

St. Petersburg University  
Graduate School of Management  
Master in Corporate Finance

**M&A DEALS' CHARACTERISTICS AND AFTER-MERGER BIDDER  
FINANCIAL PERFORMANCE: THE CASE OF UK IT INDUSTRY**

Master's Thesis by the 2nd year student

Concentration — Corporate Finance

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**ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ  
ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ**

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	<p>модель проверила факторы, влияющие на выбор способа оплаты в сделках слияний и поглощений. В результате были выявлены следующие значимые факторы, которые влияют на финансовые показатели компании-покупателя после сделки: метод оплаты, возраст компании – цели и схожесть бизнес-индустрий компании-покупателя и цели. Кроме того, денежный баланс компании-покупателя и показатель отношение цены к балансовой стоимости компании-покупателя влияют на выбор способа оплаты в сделках слияний и поглощений. Результаты данного исследования имеют как теоретическую новизну для академического мира, так и практическую ценность для акционеров и менеджеров компаний-покупателей.</p>
<p>Ключевые слова</p>	<p>Слияния и поглощения, финансовое состояние, компания-поглотитель, компания-цель</p>

## ABSTRACT

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Description of the goal, tasks, and main results	<p>M&amp;A deals is one of the most valuable tool for companies, who desire to grow. However, the decision about conducting M&amp;A deal is very hard one and requires a long-decision making process to find out if the M&amp;A deal will be beneficial for bidder company in the future in terms of financial performance. Managers and shareholders of the company should know, which M&amp;A deal' characteristics are crucial for future company financial performance. Therefore, the main aim of the current work is to find out what characteristics of M&amp;A deals do affect the after-merger financial performance of the bidder company and what is the direction of such an impact on after-merger bidder financial performance. To achieve this goal, firstly, theoretical background of M&amp;A deals was studied. After that, approaches to measuring M&amp;A deal financial performance were observed. Then, based on literature review related to M&amp;A deal factors, main hypotheses were formulated. To test these hypotheses five regression models were built. The first four models tested which factors of M&amp;A deals affect after-merger bidder financial performance through different dependent variables such as return on equity, return on sales, return on assets and price-to-earnings ratio. The fifth model tested the factors which affect the choice of method of payment in M&amp;A deal. As a result, method of payment, age of target company and relatedness of target and bidder industries affect after-merger bidder financial performance. Moreover, bidder cash balance and its price-to-book value ratio influence the choice of specific payment method in M&amp;A deal. The results of research bring both theoretical novelty for academic world and practical value for shareholders and managers of bidder companies.</p>
Keywords	Mergers and acquisitions, financial performance, bidder company, target company

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## INTRODUCTION

Mergers and acquisition is, mainly, the tool, which many companies have in their armory and are ready to use and implement. It is strongly recommended tool for implementing strategic plans of the company, one of the growth opportunities for the business, who stands for changing the status quo. Company has always a choice: to develop internally by using only internal resources, for example, R&D process and other internal improving or building new facilities, or to merge or to acquire other company, which has already had all required assets, patents, local presence in a new market (for bidder company). Anyway, company should have always to be ready to meet the needs of a changing market environment, to outperform the development of competitors and the market or, at least, to maintain the current economic state.

Acquisition of competitive advantages in terms of partners, their resources and opportunities in conjunction with potential companies could help to increase activity in changing market conditions. However, as in case of a new investment, which means often the upside potential of high profits, there is the risk of making a bad investment decision and losing a lot of money, therefore, we have the same story related to M&As: we do not know the outcome of this deal and bear the risks.

As it was said before, company should always understand the reasons of potential merger, benefits and impacts of such a merger. What is more important that firms have also to think about future impacts on company financial performance, because there are many stakeholders, which are interested in superior performance of company, such as shareholders, owners of the business, debt holders, employees and government, who wants taxes from your business.

The problem of M&A deals is actively discussed in academic literature. The uncertainty on the financial markets and overall economic situation lead many global investment deals to fails. However, among academics there is still no consensus concerning the effects of M&A deals on the company performance both in short-term and long-term perspectives. Some researchers conclude that there is a positive relationship, others infer – negative or no impact at all. But management of the company, which actually initiates these M&A deals should realize by themselves if the deal worth it: namely, if present value of M&A deals' financial benefits exceeds present value of expenses, which company has to incur while proceeding with the deal. Basically, does the company have positive net present value of the project in which our project is potential M&A deal?

Moreover, in previous research there are no concrete advices for the parties, who make decisions concerning potential M&A deals: which features of M&A's deals are the most significant for the future company financial performance etc. Many researchers just compared

two samples: the first one – companies who did not have M&A deals, the second one – companies who did have. Some of them even propose a further research in their studies in order to determine which particular factors make an influence on financial performance of the bidder companies and recommend studying M&A deal characteristics (Bertrand and Betschinger, 2011). The few works on this subject were presenting confusing results because the primary objective there was to determine if any relationship exists, and particular factors were not of a primary interest. **To sum up, we infer that the problem of particular M&A deal factor impact on the bidder after-merger financial performance still represents a strong research gap, which the current research paper is aimed to close.**

It is supposed that knowing in advance at least the general effects of M&A deals and its features in a certain country and market, in my case United Kingdom and IT industry, simplifies decision - making process related to M&A deals for the all stakeholders.

Therefore, the research question is the following: What characteristics of M&A deals do affect the after-merger financial performance of the bidder company? And what is the direction of such an impact on after-merger bidder financial performance?

And the main aim of the work is investigation of the relationship between M&A specific deal characteristics and after-merger bidder financial performance.

In order to answer the research question, I defined several research goals:

- To examine theory related to M&A deals;
- To observe the relevant literature related to M&A deals performance and essential M&A deals characteristics
- To formulate the main hypotheses, the methodology and obtain required data;
- To run regression models and to get main findings;
- To formulate managerial implications and final conclusions.

In order to observe the current studies concerning M&A deals, the following databases are used: Elsevier, EBSCO, Emerald Insight and Scopus.

To conduct an empirical research, the vast majority of databases are used: ZEPHYR Bureau van Dijk, Capital IQ, Amadeus Bureau van Dijk, Thomson Reuters DATASTREAM, Thomson Reuters EIKON, Bloomberg, Financial reports of the companies.

The research is structured as follows: in the first chapter, theoretical aspects of M&A deals are analyzed as well as types and rationale of this kind of deals. Moreover, M&A trends and M&A UK market is observed in this chapter. The second chapter provides an overview of the literature relevant to problems of research, and hypotheses put forward for verification. The third chapter is devoted to the description of the research methodology, the formation of a

sample on which hypotheses are tested. Moreover, empirical hypotheses testing is performed on the presented sample using regression models, and the results are discussed. Finally, based on main findings from regression models, managerial implications are proposed and conclusions are formulated. Possible limitations of the research are also discussed.

## CHAPTER 1. M&A DEALS IN OVERALL CONTEXT

Nowadays the world market follows the globalization tendency, which means that large corporations are striving to expand to new markets or to diversify their portfolio through offering new product for the clients. These companies want to dominate not only their domestic markets, but also to make pressure on the local players in the new markets. To implement this kind of strategies, companies have a wide variety of tools, which can help them to realize their ambitions in conquering new markets. One of the main growth tools and large form of expansion is mergers and acquisitions. Let us find out what is M&A deal and what types of these deals can exist.

### 1.1. Definition and main types of M&A deals

In the simplest terms, a merger is the union of two corporations, in which only one of them survives and the other ceases to exist. When merged, the bidder company has to take both assets and liabilities of the target company. Sometimes, in order to describe this type of deal many practitioners use the term statutory merger (Damodaran, 2007). Moreover, subsidiary merger exists, which represents the merger of two companies in which the target company becomes a subsidiary or the part of a subsidiary of the parent company. Reverse subsidiary merger assumes that subsidiary company of the acquiring company is merged with the target one. Here it is worth to mention that definition merger ( $A+B=A$ ) should be distinguished from the term consolidation ( $A+B=C$ ), which represents a combination of enterprises, in which two or more companies combine to form a completely new company. All unite companies are abolished and the new legal entity continues to work (Gaughan, 2004).

In theory, when merging companies have approximately the same size – consolidation term is applied, in other case, when merging companies differ significantly in terms of size – merger term is applied. However, this dissimilarity is blurred, and term merger is applicable for all types of company size. Another term which is widely used in M&A terminology is takeover. Mostly, this term refers to hostile deal, which means tender offer delivered to the shareholders of target Company. Target Company is the company which is acquired, bidder Company – which acquires.

It is worth considering the classification of the main types of mergers and acquisitions. The most important features are:

- regional and branch affiliation of the company;
- the way of the conducting the deal;
- the attitude of the company's management to the deal of this type;

- features of the mechanism and conditions of M&A deal (Gorelov, 2010).

It is also worthwhile to determine the types of mergers that depend on the nationality of the companies to be merged:

- domestic deals, when the target and bidder companies are registered in one country;
- cross-border deals, when companies are in different states, and implies the exit of one of them to the foreign market.

At the same time, it is possible to distinguish M&A deals by the nature of the relationship of the company's management to such a deal, and thus to mention the following types of deals:

- A friendly takeover, in case when acquirer tries to take over another company (target) with the agreement of the target corporation's board of directors;
- Hostile takeover happens when the board of directors of the bidder company rejects the proposal of another company to buy their shares and strongly opposes this merger or takeover, trying to implement several actions that would prevent the capture of their company. In this situation, the acquiring company organizes a few activities in the financial market aimed at achieving its objectives and acquiring the company (Reed, Lazhu, 2011).

There are two ways how this kind of takeover can be conducted:

- Tender offer, when the company purchases shares from outstanding shareholders of the target company at a high premium to the current market price.
- Proxy fight, when the acquirer attempts to persuade target shareholders to use their proxy votes to set new management or take other types of corporate action

In its turn, target companies have some strategies of defenses in their arsenal:

1. The majority. For decision-making on particularly important issues, the company does not have a simple majority, it needs super-majority, namely 60-80% of shareholders (Carney,1983).
2. Creating a strategic alliance. This type of protection involves a strategic alliance of companies that can not only protect each of them from an undesirable merger, but also ensure the strengthening of positions in the market of each of them, as well as achieving other strategic goals (Babatunde, 2011).
3. The Golden Parachute. The essence of this method is that in the case of a change in the owner of the company, top managers are paid a one-time large bonus. Thus, the cost of purchasing a company is significantly increasing (Hall, Anderson, 1997).

4. Protection of assets. "The ideal protection is a legal structure that does not allow raiders to deprive the owners of their assets or forces the aggressors to pay a high price for them, that is, the owners can maintain the necessary degree of control (Demidova, 2007).
5. "Poisonous pill". The essence of the method is that it encourages the shareholders of target company to buy shares of its company at a reduced price. R. Mommenti G. Schwert (1989) in his study confirms the high efficiency of "poisonous pills", focusing on the element of surprise. In addition, this method of protection is effective for companies of small size (Ryngaert, 1998).
6. "White Knight" is a defending company that becomes a strategic partner of the target company. It opposes hostile absorption. The main drawback of this method is that the "white knight" may later itself attempt to take over the company (Bebchuk, Coates, 2002).

Considering the ways of the implemented integration of companies, it is expedient to distinguish their following types (Evans, Bishop, 2009):

1. Horizontal, in which there is a merger of companies operating in the same market segment and providing the same nature of services. Such transactions occur when companies adopt a strategy aimed at expanding and preserving the market, as well as improving technology. The acquired company can often also become only a channel for promoting current products. Moreover, if horizontal merger leads to increasing market power of merged company, antimonopoly service can block this deal because of antitrust law. Fortunately, in last decades the government is quite liberal and approves any horizontal mergers.
2. Vertical merger is the merger of companies, which are at the different stage of value chain process in the same business or have relationships such as between buyer and seller. Here Bidder Company expands its activities by expanding the list of services provided in the same market or attracting new customers.
3. Conglomerate merger happens when companies are not competitors and do not have abovementioned relationships. Merging companies operating in different market segments and offering new products, and the M&A deal is aimed at achieving a diversification strategy (creating new products in new markets). There could be related merger, when companies from the similar industries plan to merger, and unrelated – when companies from totally different industries merge

In its turn, conglomerate merges can also be divided into three main types:

- Expansion of the market, namely the use of new channels for promoting services by bidder companies in those geographic regions that have not previously been serviced;
- Expansion of the product line, implying the unification of non-competing products and services;
- Pure conglomerate mergers, which are independent and not connected with any commonality, namely unrelated merger.

Also, depending on the mechanism of M&A deals, the following types of acquisition can be distinguished:

- Sale/purchase of a part or all assets of the company being acquired (liabilities included);
- Stock sale/purchase, in which bidder purchases target company's shares with cash payment or payment of shares or other securities.

In most cases, bidders prefer asset sales to stock ones, whereas the sellers would choose stock sales. If we consider historical statistics, more than 30% of all deals were stock sales.

From the buyer's point of view, the acquiring company could achieve additional tax benefits by allocating a higher value for that type of assets, which could be depreciated fast (3-7 years) and by allocating a lower value on that type of assets that are being amortized at slower rate (>15 years). This method will improve the first year's company cash flows due to lower taxes paid. Another benefit of assets sales for buyers is that buyers would be able to avoid potential liabilities, which are inherited from the target. These liabilities could be damaging for the acquiring company, especially contingent ones such as various contract disputes, employee lawsuits, product liabilities etc. At the same time assets sales benefits might be turned into problems for the buyer, because sometimes it is impossible to transfer certain type of assets from target company due to issues which are related to legal ownership, third-party consents or assignability. There are some examples such as intellectual property, contracts and leases, different kind of permits. Moreover, asset acquisition does not need approval from company shareholders.

From the sellers' point of views, asset sales generate higher taxes because while intangible assets, such as goodwill, are taxed at capital gains rates, other "hard" assets can be subject to higher ordinary income tax rates. Furthermore, the seller faces double taxation. The corporation is first taxed upon selling the assets to the buyer. The corporation's owners are then taxed again when the proceeds transfer outside the corporation.

It should be noted that there are practically no M&A deals that could be unequivocally attributed to a particular group or type. Basically, all M&A deals that take place in the world are

a combination of different types with a greater significance of certain motives, which are going to be described further. However, before, the history of M&A development should be discussed properly.

## 1.2. History of M&A deals

In general, the history of M&A deals can be divided into five main waves: merger waves. These periods were characterized by cycle: after a period with a large number of mergers there was a period of downside with a relatively smaller number of mergers. In all waves the growth of M&A deals amount occurred with rapid and sustainable economic growth and coincided with certain changes in economy (structural reforms). Each new wave was associated with appearance of some new crucial economics factor, for instance with stock market rise, drop of interest rate or technical progress. If economic processes create common conditions for growth of M&A deals, therefore, changes in concrete industries largely determines in which one this M&A activity will be particularly active (Mitchell, Mulherin, 1996).

The first wave from 1897 to 1904 year is called horizontal consolidation. The intensification of M&A deals during this period contributed to the need for greater efficiency and problems with the application of Sherman's antitrust law, migration to the West and technological progress. Mergers were mainly horizontal and led to the concentration of such industries as metallurgy, transport and extractive industries. The end of M&A deals boom was put by financial fraud and stock market crash in 1904. Due to this fall and weakness of bank industry, key financial constituents, essential for fueling of M&A deals, were gone. With their disappearance, the first period of great mergers came to end. Several historians of economies consider many horizontal mergers of first wave as an attempt to achieve economy of scale. Expanding companies sought to increase their efficiency through M&A deals by lower unit costs. But the fact that majority of this mergers failed means that these companies failed in their intention to increase effectiveness.

Second wave from 1916 to 1929 is called increase in concentration. The growth of M&A deals in this period was caused by the US entry into the Second World War and the post-war economic boom. The mergers were also mostly horizontal and led to a further increase in concentration in industry. The second wave of mergers has some common features with the fourth wave in that attraction of borrowed capital to finance M&A deals was a frequent practice. The companies used significant amounts of borrowed capital in the structure of financing of M&A deal, that enabled investors to earn high profits, but at same time increased risk of a fall in value in the event of a slowdown in economic growth (that really happened afterwards). The second wave of mergers ended simultaneously with the collapse of the stock market in 1929. After the collapse, the number of mergers significantly decreased. Without thinking more about expansion, companies in an atmosphere of rapid and universal demand growth sought only to maintain solvency.

Investment bankers played a key role in the first two merger periods, having a significant impact on the leaders of the economy. They often vetoed the merger if they believed that this merger was contrary to the policy or to ethical views of the investment bank, by not allocating funds to the company that needed financing. Investment banks easily achieved controlling influence, since a small number of them controlled most of the capital available for financing of M&A deals. However, in the third wave, financial support of such deals came from other sources.

The third wave from 1965-1969 is called era of conglomerates. The main features of this wave are emergence of financial engineering and conglomerates. The rise in the stock market and the longest period of continuous growth in the country's history caused a record increase of price to-earnings (P/E) ratios. Companies with high P/E ratio learned to increase earnings per share not by reinvesting, but through mergers. Companies with higher P/E ratios frequently absorbed companies with lower P/E ratio, and then after-merger EPS growth. This growth led to an increase in the share price of the merged company as long as its P/E ratio was not lower than the same coefficient for the bidder company before the deal was concluded. However, in order to maintain this pyramid effect, the profit growth of the target company should have been high enough to convince investors to apply a higher multiplier to the merged company than was applied to bidder company. Over the time, the number of fast-growing companies with a relatively low P/E ratio decreased, because conglomerates by competing with each other lifted the ratios of these companies up.

The increase of the acquisition price, coupled with the growth in the debt burden of the conglomerates, led to the collapse of these pyramids. It is worth mention that during this wave, according to FTC, 80% of mergers were conglomerate (Federal trade commission, 1977).

The fourth wave from 1981-1989 is called era of economy. This wave was marked by the activation of primarily hostile takeovers. Before, this kind of mergers was rare. In 1980s many large conglomerates disintegrated and the number of financial buyers using the capture strategy and LBO (Leverage buy- out) increased. Moreover, this period differs significantly from other previous three waves in terms of size and value of target companies. The fourth wave was the wave of megamergers; the total amount of money paid on acquisitions sharply increased (average deal size also increased dramatically). According to Mergerstat, from 1971 to 1986 the number of deals with value more than 100 \$ million increased more than 23 times.

During the fourth wave in financial circles the term corporate raider appeared. The main source of profit for corporate riders was the revenue from the attempt to absorb target Company. Rider in most cases gains a decent profit exactly from attempts to absorb target company, even without acquiring ownership of target company. This kind of acquisition was initially organized

with the purpose of selling the shares of the target company at a price higher than originally paid by the raider. The ability of the raiders to receive cash payments in exchange for the shares that the raider has already acquired made many attempts of hostile takeovers very lucrative. Even if this target company refused to participate in such deals, the raider could succeed at the expense of introducing the company into the game. When target company enters the game, shares tend to concentrate in the hands of arbitrageurs who are willing to sell to the buyer (bidder) who gives the highest price. This process often led to the acquisition of target company by not necessarily the primary buyer. Arbitrageurs play on the likelihood that the merger will successfully end: they buy target company's shares, expecting that there will be an attempt to acquire this target company.

To sum up the fourth wave, other unique aspects of this wave should be mentioned as the following:

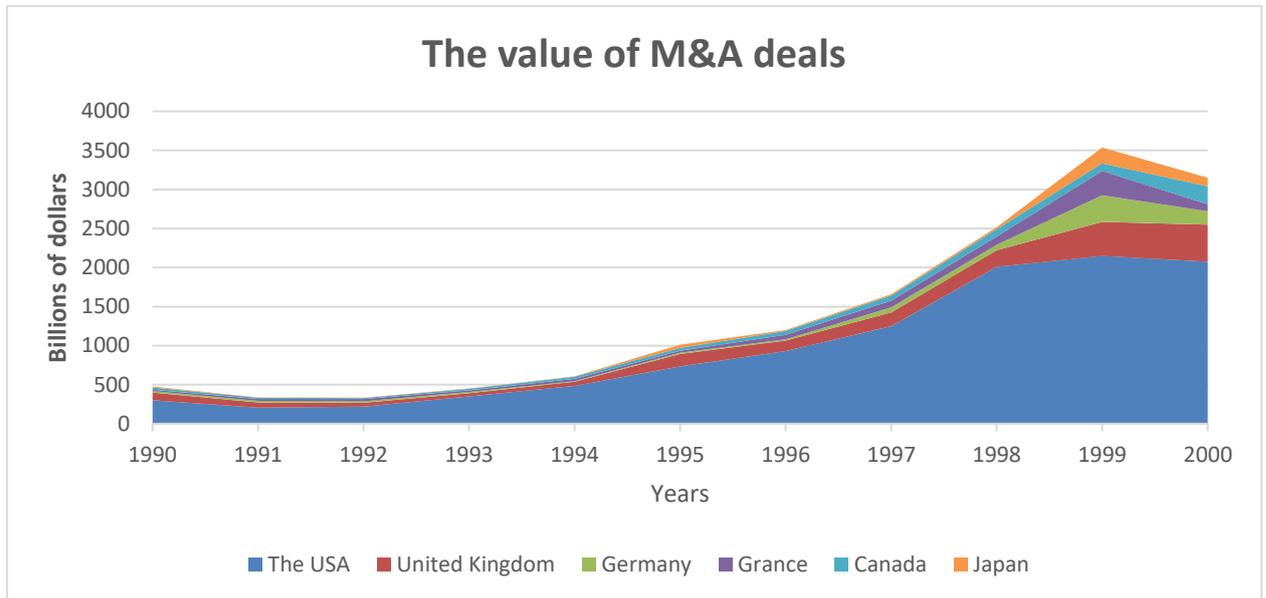
- Aggressive role of investment banks
- The complexity of acquisition strategies has increased
- Increased use of borrowed capital
- International M&A deals

The fourth wave of mergers ended in 1989, when lasting economic growth came to end and the economy went into the stage of a short and relatively mild decline. The slowdown in the growth of the economy led to the disintegration of a number of highly profitable fourth-wave deals made with the help of debt financing. In addition to the overall slowdown in the economy, another factor that led to the end of this wave was the collapse of the junk bond market, which provided financing for many LBO.

From 1992 the number of M&A deals started to increase again and the fifth wave of mergers stepped on. There were many megamergers, but less hostile takeovers and more strategic mergers. This means that the focus from financial buyer, which was dominant strategy in fourth wave of mergers, was changed to strategic buyer. Company was no more interested only in financial enrichment. These deals were financed predominantly by own capital (equity) that led to emergence of mergers with lower debt burden.

The fifth wave of merger was truly international. In Europe, this wave clearly manifested starting from 1998 year. As could be seen in Figure 1, 1999 year, the value of M&A deals in Europe was almost as great as in the US. The largest number of European M&A deals accounted for the UK, followed by Germany and France. In Asia, the value and the number of M&A deals also noticeably increased from 1998 year. Most of these deals took place in Japan. The volume of M&A deals in Canada grew steadily throughout the 1990s, but more than doubled in 2000 year. The growing importance of Europe and the rest of non-attributable non-American world is

also could be observed (Black, 2000). According to Black, in 1975 year the United States accounted for 52.5% of the global stock market capitalization, in 1998 the US share fell to 42%. At the same time, European market capitalization increased from 25% in 1975 year to 33% in 1998 year.



*Figure 1 The value of M&A deals by country*

*Source: Thomson Financial Securities Data*

To conclude, abovementioned five waves of M&A deals contributed a lot to the development of contemporary M&A market, which is quite sustainable and well-formed not only in USA, in which first four waves mainly proceeded, but also in other countries, even developing ones.

### 1.3. Main motivations for M&A deals

There are several reasons why companies can decide to merger. In general, following motives could be defined:

1. Strategic realignment
  - a. Technological change
  - b. Market power
2. Synergy
3. Financial considerations
4. Tax considerations
5. Agency problems
6. Ego/Hubris
7. Diversification

#### **Technological change**

With the acceleration of technological progress, M & A is often seen as a way to quickly master the production of new products and enter new markets that have arisen as a result of the creation of new technologies. Large and more bureaucratic firms often do not have the same creativity and lightness as small and dexterous players in market niches do. In conditions when talented engineers are in deficit, and the life cycle of goods is reduced, companies do not have the time or resources to innovate. Therefore, large companies often look at mergers and acquisitions as a quick, and sometimes cheaper way to get involved in new technologies, which allows filling in the gaps in the product range or entering an entirely new market. Also, technologies can be bought in order to prevent them from falling into the hands of competitors.

#### **Market power**

According to this theory, companies when merge are then able to set prices for their goods at a level that is impossible with higher competition in the market. In one study of 11 mergers contested by antimonopoly authorities, only for two of them statistically significant positive abnormal return was found (Stillman, 1993). Another paper argues that if the theory of market power were correct, then the abnormal profitability of mergers that would most likely be banned as violating the terms of competition, would be negative at the time of the announcement of these transactions. Having examined 126 cases of horizontal and vertical mergers, the authors of this work found that after the announcement of the merger, there was a statistically significant

positive abnormal return, but did not reveal an abnormal negative return after the regulators began their investigation. Investors, apparently, did not believe that regulators would recognize these mergers as anti-competitive ones. Probably, the basis for such mergers laid not only in the desire to dominate the market. However, more recent studies have shown that in some cases, the desire to increase market power can indeed be the main motive of the merger (Singhal, 1993).

## **Synergy**

There are two types of synergies: revenue and cost synergies. Revenues refer mostly to increased market shares, while cost synergies propose getting rid of redundant departments and some operational efficiency due to economy of scale or scope. In general, synergies can be realized when two types of economic activity perfectly complement each other (Asquith, 1983).

Expected synergies let the companies to incur expenses which are related to M&A deal process and to pay premium for target companies' shares. Synergy can provide merged company with positive net acquisition value (NAV).

$$NAV = [V_{ab} - (V_a + V_b)] - (P + E), \text{ where}$$

$V_{ab}$  = the value of merged company

$V_a$  = market value of company B

$P$  = premium for company B

$E$  = M&A deal process expenses

$V_a$  = fundamental value company A

The value in the square brackets is synergy effect. In order to pay off the merger, this effect should be higher than the sum  $P+E$ . If it is not a case, it means that acquirer overpays the target. But what should we include into synergies? Some researchers observe synergies in a broad sense and include even liquidation of ineffective management, in other words, change of leadership. Two main types of synergies are operational and financial synergies. Operational synergies involve two things: increase of profits and decrease of costs. It could be achieved both through horizontal and vertical mergers. Financial synergy represents decline in cost of capital for the merge company as this company is more sustainable and has more trust from different types of debtholders (Jensen, Ruback, 1983).

Revenue synergies are harder to achieve than cost ones. Clemente and Greenspan (1996) called these synergies as revenue-enhancing opportunity, REO. They define it as new created

and enhanced product or service, which are formed through synthesis of two distinct features of parties and gave long-term revenue growth. There are several sources of revenue growth:

- Mutually beneficial expansion of market opportunities through reciprocal marketing of both partners' products (cross – marketing);
- Broad assortment will enable company to sell more products to their customers;
- Network effect (Clemente, Greenspan, 1996)

As was said these synergies are not easy to attain, and, moreover, it is hard to measure and include them in valuation modeling.

Cost synergies are easier to reach and measure. Reduction of expense can result from economies of scale, which means reduction of unit costs. Some empirical research advocate that M&A deals are used in order to achieve operational economy (Lichtenberg, Donald Siegel, 1987). Other important concept, which should be mentioned in relation to cost synergies, is economy of scope. For instance, the company is able to utilize the same set of raw materials for production of wider production assortment (Loretta, Mester, 1987). Good example here will be the merger of financial institutions, as they can share incoming streams in order to product wide range of services such as trust management, consumer investment products or economic analysis. Smaller banks could not afford the launch of these divisions because of expenses.

In corporate finance, there is a dispute about whether the financial synergy exists or not. The merger of two companies could decrease the risk, if their cash flows do not match totally. Potentially, merger can reduce the volatility of cash flows and investors or creditors will consider this company as less risky one. Bankruptcy risk, theoretically, should go down; therefore, company can meet their current liabilities. Apart from this risk, there is a risk of negative net company value, when liabilities exceed assets. Robert C. Higgins and Lawrence Schall (2007) defined it as debt coinsurance. This situation can lead to credit rating fall, which, in its turn, will increase cost of capital for the company.

### **Financial considerations**

One of the financial motives is that after fundamental financial analysis acquirer could find out that Target Company is undervalued. It means that the cost of acquisition significantly exceeds the target market value, even when the premium is added to acquisition price, which is usually associated with a change in control.

Coefficient  $q$  is the ratio of the stock price of company shares to the costs of replacing company assets. Firms which desire to expand their activities can either buy new fixed assets, or obtain these assets by acquiring company whose market value is less than the cost of replacing its assets ( $q < 1$ ). This theory perfectly explains the transactions in the 1970s, when due to high

inflation and interest rates, the market value of many firms was much lower than the book value. High inflation also led to the fact that the cost of replacing assets was much greater than their book value (Campbell,1977).

### **Tax considerations**

Here two aspects should be distinguished. The first one: due to M&A deal, bidder company can get tax privileges (for example, unused net operating losses of target company), tax credits and also could overestimate or write off acquired assets. Second aspect relates to deal status as non-taxable.

The opportunities to impair losses for future periods can be used in order compensate the rise of taxable profit due to merger. Additionally, merger might be reflected in accounting, using purchase method, which requires the correction of acquired assets' balance value based on current market value. As a result, depreciation of these assets affords to decrease after-merger income tax.

### **Agency problems**

Under the agency motive, managers may get acquisitions against the attention of the shareholders. Amihud and Lev (1981) depict that managers engage in conglomerate mergers in order to spread activities of the firm and smooth out earnings, thereby securing their jobs; though, this is against shareholders' interest as they can diversify at their own at a very little cost. Moreover, Jensen (1986) in his theory of free cash flow, explains that managers with admittance to spare cash favor in engaging favorite projects and unbeneficial or unsuccessful acquisitions instead of giving back to shareholders. This is sign of agency conflict between owners and managers.

### **Ego/Hubris**

According to Mueller (1969), managers, who care only about their own interests, conduct not enough thought – out deals with the purpose only to increase the size of bidder company in concert with own reward (Mueller, 1969). However, some suppose that the manager reward depends not so much on size as on the financial position of the company (Lewellen, Huntsman, 1970).

### **Diversification**

The fundamental motive for M&A deal is growth. Companies have a choice between internal growth and growth through this kind of deals. Companies should understand that

internal growth could be very slow and uncertain, while M&A deals make this process faster, but, of course, it also has uncertainties. Companies can grow inside their own industry or can penetrate to other industries, which means diversification.

This strategy is followed, when company has unstable profits. Uneven revenue stream impedes paying the dividends and created unstable base for long-term planning. Also, company desires to enter more profitable industry, in which Target Company operates. However, there is no guarantee of long-term high profits in this new industry; it could be just short-term effect. Financial benefit from diversification is represented by effect of mutual insurance, when companies do not have totally correlated profits and can get unified profit stream which is not so volatile in comparison with separate profit streams.

Diversification would be beneficial also in next cases:

- High relatedness exists between the target and the acquirer company in terms of industry focus;
- Strong transfer of knowledge between different divisions of the merged company;
- Internal capital markets increase transparency and ability to monitor the processes efficiently;
- Managers of the merged company are enough motivated and rewarded.

## 1.4. Main steps and participants of M&A deals

To make M&A deal real and fully conducted the help from many external professionals is required. These professionals are usually investment banks, auditors and lawyers. In the forefront of M&A deal the most crucial participants are investment banks. Their role could not be underestimated, because it includes wide aspect of services such as:

- Strategy advices;
- Searching for the best target and follow-on negotiations;
- The financial evaluation of the target;
- Bridge financing (provide investing when capital markets do not provide financing for buying the target company);
- Structuring of the deal;
- Hostile defense;
- Fairness opinion.

Investment bankers usually help to define strategic goals of the firm and evaluate possible ways of achieving these aims. Big investment banks have special M&A group inside corporate finance department. This group fully devotes their work to the whole process of M&A deals. According to Mergerstat, in 2001 top 5 investment banks in terms of percentage of annual volume of M&A deals (\$) are Goldman Sachs, Merrill Lynch, Morgan Stanley Dean Witter, Credit Suisse First Boston and Citigroup (Mergerstat, 2002).

It should be highlighted that investment banks prepare quite an important document called fairness opinion. The fairness opinion includes a summary of the valuation analysis conducted by the investment bank to show the basis on which the opinion is offered. This document is intended not only for informing of investors, but also for protecting of board of directors from shareholders' criticism. However, this document does not negate the need of additional examination of the deal, because investment bank who also act as M&A advisor has obvious reasons to prepare this document in a certain way, which boils down to conflict of interest.

In case of successful completion of deal, investment banks receive fees in the amount of 1-2% of the deal value. Moreover, if the deal is too large, the group of investment banks can form a syndicate for the purpose to deliver bridge financing for the bidder company. Then this syndicate agrees to underwrite all new issue of securities (debentures, common or preferred shares).

To fully conduct M&A deal both parties of M&A deals should proceed through long process, which includes several stages. This process in friendly deals differs from that one in

hostile deals. There are various approaches to the definition of stages, however, in general, there are 5 stages, if we consider friendly M&A deal case.

### **Stage 1. Statement of the goals**

First, the bidder company should clearly define the objectives of the transaction. This step is very important for further success. The predator company needs to develop a system of indicators that specify the company's objectives and growth strategy through M&A deal, which can improve its position relative to its competitors.

In addition, at this stage, the M & A department, which exists in many well-developed companies, is actively cooperating with the company's executive director and the staff of the acquiring company to develop a new organizational structure, recruitment strategy and other important points. Also, the duties and authorities of all participants in the M&A deals are discussed and distributed. This department once again defines all the properties of the "ideal object for acquisition" and is engaged in the development and discussion of strategies with the top management of the company (Galpin, 2005)

### **Stage 2. Assessment of the situation**

At this stage, the evaluation of the results of the analysis of the target company, conducted earlier, discussed by both parties. If after it both companies still consider the deal to be beneficial, then negotiations begin, initial conditions and terms are discussed, and a protocol of intentions and an agreement on the confidential nature of the deal is drawn up. As for the contents of the protocol, it is usually approximately the same: a description of the main goals and objectives of the merged company, the expected financial and economic results (for example, the structure of assets provided by the company). It is extremely necessary at this stage to agree on the basic principles of management, rights or accompanying voices of the founding companies when solving certain issues, the main stages of the unification process and the resources necessary for it (Galpin, 2005).

### **Stage 3. Analysis and research**

To begin with, a thorough analysis of the target company is carried out (namely due diligence process); the focus is on financial, legal, cultural, operational and strategic aspects. All collected information goes to the top management of the absorbing company, which processes the information in terms of possible interference to transaction transactions. Further, a preliminary version of the agreement on the transaction is being developed, on which further negotiations of the companies are based. At this stage, it is very important to exclude haste in

decision-making. It is worthwhile once again to analyze the market, consumers, competitors, corporate culture and personnel of the target company. After the completion of this analysis, top management, if nothing else prevents the deal, becomes ready for its conclusion. (Loomis, 2001).

#### **Stage 4. Negotiation**

At the negotiation stage, the final version of the merger or acquisition agreement is finalized. The top managers of the companies negotiate with the purpose of determining further transactions (price, order of work during the transitional period, legalization, policies for personnel, etc.). At this stage, usually all managers of the target company are connected: the top managers again carefully look at the version of the agreement so that after their comments managers who deal exclusively with M & A transactions look at it from their side and make any amendments if they are required, and then more narrow specialists "polish" the final version (Sherman, 1998).

#### **Stage 5. Real integration**

This stage, of course, depends on the characteristics of each transaction involved in it, but usually it requires the basic functions of the company, its staff, the procedure for making managerial decisions and some other issues. It should also be noted that maintaining contacts with all stakeholders is of utmost importance in order to realize the last stage - integration - as effectively as possible (Wood, 1998). This stage is particularly carefully considered in this paper, since the emphasis is on the effectiveness of mergers and acquisitions, which, in fact, can be evaluated at this stage. A huge number of different kinds of changes occur in each case, when it comes to how to do it.

## 1.5. Main triggers and trends in M&A industry

Nowadays, M&A industry worldwide is in quite stable conditions: for instance, in 2017, companies announced over 50600 transactions with a total value of more than 3.5 trillion USD (2.9 trillion EUR/ 2.5 trillion GBP). Compared to 2016, the numbers of deals grew only marginally by 2.9% while the value declined by 2.00% (Imma Institute, 2018). We can observe the M&A industry dynamics for the last thirty years in figure below.

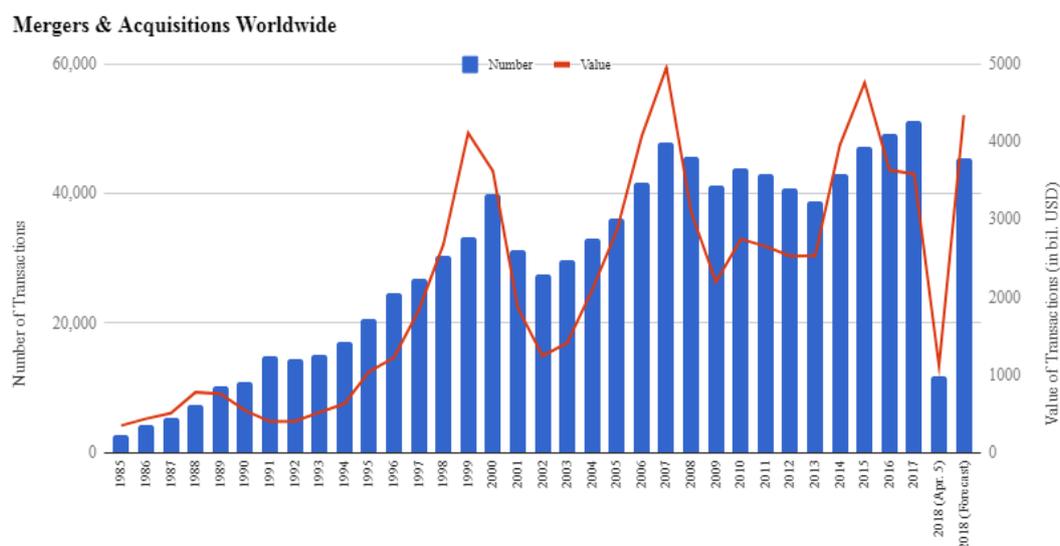


Figure 2 M&A worldwide dynamics

Source: Imma Institute<sup>1</sup>

Most of the studies about mergers and acquisitions are devoted to the USA, because a huge amount of deals happens in this country. However, if you analyze the graph below, you might infer that the USA M&A market is highly overheated and it is hard to apply the results from studying this market to other countries, especially to the developing ones.

<sup>1</sup> Internet source: <https://imaa-institute.org/mergers-and-acquisitions-statistics/>

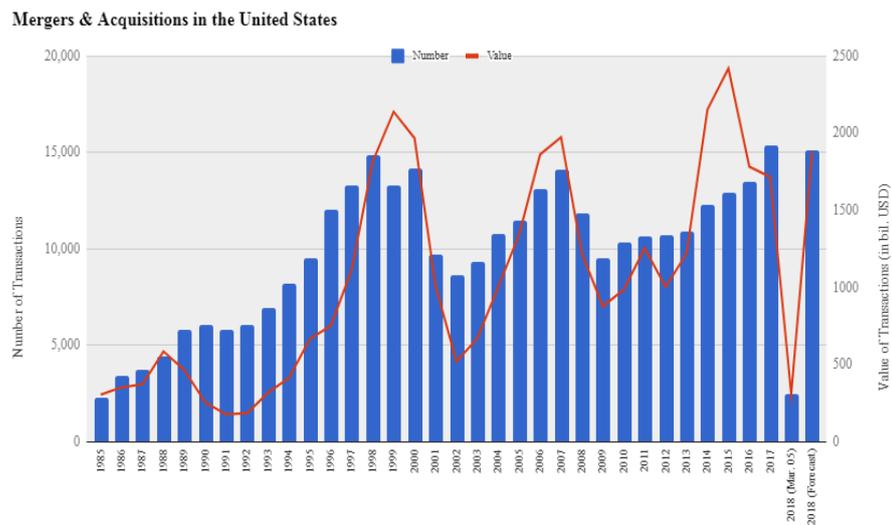


Figure 3 M&A deals dynamics in the USA.

Source: Imma institute

The next step of my research and mainly logical one was to study the emerging markets. The good examples of these countries are BRICS countries, namely Brazil, Russia, India, China and South Africa.

Russia is not a good object for the study because of the specification of the market. Mostly, M&A market in Russia is private, where many of the deals are not publicly discussed and announced, therefore there is an obstacle to gather the information concerning the M&A deals. After studying different analytical articles related to M&A market in BRICS countries, one article about China attracted my attention. Dezan Shira (2016) shows the high dynamics of M&A China market development. For example, the number of inbound M&A deals in China increased 39 percent from 2010 to 2015, with total deal value increasing by approximately 141 percent. The majority of M&A activities in China are domestic, making up 89, 5 percent of all transactions in 2015. However, the gathering information about M&A's deals in China is challenging, which create obstacles even for collecting data about bidder companies and the deals itself.

Therefore, the research was shifter to Europe, namely to United Kingdom. Why is exactly UK? The answer is simple, because 70% of M&A deals (by deal value) in Europe were happening in UK. By the number of the deals UK is also leader with 52,5% (see figure 4).

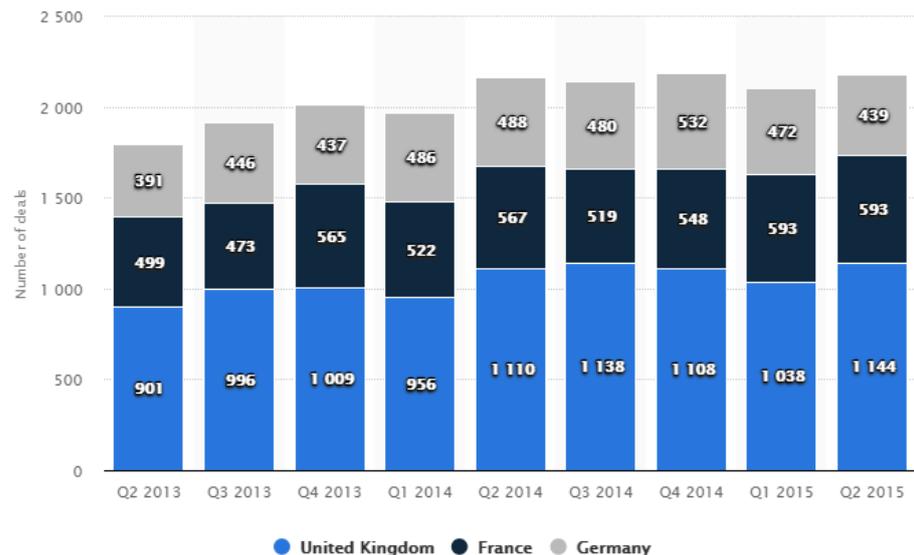


Figure 4 M&A deal in Europe (2013-2015 year) by country.

Source: Statista<sup>2</sup>

M&A deals in UK continue to grow. After Brexit, the number of M&A deals was supposed to decrease. However, it had another effect: due to the uncertainty regarding Brexit, businesses based in the UK seek to explore new, more stable markets abroad to counteract any future negative economic effects in the UK, despite unfavorable exchange rates (Rishi Patel, 2017).

- Favorable outlook for overseas investments (cross-border M&A deals)
- Cheap pound currency, which makes UK targets more attractive<sup>3</sup>

Moody's Investors Service predicted that M&A activity in the UK telecom sector would increase in the second half of 2017 and beyond, as fixed line companies begin to converge their services and as their revenue growth stalls.

The choice of industry was also logical and subsequent - IT industry. Why? Deloitte, in their study, which was devoted to the main trends of M&A deals in 2018, found out that the most cited reasons for M&A deals were looking to acquire technology and looking to build out a digital strategy (19 and 16 percent, respectively). Some plan to seek major, transformational deals (17 percent). Others say they are on the hunt for smaller, strategic opportunities (15 percent) (Deloitte, 2018).<sup>4</sup>

Moreover, Morgan Stanley mentioned the main trend of future M&A deals - technology convergence, where non-tech companies buy technology firms and vice versa, will continue to be an

<sup>2</sup> Internet source: <https://www.statista.com/statistics/247127/m-and-a-deal-value-in-europe/>

<sup>3</sup> Internet source: <https://www.financierworldwide.com/state-of-the-uk-ma-market/#.WuD75G6FPIX>

<sup>4</sup> Internet source: <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/mergers-acquisitions/us-mergers-acquisitions-2018-trends-report.pdf>

over-arching trend. “Up until recently, most technology companies were sold to tech companies,” says Michael Grimes, Co-Head of Global Technology Investment Banking. “But the world has completely changed. All companies need to become technology-driven.” Non-tech companies acquired \$128 billion worth of technology firms in 2016, versus \$13 billion in 2013. (Morgan Stanley, 2018).<sup>5</sup>

The most crucial factor for choosing this particular industry is that tech isn’t just for tech companies anymore. Nearly every industry has been affected by digital and mobile technologies, and many have been upended. Other advances, such as robotics and additive manufacturing, are also taking hold. No company can afford to ignore the impact of technology on everything from supply chains to customer engagement, and the advent of even more advanced technologies, such as artificial intelligence and the Internet of Things, portends more far-reaching change. How do companies rapidly access the technologies that can advance their businesses and integrate them successfully with their current operations?

For an increasing number of organizations, the answer is to buy rather than to build. Acquisitions of high-tech targets have become an instrument of choice for buyers in all sectors looking to boost innovation, streamline operations and processes, shape customer journeys, and personalize products, services, and experiences. High-tech deals represented almost 30% of the total \$2.5 trillion of completed M&A transactions in 2016 (Boston Consulting group, M&A report, 2017).<sup>6</sup>

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<sup>5</sup> Internet source: Thomson Reuters. Morgan Stanley Internal M&A database.

<sup>6</sup> Internet source: <https://www.bcg.com/ru-ru/publications/2017/corporate-development-finance-technology-digital-2017-m-and-a-report-technology-takeover.aspx>

## CHAPTER 2. THE PERFORMANCE OF M&A DEALS

### 2.1. Approaches to M&A performance evaluation

To start the analysis of related research to M&A deals topic, we have to realize that there are basically two main approaches in evaluation of financial effects of M&A deals.

The first one is basically based on the financial statements of the company and tries to evaluate fundamental effect on the company performance after merger or acquisition. According to Chi et. Al (2011), the analysis through financial statements includes comparison of financial indicators of acquiring company before and after M&A deal.

The second approach studies company shares return through of event –study. Wong et. Al (2009), devoted their research to evaluation of announcement deal impact on shares return of both bidder and target companies.

Studies concerning company performance can be split up into four main groups:

1. Event studies (stock-market-based measures or abnormal returns), both in the short run and long run (Haleblian and Finkelstein, 1999; Sudarsanam and Mahate, 2006): these works constitute the majority of research in M&A industry. The main advantage of this method is the direct impact of M&A deal on the shareholders' welfare.
2. Accounting-based measures (Lu 2004; and Zollo and Singh 2004): this approach is based mainly on the financial statements' comparison before and after the deal, focusing on various relative indicators. As a rule, as a measure of comparison similar non-floating companies are used. However, it is very challenging to find out comparable companies due to its operational specifics.
3. Managers' subjective assessments (Brock, 2005; and Homburg and Bucerius, 2006) and expert informants' assessment (Hayward, 2002): this approach analyzes the results of managers' polls concerning the results of the M&A deal. As a rule, the conclusions obtained from the standardized questionnaires are summarized for the whole sample.
4. Case studies (Mitchell and Lehn, 1990): these works focus on one deal or a limited sample, using as a basis for analysis data from deep interviews of managers and analysts. This method is very productive, because hat a detailed study of the deal can open new, previously unexplored aspects of the problem.

However, abovementioned methods have theirs advantages and disadvantages in attempt to define if the M&A deals creates added value for the company bidder and the project has

positive NPV. Then, we will analyze in more detailed way these approaches, namely event – study and accounting – based measures.

Event-study approach is based on consideration of shares’ return before and after the announcement of the deal. The return for one day is calculated as the ratio of changes in the stock price and paid dividends to the price of shares a day before publication of information about the deal. Abnormal is any return that exceeds usual for this security. Under normal return, as a rule, is understood the return according to the CAPM model or the return of a large market index, for example S&P500.

The main assumption here is that share price reflects the present value of all expected future cash flows. In the Table 1 below there are some advantages and disadvantages of this method.

*Table 1 Event study advantages and disadvantages*

<b>Event-study</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Direct measure of created added value to investors	Only short-term reaction without intrinsic (fundamental value)
Forward approach through estimation of future potential the cash flows.	Strong assumptions about the efficiency, rationality of investors and the absence of restrictions for arbitration.
	Very large disturbances from other events of the company, which can greatly distort the observed share return.

*Source: Made by author*

To finalize, in the event study we consider deal announcement impact only on the market value of the company, avoiding the review of impact on the fundamental value of company. This method traces only short-term reaction of the market and do not even consider current financial situation of both companies though, for instance, financial ratios such as liquidity, solvency, profitability and efficiency ratios. Especially in developing countries, this method will not work, as capital markets there are not efficient, because there is no absolute information symmetry and high volatility of stock market.

Despite its minuses, this approach has dominated research in this field since the 1970s. Then, let us look at results of some event-studies related to M&A performance. The researches

can be conditionally divided into profitability analysis for shareholders of both bidder company and target company.

**Target companies' shareholders.** Most research shows that the owners of the target company, as a rule, receive a significant positive return. Analysis of existing works shows that the positive profitability does not depend on the deal terms, time horizon and other factors. The average abnormal return is 20-30%. It can be argued that the shareholders of the target company, as a rule, receive a premium.

**Bidder companies' shareholders.** This area of research is the most problematic one. Each new research work gives a new evaluation of this phenomenon and contributes to previous mess of researches. It can be argued that there is not a single study that would represent indisputable results, unconditionally recognized and confirmed by all authors. Some researchers claim the existence of a negative return for the bidder company, whereas a comparable number of others claim the opposite statement. Such a significant diversity of results is easily explained as an essential difference of the analyzed sampling, and the methodology used. However, some consensus is found concerning the return for the shareholders of totally new merged company: they received mainly positive returns.

Various authors in their works try to identify certain patterns for various segments of the general set of M&A deals.

1. Firstly, there is a set of works that study only large deals. The classical work of Hayley, Palepa and Rubak (1992) analyzes only the largest American deals of the 80s.
2. Secondly, it is possible to single out the works that examine transactions by geographical principle. For example, Eckbo and Thorburn (2002) study Canadian, Rennebug and Goergen (2003) - European, and Kuipers, Miller and Patel (2002) - international deals.
3. Thirdly, the study of mergers in certain industries is widespread. Beitel (2002) examines banks, and Macieira, Megginson and Neil (1998), in turn, conglomerate transactions.
4. Fourth, the researchers isolate the sample by certain types of transactions. Jarrel & Paulsen (1989) analyze only acquisition, Banneriae, Owers (1992) - deals with "white knights", Millerin (2000) – only uncompleted deals.

Obviously, conclusions obtained on different disjoint samples can significantly differ from each other. Comparison of research results from different samples is objectively very difficult. Moreover, the work analyzing the full sample of mergers deals, significantly differ in the periods under review. On average, researchers consider one decade. However, various waves

of mergers in the twentieth century differ qualitatively and structurally, which in its turn also does not imply full compliance of the received conclusions. On the other hand, significant differences are rooted in the methods of analysis. Abnormal return can be determined relative to the historical share return, market one or comparable companies.

To conclude, despite the simplicity of the method, the results obtained by the researchers differ significantly from each other because of the differences in the samples analyzed, the infinite variations of the method used and the time periods under which the sample is reviewed.

Let us now concentrate on another important method of assessment of M&A deals' performance: method of analysis of financial indicators. In most cases, this approach examines public financial statements of companies before and after the merger. Thus, it analyzed how financial indicators change. In various works attention is focused on various aspects: net profit, return on assets, earnings per share, operating lever or liquidity of the firm. As a rule, in similar works similar companies of the industry are considered, who, on the one hand, experienced M&A deals and, on the other hand, who had no such an experience. This makes it possible to compare the effect of M&A deals on company performance after-merger. Observing Hult (2008), Bruton (1994) and Powell and Stark (2005), we can infer following pluses and minuses of this method:

*Table 2 Accounting-base method advantages and disadvantages*

<b>Accounting – based measures</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Shows fundamental impact on after-merger company performance and captures the realized returns	Risk of accounting policy change and distortion of accounting data due to manipulation
Availability of data	Back-looking analysis (takes into account only historical information)
Simpler to be implemented compared to event study	Incorporate the impacts of outside factors

*Source: Made by author*

Additionally, financial statement analysis does not consider such important M&A deals aspects as:

- Time period after which income is received;
- The amount of money paid for the acquisition of target company (Deal value);

- Some financial ratios, like ROA, are affected by the method of accounting for the merger (purchase vs pooling accounting) and the method of financing the merger (cash, debt or equity).

The earliest study using accounting based measures of mergers in the UK conducted by Meeks (1977), examined the performance of 233 acquirers during 1964 and 1972, and found that profitability increased in the year of the takeover but decreased in each of the five subsequent years. Other studies for the UK which were made by Dickerson et al. (1997) have reached the opposite conclusion. The picture becomes even more blurred when Mueller (1980) investigated the corporate assets growth. Furthermore, Martynova and Renneboog (2008) stated that using the cash-flow-based metrics has identified positive returns, while earnings-based measures result in negative performance in the case of mergers.

The research concerning the results of application of this methodology also can be split into profitability analysis for owners of the target company and bidder company. In general, the returns are evenly distributed. In 1/3 of cases, there is negative profitability, in 1/3 practically no changes occur, and another 1/3 significant positive return. The observed differences in conclusions can be explained by the significant the difference between the subject and methods of analyzing financial data. It can be assumed, that the use of return indicators ROA by Meeks (1977), ROE by Salter (1979), ROC by Herman, Lowenstein (1988) or the gross margin by Sharma (2002) may lead to other results than market share analysis by Mueller (1985) or the capital turnover by Haley, Palper and Rubak (1992).

Along with an analysis of financial statements, many researchers significantly adjust the initial data. So, the work of Parrino, Harris (2001) considers adjusted operating cash flows, and Seth (1990) analyzes flows for shareholders. Further significant differences are visible in the sample power: from 16 transactions Salter and Weinhold (1979) to 613 in Dickerson, Gibson Tsakalotos (1997); analyzed countries: from the UK – Meeks (1977) to Australia - Sharma (2002); time periods: from the 60's in Salter (1979) to XXI century – Ho (2006); investigated range: from year - Ravenschaft (1987) up to 5 years - Dickerson (1997).

Therefore, just as in the case of stock return analysis, the difference in conclusions is provided by the variety of used tools, the sample and the time period.

A review of works on accounting performance after an M&A has been provided in the papers by Zollo and Meier (2008), Papadakis and Thanos (2010), and Thanos and Papadakis (2012). For example, Tuch and O'Sullivan (2007) suppose that the rationale behind these accounting – based studies is the strategic aim of a business is to earn a satisfactory return on capital, and any benefit arising from takeovers will finally reflected in the firm's accounting

statements. Let us now concentrate more on possible accounting – measures, which could be used as dependent variables.

Healt et al. (1992) proposed the following accounting measures such as profitability, employing earning-based measures and cash flow performance measures. Bertrand and Zitouna (2008) suggested innovation indicators, while Bertrand (2009) and Gurgler et al (2003) offered growth rate of sales or assets. In the study Grigorieva and Troitsky (2012) authors assess the impact of mergers and acquisitions on the operating efficiency of companies using (EBITDA/Sales) ratio. Yook (2000) assesses the impact of mergers and acquisitions on the value the company using the economic value added indicator added (EVA). Meeks (1981) compared profit/sales ratio, return on equity (ROE) and ROA and concluded that ROA is the most appropriate ratio for measuring M&A performance. However, Barber and Lyon (1996) stated operating cash flows is optimal in measuring the performance of firms after significant events, such as takeovers, as earnings can be easily manipulated. Return on assets (ROA) is widely used in the M&A literature Bertrand and Betschinger (2011).

Table 3 below summarizes research based on accounting returns studies. As seen from the table, most researchers have used Return on Equity or Return on Assets as an indicator of acquisition performance.

*Table 3 Summary of accounting – base studies*

Researchers	Sample Size and scope	Study period	Time frame of study	Variables
Healy, Palepu & Ruback (1992)	50 US	1979-1983	1-5 years	Operating cash flow (OCF) divided by market value of equity + book value of debt
Harrison, Hitt, Hoskisson & Ireland (1991)	1100 USA	1970- 1989	3-5 years	ROA (Return on assets)
Guest, Bild & Runsten (2010)	303 UK	1985-1996	1-3 years	ROE
Krishnan, Miller & Judge (1997)	147 US	1986-1988	3 years	ROA
Melicher & Rush (1974)	132 US	1960-1969	5 years	ROA, ROE,

				OCF etc.
Sharma (2010)	5 US	5 mega mergers	2,5 years	ROE, OCF
Zollo & Singh (2004)	227 US	1986-1994	3 years	ROA

*Source: Dipali Krishnakumar (2012)*

Concerning the change in company's performance after merger by analyzing different studies we can conclude the following things:

- Improved productive efficiency due to horizontal mergers (Fee and Tomas, 2007);
- Positive market performance associated with collusive and financial synergy (Chatterjee, 1986);
- Positive increases in cash flow after mergers (Palepu and Ruback, 1992);
- Long-term gains to mergers in the property-liability insurance industry (Boubakri, Diome, and Triki, 2008);
- Banks are more cost efficient following mergers (Al-Sharkas, Hassan and Lawrence, 2008);
- Bondholders of merged banks experience significantly positive returns because of diversification, increased bank size, and synergy (Penas and Unal, 2004);
- Non-IT firms have a greater increase in value (Lee and Lim, 2006).

Despite the fact, that both event-study and accounting – based measures have their flaws, according to Cording et al. (2010), 92 percent of empirical studies related to M&A deals' performance used event study and accounting-based methods. Moreover, Zollo and Meier (2008) stated while 41 percent of the total reviewed articles use short-term event study, whereas only 28 percent of researches use accounting based measures.

As said it was mentioned before, despite the wide coverage of the topic of mergers and acquisitions in the economic literature, among a large number of subjective opinions of various researchers and financiers on this issue, there is practically no scientific consensus. We can definitely see that it is not relevant to give a final answer on the question whether M&A deals create value and have positive NPV value for bidder companies or not. However, we can observe potential factors of M&A deal, which will be crucial (essential) for the success of bidder company after conducting M&A deals in terms of financial indicators. Further, we will analyze existing M&A factors, which might impact after-merger bidder financial performance and formulate main hypotheses, which afterwards will be tested through econometric regression modelling.

## 2.2. Essential M&A deals factors

The most important part of current thesis is devoted to determination of M&A factors, which are crucial for the success of M&A and its's impact on financial performance. To construct the regression model, we need variables both dependent and independent ones.

Yaghoubi and Yaghoubi (2016) suggest dividing possible factors into five different groups, namely: acquirer characteristics, target characteristics, bid characteristics, industry characteristics and macro-environment characteristics. Besides, different authors suggest that primarily bid characteristics can strengthen or weaken the value from mergers and acquisitions (e.g. Ismail et al., 2011).

Due to the study by Walker (2000), Moeller, Schlingemann and Stulz (2007), it is possible to define the important factor for this research: method of payment.

The right choice of financing and payment structure for M & A transactions in its turn reduces capital expenditures of bidder company, diversifies risks related to concluded deal and increases the shareholders' bidder company welfare. In academic literature researchers found some determinants of payment methods in M&A deals both in developed and developing countries.

In M&A deals different methods of payments exist:

- Cash
- Bidder company shares
- Combination of cash and stock

According to pecking order, theory managers prefer to raise funds in the following order:

1. Internal sources of financing
2. Debt financing
3. Raising funds in equity markets

To discuss the possible advantages and disadvantages of each payment method, different points of view should be considered, namely bidder and target ones. Considering target's point of view, cash has such advantages as liquidity and fact that amount of money to be received by target due to deal will not change despite the fall in the value of bidder's shares. However, in the case of cash as method of payment shareholders of target company have to pay capital gain tax at once. When pay by shares, the capital gain tax payment is postponed and should be made after the sales of relevant shares.

Considering bidder's point view, using cash for M&A deal payment is beneficial, because the share of existing shareholders is not diluted. However, in this case bidder company is forced to use its own capital, which in its turn increases debt burden on bidder company and

decreases its liquidity (Grinblatt-Titman, 2002); (Martyonova, Renneboog, 2011), (Agliardi, Lukyanov, 2011). In the Table 4 below you can see overall conclusions about methods of payment.

*Table 4 Advantages and disadvantages of various methods of payment*

	For bidder company		For target company	
	Advantages	Disadvantages	Disadvantages	Advantages
Cash	Shows higher interest in M&A deal	Debt burden	Capital tax gain	Reliable and robust
Shares	No extra debt	Signal that your shares are undervalued.	Uncertain, requires negotiation	Control over merger company in future

*Source: Made by author*

There are some theories concerning the choice of method of payment in M&A deals. The most important one is the theory of availability of financial resources. According to this theory, bidder company is often limited in term of using cash as method of payment due to their insufficiency. To finance M&A deals, in which cash is used for payment, debt financing is attracted in most cases. Difficulty and unwillingness of company managers to increase debt burden increased the probability of using shares as method payment. Moreover, theoretically, if the company has a large reserve of cash in relation to the value of its assets, it has greater freedom in using cash as payment method in M&A deals. The size of bidder company might also matter, because large diversified companies have greater access to (borrowed capital markets). For instance, Faccio (2004) showed that the size of bidder assets and debt ratio are significant factors when choosing the payment method, and that special access to bank financing increases probability of choosing cash as a method of payment in M&A deals (Faccio et.al, 2004).

Myers and Majluf (1984) supposed that there is an information asymmetry between management of bidder company and other market participants. Under these circumstances, bidder company's management may use information asymmetry while choosing method of payment in M&A deals. Let us make an example: if company managers think that the value of its shares is underestimated, they will use with high probability the cash as payment method. Vice versa, financing the deal through additional issue of shares is more preferable option for bidder company (Myers, Majluf, 1984). However, the effect can be totally different: lack of information concerning the value of bidder company may lead to using shares as payment

method. After official announcement about potential M&A deal market players can think that offer price for target company is too high. This event will decrease the value of bidder company shares and, subsequently, will reduce the value of shares, which will be received by target company (Hansen, 1987).

Another theory is devoted to significance of relative size of deal, namely that if size of target company is significant in comparison to bidder company, the probability of using shares as payment method increases. This effect can be explained in a way that in case of acquisition of large target company, bidder company needs a large amount of money and/or significant augment of debt to equity ratio. Several empirical studies confirm this theory (Grullon, 1997, Zhang, 2001, Dong, 2006). The authors of the works found out that the larger the relative size of target compared to the bidder company, the greater the likelihood of using shares or a combination of shares and cash as a method of payment in M&A deals. However, there are also contrary results. According to Martin (1996), the ratio of deal size to the market capitalization of the bidder company 20 days before the official announcement of the deal does not affect the choice of the method of payment in M&A deals (Martin, 1996). This can be explained by the following arguments:

- On the one hand, large deal size urges the management of bidder company to use shares as payment method, because it will lead to a relatively smaller deterioration in the financial situation (or increase of debt burden);
- On the other hand, using shares will significantly dilute the proportion of existing shareholders of the bidder company.

These both effects compensate each other; therefore, cumulative effect of relative size of deal is not significant. Apart from it, with an increase in the relative size of the target company, the risks of its assets being overvalued also go up, which in its turn increases the desire of the bidder company's management to transfer some of the risks to the owners of the target company and enhances the likelihood of using shares as payment method in M&A deal. This is why we can consider a relative deal size as accelerator, which enlarges the effects of other factors, affecting the choice of payment method in M&A deals (Ghosh, Ruland, 1998).

Other theory, which excites the minds of researchers many years, considers ownership structure of participating companies in M&A deal as significant factor, affecting the choice of payment method in this kind of deals. According to Stulz (1988), there is negative relationship between the probability of using shares as payment method and the amount of share capital owned by bidder company management. This fact is explained by desire of bidder company's managers not to lose control over company, because financing of M&A deal through share issue by bidder company leads to dilution of a controlled company share by existing shareholders

(Stulz, 1988). According to Martin (1996), this negative relationship is non-linear and significant only if company management owns from 5% to 25% of voting rights. This can be explained by the following reasons:

- If the share of managers in company ownership is high, dilution of control has not sufficient negative consequences for them;
- If this share is low, company management is less concerned with corporate control issues (Martin, 1996).

Ghosh and Ruland (1998) approved abovementioned results and, moreover, found out that a high concentration of shares in the hands of the target company's management leads to a higher probability of financing the M&A deal through shares. This happened due to two facts:

- Shareholders of target company desire to keep the part of control over merged company;
- Obtaining some control of a merged company can help the target company's management keep their positions in company.

To conclude, the authors showed that factor of Target Company's ownership structure is more significant while choosing the payment method in M&A deals than that of bidder one.

Abovementioned authors stated that acquiring company returns are higher for cash mergers. Both studies attributed this to information asymmetry and the signaling by management using stock mergers rather than cash mergers that the acquiring company's stock is overvalued. According to Loughran (2008), Vijn Emery (2009), Switzer (2012); Martynova and Renneboog (2011), the possibility of stock financing increases with the acquiring company's shares being overvalued in the market. The overvalued stock means shares of the acquiring company are trading at a premium to the book value of its assets. In contrast, an acquisition financed with cash conveys the confidence of an acquirer in accurately assessing the value of a target firm. Stock markets, in general, consider cash offers as good news which leads to positive valuation of share prices of both the target and the acquiring firms.

In works of Gerbauld and York (2007), we discover other interesting factor of M&A deals that is crucial for after-merger performance. This is relatedness between merging companies, in other words, horizontal merger, when merging companies operate in the same industry. This is a very important factor, which should be included in the model. However, regarding business relatedness some contrary results are found. Sing and Montgomery (1987) found that acquisitions which are related in product, market or technological terms create substantially higher gains than unrelated acquisitions. This statement indicates that related target firms benefit more from acquisitions than unrelated target firms. However, Chatterjee (1986) found opposite results and shows that unrelated targets outperform the related targets.

Another interesting feature of M&A deals is glamor versus value acquiring firms (Tobin's Q). Firms that have high Tobin's Q (or P/B ratio) are referred to glamor (or growth) companies, the firms which have low P/B ratios are referred to value firms. Previous studies by Lang et al (1989) and Servaes (1991) showed the evidence that shareholders of high Q company-bidders gain much more than the shareholders of low Q company - bidders. And the shareholders of low Q company – targets gain more from takeovers than the shareholders of high Q company - targets. Rau and Vermaelen (1998) highlighted that the acquisition of firms with low Q generated high abnormal returns for the shareholders, while the high Q firms generated significantly negative abnormal returns. Goergen and Renneboog (2004) showed that high P/B ratio for target company leads to a higher bid premium combined with negative abnormal return for the bidder. Moreover, Moeller et al. (2004) and Dong et al. (2006) also found that the bidder's Tobin Q and its closest proxy- P/B ratio have negative influence on bidder returns. In general, high Q of both acquirer and target companies play negative role on the acquirers' shareholder CAR, while target companies benefit more from their high Q.

In the empirical study of the financial sector of the BRICS countries Grigorieva and Grinchenko (2013) analyzed the impact of mergers and acquisitions on the value of acquiring companies. The authors also identified determinants of the effectiveness of mergers and acquisitions, which turned out to be approximately similar for all BRICS countries: method of payment of the deal, the relative size of the deal, presence of intangible assets from the bidder company, bidder experience in conducting M&A deals, and the difference in the characteristics of countries.

In the work of Rani, Yadav and Jane (2014) analyzed influence of domestic and international M & A transactions on welfare Indian companies-buyers in the period of 2003-2008. The authors concluded that both types transactions lead to an increase in the welfare of the bidder company, but excessive profitability of international transactions is higher than domestic ones. In contrary, Moeller and Schlingemann (2004) found that acquirers experience lower stock and operating performances in case of cross-border M&As. Therefore, they conclude that a negative relation between value and global diversification exists.

Another determinant found by Servaes (1991) is deal atmosphere. He showed that the losses to acquiring firms are in general 4% larger in hostile takeovers than in friendly takeovers, while the target firms' gain are 10% more in a hostile takeover. This difference can be explained by the higher premium paid in hostile takeovers or because of the decrease in firm value caused by the takeover defenses.

Another study by Moeller, Schlingemann and Stulz (2004) showed the size effect of the acquirer on the gains from acquisitions. In this study, they found significant results which show higher announcement returns for large acquiring firms than for small acquiring firms.

Additionally, other fascinating factor could be included into model, but unfortunately, there are a lot of data required to define this factor. It is called financial distress of the target company. Financial distress means the situation in which company is not able to meet its financial obligations to different debtholders due to high fixed investments and revenues that are very sensitive to downturns in economy. To find out if the target company is in financial distress or not, Z-score is calculated. According to Altman (1968), there is the following formula:

$Z - score = A * 3,3 + B * 0,99 + C * 0,6 + D * 1,2 + E * 1,4$  ; where,

$$A = \frac{EBIT \text{ (Earnings before interest and taxes)}}{Total Assets}$$

$$B = \frac{Sales}{Total Assets}$$

$$C = \frac{MV \text{ (Market value) of equity}}{BV \text{ (Book value) of debt}}$$

$$D = \frac{Working capital}{Total assets}$$

E= Retained earnings

A target company considered to be in financial distress if Z-value is lower than 1,81.

Moreover, there were some researches which were devoted to potential control variables, which must be included in the model. For example, Altunbas and Ibanez (2004) argue that if a bidder already possesses a high-level of profitability before the merging process, it is more likely that the profitability of the new institution will decrease in the short term due to the process itself. Otherwise, it is probable that bidders with a lower level of performance will manage to increase their profitability after merging with a target. Consequently, a negative relationship between bidders' premerger performance and post-merger performance is expected initially. This effect is also known as a "floor-ceiling" effect (Ramaswamy, 1997).

Datta et al. (1991) and Kusewitt (1985) used such control variables as the size of a target vis-a-vis the bidder (relative size). Why is it worth to include this variable in the model? Relative size was used as a control variable since various studies show that it may impact post-merger bidder performance. Some researchers show that larger companies might acquire smaller companies to realize scale-related synergies that would otherwise be difficult to obtain.

Moreover, Chatterjee (1986) states that the smaller the acquired firm, relative to the bidding firm, the greater the potential for synergy. Then, Tuch and O'Sullivan (2007) state that there are a few reasons why acquiring larger targets might result in better post-acquisition performance such as:

1. Larger targets are more difficult to assimilate into a combined organization; therefore, the pool of potential acquirers is expected to be smaller. This may result in acquirers being able to acquire large targets on more advantageous terms (Roll, 1986).
2. The economic impact of acquiring a larger target is likely to have a stronger impact on the post bid performance of the combined company (Bruner 2002).
3. Moeller et al. (2004) argue that the contrasting findings from some studies examining the impact of size arise because of the different levels of care exercised by smaller bidders in the acquisition process.

In overall, small bidders need to be more careful when making a potentially risky bid, as there will be a relatively larger economic impact on their company. The authors therefore argue that the size effect is due to smaller acquirers rather than to larger targets. Since data is not conclusive on the direction of the effect, but research shows impact of relative size on the merger performance, this variable is used as control variable.

Even though many researchers, who were mentioned above, contributed a lot in the developing of M&A topic and its effect on firm performance, there were a little said about possible problems with not only method of research (accounting - based measure), but with overall attempt to measure the after-merger performance of both target and acquirer company.

For example, King et al. (2004) provided convincing evidence for the existence of "unidentified" variables in their meta-analysis of 93 empirical studies published between 1921 and 2002 relating merger and acquisition activity and financial performance. He concluded that unidentified variables may explain significant variance in post-acquisition performance suggesting the need for additional theory development and changes to M&A research methods.

In this same connection, Kaplan and Norton (2006), and Hitt et al. (2001) pointed out that in addition to financial synergies, other variables such as customer synergies (e.g., cross selling of products and services), internal process synergies (e.g., shared services and value chain integration), and learning and growth synergies (e.g., development of human, information and organizational capital), and strategic fit are all important for performance. Thanks to their research, we can mention other variables not directly linked to the merger process are well-known to influence organizational performance. Among others, these include:

- the general state of the economy
- the effect of merger waves

- the actions of customers, competitors, key employees and other agents of the firm as they attempt to protect or advance their own interests, or to gain strategic advantage during the uncertainty of the merger process.

To sum up, abovementioned studies are crucial for understanding of diversity of factors of M&A deals, which could affect after-merger financial performance of bidder company. When potential bidder considers M&A deals, he should take into account certain aspects of M&A deals, which will simplify decision -making process and prevent the bidder from negative performance after merger. In the following paragraph, based on literature review, several hypotheses will be formulated and then tested on certain sample.

### 2.3. Hypotheses statement

Considering the studies conducted and the dependencies identified, as well as the availability of information on M&A deals in the UK IT industry, it seems appropriate to test the hypotheses for each of financial indicators, ROE, ROA, ROS, P/E. To formulate these hypotheses, a brief review of the most important M&A deals factors should be made.

Method of payment is crucial part of M&A deal, which can affect company financial performance after the completion of this deal. When you pay by cash, you show that you are more determined and sure about the deal. Moreover, when you pay by stock, it signals that you stock is overvalued, which is bad. According to Shleir's and Vishny's (2003) in the long run perspective, market corrections of bidder stock can lead to negative long-term returns for bidder company.

Usually, when the value of bidder company is overestimated, management of the bidder company prefer to use shares as method of payment, because this surplus (over real value of company) allows to save money on M&A deal.

Therefore, we formulate the first hypothesis: **H1. The after-merger bidder financial performance is higher when cash method of payment in M&A deal is used than that performance in case of shares or combination of shares and cash as methods of payment were used** (Eckbo et al., 1990; Sheilfer and Vishny, 2003).

The next important thing is about type of merger in terms of diversification: namely related and unrelated ones. In case of related merger, which means that companies who are going to merge are from the similar industries, can exploit more post-merger synergies: you both have all required assets to perform better and in a more efficient way through, for instance, economy of scale. In case of unrelated merger, companies are from totally different industries that can impose some obstacles on their future integration and will decrease potential to exploit cost and revenue synergies, which, in its turn, will not allow the merger company to improve its financial indicators. Moreover, P/E ratio also will be influenced negatively, because, according to Morck Shleifer and Robert Vishny (2003), market punishes those of kind deals and imply conglomerate discount, which means, that shareholders of merged company will get lower earnings per share.

The related nature of the two merging companies is determined by the availability of the same codes of the Standard Industrial Classification (SIC). Here, we formulate the second hypothesis: **H2. The after-merger bidder financial performance is higher in case of related merger than that performance in case of unrelated merger** (Morck ,1990; Shleifer and Vishny, 2003).

Next important factor of M&A deal, namely the age of target company, was not discussed in academic literature before, however, I believe, that is crucial for current research. The older the company, the more inflexible it is, which means that bidder company will struggle in trying to change and manage this target company in a more suitable and strategic way. Therefore, we formulate the third hypothesis: **H3. The age of target company is negatively related to after-merger bidder-company financial performance**

Nowadays many M&A deals include parties, which could be from different countries, in other words these M&A deals are cross-border ones. According to many researchers (Rani et al., 2014; Grigorieva, Grinchenko, 2013), international mergers and acquisitions lead to higher after-merger financial ratios of bidder company. This opinion assumes that by entering the international market, the company has the opportunity to learn from the experience of foreign competitors, to gain access to specific technologies, strengthen the brand. It also corresponds to the conclusions to which many authors came to. However, deals in which the bidder company purchases foreign assets are often viewed as more risky transactions. It is explained by the fact that the process of integration of such companies will be complicated due to territorial, cultural and, possibly, language barriers. Thus, the cumulative excess return in such mergers and acquisitions is lower than those of conducted within the same country. Therefore, we formulate the fourth hypothesis: **H4. The after-merger bidder financial performance is higher in case of cross-border deal than that performance in case of domestic deal.**

The following aspects were not also properly discussed in academic world, however, they are essential, when you are making decision about potential M&A deal. When bidder negotiates a deal, it always confronts with such things as deal size and number of fees that company has to pay to investment banks. This amount of money company pays either by stock or cash; anyway, it creates a high burden on this company and makes her riskier, because company may not be able to cover its operational expenses and debt obligations in the future. Moreover, high deal size can mean that bidder overpaid to target company: the price paid (investment) exceeds the present value of expected synergies. To sum up, large transaction costs lead to deterioration in the company's financial and operating performance and, therefore, we formulate the fifth and sixth hypotheses: **H5. The size of M&A deal is negatively related to after-merger financial bidder performance**

**H6. The amount of paid commissions (fees) in M&A deal is negatively related to after-merger financial bidder performance**

There are also some interesting factors that are usually studied by researchers in academic world. For example, bidder companies sometimes include earn-out payment in M&A deal contract. It is assumed that these kinds of deals reduce the risk of adverse selection, since the

second part of payment for the transaction is made based on the results of the activities of the target company (Barbopoulos, Sudarsanam, 2012).

Moreover, acquired stake size also could affect after - merger financial performance of bidder company. The control by a parent company implies a better applicability of the new managerial rules and processes. Those processes can directly affect the performance of the merged company and that is why the parent company might be interested in establishing a higher degree of control in the company that it bought. Such control is achieved when the management of the acquirer has the majority of voting rights while making strategic decisions. Therefore, buying a bigger stake can be considered a way of improving the influence of the parent company and, therefore, the resulting performance.

**Under current research**, it seems relevant to get deeper and find out the factors, which influence the decision about method of payment in M&A deal. In previous paragraph, corresponding literature was analyzed and, therefore, we can also formulate some interesting hypotheses, which then will be tested.

When company possess enough cash, it could afford to pay cash in M&A deal, because company does not have to acquire external financing and increase its debt burden. Here, the first hypothesis is formulated: **H7. The larger amount of cash bidder company has, the higher the probability of using cash as method of payment in M&A deal** (Faccio et.al, 2004).

Moreover, according to Faccio (2004), such things as size of bidder assets and its leverage also matter while choosing the method of payment in M&A deal. When the company is big enough (diversified), it has more access to borrowed capital markets, which means that for bidder is easier to pay by cash in this case. However, if the company is high leveraged, it is riskier to attract more debt, therefore, it will prefer shares (or combination) to cash as method of payment. Here, we formulate second and third hypotheses: **H8. The larger the bidder company in terms of total assets, the higher the probability of using combination of shares and cash/or only shares as method of payment in M&A deal** (Faccio, 2004)

**H9. The more leveraged the bidder company, the higher the probability of using combination of shares and cash/or only shares as method of payment in M&A deal** (Faccio, 2004)

According to Loughran (1987), Switzer (1983), Martynova and Renneboog (2007), when bidder company is overvalued (P/B ratio is high), it would use shares as method of payment. It can be explained by the fact that when company is overvalued, by using shares as method of payment, company could economy some money by paying in reality less. However, there is always a risk of company overvaluation, because investors could perceive it as a bad signal and will start to sell the stock. Here, we formulate the last hypothesis: **H10. The higher Price-to-**

**book value ratio of bidder company, the higher the probability of using shares or combination of shares and cash as method of payment**

Then, in next chapter, all formulated hypotheses will be testing through different regression models, namely financial performance regression models, in which each of the model will correspond to one of the financial indicators such as ROA, ROS, PE, ROE, and method of payment regression model, which will help to understand the factors, which influence the choice of payment method in M&A deal.

## CHAPTER 3. EMPIRICAL STUDY

### 3.1. Research methodology

In this paragraph the detailed description of the main methodology will be represented. The research includes the building of regression model which helps to find out any relationship between different factors of M&A deals and after-merger financial performance of the company-bidder. Moreover, additional regression model will be constructed to define, which factors affect the choice of method of payment in M&A deal.

It is worth to mention here also, why we do not use another approach of measuring financial performance. As in second chapter was mentioned, there are two main approaches to measure after-merger post performance: event study and accounting – based measures. Event study tries to explain stock price reaction when a firm announces an M&A. However, the latter approach does not reflect the fundamental processes and effects, which occur inside the company. This method just covers the market perception of the company and the results will be relevant to only one stakeholders of the company: the shareholders. But the owners of the company also want to know what kind of impact does have M&A deals on intrinsic performance of the company, which cannot be measured through this method. Therefore, accounting – based measures will be used to conduct an empirical study.

We are going to test the hypotheses, which we have set in previous chapter. In the current empirical study, we are going to build four regression models, each of them will be related to some of the financial performance indicators and one additional regression model to test which factors influence the choice of payment method in M&A deal. Below, there are following measures of financial performance, which will be taken in the financial performance regression models:

#### 1. Return on equity (ROE)

This indicator shows the profitability of equity and is measured as net profit divided by the company's own capital. Many authors have different approaches of choosing which numerator to take. Mostly, the researchers used net income, while others also use Earnings before interest and taxes (EBIT) and Net operating profit after taxes (NOPAT). This is very important financial indicator for the company, but, predominantly, is crucial for the shareholders of the companies, who invested their own capital and want to see that their capital is invested effectively. Therefore, the results of this model and managerial implications concerning potential M&A deals will be devoted to the shareholders of the company, not to the owners of business.

In our regression model, for the simplicity purposes and due to availability of data, we will calculate Return on Assets for the bidder companies, as following

$$ROE = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Total common equity}}$$

## **2. Return on assets (ROA)**

This indicator shows the profitability of all assets, which were used by company, therefore the source of financing is not important here. It shows the amount of profits per one-unit cost of capital, the effectiveness of using the whole capital. The results of this model and its managerial implications will be crucial mostly for the owners of the business. The Return on assets will be calculated, as following:

$$ROA = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Total Assets}}$$

## **3. Return on sales (ROS)**

This ratio shows the share of profit attributable to each dollar which was earned by the company. To calculate sales profitability, we can use different indicators of profit, which explains the existence of such variations in the coefficient, as:

- Profitability of sales by gross profit (Gross Profit Margin).
- Profitability of sales by operating margin (Operating Margin).
- Profitability of sales by net profit (Net Profit Margin).

In our research, we will use Net profit margin, which is calculated as following:

$$ROS = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Revenues}}$$

This indicator is important both for shareholders and the owners of the business, because it shows how the company is able to operate and reduce their costs. As we know, potential merger of the company can increase sales through increasing market power or entering in a new market / new business and at the same time can reduce company costs through economy of scale or getting rid of redundant departments etc.

## **4. Price – to – earnings ratio (P/E)**

This indicator should also be included in the current empirical study to cover market perception of M&A deals and its impact on the company. P/E ratio measures company current

share price to its current earnings per share. Basically, this indicator shows the potential of the company to grow (market expectations) in the future or the amount of money an investor might expect to invest in the company to be able to receive this one-dollar on that company's earnings.

### Financial performance models

Data on the independent and control as well as on dependent variables are presented in the Table 5 below.

*Table 5 Description of variables for financial performance model*

Name of variable	Description	Notation
Dependent variables		
Return on assets	Calculated as the difference between the bidding firm's two - year average ROA after the acquisition and the average of the ROA of the bidding company of deal year and one year prior to the deal	ROA
Return on equity	Return on equity is calculated as the difference between average ROE after two years after the deal and average ROE of the bidding company of deal year and one year prior to the deal	ROE
Return on sales	Return on sales is calculated as the difference between average ROS after two years after the deal and average ROS of the bidding company of deal year and one year prior to the deal	ROS
Price - to - earnings ratio	Price - to - earnings ratio is calculated as the difference between average PE after two years after the deal and average PE of the bidding company of deal year and one year prior to the deal	PE
Independent variables		
Relatedness (Dummy variable)	If merger is related (similar industries) – coded as 1, if unrelated (different industries) – coded as 0.  According to SIC <sup>7</sup> , we consider first three numbers to define the similarity of industries of participants of M&A deal	RELAT

<sup>7</sup> SIC is Standard Industrial Classification, which classifies industries by four-digit code. The first 3 digits of the SIC code indicate the industry group, and the first two digits indicate the major group.

Method of payment (Dummy variable)	There are 2 main methods of payment in M&A deals in chosen sample: <ul style="list-style-type: none"> <li>• Cash – coded as 1</li> <li>• Cash and shares (combination) – coded as 0</li> </ul>	PAYM
Deal value	Final offer price by acquirer. We take here logarithms, as the number is too large. Deal value includes the amount paid by the acquirer, excluding fees and expenses. This dollar value includes the amount paid for all common stock, common stock equivalents, preferred stock, debt, options, assets, warrants, and stake purchases made within six months of the announcement date of the transaction. Liabilities assumed are included in the value if they are publicly disclosed	DEALREL
Fees	Amount of money which bidder company pays to investment bankers and other support stuff to complete the deal. They are calculated as percentage of deal size	FEE
Cross – border (Dummy variable)	If the deal involves only domestic parties or the deals includes international bidder or target. Cross-border deal is coded as 1, domestic deal is coded as 0.	CROSS
Age of target company	The amount of years the target company operates in the market	AGET
Control variables		
Leverage of bidder company	Debt - to - equity ratio of the bidder company	DE
Size of bidder company	Logarithm of total bidder assets	LGBA

*Source: Made by author*

The model will use the cross-sectional data, because there is no change in time, as the deals happens at one moment of time. The general form of the regression model is as follows:

$$\begin{aligned}
FImodel = & \alpha + \beta_1 X_{(t)} + \beta_2 X_{(t)} + \beta_3 X_{paym(t)} + \beta_4 X_{relat(t)} + B5X_{dealrel(t)} + B6X_{fee(t)} \\
& + B7X_{cross} + B8X_{aget(t)} + \varepsilon_{(t)}
\end{aligned}$$

FI - financial indicator could be one of the following ratios: ROE, ROA, ROS, P/E

Each financial indicator (dependent variable) is calculated as following:

$FI_{model} = average(FI_{t+1} + FI_{t+2}) - average(FI_{t-1} + FI_t)$ , where t - the year of the conducting the M&A deal (Ramaswamy, 1997).

Therefore, by making this averaging, we decrease the effect of accounting manipulation and, moreover, we may not include such control variable as pre-bidder return on equity, because this is already embedded.

$\alpha$  – Constant

$\beta_1 - \beta_8$ - Coefficients for controlling variables and M&A deals' factors

$X_1 - X_2$  – control variables in the model

$X_{paym}$  – dummy variable, which shows the type of payment, which was made in the deal

$X_{relat}$  – dummy variable, which shows if the merger was related or not

$X_{dealrel}$  – logarithm function of deals size

$X_{fee}$  – the number of fees which were paid by bidder to investment banks and etc.

$X_{cross}$  – dummy variable, which shows if the deal was cross-border or domestic

$X_{aget}$  – the age of target company

$\varepsilon$  – normally distributed random error.

### Method of payment model

Here, we consider additional regression model, which is crucial for defining the factors, which affect the choice of method of payment in M&A deal.

Below, in Table 6 you can see the list of variables for this model.

*Table 6 Description of variables for method of payment model*

Dependent variable	
Method of payment	Cash - coded as 1, combination of cash and shares – coded as 0.
Independent variables	
Cash balance	The amount of cash, which is reflected in the balance sheet, in the last available financial data prior to M&A deal. We take here logarithm as the numbers are very big and volatile.
P/B ratio	Price-to-book ratio of bidder company

Leverage of bidder company (considered as control variable also)	Debt - to - equity ratio of bidder company
Size of bidder company (considered as control variable also)	The number of total assets of bidder company. We take here logarithm as the numbers are very big and volatile.

*Source: Made by author*

As the dependent variable (method of payment) has binary outcomes, namely 1 (cash as method of payment) or 0 (combination of shares and cash as method of payment), we use probit model here. The general regression model is as follows:

$$\text{Method of payment} = \alpha + \beta_1 X_{CASH(t)} + \beta_2 X_{PB(t)} + \beta_3 X_{SIZE(t)} + \beta_4 X_{DE(t)} + \varepsilon(t)$$

Where t – the year of M&A deal

Method of payment could be cash – coded as 1 or combination of shares and cash – coded as 0.

$\alpha$  – Constant

$\beta_1 - \beta_4$  – Coefficients for dependent variables

X\_cash – shows the amount of cash balance at bidder company (logarithm function)

X\_pb – price-to-book value ratio of bidder company

X\_size – logarithm function of bidder total assets

X\_de – leverage of bidder company

$\varepsilon$  – normally distributed random error.

### 3.2. Data and sample

Let us mention the sources of data for all variables of the regression models. Data for control variables and dependent variables were taken from Thomson Reuters DataStream source and the lack of data was fulfilled through Amadeus, Capital IQ and Bloomberg databases. The data concerning independent variables, which are the factors of M&A deals were taken from Zephyr database.

The criteria for M&A deal sample are following:

1. One of the parties (bidder or target) registered and operated in the UK;
2. Bidder company is listed company at the moment of deal and 2 years after: in order to calculate P/B and P/E ratios;
3. The bidder company must acquire at least 50% +1 of the target company's shares, as this shareholding is an unconditional controlling stake and will allow the bidder company to

take an active part in the development and management of the post-merger company. Moreover, it will give to the owner the opportunity to independently make decisions in matters of the functioning of the joint-stock company, including appointing a management team. This will help to exploit potential synergies between the companies.

4. The current state of the transaction is defined as declared and completed-confirmed.
5. Deal type: Acquisition/Merger
6. Deal value should be higher than 10 million USD: this criterion makes it possible to exclude deliberately small M&A deals
7. Timeframe represents the following period: from 01/01/2011 till 31/12/2014. The lower limit was chosen in order not to take the crisis period due to many specifics of that period which can distort the results. The higher limit was chosen in this way in order to measure future financial performance.
8. The industry was chosen according to ZEPHYR classification: Computer, IT and internet services.

Keeping the above-mentioned criteria and using the Zephyr database, a sample of 275 M&A deals was formed. However, after collecting data for all the variables, which should be included in the financial performance regression model, the sample was reduced to 168 deals. For method of payment regression model, the sample was reduced to 123 deals due to unavailability of some data.

The description of M&A deals' features in UK IT industry conducted from 2011 till 2013 is presented in Table 7 below.

*Table 7 Brief description of M&A deal factors*

<b>Method of payment in M&amp;A deals</b>	
Cash – 75%	Combination of shares and cash – 25%
Average fees – 2% of deal value	
Domestic deals – 28%	Cross – borders deals – 72%
Related mergers – 74,4%	Unrelated mergers – 25,6%

*Source: Author's calculations*

Further, more detailed descriptive statistics of dependent variables is represented in Table 8 below.

*Table 8 Descriptive statistics of independent variables (Financial performance model)*

Variable	Number of observations	Mean	Standard Deviation	Minimal value	Maxim value

FEE	168	0,0225	0,0104	0,0036	0,45
CROSS	168	0,726	0,447	0	1
DEALREL	168	10,93	1,48	9,13	15,63
RELAT	168	0,738	0,44	0	1
PAYM	168	0,7514	0,38	0	1
AGET	168	51,32	47,975	4	180
LGBA	168	14,6	2,605	9,06	25,9
DE	168	70,97	100,86	0	680,87

*Source: Author's calculations*

Moreover, for method of payment model, we also get descriptive statistics.

*Table 9 Descriptive statistics of independent variables (Method of payment model)*

Variable	Number of observations	Mean	Standard Deviation	Minimal value	Maxim value
LGCASH	123	11,4	2,67	3,789	23,45
DE	123	75,2	160,5	0	680,87
LGTA <sup>8</sup>	123	13,6	2,7	8,6	25,92
PB	123	3,26	8,38	0,012	34,68

*Source: Author's calculations*

Next step, after describing variables and data, corresponding to these variables, is to conduct different regression models in order to get results. Basically, we will build four financial performance regression models, depending on financial indicator, and then special method of payment regression model will be conducted.

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<sup>8</sup> LGBA is the same as LGTA in financial performance regression model. It means logarithm of bidder total assets

### 3.3. Empirical results

#### Financial performance regression models

Firstly, we will observe the results of four regression models with different financial indicators as dependent variables. For all models, checks for multicollinearity through VIF test (see Appendix № 8) and for heteroskedasticity were performed. The relationship between the regression model independent variables was not revealed in none of the four models.

#### ROE financial performance model

At the beginning, we constructed the basic model with only control variables:

- LN from size of bidder assets
- Debt to equity ratio of bidder company

You can see results in Appendix. Afterwards, the basic model was expanded: six factors of M&A deals were included. Data on the estimation of the parameters of the constructed regression is presented in the Table 10 below. The regression model itself is significant at the 5% level of significance.

*Table 10 Results of ROE financial performance regression model*

R-squared = 0,449/ Adjusted R <sup>2</sup> = 0,421		
Prob > F=0,0000 => model is significant		
Factors	P-value	Direction of relationship
FEE	0,469	Negative
RELAT	0,034**	Positive
PAYM	0,079*	Positive
DEALREL	0,607	Negative
CROSS	0,914	Positive
AGET	0,098*	Negative
LGBA (Control)	0,023**	Positive
DE (Control)	0,000***	Positive
1% level of significance - ***, 5% level of significance - **, 10% level of significance - *		

*Source: Author's calculations*

From this model we can infer that there are three significant factors, namely the relatedness of merger, method of payment in M&A deal and age of target company. Relatedness of merger and method of payment in M&A deal have positive direction of relationship, while age of target company – negative one.

## ROA financial performance regression

The same approach is applicable here: firstly, we construct basic model and then expand it with other essential factors of M&A deals. The results of this ROA model are presented in Table 11.

*Table 11 Results of ROA financial regression model*

R-squared = 0,419 / Adjusted R <sup>2</sup> = 0,4016		
Prob >F=0,0000 => model is significant		
Factors	P-value	Direction of relationship
FEE	0,358	Negative
RELAT	0,053*	Positive
PAYM	0,081*	Positive
DEALREL	0,511	Negative
CROSS	0,816	Positive
AGET	0,109	Negative
LGBA (Control)	0,017**	Negative
DE (Control)	0,000***	Positive
1% level of significance - ***, 5% level of significance - **, 10% level of significance - *		

*Source: Author's calculations*

From this model we can infer that there are only two significant factors, namely the relatedness of merger and method of payment in M&A deal. Relatedness of merger and method of payment in M&A deal both have positive direction of relationship.

## ROS financial performance regression model

The next model, which was constructed, was with ROS as dependent variable. However, I decided not to include results of this model, because the quality of model is too low: R<sup>2</sup> is 0,018 (see Appendix № 6). This can be explained by the fact that return on sales is very specific indicator and its performance is affected by many other external factors, which are not related to M&A deal at all.

## P/E financial performance regression model

Firstly, we start again from basic model with control variables D/E and LN of bidder assets, then additional independent variables were added. The results of the last financial performance model are presented in Table 12 below.

*Table 12 Results of P/E financial performance regression model*

R-squared = 0,436/ Adjusted R <sup>2</sup> = 0,3960		
Prob > F = 0,0000 => model is significant		
Factors	P-value	Direction of relationship
FEE	0,880	Negative
RELAT	0,047**	Positive
PAYM	0,050*	Positive
DEALREL	0,538	Negative
CROSS	0,889	Positive
AGET	0,057	Negative
LGBA	0,023**	Negative
DE	0,018**	Positive
1% level of significance - ***, 5% level of significance - **, 10% level of significance - *		

*Source: Author's calculations*

From this model we can infer that there are three significant factors, namely the relatedness of merger, method of payment in M&A deal and age of target company. Relatedness of merger and method of payment in M&A deal have positive direction of relationship, while age of target company – negative one.

### **Method of payment regression model**

From abovementioned results we can see that the method of payment in M&A deal was significant factor in ROA, ROE, PE models, which means that it affects financial performance of bidder company after merger. This is why it is crucial to find out the factors which affects the choice of method of payment in M&A deal. Through the same process we receive the following results of method of payment regression model, which are presented in Table 13.

*Table 13 Results of method of payment regression model*

R-squared = 0,4/ Adjusted R <sup>2</sup> = 0,37		
Prob > F = 0,0135 => model is significant		
Factors	P-value	Direction of relationship

LGCASH	0,073	Positive
PB	0,013**	Negative
LGBA	0,172	Positive
DE	0,404**	Negative
1% level of significance - ***, 5% level of significance - **, 10% level of significance - *		

*Source: Author's calculations*

According to the results of this model, we can say that there are two factors which affect the choice of method of payment such as bidder cash balance (positive relationship) and its price-to book value ratio (negative relationship).

### 3.4. Main findings and discussions

In previous paragraph different financial performance models were conducted and in the Table 14 below summary results of all financial performance models are presented. Each model corresponds to one of the three (ROS model was excluded from the research) financial indicator as dependent variable in the regression model.

Table 14. Summary results of financial performance regression models

	ROE	ROA	PE
Model quality (R <sup>2</sup> )	0,458	0,48	0,456
Method of payment in M&A deals	0,081*	0,079*	0,060*
Relatedness of merger	0,034**	0,053*	0,050**
Age of target company	0,098*	0,109	0,057*
1% level of significance - ***, 5% level of significance - **, 10% level of significance - *			

Source: Author's calculations

As you can see in all three models (we do not consider ROS model anymore), factor method of payment is significant and we accept the first hypotheses.

**H1. The after-merger bidder financial performance is higher when cash method of payment in M&A deal is used than that performance in case of shares or combination of shares and cash as methods of payment were used**

This means that in current sample and in 2011-2014 time period, cash mergers were more beneficial for after-merger bidder performance than that in which combination of shares and cash was method of payment. The similar result was received by Eckbo (1990) and Sheilfer and Vishny (2003); they also found out that cash mergers are better in terms of financial performance for bidder company. This can be explained by the fact that when you pay by cash to target company, it shows that you are really sure about this M&A deal and desire to exploit potential synergies to the fullest. Moreover, in case of cash as method of payment, bidder company does not lose any percent of control over merged company, whereas in case of shares as method of payment, bidder company let the target company manage somehow merged company and intervene to its affairs in future. This might be not in the line with bidder long-term strategy and will impede the exploitation of synergies from merger of the companies. However, we have also found in the current research the factors, which affect the choice of payment method in M&A

deal, in order to make proper recommendations both for shareholders and managers of the companies.

For this purpose, additional method of payment regression model was constructed. There were two significant factors, which affect the decision – making process concerning method of payment:

- Bidder's cash balance

Therefore, we accept the following hypothesis: **H7. The larger amount of cash bidder company has, the higher the probability of using cash as method of payment in M&A deal**

Faccio (2004) showed the same relationship in his research. This hypothesis can be explained by the fact that companies that have a significant amount of money sufficient for carrying out the M&A deal, do not resort to debt financing. This increases financial discipline of bidder company, because the management of the buyer company is not controlled by external creditors. Moreover, company is not getting riskier as leverage does not increase. Therefore, potential bidder will prefer cash mergers, if he has enough cash reserve at the balance.

- Price-book value ratio of bidder company

We accept here the next hypothesis: **H10. The higher Price-to-book value ratio of bidder company, the higher the probability using shares or combination of shares and cash as method of payment**

In current hypothesis, we coded cash as 1, and received negative relationship between Price-to book value ratio and method of payment, which means that the higher P/B of bidder company, the better not to use cash as method of payment. The same result was also received by Faccion (2004). It can be explained as follows: when company has high price-to book value ratio, it means that company is overvalued and for bidder is more beneficial to use shares as method of payment, because it will reduce actual amount of money, which will be paid to target company. However, we should consider risks of showing to the market that our company is overvalued: it could make investors to sell their stock, which will reduce market value of bidder company.

Let us now come back to the financial performance regression models results. The next significant factor is the relatedness of merger, which showed positive relationship with after-merger bidder financial performance. Therefore, we accept the following hypothesis: **H2. The after-merger bidder financial performance is higher in case of related merger than that performance in case of unrelated merger.**

This means that company while choosing potential target should firstly look at companies from the same industry, because it creates more potential to exploit potential synergies due to

this merger. This decision is also important both for manager and the shareholders of the company, as in all three models this factor is significant.

And the last factor, which was significant in ROE and PE models, is the age of target company, which showed negative relationship with after-merger bidder financial performance. Therefore, we accept the following hypothesis: **H3. The age of target company is negatively related to after-merger bidder-company financial performance.**

As this hypothesis is accepted only in case of ROE and PE influence, recommendations concerning this factor will be devoted primarily to the shareholders of the company, therefore, there could potential agency conflict between them and managers of the company. Basically, shareholders should vote for merger with younger target company, because the acquisition of such a target will afford to integrate it in bidder company in a softer and more flexible way. It also increases the potential to exploit both revenue and cost synergies.

In next paragraph, based on main find findings from empirical study, managerial implications both for managers and shareholders of the company will be proposed, because there are financial indicators in the model, which are the prime interest of both parties.

### 3.5. Managerial implications

In the previous paragraph of this chapter, factors influencing the effectiveness of mergers and acquisitions deals were defined, based on a sample of 168 transactions in which UK public companies acted as bidders. The effectiveness of the deals was expressed through accounting-based measures such as return on assets, return on equity and price-to-earnings ratio. Moreover, additional method of payment model was conducted, based on the same sample, but reduced to 123 transactions due to some lack of data.

Because of the fact that one of the main tasks of company management is to increase the financial effectiveness of companies, based on the results of the study, we can formulate recommendations for UK public bidder companies using the growth strategy through M&A deals.

The recommendations that will be given below refer exclusively to UK public companies, whose shares are traded on the stock market and will be divided into 2 groups, which are formed based on confirmed hypotheses. Basically, there are two pools of audience, for whom the recommendations could be made.

The results of financial performance model, in which ROA was dependent variable, are more applicable for managers of the company, whereas ROE and P/E are more determined for shareholders of the company. Fortunately, the approved hypotheses mainly applicable for both groups of people. The summary suggestions are presented in the Table 15 below.

*Table 15. Managerial implications for shareholders and managers of the company*

	Shareholders	Managers
Age of target company	Should look for young target companies	Possible contradiction with shareholder's decision, because ROA model did not show the significance of this factor
Method of payment	Cash payment is preferred; however, the decision will be based on: <ul style="list-style-type: none"> <li>• Amount of available cash</li> <li>• P/B ratio of company</li> </ul>	
Target industry	Related merger is preferable option, which means that industries of bidder and target companies should be similar	

*Source: Made by author*

Mainly, shareholders and managers of the company should carefully consider such factors as method of payment in M&A deal and industry of target company. Even though cash mergers are generally more beneficial, both managers and owners of the company should take into consideration the amount of cash they have and current P/B ratio of their company. If they have limited amount of cash, it is better not to pay by cash, because in this case they have to attract new debt, which can make company riskier (Net Debt/EBITDA, D/E ratios should be taken into account). If they have large reserve of cash, it is better to use cash as payment method. Additionally, if P/B ratio is high, they better use shares or combination of shares and cash in order to save the actual money spent on acquiring the target (Lower actual deal value).

While choosing potential target, bidder should firstly look at those companies, who operate in the same industry, because there is more potential to exploit both revenue and cost synergies. Moreover, it is easier to increase market share and market power, if you operate in the same industry and produce related products.

Finally, shareholders of the company are advised to look for younger target company, because it is easier to integrate them in new merged company. However, they should find a compromise with managers of the company, because for them this factor is not significant for after-merger financial performance, namely return on assets indicator.

### 3.6. Limitations of research

Despite the fact that through current paper research goal was achieved and research gap was closed, there are some limitations of this research. Though, we found which factors of M&A deals affect after-merger bidder financial performance, there are also other factors, which we were not able to consider in this research due to lack of data.

For example, such factor as premium, which paid by bidder company to target should be considered, because it might affect after-merger bidder financial performance. It shows how much you overpaid and sometimes this overpayment is not covered by synergies. Size of the premium paid is calculated using the methodology of Moeller et al (2004): the deal value divided by the market value of equity of the target 1 month prior to the deal announcement (Moeller et al., 2004). However, this information is available only for large deals (more than 3 billion dollars) and mostly for US market. Therefore, further research could be devoted only to megamergers all over the world.

Other interesting factor, which was also not included in the model because of lack of data, is the type of financing, which could be: namely infusion of capital, issue of convertible securities, attraction of additional bank financing, private placement of securities.

Moreover, it would be interesting to attract more information about target companies and include different target's characteristics (except from target age) into the model. The problem is that many target companies are not public, therefore it is almost impossible to obtain required data. The possible solution is to observe more countries and include the deals, in which both parties are public companies or to expand time period for having normal size sample.

Abovementioned limitations do not undermine practical and theoretical value of current research. All results are useful and valuable for managers and owners of bidder company, who make decisions about potential M&A deals.

## CONCLUSION

The presented study attempts to answer the question of the effect of M&A deals on the after-merger financial performance of the bidder company in United Kingdom in IT industry.

Thus, the management of companies from UK and other developed countries can design and execute mergers and acquisitions deals in such a way that they create a value increase for investors and managers of the company. Through the current empirical research, M&A crucial theory was observed and throughout the existing literature related to M&A performance, we were able to propose essential M&A deals' factors. These factors are crucial primarily for potential buyer, who is looking for a target to acquire. This decision is hard one, because it requires an approval from many stakeholders of the company, mainly, managers, board of directors and, obviously, shareholders of the company, who decide on the deal by voting. Moreover, this touches also potential investors of the company-buyer, who are going to buy shares of this company, because they believe that this merger will benefit the bidder company in terms of financial performance and the market in the long-term perspective will appreciate it through increasing the share value of this bidder- company.

After observing literature review, main hypotheses of the study were formulated. The empirical part included basically two main models: financial performance model with 4 variations, depending on financial indicator (ROS, ROE, ROA, PE) as dependent variable and method of payment model, which affords to find out which factors impact the decision concerning the type of payment method.

After conducting regression models, some results were delivered. Such characteristics as method of payment, relatedness of the merger and age of target company were considered as significant ones. Therefore, both managers and shareholders of the company, while choosing potential target, should look at industry in which target company operates. If the target main activities relate to bidder company business operations, this is a good signal for approving this deal. Moreover, for the shareholders of the company the prime concern is that the target company should not be too old, because it is harder to integrate with this kind of company due to cultural, organizational and other difficulties, therefore, the younger the target company, the better. Concerning method of payment, company-bidder should be very careful, because it affects future financial performance of the company sufficiently. Method of payment regression model helped to discover, which factors influence the choice of payment method. Both managers and shareholders of the company should consider the following aspects:

- Availability of cash

If the level of cash is low, it is risky for bidder to choose cash as method of payment, because it will increase debt burden of the company. However, if company has enough cash reserve, it can afford to pay by cash to target company, which helps not to lose control over merged company.

- Current P/B ratio

If this ratio is high enough, it means that bidder company is overvalued. It actually helps to save some money on deal value due lower real deal value, therefore, it is preferable to pay by shares or combination of shares and cash in this case. However, this decision imposes some risks on bidder company due to potential loss of control over merged company.

In addition to abovementioned factors, other factors were proposed as essential for M&A deal such as internationality of the deal, deal value size and the amount of commission to investment banks. Unfortunately, in this research paper, we are not able to make any conclusions about these factors due to their statistical insignificance.

To sum up, the results of current research paper are very practical and valuable both for shareholders and managers of the bidder company. Recommendations, based on empirical results, can be used by them in order to conduct an effective M&A deal, which will bring added value for their company through better financial performance.

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## APPENDICES

### Appendix 1. Base ROA financial regression model (only control variables)

regress ROA DE LGBA

Source	SS	df	MS			
Model	302109.775	2	151054.887	Number of obs =	168	
Residual	400287.752	165	2425.98638	F( 2, 165) =	62.27	
Total	702397.527	167	4205.97322	Prob > F =	0.0000	
				R-squared =	0.4301	
				Adj R-squared =	0.4232	
				Root MSE =	49.254	

ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
DE	.2639036	.0236802	11.14	0.000	.2171483	.310659
LGBA	-4.205037	1.360562	-3.09	0.002	-6.891393	-1.518681
_cons	39.80368	19.60731	2.03	0.044	1.090109	78.51725

### Appendix 2. Base ROE financial regression model (only control variables)

regress ROE LGBA DE

Source	SS	df	MS			
Model	289122.529	2	144561.265	Number of obs =	168	
Residual	413274.998	165	2504.69696	F( 2, 165) =	57.72	
Total	702397.527	167	4205.97322	Prob > F =	0.0000	
				R-squared =	0.4116	
				Adj R-squared =	0.4045	
				Root MSE =	50.047	

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
LGBA	-3.022055	1.498556	-2.02	0.045	-5.980873	-.0632365
DE	.2536231	.0236427	10.73	0.000	.2069419	.3003042
_cons	24.22656	22.06774	1.10	0.274	-19.34499	67.79812

### Appendix 3. Base PE financial regression model (only control variables)

regress PE DE LGBA

Source	SS	df	MS			
Model	290100.93	2	145050.465	Number of obs =	168	
Residual	412296.597	165	2498.76725	F( 2, 165) =	58.05	
Total	702397.527	167	4205.97322	Prob > F =	0.0000	
				R-squared =	0.4130	
				Adj R-squared =	0.4059	
				Root MSE =	49.988	

PE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
DE	.2529419	.023552	10.74	0.000	.2064397	.2994441
LGBA	-2.729598	1.274169	-2.14	0.034	-5.245374	-.213821
_cons	18.92051	18.26712	1.04	0.302	-17.14693	54.98795

#### Appendix 4. ROE financial performance regression model (Stata)

```
regress ROE RELAT DEALREL CROSS AGET PAYM FEE DE LGBA
```

Source	SS	df	MS	Number of obs = 168		
Model	315178.05	8	39397.2562	F( 8, 159) =	16.18	
Residual	387219.477	159	2435.34262	Prob > F =	0.0000	
				R-squared =	0.4487	
				Adj R-squared =	0.4210	
Total	702397.527	167	4205.97322	Root MSE =	49.349	

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
RELAT	17.53655	8.215701	2.13	0.034	1.310572	33.76253
DEALREL	-1.412665	2.739818	-0.52	0.607	-6.823795	3.998466
CROSS	.7136194	6.625743	0.11	0.914	-12.3722	13.79944
AGET	-.1321754	.0841972	-1.57	0.098	-.2984646	.0341138
PAYM	1.203655	.6809386	1.77	0.079	-.1411958	2.548506
FEE	-5.563775	7.657	-0.73	0.469	-20.68632	9.558771
DE	.2605302	.0235366	11.07	0.000	.2140455	.3070149
LGBA	-3.253043	1.418603	-2.29	0.023	-6.054779	-.4513063
_cons	35.62897	28.61422	1.25	0.215	-20.88401	92.14195

#### Appendix 5. ROA financial performance regression model (Stata)

```
regress ROA FEE RELAT DEALREL CROSS AGET LGBA DE PAYM
```

Source	SS	df	MS	Number of obs = 168		
Model	315589.341	8	39448.6677	F( 8, 159) =	16.22	
Residual	386738.199	159	2432.31572	Prob > F =	0.0000	
				R-squared =	0.4193	
				Adj R-squared =	0.4016	
Total	702327.54	167	4205.55413	Root MSE =	49.319	

ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
FEE	-6.767035	7.34155	-0.92	0.358	-21.26657	7.732498
RELAT	17.73711	8.257177	2.15	0.053	1.429217	34.045
DEALREL	-1.691087	2.564532	-0.66	0.511	-6.756028	3.373855
CROSS	1.54041	6.605272	0.23	0.816	-11.50498	14.5858
AGET	-.1363992	.0845324	-1.61	0.109	-.3033503	.030552
LGBA	-3.083711	1.282588	-2.40	0.017	-5.616818	-.5506044
DE	.2606752	.0235143	11.09	0.000	.2142345	.3071158
PAYM	1.188142	.6770498	1.75	0.081	-.1490291	2.525312
_cons	35.69185	28.36694	1.26	0.210	-20.33275	91.71645

## Appendix 6. ROS financial performance regression model (Stata)

```
regress ROS FEE RELAT DEALREL CROSS AGET LGBA DE PAYM
```

Source	SS	df	MS	Number of obs = 168		
Model	223.810227	8	27.9762783	F( 8, 159) =	0.36	
Residual	12195.9646	159	76.7041798	Prob > F =	0.9377	
Total	12419.7748	167	74.3699091	R-squared =	0.0180	
				Adj R-squared =	-0.0314	
				Root MSE =	8.7581	

ROS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
FEE	.0905093	1.322177	0.07	0.946	-2.520784	2.701803
RELAT	1.4424	1.465517	0.98	0.326	-1.451991	4.336791
DEALREL	-.1642412	.4713524	-0.35	0.728	-1.09516	.766678
CROSS	-.3732544	1.174472	-0.32	0.751	-2.692831	1.946322
AGET	-.0190221	.0148843	-1.28	0.203	-.0484186	.0103745
LGBA	.0087311	.2296488	0.04	0.970	-.4448244	.4622866
DE	-.0029904	.0042237	-0.71	0.480	-.0113322	.0053513
PAYM	.4397651	2.230943	0.20	0.844	-3.966338	4.845868
_cons	.3096896	5.897797	0.05	0.958	-11.33844	11.95782

## Appendix 7. P/E financial performance regression model (Stata)

```
regress PE FEE RELAT DEALREL CROSS AGET LGBA DE PAYM
```

Source	SS	df	MS	Number of obs = 168		
Model	21146.7901	8	2643.34877	F( 8, 159) =	6.15	
Residual	68292.4132	159	429.512033	Prob > F =	0.0000	
Total	89439.2034	167	535.564092	R-squared =	0.4364	
				Adj R-squared =	0.3980	
				Root MSE =	20.725	

PE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
FEE	-.3771104	2.497251	-0.15	0.880	-5.309171	4.55495
RELAT	2.349985	3.085105	0.76	0.047	-3.743087	8.443056
DEALREL	-.6448164	1.045566	-0.62	0.538	-2.709805	1.420172
CROSS	.3508038	2.505233	0.14	0.889	-4.597021	5.298629
AGET	-.0667208	.0347808	-1.92	0.057	-.0019711	.1354127
LGBA	.82612	.5331075	1.55	0.023	-.2267654	1.879005
DE	.0010143	.0098569	0.10	0.018	-.018453	.0204816
PAYM	1.794028	.2790505	6.43	0.050	1.242905	2.345152
_cons	-8.997603	11.7981	-0.76	0.447	-32.2988	14.30359

**Appendix 8. Multicollinearity check for financial performance model factors (independent variables) (Stata)**

Variable	VIF	1/VIF
DEALREL	1.35	0.740889
LGBA	1.29	0.775112
RELAT	1.22	0.820119
AGET	1.13	0.888669
FEE	1.12	0.890979
CROSS	1.08	0.925396
DE	1.04	0.962060
PAYM	1.03	0.974104
Mean VIF	1.16	

**Appendix 9. Descriptive statistics for financial performance model (Stata)**

sum

Variable	Obs	Mean	Std. Dev.	Min	Max
FEE	168	.0224616	.0103642	.0036	.045
CROSS	168	.7261905	.4472455	0	1
DEALREL	168	10.93035	1.482189	9.130213	15.63426
RELAT	168	.7380952	.4409855	0	1
PAYM	168	.7514286	.384138	0	1
AGET	168	51.32738	47.97573	4	180
LGBA	168	14.62362	2.604927	9.063347	25.90817
DE	168	70.97732	100.8572	0	680.87

**Appendix 10. Method of payment regression model (Stata)**

regress PAYM LGCASH DE LGTA PB

Source	SS	df	MS	Number of obs =	123
Model	.197346236	4	.049336559	F( 4, 118) =	3.29
Residual	1.77013344	118	.015001131	Prob > F =	0.0135
Total	1.96747967	122	.016126883	R-squared =	0.4003
				Adj R-squared =	0.3698
				Root MSE =	.12248

PAYM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
LGCASH	.0110813	.0123983	0.89	0.073	-.0134707 .0356333
DE	-.0000598	.0000715	-0.84	0.404	-.0002014 .0000818
LGTA	.0170842	.0124455	1.37	0.172	-.0417296 .0075612
PB	-.0035469	.0014087	-2.52	0.013	.0007572 .0063365
_cons	.115923	.0613874	1.89	0.061	-.0056408 .2374869

## Appendix 11. Descriptive statistics for factors of payment method regression model (Stata)

sum

Variable	Obs	Mean	Std. Dev.	Min	Max
PAYM	123	.7317073	.4448829	0	1
LGCASH	123	11.39571	2.671653	3.789855	23.44981
DE	123	75.17359	160.4725	0	680.87
LGTA	123	13.6391	2.682931	8.626657	25.91743
PB	123	3.261589	8.384197	0.012	34.68333

## Appendix 12. Sample criteria (Zephyr database)

Product name	Zephyr		
Update number	30		
Software version	30.0		
Data update	19/03/2018 (n° 30203135)		
Username	volkhovsky		
Export date	20/03/2018		
Cut off date	31/03		
		Step result	Search result
1.	Current deal status: Completed, Completed - confirmed	1,432,629	1,432,629
2.	Listed/Unlisted/Delisted companies: listed acquiror	302,953	241,311
3.	Deal type: Merger/Acquisition	641,039	128,617
4.	Percentage of stake: Percentage of final stake (min: 50 %)	673,003	121,719
5.	Country (primary adresses): United Kingdom (GB) ( Acquiror OR Target OR Vendor )	208,248	12,679
6.	Zephus classification: Computer, IT and Internet services ( Acquiror OR Target OR Vendor )	305,901	3,216
7.	Time period: on and after 01/01/2011 and up to and including 31/12/2014 (completed-confirmed)	311,942	726
8.	Deal value (mil USD): min=10 (including estimates)	427,830	275
	Boolean search : 1 And 2 And 3 And 4 And 5 And 6 And 7 And 8		
		TOTAL	275