Valuation of the target company in the process of the mergers and acquisitions using discounted cash flow method

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Abstract: Mergers and acquisitions are a used and respected alternative to a company’s organic growth and they are a significant channel of capital redistribution. The actual process of company combinations is performed in more possible forms and it is affected by a number of factors of local, regional, national and global character, which may not lead to a successful end. It is an investment that does not occur in a company’s life very often. The process can be divided into three stages: preparation and plan; implementation; and integration. The key factor of the first stage is the establishment of the value of the target company as a basis for successful negotiations. The implementation stage is a stage of analyses. At the third stage the acquiring business manages the demanded changes in the acquired business. The aims of this paper are to analyse valuation methods and outline the procedure for using the discounted cash flow method adapted to the conditions of the Czech M&A market. Especially risk factors and their reflection in the valuation method are considered.

Key-Words: mergers and acquisitions; planning; implementation; integration; due diligence; target firm; methods of valuation; discounted cash flow method;

1 Introduction
The transformations of enterprises are more broadly referred to as business combinations. They are strategic decisions in the life of a business affected by a larger number of factors of local, regional, national and even global character. A business combination according to US accounting principles is defined as a transaction through which an entity obtains control of a business. According to Chinese regulations, a group of businesses is formed when an entity obtains a substantial influence, i.e. when a business owns 20 and more percent of voting rights of another business. A business combination should bring an increase in the value for owners thanks to two basic approaches referred to as asset exploiting and asset augmenting. It involves not only capital transactions but also transformation processes which include complex sets of assets and liabilities of the participating businesses. The economic practice uses terms business combinations or mergers and acquisitions (M&A) [23]. Basic types of M&A, implemented with the purpose of business expansion, obtaining control or a substantial influence, changes in the ownership structure, demerger and sale of assets, are summarized in Tab. 1.

The Czech trade law [24] defines a merger as a combination in which one or more companies cease to exist without liquidation and their equity, including rights and duties following from labour-law relations, are transferred to another existing or a newly established successor company. It means this is a legal combination which requires an agreement of all participating companies. On the other hand, an acquisition is a transaction in which one company (the bidder) gains a decisive share of the basic equity of another (target) business. The acquisition can have a character of a capital investment (capital acquisition) or a property acquisition, in which the entire company or its part is purchased. By this a group of companies connected by their capital arises and the legal position of individual companies does not change [2]. Unless this is a hostile takeover, also a legal takeover can take place in case of property acquisition or capital acquisition by one owner [4].
The differences between mergers and acquisition will mainly stand out in accounting procedures [1]. Similarly, the European law (Directive 2005/56/EC of the European Parliament and of the Council of 26 October 2005 on cross-border mergers of limited liability companies) defines a merger as a process in which one or more companies, on being dissolved without liquidation, transfer all their assets and liabilities to another existing or a new company, in exchange for the issue of securities or shares representing the capital of the successor company and, if applicable, a cash payment not exceeding 10% of the nominal value of those securities or shares.

Table 1: Basic transactions referred to as M&A

<table>
<thead>
<tr>
<th>Mergers</th>
<th>A combination of two or more businesses into one successor company.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint venture</td>
<td>A combination of two or more businesses with the same proportion of voting rights.</td>
</tr>
<tr>
<td>Tender offer</td>
<td>A public (direct) offer to stockholders of the target firm to tender their stock for sale.</td>
</tr>
<tr>
<td>Premium buy-back</td>
<td>Purchase of stocks of a significant stockholder for a price increased by the premium.</td>
</tr>
<tr>
<td>Proxy repurchase</td>
<td>An effort of a part of stockholders to gain representation in the board of directors at the general assembly on a proxy basis.</td>
</tr>
<tr>
<td>Standstill agreement</td>
<td>A voluntary contract which binds a bought-out stockholder not to try to take control over the business in the future.</td>
</tr>
<tr>
<td>Anti takeover amendments</td>
<td>A withdrawal or a raised price of a business takeover.</td>
</tr>
<tr>
<td>Going private</td>
<td>The entire basic equity of the business is bought by a small group of stockholders.</td>
</tr>
<tr>
<td>Share purchase</td>
<td>A business acquires its shares back by a tender offer, purchase in the free market or buy-back. The objective is to increase the value of shares for the current shareholders.</td>
</tr>
<tr>
<td>Leveraged buyouts</td>
<td>Purchase of a business by a small group of investors which is financed by means of debt instruments, usually a purchase of their own shares in the stock exchange.</td>
</tr>
<tr>
<td>Exchange offer</td>
<td>An exchange of one type of securities for another, common stocks for bonds. It means a change in capital structure without a change in investments.</td>
</tr>
<tr>
<td>Divestiture</td>
<td>A sale of a part of business to a third party. The business acquires cash.</td>
</tr>
<tr>
<td>Spin-off</td>
<td>A new legal entity arises – its shares are divided in proportion to the amount of owned shares among the shareholders of the parent company. A specific form is split-up, i.e. a division of the entire business by a series of spin-offs among shareholders – the business is dissolved.</td>
</tr>
</tbody>
</table>

Source: authors

2 Problem Formulation

As follows from the definitions of acquisitions and mergers, also the difficulty of negotiations and the combination process itself will depend on the type of M&A and the conditions of the external and internal environment [6]. The perception of M&A risks will be different in a company which wants to gain an ownership interest or the entire business (acquirer, bidder) and different in a company which is to be acquired (target). The entire process is usually facilitated by a consulting agency (auditing, legal, taxation, investment, accounting, financial agency, etc.) and is divided into three fundamental phases: planning, implementation and integration [17, 18]. The M&A process is illustrated in Fig. 1. Analyses of causes of financial crises indicate creations of price bubbles as a consequence of excessive risk taken by investors and provision of unsecured credits for these trades. Ineffective liquidity and failure of debtors leads to a drop in asset prices, fall of market and transition of problems from the financial sector to real economy.
negotiations on purchase and sale. Due diligence is sometimes compared to an early warning system against an unfavourable trading transaction. At the end of the implementation phase, the negotiations on the transaction conditions have been concluded reflecting its real values as precisely as possible (at this stage, the acquirer has relatively complete information about the transaction, the evaluation of partial activities and preliminary projections).

Therefore, the final offer can be made by the bidder and the share purchase agreement (SPA) can be prepared.

At the third stage (post merger integration – PMI) the acquiring business manages the demanded changes in the acquired business. The actual merger of two or more organizational units into one occurs. This process is the vital phase as the M&A objectives are implemented. The key document is the integration project which is based on the results of the implementation phase and is usually controlled by a member of the TOP management and a board consisting of managers of participating companies. By concluding the PMI the transformation process of the business is finished and the business is ready for gradual meeting of the set objectives. There is the assumption that the expected synergic effect will be used to generate a premium for the target firm and also a higher value of the successor firm. However, this assumption need not be met and then the merger is unsuccessful and drains the owners’ capital. According to a study by KPMG [11], up to 83% of all mergers and acquisitions do not increase the shareholders’ value of a business and over a half of all M&A decrease the value. Similarly, the PwC study [16] says that over 64% of M&A do not meet their objectives.

The reason for this ‘acquisition paradox’ is an underestimation of risks occurring during the three mentioned phases of the transformation process.

### 2.1 M&A - planning
- strategic risk arising from an optimistic estimate of M&A objectives and the changes in initial external and internal conditions during the transformation implementation,
• not using potential integration challenges which can be inferred from the trend of M&A development and foreign direct investment (FDI) – see fig. 2,
• overestimation of the significance of synergies,
• market risk determined by the development of an assumed demand,
• selection risk related to the type of transaction (domestic – cross-border),

Figure 2: Development of FDI and M&A in Czech Republic in period 2008 – 2013

<table>
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<tr>
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<tr>
<td>2008</td>
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<td>2009</td>
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<td>2010</td>
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<td>2011</td>
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<td>2012</td>
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<tr>
<td>2013</td>
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</tbody>
</table>

Source: UNCTAD 2014

2.2 M&A - implementation
• due diligence did not concentrate on essential issues,
• trade risk determined by changes of market conditions (loss of a key customer, failure of distributors, competition, price pressures, failure of a supplier, drop in demand),
• financial risk following from a payment of an inadequately high price for the target firm, originally not found liabilities, hidden taxes, additional expenses for M&A, drop in the value of the target firm, a lower than expected cash flow,
• legal risk determined by cross-border resistance, credit contracts, not concluded legal processes, unclear trade agreements, regulatory measures, past first liabilities,
• tax risk following from hidden tax liabilities or changes of tax regulations,

• territorial risk determined by regulatory, economic, financial, political, technological and socio-cultural factors in the region of the target firm,
• expenditure risk [19] following from expenditure calculations of the actual process of M&A,

2.3 M&A - integration
Risks from post merger integration threaten the operation of the new business in the real time and

• research risk determined by a low degree of results and insufficient motivation of research employees,
• technical risk consisting in a low quality of devices, equipment and technologies, management methods of production processes, skills and knowledge,
• environmental risk which is caused by environment polluting processes,
• human resources risk determined by employees’ insecurity, loss of key employees, unverified work procedures, unsuitable organization structure or management methods,
• organisational culture risk following from difficulty in integrating the organizational culture, different work regulations, principles and ethics.
thus the success of the M&A. They cause troubles in individual fields of the integration project. An inclusion of a new entity is a matter of the managerial team in cooperation with the other employees. The main risks are caused by differences in strategic and operational management, methods of organization and administration, trade and marketing, financing, information technologies, production processes, use of human resources and organizational culture. Difficulties with including the target firm can be caused by risk factors, such as unverified technologies, insecurity of the workforce (low qualifications, insufficient knowledge, skills, loss of employees), negative impact of the media, incompatible organizational culture, unsuitable production profile, etc.

It is difficult to implement integration and at the same time provide for an everyday operation of the business. This is related to the right timing of the integration. A gradual inclusion of the target firm should prevent any decrease in performance, customers from switching to competitors or competition from taking control of the market segment. The key role in the process of a successful integration is played by the internal communication among the managements of participating companies and between employees and management. Employees have to participate in the decision process concerning the objectives and steps of the integration.

2.4 Risk analysis
To analyse the risks identified within the process of mergers and acquisitions, some of the following methods can be used [10, 13]:
- root cause analysis,
- cause and effect analysis (Ishikawa Fishbone diagram), system and process diagrams, force field diagrams,
- risk probability description (probability distribution, expected values, risk quantification), risk assessment using scales, probability impact matrix,
- statistical and simulation analysis (Monte Carlo simulation, Markov analyses, Bayesian inference and Bayes networks, PERT method),
- analysis using scenarios and diagrams (scenario analysis, fault tree analysis, event tree analysis, cause-consequence relationship, bow tie analysis),
- decision support analyses (decision tree analysis, cost/benefit analysis, multi-criteria decision analysis).

In the risk analysis we differentiate two forms: a qualitative and a quantitative analysis. The qualitative analysis assesses the possible impact of identified risks on M&A objectives using scales or a rough numerical value. The analysis includes the structure of risks, exploration of the relations inside and outside the process of cause and effect analysis, e.g. by the root cause method or using system and process diagrams. The result is the first establishment of the priority of risks or also an estimate of the zone of the expected risk impact before the other (quantitative) analysis.

The quantitative analysis aims to evaluate the impact of individual risks on expected results of M&A directly or indirectly while respecting the additional costs. Based on the extent of the influence on the total risk of the transformation process, these are divided into priority TOP risks identifying unacceptable risks, acceptable risks (for monitoring) and remaining risks to be solved after the TOP risks are eliminated. The results of the quantitative analysis are then criteria for M&A to be refused or the combination process to be stopped, or the risks to be handled and measure proposals reflected in the planning, implementation and integration of M&A.

One of the risks appearing at the very beginning of decisions on a merger or acquisition is an incorrect valuation of the companies entering the transaction and its further precision within the due diligence process [22]. The starting point is the target company, whose market value is established using a suitable valuation model, independent from the prepared merger. The procedure of the valuation of merging entities and the establishment of the purchase price is illustrated in Fig. 3.

![Figure 3: Process of enterprise valuation and selling price calculation](public_domain_information specific_market_and_competitor_analysis selling_price_of_the_seller)

<table>
<thead>
<tr>
<th>Public domain information</th>
<th>Specific market and competitor analysis</th>
<th>Selling price of the seller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal analysis</td>
<td></td>
<td>Greed and fear</td>
</tr>
<tr>
<td>Net asset method</td>
<td>Capitalised earnings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discounted CF method</td>
<td></td>
</tr>
</tbody>
</table>
3 Problem Solution

To establish the market value of a target firm, three methods are proposed in the diagram in fig. 2 (net asset value, capitalised earnings method, discounted cash flow method). When using the discounted cash flow (DCF) method, which is described by equation (1) is necessary to define all components of risk that significantly affect the market value of the target company [3]. Role here also plays a premium that acquirers are willing to give the owners of the target company. The components of risk are reflected in the discount rate, which represents weighted average cost of capital (WACC).

\[ V_T = \sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} \]  

(1)

\[ WACC = \frac{E}{E+D} + \frac{D}{E+D} \]  

(2)

where:
- \( V_T \) - Value of target firm
- \( FCFF \) - Free cash flow to firm
- \( WACC \) - Weighted average cost of capital
- \( t \) - Number of years (1 to \( n \))
- \( E \) - Equity
- \( D \) - Debt
- \( r_E \) - Cost of equity
- \( r_D \) - Weighted arithmetic average of the interest rate paid on borrowed capital

The return rate demanded by investors \( r_E \) will be established using CAMP\(^3\) model, which shows the relationship between the expected risk rate and the expected return. The investor takes risks with each investment – the risks have to be compensated for by an adequate return.

\[ r_E = r_f + \beta \cdot r_b + r_{se} + r_{cm} + r_L + r_{sr} \]  

(3)

\[ r_b = r_m - r_f \]  

(4)

where:
- \( r_f \) - Risk-free rate of return
- \( \beta \) - Deviations of systematic risk from the risk premium of the capital market
- \( r_b \) - Basic risk surcharge (return premium for the risk of investing in shares)

\( r_m \) - The expected rate of return of the capital market
\( r_{se} \) - Risk surcharge for small enterprises
\( r_{cm} \) - Surcharge for market capitalization
\( r_L \) - Share liquidity risk
\( r_{sr} \) - Surcharge for other specific risks

The risk-free rate of return \( (r_f) \) is established at the level of the interest rate of state bonds, e.g. according to Czech National Bank statistics, the return of ten-year bond in 2010 was (Maastricht criterion) 3.89%.

If data from a capital market is available, we can estimate the regression coefficient \( \beta \) based on an analysis of the temporal series of return rate of shares of the valuated business \( (r_i) \) and the return rate of the market (stock index) using equation

\[ \beta = \frac{\text{cov}(r_i, r_m)}{\sigma(r_m)} \]  

(5)

If data from a working public capital market is unavailable, we can use a simple model based on a set of selected factors which is based on the level of systematic trade (business) and financial risk. For example factors used in the methodology by Maříková and Mařík [12] assessed in tab. 2.
Table 2: Example of factors for $\beta$ coefficient estimate

<table>
<thead>
<tr>
<th>Scale for risk rate evaluation</th>
<th>0.5</th>
<th>1</th>
<th>1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity to changes of the economic cycle</td>
<td>minimum</td>
<td>develops with the cycle</td>
<td>high</td>
</tr>
<tr>
<td>Negotiation power with suppliers</td>
<td>more on the side of the business</td>
<td>balanced</td>
<td>more on the side of the suppliers</td>
</tr>
<tr>
<td>Negotiation power with customers</td>
<td>more on the side of the business</td>
<td>balanced</td>
<td>more on the side of the customers</td>
</tr>
<tr>
<td>Proportion of fixed expenses in total expenses</td>
<td>low</td>
<td>average</td>
<td>high</td>
</tr>
<tr>
<td>Debt rate (D/E)</td>
<td>lower 40%</td>
<td>40–80%</td>
<td>higher 80%</td>
</tr>
<tr>
<td>Size of the business</td>
<td>large</td>
<td>medium</td>
<td>small</td>
</tr>
<tr>
<td>Territorial diversification</td>
<td>considerable</td>
<td>medium</td>
<td>small</td>
</tr>
<tr>
<td>Product diversification</td>
<td>considerable</td>
<td>medium</td>
<td>small</td>
</tr>
</tbody>
</table>

Source: Maříková a Mařík, 2001

The β estimate will then be the weighted arithmetic average:

<table>
<thead>
<tr>
<th>Risk level</th>
<th>Frequency</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>1.0</td>
<td>2</td>
<td>2.0</td>
</tr>
<tr>
<td>1.5</td>
<td>5</td>
<td>7.5</td>
</tr>
<tr>
<td>In total</td>
<td>8</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Coefficient $\beta = 10/8 = 1.25$

The expected rate of return of the capital market ($r_m$) will be established as a sum of the premium for developed stock markets ($r_{p,USA}$) and the premium of the country ($r_{pE}$). The USA has been chosen as an example of a developed market and the premium is calculated as a difference of the rate of return of stocks and bonds during the past 5 years, e.g. $r_{p,USA} = 4.8\%$ risk-free rate $r_{USA} = 3.9\%$. The country risk can be derived from the Inward FDI Potential Index, which allows us to establish the attractiveness of a specific country based on selected economic factors [21], or CASS MARC M&A Maturity Index [5], which comprises six partial factors of risk. Table 3 shows the values of the index for the Canada and USA (mature markets), Czech Republic and Poland (transitional markets), Ukraine (emerging markets).

Table 3: CASS MARC M&A Maturity Index

<table>
<thead>
<tr>
<th>Country</th>
<th>Factors</th>
<th>Regulatory</th>
<th>Economic</th>
<th>Financial</th>
<th>Political</th>
<th>Technological</th>
<th>Socio-cultural</th>
<th>Index ($r_{pE}$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td></td>
<td>1.8</td>
<td>1.7</td>
<td>1.8</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td>1.5</td>
<td>1.9</td>
<td>2.0</td>
<td>1.3</td>
<td>1.0</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Czech Republic</td>
<td></td>
<td>2.8</td>
<td>2.1</td>
<td>2.8</td>
<td>2.0</td>
<td>1.7</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Poland</td>
<td></td>
<td>3.3</td>
<td>2.3</td>
<td>2.7</td>
<td>2.0</td>
<td>2.3</td>
<td>1.0</td>
<td>2.3</td>
</tr>
<tr>
<td>Ukraine</td>
<td></td>
<td>3.8</td>
<td>3.9</td>
<td>3.3</td>
<td>4.0</td>
<td>2.0</td>
<td>2.0</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Source: CASS 2011

The estimate of the risk premium of a country will change in dependence on the country rating and the effect of the country risk on the risk of the business. The coefficient of the country risk effect on the business risk ($A$) will be evaluated according to the conditions of the external environment within the range of 0 to 1. In our example, the coefficient is significantly influenced by the share of exports in total production enterprise. The enterprise exports 40% of its product, therefore we choose $\lambda = 1 - 0.4 = 0.6$ and thus $r_{pe,CR} = 0.6 \cdot 2.1 = 1.26\%$.

The surcharge for the size of the business $r_{se}$ is estimated according to INFA model [7] in dependence on the value of payable resources (owned capital, bank loans and bonds) at an amount of 1.1%.

The value of the risk surcharge for market capitalization is determined by the ratio of the book value and the market value of the target firm. It is established based on the values achieved in the field of activity of the business. In our example, we will use the results of the economic situation analysis of industrial enterprises in the Czech Republic in 2010: $r_{se} = 0.5\%$. 

...
The stock liquidity risk of a specific business is derived from activities in the market; in our case, we choose the value of \( r_L = 0.8 \% \) in compliance with the INFA methodology. The surcharge for other specific risks (\( r_{sr} \)) is derived from deviations from means of qualitative and quantitative aspects of performance in the field of activity. In the Czech conditions, the specific risk in 2010 ranged between 2.04 and 3.59 \%. For our example, we will use \( r_{sr} = 2.76\% \). When equation (3) is used, the rate of return demanded by investors in business stocks is

\[
r_e = 3.89 + 1.25 (4.8 - 3.9 + 1.26) + 1.1 + 0.5 + 0.8 + 2.76 = 11.75\%
\]

The DCF model of the entity demands that expenditures for depths (\( d \)) are considered, established as a weighted arithmetic average of the existing interest rates paid by the business from the loaned capital. When the weights expressing the ratio between the owned and the depth were established and equation (2) was used, we achieved the value of the total risk (WACC), and used this in equation (1) to calculate the value of the target firm \( V_F \).

According to Figure 2 should be included in the value of the business the synergic effect and costs associated with the merger, which can be written mathematically as:

\[
NPV = S - C = PV_{AB} - (PV_A + PV_B) - PP_B + PV_B
\]

Expense for a merger is calculated as:

\[
C = PP_B - PV_B
\]

The net current value for owners of the successor company is then:

\[
NPV > 0, \text{ or } S > C = PP_B - PV_B
\]

The diagram in fig. 2 shows that the basis for the final price formation is the valuation of the target firm itself. However, there is no clearly set price [14] as it is different for each bidder, depending on what the acquirer intends to do with the target firm, what the acquirer’s financial situation is, whether the acquirer can invest some more capital in the target firm and thus achieve growth, or if some form of synergy will take place in the combined entity. Last but not least, the acquisition price also depends on risks of the merger or acquisition process. An acquirer should implement a merger if the expected net current value for owners of the combined entity will be positive or if the expected value of synergies exceeds the expenses. By expenses we mean the premiums the bidder will pay to the target firm owners over its value as an independent entity. It is a part of synergy which is shifted to the target firm.

\[
NPV < 0, \text{ or } S < C = PP_B - PV_B
\]

The synergic effect will be created by acquirers if they use a comparative advantage other businesses do not have and the management of the target firm itself is not able to use. The synergy from the combination will be usually manifested in the future by achieving higher returns, margins, better use of resources, lower expenses, etc. Moreover, the NPV has to reflect all risks which could threaten the economic gain for owners of the successor company or even turn it to a loss. The risk that the bidder will pay an amount to the target firm owners which will be higher than the market capitalization is mainly determined by motivation factors. Its elimination is up to the future negotiations within due diligence.

Expenses can include premium payable by the bidder to the target firm owners over its value as an independent entity. It is a part of synergy which is shifted to the target firm.

\[
NPV > 0, \text{ or } S > C = PP_B - PV_B
\]

If the merger is successful, shareholders of the target firm will share in the success. Shareholders of the bidding firm usually retain the same (NPV = 0), whereas the shareholders of the target firm may gain outstanding incomes. From an economic point of view, a typical merger is a net gain for investors but the competitive bidding fight together with an active protection of the target firm management, often shift a larger part of the gain to the selling shareholders’ side [8, 9].

### 4 Conclusion

The formation of the final M&A price is a complex matter; the final price will be affected by a high number of quantifiable and non-quantifiable risks. The diagram in fig. 2 shows that the basis for the final price formation is the valuation of the target firm itself. However, there is no clearly set price [14] as it is different for each bidder, depending on what the acquirer intends to do with the target firm, what the acquirer’s financial situation is, whether the acquirer can invest some more capital in the target firm and thus achieve growth, or if some form of synergy will take place in the combined entity. Last but not least, the acquisition price also depends on risks of the merger or acquisition process. An acquirer should implement a merger if the expected net current value for owners of the combined entity will be positive or if the expected value of synergies exceeds the expenses. By expenses we mean the premiums the bidder will pay to the target firm owners over its value as an independent entity. It is a part of synergy which is shifted to the target firm.

\[
NPV > 0, \text{ or } S > C = PP_B - PV_B
\]

Expense C used in the inequality (10) can be reliably estimated if the price of the target firm \( PP_B \) is paid in cash. If the payment is made in the form of stocks, the expenses (C) depend on the price of these stocks after the merger is implemented and the
risk of incorrect market valuation has to be considered. According to an analysis carried out by Thomson Reuters, M&A financed by cash achieved positive return (CAR)\(^4\) in contrast to the other ways of financing. If the merger is successful, shareholders of the target firm will share in the success. Shareholders of the bidding firm usually retain the same (NPV = 0), whereas the shareholders of the target firm may gain outstanding incomes. From an economic point of view, a typical merger is a net gain for investors but the competitive bidding fight together with an active protection of the target firm management, often shift a larger part of the gain to the selling shareholders’ side [8].

A significant role in the decision making process is played by the DCF model, which is able to express the value of the target company objectively and can take account of the expected economic effects as well as risks.

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References:


