

# VALUATION OF THE COMPANY IN FINANCIAL DISTRESS

*Milan Hrdý, Bohuslav Šimek*

## Introduction – The Company in Financial Distress

The valuation of the company in financial distress is a specific area of valuation, which has not been comprehensively analyzed yet. The question of the valuation of companies in time of crisis is partly mentioned in some specialized literature [5] which centers upon the integration of problems of risks and uncertainty into activities concerning the investment decision and the valuation of companies. This integration is possible to carry out by adjusting the cash flows or the discounting rate. Kislingerová [5, p.113-114] points out the very strong optimism in the identification of the cash flow which lies mainly in underestimation of competition, in the need of the optimistic prediction, in distorted understanding of the causations and consequences and in the suppress of the optimistic views and models. The valuation of the next cash flows is necessary to prepare in the form of the variable collection for the different scenarios from the very optimistic to the very negative [5]. It is a very interesting idea because in case of the valuation of the firm the different options of the future estimated discounted cash flows are not taken into consideration. The temporary situation in the world economy concerning the future development is very uncertain and it could be possible to identify the different scenarios of the valuation in dependency on the development of the financial and economic crisis. As it will be later analyzed, in case of the valuation of the firm in financial distress, the reasons of this distress are necessary to take into account. They could be inside the firm, but also outside, caused mainly by the problems of the financial and economic crisis. Economic crisis from the years

2008–2009 may be the important factor influencing the financial prosperity of the company and its possible financial distress. The causes of this crisis could be analyzed and explained in a different way, for example according to Lungová [6].

The problems of the valuation of the company in financial distress are very sporadically solved also in the foreign literature. Damodaran [1] shows two mainly problems occurring in the real valuation process, valuing equity in distressed firm and valuing equity with negative earnings. According to this theory if the firm has substantial amounts of debt and there is a very strong possibility of defaulting on the debt and going bankrupt *“the discounted cash flow valuation may be inadequate tool for estimating value”* [1, p. 826]. According to Damodaran [1, p. 827] *“the equity investors in such a firm given limited liability, have the option to liquidate the firm and pay off the debt. This call option on the underlying firm can add value to equity.”* It is supposed that the firm will be liquidated and the face value of debt will be paid off. The real use of this theory in the practice valuation is very arguable. Firstly it is incorrectly supposed that the firm in financial distress will be always liquidated and secondly the identification of the values of  $d_1$ ,  $d_2$ ,  $N(d_1)$  and  $N(d_2)$  in the process of valuation of the option according for example to the well known Black-Scholes model is in the real practice of valuation very complicated. It is since necessary to identify probability of default and default spreads because Damodaran [1, p. 830] defines this probability as *“ $1-N(d_2)$ ”* where  $N(d_2)$  is a well known function of probability that the call will be exercised provided one assumes that the asset drift is the risk-free rate. It is very complicated to identify such as information in the

environment of the Czech companies and it is very complicated to obtain such as information for the average connoisseur.

Because there is a very little information about the valuation of the company in financial distress and the possible recommended approaches are not in really applicable to the real valuation process, the aim of this contribution is to analyze and prepare the possible steps how to cope with financial distress and to prepare some manual of real valuation. For this reason it is necessary to identify the most important differences of the healthy company and the company in financial distress. Problems of the valuation of the companies in the specific cases, or problems of the valuation of the specialized firms, such as for example financial institutions, are usually solved in the special way where it is necessary to link up the general valuation procedure and the specifics concerning some concrete case. The financial distress is the specific problem in this case. The methods used for the solution of this problem are the analysis, the method of comparison and finally the synthesis which could lead to the above mentioned manual.

The financial distress is defined as a relative or absolute insolvency. The absolute insolvency is possible to describe as the situation when the value of liabilities exceeds the value of assets [7, p. 512]. The relative insolvency is possible to characterize as the situation where the firm is not able to pay its liabilities in concrete time, at concrete place and in concrete form [7, p. 512]. The insolvency is also possible to distinguish as so called primary and secondary, where the secondary insolvency is characterized as the situation when the value of outstanding receivables is higher than the value of outstanding liabilities. Some authors emphasize [5, p. 84] that it is necessary to distinguish between the insolvency and the so called reluctance to pay. With financial distress bankruptcy of the firm is directly related, when the fulfillment of conditions of bankruptcy means the initiation of legal action of the winding up of the company. In the area of business valuation it is necessary to deal with the state just before the declaration of bankruptcy and with the analysis of possible financial and organizational measures how to rescue the firm. As has already been declared by bankrupt and insolvency proceedings, it is necessary to proceed on the basis of Act No. 182/2006 Coll.

Bankruptcy and Settlement (Insolvency Act), which is based on the company's estate and on the list of assets and liabilities, which the bankrupt shall prepare and submit, including all required documents, to bankruptcy administrators. Property belonging to the estate shall be entered in separate list items. Part of the inventory and valuation of property is made by the insolvency administrator. It could be derived from the previous lines that for purposes of determining the valuation procedures in financial distress the following situations is necessary to distinguish:

1. The company is in financial distress, but has not been declared bankrupt and no insolvency proceedings have been initiated.
2. The company is bankrupt and insolvency proceedings which will deal with bankruptcy on the basis of reorganization under § 316-364 of the Insolvency Act have already been initiated.
3. The company is in financial distress and insolvency proceedings which will deal with bankruptcy under § 244 to 315 of the Insolvency Act have already been initiated.

### **1. Valuation of the Company under Bankrupt Solved by the Bankruptcy**

In its own valuation, bankruptcy trustee is based on the information contained in the debtor's accounting and other available data. Insolvency Act provides that the valuation must be in accordance with specific legislation on valuation of property, but not reflected in the accounts of the debtor [13]. If the bankruptcy is done under the Insolvency Act, the result of the valuation process is not possible to clearly identify as in the Insolvency Act because there is no reference to any legal valuation regulation. In valuing a bankrupt company the question is how to appreciate the company and according to which legal or other standards to proceed. At the same time it is important to determine which method to use when determining the value of the company's own decline. Among the major sources from which it would be possible at present to determine the value of a bankrupt company based, are in addition to the Insolvency Act, the Act on Property Valuation, Accounting Act, the International Valuation Standards, whether European or International. The specialized literature [8] supposed so called going-concern

principle which states that the company will continue in its activity to the future. But if the bankrupt of the company is solved by the bankruptcy, the goin-concern principle is not possible. This situation is not in the valuation theory commonly described and for that reason it is necessary to respect the law in concrete countries. The question is mainly how to interpret the term mentioned in the Insolvency Act [13] „*compliance with special regulations*“, and whether an amended Act No. 151/1997 Coll. on valuation is considered as such a specific legislation. In the text of the Insolvency Act a number of terms are also listed that relate to pricing and value, such as valuation, valuation expert, awards administrator, collateral valuation of sold property, expert opinion, estimated value, value of the collateral, property value, price, price of the property, price of the estate, estimated cost, the usual price, market price, price performance, the purchase price etc. [12]. We therefore conclude that the individual items in the list of the estate, including real estate, are valued outside the regime of the Law on Property Valuation. Law on Property Valuation in § 2, paragraph 1, defines the usual price so that *“the property or service is valued at the usual price which for the purposes of this Act means the price which would be achieved on sales of the same or similar assets or the provision of same or similar services in the ordinary course of trade in the country at the measurement date”* [12]. They are considering all the circumstances that have influence on the price, but the amount does not reflect the influence of the market in exceptional circumstances, personal circumstances of the seller or the buyer or the influence of special favorites. Extraordinary circumstances of the market represent the state of distress of the seller or the buyer, or consequences of natural calamities. Personal relationships include in particular property relations, family or other personal relationships between seller and buyer. Special popularity means the value attributed to a specific property or service resulting from a personal relationship to them. Law on Property Valuation solves business valuation in its sixth head, § 24, where in paragraph 1) states that *“an enterprise or part (hereinafter the Company) are valued as the sum of the prices of individual types of property identified pursuant to this Act by reducing the prices of liabilities”* [12]. If we

followed the provisions of this Act, at the vast majority of companies in bankruptcy we would come to the price of the enterprise, which would be zero or even negative. In addition, the following paragraph 2 of the Act states that if so stipulated by the decree, the company is appreciated by the income valuation or by its combination with the award pursuant to paragraph 1 [12]. However, the relevant implementing decree to Act does nothing to solve business valuation as such, so this provision of the award for the company in bankruptcy is useless. Due to the fact that a bankrupt company with no further operations cannot even apply the provisions of paragraph 3) of the above paragraph which states as an option awards income valuation of the company in a way which is calculated as the sum of discounted future net annual revenues. This is for the company in bankruptcy impossible, since there is minimum assumption that in the future additional revenues from operating activities will be achieved. Neither the amended Act No. 563/1991 Coll. on accounting provides help. The value under the Accounting Act can be identified according to § 27 paragraph 5, *“when the market value means the value that is published on the domestic or foreign stock exchange or another regulated market”* [11]. Entity for the valuation according to § 24 paragraph 2 point b) this Act *“applies market value, which is published at the time not later than the time and most awards are approaching the time of valuation. If the property is maintained at the domestic stock exchange, market value means the closing price announced in stock exchange business day on which the valuation is done. If the property is not maintained at the domestic stock exchange and is listed on foreign stock exchanges, market value means the highest price of the closing prices which was achieved in approved foreign markets, stock exchanges in the working day on which the valuation performed. In another case of a regulated stock exchange market the market value means the price valid at the date on which the valuation is done. If the date on which the valuation is carried out, the markets do not work, the price declared on them is the last working day price preceding the time of award, if known, or the price, proceed further according to the second sentence. The Law on Accounting understands the market value as one of several alternatives*

for determining the fair value of specific securities, derivatives, financial investments and technical reserves of insurance and reinsurance undertakings and in particular the assets and liabilities in cases of mergers and cooperatives (with the exception of the change of legal form), etc” [11]. The fair value of the law means [11]:

- a) market value,
- b) the valuation by a qualified estimate or expert opinion, if market value is not available or inadequately represents the real value,
- c) the valuation established under special regulations – if not proceed as described above.

The law is not specified by what value (or price) is to determine the next variant of fair value set. Usually it is considered that the market value is estimated in terms of international valuation standards. The European Valuation Standards (EVS) and the International Valuation Standards (IVS) understand the definition of the market value as *“the estimated amount for which an asset could be exchanged on the date of the estimate between a willing buyer and a willing seller in an independent transaction after proper marketing, in which each party is informed reasonably and without coercion”* [4]. Standards understand the market value as the sum of the exchange the property would bring when offered for sale on the open market at the specified date under conditions which meet the definition of market value. It assesses the highest and best use, or most likely use, i.e., whether existing or alternative. The assessment is made on the basis of available data from the market. Then the estimate methods and procedures are applied, reflecting the nature of property and the conditions under which the property could be most likely traded on the open market. The most common methods for a reasonable estimate of market value are the cost method, sales comparison and income capitalization method. If the valuation of the estate is beyond the scope of the Act on Property Valuation, we can assume that the proprietary nature, that is actually a company, is valued at the usual price, in which case it will lack a real sense of business valuation, since the aim of insolvency proceedings is the relative satisfaction of creditors of the corporate property and subsequent termination of its

activities. If the analysis of options of the valuation in financial distress is carried out by the income methods, it will be necessary to foresee the future continuation of the business, regardless of how critical the financial situation of the company is. The crisis situation in financial distress may mean not only the actual winding up of the business, but also the attempt to carry out otherwise very painful restructuring measures, which ultimately lead to its recovery and future prosperity. Current methods of business valuation in the economic practice of the Czech Republic do not fully answer the question of how to evaluate a failing firm and determine its market value at the time of failure. If you start from the above definition of market value as the estimated amount for which an asset could be exchanged on the date of valuation between a willing buyer and a willing seller in a transaction between separate and independent partners after proper marketing, in which both parties acted informed, reasonably and without coercion, the identification of the market value of a bankrupt company is virtually impossible, since it is impossible to think that the bankrupt or the insolvency administrator is a willing seller. It is also necessary to state the fact that the definition of market value in terms of international standards (created by a compromise among the estimate theories in different countries) does currently not correspond to any description or definition for legal, accounting or pricing legislation in the country. It is obvious that if you have already been declared bankrupt and proceed according to the Insolvency Act, only property valuation can be used and the problem arises, what method of property valuation to use. A strict application of valuation under the Act on Valuation of property may lead in some components of the property to their overestimation, where in addition to the administratively set price based on the decree may prevent or prolong the sale of the company itself, or vice versa to set the value of company's assets under its market value, thus cause damage to both the creditors and the bankrupt himself. It will therefore be essential to supplement the Insolvency Act and the Act on Valuation of items and facts relating to the valuation of business assets in his bankruptcy case. Finally, it can be stated that the current methods of business valuation in economic practice, virtually all of the Czech Republic do

not answer the question how to evaluate a failing firm and determine its market value at the time of failure. Determination of market value as defined under international accounting standards is not possible because, as mentioned above, it can't consider that the bankrupt or the insolvency administrator were voluntary sellers. It is also necessary to state the fact that the definition of market value in terms of international standards does currently not correspond to any description or definition of legal, accounting or pricing legislation in the Czech Republic. Therefore only property valuation can be taken into consideration, with the fact that from practical aspect the value of a bankrupt company will be considered as the sum of the individual components of the valued company's assets value at which the bankruptcy trustee will be able to monetize the asset. This conclusion could be supported by the reality that the bankrupt company solved by the bankruptcy hasn't any perspective for the future and for that reason it is not possible to identify the future cash flow available. The same situation is in case of using the method of market comparison because there isn't some comparable company available as it is supposed in the specialized literature [8]. There may be also a conflict with the above-mentioned pricing rules, but if we want the value of the company to be considered truly real, other possibility of realizing the value of real property or business bankruptcy does not exist. Company value in the resolution of its financial distress based on the bankruptcy of insolvency law can be simply expressed as follows:

$$V_c = \sum V_p - \sum V_l, \quad (1)$$

Where

$V_c$  – value of the company,

$V_p$  – value of an individual property converted into money,

$V_l$  – value of liabilities.

It is clear from the above, that the company value is negative, as in the solution of the bankrupt company situation by bankruptcy, creditors will be satisfied pro rata basis because the company's assets are not sufficient to fully cover corporate liabilities. Despite the inconsistency of various methods of valuation of the above mentioned individual components

of the corporate assets, it will be ultimately decisive, for which sum the individual components can really be monetized. The success of the bankruptcy proceedings will consist primarily in achieving the smallest negative enterprise value possible. The above mentioned proposal can be theoretically compared with the valuation of the company by so called liquidation value [8] which is used when the income value is lesser than the value of the company's property to be sold.

## 2. Basic Approaches to Company Valuation in Financial Distress without a Declaration of Bankruptcy or in Bankruptcy Resolution on Reorganization under Bankruptcy Law

### 2.1 Basic Factors Affecting Company Valuation with the Reorganization and Restructuring

Company valuation in current conditions is based on the principle of continuous future going concern. It is expected however [8, p. 58] that this principle can work only if it is a healthy firm, or a troubled company that can survive, with proper treatment, the risks to which it is exposed. With an ailing company a limited lifetime in the range up to ten years is set, and the best solution for an acutely endangered company will be setting of the liquidation value. This is probably correct and the proceedings correspond to the average international and domestic valuation procedures. The question is whether and how it is possible to evaluate a company in financial distress by the income methods which are a very topical issue in the current financial crisis. The issue can be dealt with by the fact that we assume, as previously stated, the development of the company in two directions:

1. The company will survive its financial crisis and will continue into the future.
2. The company in the financial crisis ends its activities.

In the latter case, the enterprise value was equal to just above mentioned liquidation value, which could be paid to the owners in case of liquidation of the company. In case of insolvency proceedings and the bankruptcy solution the value of the company would be according to the previous chapter negative, as it would not be sufficient to fully satisfy all creditors, let alone the remaining assets to the owner.

In the first case, of course, it is necessary to restructure and reorganize the company. The reorganization is also dealt with in the Insolvency Act, which provides solutions of bankruptcy reorganization under § 316 – § 364th. According to § 316, paragraph 2 reorganization can solve the bankruptcy or impending bankruptcy of the debtor. According to § 316, paragraph 1, it is assumed that there is a gradual satisfaction of creditors' claims while preserving the debtor's by business secured measures for economic recovery of this company pursuant to a court-approved management plan to control the ongoing performance [13].

It is obvious that if we want to value the company as a full subject by income methods on the principle of going concern, it will be necessary to implement measures that will lead not only to its immediate rescue, but also to the ability to generate future free cash flows that are on the basis of common methods of income valuations based on free cash flow. In order to be able to realistically assess the effectiveness of reorganization and restructuring measures and their costs, it is necessary primarily to identify clearly the causes of financial distress which may be numerous. Basically, they can be divided into four groups as follows:

1. Liquidity problems due to company financial performance and as a result of bad debts.
2. Liquidity problems associated with high agency costs associated with representation indifference, inability or fraud agent.
3. Debt problems with high indebtedness of the company and its debt repayment problems.
4. Liquidity problems of the company with a substantial drop in sales due to lower company competitiveness or adverse developments in market demand.

Also Damodaran [1] distinguish in the case of the presentation of the valuing negative earnings firm between *"firms with temporary problems, the firms with the long-term problems"* and even *"firms with strategic problems"*. It just encourages the approach of authors of this article than it is mainly necessary to identify the problem, the reason of financial distress, and then make the adaptation of the valuation steps according to this reason.

Liquidity problems due to the problem of financial management can be relatively best

managed assuming the adoption of some key measures relating to financial management of the company. The most important measures include analysis of business conditions in the area of purchasing and sales, especially in the careful consideration of different payment instruments, especially to troubled customers and greater analysis of their financial health. Ideal solution would be their possible replacement by other customers. If this is not possible, a demanding substantial change in production would be necessary, which requires a stronger restructuring, as will be explained later. Problems with liquidity can also be caused by a significant mismatch between the maturities of receivables and payables and significantly positive value of the trade deficit. In this case it is necessary to reconcile these very maturities, so as to eliminate the emergence of problems with the company's liquidity.

If agency costs are the problem, it is necessary to proceed to radical exchange of management, but this may not be a simple and inexpensive matter, mainly because managers may have a provision allowing the payment of so-called golden parachutes in their contracts. If, however, it was clearly shown that after the exchange of business managers the company would really begin to prosper, it would be possible to obtain financial resources for the survival of the transitional period.

In the case of over-indebtedness the business requires restructuring of liabilities, especially change of debt forms or the substitution of debt by equity from external investors with subsequent dilution of ownership.

The most complicated issue, however, will be the last case, the cause of financial distress where the problems are with sales or negative market developments. Here the firm must be analyzed in detail, what are the causes of this condition and the appropriate action must be taken. One of the problems can be product obsolescence with subsequent need for costly innovations. Even more challenging would be the need to change the production program with radical change and restructuring of assets. In the case of radical restructuring or reorganization subsequent funding must also be provided, whether from credit sources or sources of their own, possibly also from venture capital funds. With the participation of venture capital funds and other investors in a crisis situation the



company will also result in a higher required rate of return, which is reflected in the next chapter, analyzing the discount interest rate in the valuation of the company in financial distress.

Solving the above mentioned four cases can be divided in terms of valuation to cases where is the need for a comprehensive restructuring of the manufacturing business, or finding of new sales markets and to cases where a partial solution of the problem will suffice, such as bad debt problem, the problem of trade deficit, the difference between the time of turnover of payables and receivables, the necessity of restructuring liabilities, or management replacement. All these measures will always be associated with additional incremental costs of different heights, depending on the degree and intensity of reorganization or restructuring. These costs will significantly reduce the value of the company identified on the basis of the income methods and they will significantly extend the time horizon within which it will be possible to calculate the positive market value of the valued company.

## 2.2 Valuation of the Company in Financial Distress by Two-Stage DCF Method for Solving the Problem without Major Restructuring Changes in the Product Range or Finding New Markets

In case of valuation of the company in financial distress which the company is able to resolve by internal measures without restructuring the production or finding new sales markets, the valuation will be based on traditional valuation process and the method of two-stage DCF entity or DCF equity. The fundamental difference is only in the fact that the internal emergency measures consist in the solution of either insolvency or over-indebtedness of the company or in the exchange of business managers, which will lead to the additional costs and will result in a significant reduction in free cash flow for the first phase or even to the negative value. The ongoing value will be set already for the new stable situation of the company. The first phase will be the restructuring phase, the second phase will be the stability phase of the company with a projected annual increase in free cash flow. It will therefore be based on the

classical formula for the valuation based on a company's free cash flow FCFF [8, p. 178]:

$$V_b = \sum_{t=1}^T \frac{FCFF_t}{(1+i_k)^t} + \frac{OV}{(1+i_k)^T}, \quad (2)$$

where

- $V_b$  – value of the company brutto,
- FCFF – free cash flow of the company,
- $t$  – individual years of the first phase,
- $T$  – time of the first phase,
- $i_k$  – discount interest rate on the basis of the average cost of capital,
- OV – ongoing value of the company.

At the identification of free cash flow (FCF) a similar procedure as in classic venture is applied, with the fact that it is necessary to include previously mentioned restructuring costs. It is possible to proceed as follows, which start from the adjusted operating income (KPVH):

FCF = KPVH after taxes + depreciation and adjustment for the costs that are not expenditure – investment in working capital adjusted operationally necessary – investment in the acquisition of fixed assets – restructuring costs (3)

Restructuring costs are expected as the costs directly related to the implementation of the restructuring or reorganization, not as secondary costs arising as a side effect by the restructuring or reorganization, which are then reflected in the KPVH as normal operating costs.

## 2.3 Valuation of a Company in Financial Distress by the Three-Phase DCF Method, in Case of Necessity of Fundamental Changes in the Restructuring of the Production Program or Findings of New Markets

Using a two-stage DCF entity method and the DCF equity method at classic business valuation assumes that we can identify two phases, the first phase usually includes a period for which the prognosis for free cash flow for individual years can be identified and the second phase as the ongoing value. In case of valuation of the company in financial distress with the need for major restructuring changes the valuation of three-phase method would be coming into account where the first phase would be possible to identify as the period of rehabilitation of the

company, during which we would expect a negative free cash flows. The second period could be identified as the period when the company begins to generate positive free cash flows which are able to identified for each year and the third phase as the phase of the ongoing business value with the expected steady annual growth. It is important to note how the solution of the financial distress affects the identification of free cash flow of the valued company in financial distress. A classic company's performance results are calculated as adjusted operating profit after taxes, to which depreciation, the changes in expense reserves and provisions are added. Then it is necessary to deduct net investments in operational necessary working capital and also to deduct the required investments which are necessary for the future growth of the company. Adjusted operating profit will be significantly affected by the rehabilitation and restructuring measures performed. Above all, one-time operating revenues and expenses associated with e.g. sale of redundant assets or property, or subsequent purchase as a result of restructuring, will be significant. However, it is necessary to distinguish real changes in these items of extraordinary profit which according to the theory of valuation [8] should not be taken into account in pricing. Restructuring or substantial rehabilitation of the company, however, will be changing the nature of interventions in fundamental structure of the company so they should be counted. The owner of the business will be in fact forced to suffer long term negative consequences of restructuring and this is bound to occur in free cash flows that can be also negative. These negative flows will be based not only on the loss of corrected profit, but also on the necessary investment in the necessary operational fixed assets and working capital. These investments will be mainly restructuring and ensuring the future prosperity of the enterprise. The rehabilitation phase will generate negative cash flows.

The second phase, which will be the phase in a longer period of prosperity, will require a very precise and detailed analysis of market trends and market share of the restructured company. The restructured company will be located on a different product or service market from that where it worked previously, and the analysis of the new market will therefore have to be done very precisely.

A potential the third phase of valuation would be the ongoing phase of prosperity when it would already been possible to identify the expected free cash flows and a stable annual growth expected by traditional rules.

Valuation formula for three-phase method would look as follows:

$$V_b = \sum_{t=1}^T \frac{FCFF_t}{(1+i_1)^t} + \sum_{t=T+1}^{T+N} \frac{FCFF_t}{(1+i_2)^t} + \frac{OV}{(1+i_3)^{T+N}}, \quad (4)$$

Where

- $V_b$  – value of the company brutto,
- FCFF– free cash flow of the company,
- OV – ongoing value,
- t – individual years of the first phase,
- T – time of the first phase,
- N – time of the second phase,
- $i_1$  – discount interest rate for the first phase,
- $i_2$  – discount interest rate for the second phase.

For the identification of free cash flow (FCF) for the first phase, it is necessary to work not only with the corrected operating income (KPVH), but rarely with the previously mentioned result of extraordinary profit arising from sales or purchases of new machinery and equipment due to a fundamental restructuring of the production program. As in the previous case, restructuring costs will be taken into account:

$$FCF = KPVH \text{ after taxes} + \text{depreciations and adjustments for the costs that are not extraordinary expense} + \text{profit} - \text{adjusted investment in operational working capital required} - \text{investments into fixed assets} - \text{restructuring cost} \quad (5)$$

In both cases of business valuation in financial distress whether the restructuring of the production program is done or not, it is necessary to mention one problem, and it is the net DCF valuation. So far we worked only with the gross valuation where the net valuation will be needed to deduct the value of liabilities. But this can be a major problem, since during the restructuring or reorganization of the company significant changes in capital structure will occur as well. The question therefore is whether to use the value of liabilities at the date of valuation, which is a classic approach, or the value of the commitments that we expect after



the stabilization of the company and after its restructuring. If we choose the first option, we will be in accordance with theoretical assumptions, but very distant from the future real situation of the company. Therefore it will be more correct to subtract the target value of liabilities made after the restructuring, because even at the own valuation, even if it is performed to the present day, we come from the future target state, which we want to achieve by the restructuring and reorganization.

Before the valuation of the company in financial crisis it is necessary to perform the financial analysis of this company with an emphasis on the bankruptcy predictive model applied to Czech conditions [9] with the different options of the future value of the company after the possible restructuring measures.

Damodaran [1] also consider in case of the strategic problems of the company being valued the possibility of the change of the owners of this company. The consequences of this solution could be in the sphere of capital structure and so in the discount interest rate for valuation, but the real valuation would depend also on the plans of the new owners and their marketing strategy and the restructuring of the company's production. So the above mentioned approach could be used.

## 2.4 Restructuring Costs

Restructuring costs are, according to the Accounting Standard Codification (ASC) of the new GAPP, costs that are incurred or will be incurred in connection with a plan of action that will materially change the scope of business undertaken by an entity or the manner in which a business is conducted. They typically include costs such as employee benefits, costs associated with product line elimination or relocation, costs for new systems development or acquisitions, retraining costs, and losses on asset impairment and dispositions. According to the ASC they are identified the following standards [10]:

- **ASC 840**, which discusses the accounting for a termination of a capital lease.
- **ASC 715**, which discuss an employer's accounting for pension plans.
- **ASC 715-60**, which discusses an employer's accounting for postretirement benefits other than pensions.
- **ASC 712**, which discusses an employer's accounting for postemployment benefits.

- **ASC 360**, which discusses the accounting for long-lived assets that will be disposed of, including discontinued operations.
- **ASC 420**, which discuss costs in anticipation of a business combination.
- **ASC 420**, which discusses the accounting for certain onetime termination benefits, costs to terminate contracts other than capital leases, and costs to consolidate facilities or relocate employees.

The restructuring cost for the purpose of valuation of the firm is not separately identified nor in the Czech, neither in the foreign literature and for that reason it could be useful to identify the proposal of the formula of the restructuring costs in a following way:

$$RC = FRC + ERC + LARC + BCRC + FaRC, (5)$$

where

FRC – restructuring costs concerning changes in financing,

ERC – restructuring costs concerning employees,

LARC – restructuring costs concerning long-term assets,

BCRC – restructuring costs concerning business combination,

FaRC – restructuring costs concerning consolidation of facilities.

## 2.5 Identifying the Discount Interest Rate for Valuation of the Company in Financial Distress

Identification of the discount interest rate at prosperous businesses is very closely identified in the specialized literature [8]. The method of average weighted cost of capital is the most used method. In the case of a company in financial distress the use of the average weighted cost of capital is a very complicated thing. Financial distress affects quite negatively the cost of capital of the company, because the rising financial distress leads to a sharp increase in costs of both equity and debt with a very limited possibility of their identification. Generally, to identify the cost of equity and debt in dependency on the level of debt is very difficult, but there are some approaches [2] or [3]. Identifying of these costs is possible only from zero to the maximum possible debt [2]. Maximum possible debt represents a level of debt, in which all values of indicators of financial

analysis show good financial health of the company i.e. do not indicate the danger of possible financial distress or gray zone. If this happens, there may be uncontrolled increase in costs of equity and debt which is very difficult to identify. Anyway, it may be considered for valuation of the company in financial distress to use not only two or even three-phase method of valuation, but also two or even three different values of the discount interest rate. The interest rate for the first phase would be the interest rate with a high average cost of capital on the very upper limit of the cost of equity and loan capital usual for businesses which are in financial distress. In the second stage the cost of capital in transitional phase will be reflected where there is a decline in risk surcharge due to the stabilization of the company and the third stage, i.e. stage of continuing value, when stable and healthy company is assumed and the classical average capital cost of the company can be used as interest rate.

The cost of capital of the company will significantly be affected by the fact whether or not the financial restructuring was a result of financial distress, especially if the substitution takes place in foreign equity, or only in debt restructuring. An important role could be played as well by so called venture capital, which, if invested in the company in financial distress, would require a high return on invested capital with the possibility of subsequent sale of the company further candidates. A specific case would also be the fact, if the company merged with another entity, but then the valuation of the company would lack purpose, because the company itself would cease to exist and would become part of the new company, which would then change the value depending on the ability to integrate the acquired business. Another factor that should be taken into account would be the composition of corporate capital, which would change during the restructuring. Identification of the interest rate of discounting could be therefore based on the average weighted cost of capital, with the  $i = 1, 2, 3$  from the equation 4 would be the following:

$$i_n = C_{en} \times E_n + C_{dn} \times D_n, \quad (6)$$

where

$i_n$  – discounted interest rate for the relevant period,

- $C_{en}$  – costs of equity in the period  $n$  including risk surcharge,
- $E$  – the amount of equity in period  $n$ ,
- $C_{dn}$  – costs of debt in period  $n$  including risk surcharge,
- $D$  – the amount of debt in period  $n$ .

The identification of risk surcharge and the coefficient  $\beta$  will play an important role. When determining the risk surcharge the increased risk will be taken into account, which will result from the solution of an uncertain company's situation in the context of financial distress. As Kislingerová states [5, p. 107] the results in the case of identification of risk based on expert evaluation are very often better because they are based not only on the optimistic assumption of market development and business environment, but also on optimistic assessment of internal factors. Kislingerová [5, p. 107] also speaks of the underestimation of psychological and occupational risks arising from the situation of the company, where the negative impact of such mergers on the performance of employees and their ability to make optimum performance throughout the implementation of the merger is often underestimated. A similar underestimation could also occur even as the result of the restructuring or reorganization because of the financial crisis where the changes in the performance of employees can be quite fatal. Risk surcharge in any case would include a surcharge on the uncertain future. It is highly doubtful whether appropriate restructuring and reorganization measures will be successful. In the case of using modular methods, in addition to classical risk factors known from the literature [8], it is necessary to consider the risk resulting from the restructuring and reorganization of the company because the restructuring or reorganization is definitely a considerable risk. As the coefficient  $\beta$  is regarded, absolutely fatal changes will occur due to restructuring and reorganization, implying that it will be necessary to determine the coefficient  $\beta$  in the context of new conditions. As an appropriate method which can be considered is the marginal method of analogy. Although the coefficient  $\beta$  addresses the issue of systemic risk, which depends mainly on the overall economic situation, it will be necessary to take into account some changes here as well, because of a sensitive reaction of the restructuring company to any

negative changes in market risk. It's basically the same principle as in the case of financial risk, where the risk adjustment of  $\beta$  is justified by the statement that a more indebted company will respond more sensitively to changes in the market because it is burdened with a larger proportion of fixed payments than a less indebted company [8, p. 232].

## Conclusion

The aim of this article was to analyze and prepare the possible ways how to cope with the valuation of a company in financial distress and to prepare some possible steps of valuation. Creating a model of the valuation of a company in financial distress is difficult in economic practice and it has not been analyzed in detail yet. Damodaran [1] offers the solution of valuation of the equity of the firm in financial distress as the call option. The real use of this theory in the practice valuation is very arguable. Firstly it is incorrectly supposed that the firm in financial distress will be always liquidated and secondly the identification of the values of the option model is in reality very complicated. If we want to address this issue seriously and offer some serious approaches, it is necessary firstly identify the individual situation of the company in financial distress, especially if insolvency proceedings have already been initiated and if it is solved by reorganization or bankruptcy. In the event of the bankruptcy the company will be evaluated by property method with the valuation of individual components of the property where the value will be calculated as a specific sum of monetized components of assets after deducting the value of liabilities. It is evident that the enterprise value will be negative. In case of reorganization or restructuring, whether before or after the initiation of insolvency proceedings, it will be crucial which major restructuring measures will be necessary to carry out. In case of measures without having to change the fundamental production program or finding new markets, the income DCF method will be sufficient for the process of the valuation. To the first phase, restructuring measures in the form of incremental or additional costs would be reflected, that arise due to restructuring and which will significantly weaken the free cash flow in the first phase. If major restructuring changes are needed, it is necessary to work

with three-phase method of valuation where in the first phase thorough restructuring measures will be implemented, the second phase would be considered as stabilization phase and in the third phase continued value will be identified for restructured company with the appropriate expected rate of growth. Various risks in the individual phases of the valued company will be reflected into different values of the discount interest rate. The cost of equity and the cost of debt reflect the different risk increase and also the different composition of corporate capital in these different periods, as reorganization and restructuring will pose in various stages of the different composition of capital. The capital structure is closely related to another question concerning the valuation and identification of the size of the net liabilities deducted. Given the substantial changes in the future structure, focus on the company target value of liabilities seems more correct than their value at the date of valuation. At the very end it is possible to say that the area of business valuation in financial distress is a very interesting and demanding area of the valuation process which offers a wide range of other problems, that have not been deeply solved yet, such as the identification of restructuring costs, or the question of the size of risk surcharge both at his own cost and foreign capital, depending on the phase of restructuring. It is necessary to highlight that these published recommendations are the first proposal for the future discussion in the theory and practice of the valuation.

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**doc. Ing. Milan Hrdý, Ph.D.**  
SVŠE Znojmo  
hrdy@svse.cz

**Ing. Bohuslav Šimek**  
University of West Bohemia in Pilsen  
Faculty of Economics  
simekb@kpm.zcu.cz

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## Abstract

**VALUATION OF THE COMPANY IN FINANCIAL DISTRESS****Milan Hrdý, Bohuslav Šimek**

*The contribution deals with so far not very deeply analyzed, but very important issues of corporate valuation in financial distress. Only Damodaran offers the solution based on the valuation of the company in the financial distress as the option on the base of the Black-Scholes model, but this is not possible use in the reality of the valuation in the Czech Republic. The solution of this problem requires the projection of the specifics of the financial distress of the firm into the common methods of valuation of the company without financial distress. Identification of single valuation methods depends, besides others, on the fact if the insolvency process has been initiated or not and if it is solved by bankruptcy or by reorganization. The property valuation is used in case of the bankruptcy with the negative result value. The income approach is possible to use only in case if the successful reorganization and restructuring of company is supposed, and it is necessary to distinguish whether the manufacturing is going to be restructured or not. If so, it is necessary to use three phase income method of valuation where the free cash flow must be recognized not only for cost of restructuring, but also for the extraordinary profit from selling or buying the new or old manufacturing equipment. Just the identification of the restructuring cost plays also a very important role in the process of the valuation. The interest rate for discounting of the free cash flow would also be identified separately for every phase and adjusted by risk surcharge. In case of net valuation of company it is necessary to subtract from the gross value not the value of liabilities on the date of valuation, but the target value of liabilities.*

**Key Words:** valuation, company, financial distress.

**JEL Classification:** G30.