THE QUALITY DETERMINING THE GENERAL VALUE OF BUSINESSES THROUGH DISCOUNTED CASH FLOW METHOD

Zuzana KUDLOVÁ

Department of Corporate Financial Management, Faculty of Business Economy with seat in Košice, University of Economics in Bratislava

Mariana IVANIČKOVÁ

Department of Corporate Financial Management, Faculty of Business Economy with seat in Košice, University of Economics in Bratislava

Abstract

The contribution aims to estimate the quality of determining the general value of the selected company and to determine the most suitable model through the method of discounted cash flows. The general value of the enterprise is an expert's estimate of the most probable price of the assessed property on the day of the assessment at the given place and time. The quality of determining the general value of the enterprise is essentially related to the assessment of the actual situation in the enterprise, which includes obtaining and using funds, fluidity of financial flows, investing in other activities, the ability to repay foreign resources, planning and the current state of the enterprise. In the contribution, we focused on the quality of determining the general value of the company with an emphasis on the revenue potential. We carried out the valuation of the assets of the selected company in a two-phase process, which consisted of the calculation of free cash flows, the average weighted cost of capital, and the calculation of the company's value based on the parametric and Gordon formulas. When determining the general value of a company, it is also essential to consider whether the financial results of the company depend on economic deviations, and it is necessary to monitor the capital market, the development of interest rates on loans provided by banks, and the development of interest rates on government bonds.

Keywords: cost of capital, discounted cash flow, enterprise, general business value, quality

JEL Classification: G32, L32, M41

Introduction and theoretical background

Determining the company's market value is required to prepare for a unique and complicated process because every business is unique, and we cannot, therefore, be compared with other businesses. The synergistic effect causes the company's value to

be higher than that of its parts. Business valuation is determining the company's value in monetary terms on a specific date. It is the process of determining the general value of the company using appropriate valuation methods. The resulting value valuation is thus equal to the price, but only the most likely estimate. The value of the company's assets is the expert valuation of an asset trader at a particular valuation date in ordinary business. Eiteman, Stonehill, and Moffett (1998) state that it is crucial and necessary to consider not only the actual value of assets but also subjective factors such as yield potential and prospects for further business development. In assessing the future success of the business entity is also required to use management tools that support the strategy and business performance in terms of increasing its value and competitiveness (Durkáčová, Gontkovičová, 2014).

The company's market value results from objectified asset value estimated by the organization or institution specializing in the expert activity. Enterprise value is determined by the future revenue of owners or all investors, which reflects the time value at a given location and a specified period. An enterprise is measured as a body capable of bringing income, considering its revenue potential. The resulting enterprise value is determined as the present value of its future revenue that is willing to offer more than the company's market value (Hečková, 2007).

The whole process of undertaking the valuation aims to determine the company's fair value, which may be a determination of the market value yield or expected value. Enterprise value is generally under Eiteman, Stonehill, and Moffett's (1998) Subjective assessment of a particular wearer's past, present, or future revenues.

The value of the company concerned, the maximum appreciation, respectively depreciation contributions from owners in monetary terms on a specific date, and determining the company's value is engaged in expert work, which has become an essential part of business development. Expert activities in the Slovak Republic shall be registered in the list of experts, which is led by the Ministry of Justice and must follow the relevant expert legislation (Kislingerová, 2001).

The market value of the company is an expert estimate of the most likely rates improved asset at the date of valuation in each place and time, which he should reach the market in conditions of the free competition at a direct sale when the buyer and seller act with due awareness, caution and assuming that price is not affected by undue consideration, usually including value-added tax. In determining the value of a company is not only the actual current value of the property, as well:

- yield potential,
- position on the market,
- future of the company.

Quality plays a significant role in determining the general value of the company because it is currently one of the critical phenomena in the business field. Quality is the foundation of business success. It depends on the quality and the prospects of further development of each company. Exact statistical methods and specific outputs in graphical form are the core of statistical quality control. By Tkáč (2001), these statistical outputs are produced through software support, creating a sufficient basis for applying and implementing selected statistical methods.

Valuation of the property business in the Slovak Republic, the decree on determining the general value of property no. 492/2007 Z.z. as amended. Decree uses the term universal value, that is, the property's inherent value to which the expert in the valuation and finalize mentioned decree regulates the manner or method of determining the value of assets. Determination of the general value of a company in

Slovakia implements expert institutes, organizations that are legal entities registered in the expert industry 51 01 01 Valuation of companies. The above expert industry is a part of Department 51 00 00 Economics and business management.

Mlčoch (1998) states that in the valuation of companies, encounter many types of assets may have economic, construction, engineering, or other nature, so it is possible that the general value of the company is to designate one expert as a natural person. The establishment can assess only an expert who is a legal person, is Forensic Institute or organization, and the individual departments are made up of experts who value individual assets. Reasons and causes determining the enterprise value may result from internal or external needs. Business valuation based on internal needs is the case:

- the purchase or sale of company
- of real creditworthiness of the company,
- enterprise merger, liquidation, bankruptcy,
- new companion,
- input on a stock exchange market (Mlčoch, 1998).

Business valuation based on external needs again by Copeland, Koller, and Murrin (1993) occurs in the realization of these facts:

- loan application,
- acquisition of the components of a gift, inheritance, or gratuitous transfer,
- insurance of property,
- litigation and tax purposes.

Before starting the expert, activities must have an expert available particular document, which is necessary to proceed with a business valuation. Hečková (2007) states that the primary input information can include the company's financial statements for a certain period, information about the subject, and pricing information on macroeconomic factors that influence the final general value.

In determining the general value of a company can also come up against some obstacles, which, according to Kislingerová (2001), include the fact that:

- every company is a specific unit; therefore, there is no public supply and demand, which would objectify price on the market
- enterprise value is typically more significant than the sum of an individual asset,
- not consider only the actual current value of the property, as well as revenue potential, position in the market, and its prospects,
- the subjective approach to the external assessor, and court expert.

Material and methods

Kotulič, Király, and Rajčániová (2007) reported that in determining the yield value of the business enterprise is valued as an asset capable of bringing the yield. Therefore the value of the company is determined as the present value of its future revenues considering:

- net revenue of the company,
- the interest capitalization rate of return,
- level of risk capital investments in business valuation.

The primary methods of determining the general value of the company include:

- equity method,
- business, respectively yield method,

- a combined approach, the liquidation method,
- comparison method and other methods.

The new company shall, in the case valuation yield method, based on the original company's accounting value of assets and liabilities and the difference between the market value; the carrying value of assets and liabilities is accounted for as valuation difference. In this case, a new enterprise recognizes assets and liabilities in the initial carrying amount, which their objective recognition cannot attain (Kislingerová, 2001).

Industry and corporate-specific factors are significant determinants of corporate performance (Oyebanji, 2015; Rajkumar, 2014; Akinyomi, 2013; Akintoye, 2008; Egbunike, Okerekeoti, 2018).

The model's yield method can be divided into several models, which include:
- a discounted dividend,
- discounted cash flow (DCF),
- model net present value of growth opportunities,
- models of capitalization of profits,
- Capital Asset Pricing Model,
- models' capitalization of net income,
- discounted FCFS,
- combined methods,
- discounted values of indicator EVA.

In this paper, we applied the calculation of the valuation company through the discounted cash flow method, where we calculated the company's value in the first and second phases, and we used formulas summarized in Table 1.

Table 1 Summarizing using the formula

		Formula
The first phase DCF	Enterprise value by model FCFF	$\Sigma\ FCFF_t\,/(1+WACC)^t$
	The weighted average cost of capital (WACC)	$r_d\,(1-t)\,D/V + r_e\,E/V$
	The cost of equity (r_e)	$r_f + \beta\,(r_m - r_f)$
The second phase DCF	The weighted average cost of capital (V)	$D + E$
	The continuing value (parametric formula)	$KPV_{T+1}\,(1-g/R_i)/(WACC_{T+1} - g)$
	Gordon formula	$FCFF_{2022} = FCFF_{2021}\,(1+g)$
	The continuing value (Gordon formula)	$FCFF_{2022}/(WACC - g)$

Source: Author´s editing

Studies by El Ghoul et al. (2011) and Gregory, Tharyan, and Whittaker (2014) show that a discounted cash flow (DCF) model framework (which describes a company's value as the sum of future cash flows, discounted at the cost of capital) can be used to break down the influence of a corporation's ESG profile on equity valuations, including cash flows, risk, and cost of capital.

Consequently, within a DCF model, systematic risk is typically captured through the cost of capital (i.e., the denominator in the DCF model). In contrast, the firm-specific risk is linked to the numerator of the DCF model, that is, future cash flows. (Giese, Lee, Melas, Nagy, Nishikawa, 2019)

Results and discussion

Calculation of company general value discounted cash flow method

Prior to the selection of a method is necessary to determine the purpose of valuation and the valuation for whom it is intended. Currently, there is a problem of valuation lack of theoretical methods, but on the contrary, are too numerous, and thus, the selection of the most appropriate method is influenced by many factors, which include a description of the company, the level of estimated profit achieved, the expected rate of profit growth, stability, leverage, and others. In this paper, we have chosen for valuation of efforts by the subject to obtain a loan, respectively, finding current fair credit standing enterprise as information for management.

FCFF proceeded in two phases. The first phase covers the period for which the expert can develop a forecast of free cash flow for the year. The second phase is the period from the first phase to infinity, which is the period for which a valuator does not dare to estimate earnings or other financial forecasts. We must calculate the discounted cash flow based on free cash flow. The selected company's free cash flow for 2017-2021 is calculated in Table 2.

Table 2 Calculation of free cash flow (FCFF)

	2017	2018	2019	2020	2021
Taxation of income before deducting interest NOPAT	12 325	12 255	10 700	18 102	19 393
+ depreciation	9 335	8 460	7 076	6 604	6 179
= Preliminary operating cash flow	21 660	20 715	17 776	24 706	25 572
- An investment in the adjusted working capital	n/y	3 814	3 457	11 043	-3 856
= - Investment in the acquisition of fixed assets	n/y	3 170	5 898	3 900	6 385
FCFF	**n/y**	**13 731**	**8 421**	**9 763**	**23 043**

Source: Author´s editing

For calculating the cost of equity, it is necessary to know the risk-free interest rate rf, β coefficient for the studied company profitability and the market as a whole r_m for each year studied, which in our case is the period from 2017 to 2021. Table 3 displays the appropriate parameters selected for individual years, the calculation of the required rate of return on shareholder (r_e), and the weighted average cost of capital (WACC).

Table 3 The calculation of the weighted average cost of capital (WACC)

	2017	2018	2019	2020	2021
Risk-free interest rate rf	6.3 %	5.1 %	4.1 %	4.8 %	3.3 %
β factor for the chosen company	0.85	0.75	0.75	0.75	0.75
The profitability of the overall market rm	7.5 %	7.5 %	7.5 %	7.5 %	7.5 %
The required rate of return of shareholder re	7.32%	6.9 %	6.65%	6.83%	6.45%
WACC	0.0701	0.0672	0.0663	0.0671	0.0623
WACC (%)	**7.01%**	**6.72%**	**6.63%**	**6.71%**	**6.23%**

Source: Author´s editing

Based on the above parameters, we calculated the company's value in the first phase, which is 42 254,35 thousand €.

To determine the value of the business in the second phase, we used a parametric formula that works with selected value-creation factors. The purpose of establishing the weighted average cost of capital (WACC) after 2022, we, based on previous developments, set the following estimates:

- r_f = 3%,
- β = 0,75,
- r_m = 7,5%,
- r_d = 5,8%.

The management of the holdings is expected in 2022, with the need for an operating loan of € 22 million €, but the total amount of credit by the end of the year will change with the gradual repayment of various loans and other sources. We, therefore, proceed to:

- estimation of interest-bearing borrowed funds under the previous development in 1650,
- estimate equity 60 100 thousand €,
- determining the income tax rate for 2022 of 21 %.
- From this data, we calculated that:
- the estimated required rate of return of shareholders is re = 6,38 %
- the estimated weighted average cost of capital of the WACC = 0,0618, representing 6,18 %.

We then calculated the rate of investment as a share of net profit NOPAT and capital invested in the previous year, return on capital investment as a share of profit and NOPAT invested capital and return on investment as a share of the total net increase in NOPAT growth and capital invested in the previous year. The achieved parameters are recorded in Table 4.

Table 4   Results calculated parameters – a parametric formula

	2017	2018	2019	2020	2021	average	estimate
NOPAT	12 325,4	12 254,6	10 699,6	18 102,0	19 392,8	-	**18 454,1**
The growth rate of operating profit	N/Y	-0.6 %	-12.7 %	69.2 %	7.1 %	**16.3 %**	**4.5 %**
Total invested capital	34 584,9	38 398,4	41 855,5	52 898,8	49 042,6	-	**46 668,6**
Net investment rate	N/Y	31.1 %	32.3 %	61.0 %	-19.9 %	**23.9 %**	**10.9 %**
Return on Invested Capital	N/Y	35.4 %	27.9 %	43.2 %	36.7 %	-	-
Return on Investments Net	N/Y	N/Y	-40.8 %	214.1 %	11.7 %	**39.0 %**	-

Source: Author´s editing

Of the above parameters, we calculated the company's continuing value according to the parametric formula estimated in the amount of 978 834,16 thousand €.

For comparison, we estimated the continuing value based on the Gordon formula and set the value of expected FCFF for the period from 2022 to infinity. Based on expected stable growth in the future, we calculated an estimate FCFF2022, and we found that the estimated continuing value by the Gordon formula is 1 433 324 thousand €.

Conclusion

In this paper's valuation of the company's general value discounted cash flow method, we applied the ongoing second phase estimate based on two procedures. Specifically, the parametric and Gordon formula, where the resulting value by Gordon formula achieves significantly higher value because it is based on estimated future free cash flows (FCFF) with the assumption of steady growth. The development of free cash flow in the past showed a significantly uneven development. Estimated parameters (FCFF) from last year's first phase according to a stable growth rate will be significantly overstated. Used parametric formula based on profit NOPAT, estimated based on factors expressing the value of the company and the continuing value of this formula appears on the precautionary principle preferable because the parameters are necessary for its calculation, which includes investment rate and the growth rate of profit based on averages determined by developments in the past, which is essential for achieving the elimination of some significant variations in the development of individual parameters.

The primary disadvantage is that the recalculation is based on an accounting model that has yet to be adjusted to an economic one. Therefore the result of evaluating the company's performance may need to be corrected. This shortcoming can be eliminated by appropriately adjusting the data entering the calculation.

In calculating based on discounted cash flows and applying other methods, yield estimate is the most crucial moment for the future. When estimating the growth rate of both components and the cost of capital, it is necessary to analyse the impact on the undertaking operation in detail. It is crucial to deal with the fact that the firm's economic performance is dependent on economic fluctuations and must also follow the stock market, the trend of urban government bonds, and interest rates of loans to the banking institutions. Even a low estimate deviation from the expert properties can rapidly change the company's estimated value.

Bibliography

1. Akintoye, I.R. (2008), "Effect of capital structure on firms' performance", European Journal of Social Science, Vol. 4 No. 5, pp. 40-61.
2. Akinyomi, O.J. (2013), "Effect of firm size on profitability: evidence from Nigeria manufacturing sector", Prime Journal of Business Administration and Management, Vol. 3 No. 9, pp. 1171-1175.
3. Copeland, T., Koller, T., Murrin, J. (1993). Stanovení hodnoty firem. Praha: Victoria Publishing, 1993. 359 s. ISBN 80-85605-41-4.
4. Durkáčová, M., Gontkovičová, B. (2014). Využívanie manažérskych nástrojov v riadení podnikových procesov. In: Manažment v teórii a praxi, 2014, vol. 10, no. 1-2/2014, str. 4-12. ISSN 1336-7137
5. Egbunike, C. F., & Okerekeoti, C. U. (2018). Macroeconomic factors, firm characteristics, and financial performance: A study of selected quoted manufacturing firms in Nigeria. Asian Journal of Accounting Research.
6. Eiteman, D., Stonehill, A., Moffett, M. (1998). Multinational Business Finance. Norwalk: Addison-Wesley Publishing Company, 1998. 835 s. ISBN 0-201-52485-6.
7. El Ghoul, S., Guedhami, O., Kwok, C. C., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital?. Journal of Banking & Finance, 35(9), 2388-2406.
8. Giese, G., Lee, L. E., Melas, D., Nagy, Z., & Nishikawa, L. (2019). Foundations of ESG investing: How ESG affects equity valuation, risk, and performance. The Journal of Portfolio Management, 45(5), 69-83.
9. Gregory, A., Tharyan, R., Whittaker, J. (2014). Corporate Social Responsibility and Firm Value: Disaggregating the Effects on Cash Flow, Risk, and Growth. Journal of Business Ethics 124 (4): 633–657.
10. Hečková, J. (2007). Podnikové financie. Prešov: Fakulta manažmentu PU v Prešove, 2007. 257 s. ISBN 978-80-8068-689-5.
11. Kislingerová, E. (2001). Oceňování podniku. Praha: C. H. Beck, 2001. 367 s. ISBN 80-7179-529-1.
12. Kotulič, R., Király, P., Rajčániová, M. (2007). Finančná analýza podniku. Bratislava: IURA Edition, 2007. 206 s. ISBN 978-80-8078-117-0.
13. Mlčoch, J. (1998). Oceňování podniku. Praha: Linde, 1998. 159 s. ISBN 80-7201-145-6.
14. Oyebanji, T.A. (2015), "Firm's characteristics and financial performance of Nigerian listed companies", unpublished master's thesis, Babcock University, Ogun State.
15. Rajkumar, P. (2014), "Impact of financial leverage on financial performance: special reference to John Keells Holdings Plc. in Sri Lanka", Scientific Research Journal, Vol. 2 No. 2, pp. 15-20.

16. Tkáč, M. (2001). Štatistické riadenie kvality. Bratislava: Ekonóm, 2001. 312 s. ISBN 80-225-0145-X.

Correspondence address:

Ing. Zuzana Kudlová, PhD., Department of Corporate Financial Management, Faculty of Business Economy of the University of Economics in Bratislava with seat in Košice, University of Economics in Bratislava, Tajovského 13, 041 30 Košice, Slovak Republic. e-mail: *zuzana.kudlova@euba.sk*
ORICID: https://orcid.org/0000-0002-9633-2418

Ing. Mariana Ivaničková, PhD., Department of Corporate Financial Management, Faculty of Business Economy of the University of Economics in Bratislava with seat in Košice, University of Economics in Bratislava, Tajovského 13, 041 30 Košice, Slovak Republic. e-mail: *mariana.ivanickova@euba.sk*
ORICID: https://orcid.org/0000-0002-3601-1313