

ИНСТРУМЕНТАРИЙ ФИНАНСОВОГО ПЛАНИРОВАНИЯ И ОЦЕНКИ В СИСТЕМЕ УПРАВЛЕНИЯ ОРГАНИЗАЦИЯМИ

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DETERMINING THE COMPANY VALUE USING FREE CASH FLOW TO THE EQUITY

Abstract. Previously, the main objective of a company was to maximize profits. Today, however, value orientation is changing and companies have shifted focus towards maximizing their value. Company value is an important management tool, as it is a comprehensive evaluation which may affect competitiveness and achieve progress. To determine the value, it is necessary to know the economic indicators of the company, its market position, organizational structure, etc. Besides quantitative factors, macroeconomic indicators and incalculable factors are also important. The value of the company depends on the uniqueness and quality of the offered product, the company's market, the level of cost control, efficient use of resources, etc. The value of the company also affects, for example, human capital, information systems, environmental management and innovation. The total value is not only the sum of the values of individual assets. The total value at the end of the planning period should be higher than the current value. It needs to be assessed, for example, in cases of selling or buying, the entry of new shareholders, merger, inheritance, liquidation and the entry of a new partner. There are a number of methodological approaches to determining the value of the company – the accounting method, substance method, income methods, methods of exchange appreciation and combined methods. The article also deals with the theoretical description and mathematical basis of the techniques of free cash flow to the firm and free cash flow to equity. This is a theoretical paper which aims to describe the value of a company and the possible methods for its determination.

Key words: company value, maximizing profits, free cash flow to the firm, free cash flow to equity.

Introduction

The traditional objective of company management is profit; all company activities exist for the purpose of maximizing profits [1]. But market economy has been developing and competition growing. Companies that operate on a traditional model have been unable to meet the requirements of development objectives and the needs of company management changes [2]. At present, companies want to achieve the maximization of corporate value, to reach the business objectives of maximizing profits by maximizing value and switch from profit-oriented company management to value-oriented management [3].

Over time four basic principles of company valuation have been developed, namely: the market value, the subjective value, the objectivised value and the Cologne school [4].

The determination of company value is one of the most important tools of management. The authors [5] claim that company value is a synthetic indicator that reflects the financial performance and the economic and financial situation reached either now or in the future within the company. The maximization of company value has currently become the generally accepted company objective hypothesis. Only when the creation of value is realized can the corporation stand out in fierce competition and therefore achieve sustaining progress [6]. To determine the value, it is important to know the economic

indicators of the company, its market position, organizational structure, the strategy and vision of company owners [4]. Indicators that reflect the growth of enterprise value are, for example, EVA¹, MVA², NAV³, CFROI⁴ [7]. They are also important macroeconomic indicators (GDP⁵ growth, expected inflation, etc.). According to [8], corporate values are influenced by quantitative factors, which are recorded in accounting. The company is also significantly affected by non-quantifiable factors – the quality of management, quality of staff, their loyalty to the company, the level of research and development of new technology, etc.). The company can value at different levels [9]:

– Gross value – this is the value of the company as a whole, as a business entity. It includes both the value for the owners, as well as the value for creditors.

– Net value – this quality represents the valuation by the owners of the company. In principle it is therefore valued equity. The concept of equity here, however, may not always be exactly in agreement with the accounting concept.

Nowadays there are economic theories (shareholder theory) according to which the company management should be led by a single objective, namely the growth of the value of the company [7]. This should be the main objective and all the other objectives, like strategy, methods and management techniques, should result from that.

The company value reflects the company's comprehensive strength. Company value appraisal is a comprehensive evaluation it is the overall economic judgement of the value of estimated processes [10, 11] presented the definition of company value as the market value of all resources or assets that can create wealth for the company, including not only the existing, tangible resources, but also the potential, intangible ones, considering the time value of money and the value of risk.

What does the value of the company consist of?

According to [12], in the past two decades there has been a fundamental change in the economic system due to a shift of interest from resource-based economy to information-based economy. In the new economy, the value of a company is becoming increasingly dependent on intangible resources and less dependent on production processes and financial capital [13].

The total value of the company is not formed only by financial capital. According to [14], human capital, which is a part of intellectual capital, is also significantly influential. Human capital plays, in fact, a crucial role in the competitive struggle which is so typical for this period of time. People have become a very important part of a successful business [15]. The employees and their knowledge, abilities and skills contribute to the wealth and prosperity of the company. The employees and their learning and development do not feature as expenses, but rather as investments for a better future [16]. The authors [17] study of the relationship between information systems and company value, and the influence of the complementary mechanism between information systems and human capital on company value. In the short term, the adoption of information systems has a significantly negative impact on company value. In the long term, as time goes by, the negative influence decreases gradually. The adoption of information systems thus has a statistically positive impact on company value. The authors [18] analysed the impact of companies' environmental management on corporate value. They conclude that environmental management can improve corporate value. For example, producing environmentally friendly products can help environmentally friendly products gain recognition and improve company value significantly.

In addition, operating efficiency, investment efficiency and financing efficiency have a significant positive influence on company value. The minimum value of these local efficiency variables has a negative relationship with company value, and significantly decreases of company value. The authors [19, 20] demonstrated the significance of unidentifiable intangible assets in forming the increment to the value of the company. The value of a company is increased by several innovative activities, such as the creation and implementation of the Lean Production concept, the Kaizen philosophy, the Kanban system, the Just-in-Time production strategy, Business Process Reengineering, Total Quality Management, etc.

¹ EVA – Economic Value Added.

² MVA – Market Value Added.

³ NAV – Net Asset Value.

⁴ CFROI – Cash Flow Return On Investment.

⁵ GDP – Gross Domestic Product.

As already mentioned, the objective of a business is the value of the company. This is dependent on its ability to generate future revenues. Therefore, it depends on the uniqueness and quality of the product offered, which affects the demand for the product, the position of the company in the market, the level of effective cost management, the innovative skills of employees and the ability to find new investment opportunities and effectively utilize the available resources [21].

The aim of this article is to provide, in addition to a theoretical description of the importance of company value, a theoretical elucidation of possible methods for determining the value of a company, mathematical basis included, with a focus on the method of free cash flow to the firm and free cash flow to equity.

Materials and methods

Now we explain which means can be used to determine the value of a company. A reliable indicator of the dynamic development of a company is the resulting value of the company. However, if the resulting value of the firm at the end of the planning period (discounted to the starting year) is higher than the current value of the company at the beginning of the planning period, the following is true [22]:

$$MV_t - MV_0 > 0,$$

where MV_t – is the market value of the company at the end of the planning period and MV_0 is the market value of the company at the beginning of the planning period.

According to [23], it is necessary to know the total value of the company in the events of selling or buying, new shareholder entry, settlement with an existing partner, fusion, transformation of legal form, inheritance, liquidation etc. The value has to be constructed as a Fair Market Value – which is an honest, decent market price. The total value is not simply the sum of the values of individual assets, but also includes the benefit (future revenues that company will bring) that the company provides to its owner. The basic starting point is that the company will exist in the future. The market value of the company is a subjective estimate of future market prices, which may differ significantly from the book value [24].

There are a number of methodological approaches to determinate the value of the company [24]:

- accounting method – viewed as property by the company, its price is determined on the basis of information from accounting;
- substance method – cost is calculated based on the replacement cost of all equity components of the company corrected for depreciation;
- income methods – include a method of profit capitalization (value derives from consistently achievable profit), discounted cash flow method (value derives from future revenues), the method of free cash flow (also considering investments during the life of the company);
- methods of exchange appreciation – these assess the market price of the shares.

There is also the so-called combined method, where the business value is determined as the arithmetic mean. It is also possible to use the EVA method. A company which has terminated activity is measured by the liquidation value (very similar to the substance method).

Included among methods of income are, according to [25], free cash flow to shareholders and creditors (FCFF – Free Cash Flow to the Firm) and also free cash flow to shareholders (FCFE – Free Cash Flow to Equity). These two methods will presently be explained in more detail.

Results

In corporate practice, the FCFF technique is the one most commonly used. In this case, the interest from external capital is not taken into account, because external financing costs are included in the required rate of return on investment (represented by WACC¹). Including the interest on debt into the cash flow would lead to a double calculating mistake, thus unreasonably lowering the value of NPV² [26]. Moreover, all capital expenditures are taken into account (with a minus) at the moment of their appearance. Financial charges result from the use of external capital and constitute tax deductible expenses. Therefore, excluding the interest from the calculation of FCFF leads to an increase in income tax. The issue is solved by including a tax shield into the discount rate represented by WACC [27].

¹ WACC - Weighted Average Cost of Capital.

² NPV - Net Present Value.

$$FCFF = EBIT(1 - T) + A - WCI - I + RV_{FCFF},$$

where *EBIT* is earnings before interest and taxes; *T* is tax rate; *A* is amortisation; *WCI* is working capital investment; *I* is capital expenditure; RV_{FCFF} is residual value for all financing parties. According to [25] using the FCFE technique, the cash flows and the required rate of return are calculated from the equity owner's perspective. This fact demands inclusion of interest on external capital in the free cash flow calculation and the use of cost of equity. The FCFE considers only expenditures from the investor's own resources and the repayments of debt when the instalments are due [28]. From the technical point of view, the initial investments can be treated as total investment expenditures with the deduction of loans. From the investor's point of view, acquiring additional loans provides an inflow of funds, so it is marked with a plus. This technique also assumes that free cash flows generated by a given investment are to be discounted by the rate of return on investment required by the investor [27].

$$FCFE = PBT(1 - T) + A - WCI - I + D_N - D_R + RV_{FCFE},$$

where *PBT* is profit before tax; D_N is debts incurred; D_R is debt repaid; RV_{FCFE} is residual value for equity holders.

There is the second technique of FCFE calculation that is based on FCFF recalculation [27]:

$$FCFE = FCFF + D_N - D_R + Int * (1 - T) + RV_{FCFE},$$

where *Int* are financial costs.

Discussion and conclusions

A literature review confirmed the relevance and importance of measuring the value of a company. At present, the company's aim is not to maximize profit, but just to maximize company value. Measurable and immeasurable factors affect company value. To determine the value of the company, there are several methodological approaches. They are divided into the accounting method, substance method, income methods, methods of exchange appreciation and combined methods. The aim of this paper was to describe some of these methods theoretically, the authors focused on the method of free cash flow to the firm and the method of free cash flow to equity. In the Table we can see the main differences in the most popular NPV calculation techniques.

Main differences in most popular NPV calculation techniques*

	Calculation perspective	Capital expenditure treatment	Flow / income (FCF / EVA)	Discount rate
FCFF	All financing parties view	Total, regardless of the financing source (bank/owner)	Debt financing operations (incurred loans, repayment and interests) are excluded	Weighted average cost of capital (WACC)
FCFE	Equity capital view	Exclusively investor's equity funds	Incurred loans increase, but repayment and interest decrease FCF for the owner	Rate of return expected only by the owner (cost of equity – r_e)
EVA	All financing parties view	Not applicable in EVA calculation	Calculation of income surplus over the cost of invested capital	Weighted average cost of capital (WACC)

* Made according to: [27. 562], own processing.

The FCFF method and FCFE method have both been described, including their mathematical foundation. It can be stated that the aim of this article was achieved. Further research on company value will be responsible for calculating the value of a specific company in practice, using the above methods. Additionally, the list of methods for determining the value of the company could be extended and described in more detail.

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ОПРЕДЕЛЕНИЕ СТОИМОСТИ КОМПАНИИ НА ОСНОВЕ ПРИТОКА СВОБОДНЫХ ДЕНЕЖНЫХ СРЕДСТВ В СОБСТВЕННЫЙ КАПИТАЛ

Ранее основной задачей компании было максимизировать прибыль. В настоящее время ценностные ориентации меняются и компании хотят добиться максимизации своей стоимости. Стоимость компании является важным инструментом управления, поскольку она представляет собой всестороннюю оценку, способную повлиять на конкурентоспособность и достижение прогресса. Для определения стоимости необходимо знать экономические показатели компании, ее положение на рынке, организационную структуру и т. д. Помимо количественных факторов, важны также и макроэкономические факторы, не подлежащие расчету. Стоимость компании зависит от уникальности и качества предлагаемого продукта, рынка, на котором компания оперирует, уровня контроля над затратами, эффективного использования ресурсов и пр. Стоимость компании находится также под влиянием, например, человеческого капитала, информационных систем, экологического контроля и инновационности. Общая стоимость – это не просто сумма значений отдельных активов. Общая стоимость в конце периода планирования должна быть выше, чем ее промежуточное значение. Такую стоимость нам нужно знать, например, для продажи или покупки, для появления новых акционеров, слияния, наследования, ликвидации и на случай появления нового партнера. Есть целый ряд методологических подходов к определению стоимости компании: метод учета, имущественный метод, методы расчета по доходам, методы определения роста валютного курса, комбинированный метод. Представлены теоретическая характеристика и математическое обоснование методов притока свободных денежных средств в фирму и увеличения ее собственного капитала. Целью этой теоретической работы является характеристика стоимости компании и методов ее определения.

Ключевые слова: стоимость компании, максимизация прибыли, свободный денежный поток в фирму, приток денежных средств в собственный капитал.

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