Possible approaches to the valuation of a firm

Přístupy k oceňování podniků

I. Živělová

Mendel University of Agriculture and Forestry, Brno, Czech Republic

Abstract: Measurement of business performance by using the value of a firm represents a modern tool of financial management. The paper deals with this problem and discusses basic methodological approaches to the determination of farm's value, especially by means of methods based on the estimation of future revenues.

Key words: farm's value; methods of determination; future revenues

Abstrakt: Moderním nástrojem řízení podniku se stává měření jeho výkonnosti pomocí hodnoty podniku. Příspěvek je zaměřen na základní metodické přístupy k oceňování podniku, zejména na metody založené na odhadu budoucích výnosů, s cílem stanovit hodnotu podniku.

Klíčová slova: oceňování podniků, metody oceňování podniků, stanovení hodnoty podniku

INTRODUCTION

At present, valuation of firms is a very relevant topic not only in the Czech Republic, where it has become a necessary precondition of ownership transformation, but also in developed market economies, where it is associated above all with needs of an efficient allocation of free financial means. However, there are also many other reasons why it is important to estimate the current value of a firm. Among them, besides purchasing, selling and/or partitioning of enterprises to smaller, independent subjects, it is necessary to mention above all the transformation of firms into other legal entities and, last but not least, also the implementation of the main objective of any form of entrepreneurship, which under conditions of free market economies means the growth of the market value of the firm. The value of a firm is influenced by all short-term and long-term decisions of its managers. It is influenced by financial policy of the firm, its business strategy etc. Firm's managers must be able to evaluate the impact of their decisions on the firm's value. This means that for a good management, it is necessary to know also the methods and ways of firm valuation.

Although it is necessary, especially when valuating agricultural enterprises, to know some differences, which result from the character of their operation, one can generally say that the basic methodological approach to the firm valuation remains to be the same in all branches of the national industry, regardless to their practical application.

The aim of this paper is to present a survey of fundamental methodology of a firm's valuation, especially with regard to methods based on the estimation of future revenues and to describe one of possibilities how to determine its value.

OBJECTIVES AND METHODOLOGY

The objective of determination of firm's value is to express its price by means of a monetary equivalent. As a rule, the final result then arises from the application of several methods of valuation. The most popular methods of firm valuation can be classified from different points of view. For practical purposes, however, it seems to be advantageous to use three basic categories, viz.:
– methods based on an analysis of expected revenues of a firm
– methods based on the estimation of the market value of a firm and
– methods based on the determination of the value of firm's assets.

Each of these methods has been elaborated on different principles and for that reason, their informative value is also different.

Methods based on the analysis of expected revenues integrate valuation of a firm with capital investments. The valorisation of invested capital is reflected in future revenues. This future valorisation is put down as the decisive parameter of firm's value, regardless to the current value of its assets, which, however, represent a source

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of these future revenues. From the viewpoint of economic theories, this approach can be considered as one of the most suitable methods of firm valuation.

Methods based on the estimation of the market value of a firm are based on the appreciation of the expected market evaluation of firm's profitability. This market value is represented by the estimated sum of money, which would be paid by an investor in case that the company would be sold on a capital market. This means that the application of these methods necessitates a functioning capital market because this market projects into the farm's market value not only its current and future revenues, but also rates of growth and some other relevant factors. The application of these methods is dependent on the fact if the firm is sold in the capital market or not.

Methods based on the determination of the value of firm's assets are based on assumption that the farm's value is determined by the worth of its assets, which represent the source of future farm's revenues. This evaluation results from the description of assets as recorded in accountancy books of a firm. This means that this valuation comes out from the current situation and modifies is with regard to the expected future conditions. When using this method, it is necessary to choose a suitable price of assets, i. e. to use both the price derived from the book value and the liquidation price, which represents the sum of purchasing prices of individual components of farm's assets in case of their sale. One can also take into account the so-called reproduction cost price but it should be said that their determination is associated with a number of problems.

RESULTS AND DISCUSSION

When considering these three basic groups of methods of firm valuation, it is possible to say that the *analysis of expected revenues* seems to be the most objective method of estimation of farm's value. These methods can be used in various modifications, i. e. with regard to the method of estimation of future revenues of the firm, which can be derived either from the estimate of future revenues or from and analysis of the past results.

There are many models elaborated on the base of estimates of future revenues resulting from results of future cash flow. These models may differ either from the viewpoint of expected growth of the firm or from that of estimation of future cash flow.

The cash flow resulting from future operation of the firm can be classified as follows:
– cash flow for owners and creditors
– cash flow for owners
– dividends as a special case of cash flow for shareholders
– economic value added.

It seems that under conditions of the Czech Republic, the model considering all cash flows (i. e. both for owners and for creditors) is the most suitable method of farm's valuation. However, when considering possibilities of application of these methods for the purposes of evaluation of impacts of managerial decision-making on the farm's value, it is possible to recommend also the method economic value added because it enables to identify the most important factors of value formation and to evaluate economic results with regard to risks associated with its formation.

Determination of cash flow as a sum of profit after taxation and depreciation can be taken into account as the simplest method, which can be used in practice. For the needs of firm valuation, however, this method of calculation is not sufficient because it assumes also the estimation of future revenues. If the firm wants to reach future revenues in the required extent, it must continuously invest with the objective to assure at least the reproduction of depreciated long-term assets. This means that future cash flows used for the firm valuation must involve cash flows resulting from the firm after the deduction of expected investment costs expended both into the operational long-term assets and into the necessary working capital. Only this modification of cash flow expresses how much money may owners and creditors drain from the firm without any disturbances of the expected farm's development.

Referring the current system of financial reporting, it is possible to calculate the cash flow modified with regard to expected investments using the following simplified scheme:

Operational results
– Income tax
+ Depreciation of long-term assets
+ Formation of long-term reserves

= Gross cash flow

– Investments into the long-term assets
– Increase of working capital

= Free cash flow

The method of firm valuation by the means of cash flow uses expected future data. This means that it is linked up with financial planning, especially with long-term financial plans. The long-term financial planning must be based on a long-term concept of farm's development and on its future strategy. It represents a system of well-balanced plans considering various aspects of farm's future development.

Regarding the fact that the expected cash flows will be attained in future, it is necessary to convert (discount) them to the current financial value. This means that it is necessary to decide with discount rate should be used and how to define the calculated interest rate.

The basic function of calculated interest rate is to express the expected profitability of an investment. The calculated interest rate also enables to express the level of expected risk. Regarding the fact that the future revenues will be attained not only by means of owned capital but also by foreign funds, the calculated interest rate must be determined on the base of average weighed capital costs as follows:

$$PVNK = i_{CK} \times (1-d) \times \frac{CK}{K} + i_{VK} \times \frac{VK}{K}$$

where:
$PVNK$ = average weighed capital costs
i_{CK} = costs of foreign funds
d = income tax
CK = value of foreign funds
VK = value of owned capital
K = total value of invested capital
i_{VK} = expected profitability of owned capital.

The average weighed capital costs represent average expenses, which must be paid after the acquisition of all kinds of capital. They are, therefore, dependent on shares of its individual components and on the height of costs associated with the acquisition of individual kinds of capital. In this context it is debatable, which value of foreign funds and owned capital should be taken into account. Should we consider its market or its book value? Considering the fact that under conditions of the Czech Republic the capital market is not too much developed, we can recommend the use of book value.

In practical situations, it is usually expected that the firm will exist for an indefinite period. However, this expectation does not enable to plan cash flows for individual years. This means that the cash flow resulting from the farm's operation is usually divided into two time periods, viz. into the time interval, which is explicitly prognosticated, and into the period that follows after this explicitly prognosticated time interval. The expected discounted cash flow is then formed as follows:

Discounted cash flow = Discounted cash flow in the explicitly prognosticated time interval + Discounted cash flow after the explicitly prognosticated time interval.

This method is usually referred to as a standard two-stage method. The first one involves the period when it is possible to elaborate a prognosis of cash flows in individual years on the base of the available data while the second one represents a more distant time horizon where all values can be estimated only with a low accuracy. In the second stage, the value of a firm is usually denominated as a constant or continuing value. The total farm's value is then calculated as a sum of both stages:

$$HP = \sum_{t=1}^{n_1} VPT_1 \times (1+i_k)^{-t} + HPP \times (1+i_k)^{-n1}$$

where:
HP = total farm's value
VPT_t = free cash flow in the year t
i_k = calculated interest rate
n = number of years in the first stage
HPP = constant (continuing) value.

In the second stage, the calculation of farm's value is rather difficult but it is necessary to emphasise that it can considerably change this value. When calculating the constant value of a firm, it is possible to use two assumptions, viz. the stable rate of growth of discounted financial revenues or the expected profitability of new investments planned for the period to come. The choice depends on the decision of the person performing the valuation and on the economic condition of the valuated firm.

There is another problem associated with the discounting of future cash flows of the firm, viz. the fact that there is usually used only one calculated interest rate for the whole future period; this, however, could be accepted only in case that the capital structure of the firm would not change. This assumption is not realistic because the capital structure changes and for that reason, it is necessary to take into account that the calculation is not exact.

CONCLUSIONS

The estimation of a farm's value is rather problematic and difficult. However, under conditions of a developed market economy, which uses modern methods of management, this activity represents that part of operational management is oriented to the most important interests of owners. The owners are interested above all in the growth of their property and for that reason, the increase of farm's value becomes the main objective of business activities of the company top management. The farm's value is affected by various factors and a good knowledge of their quantitative effects and on changes in the farm's value is very important for a qualified decision-making of managers. Factors, which influence the value of the company, can be enumerated as follows: operational results of the firm, structure of stock capital and costs associated with capital acquisition. These costs show an effect on the total value of the company and the decisions of top management may significantly influence the costs of capital acquisition and thus also the final farm's value.

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Contact address:

Prof. Ing. Iva Živělová, CSc., Mendelova zemědělská a lesnická v Brně, Zemědělská 1, 613 00 Brno, Česká republika
tel.: +420 545 131 111, e-mail: zivelova@mendelu.cz