



UNIVERSIDADE CATÓLICA PORTUGUESA

Industry Differences in Mergers and Acquisitions

M&A Performance and Synergies Assessment

Internship Report
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by

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“To know, is to know that you know nothing.

That is the meaning of true knowledge.”

Socrates

SUMÁRIO EXECUTIVO

Apesar da já extensa pesquisa sobre as sinergias geradas e a performance pós-aquisição em atividades de *M&A*, não existem muitos estudos na literatura sobre as diferenças de performance entre indústrias e tipos de sinergia.

Este relatório, preparado em colaboração com a PricewaterhouseCoopers, durante um estágio curricular em *Corporate Finance*, no departamento de Fusões e Aquisições, tenta preencher esta lacuna existente na literatura e examinar assim três questões. Em primeiro lugar, perceber quais as indústrias que conseguem obter, de um modo geral, mais sinergias após uma aquisição. Em segundo lugar, são analisadas quais os tipos de sinergias que se destacam mais em cada indústria. E finalmente, em terceiro lugar, verificam-se quais as indústrias que têm o melhor desempenho em cada tipo de sinergia.

Deste modo, é apresentada uma nova abordagem na avaliação do desempenho das empresas, através da análise das medianas e taxas de crescimento do valor residual (diferença entre o valor real e o valor previsto). Usando indicadores contabilísticos pós-fusão como medidas de desempenho e *proxies* para sinergias operacionais, financeiras e fiscais, este ensaio conclui que a indústria de Transporte, Armazenagem e Serviços de Viagem é o setor, em geral, com o melhor desempenho, e que a eficiência fiscal é a sinergia com maior criação de valor entre os outros tipos de sinergias. Conclui-se também que nas sinergias operacionais de vendas e nas sinergias fiscais, o sector da construção apresenta-se como a indústria onde houve maior criação de valor e que nas sinergias financeiras, foi o setor de Serviços Imobiliários. Limitações sobre a dissertação e orientações para futuras pesquisas também são discutidas no final.

Palavras Chave: Fusões & Aquisições; Diferenças nas Industrias em F&A; F&A; Performance pós-aquisição; Sinergias em F&A

ABSTRACT

Despite the extensive research about post-acquisition synergistic performance in M&A, there are not many studies about industry differences in each type of synergy.

This report, prepared in collaboration with PricewaterhouseCoopers, during an internship in the Corporate Finance - M&A department, attempts to fill this gap in the literature and examine three issues. First it is examined which industries are more successful in M&A in general. Secondly, it is analysed which synergies stand out the most inside an industry. And thirdly, it is studied which industries have the best performance in each type of synergy.

It is also provided a new approach for examining performance, by analysing the medians and growth rates of the residual values (difference of actual and the predicted values) of the performance measures. Using post-merger, accounting-based indicators as a measure of performance, and proxies for operating, financial and tax synergies, this essay concludes that Transport, Freight, Storage & Travel Services is the industry with the best performance in general and the tax efficiency is the synergy with most value generation across the other types of synergies. It is also concluded that in the revenue-enhancement synergies and in tax synergies the Construction sector was the industry with more synergistic value creation and in financial synergies, was the Property Services sector. Measurement issues and directions for future research are also discussed in the end.

Keywords: Mergers & Acquisitions; Industry differences in M&A; M&A; Post-deal performance; Synergies in M&A

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LIST OF ACRONYMS AND ABBREVIATIONS

- Number of something

^ - Predicted Value

AT – Austria

b – Billion

BE – Belgium

BIMBO – Buy-In Management Buy-Out

CAGR – Compound Annual Growth Rate

Com. – Communications

DE – Germany

DK – Denmark

EBIT – Earnings before Interest and Tax

EBITDA – Earnings before Interest and Tax

EU – Fifteen member states of the European Union

ES – Spain

EY – Ernest & Young

FI – Finland

FR – France

GB – United Kingdom

GDP – Gross Domestic Product

GR – Greece

H&R – Hotel & Restaurants

IE – Ireland

IPO – Initial Public Offer

k – Thousand

m – Million

M&A – Mergers & Acquisitions

MBI – Management Buy-In

MBO – Management Buy-Out

NACE – General Name for Economic Activities in the European Union

OE – Operating Expenses

PPP – Purchasing Power Parity

ROA – Return on Assets

ROE – Return on Equity

ROI – Return on Investment

ROS – Return on Sales

BvD – Bureau van Dijk

1 | INTRODUCTION

Throughout the years, M&A activity has increased considerably, boosted by great change forces in the world economy, such as: accelerated technological pace, reduced communication and transportation costs, expanded and intensified sources of competition and emergent industries and less barriers to capital and investment transactions (Copeland et al., 2014). This kind of investment has always received much attention from the public as well as the academic world, making big headlines and creating lots of controversy around the theme for their possible synergistic outcomes and their huge deal values (Johnson et al., 2009; Hoang & Lapumnuaypo, 2007).

Throughout the literature, there is quite of empirical evidence that M&A on average creates synergistic value (Seth, 1990). There was always the need to measure firms post performance to justify their M&A activity. Nonetheless there is not much evidence whether a company in a specific industry should engage in M&A, and what type of gains will earn the most.

In an attempt to shed some light in this debate by exploring the importance of an industry on the synergistic value creation after an M&A deal, the current paper aims to evaluate the possible outcomes per industry and per synergy type. But measuring these possible outcomes that mergers and acquisitions create is an inexact science, where the most common method is to compare pre and post-deal share prices incorporating investors' expectations (Rehm et al., 2012).

Therefore, this essay was divided into five chapters. First, because this dissertation was made in a corporate environment, since it is connected to an internship in PwC Portugal in the Advisory - Corporate Finance (M&A) department, the company is introduced along with the motivations for the internship. Second, it is reviewed the context, the key concepts and the post-performance measuring methods in M&A

present in the literature. Third, it clarifies and describes the data, the three research questions, the performance measures and the research design and strategy. Because the lack of data and the fact that relying on market expectations skews the results by representing only large companies, the methodology used has focused on accounting based measures using an exploratory approach when assessing synergistic post-performance. Five synergy types and eleven from twenty five general industry classifications were chosen.

Fourth, in chapter five, the results are presented and discussed, and finally, in chapter six the conclusion along with the contribution and limitations of this dissertation and the directions for future work are addressed.

2 | PRICEWATERHOUSECOOPERS

This dissertation was developed during the internship in the Mergers and Acquisitions department at PricewaterhouseCoopers Portugal. Developing the present study along with this internship and the curiosity to learn and understand M&A activity and its behaviour in each different industry, has played a crucial role and incentive in the choice of this theme.

2.1 | PwC in the world & the Corporate Finance division

PricewaterhouseCoopers has resulted from a merger between Price Waterhouse and Coopers & Lybrand in 1998. Both companies were from London and had its origins in the mid-1800s.

PwC¹ is one of the largest consulting company in the world. With a total revenue of \$35.4b in the fiscal year of 2015, PwC is considered one of the “Big Four” together with Ernest & Young, KPMG and Deloitte. It has offices in 157 countries and in 756 different locations, more than 208,109 employees (Figure 1) and was considered in 2015 the 2nd most powerful brand in the world according to Brand Finance Global 500.

PwC clients include 418 firms in the list Fortune Global 500 and 443 firms from FT Global 500. It offers multiple services in the segments of Audit & Assurance, Tax, Advisory, Consulting, Deals, Entrepreneurial & Private Clients, Family Business Services, IFRS, People & Organisation, Legal, and Sustainability & Climate Change.

¹ In 2010, PricewaterhouseCoopers had formally shortened its brand name to PwC.

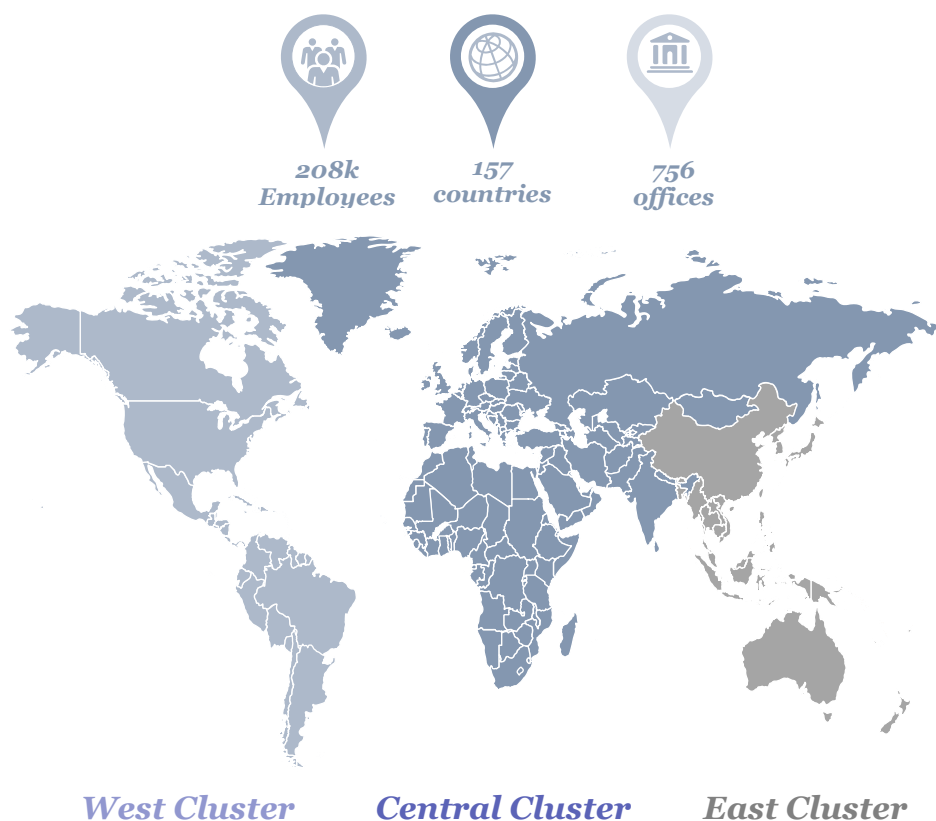


Figure 1 – PwC Global Presence | Source: PwC’s internal source

In 2015 and 2014, PwC was the number one company in the world and Europe in terms of number of M&A transactions, being ahead of its competitors (Table 1). Furthermore, in the last ten years, PwC has advised more than 4,000 transaction worldwide with a total value of more than €460b.



World Rank	Advisor	Nr. Deals 2015	Nr. Deals 2014	Europe Rank	Advisor	Nr. Deals 2015	Nr. Deals 2014
1		389	398	1		262	266
2	Goldman Sachs	349	376	2	Rothschild	242	220
3	Morgan Stanley	329	288	3	KPMG	205	242
4	KPMG	323	365	4	EY	196	217
5	JPMorgan	303	274	5	Deloitte	175	197

Table 1 – Number of deals ranking made in the World and Europe by financial consultancy companies | Source: PwC’s internal source

The Corporate Finance division in the Deals department has 2,500 employees spread worldwide (Figure 2). The department Deals is divided in Transactions and Corporate Finance.

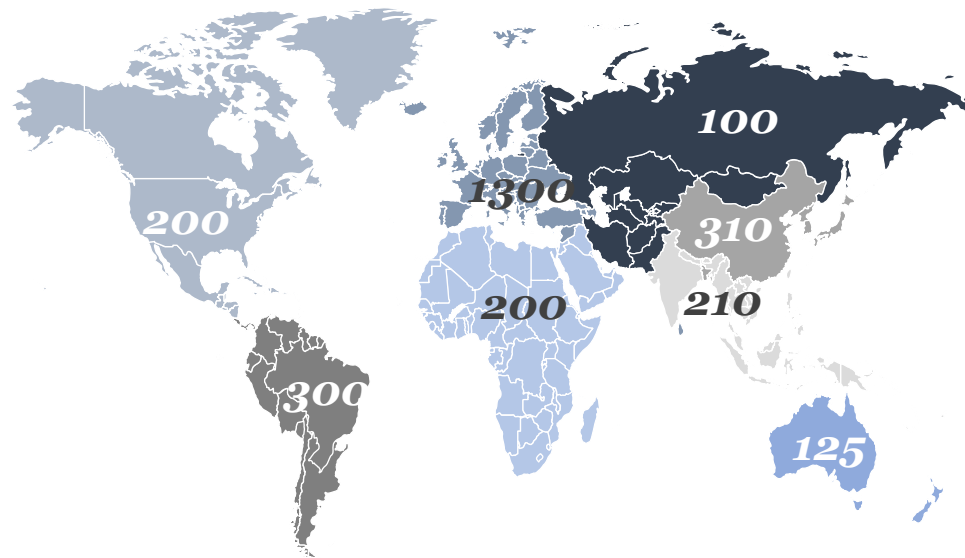


Figure 2 – Number of employees by world region in the Corporate Finance Division
Source: PwC's internal source

2.2 | PwC Portugal & the Corporate Finance division

PwC is present in Portugal for more than fifty years and its activity is split by the following entities:

- **Auditing:** PricewaterhouseCoopers & Associados - Sociedade de Revisores de Contas, Lda (PwC SROC);
- **Advisory:** PricewaterhouseCoopers / AG - Assessoria de Gestão, Lda (PwC AG);
- **Financial Services:** PricewaterhouseCoopers / MFAS – Management, Finance & Accounting Services, Lda.

PwC has two offices in Portugal – Lisbon and Oporto – and other two in Angola and Cape Verde, with 38 partners and about 1,300 employees in total (Figure 3). The services offered are Assurance, Tax and Advisory. In advisory, there is the

subdivision named Corporate Finance and therefore the divisions of M&A, Funding/ IPO's, Privatizations, Project Finance, Revision of Financial Models and Public Private Partnerships.



Figure 3 – Employees in Portugal by functional division | Source: PwC internal source

In terms of number of deals made in 2015, Portugal also stands out in first place, with seven deals made in the last year (Table 2).


PT Rank	Advisor	Nr. Deals 2015	Nr. Deals 2014
1	 pwc	7	3
2	EY	4	1
3	Deloitte	1	1
4	Citi	1	1
5	KPMG	-	4

Table 2 - Number of deals ranking in Portugal made by financial consultancy companies Source: PwC's internal source

3 | THE LITERATURE IN MERGERS & ACQUISITIONS

M&A, an alternative approach to organic development (Johnson et al., 2009), is considered a form of investment and a way to grow quickly by external means (Copeland et al., 2014; Rappaport, 2006; Cusatis & Blumberg, 2009).

Back in early 1900s, M&A activity began to rise, first at a domestic level, and later, with the help of technology, communication and transport advances, at an international level (Grave et al., 2012). As it is shown in Table 3, there are six waves in the history of takeovers (Weston & Weaver, 2001; KPMG, 2011):

- *1st Wave:* Characterised by the creation of giant companies through horizontal mergers ending later with the World War I.
- *2nd Wave:* Marked by the flourishing of the automobile sector and vertical integrations. This wave has ended with the great depression.
- *3rd Wave:* Witness the rise and fall of the trendy (at that time) conglomerates, where the share prices crashed later in most of these diversified companies.
- *4th Wave:* This wave has involved extremely leveraged acquisitions and hostile transactions that led banks to bankrupt due to their excessive lending activity.
- *5th Wave:* Size was the key word at that time and ended because of the millennium bubble and some controversy around some companies (e.g. Enron).
- *6th Wave:* Boosted by globalisation, this wave accentuated the Private Equities role. The recent financial crisis has terminated this wave.

1 st Wave	1893 – 1904	Horizontal mergers
2 nd Wave	1919 – 1929	Vertical mergers
3 rd Wave	1955 – 1970	Diversified conglomerate mergers
4 th Wave	1974 – 1989	Co-generic mergers, hostile takeovers,
5 th Wave	1993 – 2000	Cross border, mega mergers
6 th Wave	2003 – 2008	Globalisation, private equity, shareholder

Table 3 – M&A Waves throughout the years | Source: KPMG, 2011 in *The Seventh Wave of M&A*

All waves coincide with favourable economic/political environment, stock exchange booms and easy loans, and are followed by technological or industrial shocks in the economy. In the end of which wave, the decisions made by the managers are irrational and vanity/self-related (Martynova & Renneboog, 2008).

3.1 | Key concepts in M&A

This section provides a summary of the stages, methods, motives, gains and classifications of mergers and acquisitions.

3.1.1 | Stages

The M&A process might have five (Cusatis & Blumberg, 2009) or three different stages depending on streams in the literature (Kusstatscher & Cooper, 2005; McCarthy & Dolfsma, 2013). The three stages view is divided in pre-merger, during-merger and post-merger stages.

The first step underlines the planning process, where potential candidates are identified, biddings and negotiations are made and a due-diligence and valuation is performed to the target company. Financial and economic motives are also assessed in this screening phase.

The during-merger phase is the bureaucratic part, comprising the validation, formalization and announcement of the transaction.

The last stage is characterised by the integration or implementation phase of the strategic capabilities. These strategic competences might be deeply embedded in the organisation’s culture, making it more difficult to transfer the potential synergies and value added from one company to another (Barney, 1991; Weston & Weaver, 2001). Therefore, to achieve a successful integration, the process must not be too slow and changes have to be made at three different levels: strategic/corporate, administrative/business and operative (Kusstascher & Cooper, 2005).

3.1.2 | Methods

For a company to buy another there are three possible legal methods (Figure 4): the merger or consolidation, the acquisition of stock and the acquisition of assets. When a merger occurs, the target ceases to exist and is incorporated in the acquirer firm (assets and liabilities of the target are absorbed by the acquirer), while in a consolidation both target and bidder cease to exist and create a new firm. In the second legal method, the acquisition of stock, the acquirer purchases the target’s voting shares using stocks, cash or other securities. It can be performed by a tender offer – a public offer to purchase shares – that usually is perceived as hostile. Finally, in the acquisition of assets, the buyer acquires most or all assets of the target company (Ross et al., 2002).

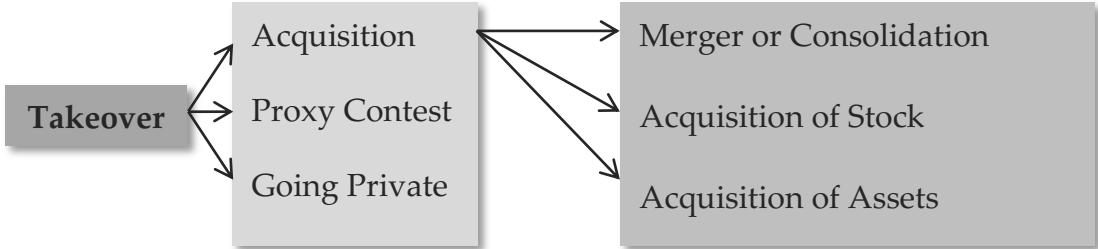


Figure 4 – Takeover activity by type | Source: Ross et al., 2002

Concerning the acquisition of stock or assets, there are several ways to enter or control the capital of another firm. The most important ones are the following (Ross et al., 2002; APCRI, 2006; Weston & Weaver, 2001):

- **Capital Increase:** the existing shareholders subscribe additional shares;
- **IBO:** the acquisition is performed by a private equity or venture capitalist firm (institutional investor);
- **MBI:** external management team becomes the company's new management by acquiring the firm;
- **MBO:** internal management team financially supports the firm by acquiring it;
- **BIMBO:** is the combination of the two methods described before, where an external management team supports the internal management team that controls the firm;
- **Minority Stake:** acquisition of a stake in the company lower than 50%;
- **Share buyback:** repurchased outstanding shares from the stock market.

3.1.3 | Why do firms engage in M&A Transactions

Mergers and Acquisitions may allow several possible gains² (Lynch & Lind, 2002; Palepu et al., 2013; Ross et al., 2002; Weston & Weaver, 2001):

- New capabilities
- Access to new markets
- Additional value to shareholders
- Revenue enhancements such as marketing gains, strategic benefits and increased market power
- Cost reductions through economies of scale, economies from vertical integration and/or complementary resources between firms
- Lower taxes

² To see a full list of possible sources of gain in M&A, see Annex I – Gains in M&A activity, Figure 10 and 11.

- Synergies

One example of synergy gains can be observed in the Zon and Optimus merger in 2013. Zon, a big Portuguese cable telecoms firm offering a triple-play service³, when has merged with Optimus, mainly a mobile telecom company with mobile telephony and internet, both firms were able to take advantage from the combination of their related business and become a much greater company providing a broader telecommunications service and offer a quadruple-play service⁴.

Concerning the motives, Johnson et al. (2009) consider strategic, financial and/or managerial motives in an acquisition of a firm. The first motive includes the extension to new geographies, the consolidation of competitors – increasing market power and efficiency – and the acquisition of new capabilities. The financial motives comprise: the financial efficiency that happens when a company with a great amount of cash joins another firm with high debt⁵; the tax efficiency and the asset stripping or unbounding that happen when assets are more valuable than the entire business together, making it possible for the acquirer to split the firm in several business units and sell it separately (Palepu et al., 2013). Finally the managerial motives, usually value destroyers, consist in personal ambition and bandwagon effects. This last one happens when lots of transactions are taking place in the industry and managers are pressured to also acquire.

Trautwein (1990) reviews several other theories about takeover's motives and provides a summary identifying seven major theories in this matter (Table 4).

³ Internet, television and fixed phone services.

⁴ Includes mobile phones.

⁵ In this way one can finance the other and the firm with strong balance sheet probably will get a cheap deal value.

Merger as Rational Choice	Merger Benefits Bidder's Shareholders	Net Gains through Synergies	Efficiency Theory
		Wealth Transfers from Customers	Monopoly Theory
		Wealth Transfers from Target's	Raider Theory
		Net Gains through Private Information	Valuation Theory
	Merger Benefits Managers		Empire-building Theory
Merger as Process Outcome			Process Theory
Merger as Macroeconomic Phenomenon			Disturbance Theory

Table 4 – Theories of Merger Motives | Source: Trautwein, 1990

The first theory referred is the efficiency theory, which incorporates three types of synergies: operational, financial and managerial⁶.

The monopoly theory translates the seeking for market power and the raider theory explains the wealth transfer form target's shareholders in the form of greenmail or excessive compensation.

In the valuation theory and empire-building theory managers perform and plan the transaction. The first theory considers that the manager has more information about the enterprise value than the shareholders, and the second theory considers that the manager plans and performs the acquisition taking into account his own utility maximisation, and not the shareholders' utility.

⁶ Will be discussed later in this chapter.

The process theory assumes that decisions of a transaction are a result of past processes and influences and not rational strategic choices, and finally the last theory assumes that Mergers and Acquisitions waves are caused by economic instabilities with consequences as uncertainties and shaken expectations.

3.1.4 | Classifications

According to several authors (Ross et al., 2002; Rosenbaum & Pearl, 2013; Iannotta, 2010) there are three M&A classifications, namely horizontal, vertical and conglomerate acquisitions.

The horizontal acquisition, ponders the same industry for the target and buyer involving competitive or complementary products. The Walt Disney Company – a television and film producer mainly focused on a young audience – buying Lucas Films – a film producer of a fiction blockbuster – makes a good example for horizontal integration, since both are in the same level in the value chain and may take some synergy gains out of the transaction.

Vertical acquisition considers a different phase of the supply chain for each the acquired firm and the acquirer. It may be backwards or forwards, depending if the target is a supplier or a buyer.

The conglomerate acquisition happens when the acquirer wants to diversify his portfolio. The target's and bidder's businesses are unrelated, meaning that the two firms existing businesses don't have any relationship with each other.

3.2 | Mergers & Acquisitions phenomena and post-performance

Mergers and acquisitions have been gaining popularity throughout the years, being something very common nowadays. Figure 5, clearly shows the pronounced increase of deals in the last 15 years. However the intense M&A activity diverges sharply from post transaction performance.

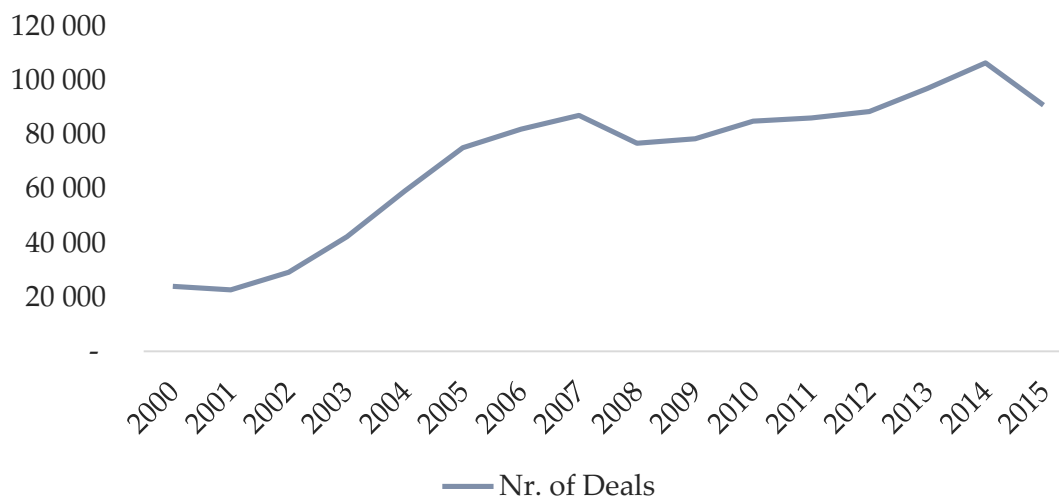


Figure 5 – Number of M&A deals per year | Source: Data from Zephyr BvD

Accordingly to the results of a major study⁷ by Hay Group in 2007, 90% of Mergers & Acquisitions are not a success. Nonetheless M&A activity reaches every year new peaks in terms of number of deals and value (Weber et al., 2013).

Along the M&A history several studies demonstrate an high rate of failure and present various explanations for these disappointing performances. Some theoretical and empirical explanations for these failures can be found in Lynch & Lind (2002) and Cusatis & Blumberg (2009), such as lack of cultural fit, hubris and overvalued⁸ companies, conglomerate transactions (diversification) or exaggeratedly overconfident expectations from synergies (Roll, 1986; Johnson et al., 2009). By conducting a survey where 352 executives in Europe, North America and Asia were

⁷ Performed over 200 major European M&As transactions for three years.

⁸ Explained later in 3.2.3 | Theory of motives and implications.

asked to designate the causes for unsuccessful acquisitions, Miles et al. (2012) describe the top five root issues appointed in Figure 6.

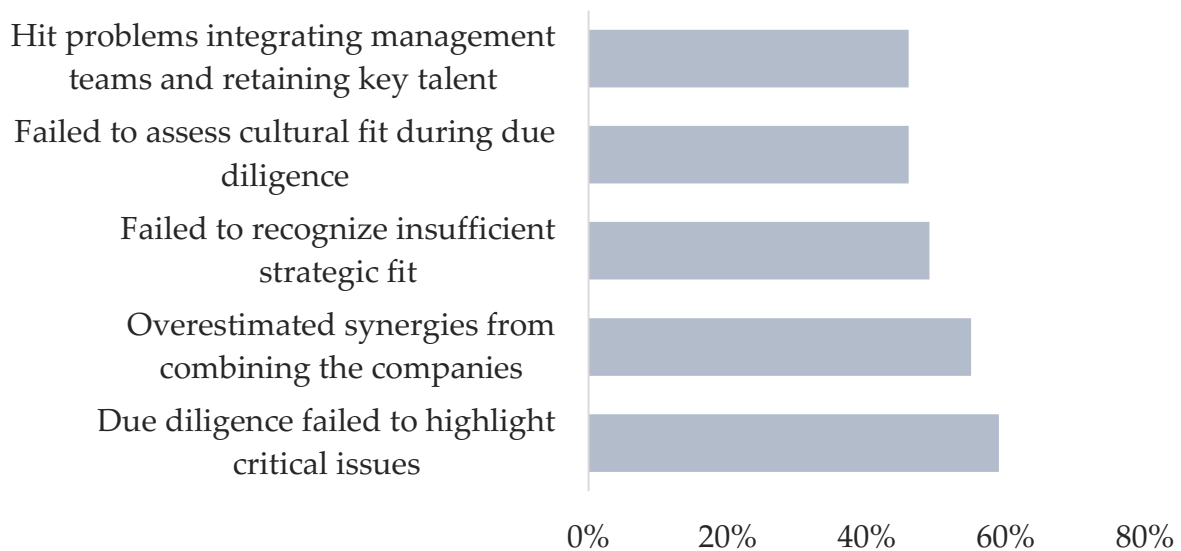


Figure 6 – Percentage of executives who have rated the explanations of post-deal underperformance as major or very major on a scale of 1 to 5 | Source: Economist Intelligence Unit on behalf of Bain & Company, 2012

Some of these aspects will be explained in the following subchapters along with the explanation of some methods of post synergistic performance measuring.

3.2.1 | Cultural fit

The culture aspect is one of the most debated post-merger problems of mergers and acquisitions (Datta et al., 1991; Weber & Tarba, 2012; Weston & Weaver, 2001).

Culture stands for beliefs, values, procedures, management styles, traditions and other behavioural patterns of one company that may be formal or informal. When cultures are combined from different companies in the integration stage, confusion, disbelief, antagonism and resistance can be generated from one or both sides. These cultural differences are boosted when the transaction is cross border.

According to the model created by Haspeslagh & Jemison (1991), integration has to be made giving some conditions (Figure 7). For companies with high interdependence, the authors believe that tight integration is needed in order to exchange capabilities. In the case of conglomerates this strategic interdependence will be low due to the low level of relatedness in the business. Companies with a strong and different culture, or ruled by strong characters or even geographically distant should be slowly and carefully integrated or left alone, like in the case of conglomerates that suit better the preservation category.

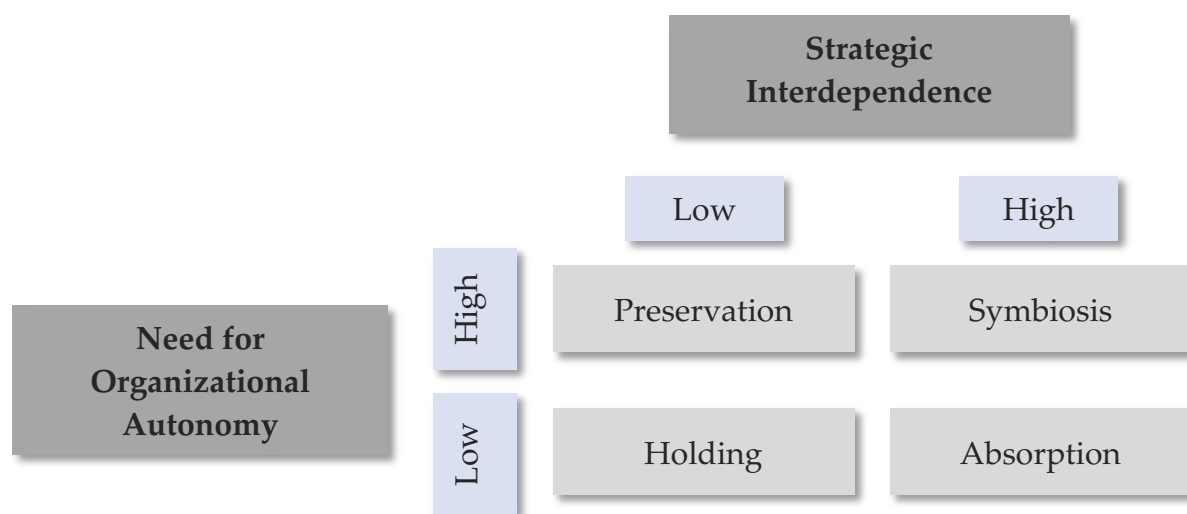


Figure 7 – Acquisition Integration Matrix | Source: Haspeslagh & Jemison, 1991

Even so, many firms when performing or planning a transaction ignore these cultural factors preventing integration benefits and damaging the performance of the firm. However Stahl & Voigt (2008) and also Datta et al. (1991) found that these differences can have a positive or a negative impact on performance depending on the degree of relatedness and the dimension of cultural differences between firms, leading the present revision for one of the explanations for failure mentioned before about conglomerate transactions.

3.2.2 | Conglomerate diversification

Conglomerate (unrelated) diversification through acquisitions, meaning that the acquirer buys a firm that does not offer the same products or does not serve the same market, can be also a cause for disappointing performances (Johnson et al., 2009). According to Federal Trade Commission and Ansoff (1988), related strategies involve horizontal/vertical integration and product or market extension acquisitions leaving all other transactions to the category of (pure) conglomerates.

These kind of transactions may have the wrong motives like spread the risk, respond to market decline and managerial ambition (Johnson et al., 2009). There is evidence that shareholders can reduce and spread risk more effectively on their own by investing in different businesses than the company by diversifying (Seth, 1990). There is also evidence that related businesses bring more synergistic value than unrelated ones (Stahl & Voigt, 2008; Lubatkin, 1983; Seth, 2002). Porter (1967) found that the more differences exist between the two value chains⁹ of the two companies, the more difficult will be to transfer skills and create synergies.

3.2.3 | Theory of motives and implications

Another theory explaining failure and success was developed by Berkovitch & Narayanan (1993), where they introduce a pattern of gains to the acquirer and target according to the acquirer's motivations. Therefore this theory explains three motivations for M&A: efficiency gains (restructuring) or synergies, Hubris or Winner's Curse and Agency Problems or Mistakes.

The concept of synergy is the most cited motivation for a takeover. (Corporate) Synergies occur when beneficial financial effects from two or more companies combined exceed the sum of the value created by the same number of companies on their own if the acquisition have not taken place (Ross et al., 2002; Bradley et al.,

⁹ Porter creates this concept to help him analyse possible synergy transfers.

1987). According to Iannotta (2010) and McSweeney & Happonen (s.d.) it can take the form of operating or financial synergies.

Financial synergies aim to improve the cost of capital by, for example, combining a target with a weak balance sheet, with an acquirer with a strong one. Operating synergies measure cash flow boosts and can be divided into four types: cost synergies (e.g. economies of scale or scope and increased bargaining power with suppliers), asset/ investment synergies (e.g. use of common equipment), tax synergies (e.g. tax savings) and revenue synergies (e.g. cross selling and pricing power).

Another classification made by the authors Wind & Mahajan (1985) consider operating, investment, sales and management synergies. The first two fit in the operating synergy description made above. Sales refer to advertising, common market and distribution channel gains. And managerial synergies refers to risk reduction, shared resources and when the acquirer possess greater planning and management capabilities that improve the target's performance (Jensen & Murphy, 1990).

Regarding the hubris hypothesis, this motive is explained by the winner's curse theory¹⁰, where overpayment is implicit. This theory applied to M&A activities, explains that the bidder, when facing lots of other bidders – and taking into account that the value of the target is uncertain – in order to win, the firm has to present an higher bid than all the other bids (Figure 8), probably making it an over valued offer (Roll, 1986).

¹⁰ First introduced in the literature of auctions by (Capen et al., 1971).

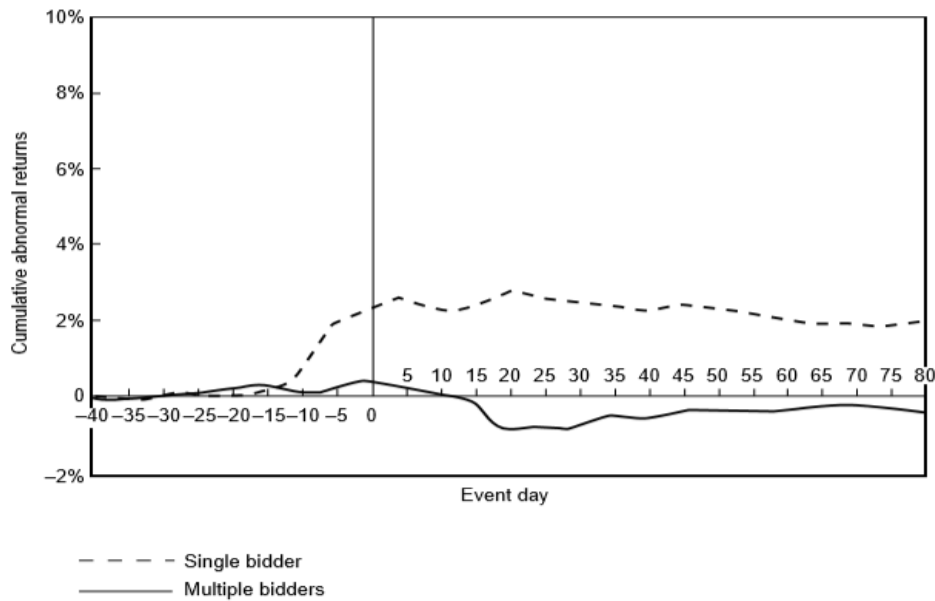


Figure 8 – Cumulative Abnormal Returns (CAR) of Acquiring Firms | Source: Weston & Weaver, 2001

About the last motivation, Jensen & Meckling (1976) clarify consequences in the concept of agency costs, explaining that because managers do not own a considerable stake in the company, have incentives to put less effort and consume more available perks provided by the firm. In an event of a merger or acquisition the manager may try to increase his perquisites or to target companies on businesses very well known by him to make him indispensable and less substitutable in the eyes of the shareholders (Berkovitch & Narayanan, 1993).

The total gains resulting from these three motives can be observed in Table 5 and 6, showing that the target always gain (Weston & Weaver, 2001; Iannotta, 2010; Lubatkin, 1983; Hackbarth & Morellec, 2008) and only in the synergy and efficiency hypothesis the gains are positive to the acquirer (Berkovitch & Narayanan, 1993). Some evidence shows that the target and acquirer returns have increased and decreased respectively over the last decades due to greater government regulation and more sophisticated defensive strategies from the targets (Weston & Weaver, 2001).

Motive	Total Gains	Gains to Target	Gains to Acquirer
Synergy and/or Efficiency	+	+	+
Hubris (winner's curse, overpay)	0	+	-
Agency Problems or Mistakes	-	+	-

Table 6 - Implications of different hypotheses about the target gains and acquirer gains | Source: Adaptation from Berkovitch & Narayanan (1993) in the book of Copeland et al. (2014)

	Mergers	Tender Offer
Targets	Positive 20-25%	Positive 30-40%
Buyers	Positive 1-2%	Negative 1-2%

Table 5 - Pattern of Event Returns | Source: Weston & Weaver, 2001

3.2.4 | Measuring post-performance in M&A studies

In the literature, there are several empirical studies evaluating the creation and destruction of synergistic economic value of mergers and acquisitions (Bradley et al., 1987; Eckbo, 1981; Seth, 1990; Berkovitch & Narayanan, 1993).

Zollo & Singh (2004) and Zollo & Meier (2008) define the post-performance studies in M&A as having “(...) much heterogeneity both on the definition of the performance of M&As and on its measure” showing that performance measurement is a multidimensional evaluation where the available methods only cover parts of it.

They suggest that when measuring performance, decisions about some perspectives have to be made on whether to be: subjective or objective, expected returns or realized returns, short-term or long-term, public or private information and acquired separate returns or combined returns.

One of the most used methods to assess the performance of firms involved in M&A activity is the event studies (Eckbo, 1981; Seth, 1990; Weston & Weaver, 2001; Berkovitch & Narayanan, 1993; Iannotta, 2010; Wang & Moini, 2012). In the meta-analytic review of Datta et al. (1992), the authors identify more than forty studies using this methodology alone. The empirical evidence in synthesis from most of this studies shows that the acquirer does not get any gains from the transaction at the time of the announcement.

The event studies by measuring the abnormal market based return at the time of the deal announcement assesses the impact of an event – in this case a merger or an acquisition – on the value of the firm. Usually, the most common way to calculate abnormal returns is to estimate, with a regression, the stock returns and compare with the market index. The abnormal return is the difference between the expected and the actual stock.

The researchers usually define a period of time of days, months or years (event window) before and after the event that can be categorised as short-term – ex-ante approach – or long-term – post-ante approach – event study, where short-term represents future returns assuming that financial markets have a forward vision and long-term assumes that the stock price does not capture instantly the deal effect (Wang & Moini, 2012).

This statistical approach is considered a market based measure since it comes from stock returns based on market expectations, reflecting the future value of a firm (Gentry & Shen, 2010; Schoenberg, 2006).

On the other hand, accounting based measures appear has another option to assess firm's performance after a deal. As it happens in long-term event studies, accounting measures also have a long run perception, although it considers realized and past returns. This measure comprises post and pre-deal values from firm's accounting statements where subsequent values are assumed to reflect any benefits or costs from takeovers (Gentry & Shen, 2010; Masa'deh et al., 2015).

This method is based on financial accounts from the Balance Sheet, Income Statement and Cash Flow Statement of a company and usually uses cash flow, employment earning and innovation measures, and productivity and growth rate of assets or sales. Researchers frequently apply financial ratios like ROA, ROE, ROS and ROI and also sales growth and cash flow to analyse the performance of the firm (Wang & Moini, 2012; Masa'deh et al., 2015; Barber & Lyon, 1996). Empirical results may differ across all studies in the literature according to the definition of performance provided, the choice of book or market values and the methodology chosen (Wang & Moini, 2012).

According to Cording et al. (2010) and Zollo & Meier (2008), event studies and accounting measures represent 92% of the empirical studies, where 41% of the articles use short-term event studies, 31% use long-term event studies and 28% use accounting based measures. Besides accounting and market performance measures, Wang & Moini (2012) define other three¹¹ commonly used approaches: managers' perceived performance, expert informants' assessment and divestment measures.

Managers' perceived performance use interviews and surveys to extract data from top executives of the acquirer firm¹², where they rate the completion of their pre-M&A objectives (in the form of financial or non-financial ratios) of several years after the deal is complete. Zollo & Meier (2008) found out that 14% of the papers reviewed used management's perception. In this approach several advantages come to light as

¹¹ Zollo & Meier (2008) identified twelve distinct approaches on total.

¹² Sometimes the target firm is asked to share its perspective.

the diminished external noise, the usage of private and accurate information¹³ and the multidimensionality character (Wang & Moini, 2012; Schoenberg, 2006).

Very similar to the managers' perceived performance approach, expert informants' assessment use the same elements, but instead of extracting information from top executives, researchers ask experts (e.g. security analysts) or in some cases ask both. Thus, by using this approach, the research is not exposed to management bias, since the performance assessment is made by external people (Wang & Moini, 2012; Schoenberg, 2006).

Finally, the divestment measure uses divestitures as a metric for failure (Meschi & Metais, 2008; Wang & Moini, 2012).

Although some correlation was found between managements' and experts measure, Zollo & Meier (2008) and Schoenberg (2006) did not found any association between subjective and objective approaches, and any relation at all between short-term event studies with the other performance measures.

When measuring the performance of the firm, the empirical research made throughout the years has showed that the most common profitability determinants based on the characteristics of the sample are (Wang & Moini, 2012; Kusewitt, 1985):

- **Country Level Evidence**

Research from companies of one or more countries comparing gains for example between developing and developed countries (Kumar, 2009).

- **Domestic and Cross-border Deals**

Evidence on differences between deals made domestically or outside de country (Morosini et al., 1998).

¹³ Although this measure is exposed to possible management bias.

- **Hostile Takeovers vs Friendly Deals**

Although hostile¹⁴ takeovers are not very common (Weston & Weaver, 2001), empirical evidence shows higher returns in hostile than in friendly M&A (Tuch & O'Sullivan, 2007).

- **Methods of payment**

Depending if the company pays in cash or stocks, different returns will be expected, where empirically in cash payments deals the performance is inferior (Tuch & O'Sullivan, 2007).

- **Relatedness**

There is mixed evidence where Porter (1987) and Johnson et al. (2009) appoint better performance in related business than in unrelated ones, and Eckbo (1989) concludes that there is no significant difference in gains between horizontal and non-horizontal mergers.

- **Experienced Acquirers**

Zollo & Reuer (2006) found that experience acquirer firms have a positive relationship with performance.

- **Waves in M&A**

Martynova & Renneboog (2008) found that takeovers are more common and have a better performance depending on the part of the wave they were experiencing.

- **Private vs Public Targets**

Capron & Shen (2004) found that when acquiring targets – public or private – the returns depend on the relevance of their *“agency costs, resource sharing opportunities, and bargaining power”*.

- **Relative Size of the Acquirer**

Empirical data evidence proves a negative correlation between the acquirer size and M&A performance (Moeller et al., 2003).

¹⁴ The transaction is made regardless the strong opinion of the target against the deal.

Concerning the industry differences as a profitability determinant, there is not much research on this topic. Still Cusatis & Blumberg (2009) have summarized the findings in the literature stating that mergers in banking, railroad and property liability insurance industries seem to create more synergistic value than mergers in other industries. Bruner (2002) also found in the state of the art a trivial inclination for returns to diminish over time, apart from deals in banking and technology industries.

4 | METHODOLOGY & APPROACH

In the present dissertation, a quantitative and qualitative analysis, comparing the performance of different industries using firms involved in M&A activity, was undertaken. Therefore the research questions, the sample and the research strategy used in this study will be explained in the following subchapters.

4.1 | Research question, design & analytical framework

When measuring performance in an M&A context, most studies look to the factors influencing synergistic value creation (Lynch & Lind, 2002), the sources of synergies (Seth, 1990) or to the differences between the acquired and acquirer gains (Berkovitch & Narayanan, 1993).

None of these studies, however, simultaneously look at the performance of the combined firms by source of synergistic value creation along with the performance between different industries. Thus, this essay presents an exploratory approach and attempts to address these issues in order to clarify differences between industries in terms of synergy performance. To do so, three specific research questions were investigated:

- Which industries have on average the highest performance after an M&A deal?
- Which value creation synergy types within an industry have on average the highest performance after an M&A deal?
- Which industries after an M&A deal have the best results per type of synergy?

In order to describe and explain the research questions, the type of research used, supported by Nenty (2009), is the mix-method approach, involving both quantitative

and qualitative analysis. According to Nenty (2009), mix-methods are descriptive empirical studies used when the research question(s) is (are) not translatable into hypotheses with direct affirmative or negative answers. These descriptive empirical studies are answerable through descriptive examination of the data.

Within the mix-methods, quantitative analysis is defined as a process to extrapolate information from a sample to a larger population, supported by theory. Quantitative research is divided in three different sections as the (1) verbal part, where the literature is reviewed and the research problem is presented and validated; followed by (2) the quantitative part, where hypotheses are tested or the research question is numerically supported; ending with (3) with another verbal part where the study is summarized and findings are discussed (Nenty, 2009).

Regarding the analytical approach, although market based measures are considered superior than other kinds of performance measure (Morosini et al., 1998), the present essay will focused on accounting based measures due to the fact that the database used – Zephyr – has not a considerable amount of deals of publicly listed companies. Nevertheless accounting based measures present several advantages (Wang & Moini, 2012):

- It takes into account returns that already happen and not expected synergies
- There is more valuable information to evaluate different perspectives in a M&A transaction
- Has a simpler implementation than event studies
- Multiple motives effects after the deal can be tracked
- Private firms are not left out
- Considers all firm sizes (unlisted and listed) and not only really big companies

4.2 | Sample and data description

The initial sample¹⁵, taken from Zephyr BvD database, consisted in 8,496 completed mergers or acquisitions from firms (target or acquirer) with positive turnover¹⁶, occurred in the period of January 2005 till December 2014 (Table 7).

Research Steps	Step Result	# Observations
Completed Deals	1,094,202	1,094,202
Time Period of 01.01.2005 till 31.12.2014	820,415	820,369
EU 15 Countries (acquirer and target)	54,687	32,887
Acquirer Operating Revenue >0	369,671	16,901
Target Operating Revenue >0	547,685	8,496
Total	-	8,496

Table 7 – Sample construction taken from Zephyr BvD

The sample, was therefore limited, according to the equity method (nr.6 from IAS 28, paragraphs 19-20 from NCRF 13), to acquisitions and mergers with stakes over 20%. After this screening phase, the sample was reduced to 6,873 deals of 5,355 acquirers and 6,509 targets. As it is displayed in Figure 9, the busiest and quietest years were 2012 and 2009 with 634 deals¹⁷ and 423 deals respectively.

¹⁵ For more detailed information about the sample: **Erro! A origem da referência não foi encontrada.**, Table 21, 22, 23 and 24.

¹⁶ To ensure that the companies were active.

¹⁷ Zephyr data base does not have all the records about transactions, therefore these values are close estimates of the real number of deals.

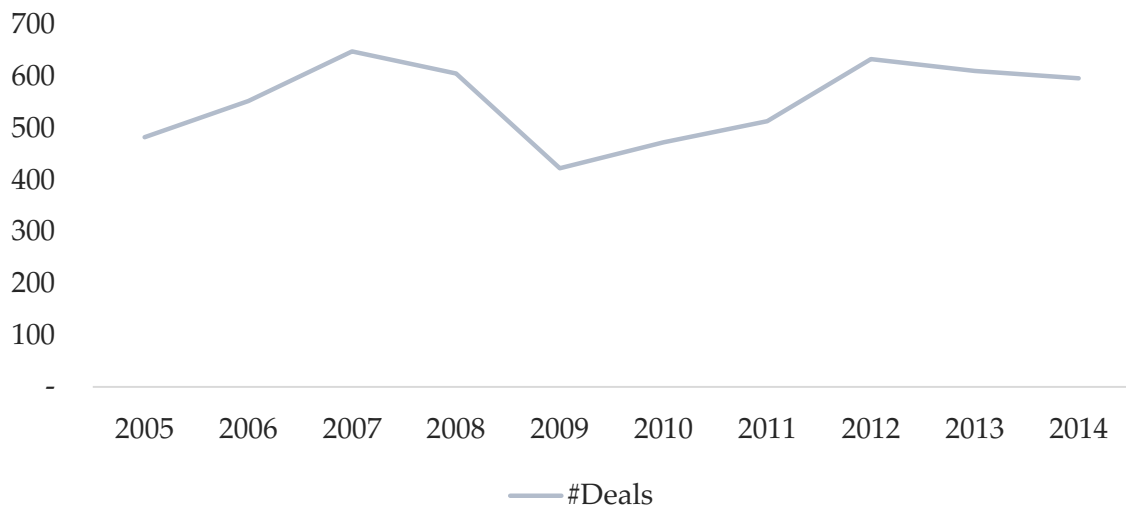


Figure 9 – Number of deals concluded per deal announcement year

In order to have a more uniform and homogeneous¹⁸ sample, the data collected refers only to transactions performed between countries in the EU-15, such as, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. These countries were defined by the origin of the acquiring and acquired firm, not taking into account the vendor's country.

It is possible to observe that the countries with more deals in the past ten years were Finland, followed by France and Spain. The countries with less deals were Ireland and Luxembourg (Table 8). Only 50 deals from 6,873 were cross borders.

¹⁸ To have less differences in the accounting standards across countries.

Acquirer	Number of Deals	Target	Number of Deals
AT	69	AT	68
BE	169	BE	176
DE	500	DE	498
DK	44	DK	44
ES	956	ES	962
FI	1,230	FI	1,231
FR	1,178	FR	1,178
GB	861	GB	853
GR	82	GR	82
IE	4	IE	4
IT	717	IT	723
LU	7	LU	3
NL	131	NL	128
PT	102	PT	102
SE	823	SE	821

Table 8 – Number of deals per EU-15 countries by acquirer and target

The deal value¹⁹ in this sample has a minimum of 3,000€ and a maximum of 17,800,000,000€, but 50% of the cases will be below 9,300,000€ and 99% will be below 369,460,000€ (Table 9)²⁰.

k€	μ	σ	Min	0,25	median	0,75	Max
Deal Value	35,293	8,993	3	2,725	9,300	24,879	17,800,000

Table 9 – Percentile division of the deal value in thousands of euros

Regarding the types of deals²¹ (Table 10) and the industries (Table 11), the sample collected reflects the categorization made by Zephyr²², presenting nine different deal

¹⁹ Only 2 057 of the deals in 6 873 have information about the deal value.

²⁰ For average deal value in each industry, see Appendix II – Average deal value by industry classification, Table 25.

²¹ In Appendix III – Types of M&A per industry classification Table 26, 27 and 28 has the deal types per industry.

²² To see the NACE codes that correspond to each Zephyr industry classification, see

types and twenty five different sectors. Only twenty five deals, according to their NACE rev..2 two digit code²³, were made between companies in unrelated industries.

Deal Type	#Deals	Deal Type	#Deals
Acquisition	5,452	MBO	2
Capital Increase	34	Merger	53
IBO	444	Minority stake	771
MBI	3	Share buyback	83
BIMBO	1	No Type	30

Table 10 – Number of transactions per deal type

In these 6,873 deals sample, it is also possible to assess the number of companies involved and their size in terms of personnel. There are 5,355 acquirer companies with an average of 4,061 employees and a median of 113, and 6,509 target companies with an average and median of 469 and 21, respectively.

Appendix IV – Zephyr industry classification (Table 29).

²³ Although, throughout the essay, it was used the industry Zephyr classification in order to have a broader categorization of an industry than the NACE codes, another approach was made to see the number of unrelated industries. Only the first four NACE industry CAEs of the acquirer and acquired were compared. If one or more codes were the same in each company, then it was considered a related industry.

By Acquirer's Industry	#Deals	%	By Acquirer's Industry	#Deals	%
All	6,873	100%	Mining & Extraction	47	1%
Agriculture, Horticulture & Livestock	79	1%	Miscellaneous Manufacturing	15	0%
Banking, Insurance & Financial Services	1,681	24%	Personal, Leisure & Business Services	870	13%
Biotechnology, Pharmaceuticals and Life Sciences	30	0%	Printing & Publishing	232	3%
Chemicals, Petroleum, Rubber & Plastic	108	2%	Property Services	283	4%
Communications	204	3%	Public Administration, Education, Health Social Services	239	3%
Computer, IT and Internet services	409	6%	Retailing	298	4%
Construction	248	4%	Textiles & Clothing Manufacturing	55	1%
Food & Tobacco Manufacturing	255	4%	Transport Manufacturing	83	1%
Hotels and Restaurants	82	1%	Transport, Freight, Storage & Travel Services	341	5%
Industrial, Electric & Electronic Machinery	294	4%	Utilities	345	5%
Leather, Stone, Clay & Glass products	73	1%	Wholesaling	346	5%
Metals & Metal Products	143	2%	Wood, Furniture & Paper Manufacturing	113	2%

Table 11 – Number of deals per industry of the acquirer and weight in the total deals

4.3 | Research strategy & analysis

Because the aim of this study was to measure synergies per industry by using accounting-based measures²⁴, a forecast of a “normal” return for each type of measure used was needed.

To do so, the first step was to define the periods to consider in the analysis. Zephyr BvD only includes data for the three years pre-merger, one year post-merger and the last year available after the merger from the target and the buyer. For the

²⁴ Described and explained in the next subchapter.

purpose of this essay, the last year available after the transaction was not considered²⁵.

The next step was to add the returns R_{jnt} from the target g and the acquirer a of each financial account entry j , in time t ²⁶ and in each deal n , with the purpose of considering each pair of firms a single entity and like so evaluate synergistic value creation (Seth, 1990; Kengelbach et al., 2013):

$$R_{jtn} = R_{jntg} + R_{jnta}$$

In order to assess if there was synergies in each deal, the succeeding step was to forecast a post-deal return \hat{R}_{jn} for each financial account and each transaction. The predicted return considers a “normal” return that would have been expected if the firm was not involved in the transaction. The difference between this predicted return and the actual return after the event generates the residual, which denotes abnormal returns:

$$r_{jn} = R_{jn} - \hat{R}_{jn}$$

Thus, representing synergistic value creation (abnormal returns), bearing in mind the definition of synergy, the actual combined returns of the target and the acquirer firm should exceed the predicted combined ones, since the predicted returns would have only happened if there was no transaction and the combining companies had stayed independent, i.e. the joint firm will have to create more value than the separate firms.

Fourthly, for the estimation of this “normal” returns, it was used an instrument G_{jntc} that considers the compound annual growth rate of each deal of the three pre-

²⁵ It was not considered because it was not homogeneous throughout the deals, since deals realized in 2006 would have values for the last year available from 2014 (8 years of difference) and deals made in 2012 would have values also from 2014 but with 2 years of difference. Also deals made in 2014 would have the same value for the first year available account and last year available.

²⁶ The years are: Pre-deal -1, -2 and -3 years, and post-deal.

merger years and a “deflator”, adjusting the $CAGR_{nj}$ ²⁷ to the GDP_{ct} annual growth rate. It was taken from World Bank database, the GDP PPP per capita (constant 2011) and calculated subsequently its CAGR over the three previous years, by country c and for each year t from 2005 to 2014 ($CAGR_GDP_{ct}$)²⁸. Hence, the $CAGR_GDP_{ct}$ was individually combined in each deal with the correspondent year²⁹ and country, and subtracted to the $CAGR_{nj}$ of the matching deal, originating the growth rate used in the forecast³⁰:

$$G_{jntc} = CAGR_{nj} - CAGR_GDP_{ct}$$

Finally, to assess the performance of each industry per financial entry or financial ratio j , for each industry i , the residual average and median (Kengelbach et al., 2013) across deals were calculated. Like so, it is possible to estimate the average/median abnormal returns per industry and per accrual j , allowing to answer the research questions proposed.

4.3.1 | Accounting-based performance measures

In this analysis several indicators were needed, however it was only possible to assess those available in the Zephyr database (in Appendix V, Table 30, 31 and 32 a description of the distribution of each subsample per indicator is made). The financial account entries from the balance sheet and income statement available were the following:

- Turnover (or Operating revenue)
- EBITDA
- EBIT
- Profit Before Tax

²⁷ It was calculated the CAGR of each combined accounts R_{jt} of the target and acquirer in each deal. So for example for deal 1 the CAGR was $((\text{Post-deal } R_{j1} / \text{Pre-deal } R_{j1})^{1/2}) - 1$.

²⁸ For example, the CAGR of the GDP of 2005 was the $((\text{GDP}_{2005} / \text{GDP}_{2003})^{1/2}) - 1$.

²⁹ Year when the deal was complete and the GDP compound annual growth rate on that year.

³⁰ Because there were only 3 years to do the forecast, no other forecast methods could be used besides growth rates as the CAGR.

- Profit After Tax
- Total Assets
- Shareholders' Funds
- Net Assets
- Market Capitalization

Three of this financial accounting variables were discarded due to insufficient data: Net assets because only 289 deals presented figures (i.e. target, bidder and all years), most of them classified as banking industry and all of the deals had always one value of one year missing; Total assets due to the fact that all of the deals had always one value of one year missing; and Market capitalization since only 29 deals presented figures, most of them classified as banking industry.

To calculate the synergistic value creation after a transaction from financial statements proxies, the following types of synergies were considered:

- **1 | Operating Synergies**

In operating synergies it is possible to consider revenue-enhancement (or sales) synergies, cost-based synergies and investment-based synergies.

Revenue-enhancement synergies comprise the increase in sales due to complementary shared resources, like marketing and distribution channels. To assess this kind of synergies, Huyghebaert & Luypaert (2013) consider the increase in sales in the income statement. Since this financial entry was not available on Zephyr, Operating revenue, that includes other components besides sales, was considered instead.

Cost-based synergies may be observed through the ratio of the difference between predicted Operating expenses and actual Operating expenses³¹ (residual) over the Turnover of the last year available before the acquisition (Huyghebaert & Luypaert, 2013):

³¹ Operating expenses were calculated by subtracting *EBIT* to the *Turnover*.

$$\frac{(OE^t - OE_t)}{\text{Turnover } t-1}$$

Thus, this ratio takes into account any economies of scale or scope that may arise in an M&A deal in several functional areas of a company.

Finally operating synergies may also arise from cuts in capital investments, related to a more efficient use of the capital equipment. Huyghebaert & Luypaert (2013) suggest the use of Non-cash current assets minus Non-financial short-term liabilities relative to Sales and also Tangible fixed assets relative to Sales. Unfortunately Zephyr database did not have this financial information, hence the investment-based synergies were left out of this analysis.

▪ **2 | Financial Synergies**

Financial synergies were calculated through the difference between EBIT and Profit before tax, since in Zephyr was not available financial entries as Long term debt. With this difference, it is obtained the interest results – or net interest³² – where positive values indicate an interest income higher than the interest expense.

▪ **3 | Tax Synergies**

In order to evaluate possible tax gains from an acquisition of two companies, the same logic as in financial synergies was applied and so it was subtracted the Profit before tax to the Profit after tax. Tax efficiency may arise when two companies' combined are able to pay fewer taxes. For example when one of the companies is located in a country that pays fewer taxes or when the target firm has accumulated losses, lowering the taxes charged to the acquiring firm (Johnson et al., 2009).

³² If net interest > 0, then interest income > interest expense.

▪ 4 | Corporate Synergies

For the synergistic value creation in general of the two firms combined after the deal, it was used the financial ratios ROE and ROS³³ (or net profit margin). Both ratios are considered profitability measures, where the first one addresses the management's ability at maximizing return to the shareholders and the second indicates the management's ability at generating profit from its sales³⁴ (Masa'deh et al., 2015):

$$ROE^{\wedge} = \frac{\text{Profit after tax}^{\wedge}}{\text{Shareholder's funds}^{\wedge}} \quad | \quad ROS^{\wedge} = \frac{EBIT^{\wedge}}{\text{Turnover}^{\wedge}}$$

All indicators used, except two, were calculated relative to the deal value to reflect the size of the bidder's firm. Since the cost based synergies and the financial ratios ROE and ROS were already incorporating the firm size (i.e. turnover and total equity), there was no need to divide by the deal value.

Each indicator had a different number of observations according to the existing data, diminishing considerably the initial sample into different subsamples. Another sample reducing factor was the fact that not all deals had an industry Zephus³⁵ classification, making the sample even smaller than the original. Table 12³⁶ presents descriptive statistics on the several combined firms characteristics in the year before the acquisition.

³³ ROE and ROS were calculated using the financial entry *turnover* instead of *sales*.

³⁴ In this study, the turnover instead of sales.

³⁵ Name that Zephyr Bureau van Dick give to their own industry classification.

³⁶ Includes deals without deal value information. It also includes deals in all 25 Zephus industries and only deals that were acquisitions and management buy-ins/outs.

Financial Entry	# Deals	Pre-Deal Average	Post-Deal Average	Pre-Deal Min
Turnover	2,205	635,772	727,111	60
Op. Expenses	916	563,602	598,330	150
Net Interest	1,098	-162	4,799	-2,491,163
Tax Results	2,081	-13,291	-11,109	-1,380,370
Profit After Tax	1,358	80,537	65,757	-5,185,985
		Pre-Deal Median	Pre-Deal Max	Pre-Deal S. Dev.
Turnover		41,709	78,328,800	3,743,439
Op. Expenses		38,599	79,532,031	3,595,091
Net Interest		-35	4,552,160	160,311
Tax Results		-897	2,360,757	100,823
Profit After Tax		2,235	7,731,924	489,296

Table 12 – Descriptive statistics on the several financial performance measures in thousands of euros

In order to have consistent results, other deal types besides acquisitions and management buy-ins/outs were not included in this study, since: (1) the target in the case of mergers ceases to exist, and so their accounts are incorporated in the bidder's, (2) in the case of institutional buy-outs, private equities or venture capital are associated, (3) the results might be biased in a capital increase and share buyback³⁷ and (4) in minority stake the bidder does not have control over the target, making it not a fair choice to combine the results from the target and the bidder (R_{jn}). Moreover, it was considered only one deal per acquirer so other deals made in the period of time considered (2005-2014) do not bias the results.

³⁷ Since the acquirer in the past had some influence in the target and is currently subscribing for more or new shares.

5 | FINDINGS AND DISCUSSION

The industries considered in this analysis, due to the lack of relevance of some sectors in terms of the size of the sample, were only eleven from the twenty five available in the Zephus industries: (1) Banking, Insurance & Financial Services, (2) Personal, Leisure & Business Services, (3) Computer, IT and Internet services, (4) Utilities, (5) Wholesaling, (6) Transport, Freight, Storage & Travel Services, (7) Industrial, Electric & Electronic Machinery, (8) Retailing, (9) Construction, (10) Property Services and (11) Food & Tobacco Manufacturing.

5.1 | Industry generic performance

To assess the overall performance, the rates of failure³⁸ of the financial ratios ROE and ROS were analysed. Table 13 and 14 summarizes the rate of failure and the residual average/median per industry from the target and bidder combined.

Looking to Table and 14, the Transport, Freight, Storage & Travel Services sector is the one with the lowest rate of failure, i.e., had the most synergistic number of transactions inside its own industry. On the other hand, Industrial, Electric & Electronic Machinery industry had the highest rate of failure, where 65% and 75% of the transactions had value destruction, with negative ROE and ROS residual medians respectively.

³⁸ The rate of failure is the number of transactions that had negative residuals over the total value of transactions inside an industry.

Industry (ROE)	#Deals	%	Rate of failure	Residual Average	Residual Median
All	1,271	1	57%	-14%	-2.1%
Transport, Freight, Storage & Travel Services	65	5%	46%	-40%	0.5%
Property Services	47	4%	53%	38%	-0.7%
Banking, Insurance & Financial Services	279	22%	56%	-4%	-0.7%
Utilities	73	6%	56%	23%	-0.8%
Retailing	60	5%	57%	4%	-1.5%
Personal, Leisure & Business Services	153	12%	58%	50%	-1.0%
Food & Tobacco Manufacturing	47	4%	60%	0%	-0.8%
Wholesaling	74	6%	61%	-24%	-2.3%
Computer, IT and Internet services	75	6%	63%	-571%	-2.5%
Construction	49	4%	63%	-8%	-3.3%
Industrial, Electric & Electronic Machinery	57	4%	65%	34%	-3.6%

Table 13 – Number of deals per industry with available financial information for ROE. Rate of failure and possible synergies of the financial performance measure ROE

Considering the average performance, when observing the average from the residual value of the financial ratios, in Table 13, Personal, Leisure & Business Services industry present a positive value (i.e. there were synergies) and the higher value, followed by Property Services. Although Transport, Freight, Storage & Travel Services sector was the one with the lowest rate of failure and Industrial, Electric & Electronic Machinery the one with the highest, when comparing the residual average, this two sectors switch their positions and now Industrial, Electric & Electronic Machinery is the third industry with most synergies and Transport, Freight, Storage & Travel Services sector is the second worst, with value destruction, followed by Computer, IT and Internet services. The same does not happen when looking to the financial ratio ROS. Industrial, Electric & Electronic Machinery and Transport, Freight, Storage & Travel Services appeared as the second and fourth

industries with the highest synergies, Computer, IT and Internet services as second, and Utilities as the industry with the most synergies.

Industry (ROS)	#Deals	%	Rate of failure	Residual Average	Residual Median
All	882	100%	56%	34%	-4.0%
Transport, Freight, Storage & Travel Services	47	5%	47%	7%	0.6%
Property Services	32	4%	50%	-2%	-0.1%
Banking, Insurance & Financial Services	189	21%	54%	5%	-0.7%
Utilities	51	6%	55%	19%	-0.4%
Retailing	52	6%	56%	8%	-0.3%
Personal, Leisure & Business Services	109	12%	56%	7%	-0.3%
Food & Tobacco Manufacturing	32	4%	56%	0%	-0.4%
Wholesaling	49	6%	59%	-6%	-0.5%
Computer, IT and Internet services	42	5%	64%	2%	-0.8%
Construction	40	5%	65%	-15%	-1.1%
Industrial, Electric & Electronic Machinery	36	4%	75%	13%	-1.3%

Table 14 - Number of deals per industry with available financial information for ROS. Rate of failure and possible synergies of the financial performance measure ROS

Since the residual average value is very different from its medians and is not possible to attain a conclusion, the medians were then assessed leading to the only industry with a positive value: the Transport, Freight, Storage & Travel Services.

5.2 | Synergy creation on each industry

In this section, as the indicators – types of synergies – presented in the subchapter 4.3.1 are coefficients not comparable between each other, in order to answer the second research question, the growth rates will be instead analysed. Hence it was compared the growth rates from the year -1 to the predicted +1 and the actual +1

from the indicators³⁹: turnover, interest, tax and operating expenses. The residual growth rate is the difference between the actual and the predicted growth rates.

Analysing Table 15, Banking, Property Services and Utilities industries present financial and tax gains has the most and less accentuated synergies respectively. All the other industries except one, present opposite results where gains are more emphasised at a tax level and less at a financial level. Transport, Freight, Storage & Travel Services is the only sector where sales synergies are stronger.

	Turnover Residual Growth Median	OE Residual Growth Median	Interest Residual Growth Median	Tax Residual Growth Median
Banking, Insurance & Financial Services	5.8%	4.9%	8.4%	0.2%
Computer, IT and Internet services	8.7%	8.7%	-13.6%	8.8%
Construction	4.7%	11.4%	-13.7%	14.5%
Food & Tobacco	4.3%	3.4%	-2.1%	20.3%
Manufacturing	4.3%	3.4%	-2.1%	20.3%
Industrial, Electric & Electronic Machinery	9.2%	8.7%	7.8%	24.0%
Personal, Leisure & Business Services	5.2%	9.0%	-4.9%	17.4%
Property Services	5.7%	3.1%	15.1%	0.2%
Retailing	5.9%	4.6%	4.2%	13.6%
Transport, Freight, Storage & Travel Services	10.2%	6.9%	-13.5%	9.7%
Utilities	5.9%	10.8%	9.7%	5,1%
Wholesaling	7.0%	11.8%	5.0%	26.0%

Table 15 - Residual from the growth rates of each financial performance measure by industry

In operating expenses, 50% of the cases had value destruction across all industries since the residual of the operating expenses has presented only positive⁴⁰ values.

³⁹ For the growth rates, no ratios were considered, i.e. ROE and ROS.

⁴⁰ Since operating expenses represent costs, the rationale is the opposite from the other variables and must be negative in order to show synergy gains.

5.3 | Top industry performance by type of synergy

Revenue-enhancement synergy is comprehended in Table 16, where the Construction sector presents the highest median⁴¹/synergistic value creation, followed by Personal, Leisure & Business Services and Retailing. On the other hand, in Wholesaling⁴², on average only 2.8% of the deal value are turnover gains.

Synergistic value creation might be associated with up-selling, cross-selling and concentration on the highest-margin products and segments, probably more emphasised in the Retailing industry, since it is easier to apply (Kengelbach et al., 2013).

Turnover/Deal Value	#Deals	%	Rate of failure	Residual Average	Residual Median
Construction	18	3%	39%	522%	244.8%
Personal, Leisure & Business Services	84	14%	24%	2,031%	89.5%
Retailing	21	4%	29%	3,600%	70.1%
Utilities	36	6%	36%	-3,430%	67.3%
Food & Tobacco Manufacturing	22	4%	32%	66,630%	55.5%
Industrial, Electric & Electronic Machinery	41	7%	37%	554%	53.1%
Computer, IT and Internet services	45	8%	20%	224%	50.4%
Banking, Insurance & Financial Services	107	18%	29%	1,200%	48.6%
Property Services	34	6%	35%	332%	38.1%
Transport, Freight, Storage & Travel Services	28	5%	36%	206%	27.1%
Wholesaling	9	2%	44%	66%	2.8%

Table 16 – Operating Synergy: Revenue-enhancement (Sales) Synergy Analysis

Table 17 shows that cost-based synergies do not present any efficiency gains in the first year. Nonetheless the industry with less value destruction is Property Services with a rate of failure of 55% and with 21 transactions from a 42 sample with losses of 3.2% in percentage of the turnover of the last year before the transaction. However

⁴¹ Since the residual averages and medians present great differences between them, only medians were taken into account in the synergy assessment.

⁴² This industry in this performance measure is not representative since it has only 9 transactions as sample.

when assessing the average, Property Services, Food & Tobacco Manufacturing and Retailing obtained negative values, indicating synergy gains.

This results in Table 16 and Table 17 might seem odd since according to BCG study, 94% of firms in M&A announcements usually focus on cost savings when justifying to their shareholders an M&A potential deal, neglecting any likely sales synergies. This happens because cost-based synergies are simpler to quantify than revenue-enhanced synergies, making it easier to present to shareholders.

Operating Expenses/Turnover t-1	#Deals	%	Rate of failure	Residual Average	Residual Median
Property Services	42	5%	55%	-22%	3.2%
Food & Tobacco Manufacturing	24	3%	58%	-3%	3.3%
Retailing	23	3%	57%	-4%	4.3%
Banking, Insurance & Financial Services	304	33%	66%	29%	4.7%
Industrial, Electric & Electronic Machinery	42	5%	67%	6%	6.4%
Transport, Freight, Storage & Travel Services	23	3%	61%	24%	6.8%
Computer, IT and Internet services	30	3%	67%	15%	7.3%
Personal, Leisure & Business Services	102	11%	70%	29%	9.0%
Construction	37	4%	70%	42%	8.9%
Utilities	33	4%	70%	40%	10.0%
Wholesaling	38	4%	71%	49%	12.3%

Table 17 – Operating Synergy: Cost-based Synergy Analysis

Regarding financial synergies (Table 18), 50% of the deals made in Property Services had financial gains of 22.8% of the deal value. After this industry, Utilities and Banking appear only with 8% and 3.2% of gains to the deal value. The industries Industrial, Electric & Electronic Machinery, Transport, Freight, Storage & Travel Services, Retailing and Food & Tobacco Manufacturing⁴³ present negative values, i.e. have synergistic value destruction, even though the first two have a positive average.

⁴³ This industry in this performance measure is not representative since it has only 7 transactions as sample. The same happens in Wholesaling and Construction.

Real estate, Utilities – gas, electricity and water – and the Banking and Insurance industries are typically highly leverage sectors with high debt to equity ratios, making them more vulnerable to interest rates changes. Since in M&A transactions (property services are usually leverage because of large buyouts), the companies involved when combined usually have greater debt capacity, profitability and cash flows lowering their costs of capital.

Interest/Deal Value	#Deals	%	Rate of failure	Residual Average	Residual Median
Property Services	24	8%	25%	71%	22.8%
Utilities	18	6%	28%	11,897%	8.0%
Banking, Insurance & Financial Services	41	14%	34%	49%	3.2%
Computer, IT and Internet services	24	8%	46%	25%	2.5%
Personal, Leisure & Business Services	39	14%	44%	47%	0.4%
Construction	7	2%	43%	-153%	0.4%
Wholesaling	5	2%	40%	-3,216%	0.1%
Industrial, Electric & Electronic Machinery	21	7%	52%	91%	-0.5%
Transport, Freight, Storage & Travel Services	14	5%	50%	2%	-0.7%
Retailing	16	6%	56%	-364%	-2.3%
Food & Tobacco Manufacturing	7	2%	86%	-63%	-5.2%

Table 18 – Financial Synergy Analysis

Tax gains are more accentuated in the Construction, Wholesaling and Industrial, Electric & Electronic Machinery but are inexistent in Retailing and Personal, Leisure & Business Services with a negative median of 0.4% and 0.5%.

Tax/Deal Value	#Deals	%	Rate of failure	Residual Average	Residual Median
Construction	13	3%	31%	2%	7.0%
Wholesaling	10	2%	30%	37%	6.6%
Industrial, Electric & Electronic Machinery	34	7%	29%	57%	6.1%
Transport, Freight, Storage & Travel Services	20	4%	35%	-186%	3.6%
Utilities	38	8%	47%	-84%	0.7%
Food & Tobacco Manufacturing	21	4%	43%	-3,625%	0.1%
Computer, IT and Internet services	45	9%	49%	28%	0.1%
Banking, Insurance & Financial Services	90	18%	50%	-97%	0.0%
Property Services	37	7%	57%	16%	-0.2%
Retailing	21	4%	57%	-154%	-0.4%
Personal, Leisure & Business Services	68	14%	53%	-33%	-0.5%

Table 19 – Tax Synergy Analysis

According to Bruner (2002) for bidders there is no evidence of earning returns after an M&A deal. Since tax income is positively correlated with profit after tax, and since most bidders have net income losses, probably higher than the gains of the targets⁴⁴, in M&A, taxes will be generally lower⁴⁵. As it is showed in Table 20⁴⁶, Construction, Wholesaling and Industrial, Electric & Electronic Machinery industries present the highest rates of failure and negative medians, indicating that in 50% of cases there are net profit losses.

⁴⁴ Since bidders have to be significantly bigger than the targets to be able to acquire them, losses in the bidders' returns may be greater than gains in the targets' due to size effect.

⁴⁵ Since in this sample, cross borders are almost inexistent, as it was showed in chapter 4, they cannot be presented has a justification for tax gains.

⁴⁶ Profit after Tax does not incorporates the size of the firms (e.g. deal value) as the other variables analysed in this study do. So in this table is not possible to compare industries but only analyse the negative or positive sign of the median.

Profit After Tax	#Deals	%	Rate of failure	Residual Average	Residual Median
Retailing	63	5%	63%	-23,716.7	-538.8
Wholesaling	76	6%	58%	-20,541.2	-259.9
Industrial, Electric & Electronic Machinery	59	4%	58%	-6,877.9	-118.8
Construction	59	4%	54%	13,684.9	-63.1
Computer, IT and Internet services	85	6%	53%	4,964.4	-48.3
Personal, Leisure & Business Services	168	12%	52%	-815.6	-22.2
Banking, Insurance & Financial Services	292	22%	51%	-15,081.4	-3.1
Food & Tobacco Manufacturing	50	4%	48%	45,137.4	0.0
Utilities	73	5%	49%	-21,768.1	27.7
Property Services	49	4%	47%	1,132.5	64.5
Transport, Freight, Storage & Travel Services	69	5%	42%	920.5	224.5

Table 20 – Profit after Tax Analysis, in thousands of euros.

5.4 | Discussion

The research made emphasises tax efficiency as the synergy with more gains in most of the industries presented, with seven industries out of eleven having their best results in the tax synergy.

Although financial synergies were not very evident in this study, and only Banking, Property Services and Utilities industries have revealed high financial synergistic improvements, this kind of gains have become throughout the years comparatively more important across the other types of synergies due to the severe financial and credit crisis. These financial gains include lower costs of debt and improved credit rating, easier access to bank capital, higher financial flexibility, possible contract breaks and improved tax efficiency⁴⁷ (Zenner et al., 2009).

In synergistic value creation in general (ROS and ROE) and in cost-based synergies, the rate of failure across all industries is higher than 50%⁴⁸, which is

⁴⁷ Seen for some authors in the literature as a financial synergy.

⁴⁸ Except Transport, Freight, Storage & Travel Services in ROE and ROS.

considerably high. Nevertheless, these values are not as high as the ones presented in Weston & Weaver (2001) and Hay Group (2007). Computer, IT and Internet Services is the industry that presents the lowest rate of failure (20%) in the sales synergies.

Transport, Freight, Storage & Travel Services was considered the industry with the best performance when looking to wealth creation in general, and also the only one with synergistic value creation. This deduction contradicts in part the studies of Cusatis & Blumberg (2009), Rehm et al. (2012), and Bruner (2002) stating that financial services and banking industry is one of the sectors with the best performance, or the market-based study of Nangia et al. (2015) that has found that Retailing and Utilities are ahead of Transportation & Logistics. Nevertheless, Cusatis & Blumberg (2009) also stated that railroad industries in several empirical studies appear to have a superior performance, supporting the findings in the present dissertation.

Regarding the different types of synergies and the industry performance comprised in each one, every industry had sales synergies, being the Construction sector the industry that had the most gains. This industry was also the one with the best performance in terms of tax efficiency. This might happen since when one construction company acquires another, this bidder has access to new clients, knowledge and markets, improving sales. But at the same time, this sector has been conservative in what concerns innovation in materials, technologies and processes, and is the sector that consumes more raw materials in the world, being very vulnerable to commodity price changes (Gerbert et al., 2016). So, although this industry has big gains in terms of sales, due to elevated operating costs, they have diminished margins, being able after an M&A transaction to have income tax gains.

In terms of cost based synergies, none of the industries analysed have presented any gains, showing instead value destruction. Although it seems strange, it might have some explanations. For example, when acquisitions occur, restructuring

measures like downsizing take place and in the short term the company increases its costs, being only able to decrease it in the long term. Another justification could be related to the fact that after an acquisition, some redundancies such as, contracts, the closure of redundant plants or production lines and the centralisation of administrative functions, might persist and take time, making efficiency gains not immediately tangible in the first year.

Concerning the banking, Insurance and Financial Services industry, this sector is always, in all sample cuts and in the original 6,873 sample (Appendix I – Description of the sample by industry classification), the sector with the much more number of transactions comparing to the other industries. This industry is far less consolidated than others, and so M&A activity has increased regardless the high rate of M&A failure presented in most studies (Little, 2010).

6 | CONCLUSION

The present research was meant to identify the best performance after an M&A deal at an industry level taking into account different types of possible synergies. In order to answer the research questions, data from Zephyr BvD, provided by PwC Portugal, was analysed in an exploratory manner. A new methodological approach in the M&A performance measurement is presented, assessing performance by observing the means and medians of a residual value, calculated with a predicted and an actual performance measure. This performance measures were based on accounting/financial statements with an initial sample of 6,873 transactions and eleven different industries chosen, dividing itself in smaller samples depending on the performance indicator used.

The findings show that Transport, Freight, Storage & Travel Services was the industry with the best performance taking into account general synergies. It was also highlighted that the Construction sector had the best performance in the revenue-enhanced and tax synergies and Property Services in the financial synergies.

The type of synergy with more economic value creation was at a tax level, where seven out of eleven industries had more tax efficiencies than operating or financial.

6.1 | Theoretical and practical contribution

This essay has allowed to understand better the differences between the performance in some industries after an M&A deal and industry differences in each type of synergy.

Additionally, this study provides an interesting insight for advisory companies and companies interested in acquirer others, presenting them the trends in their industries⁴⁹ and where it is more expected to have gains after an M&A deal.

6.2 | Limitations

One of the limitations of this essay is the use of accounting measures perceived as inferior when compared to market based measures (Morosini et al., 1998). Other authors believe that subjective measurements are more valuable than objective ones since these approaches are not subject to manipulation (Miller, 1987).

Financial statements present several disadvantages because (1) they can be manipulated and distorted by management, (2) they are influenced by outside factors, (3) are past oriented instead of representing future or present expectations, (4) there are different accounting standards and policies across countries and companies limiting possible comparisons, (5) the combination of the target and bidder might be very difficult since the target may be dissolved and (6) accounting data is too noisy and might not isolate M&A effects (Wang & Moini, 2012; Kaplan, 2006).

Besides these disadvantages, all the measures used in the present essay were accrual-based measures, subject to under or overestimates and historical influences. Barber & Lyon (1996) suggest the use of operating cash flow as ideal in performance measurement, though it was not possible since Zephyr BvD did not have this financial indicator.

Another limitation is that Zephyr database does not have all the deals made in the period of time and in the countries considered, and only have data for one year after the deal and three years before the deal. This last restriction makes it difficult to calculate accurate and solid forecasts of a predicted performance indicator for each

⁴⁹ If the company is inserted in one of the eleven industries analysed.

target and acquirer combined. Some efforts were made to overcome this limitation by combining data from Zephyr BvD and Orbis BvD – also provided by PwC Portugal – in order to have access to all the years after and before the deal and to the complete balance sheets, income statements and cash flow statements from the companies included in the transactions of this study. Unfortunately this merge of the databases was not possible since the 6 873 sample was reduced to around one thousand acquirers and when combined with the data from the targets, the original sample was reduced only to approximately fifty deals.

At last, two factors that could also be drawbacks are the short term analysis made in this study that might not capture all the effects caused by an acquisition, and the fact that this study does not use a regression model⁵⁰, as it is used in most of the studies found in the literature.

6.3 | Suggestions for future research

For future work, it would be interesting to do some research of the possible explanations and evidence on why some industries have more synergistic gains in some areas more than in others.

Another interesting possible research, if databases like Orbis, that provide more and complete financial information about companies, were available to the researcher, would be to add or substitute to the existing performance measures other accounting measures that might seem more adequate, but were not possible to include in this study.

In addition, the investigation of this research questions in other contexts, like in other countries or only in one country, would also be an interesting research.

⁵⁰ Due to lack of data and time constraints.

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ANNEXES

Annex I – Gains in M&A activity

- | | |
|--|---|
| A. Strategy | <ol style="list-style-type: none"> 1. Develop a new strategic vision 2. Achieve long-run strategic goals 3. Acquire capabilities in new industry 4. Obtain talent for fast-moving industries 5. Add capabilities to expand role in a technologically advancing industry 6. Quickly move into new products, markets 7. Apply a broad range of capabilities and managerial skills in new areas |
| B. Economies of scale | <ol style="list-style-type: none"> 1. Cut production costs due to large volume 2. Combine R&D operations 3. Increased R&D at controlled risk 4. Increased sales force 5. Cut overhead costs 6. Strengthen distributions systems |
| C. Economies of scope | <ol style="list-style-type: none"> 1. Broaden product line 2. Provide one-stop shopping for all services 3. Obtain complementary products |
| D. Extend advantages in differentiated products | |
| E. Advantages of size | <ol style="list-style-type: none"> 1. Large size can afford high-tech equipment 2. Spread the investments in the use of expensive equipment over more units 3. Ability to get quantity discounts 4. Better terms in deals |
| F. Best practices | <ol style="list-style-type: none"> 1. Operating efficiencies (improve management of receivables, inventories, fixed assets, etc.) 2. Faster tactical implementation 3. Incentives for workers—rewards 4. Better utilization of resources |
| G. Market expansion | <ol style="list-style-type: none"> 1. Increased market shares 2. Obtain access to new markets |
| H. New capabilities, managerial skills | <ol style="list-style-type: none"> 1. Apply a broad range of capabilities and managerial skills in new areas 2. Acquire capabilities in new industry 3. Obtain talent for fast-moving industries |
| I. Competition | <ol style="list-style-type: none"> 1. Achieve critical mass early before rivals 2. Preempt acquisitions by competitor 3. Compete on EBIT growth for high valuations |
| J. Customers | <ol style="list-style-type: none"> 1. Develop new key customer relationships 2. Follow clients 3. Combined company can meet customers' demand for a wide range of services |

Figure 10 – Sources of gain in M&A (Part One) | Source: Weston & Weaver, 2001

- K. Technology
 1. Enter technologically dynamic industries
 2. Seize opportunities in industries with developing technologies
 3. Exploit technological advantage
 4. Add new R&D capabilities
 5. Add key complementary technological capabilities
 6. Add key technological capabilities
 7. Add new key patent or technology
 8. Acquire technology for lagging areas
- L. Shift in industry organization
 1. Adjust to deregulation—relaxing of government barriers to geographic and product market extensions
 2. Change in strategic scientific industry segment
- M. Adjust to industry consolidation activities
 1. Eliminate industry excess capacity
 2. Need to cut costs
- N. Shift in product strategy
 1. Shift from overcapacity area to area with more favorable sales capacity
 2. Exit a product area that has become commoditized to area of specialty
- O. Industry roll-ups—taking fragmented industries, and because of improvements in communication and transportation, rolling up many individual firms into larger firms, obtaining the benefits of strong and experienced management teams over a large number of smaller units
- P. Globalization
 1. International competition—to establish presence in foreign markets and to strengthen position in domestic market
 2. Size and economies of scale required for effective global competition
 3. Growth opportunities outside domestic market
 4. Diversification
 - a. Product line
 - b. Geographically—enlarge market
 - c. Reduce systematic risk
 - d. Reduce dependence on exports
 5. Favorable product inputs
 - a. Obtain assured sources of supply—sources of raw materials
 - b. Labor (inexpensive, well-trained, etc.)
 - c. Need for local manufacturing
 6. Improve distribution in other countries
 7. Political/regulatory policies
 - a. Circumvent protective tariffs, etc.
 - b. Political/economic stability
 - c. Government policy
 - d. Invest in a safe, predictable environment
 - e. Take advantage of common markets
 8. Relative exchange rate conditions
- Q. Investment – acquire company, improve it, sell it
- R. Prevent competitor from acquiring target company
- S. Create antitrust problem to deter potential acquirers of our firm

Figure 11 – Sources of gain in M&A (Part Two) | Source: Weston & Weaver, 2001

APPENDICES

Appendix I – Description of the sample by industry classification

By Acquirer's Industry	#Deals	%	Same Industry	Conglomerate	Domestic Deal	Cross Border Deal
All	6,873	100%	6,842	25	6 823	50
Agriculture, Horticulture & Livestock	79	1%	40	39	79	-
Banking, Insurance & Financial Services	1,681	24%	469	1,212	1,668	13
Biotechnology, Pharmaceuticals and Life Sciences	30	0%	10	20	30	-
Chemicals, Petroleum, Rubber & Plastic	108	2%	47	61	106	2
Communications	204	3%	115	89	204	-
Computer, IT and Internet services	409	6%	270	139	408	1
Construction	248	4%	122	126	244	4
Food & Tobacco Manufacturing	255	4%	190	65	253	2
Hotels and Restaurants	82	1%	57	25	81	1
Industrial, Electric & Electronic Machinery	294	4%	160	134	292	2
Leather, Stone, Clay & Glass products	73	1%	42	31	70	3
Metals & Metal Products	143	2%	76	67	142	1
Mining & Extraction	47	1%	11	36	47	-

Table 21 – Number of deals, number of conglomerates, number of deals performed in the same industry and number of deals made in the same country or outside by the industry classification Zephyus of the acquirer (Part One)

By Acquirer's Industry	#Deals	%	Same Industry	Conglomerate	Domestic Deal	Cross Border Deal
Miscellaneous Manufacturing	15	0%	3	12	15	-
Personal, Leisure & Business Services	870	13%	545	325	865	5
Printing & Publishing	232	3%	119	113	230	2
Property Services	283	4%	158	125	283	-
Public Administration, Education, Health Social Services	239	3%	197	42	239	-
Retailing	298	4%	192	106	295	3
Textiles & Clothing Manufacturing	55	1%	25	30	54	1
Transport Manufacturing	83	1%	29	54	83	-
Transport, Freight, Storage & Travel Services	341	5%	261	80	335	6
Utilities	345	5%	254	91	344	1
Wholesaling	346	5%	186	160	343	3
Wood, Furniture & Paper Manufacturing	113	2%	76	37	113	-

Table 22 – Number of deals, number of conglomerates, number of deals performed in the same industry and number of deals made in the same country or outside by the industry classification Zephus of the acquirer (Part Two)

By Acquirer's Industry	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
#Deals	483	553	649	606	423	473	514	634	611	597
Agriculture, Horticulture & Livestock	6	1	12	5	3	6	3	6	14	8
Banking, Insurance & Financial Services	110	111	147	144	107	123	131	133	157	203
Biotechnology, Pharmaceuticals and Life Sciences	1	1	1	2	4	3	2	2	4	3
Chemicals, Petroleum, Rubber & Plastic	6	7	12	12	2	9	5	10	13	7
Communications	21	28	19	21	18	12	11	12	10	17
Computer, IT and Internet services	31	45	55	32	23	15	26	31	30	30
Construction	14	26	27	29	11	25	14	26	15	14
Food & Tobacco Manufacturing	25	17	24	27	12	15	20	24	22	14
Hotels and Restaurants	5	9	16	2	8	1	6	7	3	7
Industrial, Electric & Electronic Machinery	21	25	29	27	20	13	22	32	35	16
Leather, Stone, Clay & Glass products	4	6	9	4	6	6	7	6	1	6

Table 23 – Number of deals performed in each year from 2005 till 2014 by industry Zephus Classification (Part One)

By Acquirer's Industry	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Metals & Metal Products	11	15	15	11	10	9	10	11	13	15
Mining & Extraction	-	5	4	4	4	6	2	2	4	4
Miscellaneous Manufacturing	-	4	2	3	-	-	2	1	2	-
Personal, Leisure & Business Services	65	62	71	67	58	73	77	78	81	66
Printing & Publishing	18	19	29	21	18	21	9	24	25	8
Property Services	17	23	32	28	11	15	23	31	31	24
Public Administration, Education, Health Social Services	10	9	10	16	15	18	32	31	29	26
Retailing	16	26	14	22	15	25	19	46	31	30
Textiles & Clothing Manufacturing	8	7	6	4	2	4	2	3	2	8
Transport Manufacturing	5	5	5	7	5	7	3	14	7	15
Transport, Freight, Storage & Travel Services	31	41	28	37	24	14	27	28	26	18
Utilities	22	24	36	36	28	23	27	31	20	26
Wholesaling	27	25	36	30	11	21	24	33	30	27
Wood, Furniture & Paper Manufacturing	9	12	10	15	8	9	10	12	6	5

Table 24 – Number of deals performed in each year from 2005 till 2014 by industry Zephus Classification (Part Two)

Appendix II – Average deal value by industry classification

By Acquirer's Industry	Average Deal Value k€
Agriculture, Horticulture & Livestock	14,915
Banking, Insurance & Financial Services	64,798
Biotechnology, Pharmaceuticals and Life Sciences	11,589
Chemicals, Petroleum, Rubber & Plastic	19,047
Communications	53,491
Computer, IT and Internet services	13,753
Construction	19,083
Food & Tobacco Manufacturing	34,667
Hotels and Restaurants	15,568
Industrial, Electric & Electronic Machinery	11,007
Leather, Stone, Clay & Glass products	55,837
Metals & Metal Products	26,887
Mining & Extraction	16,448
Miscellaneous Manufacturing	11,638
Personal, Leisure & Business Services	11,577
Printing & Publishing	20,343
Property Services	48,445
Public Administration, Education, Health Social Services	11,119
Retailing	50,358
Textiles & Clothing Manufacturing	13,114
Transport Manufacturing	14,589
Transport, Freight, Storage & Travel Services	18,954
Utilities	34,123
Wholesaling	12,571
Wood, Furniture & Paper Manufacturing	18,707

Table 25 – Average deal value of the initial sample by acquirer's Zephus Industry in thousands of euros

Appendix III – Types of M&A per industry classification

Deal Type	#Deals	Agriculture, Horticulture & Livestock	Banking, Insurance & Financial Services	Biotechnology, Pharmaceuticals and Life Sciences	Chemicals, Petroleum, Rubber & Plastic	Com.	Computer, IT and Internet services	Construction	Food & Tobacco Manuf.	H&R
Acquisition	5,452	62	1,187	27	93	166	352	209	215	69
Capital Increase	34	1	9	0	1	1	2	1	3	0
IBO	444	5	182	0	1	9	20	12	14	4
MBI	3	0	1	0	0	0	0	0	0	0
BIMBO	1	0	1	0	0	0	0	0	0	0
MBO	2	0	2	0	0	0	0	0	0	0
Merger	53	0	8	0	1	0	4	3	2	1
Minority stake	771	11	267	3	11	23	25	21	16	8
Share buyback	83	0	13	0	1	4	5	1	4	0

Table 26 – Number of deals per deal type and industry Zephus classification (Part One)

Deal Type	Industrial, Electric & Electronic Machinery	Leather, Stone, Clay & Glass products	Metals & Metal Products	Mining & Extraction	Miscellaneous Manufacturing	Personal, Leisure & Business Services	Printing & Publish	Property Services	Public Administration, Education, Health Social Services	Retail
Acquisition	242	57	120	36	13	696	191	233	205	247
Capital Increase	1	0	1	0	0	5	0	1	0	1
IBO	9	2	6	3	1	49	10	9	14	19
MBI	0	0	0	0	0	1	0	0	0	0
BIMBO	0	0	0	0	0	0	0	0	0	0
MBO	0	0	0	0	0	0	0	0	0	0
Merger	1	1	0	0	0	11	1	1	1	4
Minority stake	34	10	14	8	1	90	26	35	16	22
Share buyback	6	2	2	0	0	15	3	3	3	4

Table 27 – Number of deals per deal type and industry Zephus classification (Part Two)

Deal Type	Industrial, Electric & Electronic Machinery	Leather, Stone, Clay & Glass products	Metals & Metal Products	Mining & Extraction	Miscellaneous Manufacturing	Personal, Leisure & Business Services
Acquisition	42	76	278	275	275	86
Capital Increase	0	1	0	1	5	0
IBO	6	2	14	20	27	6
MBI	0	0	0	1	0	0
BIMBO	0	0	0	0	0	0
MBO	0	0	0	0	0	0
Merger	1	0	5	2	3	3
Minority stake	6	3	35	45	29	12
Share buyback	0	1	8	0	3	5
No Type	6,873	-	-	-	-	-

Table 28 – Number of deals per deal type and industry Zephus classification (Part Three)

Appendix IV – Zephus industry classification

Zephus Industry Classification	NACE Rev.2 Code(s) – 2 Digit
Banking, Insurance & Financial Services	64 65 66
Computer, IT and Internet services	58 62 63
Construction	41 42 43
Food & Tobacco Manufacturing	10 11 12
Industrial, Electric & Electronic Machinery	26 27 28
Personal, Leisure & Business Services	59 70 71 72 73 74 77 78 79 80 81 82 92 93 96
Property Services	42 43 68
Retailing	45 47
Transport, Freight, Storage & Travel Services	49 50 51 52 53 79
Utilities	35 36 38 39 42 49
Wholesaling	45 46

Table 29 – Zephus industry classification and corresponding NACE Rev. 2 Codes

Appendix V – Sample distribution by accounting-based measures and industry classification

Financial Accruals	Operating Expenses		Turnover		Interest		Tax		Shareholders' Funds		Profit	
	#	%	#	%	#	%	#	%	#	%	#	%
All	916	100	2,205	100	1,098	100	2,081	100	1,869	100	1,358	100
Agriculture, Horticulture & Livestock	12	1%	31	1%	17	2%	26	1%	18	1%	15	1%
Banking, Insurance & Financial Services	304	33%	485	22%	253	23%	445	21%	428	23%	292	22%
Biotechnology, Pharmaceuticals and Life Sciences	7	1%	10	0%	7	1%	9	0%	12	1%	7	1%
Chemicals, Petroleum, Rubber & Plastic	27	3%	46	2%	21	2%	36	2%	27	1%	21	2%
Communications	21	2%	73	3%	32	3%	64	3%	72	4%	54	4%
Computer, IT and Internet services	30	3%	125	6%	64	6%	122	6%	120	6%	85	6%
Construction	37	4%	90	4%	35	3%	88	4%	84	4%	59	4%

Table 30 – Number of deals per performance measure and Zephus industry and weight per Zephus industry in the total sample. Number of deals after leaving only deal types acquisition, MBI, MBO and BIMBO and taking repeating companies⁵¹ (Part One)

⁵¹ These values include transactions with or without corresponding deal values, so it will present different figures when compared with the tables presented in Chapter 5.

Financial Accruals	Operating Expenses		Turnover		Interest		Tax		Shareholders' Funds		Profit	
	#	%	#	%	#	%	#	%	#	%	#	%
Food & Tobacco Manufacturing	24	3%	92	4%	35	3%	77	4%	79	4%	50	4%
Hotels and Restaurants	8	1%	24	1%	16	1%	21	1%	24	1%	17	1%
Industrial, Electric & Electronic Machinery	42	5%	102	5%	53	5%	97	5%	78	4%	59	4%
Leather, Stone, Clay & Glass products	8	1%	17	1%	8	1%	20	1%	17	1%	13	1%
Metals & Metal Products	23	3%	54	2%	25	2%	56	3%	39	2%	27	2%
Mining & Extraction	9	1%	14	1%	5	0%	12	1%	12	1%	9	1%
Miscellaneous Manufacturing	5	1%	7	0%	4	0%	6	0%	3	0%	3	0%
Personal, Leisure & Business Services	102	11%	291	13%	135	12%	262	13%	235	13%	168	12%
Printing & Publishing	38	4%	71	3%	31	3%	81	4%	62	3%	45	3%
Property Services	42	5%	89	4%	56	5%	91	4%	70	4%	49	4%

Table 31 – Number of deals per performance measure and Zephus industry and weight per Zephus industry in the total sample. Number of deals after leaving only deal types acquisition, MBI, MBO and BIMBO and taking repeating companies (Part Two)

Financial Accruals	Operating Expenses		Turnover		Interest		Tax		Shareholders' Funds		Profit	
	#	%	#	%	#	%	#	%	#	%	#	%
Public Administration, Education, Health Social Services	19	2%	84	4%	41	4%	82	4%	64	3%	48	4%
Retailing	23	3%	85	4%	46	4%	102	5%	83	4%	63	5%
Textiles & Clothing Manufacturing	7	1%	17	1%	5	0%	15	1%	18	1%	15	1%
Transport Manufacturing	22	2%	35	2%	22	2%	24	1%	24	1%	16	1%
Transport, Freight, Storage & Travel Services	23	3%	112	5%	56	5%	103	5%	107	6%	69	5%
Utilities	33	4%	115	5%	59	5%	109	5%	87	5%	73	5%
Wholesaling	38	4%	95	4%	49	4%	92	4%	101	5%	76	6%
Wood, Furniture & Paper Manufacturing	12	1%	41	2%	23	2%	41	2%	30	2%	25	2%

Table 32 – Number of deals per performance measure and Zephus industry and weight per Zephus industry in the total sample. Number of deals after leaving only deal types acquisition, MBI, MBO and BIMBO and taking repeating companies (Part Three)