.12.2005	13.12.2006	Delta Ice Cream SA	Nestle Hellas SA	149.750.000,00
07.12.2001	08.02.2002	Videlec	Debitel France	5.890.000,00
04.09.2001	20.12.2001	Heineken Espana Sa	Heineken NV	338.400.000,00
01.04.2003	13.06.2003	Cycos Ag	Siemens AG	36.190.000,00
17.07.2002	01.09.2002	Self Trade	DAB Bank AG	54.440.000,00
09.11.2001	27.12.2001	Infosources	Belgacom SA	80.640.000,00
31.07.2000	09.02.2001	Consodata	Seat Pagine Gialle SpA	404.120.000,00
23.12.2003	30.06.2004	Mannheimer AG Holding	Uniqa Versicherungen AG	38.300.000,00
25.05.2007	03.07.2007	Fonciere Europe Logistique	Fonciere des Regions	6.080.000,00
25.04.2001	25.04.2001	Springboard Internet Services Ltd	Tiscali SpA	29.270.000,00
11.06.2001	02.08.2001	Intercall	Liberty Surf Group SA	4.680.000,00
12.03.2003	04.08.2003	Telecom Italia SpA	Ing C Olivetti & C SpA	7.598.300.000,00
29.10.2007	14.12.2007	Algoriel	GFI Informatique SA	1.870.000,00
AVERAGE				**416.164.186,05**

Non-distressed Acquisitions

Announcement Date	Completion Date	Target	Acquirer	Market Cap of the Target 1 Week before Annoucement
30.06.1999	09.09.1999	DSL Holding AG	Deutsche Postbank AG	317.100.000,00
30.08.1999	13.10.1999	Promodes	Carrefour SA	11.937.170.000,00
20.09.1999	21.10.1999	Paribas	Banque Nationale De Paris Sa	16.998.870.000,00
20.09.1999	15.11.1999	Dexia France SA	Dexia SA	5.153.810.000,00
01.10.1999	01.10.1999	Ansaldo Trasporti SpA	Finmeccanica SpA	130.220.000,00
12.10.1999	12.10.1999	Compagnie Financiere Sgte	Schneider Electric SA	133.770.000,00
14.10.1999	18.11.1999	Guilbert SA	Pinault Printemps Redoute SA	1.172.200.000,00
21.10.1999	24.11.2000	VEW AG	RWE AG	4.614.300.000,00
03.02.2000	29.03.2000	Edison SpA	Compart SpA	1.677.740.000,00
16.02.2000	09.08.2000	Wartsila NSD	Metra Corporation	702.620.000,00
16.02.2000	31.03.2000	Kauppakaari Oyj	Talentum Oyj	45.630.000,00
07.03.2000	01.06.2000	Montedison SpA	Compart SpA	4.726.310.000,00
13.03.2000	17.05.2000	Surcouf	Pinault Printemps Redoute SA	34.000.000,00
25.04.2000	07.09.2000	Krasnapolsky Hotels & Restauran	NH Hoteles SA	384.610.000,00
19.06.2000	19.06.2000	Brit Air	Air France Finance	58.100.000,00
04.07.2000	05.09.2000	Colas SA	Bouygues SA	1.570.950.000,00
07.07.2000	16.08.2000	Distriborg Groupe	Koninklijke Wessanen NV	61.580.000,00
13.07.2000	19.12.2000	Groupe GTM	Vinci	1.581.780.000,00
24.08.2000	05.01.2001	Zanders Feinpapiere AG	Metsa Serla Oyj	108.800.000,00
01.11.2000	01.11.2000	Lusomundo SGPS SA	PT Multimedia - Servicos de Telecomunicacoes e Multimedia SGPS SA	470.520.000,00
05.12.2000	06.02.2001	Mandatum Bank	Sampo-Leonia	239.430.000,00
11.01.2001	01.05.2001	Asturiana De Zinc SA	Xstrata Spain SL	410.120.000,00
16.03.2001	05.04.2001	Decan Groupe SA	Getronics NV	124.070.000,00
02.04.2001	31.12.2001	Saint Gobain Cristaleria SA	Compagnie de Saint Gobain SA	537.230.000,00
27.06.2001	27.06.2001	Banco Espanol De Credito Sa	Banco Santander Central Hispano SA	8.430.180.000,00
03.07.2001	08.10.2001	Isis	Technip	528.600.000,00
03.07.2001	18.10.2001	Coflexip	Technip SA	2.893.220.000,00
03.08.2001	11.10.2002	AvestaPolarit Oyj Abp	Outokumpu Oyj	1.273.640.000,00
29.08.2001	16.10.2001	Austria Tabak AG	Gallaher (Austria) GmbH	1.851.520.000,00
30.08.2001	05.12.2001	Socamel Rescaset	Groupe Guillin	26.680.000,00
05.09.2001	12.11.2001	Cibix	Befimmo	186.540.000,00
07.09.2001	19.12.2001	Bodegas y Bebidas SA	Allied Domecq Plc	200.940.000,00
27.09.2001	30.10.2001	Sommer Allibert	Faurecia SA	1.228.910.000,00
22.10.2001	20.12.2001	Polynorm NV	Voest-Alpine AG	84.400.000,00
12.12.2001	12.08.2002	Jumptec Industrielle Computertecl	Kontron AG	1.570.240.000,00
24.01.2002	21.02.2002	Lapeyre	Compagnie de Saint Gobain SA	1.110.750.000,00
07.02.2002	07.02.2002	HVB Real Estate Bank AG	Bayerische Hypo-und Vereinsbank AG	1.091.370.000,00
14.02.2002	03.07.2002	Hartwall Ab Oy	Scottish and Newcastle PLC	1.545.880.000,00
06.03.2002	15.04.2002	Siticom Group	Devoteam	39.790.000,00
10.04.2002	22.07.2002	Tredi Environnement	Seche Environnement SA	237.660.000,00
29.04.2002	20.12.2002	Salamander AG	Energie Baden-Wurttemberg AG	226.520.000,00
08.05.2002	28.10.2002	Bouygues Offshore SA	Saipem SpA	841.950.000,00
06.06.2002	06.06.2002	Rheinhold & Mahla AG	Bilfinger Berger AG	73.800.000,00
14.06.2002	30.08.2002	Partek Corporation	Kone Corp	737.200.000,00
07.08.2002	08.11.2002	Simco SA	Gecina	2.340.490.000,00
11.12.2002	02.06.2003	Credit Lyonnais SA	Credit Agricole SA	18.241.860.000,00
13.01.2003	27.03.2003	Vodafone Libertel NV	Vodafone Group PLC	3.421.870.000,00
28.02.2003	17.03.2003	IPI SpA	Risanamento Napoli SpA	172.920.000,00
06.03.2003	06.03.2003	Air Dolomiti SpA - Linee Aeree Re	Deutsche Lufthansa AG	125.960.000,00
25.03.2003	31.12.2003	Banca Popolare dell'Adriatico SpA	Sanpaolo IMI SpA	251.590.000,00
02.04.2003	23.06.2003	Remi Claeys Aluminium NV	Sapa AB	51.040.000,00
07.04.2003	06.11.2003	Kolbenschmidt Pierburg AG	Rheinmetall AG	282.830.000,00
17.04.2003	21.11.2003	Banca Popolare di Cremona SpA	Banca Popolare di Lodi SCaRL	603.880.000,00
14.05.2003	06.08.2003	Locat SpA	Unicredito Italiano SpA	401.420.000,00

Announcement Date	Completion Date	Target	Acquirer	Market Cap of the Target 1 Week before Annoucement
03.07.2003	15.12.2003	Grupo Dragados SA	Actividades de Construccion y Servicios SA	3.128.800.000,00
24.12.2003	16.01.2004	Northern Foods Plc	Bank of Scotland(Ireland)	695.960.000,00
15.01.2004	31.01.2004	Solaronics Technologies	Bekaert Combustion Technology NV	12.200.000,00
20.01.2004	26.03.2004	Holsten-Brauerei AG	Carlsberg A/S	393.250.000,00
26.01.2004	20.08.2004	Aventis SA	Sanofi-Synthelabo	43.907.270.000,00
03.02.2004	03.02.2004	Dyckerhoff AG	Buzzi Unicem SpA	480.530.000,00
25.02.2004	19.04.2004	Wanadoo	France Telecom SA	11.259.330.000,00
05.03.2004	05.03.2004	General Bank of Greece SA	Societe Generale	206.190.000,00
18.03.2004	27.04.2005	Kleindienst Datentechnik AG	Beta Systems Software AG	22.840.000,00
23.03.2004	01.06.2004	SAP Systems Integration AG	SAP AG	558.480.000,00
29.03.2004	31.12.2004	Yomi Oyj	Elisa Corporation	79.020.000,00
06.05.2004	31.10.2006	AMGA - Azienda Mediterranea Ga	AEM - Azienda Energetica Metropolitana Torino SpA	421.110.000,00
30.06.2004	20.08.2004	Bastogi SpA	Sintesi	89.560.000,00
09.10.2004	06.06.2006	T-Online International AG	Deutsche Telekom AG	10.855.620.000,00
28.10.2004	19.07.2005	Royal Dutch Petroleum Company	Royal Dutch Shell Plc	87.986.130.000,00
18.11.2004	22.12.2004	Crometal	Norinco Holdings SAS	89.570.000,00
08.12.2004	20.06.2005	TIM - Telecom Italia Mobile SpA	Telecom Italia SpA	43.772.430.000,00
10.12.2004	28.04.2005	Teutonia Zementwerk AG	HeidelbergCement AG	19.730.000,00
17.12.2004	05.04.2005	Ioltech	Carl Zeiss Meditec AG	96.160.000,00
31.12.2004	31.12.2004	E.ON Bayern AG	E.ON AG	11.393.070.000,00
20.01.2005	14.12.2005	Wuerzburger Hofbraeu AG	Kulmbacher Brauerei AG	40.100.000,00
28.01.2005	01.09.2005	Investkredit Bank AG	Oesterreichische Volksbanken AG	747.890.000,00
15.03.2005	01.06.2005	Gecina	Metrovacesa SA	4.980.560.000,00
10.06.2005	25.11.2005	Greek Progress Fund SA	EFG Eurobank Ergasias SA	109.620.000,00
11.07.2005	04.11.2005	Saunalahti Group Oyj	Elisa Corporation	281.350.000,00
27.07.2005	04.01.2006	Datamat SpA	Finmeccanica SpA	268.900.000,00
28.07.2005	28.11.2005	Mermet SA	Hunter Douglas NV	19.320.000,00
08.08.2005	30.09.2005	Acea Trasmissione SpA	TERNA - Trasmissione Elettricita Rete Nazionale SpA	1.945.430.000,00
24.08.2005	20.02.2006	Autoroutes Paris Rhin Rhone	Eiffage	11.086.940.000,00
24.08.2005	09.03.2006	Autoroutes du Sud de la France	Vinci	11.086.940.000,00
05.09.2005	26.09.2005	Quaternove SA	Alten	13.800.000,00
12.09.2005	09.01.2006	Pohjola Group Plc	Osuuspankkien Keskuspankki Oyj OKO	1.792.460.000,00
19.10.2005	04.01.2006	Cramo Holding BV	Rakentajain Konevuokraamo Oyj	110.810.000,00
15.11.2005	31.03.2006	Eurohypo AG	Commerzbank AG	8.873.320.000,00
16.11.2005	16.11.2005	Sidenor SA	Banco Santander Central Hispano SA	245.450.000,00
02.12.2005	22.02.2006	Cementos Lemona SA	Cementos Portland Valderrivas SA	330.960.000,00
07.12.2005	25.08.2006	Gemplus International SA	Axalto Holding NV	1.345.210.000,00
20.12.2005	24.07.2006	Hyparlo SA	Carrefour SA	527.620.000,00
09.01.2006	27.02.2006	Axa Konzern AG	Axa SA	3.368.060.000,00
23.01.2006	27.02.2006	BHW Holding AG	Deutsche Postbank AG	2.775.600.000,00
27.01.2006	08.08.2006	Arcelor SA	Mittal Steel Company NV	1.530.000,00
03.02.2006	19.05.2006	BNL - Banca Nazionale del Lavoro	BNP Paribas SA	8.890.760.000,00
10.03.2006	10.03.2006	Itinere Infraestructuras SA	Sacyr Vallehermoso SA	687.780.000,00
16.03.2006	31.07.2006	Telefonica Moviles SA	Telefonica SA	43.002.340.000,00
23.03.2006	31.12.2006	Schering AG	Bayer AG	15.768.320.000,00
05.04.2006	14.06.2006	DIS DEUTSCHER INDUSTRIE SE	Adecco Germany Holding GmbH	787.200.000,00
15.04.2006	26.07.2006	Telefonica Publicidad E Informacio	Yell Group PLC	3.285.300.000,00
11.05.2006	11.05.2006	SIIC de Paris	Realia Business	467.410.000,00
01.06.2006	24.10.2006	Bail Investissement	Fonciere des Regions	1.744.590.000,00
08.06.2006	29.09.2006	Ferrari SpA	Fiat SpA	112.220.000,00
13.06.2006	24.08.2006	Emporiki Bank of Greece SA	Credit Agricole SA	3.076.760.000,00
27.06.2006	20.10.2006	Carestel Group	Autogrill SpA	39.790.000,00
30.06.2006	31.10.2006	Moneyline	Ingenico SA	24.520.000,00
11.07.2006	10.07.2006	Ioltech	Carl Zeiss Meditec AG	112.690.000,00
28.07.2006	31.07.2006	Groupe Diwan	France Telecom	29.960.000,00

Announcement Date	Completion Date	Target	Acquirer	Market Cap of the Target 1 Week before Annoucement
28.07.2006	10.01.2007	Parquesol Inmobiliaria SA	Grupo San Jose	786.530.000,00
25.09.2006	04.01.2007	Schwarz Pharma AG	UCB SA	3.359.880.000,00
09.10.2006	11.01.2007	DGAG Deutsche Grundvermoegen	Pirelli & C Real Estate SpA	242.000.000,00
16.10.2006	01.05.2007	La Gaiana SpA	Gabetti Property Solutions SpA	79.720.000,00
30.10.2006	02.02.2007	Dyckerhoff AG	Buzzi Unicem SpA	779.180.000,00
31.10.2006	29.01.2007	Gescartao SGPS SA	Papeles y Cartones de Europa SA	413.690.000,00
11.12.2006	13.04.2007	TDS Informationstechnologie AG	Fujitsu Services Holdings Plc	54.210.000,00
27.12.2006	27.03.2007	Thomas Cook AG	Karstadt Quelle AG	1.022.420.000,00
18.01.2007	27.04.2007	AGF Assurances	Allianz Holding France	24.772.310.000,00
19.02.2007	17.07.2007	Beni Stabili SpA	Fonciere des Regions	2.332.690.000,00
08.03.2007	12.03.2007	Vectrane SA	Eurosic	325.290.000,00
23.03.2007	05.10.2007	Endesa SA	Acciona SA	40.560.790.000,00
10.04.2007	21.06.2007	Rodamco Europe NV	Unibail Holding	9.465.900.000,00
17.04.2007	17.04.2007	Itinere Infraestructuras SA	Sacyr Vallehermoso SA	1.075.410.000,00
19.04.2007	19.04.2007	Heracles General Cement Compa	Lafarge SA	1.272.370.000,00
31.05.2007	27.09.2007	Entrepose Contracting	Vinci	294.480.000,00
22.06.2007	10.09.2007	Athena SA	J & P Avax S.A.	82.230.000,00
04.07.2007	10.07.2007	Exide Technologies S.A.	Petros Petropoulos SA	278.390.000,00
09.07.2007	26.11.2007	Koninklijke Numico NV	Groupe Danone	7.530.010.000,00
23.07.2007	28.09.2007	Parsytec AG	Isra Vision AG	27.300.000,00
17.09.2007	17.09.2007	Unisystems SA	Info-Quest SA	80.880.000,00
24.09.2007	20.12.2007	OnVista AG	Boursorama	95.470.000,00
19.10.2007	13.11.2007	Aufeminin.com	AS Online Beteiligungs GmbH	289.280.000,00
15.11.2007	15.11.2007	Business Interactif	Publicis Groupe SA	131.980.000,00
AVERAGE				**4.015.301.852,67**

The market capitalizations of the targets one week before the announcements are presented, for both distressed and non-distressed ones, summarized in the respective averages.

Source: Authors' Composition

Appendix F: Detailed Regression Output

Variable	Coefficient	Std. Error	t-Statistic	P-value
C	-1,790	0,737	-2,427	0,0214
Av. ATO growth (ATO^3)	63,321 ***	3,572	17,727	0,0000
Transaction value	0,140 ***	0,042	3,362	0,0021
Av. interest expense growth	-0,879 **	0,381	-2,305	0,0283
Av. EBITDA / total assets growth	0,884	3,982	0,222	0,8259
Av. EBITDA / sales growth	0,717	1,520	0,471	0,6407
Use of tax loss carry forwards	0,140	0,185	0,754	0,4570
Av. sales growth	-0,705	1,079	-0,654	0,5181
Reduced financial distress	-0,556 **	0,203	-2,747	0,0101

R-squared	0,782596	Mean dependent var	0,381702
Adjusted R-squared	0,724622	S.D. dependent var	1,124855
S.E. of regression	0,590284	Akaike info criterion	1,982749
Sum squared resid	10,45307	Schwarz criterion	2,366648
Log likelihood	-29,66361	Hannan-Quinn criter.	2,120489
F-statistic	13,49901	Durbin-Watson stat	1,806621
Prob(F-statistic)	0,0000 ***		

This table reports the output of the regression model in order to examine the impact of presented independent variables on the dependent variable, it being the paid acquisition premium for distressed targets. White's heteroscedasticity corrected standard errors are used to derive the above Coefficients, Standard Errors, t-Statistics and P-values. *** and ** designate a statistical significance at the 1% and 5% level, respectively.

Source: Authors' Composition