Company valuation – modern day dilemmas

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Abstract — Valuation of a company is a very complex and challenging task. On one hand it requires orientation in the existing analytical tools and relies on selection of appropriate valuation methods, on the other, it is quite intuitive with respect to the choice of unquantifiable factors. Re-occurring financial downturns are frequently triggered by decisions taken upon partial or manipulated information. Therefore, it is necessary to conduct a critical review of the popular valuation methods and develop new, more optimal solutions for company valuation.

Index Terms: company valuation, valuation methods

I. INTRODUCTION

Valuation of a company i.e. a process in which the worth of a business is determined in monetary units, is a very challenging and complex task. It is hard to say whether it is a science based on mathematical tools or an art going beyond technical analysis of results obtained in the course of complicated calculations. To find the answer to this dilemma it is necessary to establish how to define the concept of company value, to determine value generators, and to identify the underlying goals of the valuation process. The next step is the selection of appropriate valuation methods which is very important because the selection may impact the final results. The paper is based on the analysis of the literature related to company valuation and is the first in a series of publications on company value management.

II. SELECTED CONCEPTS OF VALUE

The concept of company valuation can be found in almost all scientific disciplines, yet until now no satisfactory definition has been formulated. The essence of the problem lies in the fact that each discipline sees company value from a different angle and a great number of definitions that exist operate on a highly general level.

The most general description of company value is ‘the material worth of something’ or ‘all what is valuable and desirabel, what constitutes and object of people’s efforts' (Encyklopedia PWN, 2018). D. Zarzecki quoting R.C. Miles wrote ‘company value is a property of things with respect to which these things are perceived as more or less desirable, useful, respected or important’ (Zarzecki D., 1999). E. G. Flamholtz and Y. Randle define company value as ‘all what is most important for an organisation from the point of view of operations, workforce and customers i.e. all what is most valuable, desired and what must be protected by all means’ (Flamholtz E. G., Randle Y., 2017). All the definitions quoted above are of general nature and refer to the object of valuation (‘thing’, ‘all’) and the possible equivalent expressions of its price (‘value’, ‘property’).

Depending on the assumed approach which is related to the purpose of the valuation, D. Zarzecki differentiated between the following categories of value:

• economic value – the ability of assets to generate free monetary flows in the future,
• owner value – the measure of this value is the so called disposal value or asset disposal value,
• accounting value – the value of assets and liabilities in a balance sheet in accordance with accepted accounting standards,
• replacement value – the amount that an entity would have to pay to replace an asset at the present time with a new asset of the same kind (replication of assets),
• exchange value – the cost of replacement of fixed assets with assets of a different kind which can perform the same functions,
• market value (fair-market value) – in a narrow sense: value of goods or services in a turnover on an organised market e.g. stock market, in a broad sense – value of assets being the subject to turnover on every market,
• fair value – often arrived at by experts but generally understood as a value determined during loose negotiations between parties of transaction,
• investment value – present day value of a discounted stream of economic benefits according to a specific discount rate,
• intrinsic value – also referred to as fundamental value,
understood by the investor as ‘true’ or ‘real’ value of assets, and desired by fundamental analysts in order to confirm or question the current market value of an organisation,
• liquidation value – needed in a situation when all assets or their part is to be liquidated,
• goodwill – surplus of a company value over the sum of all material assets and identifiable intangible assets, in an income-based approach – capability of an organisation to generate income (expressed in monetary terms) above the industry average (Zarzecki D., 1999).

Since the Antiquity till the present day, various value theories have been in the centre of attention of economists. Some theories were closely linked to their contemporary social and political reality, others were of more timeless nature and these timeless theories laid conceptional foundations for new value theories. For the purposes of the present paper the definition of shareholder and stakeholder value was adopted. The greatest advocates of the shareholder value are Markovitz, Sharp, Miller and Modigliani (Panfil M., Szablewski A., 2016). However, the key work which helps to understand the concept of shareholder value is the work of A. Rappaport from 1986, in which the author questions the significance of profit in the evaluation of an organisation’s performance. Instead, the author proposes a developed concept of value management for the shareholders.

According to this theory the company value is the sum of its indebtedness and own equity, while the shareholder value is ‘the value of a shareholder’s part represented by own equity’. A. Rappaport emphasized that free money flows impact the company valuation by the capital market (Panfil M., Szablewski A., 2016).

The concept of stakeholder value highlights all groups of entities which have influence on an organisation or vice versa. Although this concept was developed back in 1963, it acquired a completely new meaning after the global financial crisis of 2007 – 2009. Many experts argued that one of the reasons of the crisis was excessive effort towards increasing the shareholder value and that exorbitant expected return on investment (ROI) triggered a great deal of unethical behavior and disregard for good practices and standards of risk and value management. Since that time there have been voices advocating the modification of organisational goals: from maximising the shareholder value to maximising stakeholder value and striving towards sustainable development (Freeman, R.E., 2010).

Whereas the concept of creating shareholder value is a concept of imbalance of goals as it only focuses on meeting objectives of the owners, the stakeholder value is a concept full of harmony in which the needs of owners as well as stakeholders are satisfied and as the result the company value increases.

III. VALUE SOURCES, VALUE AREAS, VALUE DRIVERS

In the literature on the subject, it is often emphasized that the primary aim of business activity is maximising value for the owners of the company, in other words maximizing the value of a company’s own equity which is possible thanks to a basic characteristic of equity i.e. its ability to duplicate. This ability stems from the very definition of equity which is described as:
• the wealth accumulated to assure further production,
• the outcome of production process destined to be used for further production,
• the sum being the object of a loan.

The capital base of an organisation does not only consist of the capitals contributed by owners, therefore the company value is not equal to the value of own equity. The owner value is determined through (1) assessment of the total value of a company less the values other than the outside funds of liabilities or (2) direct assessment of the value of the capital through discounting owner related cash flows with the cost-of-capital-rate. The total company value can be defined as the sum of area designating constituents in which areas the value may be created. The sum can be broken into:
• current value of future profits from operational activity under the forecast,
• value of the company not embraced by the forecast,
• side effects of financing,
• value of possessed monetary resources,
• value of assets not related to the operational activity.

From the perspective of value creation it is important to identify the so called ‘value drivers’ or ‘value generators’ upon which the company value depends. The most commonly used model was developed by A. Rappaport (Figure 1) which differentiates between three basic constituents of value: cash flow from operations, cost of capital, and the level of indebtedness. A. Rappaport also identified four kinds of value drivers:
• operational – sales growth rate, operating profit rate, income tax rate,
• investment related – investments in fixed and current assets,
• financial – cost of capital, structure of capital,
• general – related to the competitive advantage period (strategic period of growth or possibility to create value).

Each of the factors presented above is reflected in the income-related valuation methods based on the model of discounted cash flows linked to respective financing parties. On the basis of the Rapaport’s model, M. Panfil and A. Szablewski divided the company value drivers into: financial, marketing and intangible. In the 1990s heavy emphasis was on financial drivers, between 2001 and 2010 on marketing drivers, nowadays there is a shift towards intangible drivers such as intellectual capital, innovation, social trust and reputation of an organisation.
Detailed breakdown within each identified driver is shown in Figure 2.

**FIGURE 1. SHAREHOLDER VALUE CREATION NETWORK**

Shareholder value creation network

- Corporate Objective
  - Creating shareholder value
  - Shareholder return
    - 1. Dividends
    - 2. Capital gains

- Valuation Components
  - Cash flow from operations
  - Discount rate
  - Debt

- Value Drivers
  - Value Growth duration
    - 1. Sales growth
    - 2. Operating Profit margin
    - 3. Income tax rate
  - Working capital investment
    - 1. Investment
    - 2. Fixed capital investment

- Management decisions
  - Operating
  - Investing
  - Financing

Source: https://www.slideshare.net/devrai16/sfm-module1-10765796

In the literature on the subject, it is emphasized that globalisation processes and the solidifying network of business contacts make the identification of value determinants a complex and challenging task. Despite the fact that the development of capital market in Poland contributed to the advances in valuation education, global aspects are still underestimated in the valuation processes which puts investors under increased risk of taking a wrong decision due to inaccurate valuation.

**IV. PREMISES FOR A COMPANY VALUATION**

The basic objective of company valuation is assessing its worth by means of methods and procedures necessary for impartial and reliable determination of value. In financial terms valuation is a process aimed at determining the worth of assets such as: bonds, securities, shares, whole enterprises as well as intangible and legal assets e.g. patents or trademarks. Most of all, valuation is a measure determining the worth of a company thanks to which it is possible to exchange cash into rights (in case of public companies) and vice versa in order to create an element of the market. Valuation is also a stimuli for trade exchange. There are many reasons to initiate valuation; the most important premises are presented in the Interpretation Note 5 which contains general principles for company valuation. Thus, evaluation may be conducted for the purposes of:

- purchase and sale transactions,
- arrangement procedure, insolvency or liquidation proceedings,
- mergers or separations of businesses,
- civil legal proceedings,
- taxes,
- verification of credit worthiness (the Polish Federation of Real Estate Appraisers Associations, 2011).

According to D. Zarzecki ‘each economically and legally independent unit disposing of a specific potential in the form of fixed or circulating assets and different values and features of intangible nature, may become the subject of valuation’. For
many authors valuation is an opinion, judgement or assessment of something valuable. D. Zarzecki quotes the concept of R.C. Miles for whom valuation is ‘an opinion on the worth, usually made in writing; it is a process of assessing the worth or cost of an asset or all assets related to a given business or investment’ (Zarzecki, D., 1999).

A. Kamela-Sowińska defines the essence of valuation in the following way: ‘valuation is a process of measuring an organisation and its wealth-related assets as well as economic effects of decisions taken by the management. The results of valuation must be sufficient for assessment of effects of activities undertaken in the past and should facilitate the choice of the best decision variant for the future’ (Zarzecki, D., 1999).

The premises for which estimates so as to the worth of company are made may be very different. Most deliberations devoted to company valuation contain a general division of situations and occurrences and stress that it is very difficult to determine all reasons for which it is necessary to measure the worth of an organisation. Generally speaking, the premises for valuation may be divided into two groups, Table 1.

<table>
<thead>
<tr>
<th>PREMISES OF VALUATION</th>
<th>Other situations resulting from conducting business activity or from the mere fact of the existence of the organization</th>
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<tr>
<td>• intended sale of an organisation or its part,</td>
<td>• choice of appropriate strategy on the basis of value criterion,</td>
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<tr>
<td>• intended purchase of an organisation or its part,</td>
<td>• assets insurance,</td>
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<tr>
<td>• sales-purchase transactions between owners of the same organisation,</td>
<td>• determination of compensation,</td>
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<tr>
<td>• nationalization of an organisation or its part,</td>
<td>• determination of loan collateral,</td>
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<td>• separation of an organisation,</td>
<td>• update of the carrying amount of assets,</td>
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<td>• mergers with other entities,</td>
<td>• handing over or taking over an organisation within financial leasing agreement,</td>
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<tr>
<td>• a transfer of assets in kind to another organisation,</td>
<td>• determination of tax payable on donation or inheritance,</td>
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<tr>
<td>• liquidation of a company.</td>
<td>• introduction of internal settlement with respect to particular plants or departments.</td>
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In the literature on the subject, more and more attention is paid to the link between the measurement of a company value and strategic management and business development, but despite this strong theoretical framework, this aspect is still underestimated by the business practice (Zarzecki, D., 1999).

Change in the approach to valuation as well as increase in awareness of the connection between business strategy and profitability of an organization can be observed since the 1980s, when as the result of the economic slowdown and record inflation in the 1970s, the economists and the investors were forced to concentrate their attention on macroeconomic factors because back then financial reports did not reflect adequate information with respect to the return on investment. This led to the emergence of the so called value-based management style.

V. METHODS OF COMPANY VALUATION

For the moment the authors and experts have not been able to work out a uniform position on how to classify the methods of company valuation. The choice of methods depends on the assumed criteria or the best business practices which have emerged with time. In principle, the starting point for classification are the factors which determine the company value i.e. the ability to generate cash, fixed and intangible assets, potential of the industry to which the organization under valuation belongs, or hidden resources of the organisation.

The most popular classification of company valuation has been developed by American authors:

- asset-based approach to business valuation;
- income-based approach to business valuation;
- market-based approach to business valuation.

On top of that, the business practice has developed even more valuation methods, for example:

- combined methods,
- real option methods (Miciuła I., 2012), (Patena W., 2011).

The asset-based approach is the oldest and most basic method based on assessing the company’s worth in the categories of ‘material substance’. According to this approach a company’s value equals the value of its assets. The income-based methods, in turn, concentrate on looking for the company value in the future surpluses of cash flows. These methods are also referred to as discounted cash methods DCF (Discounted Cash Flow) and belong to the most popular methods which are regarded by the experts of the economic science and business practice as the most reliable measures of company value. The idea behind this approach is an assumption that the value of a company is today’s worth of all future financial benefits discounted by means of cost of capital. The income-based approach enjoys considerable popularity and is widely used in practice due to its universality. It can be applied for sales, mergers, acquisitions, IPOs, restructuring processes or appraisals of company management efficiency (Panfil, M., 2011). The most frequently used methods within the income-based approach are:

- the discounted cash flow method (DCF) based on flows belonging to owners or all financing parties,
- the discounted profits method which assumes future net profits of a company discounted by the risk rate,
the discounted dividend method which is used to assess a company’s own capital (M. Panfil, M., Szablewski A., 2011), (Patena W., 2007).

Another method which despite strong criticism from the world of science is the most frequently used method of company valuation, is the comparative method also referred to as a multiplier or market method. In this method the value of a company is assessed based on the market value of a similar/peer company (Patena W., 2007). The comparative method is not well described in the scientific literature and the lack of strong theoretical foundations - according to some analysts - brought about the internet bubble in 2011 which would not have triggered such negative effects had the valuations been made using the income-based methods.

The real option approach is based on financial options. ‘Real option is a right (but not a duty) to change decisions with respect to an investment project in an event when new information occurs’ (Jajuga K., Jajuga T., 2006). A classic example of a material option is being in possession of a patent which a company is authorised to use but does not have to use. This example shows a considerable weakness of the income-based method according to which patents do not represent any real value as they do not generate any future cash flows. Real options reflect the full range of a company’s activity and the decision makers can refer to any aspect of the activity in the decision making process.

In the literature on the subject, two more methods may be encountered i.e. the combined method and the unconventional method. The first is based on an assumption that company value is affected by its assets and the ability to generate income in the future; the second embraces all other methods which cannot be classified as one of the methods discussed above (Nita, B., 2007). Advantages and disadvantages of various valuation methods are presented in Table 2.

<table>
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<tr>
<th>APPROACH</th>
<th>METHODS</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
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<tr>
<td>Asset-based</td>
<td>Accounting methods  • simple assessment of the net assets value, • corrected assessment of the net assets value. Replacement cost/value methods  • basic, • extended, • liquidation method.</td>
<td>• Simplicity of calculations, • Reference to financial statements and stocktaking reports, • Possibility (in a large number of cases) to refer the worth of particular constituents of a company’s wealth to trading prices or market offers of comparable constituents, • Possibility to disregard subjective business forecasts.</td>
<td>• Assumption that the market value of a company’ wealth corresponds to the market value of the company, • Valuation includes carrying amounts which may be subject to manipulation, • Certain subjectivism with respect to corrections made to balance sheet values of assets, • High subjectivism in assessing the potential value of a company which is derived from intangible entries not disclosed in the financial statement.</td>
</tr>
<tr>
<td>Income-based</td>
<td>• Discounted cash flow method (DCF) which is directly linked to the value creation process. Also • Discounted dividend method, • Economic gain method.</td>
<td>• Valuation is based on key parameters for creating value of a company: expected income and risk, • Virtually no external limits of its application, • Cohesion with the basic concept of investment project evaluation by means of NPV measure.</td>
<td>• Complicated calculations, • Impossible to eliminate level of subjectivism in assessing future free flows of cash, • High level of subjectivism in estimates of growth in free cash flows after the period of detailed forecast, • Self-reference (‘vicious circle’). • It is difficult to formulate accurate guidelines for assessing the cost of own capital.</td>
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<tr>
<td>Combined</td>
<td>German method, Swiss method, Anglo-Saxon method - the so called ‘value increase pace method’. The main differences between these methods result from giving different meaning (weight) to asset and income-based methods.</td>
<td>Joint consideration of the value of assets as well as the ability to generate future cash flows in the final evaluation of a company’s worth. Main differences between these methods result from different roles assigned to each of these factors. Uniform approach which assures comparability of results.</td>
<td>Probability of overestimating or underestimating a company’s value due to averaging of the results. The Swiss and the German method do not constitute theoretically convincing methodical constructs.</td>
</tr>
<tr>
<td>Comparative</td>
<td>Classification in accordance with the criterion of the applied market multiplication factor;  • Identification and selection of companies listed on a regulated capital market for the comparative purposes with the evaluated business entity,  • Determination of economic volumes that truthfully reflect the scale of the entity’s</td>
<td>• Simplicity of calculations, • Reference to market quotations, • Arriving at the company’s value on the basis of similar transactions, • Wide availability of data needed for valuation, • Possibility to disregard subjective business forecasts.</td>
<td>• High level of subjectivism and arbitrariness in selection of data needed in the evaluation process, lack of guidelines and arbitrariness with respect to:  • Period from which the market quotations will be used for calculation, • Economic volumes and corresponding multipliers, • Averaging of the evaluation results using different sets of parameters, • Determination of bonuses for audit and discounts for liquidity.</td>
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activity. The factors considered in the comparative analysis are: sales, wealth and profit expressed as:

- net profit demonstrated in the profit and loss account,
- expressed as EBITDA.

### Real options

| Delay option; Resignation option; Growth option. | Taking into consideration the bonus for efficient management of an investment project which makes it possible for managers to actively impact the correction of an investment strategy, |
| Difficult in identifying options in investment projects, |
| Possibility to identify key decisions moments in investment projects. |
| * | * |

### Methods and methods with time delay

M. Panfil and A. Szablewski developed their classification on the basis of Polish and foreign literature and proposed the following division, Figure 3.

Due to a big number of different approaches to the essence of valuation, authors and experts have not yet come to an agreement whether company valuation is more of an art or a science. G.D. McCarthy and R.E. Healy see company valuation more like a kind of craft or art rather than scientific discipline emphasizing that ‘(…) valuation of assets or whole organisations is not a scientific discipline. Disposing of a set of identical information experts may arrive at completely different results at the end of the valuation process (…)’. They explain that the differences in the obtained results are the consequence of multiplicity of determinants conditioning both the valuation process and the outcome of the valuation itself, varying experience and knowledge of those conducting the evaluation, and the reason for valuation (Healy, G.D., McCarthy R.E., 1971).

R.C. Miles, however, does not subscribe to this point of view claiming that reliable valuations based on a scientific method come down to:

- definition of the problem,
- collection and analysis of facts,
- conclusions.

According to R.C. Miles the fact that the conclusions are burdened with a certain degree of uncertainty and that the valuation is not precise and accurate should not prejudge that company valuation is not a science.

## VI. Conclusions

The existing volume of theoretical work that contributed to the development of valuation methods and techniques cannot be ignored. However, in the economic reality there is a number of occurrences which may distort the results of valuations conducted even in accordance with the best methods and techniques. The volatility of business environment, multiplicity and complexity of factors shaping the company value, quality and availability of information, and unpredictability of...
behaviour of investors are just some areas which make the work of those conducting company valuation extremely challenging. The skills that are needed to produce a reliable valuation are not only of technical nature because, important as they may be, they are supported by various econometric models which unfortunately do not embrace factors which escape quantification. The artistic aspect of company valuation is something more that just numbers, it is intuition, feeling of the market and well-developed financial intelligence which helps to express in numbers something which is immaterial and difficult to measure (Bergman & Knight, 2014). Hence, the statement that company valuation is an art requiring a holistic approach embracing economic, social, ecological and spatial aspects, seems to be justified (Maćzyńska, 2011).

John C. Bogle, paraphrasing the famous words of Winston Churchill, claimed that ‘never was so much paid for so little’ (Boogle, 2015). Despite the existence of extensive research apparatus, variety of approaches and methods, arriving at the actual worth of a company is still extremely difficult. Some of the reasons behind these difficulties are related to the measurement of the financial sector activity and the activity of multinational corporations, also inconsistencies in the economic account, expense account or in the approach towards business and management cause a great deal of trouble for the analysts (Maćzyńska, 2011).

Economic practice provides a lot of evidence for the above mentioned objections. It is enough to follow the occurrences on the world markets at the end of the 20th century. A good example may be the IT sector in which rapid development of information technologies contributed to the establishment of many computer companies fuelled by high risk capital. Investors lured by wonderful prospects of the sector development and the promises of high profits tended to forget about the golden rule of prudence and took decisions based on valuation reports which frequently did not reflect the reality. In the dot.com era investors were driven by irrational factors because on this specific market it is really difficult to determine the real worth of investment, the companies usually did not make any profits, cash flows were equal to zero, and the worth of assets was practically negligible. What seems extremely foolish nowadays, the key factors for investors were: the number of engineers employed in a given company and the monthly number of hits on the website (Berman, Knight, 2014).

The next example of inadequate valuation is the financial crisis in the United States of America brought about by a big number of high risk mortgages and culminating with the collapse of the investment bank Lehman Brothers. The explanation for the economic aberrations and sudden economic downturns in the USA and other parts of the world, may be the play of animal instincts such as mood and trust swings, succumbing to temptations, jealousy, resentiments and delusions, excessive self-confidence, corruption and money illusion (Akerlof & Shiller, 2011).

Faults in the contemporary accountancy strengthen the inconsistencies in the results of company evaluation even further. Nowadays the financial statements are becoming ‘more and more complicated and less and less transparent what triggers manipulative behaviours which sometimes take the form of ‘an art’ (Maćzyńska, 2009). On top of that, the general lack of the culture of thinking, absence of long-term strategic visions as well as difficult to foresee political transformations, catastrophies or terrorist attacks, make the work of analysts extremely difficult. There is a certain paradox of predicting the future: on one hand it is obvious that the future cannot be foreseen, on the other, it is necessary to make forecasts as ‘the decision taking process must be based on one or other vision of the future’ (Maćzyńska, 2009).

The scientific circles not only identify the disfunctions of contemporary company valuation but also look for new measurement criteria. Corruption, scandals and economic turmoils along undisputed negative effects have brought about some benefits. They have forced the theoreticians and practitioners to conduct deeper analyses of functioning of the economy as a whole, to review the existing methods and indicators and to look for new, more reliable meters which would reflect the real value of an enterprise with a greater dose of high risk.
of precision. Each method presented in the paper has its strong and weak points, each takes into account a different aspect of a company’s activity. Each has a different starting point. Therefore, it seems that the concept of combining different methods, which has started to be advocated in the literature on the subject, has strong foundations. A synthetic formula which will allow to conduct holistic company evaluation may finally produce reliable results.

VII. REFERENCES


