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The Experience with the Assessment of the Value of Five Competitive Building Enterprise of a Regional Significance in the Period of a Financial Crisis

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Abstract

This contribution is intent on the problems of the evaluation of the five competitive building enterprises of a regional significance in the period of a financial crisis and it is a part of the forming dissertation thesis on the topic ,,Modelling of The Development of the Value of the Middle – Size Enterprise in the Real Competition of The Czech Republic". It goes out from the matter of fact that choice of a suitable method is one of the most important and very essential steps in the process of an evaluation of an enterprise and therefore it is necessary to pay him a considerable attention. It is possible to divide the contribution into two main parts namely into a theoretical part and a practical part. While the theoretical part acquaints with the survey of the method used for an evaluation of an enterprise and the terminology connected with the solving problems in its introductory chapters, the practical part contains the basic data about five examined building enterprises and their evaluation by the method of return DCF entity. The aims of the contribution are to figure on the created model of five building enterprises with the similar production and the size of the economic turn-over the external negative influence of a critical character and to prove on the basis of the own experience that if an enterprise is in debt the method of return DCF entity becomes inaccurate. In order to reach these aims the evaluation of the examined building enterprises is set in the year 2010 in which the most outstanding negative effect of the financial crisis on their economic results was noticed.

Keywords: Method used for an evaluation of an enterprise, the method DCF entity, the prognosis β, the valuation of perilous premium of a country, the secure interest rate, costs on an internal capital, cost on an external capital, average costs of a capital, a two –phase calculation of an enterprise value.

The survery of the methods used for an evaluation of an eterprise[4]

Methods based on a property analysis

- a method of an accounting value (a method of an own property)
- a method of a substantial value
- a method of a liquidating value

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[4] MAŘÍK, M..Metody oceňování podniku. Proces ocenění- základní metody a postupy 2.upravéné a rozšířené vydání. Praha: Ekopress, 2007a. ISBN 978-80-86929-32-3.

Methods based on a returns´ analysis

- a method of discounted net profits
- a method of discounted Cash- flows
- a method based on the ratio EVA

Combined methods

- Schmalenback´s method (a method of a medium value)
- a method of a weighing average
- a method of a profit excess

Methods of an evaluation of enterprises put on a stock exchange

- an evaluation according to an exchange value
- an evaluation according to a divided profit (an evaluation according to dividend)

Methods of a market comparison

- an evaluation by means of multipliers derived by a comparative analysis
- an evaluation with using of a market and an accounting values of an enterprise

The terminology connected with the solving problems

The Method DCF entity – is based on a calculation of a so- called free Cash-flow which is a volume of financial means accessible to owners of an enterprise without a risk of disturbing its further development.

The prognosis β – there are several possibilities of its assessment of this coefficient namely on the basis of an operating risk and a financial risk, the historical data, factors for a valuation of the coefficient β, the risk in the United Stated of America for the branch of building industries; an arithmetical average from these values is often used in an own calculation.

The valuation of perilous premiums of a country – there are two possibilities of its assessment namely either by means of a rating evaluation or expert valuations of perilous premiums according to the categories whereupon a bigger significance is laid on the first possibility because the second one is quite subjective and therefore it is used in a calculation only for a comparison.

The secure interest rate – it is found out from the return of ten years 'state bonds according to the Czech National Bank.

Cost on an internal capital – their calculation goes out from a model of capital assets which is adjusted for the Czech Republic by the so-called additional changes (it is an additional charge for small enterprise, a market capitalization and the other specific risks)

Cost on an external capital – for their valuation a process based on market data is used as a basis whose substance is an assessment of a rating of orientation of debts of an evaluating enterprise (it means that a concrete debt of an enterprise is added to a group of bonds on a market which is loaded by a similarly cut down risk); in a practice it is calculated with a simplification when the rating is confined to a calculation of an only ratio namely to the calculation of an interest reimbursement.

Average costs of a capital – their calculation goes out from a sum of costs on an internal capital and on an external capital in which ratios of an internal capital and an external capital on a total capital and a rate of Income Tax are taken into consideration.

A two – phase calculation of an enterprise value – it is goes out from a calculation of a contemporary value of the first phase which is followed by finding out of a continuing value in a time (it is contemporary value of the second phase); a gross operating value is then a sum of the first and the second phases and after taking interest – born debts and mon-operating assets into consideration a resultant value of the own property is acquired.[5]

[5] MAŘÍK, M., MAŘÍKOVÁ, P. Moderní metody hodnocení výkonnosti a oceňování podniku. 2. vyd. Praha: Ekopress, 2005 164 s. ISBN 80-86119-61-0.

The basic data about the examined building enterprises

The building enterprise X_1 s.r.o.

The title: X_1 s.r.o.

- The law form: the corporation with a limited liability
- The object of the activity: The production of steel construction of halls, the complete realization of buildings including complete repairs and reconstructions, Carpentry, slatery, locksmithery and tinsmithery, The construction of family houses, industrial halls and agricultural buildings.
- The regions of the activity: the region of Pardubice
- The year of the establishment: 1992
- The management of enterprise: 2 managers
- The number of employees: 55
- The holder od the certificate: ČSN ISO 9001:2001
- The day the evaluation: 31.12.2010

The building enterprise X_2 s.r.o.

The title: X_2 s.r.o.

- The law form: the corporation with a limited liability
- The object of the activity: The housing construction, the reconstruction of buildings, industrial buildings and buildings of civil facilities. Mason workings tilery, plaster-cardboard workings, carpentry, tinsmithery, locksmithery, the construction of family houses, productive and warehousing objects according to requirements of an investor, the production of steel constructions of halls, the smithing production according to individual needs of a customer.
- The regions of the activity: the region of Pardubice
- The year of the establishment: 1993
- The management of enterprise: 1 manager
- The number of employees: 60
- The holder od the certificate: ČSN ISO 9001:2009, ČSN EN ISO 14 001:2005, ČSN EN ISO 3834-2:2006
- The day the evaluation: 31.12.2010

The building enterprise X_3 s.r.o.

The title: X_3 s.r.o.

- The law form: the corporation with a limited liability
- The object of the activity: The housing construction, the reconstruction of buildings, industrial buildings and buildings of civil facilities. The construction of family houses, the production of steel constructions of halls, the smithing production.
- The regions of the activity: the region of Pardubice
- The year of the establishment: 1994
- The management of enterprise: 2 managers
- The number of employees: 60
- The holder od the certificate: ČSN ISO 9001:2009
- The day the evaluation: 31.12.2010

The building enterprise X_4 s.r.o.

The title: X_4 s.r.o.

- The law form: the corporation with a limited liability

- The object of the activity: Industrial buildings and buildings of civil facilities and housing construction, The heat insulating if family houses and housing units, The demolition of objects, Building of engineering networks, the installation of objects, Carpentry, tinsmithery, locksmithery and slatery, The construction of family houses, productive and warehousing objects according to requirements of an investor, The production of steel constructions of halls.
- The regions of the activity: the region of Pardubice
- The year of the establishment: 1995
- The management of enterprise: 1 manager
- The number of employees: 53
- The holder od the certificate: ČSN ISO 9001:2009
- The day the evaluation: 31.12.2010

The building enterprise X_5 s.r.o.

The title: X_5 s.r.o.

- The law form: the corporation with a limited liability
- The object of the activity: The construction of civil, housing and industrial objects including engineering networks, The complete realization of buildings including complete repairs and reconstruction Masonic working, tilery and pavery, Carpentry, decorative workings and painting workings, The construction of family houses, reconstruction and repairs of existing objects, The production and the assembly od steel construction.
- The regions of the activity: the region of Pardubice
- The year of the establishment: 1992
- The management of enterprise: 2 managers
- The number of employees: 58
- The holder od the certificate: ČSN ISO 9001:2001
- The day the evaluation: 31.12.2010

The returns´ evaluation of the examined building enterprises by the method DCF entity Prognosis β

The possibility 1: The assessment on the basis of an operating risk and a financial risk

This possibility goes out from an application of a basic equation of securities whereupon a difference consists in the matter of fact that instead of a derivation of β from historical relationships between a market return of a market and a return of an enterprise the future β is directly assessed.

The formula for a perilous premium of an enterprise is the following one:

Formula 1: A perilous premium of an enterprise:

(Source: Mařík, M., Maříkova, P., 2005)

$$\beta = 1 + OR + FR \quad \text{.....(1)}$$

Where:

OR a business risk (an additional change for a systematic business risk)
FR a financial risk (an additional change for a systematic business risk)

As far as the business, risk is concerned, so this includes in itself a specific risk for a enterprise and a systematic risk influencing all enterprises. The specific risk is taken by means of an analysis of screenplays whose results are projected into planned returns not by a change of a discount rate into consideration. The systematic business risk is necessary to measure in accordance with a conception of β then as relative. The basis is the so-called imaginary, average enterprise." The typical spread of the business risk is from -0,5 to +0,5 whereupon it is possible to define five classes of this risk. The first class represents the lowest risk, the third class creates "the average," and the fifth class responds to the highest systematic business risk (see Table 1: The business risk).

Table 1: The business risk

(Source: Mařík, M., Maříkova, P., 2005)

The class of the systematic business risk	The perilous adjustment of β (OR)	The risk
1	-0,5	the lowest
2	-0,25	
3	0	average
4	0,25	
5	0,5	the highest

The financial risk is that which arises owing to an insolvency of an enterprise (see Table 2: The financial risk).

Table 2: The financial risk

(Source: Mařík, M., Maříkova, P., 2005)

The insolvency of an enterprise	The perilous adjustments of β (FR) in comparison with the change during the basis insolvency
0%	-0,2
20%	-0,1
40%	0
60%	+0,1
80%	+0,2
100%	+0,3
120%	+0,4
140%	+0,5

The building enterprise X_1.s.r.o.:

$$\beta = 1 + OR + FR$$
$$\beta = 1 + 0 + 0,4$$
$$\beta = 1,4$$

The building enterprise X_1.s.r.o was included in the third class of the systematic business risk because it belongs to average enterprises, it doesn´t fulfill any criterion of the higher business risk (OR = 0). From the financial risk´s point of view, it is chosen FR = +0, 4 because the insolvency of the enterprise does in the year 2010:

$$CK/VK = 12\,746/\ 10\,063 = 1,27 \times 100 = 127\ \%$$

The building enterprise X_2.s.r.o.:

$$\beta = 1 + OR + FR$$
$$\beta = 1 + 0 + 0,5$$
$$\beta = 1,5$$

The building enterprise X_2.s.r.o was unclouded in the third class of the systematic business risk because it belong to average enterprise, it doesn´t fulfill any criterion of higher business risk (OR = 0). From the financial risk´s point of view, it is chosen FR = +0,5 because the insolvency of the enterprise does in the year 2010:

$$CK/VK = 18\,208/\ 7\,314 = 2,49 \times 100 = 249\ \%$$

The building enterprise X_3.s.r.o.:

$$\beta = 1 + OR + FR$$
$$\beta = 1 + 0 + 0,5$$
$$\beta = 1,5$$

The building enterprise X_3.s.r.o was unclouded in the third class of the systematic business risk because it belong to average enterprise, it doesn´t fulfill any criterion of higher business risk (OR = 0). From the financial risk´s point of view, it is chosen FR = +0,5 because the insolvency of the enterprise does in the year 2010:

$$CK/VK = 11\,950/\ 6\,512 = 1{,}84 \times 100 = 184\ \%$$

The building enterprise X_4.s.r.o.:

$$\beta = 1 + OR + FR$$
$$\beta = 1 + 0 + 0{,}5$$
$$\beta = 1{,}5$$

The building enterprise X_{34}.s.r.o was unclouded in the third class of the systematic business risk because it belong to average enterprise, it doesn´t fulfill any criterion of higher business risk (OR = 0). From the financial risk´s point of view, it is chosen FR = +0,5 because the insolvency of the enterprise does in the year 2010:

$$CK/VK = 10\,200/\ 5\,810 = 1{,}76 \times 100 = 176\ \%$$

The building enterprise X_5.s.r.o.:

$$\beta = 1 + OR + FR$$
$$\beta = 1 + 0 + 0{,}5$$
$$\beta = 1{,}5$$

The building enterprise X_5.s.r.o was unclouded in the third class of the systematic business risk because it belong to average enterprise, it doesn´t fulfill any criterion of higher business risk (OR = 0). From the financial risk´s point of view, it is chosen FR = +0,5 because the insolvency of the enterprise does in the year 2010:

$$CK/VK = 9\,870/\ 4\,820 = 2{,}05 \times 100 = 205\ \%$$

The possibility 2: The assessment on the basis of an operating risk and a financial risk

This process used the coefficient β of similar enterprise which are handled and whose activity isn´t diverse whereupon in case of looking comparable enterprise it is necessary to deal with the effects of pertinent diversities in the business risk and on the financial risk. The effect of occasional diversities on the business risk is projected into β by an expert valuation; the effect of a height of an insolvent on β of an enterprise is possible to express by this relationship:

Formula 2: The effect of a height of an insolvent on β of an enterprise:

(**Source:** Mařík, M., Maříkova, P., 2005)

$$\beta_Z = \beta_N \times [1 + (1\text{-}d) \times CK/VK] - \beta_{CK} \times (1\text{-}d) \times (CK/VK) \ldots\ldots\ldots (2)$$

Where:

β_Z	β on an internal capital of an enterprise in debt (the so- called speculated β)
β_N	β of an internal capital provided the zero insolvency (the so- called non-speculated β)
β_{CK}	β for an external capital
d	the rate of Income Tax
CK	an external capital
VK	an internal capital

β_N should be dependent on a branch and an operating lever; because β_{CK} is mostly considered zero the following formula pays:

Formula 3: The coeficient β_N provided the zero β_{CK}:

(Source: Mařík, M., Maříkova, P., 2005)

$$\beta_Z = \beta_N \times [1 + (1\text{-}d) \times CK/VK] \ldots\ldots\ldots (2)$$

The coefficient β_N for the branch of building industries is excluded from the informative source if financing the internal capital is presumed.

The building enterprise X_1.s.r.o.:

$$\beta z = \beta_N \text{ x } [1 + (1\text{-}d) \text{ x } CK/VK]$$
$$\beta z = 0{,}40 \text{ x } [1 + (1\text{- } 0{,}19) \text{ x } 12\,746/\ 10\,063)]$$
$$\beta z = 0{,}8104$$

The building enterprise X_2.s.r.o.:

$$\beta z = \beta_N \text{ x } [1 + (1\text{-}d) \text{ x } CK/VK]$$
$$\beta z = 0{,}40 \text{ x } [1 + (1\text{- } 0{,}19) \text{ x } 18\,208/\ 7\,314)]$$
$$\beta z = 1{,}2066$$

The building enterprise X_3.s.r.o.:

$$\beta z = \beta_N \text{ x } [1 + (1\text{-}d) \text{ x } CK/VK]$$
$$\beta z = 0{,}40 \text{ x } [1 + (1\text{- } 0{,}19) \text{ x } 11\,950/6\,512)]$$
$$\beta z = 0{,}9946$$

The building enterprise X_4.s.r.o.:

$$\beta z = \beta_N \text{ x } [1 + (1\text{-}d) \text{ x } CK/VK]$$
$$\beta z = 0{,}40 \text{ x } [1 + (1\text{- } 0{,}19) \text{ x } 10\,200/\ 5\,810)]$$
$$\beta z = 0{,}9688$$

The building enterprise X_5.s.r.o.:

$$\beta z = \beta_N \text{ x } [1 + (1\text{-}d) \text{ x } CK/VK]$$
$$\beta z = 0{,}40 \text{ x } [1 + (1\text{- } 0{,}19) \text{ x } 9\,870/\ 4\,820)]$$
$$\beta z = 1{,}0635$$

The possibility 3: The assessment on the basis of factors for a valuation of the coefficient β

β The factors which belong to the area of an enterprise; an operating lever and a financial lever have a decisive a effect on the coefficient. As far as the area of the enterprise is concerned, the biggest effect on β a market and market conditions under which the evaluated enterprise does business have. The operating lever is given above all by a share of fixed costs in total costs. The financial lever which is given by a ratio of an external and an internal capitals functions in the similar way as the operating lever.

The particular factors including the scale for the evaluation of the riskiness are stated in the following table.

Table 3: The scabe for the evaluation of the riskiness

(Source: Mařík, M., Maříkova, P., 2005)

The scale for the evaluation of the riskiness	**0,5**	**1**	**1,5**
1. The sensitivity on changes of an economic cycle	a mineral sensitivity	it develops with a cycle	a high sensitive
2. The negotiating power towards supplies	a prevalence of an enterprise	well - balanced	a prevalence of suppliers
3. The negotiating power towards customer	a prevalence of an enterprise	well - balanced	a prevalence of customers
4. The share of fixed costs in total costs	low	average	high
5. The rate of the insolvency	less than 40%	40% -80%	80% and more
6. The size of an enterprise	large	middle	small
7. The diversity of an area	considerable	middle	small
8. The diversity of product	considerable	middle	small

The coefficient β is then calculated from the relationship:

Formula 4: The valuation of the coefficient:

(Source: Mařík, M., Maříkova, P., 2005)

$$\beta = (A \times B)/ B \ldots\ldots\ldots (4)$$

Where:

A a grade of risk
B a number of occurrences

The evaluation of the building enterprises X_1.s.r.o - X_5.s.r.o including taking particular grades of the risks and the number of their occurrences into consideration is stated in the Table 4: The scale for the evaluation of the riskiness (X_1.s.r.o - X_5.s.r.o) and the Table 5: The valuation of the coefficient β X_1.s.r.o - X_5.s.r.o); on the basis of these data the coefficient β is then calculated.

Table 4: The scale for the evaluation of the riskiness (X_1.s.r.o - X_5.s.r.o)

(Source: Mařík, M., Maříkova, P., 2005)

The scale for the evaluation of the riskiness	"The choice of the evaluator." (X_1.s.r.o - X_5.s.r.o)
1. The sensitivity on changes of an economic cycle	in develops with a cycle → 1
2. The negotiating power towards supplies	well – balanced → 1
3. The negotiating power towards customers	well – balanced → 1
4. The share of fixed costs in total costs	average → 1
5. The rate of the insolvency	80% and more → 1,5
6. The size of an enterprise	middle → 1
7. The diversity of an area	middle → 1
8. The diversity of product	middle → 1

Table 5: The valuation of the coefficient β (X_1.s.r.o - X_5.s.r.o)

(Source: Mařík, M., Maříkova, P., 2005)

The grade of the risk A	The number of the occurrences B	A x B
0,5	0	0
1	7	7
1,5	1	1,5
součet	8	8,5

B = (A x B)/B = 8,5/8 = 1 0,625

The possibility 4: The risk in the United States of America for the branch of building industries

Under the concept "risk" in the United States of America for the branch of building industries the branch coefficient for building industries in the United States of America provided a real insolvency which acquires the following value is comprehended:

β = 1,32

The building enterprise X_1.s.r.o: The evaluation of the prognosis β

The possibility 1: β =1,4
The possibility 2: β =1,8104
The possibility 3: β =1,0625
The possibility 4: β =1,32

Formula 5: The assessment of the coefficient β by means of an arithmetical average

(Source: Mařík, M., Maříkova, P., 2005)

$$\beta = \sum \beta_n / n \ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

$$\beta = (1,4 + 0,8104 + 1,0625 + 1,32)4$$

$$\beta = 4,5929/4$$

$$\beta = 1,1482$$

The building enterprise X_2.s.r.o: The evaluation of the prognosis β

The possibility 1: β =1,5
The possibility 2: β =1,2066
The possibility 3: β =1,0625
The possibility 4: β =1,32

$$\beta = (1,5 + 1,2066 + 1,0625 + 1,32)4$$

$$\beta = 5,0891/4$$

$$\beta = 1,2723$$

The building enterprise X_3.s.r.o: The evaluation of the prognosis β

The possibility 1: β =1,5
The possibility 2: β =0,9946
The possibility 3: β =1,0625
The possibility 4: β =1,32

$$\beta = (1,5 + 0,9946 + 1,0625 + 1,32)4$$

$$\beta = 4,8771/4$$

$$\beta = 1,2193$$

The building enterprise X_4.s.r.o: The evaluation of the prognosis β

The possibility 1: β =1,5
The possibility 2: β =0,9688
The possibility 3: β =1,0625
The possibility 4: β =1,32

$$\beta = (1,5 + 0,9688 + 1,0625 + 1,32)4$$

$$\beta = 4,8513/4$$

$$\beta = 1,2128$$

The building enterprise X_5.s.r.o: The evaluation of the prognosis β

The possibility 1: β =1,5
The possibility 2: β =1,0635
The possibility 3: β =1,0625
The possibility 4: β =1,32

$$\beta = (1,5 + 1,0635 + 1,0625 + 1,32)4$$

$$\beta = 4,9460/4$$

$$\beta = 1,2365$$

The valuation of perilous premium of country

The possibility 1: The valuation of premiums for the Czech Republic

For an assessment of a premium for a risk it is possible to use a rating evaluation which means that the rating of the whole country in whose territory a capital market and an objective enterprise function is taken into consideration. It pays that for the highest rating evaluation AAA of the enterprise S&P a basic premium for a risk of a shareholder in the model CAMP at height of 5, 5% is calculated.

The premium was calculated as a geometric average of the observations measured in the years 1926 – 1990 between the stock and treasury bills and bonds in the United State of America. The premium is controlled by a rating of a country which means that in case of a worse rating grade than AAA an additional premium expressing an increased rate of a risk for an investor in a given territory is added to this basic historical premium at the height of 5,5%

Table 6: The valuation of perilous premiums for the Czech Republic (the assessment of the value)).

(Source: Mařík, M., Maříkova, P., 2005)

The country	S & P Rating	The basic premium for a risk	The additional premium	The total premium for a risk
The Czech Republic	A -	5,50%	1,70%	7,20%

Table 7: The valuation of perilous premiums for the Czech Republic in the period of a financial crisis (the assessment of the value)).

(Source: Mařík, M., Maříkova, P., 2005)

The year	2008	2009	2010
The basic premium for a risk	5,50%	5,50%	5,50%
The additional change to the rating according S&P for the Czech Republic	1,70%	1,70%	1,70%
Total	7,20%	7,20%	7,20%

From the table stated above it ensures that in the Czech republic the total premium for the risk is considered (it id 7,20%) which is created by the basic premium for the risk (it is 5,50%) and the addiction premium (it is 1,70%) whereupon the same rating grade pays in the period of a financial crisis as well. No enterprise functioning in the territory of the Czech Republic can then reach a better evaluation than the whole country regarding the macroeconomic environment in which it functions.

Possibility 2: The expert valuation of perilous premiums according to the categories (Business Valuation News)

Enterprise can be divided into five categories according to the size of the perilous premium (see Table 8: The expert valuations of perilous premiums).

Table 8: The expert valuations of perilous premiums

(Source: Mařík, M., Maříkova, P., 2005)

The category	The perilous premium	The description
1	6 - 10%	• established enterprise, strong positions on a market • a limited competition • financially stable • an efficient management • a stable previous development • it takes a stable development in the future
2	11 – 15%	• established enterprises • a relatively strong competition • financially stable • a good management • a stable previous development • it is possible quite well to assume a further development
3	16 – 20%	• a limited capital pretension • they don´t require an extraordinary know-how • enterprise in branches with a very strong competition • good results in the past
4	21 – 25%	• established enterprise • " a cyclic development" • a dependence on a special experience and knowledge of a limited group of people • a heavily anticipating development • a portability of returns of an enterprise is problematic

The evaluating building enterprise X_1.s.r.o and X_5.s.r.o were included in the second category because they show these signs: they are established and financially stable, they have a good management and a relatively strong competition, they show a stable previous development and it is possible quite well to assume their further development (see Table 8: The expert valuations to perilous premiums); the perilous premium does then 11-15%.

The building enterprise X_1.s.r.o - X_5.s.r.o The evaluation of the valuation of the perilous premiums

The possibility 1: 7, 20%
The possibility 2: 11 -15%

Further on it is calculated with the perilous premium at the height of 7,2% (see The possibility 1) because this valuation is more accurate and it goes out from the real data. The possibility 2 is quite subjective and therefore it isn´t considered further on; it is used there only for a comparison.

The secure interest rate

The secure interest rate is found out from the return of ten years´ state bonds according to the Czech National Bank (see Table 9: The secure interest rate).

Table 7: The secure interest rate

(Source: Mařík, M., Maříkova, P., 2005)

The year	2008	2009	2010
The return of ten years´ state bonds of the Czech National Bank (+)	4,55%	4,50%	4,40%

The secure interest rate does for the year 2010: r_f= 4,40 (see Table 14: The secure interest rate).

Costs on an internal capital - r_e

The model of capital assets – model CAMP (Capital Asset Pricing Model)

In most prosperous countries with a developed market system a discount factor is assessed by means of the model CAPM. Because it is quite problematically applied in the Czech Republic it is used there only seldom, thought. The reason is a low volume of trades on BCPP and RMS from which an insufficient liquidity of given securities ensues. As a rule the methods which are based on the so-called perilous additional changes are then used. To the secure rate (it is a return of long – termed state bonds to a date of an evaluation) the additional changes for the business risk and the financial risk are added.

The calculating formula for the model CAPM looks by the following way:

Formula 6: Costs on an internal capital:

(Source: Mařík, M., Maříkova, P., 2005)

$$r_e = r_f \times \beta \times (ZRP - r_f) \ldots\ldots (6)$$

where:

r_e costs on an internal capital
r_f the secure interest rate
ZPR a basic perilous additional change

For using of the stated model in the Czech Republic it is necessary to take the following additional changes into consideration:

Formula 7: Costs on an internal capital including the additional charges:

(Source: Mařík, M., Maříkova, P., 2005)

$$r_e = r_f + \beta \times ZRP + PMP + PTK + PSR \ldots\ldots\ldots (7)$$

Where:

PMP a additional change for small enterprises

PTK a additional change for market capitalization (it is for high ratio of an accounting value and a market value; this factor is omitted)

PSR a additional change for the other specific risks (for the Czech Republic it is recommended at the height of 3-5%)

The building enterprise X_1.s.r.o:

For further calculations, the model CAPM is used as the basis:

$r_e = r_f \text{ x } \beta \text{ x } (ZRP - r_f)$
$r_e = 4{,}40 \text{ x } 1{,}1482 \text{ x } (7{,}20 – 4{,}40)$
$r_e = 7{,}61\%$

For using of the stated model in the Czech Republic, the following additional charges must be taken into consideration:

$r_e = r_f + \beta \text{ x } ZRP + PMP + PTK + PSR$
$r_e = 4{,}40 + 1{,}1482 \text{ x } 7{,}20 + 4 + 0 + 3$
$r_e = 19{,}67\%$

The building enterprise X_2.s.r.o:

For further calculations, the model CAPM is used as the basis:

$r_e = r_f \text{ x } \beta \text{ x } (ZRP - r_f)$
$r_e = 4{,}40 \text{ x } 1{,}2723 \text{ x } (7{,}20 – 4{,}40)$
$r_e = 7{,}96\%$

For using of the stated model in the Czech Republic, the following additional charges must be taken into consideration:

$r_e = r_f + \beta \text{ x } ZRP + PMP + PTK + PSR$
$r_e = 4{,}40 + 1{,}2723 \text{ x } 7{,}20 + 4 + 0 + 3$
$r_e = 20{,}56\%$

The building enterprise X_3.s.r.o:

For further calculations, the model CAPM is used as the basis:

$r_e = r_f \text{ x } \beta \text{ x } (ZRP - r_f)$
$r_e = 4{,}40 \text{ x } 1{,}2193 \text{ x } (7{,}20 – 4{,}40)$
$r_e = 7{,}81\%$

For using of the stated model in the Czech Republic, the following additional charges must be taken into consideration:

$r_e = r_f + \beta \text{ x } ZRP + PMP + PTK + PSR$
$r_e = 4{,}40 + 1{,}2193 \text{ x } 7{,}20 + 4 + 0 + 3$
$r_e = 20{,}18\%$

The building enterprise X_4.s.r.o:

For further calculations, the model CAPM is used as the basis:

$r_e = r_f \text{ x } \beta \text{ x } (ZR128 \text{ x } (7{,}20 – 4{,}40)$
$r_e = 7{,}80\%$

For using of the stated model in the Czech Republic, the following additional charges must be taken into consideration:

$r_e = r_f + \beta \text{ x } ZRP + PMP + PTK + PSR$
$r_e = 4{,}40 + 1{,}2128 \text{ x } 7{,}20 + 4 + 0 + 3$

r_e = 20,13%

The building enterprise X_5.s.r.o:

For further calculations, the model CAPM is used as the basis:

$r_e = r_f \times \beta \times (ZRP - r_f)$
$r_e = 4,40 \times 1,2365 \times (7,20 - 4,40)$
$r_e = 7,86\%$

For using of the stated model in the Czech Republic, the following additional charges must be taken into consideration:

$r_e = r_f + \beta \times ZRP + PMP + PTK + PSR$
$r_e = 4,40 + 1,2365 \times 7,20 + 4 + 0 + 3$
$r_e = 20,30\%$

Costs on an external capital –r_d

For a valuation of cots on an external capital the process based on market data whose substance is an assessment of a rating of orientation of debts of an evaluating enterprise is used as basic, it means that a concrete debt of an enterprise is added to a group of bonds on a market which is loaded by a similarly cut down risk. In a practice it is calculated with a simplification when the rating is confided to a calculation of the only ratio namely to the calculation of an interest reimbursement.[6]

In the table stated below the perilous additional changes of costs on an external capital in a dependence on an estimated rating are stated.[7]

Table 10: The recommended additional charges of costs on an external capital

(Source: Mařík, M., Maříkova, P., 2005)

Rating	The recommended additional charges
AAA	0,75%
AA	1,00%
A^+	1,50%
A	1,80%
A^-	2,00%
BBB	2,25%
BB	3,50%
B^+	4,75%
B	6,50%
B^-	8,00%
CCC	10,00%
CC	11,50%
C	12,70%
D	14,00%

Costs on an external capital are assessed as a sum of the secure profitability and an additional change.

[6] MAŘÍK, M., MAŘÍKOVÁ, P. 2005. Moderní metody hodnocení výkonnosti a oceňování podniku. 2. vyd. Praha: Ekopress, 2005. 164 s. ISBN 80-86119-61-0.

[7] MAŘÍK, M., 2007.Metody oceňování podniku. Proces ocenění- základní metody a postupy 2.upravéné a rozšířené vydání. Praha: Ekopress, 2007a. ISBN 978-80-86929

Formula 8: The interest reimbursement

(Source: Mařík, M., Maříkova, P., 2005)

The interest reimbursement = EBIT/ costs´ interest……..(8)

The building enterprise X_1.s.r.o:

The interest reimbursement to the date of the evaluation does: the interest reimbursement = EBIT/ costs 'interest the interest reimbursement = 2773/ 129 the interest reimbursement = 21,50% → the evaluating enterprise is included in the rating grade D which means the additional charge is at the height of 14% (see Table 10: The recommended additional charges of costs on an external capital)

The building enterprise X_2.s.r.o:

The interest reimbursement to the date of the evaluation does: the interest reimbursement = EBIT/ costs 'interest the interest reimbursement = 2590/ 110 the interest reimbursement = 23,55% → the evaluating enterprise is included in the rating grade D which means the additional charge is at the height of 14% (see Table 10: The recommended additional charges of costs on an external capital)

The building enterprise X_3.s.r.o:

The interest reimbursement to the date of the evaluation does: the interest reimbursement = EBIT/ costs 'interest the interest reimbursement = 1 130/ 150 the interest reimbursement = 7,53% → the evaluating enterprise is included in the rating grade -B which means the additional charge is at the height of 8% (see Table 10: The recommended additional charges of costs on an external capital)

The building enterprise X_4.s.r.o:

The interest reimbursement to the date of the evaluation does: the interest reimbursement = EBIT/ costs 'interest the interest reimbursement = 1 530/ 180 the interest reimbursement = 8,50% → the evaluating enterprise is included in the rating grade -B which means the additional charge is at the height of 8% (see Table 10: The recommended additional charges of costs on an external capital)

The building enterprise X_5.s.r.o:

The interest reimbursement to the date of the evaluation does: the interest reimbursement = EBIT/ costs 'interest the interest reimbursement = 1 850/ 510 the interest reimbursement = 3,63% → the evaluating enterprise is included in the rating grade BB which means the additional charge is at the height of 3,50% (see Table 10: The recommended additional charges of costs on an external capital)

The profitability of the long–termed state bonds for the year 2010 is stated in the previous text at the height of 4, 40%.

The costs on the external capital of the building enterprise X_1.s.r.o - X_5.s.r.o represent the sum of the secure profitability ant he additional charge:

Formula 9: Costs on an external capital:

(Source: Mařík, M., Maříkova, P., 2005)

$r_d = r_f$ + the additional charge

The building enterprise X_1.s.r.o:

$r_d = r_f$ + the additional charge
r_d = 4,40% + 14,00%
r_d = 18,40%

The building enterprise X_2.s.r.o:

r_d = r_f + the additional charge
r_d = 4,40% + 14,00%
r_d = 18,40%

The building enterprise X_3.s.r.o:

r_d = r_f + the additional charge
r_d = 4,40% + 8,00%
r_d = 12,40%

The building enterprise X_4.s.r.o:

r_d = r_f + the additional charge
r_d = 4,40% + 8,00%
r_d = 12,40%

The building enterprise X_5.s.r.o:

r_d = r_f + the additional charge
r_d = 4,40% + 3,50%
r_d = 7,90%

Average costs of a capital

For the calculation of the average costs of the capital WACC the following formula pays:

Formula 10: Average costs of a capital

(Source: Mařík, M., Maříkova, P., 2005)

$$WACC = rd \times (1 - t) \times DIC + re \times EIC \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (10)$$

Where:

r_d	costs on an external capital
t	the rate of Income Tax
D	an external capital
E	an internal capital
C	a total capital
r_e	costs on an internal capital

The building enterprise X_1.s.r.o:

WACC = rd x (1 –t) x DIC + re x EIC
WACC = 18,40 x (1 -0,19) x 55,9 /100 + 19,67 x 44,1/100
WACC = 17,00%

The building enterprise X_2.s.r.o:

WACC = rd x (1 –t) x DIC + re x EIC
WACC = 18,40 x (1 -0,19) x 71,3 /100 + 20,56 x 28,7/100
WACC = 16,50%

The building enterprise X_3.s.r.o:

WACC = rd x (1 –t) x DIC + re x EIC
WACC = 12,40 x (1 -0,19) x 64,7/100 + 20,18x 35,3/100
WACC = 13,60%

The building enterprise X_3.s.r.o:

WACC = rd x (1 –t) x DIC + re x EIC
WACC = 12,40 x (1 -0,19) x 63,7 /100 + 20,13 x 36,3/100
WACC = 13,7%

The building enterprise X_4.s.r.o:

WACC = rd x (1 –t) x DIC + re x EIC
WACC = 7,90 x (1 -0,19) x 67,2 /100 + 20,30 x 32,8/100
WACC = 11,00%

The calculation WACC leans on the hypothesis that average costs on the capital are the reflection of free and rational decisions of a management of an enterprise and an interest of investors on a capital market.

A two - phase calculation of an enterprise value

A total enterprise value is calculated by means of this relationship:

Formula 11: A total enterprise value

(Source: Mařík, M., Maříkova, P., 2005)

$$\sum_{t=1}^{t=n}\left(\frac{FCFF_t}{(1+WACC)^t}\right) + \left(\frac{FCFF_{t+1}}{WACC-g_n}\right) \text{x } (1 + \text{WACC})^{-\text{n}} \quad \text{.....(8)}$$

where:

$FCCT_T$	a free Cash-flow for owners and creditors in a time period *t*
WACC	weighed capital costs (usually in %)
$FCCT_1$	a free Cash-flow for owners and creditors in the first year
n	a number of periods
g_n	a pace of an increase tenable to infiniteness[8]

In the following tables the two – phase calculations of the value of the building enterprises X_1.s.r.o. - X_5.s.r.o. are carried out; which are based on an assessment of a contemporary value of the first and the second phases whereupon the contemporary value of the first phase is assessed as a sum of contemporary values of the periods in which a plan is created for every year and the contemporary value of the second phase is assessed by means of a continuing value in the time. The gross operating value is then the sum of the first and second phases; from this value the resultant value of the own property is acquired after taking the interest-born debts and the non-operating assets into consideration.

The building enterprise X_1.s.r.o:

[8] MAŘÍK, M., MAŘÍKOVÁ, P. 2005. Moderní metody hodnocení výkonnosti a oceňování podniku. 2. vyd. Praha: Ekopress, 2005. 164 s. ISBN 80-86119-61-0.

Table 11: The cumulated DFCF entity – the contemporary value of the first phase (the building enterprise X_1.s.r.o.)

(Source: Mařík, M., Maříkova, P., 2005)

The data in thousands of Czech crowns	The calculation	2005	2006	2007	2008	2009	2010
The Earnings before Taxes and Interest	V30	-265,00	1914,00	1396,00	699,00	347,00	2773,00
The rate of Income Tax	rate	26,00%	24,00%	24,00%	21,00%	20,00%	19,00%
The taxation of the Earnings and Interest	ZZ before = V30 x rate	-68,90	459,36	335,04	146,79	69,40	526,87
The Earnings and Interest after the taxation	ZZ after = V30 x rate	-196,10	1454,64	1060,96	552,21	277,60	2244,13
The adjustments by the non -monetary operations	$CF_4 = CF_5 + CF_6 + CF_{10} + CF_{12}$	894,00	1713,00	863,04	760,86	1683,62	1436,00
The deductions of the stable assets	CF_5	687,00	650,00	53,04	626,52	814,35	571,00
The change in the state of the sums of correction, the reserves and the transient accounts of assets and liabilities	CF_6	-600,00	62,00	-73,00	-568,26	242,82	95,00
The account of the costs´ and the returns ´interest	CF_{12}	177,00	193,00	128,00	86,18	-48,95	129,00
The Earnings (the loss) from the sale of the stable assets	CF_{10}	630,00	808,00	755,00	616,42	675,00	641,00
CF from the operating activity before the changes of the Working Capital	CF = ZZ after + CF_4	697,90	3167,64	1924,00	1313,07	1916,22	3682,13
The change in the state of the Working Capital	$CF_{14} = CF_{15} + CF_{16} + CF_{17}$	-3486,00	2208,00	826,00	3683,82	-5451,94	-3800,00
The change in the state of the claims	CF_{15}	-10626,0	-13239,0	26395,0	-7125,82	-26164,55	-12984,00
The change on the state of the short-termed bonds	CF_{16}	6211,00	19066,00	-23954,00	12990,47	20196,68	10353,00
The change in the state of the stocks	CF_{17}	565,00	-3619,00	-1615,00	-2180,83	515,93	-1169,00
CF from the operating activity	CF_p= CF + CF_{14}	-2788,10	5375,64	5375,64	2750,00	4996,89	-3490,72
The acquirement of the stable assets	$CF_{24}=CF_{25} + CF_{26}$	-859,00	-1150,00	-1534,00	-1227,73	-1412,26	-1051,00
The receipts from the sale of the stable assets	CF_{26}	-630,00	-808,00	-755,00	- 616,42	-675,40	-641,00
The expenses connected with the acquisition of the stable assets	CF_{25}	-229,00	-342,00	-779,00	-611,31	-736,86	-410,00
FCF entity = free Cash- Flow into the enterprise	FCF =CF_p + CF_{24}	-3647,10	4225,64	1216,00	3769,16	-4902,98	-1168,87
The Interest Payment off (WACC) 17%	rate	0,735	0,681	0,630	0,583	0,583	0,583
DCFF= the discounted free Cash-Flow	DFCF=FCF x rate	-2680,62	2877,66	766,08	2197,42	-2858,44	-681,45
The cumulated discounted free Cash-Flow		-2680,62	197,04	963,12	3160,54	302,10	-379,35
The sum of DFCF = the contemporary value of the first phase by the method of DCF entity		-379,35					

Formula 12: The continuing value in the time

(Source: Mařík, M., Maříkova, P., 2005)

$$T = (FCFt+1/(ik-g) \quad \ldots\ldots\ldots (10)$$

The continuing value in the time:

T = (FCFt+1/(ik-g)
T = - 379,25/0,08
T = - 4 742 thousands of Czech crowns

Table 16: The resultant market value assessed by the method DFCF entity

(Source: Mařík, M., Maříkova, P., 2005)

	The calculation	The total
The evaluation od the first phase		-4 742
The discounted rate for the second phase		8%
The pace of the increase for the second phase		0%
FCF in the first year of the second phase	-4 742 x 1	-4 742
The evaluation of the second phase (the continuing value)	-4 742 / (0,08 - 0)	-59 275
The interest Payment off WACC = 17% for the year 2010		0,583
He contemporary value of the second phase	-59 275 x 0,583	-34 557
The gross operating value	-4 742 + (-34 557)	-39 299
The interest-born debts to the date of the taxation		3 500
The net operating value	-39 299 – 3 500	-42 799
The net operating assets to the date od the taxation		0
The resultant value of the own property		-42 799

The market value of the building enterprise X_1.s.r.o. assessed by the method DCF entity does – 42 799 000 Czech crowns to 31.12.2010.

The building enterprise X_2.s.r.o:

Table 13: The cumulated DFCF entity – the contemporary value of the first phase (the building enterprise X_2.s.r.o.)

(Source: Mařík, M., Maříkova, P., 2005)

The data in thousands of Czech crowns	The calculation	2005	2006	2007	2008	2009	2010
The Earnings before Taxes and Interest	V30	-3580,00	3330,00	3680,00	3250,00	2680,00	2590,00
The rate of Income Tax	rate	26,00%	24,00%	24,00%	21,00%	20,00%	19,00%
The taxation of the Earnings and Interest	ZZ before = V30 x rate	930,80	799,20	883,20	682,50	536,00	492,10
The Earnings and Interest after the taxation	ZZ after = V30 x rate	2649,20	2530,80	2796,80	2567,50	2144,00	2097,90
The adjustments by the non -monetary operations	$CF_4 = CF_5 + CF_6 + CF_{10} + CF_{12}$	1237,00	1910,00	1750,00	1420,00	1050,00	970,00
The deductions of the stable assets	CF_5	618,00	623,00	550,00	570,00	420,00	410,00
The change in the state of the sums of correction, the reserves and the transient accounts of assets and liabilities	CF_6	210,00	330,00	248,00	274,00	180,00	175,00
The account of the costs´ and the returns ´interest	CF_{12}	174,00	150,00	125,00	130,00	118,00	110,00
The Earnings (the loss) from the sale of the stable assets	CF_{10}	235,00	807,00	827,00	446,00	332,00	275,00
CF from the operating activity before the changes of the Working Capital	CF = ZZ after + CF_4	3886,20	4440,80	4546,80	3987,50	3197,00	3067,90
The change in the state of the Working Capital	$CF_{14} = CF_{15} + CF_{16} + CF_{17}$	-3434,28	-3923,21	-4054,30	-3468,42	-2726,23	-2623,95
The change in the state of the claims	CF_{15}	-1055,60	-1218,78	-1375,62	-1522,60	-1478,32	-1620,00
The change on the state of the short-termed bonds	CF_{16}	-988,78	-898,62	-902,10	-930,90	-558,99	-477,88
The change in the state of the stocks	CF_{17}	-1379,90	-1805,81	1776,58	-1014,92	-688,92	-526,07
CF from the operating activity	$CF_p = CF + CF_{14}$	451,92	517,59	492,50	519,08	467,77	443,95
The acquirement of the stable assets	$CF_{24} = CF_{25} + CF_{26}$	-387,00	-440,00	-408,00	-420,00	-419,00	-404,00
The receipts from the sale of the stable assets	CF_{26}	-259,00	-268,00	-263,00	-248,00	-230,00	-212,00
The expenses connected with the acquisition of the stable assets	CF_{25}	-128,00	-172,00	-145,00	-172,00	-189,00	-192,00
FCF entity = free Cash- Flow into the enterprise	$FCF = CF_p + CF_{24}$	64,92	77,59	84,50	99,08	48,77	39,95
The Interest Payment off (WACC) 17%	rate	0,735	0,681	0,630	0,583	0,583	0,583
DCFF= the discounted free Cash-Flow	DFCF =FCF x rate	47,72	52,84	53,24	57,76	28,43	23,29
The cumulated discounted free Cash-Flow		47,72	100,56	153,80	211,56	239,99	263,28
The sum of DFCF = the contemporary value of the first phase by the method of DCF entity		263,28					

The continuing value in the time:

T = (FCFt+1/(ik-g)
T = 263,28/0,08
T = 3 291 thousands of Czech crowns

Table 14: The resultant market value assessed by the method DFCF entity

(Source: Mařík, M., Maříkova, P., 2005)

	The calculation	The total
The evaluation od the first phase		3 291
The discounted rate for the second phase		8%
The pace of the increase for the second phase		0%
FCF in the first year of the second phase	3 291 x 1	3 291
The evaluation of the second phase (the continuing value)	3 291 / (0,08 - 0)	41 137,5
The interest Payment off WACC = 17% for the year 2010		0,583
He contemporary value of the second phase	41 137,5 x 0,583	23 983,16
The gross operating value	-4 742 + (23 983,16)	27 274,16
The interest-born debts to the date of the taxation		15 820,00
The net operating value	27 274,16 – 15 820	11 454,16
The net operating assets to the date od the taxation		0
The resultant value of the own property		11 454,16

The market value of the building enterprise X_2.s.r.o. assessed by the method DCF entity does 11 454 160 Czech crown to 31.12.2010.

The building enterprise X_3.s.r.o:

Table 15: The cumulated DFCF entity – the contemporary value of the first phase (the building enterprise X_3.s.r.o.)

(Source: Mařík, M., Maříkova, P., 2005)

The data in thousands of Czech crowns	The calculation	2005	2006	2007	2008	2009	2010
The Earnings before Taxes and Interest	V30	1 580,00	1 420,00	1 430,00	1 500,00	1 210,00	1 130,00
The rate of Income Tax	rate	26,00%	24,00%	24,00%	21,00%	20,00%	19,00%
The taxation of the Earnings and Interest	ZZ before = V30 x rate	410,80	340,80	343,20	315,00	242,00	214,70
The Earnings and Interest after the taxation	ZZ after = V30 x rate	1 169,20	1 790,20	1 086,80	1 185,00	968,00	915,30
The adjustments by the non -monetary operations	$CF_4 = CF_5 + CF_6 + CF_{10} + CF_{12}$	1 115,00	1 155,00	1 235,00	1 100,00	983,00	920,00
The deductions of the stable assets	CF_5	310,00	310,00	350,00	350,00	270,00	250,00
The change in the state of the sums of correction, the reserves and the transient accounts of assets and liabilities	CF_6	105,00	105,00	120,00	120,00	85,00	80,00
The account of the costs´ and the returns ´interest	CF_{12}	180,00	190,00	175,00	180,00	158,00	150,00
The Earnings (the loss) from the sale of the stable assets	CF_{10}	520,00	550,00	590,00	450,00	460,00	440,00
CF from the operating activity before the changes of the Working Capital	CF = ZZ after + CF_4	2 284,20	2 234,20	2 321,80	2 285,00	1 951,00	1 835,30
The change in the state of the Working Capital	$CF_{14} = CF_{15} + CF_{16} + CF_{17}$	-1 765,00	-1 716,00	-1 670,00	-1 800,00	-1 820,00	-1 830,00
The change in the state of the claims	CF_{15}	-995,00	-980,00	-910,00	-980,00	-1 020,00	-1 050,00
The change on the state of the short-termed bonds	CF_{16}	-520,00	-506,00	-540,00	-550,00	-620,00	-630,00
The change in the state of the stocks	CF_{17}	-250,00	-230,00	-220,00	-270,00	-180,00	-150,00
CF from the operating activity	$CF_p = CF + CF_{14}$	519,20	518,20	651,80	485,00	131,00	5,30
The acquirement of the stable assets	$CF_{24} = CF_{25} + CF_{26}$	-460,00	-480,00	-520,00	-4280,00	-304,21	-87,26
The receipts from the sale of the stable assets	CF_{26}	-310,00	-350,00	-380,00	-330,00	-149,21	-49,26
The expenses connected with the acquisition of the stable assets	CF_{25}	-150,00	-130,00	-140,00	-150,00	-155,00	-38,00
FCF entity = free Cash- Flow into the enterprise	$FCF = CF_p + CF_{24}$	59,20	38,20	131,80	5,00	-173,21	-84,96
The Interest Payment off (WACC) 17%	rate	0,735	0,681	0,630	0,583	0,583	0,583
DCFF= the discounted free Cash-Flow	DFCF =FCF x rate	43,51	26,01	83,03	2,92	-100,98	-47,48
The cumulated discounted free Cash-Flow		43,51	69,52	152,55	155,47	54,49	6,71
The sum of DFCF = the contemporary value of the first phase by the method of DCF entity		6,71					

The continuing value in the time:

T = (FCFt+1/(ik-g)

T = 6,71/0,08

T = 84 thousands of Czech crowns

Table 14: The resultant market value assessed by the method DFCF entity

(Source: Mařík, M., Maříkova, P., 2005)

	The calculation	The total
The evaluation od the first phase		84
The discounted rate for the second phase		8%
The pace of the increase for the second phase		0%
FCF in the first year of the second phase	84 x 1	84
The evaluation of the second phase (the continuing value)	84 / (0,08 - 0)	1 050
The interest Payment off WACC = 17% for the year 2010		0,583
He contemporary value of the second phase	1 050 x 0,583	612,15
The gross operating value	84 + 612,15	696,15
The interest-born debts to the date of the taxation		105,00
The net operating value	696,15 – 105,00	591,15
The net operating assets to the date od the taxation		0
The resultant value of the own property		591,15

The market value of the building enterprise X_3.s.r.o. Assessed by the method DCF entity does 591 150 Czech crown to 31.12.2010

The building enterprise X_4.s.r.o:

Table 17: The cumulated DFCF entity – the contemporary value of the first phase (the building enterprise X_4.s.r.o.)

(Source: Mařík, M., Maříkova, P., 2005)

The data in thousands of Czech crowns	The calculation	2005	2006	2007	2008	2009	2010
The Earnings before Taxes and Interest	V30	1 920,00	1 970,00	1 950,00	1 820,00	1 650,00	1 530,00
The rate of Income Tax	rate	26,00%	24,00%	24,00%	21,00%	20,00%	19,00%
The taxation of the Earnings and Interest	ZZ before=V30 x rate	499,20	472,80	468,00	382,20	330,00	290,70
The Earnings and Interest after the taxation	ZZ after=V30 x rate	1 420,80	1 497,20	1 482,00	1 437,80	1 320,00	1 239,30
The adjustments by the non -monetary operations	CF_4= CF_5 + CF_6 + CF_{10} + CF_{12}	1 285,00	1 450,00	1 290,00	1 160,00	1 170,00	1 150,00
The deductions of the stable assets	CF_5	450,00	460,00	470,00	420,00	410,00	410,00
The change in the state of the sums of correction, the reserves and the transient accounts of assets and liabilities	CF_6	150,00	150,00	160,00	140,00	130,00	120,00
The account of the costs´ and the returns´interest	CF_{12}	205,00	210,00	190,00	180,00	180,00	180,00
The Earnings (the loss) from the sale of the stable assets	CF_{10}	480,00	630,00	470,00	420,00	450,00	440,00
CF from the operating activity before the changes of the Working Capital	CF =ZZ after + CF_4	2 705,80	2 947,20	2 772,00	2 597,80	2 490,00	2 389,30
The change in the state of the Working Capital	CF_{14}= CF_{15}+CF_{16}+CF_{17}	-1825,00	-1930,00	-1840,00	-1950,00	-1920,00	-1935,00
The change in the state of the claims	CF_{15}	-1050,00	-1030,00	-1020,00	-1060,00	-1070,00	1080,00
The change on the state of the short-termed bonds	CF_{16}	-485,00	-620,00	-550,00	-610,00	-590,00	-605,00
The change in the state of the stocks	CF_{17}	-290,00	-280,00	-270,00	-280,00	-260,00	-250,00
CF from the operating activity	CF_p=CF + CF_{14}	880,80	1017,20	932,00	647,80	570,00	454,30
The acquirement of the stable assets	CF_{24}= CF_{25} + CF_{26}	-750,90	-768,00	-1134,00	-785,60	-620,00	-480,87
The receipts from the sale of the stable assets	CF_{26}	-490,10	-468,50	-558,50	-590,00	-520,00	-450,00
The expenses connected with the acquisition of the stable assets	CF_{25}	-260,80	-299,50	-575,50	-195,60	-100,00	-30,87
FCF entity = free Cash- Flow into the enterprise	FCF =CF_p + CF_{24}	129,90	249,20	-202,00	-137,80	-50,00	-26,57
The Interest Payment off (WACC) 17%	rate	0,735	0,681	0,630	0,583	0,583	0,583
DCFF= the discounted free Cash-Flow	DFCF=FCF x rate	95,48	169,71	-127,26	-80,34	-29,15	-15,49
The cumulated discounted free Cash-Flow		95,48	265,19	137,93	57,59	28,44	12,95
The sum of DFCF = the contemporary value of the first phase by the method of DCF entity		12,95					

The continuing value in the time:

T = (FCFt+1/(ik-g)
T = 12,95/0,08
T = 162 thousands of Czech crowns

Table 18: The resultant market value assessed by the method DFCF entity

(Source: Mařík, M., Maříkova, P., 2005)

	The calculation	The total
The evaluation od the first phase		162
The discounted rate for the second phase		8%
The pace of the increase for the second phase		0%
FCF in the first year of the second phase	162 x 1	162
The evaluation of the second phase (the continuing value)	162 / (0,08 - 0)	2 025
The interest Payment off WACC = 17% for the year 2010		0,583
He contemporary value of the second phase	2 025 x 0,583	1 180,58
The gross operating value	162 + 1 180,58	1 342,58
The interest-born debts to the date of the taxation		350,00
The net operating value	1 342,58 –350,00	992,58
The net operating assets to the date od the taxation		0
The resultant value of the own property		992,58

The market value of the building enterprise X_4.s.r.o. assessed by the method DCF entity does 992 580 Czech crown to 31.12.2010

The building enterprise X_5.s.r.o:

Table 19: The cumulated DFCF entity – the contemporary value of the first phase (the building enterprise X_5.s.r.o.)

(Source: Mařík, M., Maříkova, P., 2005)

The data in thousands of Czech crowns	The calculation	2005	2006	2007	2008	2009	2010
The Earnings before Taxes and Interest	V30	2 180,00	2 370,00	2 460,00	2 250,00	1 920,00	1 850,00
The rate of Income Tax	rate	26,00%	24,00%	24,00%	21,00%	20,00%	19,00%
The taxation of the Earnings and Interest	ZZ before = V30 x rate	566,80	568,80	590,40	472,50	384,00	351,50
The Earnings and Interest after the taxation	ZZ after =V30 x rate	1 613,20	1 801,20	1 869,60	1 777,50	1 536,00	1 498,50
The adjustments by the non -monetary operations	$CF_4=CF_5+CF_6+CF_{10}+CF_{12}$	1 350,00	1 410,00	1 390,00	1 315,00	1 230,00	1 180,00
The deductions of the stable assets	CF_5	430,00	440,00	450,00	420,00	410,00	405,00
The change in the state of the sums of correction, the reserves and the transient accounts of assets and liabilities	CF_6	170,00	180,00	190,00	175,00	150,00	135,00
The account of the costs´ and the returns ´interest	CF_{12}	520,00	570,00	550,00	530,00	520,00	510,00
The Earnings (the loss) from the sale of the stable assets	CF_{10}	230,00	220,00	200,00	190,00	150,00	130,00
CF from the operating activity before the changes of the Working Capital	$CF = ZZ\ after + CF_4$	2 963,20	3 211,20	3 259,00	3 092,50	2 766,00	2 678,50
The change in the state of the Working Capital	$CF_{14}= CF_{15}+CF_{16}+ CF_1$	-1960,00	-1940,00	-1940,00	-2000,00	-2080,00	-2080,00
The change in the state of the claims	CF_{15}	-1020,00	-1010,00	-1030,00	-1050,00	-1100,00	-1100,00
The change on the state of the short-termed bonds	CF_{16}	-620,00	-580,00	-600,00	-590,00	-610,00	-630,00
The change in the state of the stocks	CF_{17}	-250,00	-230,00	-220,00	-270,00	-180,00	-150,00
CF from the operating activity	$CF_p=CF + CF_{14}$	-320,00	-350,00	-310,00	-360,00	-370,00	-350,00
The acquirement of the stable assets	$CF_{24}= CF_{25} + CF_{26}$	1003,20	1271,20	1319,60	1575,00	-600,00	-590,00
The receipts from the sale of the stable assets	CF_{26}	-420,00	-390,00	-1090,20	-905,00	-370,00	-330,00
The expenses connected with the acquisition of the stable assets	CF_{25}	-210,00	-190,00	-959,00	-670,00	-230,00	-260,00
FCF entity = free Cash- Flow into the enterprise	$FCF =CF_p + CF_{24}$	373,20	691,20	-729,60	-482,60	86,00	8,50
The Interest Payment off (WACC) 17%	rate	0,735	0,681	0,630	0,583	0,583	0,583
DCFF= the discounted free Cash-Flow	DFCF = FCF x rate	274,30	470,71	-469,65	-281,30	50,14	4,96
The cumulated discounted free Cash-Flow		274,30	745,01	285,36	4,06	54,20	59,16
The sum of DFCF = the contemporary value of the first phase by the method of DCF entity		59,16					

The continuing value in the time:

T = (FCFt+1/(ik-g)
T = 59,16/0,08
T = 739,50 thousands of Czech crowns

Table 20: The resultant market value assessed by the method DFCF entity

(Source: Mařík, M., Maříkova, P., 2005)

	The calculation	The total
The evaluation od the first phase		739,50
The discounted rate for the second phase		8%
The pace of the increase for the second phase		0%
FCF in the first year of the second phase	739,50 x 1	739,50
The evaluation of the second phase (the continuing value)	739,50 / (0,08 - 0)	9 243,75
The interest Payment off WACC = 17% for the year 2010		0,583
He contemporary value of the second phase	9 243,75 x 0,583	5 389,11
The gross operating value	739,50 + 5 389,11	6 128,61
The interest-born debts to the date of the taxation		1 050,00
The net operating value	6 128,61 – 1 050,00	5 078,61
The net operating assets to the date od the taxation		0
The resultant value of the own property		5 078,61

The market value of the building enterprise X_5.s.r.o. assessed by the method DCF entity does 5 078 610 Czech crown to 31.12.2010

Conclusions

In the theoretical part of the contribution the particular methods of an evaluation of an enterprise and the terminology connected with the solving problems were presented; the subsequent practical part contains the basic data about five competitive examined building enterprises X_1.s.r.o, X_2.s.r.o, X_3.s.r.o, X_4.s.r.o, X_5.s.r.o and their evaluation by the method of return DCF entity. As far as a method of a discounted Cash – flow (DCF) in concerned, so this is a basic method of return from the principle´s point of view. In the contribution it was elaborated namely in the chosen variant DCF entity – a free Cash- flow into an enterprise. For the evaluation of all five examined building enterprise the process of the calculation of the coefficient β by means of four possibilities was chosen whereupon the arithmetical average from these values was used. The valuation of the perilous premiums of a country was then carried out afterwards namely by means of two possibilities. The biggest significance was laid on the possibility 1 which represents the valuation of the perilous premiums for the Czech Republic and it goes out from the secure profitability of the United States of America and the perilous premium of a country. The second possibility which includes the expert valuations of the perilous premiums according to the categories is quite subjective and therefore it is used in the own calculation only for a comparison.

Further on the costs on an internal capital were calculated namely by means of the model of capital assets CAMP (capital Asset Pricing Model). Despite the matter of fact that this model is relatively problematically applicable in the Czech Republic it is the most punctual and therefore it was the calculation of the average costs of the capital WACC; these were then projected into the calculation of the value of the enterprises by means of the two-phase calculation. In the end calculation of the contemporary value of the first phase was carried out which was followed by finding out of the continuing value in the time (it is the contemporary value of the second phase); the gross operating value was then the sum of the first and the second phase. From this value the resultant value of the own property was acquired after taking the interest-born debts and the non-operating assets into consideration. On the basis of the acquired results during the evaluation of the examined building enterprise X_1.s.r.o, X_2.s.r.o, X_3.s.r.o, X_4.s.r.o and X_5.s.r.o the matter of fact was confirmed that if an enterprise is in debt the method of return DCF entity becomes inaccurate. From this it ensues that there is no unique method by means of which it would be possible to find out value of an enterprise. In is possible to judge that a choice of a suitable method is one of the most important and very substantial steps during an evaluation of an enterprise.

On the created model of five building enterprise with the similar production and the size of the economic turn-over we succeeded in figuring the external negative influence of the critical character. According to the reactions of the building enterprises, it is possible to consider the building enterprise X_2.s.r.o the leader among the enterprise because it managed the most the critical situation on the market.

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