ASEJ

Scientific Journal

Bielsko-Biala School of Finance and Law

Volume 26 | Number 4 | December 2022

ISSN2543-9103
eISSN2543-411X
www.asej.eu

Bielsko-Biała

Bielsko-Biala School of Finance and Law
Wyższa Szkoła Finansów i Prawa w Bielsku-Białej

Scientific Journal
Zeszyty Naukowe

Academic Quarterly Publication
Vol 26, No 4 (2022)

Bielsko-Biala 2022

Scientific Journal of Bielsko-Biala School of Finance and Law
The Journal is published by Bielsko-Biala School of Finance and Law; ISSN 2543-9103, eISSN 2543-411X.

The Journal is a quarterly publication with the scoring of 70 assigned by the Polish Ministry of Education and Science, prompting quality scientific work with local and global impacts, conducting a peer-review evaluation process and providing immediate open access to its content. The publication features original research papers as well as review articles in all areas of science, with particular emphasis on social sciences (including Finance, Economics, Business, Law, Internal Security) and technical sciences (especially IT).

The Scientific Journal Office
Bielsko-Biala School of Finance and Law University Press
ul. Tańskiego 5, 43-382 Bielsko-Biała;
tel. +48 33 829 72 42, fax. +48 33 829 72 21; http://www.wsfip.edu.pl; http://asej.eu

ISSN 2543 – 9103 eISSN 2543-411X

December – 2022

Contents

Editorial Words

Dear esteemed readers,

It is my great pleasure to welcome you to the latest edition of ASEJ, the academic journal that brings you the latest research in the fields of law, economics, logistics, finance, psychology, criminology, computer science, and security. This issue features a diverse range of articles from leading experts in these fields, showcasing their latest research and insights into current trends and challenges.

As we continue to face unprecedented challenges and rapidly evolving technological advancements, it is more important than ever to stay up-to-date with the latest research and trends in these fields. This issue of ASEJ offers valuable insights and perspectives that are essential for anyone seeking to stay at the forefront of their respective disciplines.

We would like to take this opportunity to express our sincere gratitude to the authors for their hard work and contributions to the advancement of knowledge. We would also like to acknowledge the invaluable support of the Bielsko-Biala School of Finance and Law for their continued commitment to publishing this journal, which serves as a platform for the exchange of the latest knowledge and insights.

Virtual reality (VR) technology has been advancing at a rapid pace, and with its growth come a range of challenges in various fields, including economics, law, security, and computer science. In the realm of economics, one challenge is determining how to integrate VR technology into existing business models. VR has the potential to revolutionize the way companies conduct business, but it also requires significant investment and infrastructure to do so. Additionally, there are concerns about how VR will impact the job market, as it could potentially eliminate the need for certain types of jobs while creating new ones in the VR industry.

In this issue, we also explore the growing significance of virtual reality in law, economics, finance, and security. As VR technology continues to evolve, it presents both opportunities and challenges in these fields. For example, in economics, VR has the potential to revolutionize the way businesses operate, but it also requires significant investment and infrastructure. In law, the use of VR raises important questions around data protection, privacy, and intellectual property rights. In finance, VR can be used to enhance customer experiences and provide new insights into investment opportunities. In security, VR presents new risks and challenges, such as ensuring the safety of users and protecting sensitive data from cyber threats.

We hope that this issue of ASEJ will prove insightful and informative for our readers, and we look forward to your feedback and contributions in future editions.

Sincerely,

Dr Muhammad Jammal
Editor of the ASEJ, Issue 4, Volume 26, 2022

Creating value through synergyin mergers and acquisitions

Karol Partacz[1]

[1]Cracow University of Economics
Poland

***Abstract*— Mergers and acquisitions are one of the most relevant external ways to increase capital and operational potential of a company. They allow for the development of both individual entities and entire sectors and are made with the goal of improving the company's financial performance. There are many different drivers for potential investors to undertake mergers and acquisitions. One of them is synergy. Synergy is understood as a result of two or more processes interacting together to have an effect that is greater than the effect that those processes make individually. Two or more businesses can merge to form one company that can improve revenue or reducing expenses than either could have been able achieve independently. It refers to the additional value created by a transaction. More and more companies decide to evaluate synergies in their M&A financial forecasts, because they can allocate the available resources, increase revenues and reduce costs, or diversify their activities in more effective way. It is a specific factor that motivates businesses. However, it is important to make calculation to examine its economic sense and reduce potential risk of failure in business. This article focuses on the assessment of synergy and its implications in mergers and acquisitions.**

Keywords— mergers and acquisitions, synergy, valuation, revenue, acquisition premium.

I. INTRODUCTION

In times of many changes and transformations on world markets caused by, for example, the COVID-19 or the conflict in Ukraine, enterprises are forced to react and adapt to the volatility and turbulent competitive environment. A key reference for many enterprises is not only to ensure the stability of operations, but also to develop entities. By striving for growth, enterprises not only increase the scope and scale of their operations, but also look for optimal financing models adapted to the current economic conditions and market circumstances. One of such financing models are mergers and acquisitions. The point of reference for implementing the concept of growth in mergers and acquisitions is the ability to achieve added value. Synergy is achieved through implementation of an appropriate financing strategy. Combining business activities, overall financial performance tends to increase and overall costs tend to drop as a result of the fact that each company leverages off of the other company's advantages.

The issue of synergy valuation in mergers and acquisitions is widely commented in the source literature. Some research was conducted by, inter alia, T. Copeland, T. Koller, J. Murrin (1997), A. Groppelli and E. Nikbakht (1999), A. Damodaran (2005), W. Frąckowiak (2009), F. Evans and Ch. Mellen (2010), S. Karenfort (2011), R. Machała (2011), K. Mikołajczyk (2011), E. Maćkowiak (2012), M. Domagalska-Grędys (2013), J. Korpus (2014), D. Kozłowska-Makóś (2015), D. DePhamphilis (2017), F. Bauer and M. Friesl (2022).

The paper aim is to examine the importance of synergy in planning mergers and acquisitions and to study relationship between different types of investment decisions. This problem seems to be significant from the long-term risk planning and potential failure resulting from the need to take into account many factors that are not always possible to identify at the stage of financing planning. From a buyer's perspective, synergies influence the maximum price they can able to pay for a company. From a seller's perspective, understanding the

ASEJ - Scientific Journal of Bielsko-Biala School of Finance and Law
Volume 26, No 4 (2022), pages 7
https://doi.org/10.19192/wsfip.sj4.2022.3
Received: November 2022 Accepted: December 2022
Published: December 2022

potential synergies that a purchaser may be able to bring out from a transaction, postulates a basis for bargaining in favour of a higher purchase price.

In the following paper the author analyses the usefulness of a synergy on the basis of both a source literature review and empirical data to illustrate its practical application on mergers and acquisitions. The author also examines managerial and financial consequences for the entities and individuals in times of economic uncertainty. For this purpose, the author poses the following research questions:

Q1. What is the role of synergy in M&A deals?

Q2. What type of benefits or threats can synergy bring to enterprises?

Q3. How the M&A strategy adopted by enterprises can affect the expected synergy?

Q4. Does synergy have a positive impact on internal business performance?

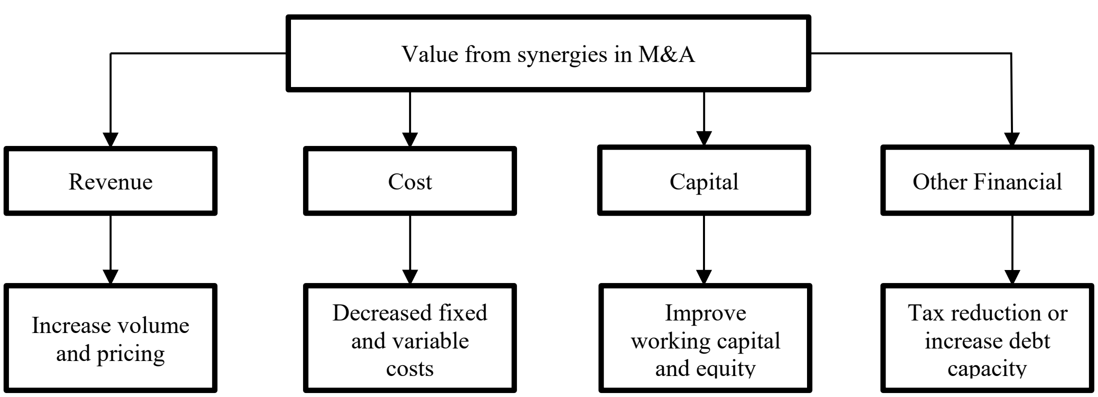
II. Synergy in mergers and acquisitions

There are many reasons for companies to merge. The assessment of the company's potential in mergers and acquisitions is made by taking into account synergy, which is often the basic premise for entities. Synergy is understood as an effect achieved by the enterprises in such a way that their integration brings greater benefits than if it had not taken place. It is supposed to lead to achieve added value. It concerns changes that occur in the structure of revenue, financial result and cash flows as a result of the merger. Changes that would not exist if the combined companies operated independently of each other. It is therefore assumed that synergy is represented by the inequality $2 + 2 > 4$, suggesting on the basis of a hypothetical comparison that as a result of the merger transaction, the combined enterprises obtain a better result (understood mainly: economically), e.g., increase in revenues, but also diversification of the production range, than as a result of separate activity. Synergy, therefore, is expressed in economies of scale, which relate to both the potential increase in production volume and the reduction of the unit production cost (Toborek-Mazur, Partacz, Surówka, 2022). This, in turn, leads to the strengthening of the company's market and competitive position, making it immune to unfavorable macroeconomic conditions, resulting from the COVID-19, the conflict in Ukraine, or other unforeseen and unfavorable economic events (Q1).

By applying synergies, two strategies can be distinguished. There is a strategy that assumes the possibility of suspending part of the company's activity and focusing only on selected, operational activities as well as a strategy of dispersing the scope of activity to areas where the company has not operated before. This is an offensive-defensive approach within M&A. In the first case (offensive strategy), the company will strive to use existing and new resources, e.g., by expanding into a new market or acquiring the necessary know-how, while in the second (defensive strategy) to maintain its current market position, e.g., as a result of increasing competitiveness in the market. A defensive strategy can also be manifested by the takeover of a competitive enterprise for the purpose of its liquidation or redirection (limitation) of its activity. Although there is no single leitmotiv, both strategies can have a positive impact on the increase in the bargaining power of the company against competitors and contractors. (Toborek-Mazur, Partacz, 2022b).

Creating value through mergers and acquisitions results from the impact of the synergy on the 4 most important financial areas of the enterprise, i.e., revenue, cost, capital and other financial. Therefore, the search for synergy is not limited only to the area of revenues and costs (revenue and cost synergies), but is primarily important in the financial and operational areas. Figure 1 presents a list of potential sources of value growth as part of synergies in merger and acquisition in the most sensitive areas of the company.

Figure 1. Value created from synergies in M&A



Source: author's own studies.

In the source literature devoted to the issues of synergy in mergers and acquisitions, attention is drawn to the importance of sharing the benefits that may result from the merger. Synergy can be understood more broadly than as an advantage of scale, depending on the nature of the advantage. The differentiating criterion is both the place and time of creation (in the valued enterprise) and the type of benefit obtained (financial and non-financial). The prospect of locating the benefits and the time horizon of their emergence determines the specific pool of funds allocated to the merger, as well as the potential return on investment (expected by stakeholders). The analysis of the structure of revenues and costs, before and after the merger, should be used to assess the merger process (at managerial level), in which synergy is one of the key determinants. Therefore, the division into financial and non-financial benefits seems to be justified. Financial benefits translate directly into owners' income, while non-financial benefits represent individual expectations of buyers. It should be added that both criteria are important from the point of view of the financial assessment of the merger. Non-financial benefits may reflect the degree of buyers' determination to merge, which in turn affects the final transaction price. The higher the degree of determination to merge, the higher its price (usually) (Q2). Therefore, the choice of synergy targets should be adapted to the investor's profile (Czerkas, 2018, p. 24). A financial investor has different expectations than a strategic investor.

III. Issues with synergy in companies

Synergy is an additional value for the company that is generated during the combination process. It means that the final valuation of the new company will be influenced by the value of the existing companies increased by this additional value. It is up to all parties involved in the M&A agreement to understand this correlation. From the perspective of the buyer, the synergy determines the maximum price for which the company is able to make a transaction. The value of the enterprises in business combination, taking into account the expected synergy, makes it possible to shift the tolerance (readiness) of the enterprise to a merger or acquisition. Companies will be able to "consume" the surplus of synergy over the value of the combined companies to keep an economic sense of the transaction. However, one should remember about business prudence, which in mergers and acquisitions takes on exceptional importance. Depending on the purpose of the merger and the formula for its implementation, enterprises will strive to present their financial and property situation in a favorable or unfavorable light. This may lead to underestimation or overestimation of the expected synergy, which in practice happens. The second reason could be sensitive information, because companies may not have information about the true value of the target company. In addition, the expected synergy may not be visible immediately after the merger, e.g., in the first year, but may be spread over the years, which hinders rational business judgement. The value of synergy is the present value of the cash flows created by it. The longer it takes to for it to turn up, the lesser its value (Damodaran, 2005).

Due to the ambiguity in recognizing synergies for the economic assessment of mergers and acquisitions, two basic types of synergies should be assumed - operational and financial, from which additional revenue and cost synergies can be distinguished. Operational synergy is based on increasing the dynamics of the company's growth and reducing operating costs, while financial synergy - on generating higher cash flows and their rational use. Revenue synergy, therefore, allows for the sale of more goods, but also for entering new markets, which may lead to an increase in revenues (Hong Diep, Tran Anh, 2020). Operational synergy allows to generate additional economies of scale as a result of the scope effect. This occurs as a result of increasing production while reducing unit costs and costs in other areas of the company's activity, e.g., distribution, supply or management. Therefore, cost synergies support the company in reducing operating costs, e.g., by limiting duplicating positions or depletion of the goods storage system, which do not lead to increased productivity. The increase in profitability in financial synergy is the result of a reduction in the cost of capital, but also the company's ability to achieve tax optimization or an increase in the ability to borrow. The effects and extent of synergy in the enterprise depend on the directions of strategic changes in the business structure of the potential buyer in connection with the planned merger procedure and the assumed method of integration and the scope of control.

Both perspectives - financial and operational - are important and mutually balanced. Mergers and acquisitions are effective when they can ensure the achievement of the intended goals by enterprises while adapting them to its capabilities (financial and non-financial), and not only when they serve to pursue to the expected pattern. Mergers and acquisitions must serve to implement specific changes, and not be just a transaction in itself, e.g., only to take over a competitor or limit competition. Synergy should be followed by the desire to achieve economies of scale, increase market power, diversify risk or increase efficiency. The definition and target of synergy efficiencies can be expanded here by the scope effect. The scope effect will be based on the drive to increase the management of combined resources, which results from the complementarity of these resources (e.g., the use of one IT or warehouse base), compared to their current (independent) use (e.g., the existence of two bases in both enterprises, before connection) (Korpus, 2014, p. 70). The phenomenon of complementarity of resources occurs primarily in those M&A transactions in which an enterprise with different, scarce resources and competences participates, and in which the other enterprise completes the missing elements in the value creation chain, e.g., due to technical integration. Table 1 shows exemplary characteristics of both forms of synergy.

TABLE 1. OPERATING AND FINANCIAL SYNERGIES - COMPARISON

Type of synergy	Potential results
Operating synergy	Economies of scale Higher growth in new or existing markets or sectors Increasing pricing power Higher Growth Rate
Financial synergy	Increasing debt capacity Opportunities for excess cash Tax benefits Diversification

Source: author's own studies.

As a result of mergers and acquisitions, synergies allow companies to increase their market power and achieve a dominant market position by limiting competition. Acquisitions may lead to the expansion of the company's area of activity, both in terms of products (diversification of the production range) and geographical (territorial expansion to new markets), which, combined with the complementary nature of products or goods, may lead, as already mentioned, to achieving benefits scope (Świetla, Toborek-Mazur, 2021).

Valuation of expected synergy by enterprises requires making assumptions about the growth rate of future cash flows. The most important issues enabling the measurement of synergies include, first, identifying the sources of synergy, estimating the future achievable acquisition value and determining the moment when the synergy will occur and its duration (DePamphilis, 2018, p. 310). An additional criterion is the estimation of total transaction costs and their comparison with the obtained synergy. The most important transaction costs include all costs directly related to the M&A transaction. These can be both costs related to the unification and integration of procedures and the way the merged enterprises operate, other acquisition fees, costs of lost productivity, costs of currency conversion or consulting services, e.g., as part of due diligence or enterprise valuation. Therefore, it is assumed that in the process of analyzing the profitability of mergers and acquisitions, interested entities make a possibly thorough review of potential transaction costs in such a way as to avoid excessive optimism or overestimation of the synergy in order to reduce the risk of failure of the entire transaction (Mellen, Evans, 2018, p. 276).

In addition to taking into account the expected synergy, transaction costs and other capital expenditures in the process of measuring the added value created in the M&A procedure, the control premium should be also taken into account. An acquisition premium (AP) is defined as the excess of the price offered for the company over the estimated intrinsic value of the company that a potential investor is willing to offer. This acquisition premium is expressed as a percentage of the stock price. A size of the synergy, control premium and transaction costs allow to evaluate the net acquisition value (NAV) of the merged company:

Net acquisition value can be presented by the following formula:

$$NAV = SE - AP - TC$$

where:

SE - synergistic effect, AP - acquisition premium, TC - associated transaction costs.

The added value achieved as a result of the merger should be higher than the premium and transaction costs (eg. financial advice or legal services). This means that in order to justify the profitability of the merger, there must be a situation in which NAV > 0. It will be possible assuming that there is a positive synergy. However, in order to be able to justify the continuation (economic purposefulness) of the merger, the sum of the control premium and transaction costs should be lower than the synergy obtained. The acquisition premium and transaction costs vary, depending on macroeconomic conditions, readiness for mergers in the sector or market structure, and is valued individually for each transaction. It is assumed at the level of about 10-40% of the market value of the acquired company. The higher the bonus level, the higher the risk. Exceeding the 40% threshold may lead to two scenarios. In the first case, it may herald the failure of the merger, due to the undervaluation of the acquired company. In the latter, it may result from a very high development potential. Mergers and acquisitions characterized by such a high level of premium require a special analysis of profitability to minimize risk on the part of investors.

However, the size of the acquisition premium differs in the US or British market, where a higher control premium is expected, than for instance on the Polish market. Based on research conducted between 2000-2010, it was noted that the acquisition premium in the United States was 26-35%, while in Poland was 4-22% (BZ WBK). This may result from the structure of the number and value of mergers and acquisitions carried out in Poland and in the world and polish M&A market participation share of all transactions. In Poland investors pay varied premiums which is typical for a shallow market with a small number of expensive M&A transactions.

IV. RESEARCH PROBLEMS OF SYNERGY

Synergy is often used as a variable in acquisitions: it is the difference between the price paid and the estimated value. The expected synergy should be related to the company's goals. One of the company's main goals is to maximize the wealth of its owners. Maximizing benefits is the result of activities aimed at increasing the company's value, which is one of the reasons for mergers and acquisitions. If enterprise gains benefits as a result of the merger, e.g., through an increase in the value of shares, it can be assumed that the merger is successful (Holtström, Anderson, 2020).

The assessment of mergers and acquisitions on the basis of the synergy should begin with the analysis of positive and negative factors that influenced its final value. The basic tool for measuring the synergy is an analysis of the financial statements of the companies participating in the merger. The financial statement is a comprehensive source of reliable information about the financial and property condition of the enterprise, which allows for the assessment of profitability, debt service capacity or financial liquidity and operational efficiency. However, the financial statements do not provide a complete picture of the situation, as the presented data do not include inflation and deflation, which is due to the fact that the data in the report are historical data. Financial data included in the annual report, sales results do not reflect all the strengths of the company. Reliability of measurement may also be disturbed by changes in the adopted accounting principles. This problem is particularly visible in mergers and acquisitions, in which companies from different countries most often participate, and therefore are characterized by a different legal regime.

Additionally, in the assessment of mergers and acquisitions based on synergy, the performed calculations, e.g., based on own company analyzes, case studies, due diligence or other prognostic and statistical analyzes (Philips, 2022).

As has been already mentioned, there is no single factor that determines the conduct of mergers and acquisitions. In practice, mergers and acquisitions, due to their complexity (economic, legal or even socio-cultural), intertwine various factors favoring the integration of enterprises. Often, mergers and acquisitions has international and cross-sectoral character, which means that not only different foreign sectors come into contact with each other, but also different legal regulations and cultural disparities. In this sense, synergy, as a quantity individually adjusted to the expectations of the merging companies, allows for the measurement of the cooperative nature of transactions, reducing the impact of other factors that are more difficult to measure. The condition for this assumption is that synergy occurs when it exceeds the acquisition premium paid with transaction costs. This is in line with the purpose of the merger, which leads to an increase in the value of the company, after the merger, due to the creation of the so-called synergistic effect - additional value for integration. The synergistic effect is represented by the following formula:

$$S = AB - (A + B) > 0$$

where:

S - synergistic effect, AB - value after M&A, A - company "A" value before M&A, B - company "B" value before M&A.

The synergistic effect is effective when its value is higher than the sum of the values of the companies before the merger. The generated growth can be either one-sided (when generated from one of the companies) or two-sided (when generated from both companies mutually). It happens, however, that it is not implemented due to the intentional actions of one of the companies. It is a manifestation of the adopted strategy or mistakes, e.g., underestimating or overestimating value (Kiymaz, 2020). Therefore, the negative value results from the deliberate nullification of the potential of one of the companies, e.g., as part of a hostile takeover, or results from the occurrence of additional unforeseen transaction costs that exceed additional revenues. It can also be a result of mistakes made at the planning or implementation stage.

A value of financial synergy depends on the type of merger transaction, i.e., a merger or acquisition. The merger can be carried out both in the form of consolidation, in which one of the two entities is established and the other loses legal personality, and of incorporation, in which both enterprises lose their legal personality and a new enterprise is created in their place. A takeover is associated with the transfer of control, i.e. its transfer to another enterprise (the acquiring company), while maintaining the existence of both enterprises (Toborek-Mazur, Partacz, 2022a). It occurs when one company makes a successful bid to take control or acquire another. Table 2 presents a division of synergy according to its type - positive, neutral or negative (index), which affects the synergistic interdependence and a creation of synergy.

TABLE 2. SYNERGISTIC INTERDEPENDENCE IN RELATION TO M&A

Type of financial synergy (index)	Value in M&A (before and after transaction)	Synergistic interdependence	Type of M&A transaction
Positive	AB > A + B	A mutual growth (two-sided) generated both from company "A" and "B" (pure interdependence)	Consolidation
Positive	AB > A + B	A unilateral (one-sided) growth, the "AB" surplus results from the increase in the value of the acquired company	Incorporation
Positive	AB > A + B	A unilateral (one-sided), the "AB" surplus results from the increase in the value of the acquiring company	Incorporation or takeover
Neutral	AB = A + B	Allocation of excess cash or an attempt to restrict competition, mainly within the group of companies	Takeover
Negative	AB < A + B	A negative value is a result of identifying additional costs over additional revenues	Consolidation Incorporation Takeover
Negative	AB < A + B	A negative value is a result of the lack of strategy development, ineffective management or individual ambitions	Consolidation Incorporation Takeover
Negative	AB < A + B	A negative value is a result of the intentional actions of the selected company (to take control)	Consolidation Incorporation Takeover

Source: author's own studies based on (Kozłowska-Makóś, 2015).

Determining the synergy requires comparing the complex effect achieved through the combination with the base effect, i.e., with the level that would be achieved if the analyzed companies did not cooperate. If the goal maximization criterion is adopted, positive synergy will be achieved only when its value is higher than 0. Achieving it in an optimal time perspective is possible due to changes in revenues, e.g., sales value and expenditures (costs) in relation to the base variant, before the merger (Bućko, 2010).

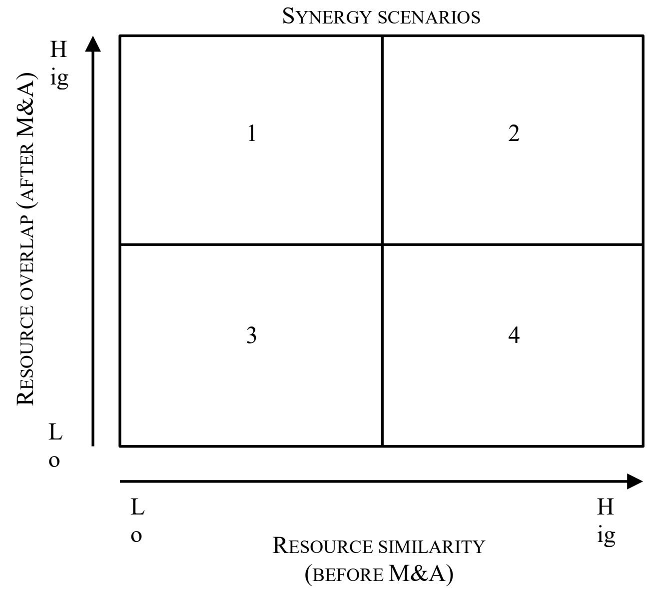
A negative index means that there was no positive synergy (dyssynergy). In the case of balancing the synergy with the base value, there is (asynergy). Nevertheless, in the literature it is assumed that synergy understood as an added value for an enterprise has a positive value and, in this context, it is most often analyzed (Stern, Hutchinson, 2011, p. 184).

The type of financial synergy affects the synergistic interdependence, which is shaped by the type of transaction (merger or acquisition), which in turn results from the growth strategy adopted by the companies. However, not every strategy brings the expected result. Based on a study conducted by McKinsey & Company on a group of 160 companies, it was noticed that in as many as 70% of revenues, results similar to the assumed ones were not achieved. This may result from miscalculation of the expected synergy, for example by ignoring or underestimating customer losses, incorrect estimation of growth in relation to overall market growth and competitive dynamics or inappropriate cost assessment of technology integration (McKinsey, 2004). The measurement of synergy is a key element in the success of a merger transaction. Among the significant problems with implementation of revenue synergy stands out setting realistic goals, changing salesforce behaviour, executing across functions and measuring financial impact (Chartier, Liu, Raberger, Silva, 2018).

The issue of synergy in an enterprise can be illustrated by the relationship between the similarity of resources at the disposal of enterprises (before the merger) and the degree of overlap between these resources (after the merger). It is based on the functioning of the supply chain between enterprises. Figure 2 presents 4 possible scenarios taking into account the implications of assessing the business cooperation.

Each scenario affects the scope of synergy achieved by enterprises as part of M&A. It follows that the effectiveness of synergies will be defined by the scope of their optimization, i.e., the adjustment of available resources and processes, before and after the merger. In the first variant, the expected synergy is insignificant. The low degree of pre-merger similarity and the high post-merger resource and process overlap suggests that there was a merger of competing companies producing competing goods but taking into account a different technology or manufacturing methods. This kind of synergy is risky because if the processes are mismatched (e.g., duplicating, which will extend the supply chain), the M&A may fail at transaction stage. There would not be positive synergy due to low revenue and cost synergies. This type of synergy is expected if competition is restricted in the market. The second case shows a high degree of similarity of resources and processes before the connection and their low correlation after the connection.

Figure 2. Synergistic interdependence and similarity of resources before and after M&A



Source: author's own studies based on (Das, 2020).

This may be the case in new markets where the company producing similar products has not been active so far. It is most often a manifestation of geographic expansion, which can be used to strengthen the portfolio. High-cost synergy may occur through the interconnection of the supply chains between companies. At the same time, there may be a decrease in revenues in the short term as a result of the duplication of already produced resources, which in turn result from the product relationship of the merging enterprises. The third variant implies a low degree of similarity of resources and processes before the merger and a high degree of their correlation after the merger. It may be a result of M&A transactions in non-complementary sectors, where it will be necessary to create a new supply chain or adjust the existing one between companies. This scenario may be unfavorable because it requires high costs and low revenues. Such synergy may be justified in a long-term perspective, in which the company wants to diversify its product range or use it to extend the supply chain and to reduce costs in the future. The fourth variant assumes a high degree of similarity of resources and processes before the merger and a low degree of their overlap after the merger. In such a case, there may be positive synergy in the short term as there will be no multiplication of processes and resources. This may result from using the available supply chain and adapting it to the production of a new, but complementary product. Thus, it will enable a smooth transition of processes in the course of the connection procedure, with minimal expenditure at the same time. Such a scenario may lead to the creation of revenue and cost synergies, due to the portfolio expansion and product expansion (Q3).

V. Conclusions

An effectively conducted M&A process should bring benefits in the form of synergy, which, due to changes in various areas of the company's operations, may positively affect the increase in its value (Marcinkowski, 2020, p. 20). Value growth is a benchmark for achieving specific long-term financial and non-financial goals. A key factor for synergy is to evaluate whether merged firms improve their performance (profitability and growth), relative to their competitors, after takeovers.

Financial investors will consider the issues of synergy differently than strategic investors. A financial investor will be geared towards achieving specific financial goals through a merger and acquisition. It can be both the achievement of higher revenues and the reduction of already existing costs. A strategic investor will be guided by the need to limit competition and open up to new markets. Regardless of the approach, it should be remembered that before actually carrying out the M&A procedure, it is necessary to assess the degree of synergy implementation. Most often, it is possible after about 12 months from the end of the transaction. Measurement uses not only synergy but also other measures including the company's share price, accounting measures such as sales, profits, return on assets, return on investments or senior managers' subjective assessments of performance (Tennant, 2022).

Not every business combination is beneficial. Synergy is then effective if both parties can compare expectations with opportunities. The potential deviation between these values may affect the final shape of not only the synergy valuation, but most of all the validity of the combination. Therefore, prior to the merger, it is required to conduct a thorough market research and the possibility of obtaining positive synergy. People who are in charge of the process of financial analysis and integration of the merger must verify the necessary data and indicators. These data and indicators should be comparable and reflect the financial condition as faithfully as possible (Q4). It requires both cost synergies and constant monitoring of the source of income (Daume, Lundberg, Montag, Rudnicki, 2022). The development of appropriate organizational mechanisms and transparency in the assessment of synergistic abilities between the merging enterprises should help in assessing the expected synergy.

VI. References

Bauer F., Friesl M. (2022), Synergy Evaluation in Mergers and Acquisitions: An Attention-Based View, Journal of Management Studies, https://doi.org/10.1111/joms.12804 (access date: 10.11.2022).

Bućko J. (2010), Podstawy analitycznej metody badania efektów synergetycznych, Problemy eksploatacji - Maintenance Problems 4-2010, pp. 215-224,

BZ WBK (2011), M&A Market. Structure, volatility and acquisitions premium, Bank Zachodni WBK, Thomson Reuters, https://www.pb.pl/atta/1821-raport-w-jezyku-angielskim.pdf (access date: 09.11.2022).

Copeland T., Koller T., Murrin J. (1997), Wycena: mierzenie i kształtowanie wartości firm, WIG-Press, Warszawa.

Chartier J., Liu A., Raberger N., Silva R. (2018), Seven rules to crack the code on reveune synergies in M&A, McKinsey&Company, https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Marketing%20and%20Sales/Our%20Insights/Seven%20rules%20to%20crack%20the%20code%20on%20revenue%20synergies%20in%20MA/Seven-rules-to-crack-the-code-on-revenue-synergies-in-M-and-A.pdf (access date: 09.11.2022).

Czerkas K. (2018), Przejmowanie przedsiębiorstw, zorganizowanych części przedsiębiorstw oraz nieruchomości. Fuzje przedsiębiorstw. Aspekty prawne, finansowe, podatkowe i organizacyjne, ODDK, Gdańsk.

Damodaran A. (2005), The Value of Synergy, Stern School of Business, https://pages.stern.nyu.edu/~adamodar/pdfiles/papers/synergy.pdf (access date: 10.11.2022).

Das S. (2020), The synergy Edge: Strategic Acquirer vs. Financial Investor, https://www.linkedin.com/pulse/synergy-edge-strategic-acquirer-vs-financial-investor-das-sourav (access date: 15.11.2022).

Daume P., Lundberg T., Montag A., Rudnicki J. (2022), The flip side of large M&A deals, McKinsey, https://www.mckinsey.com/capabilities/m-and-a/our-insights/the-flip-side-of-large-m-and-a-deals (access date: 17.11.2022).

DePamphilis D. (2017), Mergers, Acquisitions and Other Restructuring Activities, Academic Press, San Diego.

Domagalska-Grędys M. (2013), Czy efektom synergii nie sprzyja indywidualizm? Przykład gospodarstw zrzeszonych, Roczniki Ekonomiczne Kujawsko-Pomorskiej Szkoły Wyższej w Bydgoszczy 6, pp. 199-210.

Evans F., Mellen Ch. (2010), Valuation for M&A: Building Value in Private Companies, Wiley & Sons, Hoboken.

Frąckowiak W. (2009), Fuzje i przejęcia, Polskie Wydawnictwo Ekonomiczne, Warszawa.

Holtström J., Anderson H. (2020), Exploring and extending the synergy concept - a study of three acquisitions, Journal of Business & Industrial Marketing, Vol. 36, No. 13, pp. 28-41, https://doi.org/10.1108/JBIM-09-2020-0420 (access date: 09.11.2022).

Hong Diep B., Tran Anh T. (2020), Synergies in merger & acquisition: A case study of SMEs in Vietnam, Journal of Project Management 5 (2020), pp. 189-200.

Karenfort S. (2011), Synergy in Mergers and Acquisitions, Josef Eul Verlag, Siegburg, 2011.

Kiymaz H., Why Mergers and Acquisitions Fail, and What to do About It?, https://crummer.rollins.edu/center-for-advanced-entrepreneurship/why-do-mergers-and-acquisitions-fail-and-what-to-do-about-it/ (access date: 25.11.2022).

Korpus J. (red.) (2014), Fuzje i przejęcia, Wydawnictwo Profesjonalne PWN, Warszawa.

Kozłowska-Makóś D. (2015), Efekt synergii w procesach łączenia się kapitału (wybrane problemy), Zarządzanie Finansami i Rachunkowość 3 (2) 2015, pp. 17-27, https://sj.wne.sggw.pl/pdf/ZFIR_2015_n2_s17.pdf (access date: 10.11.2022).

Machała R. (2011), Zarządzanie finansami i wycena firmy, Oficyna Wydawnicza Unimex, Wrocław 2011.

Maćkowiak E. (2012), Fuzje i przejęcia w kreowaniu wartości przedsiębiorstwa, Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 737, Finanse, Rynki Finansowe, Ubezpieczenia nr 56, pp. 119-135, http://www.wneiz.pl/nauka_wneiz/frfu/56-2012/FRFU-56-119.pdf (access date: 10.11.2022).

Marcinkowski B. (red.) (2020), Przewodnik po transakcjach fuzji i przejęć, Wolters Kluwer, Warszawa.

McKinsey (2004), McKinsey on Finance, Where merger go wrong, Perspectives on Corporate Finance and Strategy, https://www.mckinsey.com/client_service/corporate_finance/latest_thinking/mckinsey_on_finance/~/media/mckinsey/dotcom/client_service/corporate%20finance/mof/pdf%20issues/mof_issue_10_winter%2004.ashx (access date: 17.11.2022).

Mellen Ch., Evans F. (2018), Valuation for M&A. Building and Measuring Private Company Value, Wiley & Sons, Hoboken.

Mikołajczyk K. (2011), Kreacja wartości w procesach fuzji i przejęć w sektorze bankowym, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu nr 171, https://dbc.wroc.pl/Content/73750/Mikolajczyk_Kreacja_Wartosci_w_Procesach_Fuzji_i_Przejec.pdf (access date: 10.11.2022).

Philips M. (2022), Desperately Seeking Synergy: An Often Promised, Rarely Delivered Outcome, The Coastal Business Journal, Vol. 7, No. 1, https://digitalcommons.coastal.edu/cbj/vol7/iss1/2 (access date: 09.11.2022).

Stern E., Hutchinson M. (2011), The Value Mindset: Returning to the First Priniciples of Capitalist Enterprise, Wiley & Sons, Hoboken.

Świetla K., Toborek-Mazur J. (2021), Verification of the Accuracy of Mergers and Acquisitions in Poland in 2012-2020, listopad 2021, International Business Information Management Association (IBIMA).

Tennant F. (2022), Ultimate goal: value creation in M&A, https://www.financierworldwide.com/ultimate-goal-value-creation-in-ma#.Y3ZT54KZNKd (access date: 17.11.2022).

Toborek-Mazur J., Partacz K. (2022a), Ewaluacja efektu synergii w transakcjach fuzji I przejęć w czasie pandemii COVID-19, Zeszyty Teoretyczne Rachunkowości, Vol. 46, Nr 1, Warszawa, pp. 101-118.

Toborek-Mazur J., Partacz K. (2022b), Impact of the COVID-19 on creating business strategies in mergers and acquisitions, ASEJ - Scientific Journal Bielsko Biała School of Finance and Law, Vol. 26 No 1 (2022), Bielsko-Biała, pp. 25-32.

Toborek-Mazur, J.; Partacz, K.; Surówka, M., (2022), Energy Security as a Premise for Mergers and Acquisitions on the Example of the Multi-Energy Concern PKN Orlen in the Face of the Challenges of the 2020s. Energies 2022, 15, 5112. https://doi.org/10.3390/en15145112

.

WSFiP conducts research and educates students in the following fields:

Finance and Accounting
- Treasure Administration
- Banking
- Corporate Finance
- Accountancy
- Accounting and Finance in Public Sector Institutions
- Corporate Accounting and Controlling
- Audit
- Management and Finance in Real Estate

Cyberspace and Social Communication
- Communication and Image Creations
- Safety in the Cyberspace

Law
- this program gives strong legal foundations to undertake further professional training for judges, prosecutors, atorneys, notaries, bailiffs.

Administration
- Fiscal Administration
- Local Government Administration

Logistics
- this program gives good preparation for work in logistics companies as well as in other economic and administrative units.

Internal Security
- Administration and Management in Security
- Security and Public Order
- Security and Development in Euro-region
- Security of Information and Information Systems
- Security in Business
- Criminology and Investigative Studies
- Criminology and Forensics
- Protection of People and Property
- Public Order Agencies

Information Technology
- Databases and Net Systems
- Computer Graphics and Multimedia Techniques
- Design of Applications for Mobile Devices
- IT Services in Public Administration Units

Postgraduate courses
- Administrative studies
- Fiscal Administration
- Law and management in health service