ANALYSIS OF INFLUENCE OF INPUT DATA, METHOD OF FINANCING AND METHODS USED FOR FINANCIAL EVALUATION OF INVESTMENT

ANALÝZA VLIVU VSTUPNÍCH DAT, ZPŮSOBU FINANCOVÁNÍ A POUŽITÝCH METOD NA FINANČNÍ HODNOCENÍ INVESTICE

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Abstract

This paper focuses on the firms' approach to processing feasibility studies, especially the part related to the evaluation of an investment project efficiency. On a particular case it shows the influence of chosen method on the decision on acceptance or rejection of a project. It also points to other factors that may affect the result of project efficiency evaluation, particularly to unrealistically planned cash flows, poorly chosen discount rates, or ignorance of using the rules for taking inflation into account. Final findings unambiguously show the necessity of post-auditing as a means of verifying the correctness of input assumptions and finding the causes of deviations occurred. The presented conclusions can be generalized and even extraction of mineral resources is no exception.

Abstrakt

Příspěvek je zaměřen na přístup firem ke zpracovávání studií proveditelnosti, zejména části týkající se hodnocení efektivnosti investičního projektu. Na konkrétním případě ukazuje vliv zvolené metody na rozhodování o přijetí či zamítnutí projektu. Poukazuje také na další faktory, které mohou ovlivnit výsledek hodnocení efektivnosti projektu, zejména na nereálně naplánované peněžní toky, špatně zvolenou diskontní sazbu či neznalost používání pravidla pro zohlednění inflace. Ze závěrečných zjištění vyplývá jednoznačně nutnost zpracovávání postauditu, jako prostředku ověření správnosti vstupních předpokladů a zjištění příčin vzniklých odchylek. Prezentované závěry lze zobecnit a ani oblast dobývání nerostných surovin není výjimkou.

Key words: investment, feasibility study, methods of investment evaluation, payback period, discounted payback period, post-audit.

1 PURPOSE AND METHODS OF INVESTMENT PROJECT EVALUATION FOR ENTERPRISE

Business cannot do without investments. These are needful when establishing an enterprise, in the course of enterprise activities namely during its innovation, development and expansion. Investment activities are for non-financial companies a specific area of their activities, focusing predominantly on acquisition of tangible and intangible fixed assets. The assets, for which resources were expended today, expect benefits in future in the form of economic benefits. In order to implement an investment the company shall defer a **certain present** consumption in favour of an **uncertain future** consumption. It follows when making decisions on investments especially two following points should be respected: the **time factor**, because a crown gained today has even in a non-inflation environment a higher value than the same crown gained tomorrow, as it can be invested immediately and will bring a certain return, and the **risk of changes**.

Investment decision-making, therefore, belongs to the most important strategic business decisions and challenges the decision on acceptance or rejection of individual investment projects. Decisions on acceptance or rejection of an investment project of a business nature must result from an assessment of feasibility study economic efficiency based on the use of financial analysis for business profitable projects or economic analysis for non-profit projects. In both cases, criterial indicators are used, the input data for the assessment is cash flows composed of the profits in each year of investment operation, the amount of depreciation in each year and the amount of investment expenditure. The result must prove the reality and feasibility of profitable projects and

meaningfulness of non-profit projects. As criterial indicators static and dynamic methods for evaluating investments may be used.

Static methods are historically older than dynamic ones. They do not take into consideration the distribution of cash income over time and sometimes they relegate the cash income from investment only to the book profit from investment. They are simple, but inaccurate. After all, their use was clearly preferred even in the first half of the fifties of the 20th century. And now they are for their simplicity favourable, but increasingly used as complementary methods. The most commonly used is the method for calculating the payback period.

Dynamic methods result from the opinion that the money a firm has available immediately, is for them more than the money received in future and that the current cash is not equivalent with the future one. Therefore, the evaluation of investment projects must respect the time factor and discount the future income from investment and capital expenditures if distributed over several years. These methods should be used wherever long-term acquisition of fixed assets as well long economic life are taken into account. Dynamic methods began to be applied more widely in the second half of the fifties of last century. The most commonly used is the method of net present value and internal rate of return. Other dynamic methods involve in particular profitability index, discounted payback period and for the evaluation of projects aimed at cost-saving then the method of discounted costs.

In addition to the above static and dynamic methods the method of free cash flow, evaluation of investment projects through economic value added EVA can be used to assess the economic efficiency or use the indicators for the calculation of the reversal (break-even point).

Since the preparation and selection of investment projects should be directed to ensure the implementation of corporate strategy and investment opportunities for each company are limited, it is necessary to lay a great emphasis on those activities and process the projects of preparatory phase thoroughly and to the extend required and pay due attention to economic efficiency evaluation.

However, also a reverse investment assessment is duly justified from the perspective of a longer time gap, as during the preparatory and implementation phases of the investment project the above mentioned changes could occur that are irreversible and affect strongly and on a long-term basis the financial efficiency of investment project. The risk of changes increases the most with rising investment expenditures, scale of project and number of related projects.

The financial effect of realized investment can then take completely other results than planned. The causes of these variations can be traced both in the human factor and in the neighbourhood surrounding the firm, in which various changes take place. Taking into consideration that the firm is essentially an open system, transforming inputs taken from the environment to outputs in the form of useful goods or services intended again for the neighbourhood, the changes taking place in the affected area will touch also the firm. It is therefore necessary by a certain lapse of time to determine, whether the results obtained in a specific investment project are in line with the planned projects. In essence, this is a feedback being a necessary part of any management functions, especially the planning, within which the verification of the progressive implementation of the selected strategy occurs. In the area of investment planning, it can be done through a systematic and independent examination, whose objective is to determine, whether the results obtained in a specific investment project are in line with the planned projects. Semantically this formulation corresponds to the term 'audit'. This is a retrospective verification of the project economic efficiency evaluation of completed investments in a certain period after their entry into service, so post-audit. The post-audit timely identifies and thoroughly analyzes deviations from the original assumptions, identifies sources of errors and causes of assumptions that proved to be misguided.

Importance of post-audit relates not only to the project it is conducted for, but its findings are a source of knowledge and experience in the preparation of other projects. Feasibility studies must be one of the sources for post-audit.

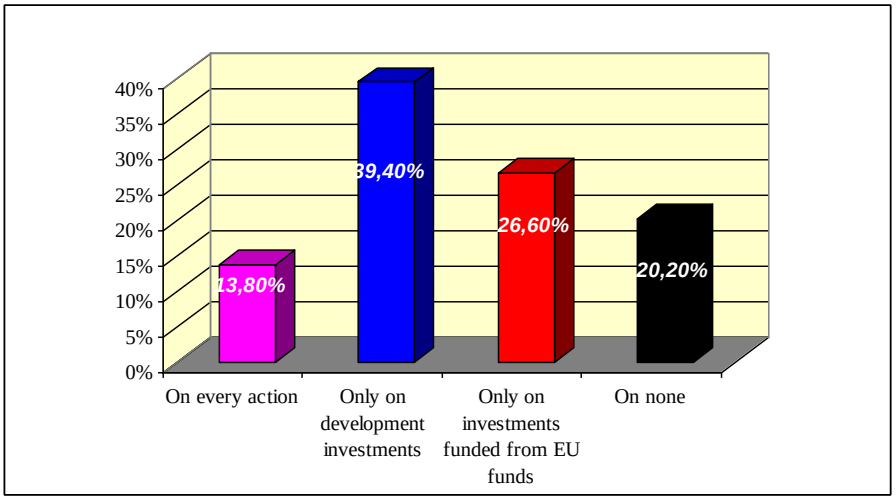
2 ISSUES OF APPROACH TO PREPARING FEASIBILITY STUDIES AND DIFFERENCES IN LEVEL OF PREPARATION

A good and thorough preparation of an investment project is essential for successful implementation and operation of investment both technically and economically. The approach of enterprises to the preparatory phase passed in the CR through a relatively intensive development since the nineties. In the nineties, the project description and prediction of maximum capital expenditures and cash flows of investment were carried out also for costly investments. Only later the theoretical knowledge on preparation and evaluation of investment projects began to be used in practice. Around the end of the second half of the last decade of the 20th century the final verdict of the management to adopt or reject investments increasingly began to be based on the conclusions of the financial evaluation of investments made in a techno-economic study of the project (Feasibility Study). The

incentive for this first step was both the gradual improvement of managerial work in companies, then the requirement of banks for preparing such documentation, as soon as the company applied for a credit, and in particular the beginning of the 21st century, the emergence of new opportunities to finance investment projects from EU structural funds. Feasibility study prepared within either the basic or simplified scope according to the requirements prescribed by methodological manuals for specific calls has become a mandatory annex to the application for financial assistance.

In what cases do companies prepare a feasibility study was one of the questions in the questionnaire survey. From 200 companies contacted 95 were willing to answer it and 20.2% of them, as shown in Graph 1, do not prepare any feasibility study at all and 26.6% only in order to obtain funds from the EU.

Graph 1 Cases in which feasibility studies are prepared



Specific approach in the preparation of investment projects is occupied by state-owned enterprises realizing investments in mining projects financed from the state budget. In these cases, the main preparatory documentation is called investment project and is prepared according to a binding outline of the Ministry of Industry and Trade. The first item of this outline justifies the need of structure and evaluation of its effectiveness. This is done only in words referring to the need to justify the structure without further quantifying the benefits of the investment. Input data of the project are in accordance with Annex 2 to Decree No 560/2006, on state budget participation in financing programmes of property reproduction, reported on the ISPROFIN forms. To evaluate the economic efficiency of an investment project neither the simplest method e.g. for calculating the payback period, is used. Absence of these calculations is justified by the fact that these are in principle enforced investments related to the implementation of the Government promulgated attenuation of uranium, ore and coal mining or investment projects aimed at cost saving or renewal of the worn equipment that is essential for completing the extraction and covering its consequences. For this reason the payback period and rate of return are here treated as irrelevant indicators.

At present, however, also those enterprises have the chance to realize some projects within the Operational Programme "Environment" and so obtain funds from the EU Structural Funds. Binding documents of the Operational Programme "Environment" 2007 – 2013, require to prepare a financial analysis, where you need to demonstrate that the project is financially returnable and financially sustainable. For so-called "large projects", i.e. the projects with total project costs over EUR 25 million, an economic analysis is prepared, which requires at least the results of the economic internal rate of return of the economic net present value of investment and the ratio of the revenues to the costs of the project to be given. Similarly, a feasibility study with the evaluation of economic efficiency through the use of dynamic methods is required also in other operational programmes. However, using these methods is not binding for business projects financed from other sources. And so even today it is possible to meet in preparation of projects with the evaluation carried out only with static methods.

Inappropriately chosen static method, not respecting the time factor is just one of the weak points that may affect the results of evaluating the project efficiency. Other ones are as follows:

- **Unrealistically planned cash flows**
- **Poorly chosen discount rate**
- **Ignorance of the use of rules for taking inflation into account**

Influence of these shortcomings in project evaluation results is illustrated by the following project.

3 ANALYSIS OF INVESTMENT DECISION ON PARTICULAR PROJECT

Supporting documents for the investment project were presented by a company producing high quality products that can be exported to all EU countries. The contract on exporting a large part of production to an EU country has forced the need to expand the production capacity by the modernization of production technology. The investment has been divided into two stages. For acceptance of this project the company has determined the condition the **payback period is seven years**. The total capital expenditure of **CZK 48 587 880** will be spread over two years. **In the first year**, the plan is to spend **CZK 30 767 880** and in the second year **CZK 17 820 000**. Project funding is combined, see Table 1:

Tab. 1: Project financing

Source	Loan in CZK million	Interest
Loan from company A	16,5	12% p.a
Loan from associate members	22	Interest-free
Soft loan from bank	6,6	1,2% p.a
Own resources	3,5	

Projected costs for each year and projected increase in sales resulting from the project realization in each year are the contents of tables 2 and 3.

Tab. 2 Projected costs for each year

Year:	**1**	**2**	**3**	**4**	**5**	**6**
Total costs in thousands CZK; thereby:	**24255**	**31983,6**	**35365**	**39138**	**54890**	**55242**
Depreciation in thousands CZK	**2640**	**2640**	**2640**	**2640**	**2640**	**2640**
Costs of production in thousands CZK	**18700**	**23210**	**28270**	**31680**	**47410**	**47410**
Other costs in thousands CZK	**2915**	**6133,6**	**4455**	**4818**	**4840**	**5192**
Years:	**7**	**8**	**9**	**10**	**11**	
Total costs in thousands CZK; thereby:	**55572**	**55583**	**55594**	**55638**	**55660**	
Depreciation in thousands CZK	**2640**	**2640**	**2640**	**2640**	**2640**	
Costs of production in thousands CZK	**47410**	**47410**	**47410**	**47410**	**47410**	
Other costs in thousands CZK	**2915**	**6133,6**	**4455**	**4818**	**4840**	

Tab. 3 Projected increase in sales resulting from the project realization in each year

Years:	**1**	**2**	**3**	**4**	**5**	**6**
Increase in sales due to project realization in thousands CZK	**30800**	**36300**	**41800**	**46200**	**58300**	**60500**
Years:	**7**	**8**	**9**	**1O**	**11**	
Increase in sales due to project realization in thousands CZK	**63800**	**68200**	**71500**	**78100**	**84700**	

From the tables above profit, after-tax profit (if the rate development of legal entity income tax is known) and cash income from the investment for each year may be calculated, see Table 4.

Tab. 4 Profit, after-tax profit and cash flow from investment in individual years

Rok	1	2	3	4	5	6
Profit in individual years in thousands CZK	6545,000	4316,400	6435,000	7062,000	3410,000	5258,000
After-tax profit in individual years in thousands CZK	**4974,200**	**3280,464**	**4890,600**	**5578,980**	**2728,000**	**4258,980**
Cash flows in individual years in thousands CZK	**7614,200**	**5920,464**	**7530,600**	**8218,980**	**5368,000**	**6898,980**
Year:	**7**	**8**	**9**	**10**	**11**	
Profit in individual years in thousands CZK	8228,000	12617,000	15906,000	22462,000	29040,000	
After-tax profit in individual years in thousands CZK	**6664,680**	**10219,770**	**12883,860**	**18194,220**	**23522,400**	
Cash flow in individual years in thousands CZK	**9304,680**	**12859,770**	**15523,860**	**20834,220**	**26162,400**	

3.1 Calculation of payback period

Project payback period is determined by the number of years that are needed the accumulated predicted cash flows to offset the initial investment. It is therefore a static method not respecting the time factor and cash flows occurred during the payback period, see the relation (1).

$$I = \sum_{n=1}^{a} (Z_n + O_n) \qquad (1)$$

I = capital expenditure

Z_n = annual after-tax profit in individual years of life

O_n = annual depreciation of investment in individual years of life

n = individual years of life

a = payback period

$Z_n + O_n$ - cash flow in individual years of investment

The return is given by the year, when the required equivalence takes effect

Tab. 5 Calculation of payback period

n	1	2	3	4	5	6	7	Total
$Z_n + O_n$	7614,200	5920,464	7530,600	8218,980	5368,000	6898,980	7036,656 (from **9304,68)**	48587,880

a – payback period = 6 years and 276 days = 6,75 years

Conclusion: The payback period with ignorance of the time factor is in the desired interval.

3.2 Taking the time factor into account and determining the discount rate

In the previous procedure an important fact was ignored that the amount of money obtained in future has less value than the same amount produced today. In evaluation of projects the time factor is taken into account by discounting the future revenues. Hereto the discount rate as a minimum required return should be determined appropriately.

Determination of the appropriate discount rate, although it is a relatively difficult matter, has a significant impact on the project evaluation. Professional literature provides several options how to proceed.

1. Identify the discount rate with corporate costs of capital – but only if:
   a) The level of the project risk is about as big as the risk of business activity
   b) The financing of the project will not affect too much the capital structure, which the corporate costs of capital result from. [2],
2. Determine the discount rate using the alternative costs of capital [1], reflecting the loss of revenue from the second-best option of the capital injection, which is invested in the project.
3. Follow the table value presented in a specialized literature. Here the discount rate of investment projects reflects their degree of risk, see Table 6 and Table 7.

Tab. 6 Dependence of the discount rate on the type of project

Project categories	**Discount rate in %**
1. Replacement of production facility	8
2. Reduction of costs by proven technology	10
3. Extension of existing production programme	**12**
4. Introduction of new products	15
5. Projects distant from the firm orientation	18

Source:[2]

Table 7: Dependence of the discount rate on the type of project 'expanded version'

Project categories	**Discount rate in %**
1. Replacement of old machines	8 (risk-free)
2. Implementation of new machines	10
3. Extension of existing production	**10**
4. New products to existing market	12
5. New products to new market	16
6. New products to new foreign market	20
7. Research	25

Source :[4]

Determination of the discount rate for the reference project

In our case, determining the discount rate according to point 1 is out of question, as the financing of enterprise by a foreign capital will increase the firm's indebtedness and so affect its capital structure.

To determine the discount rate on the basis of alternative costs would be inaccurate, as any other investment opportunities of the firm are not known, hence the alternative costs could be determined only by estimation. Therefore, it would be better in this reference case to use the recommended table values. According to its focus the project can be classified into the 3rd group in Table 6. Here the respective discount rate is 12%. According to Table 7 the recommended discount rate is 10%. However, it is important to realize that the products produced through the extended manufacturing capacity are indeed well-proven, but intended for export. Which should be at least minimally taken into account. Table 7 does not show any discount rate for this case and thus we assume that the discount rate when placing the proven products on new foreign markets would correspond to the category 5. Here the recommended discount rate is 16%. When averaging the recommended values from Table 11 (10%+ +16%), we will get the value of the recommended discount rate of 13%. Considering the recommendations of Table 10 (12%), we are then able to determine the discount rate for the reference project of 12.5%. We will count on this value in other calculations.

3.3 Calculation of the discounted payback period

According to the discounted payback period we can determine, how many years the investment must be in operation to be acceptable in terms of net current value. [1] This procedure refutes one of the shortcomings of the method used above – that all cash flows are assigned the same weight. However, the cash flows arisen during the return period are not still taken into account. The discounted payback period can be calculated by substituting into the relation (4).

$$I = \sum_{n=1}^{a} (Z_n + O_n) \frac{1}{(1+i)^n} \quad (2)$$

I = capital expenditure

Z_n = annual after-tax profit

O_n = annual depreciation of investment

n = individual years of life

a = payback period

i = desired rate of return

$(Z_n + O) * \frac{1}{(1+i)^n}$ - discounted cash flow in individual years of investment

The return is given by the year, when the required equivalence takes effect.

The calculation of the discounted payback period with the discount rate of 12.5% is evident from Table 8.

Tab. 8: The calculation of the discounted payback period with the discount rate of 12.5%.

n (years)	**1**	**2**	**3**	**4**	**5**	
Discounted cash flow	**6768,178**	**4677,897**	**5288,981**	**5131,069**	**2978,859**	
n (years)	**6**	**7**	**8**	**9**	**10**	**Total**
Discounted cash flow	**3403,061**	**4079,752**	**5012,023**	**5378,077**	5869,983 (from 6415,818)	**48587,880**

a –discounted payback period = 9 years and 334 days = 9.915 years

Conclusion: The discounted payback period respecting the time factor is not in the desired interval any longer.

3.4 Comparison of the project evaluation through the payback period and the discounted payback period

Comparing the results found out so far we can find that the difference in the payback period calculated first by the static and then the dynamic method with the discount rate of 12.5% is **3 years and 56 days.**

3.5 Issues of the prediction of the development of cash flows from the investment project

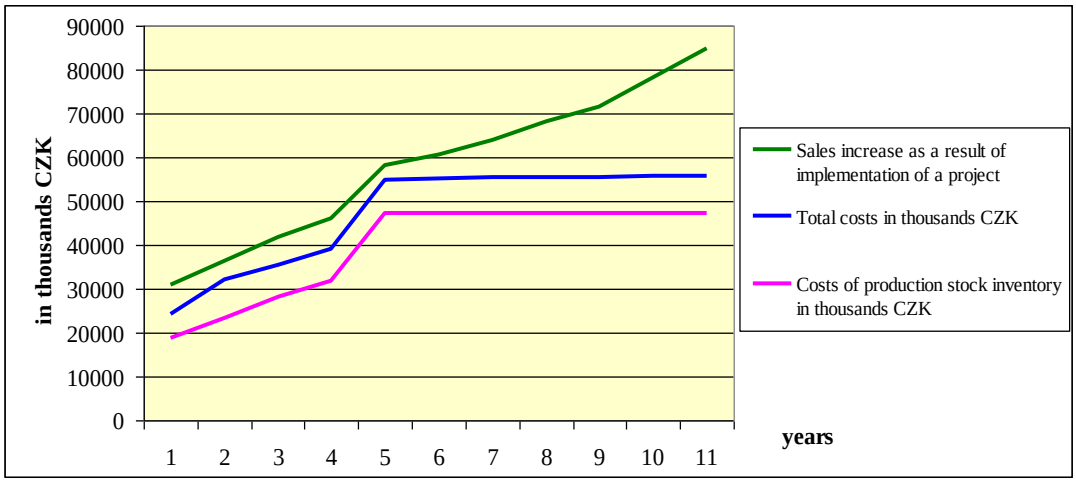
The informative value of the results of economic investment project evaluation depends on a sound estimation of cash flows for each year of the investment. The longer the project duration, the more difficult the estimations. In the case of the presented investment project we can find in the prediction of input data several weak points, which could, however, quite dramatically affect the final decision. Graph 2 illustrates (data from Tables 6 and 7) for each year of the investment an increase in sales, total annual costs of investment and for the analysis the most relevant costs of production inventory. Since the 6th year we can see a completely unbalanced

increase in sales, without changing the costs of production inventory. This may occur due to following reasons or their combinations:

1) Elimination of actual scrap rate
2) Increase in prices of products
3) Revaluation of crown
4) The same volume of inventories produces more products at the expense of quality, the price does not change

All of the above options ultimately show a great optimism of the firm and inefficiency in production. Why should be the scrap eliminated only after the 6th year of operation, when the investment is completed after the 2nd year? The increase in prices of outputs will entail a decrease in demand and consumer shift to other substitutes, as well as an eventual strong revaluation of the Czech crown. Believing in the successful implementation of the fourth point is a naive underestimation of the consumer. The firm further did not consider that during the observed lifetime the Czech Republic can adopt the EURO. It would mean, in any case, a certain increase in all costs and the firm did not consider a possibility of recession in the EU markets at all.

Graph 2 Development of costs and sales for each year of the investment



3.6 Corrections of the sales development

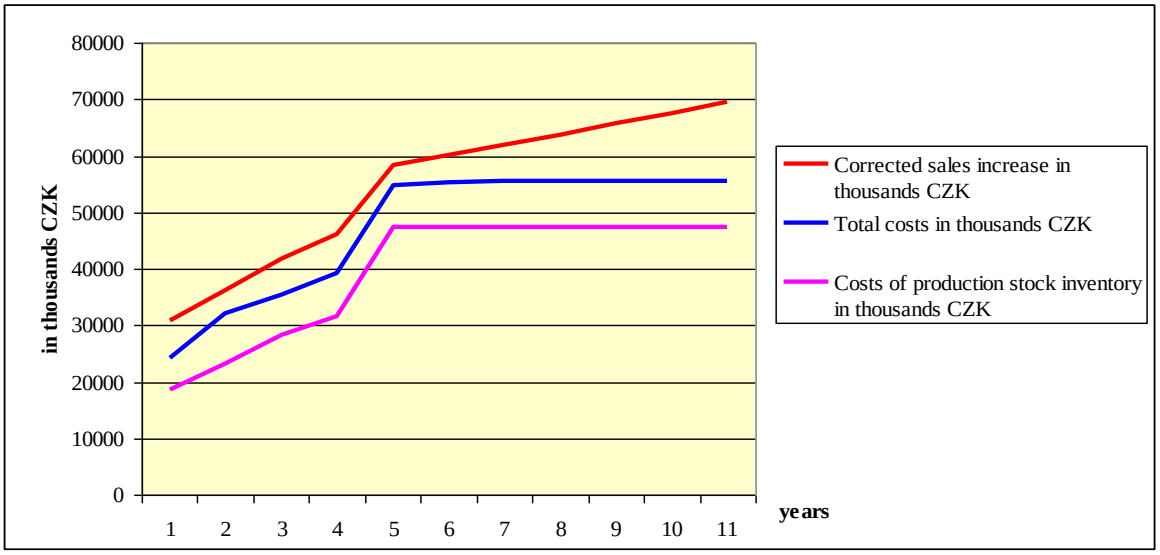
Although we could also argue the predicted increase of the growth of individual values affecting the cash flow in the period of 1—5, however let us focus only on correcting the weakest points of the project.

We will adjust the expected sales with respect to the costs of production inventories since the 6th year. Our speculations can be optimistic, neutral or pessimistic. Let us remain optimistic and assume, even with the corrected data, an overbalanced increase in sales, growth rate of 3% per annum. Table 9 shows the recalculated values for growth of sales due to the investment according to the above mentioned criterion and based on the table it is possible to calculate the payback period.

Tab. 9 Recalculated values of input data

Years:	**1**	**2**	**3**	**4**	**5**	**6**
Corrected sales increase in thousands CZK	**30800**	**36300**	**41800**	**46200**	**58300**	**60049**
Total costs in thousands CZK	24255	31983,6	35365	39138	54890	55242
Costs of production inventory in thousands CZK	18700	23210	28270	31680	47410	47410
Years:	**7**	**8**	**9**	**10**	**11**	
Corrected sales increase in thousands CZK	**61850**	**63706**	**65617**	**67586**	**69613**	
Total costs in thousands CZK	55572	55583	55594	55638	55660	
Costs of production inventory in thousands CZK	47410	47410	47410	47410	47410	

Graph 3 Development of costs and sales in individual years of the investment after correction



3.7. Determination of profit, after-tax profit, cash flows and discounted cash flows by the discount rate of 12.5% with the corrected values

Prerequisite:

Since the correction of sales touched the project only in the sixth year, it can be assumed that the payback period specified by the static method will change only slightly. Larger changes can be expected in the discounted payback period.

Tab. 10 Input data for calculating cash flows and discounted cash flows for each year of the investment

Year:	1	2	3	4	5	6
Profit for each year in thousands CZK	6545,000	4316,400	6435,000	7062,000	3410,000	4807,000
After-tax profit for each year in thousands CZK	**4974,200**	**3280,464**	**4890,600**	**5578,980**	**2728,000**	**3893,670**
Cash flows for each year in thousands CZK	**7614,200**	**5920,464**	**7530,600**	**8218,980**	**5368,000**	**6533,670**
Discounted cash flows for each year in thousands CZK	**6768,178**	**4677,897**	**5288,981**	**5131,069**	**2978,859**	**3222,865**
Year:	**7**	**8**	**9**	**10**	**11**	
Profit for each year in thousands CZK	6278,470	8122,984	10023,164	11947,679	13953,249	
After-tax profit for each year in thousands CZK	**5085,561**	**6579,617**	**8118,763**	**9677,620**	**11302,132**	
Cash flows for each year in thousands CZK	**7725,561**	**9219,617**	**10758,763**	**12317,620**	**13942,132**	
Discounted cash flows for each year in thousands CZK	**3387,368**	**3593,294**	**3727,259**	**3793,16351**	**3816,3784**	

3.8 Determination of the payback period and the discounted payback period with the corrected inputs

Substituting the values from Table 15 to the relations (1) and (2) we find out the following facts, see Table 11 and Table 12:

Tab. 11 Determination of the payback period with the corrected inputs

Year:	1	2	3	4	5	6	7	Total
Cash flows in thousands CZK	**7614,2**	**5920,464**	**7530,6**	**8218,98**	**5368**	**6533,67**	**7036,656 from 7725,56**	**48587,88**

a – payback period = 6 years and 333 days = 6.91 years

Conclusion: The payback period is at the limit of the desired period – 7 years.

Tab. 12 Determination of the payback period with the corrected inputs

Year:	1	2	3	4	5	6
Discounted cash flow in thousands CZK	**6768,178**	**4677,897**	**5288,981**	**5131,069**	**2978,859**	**3222,865**
Year:	**7**	**8**	**9**	**10**	**11**	**Total**
Discounted cash flow in thousands CZK	**3387,368**	**3593,294**	**3727,259**	**3793,164**	**3816,378**	**46385,311**

Table 12 shows that if the evaluation of the investment project of the company respects the time value of money, then the project must be rejected in this form, as for the whole lifetime no return of the invested funds will not occur.

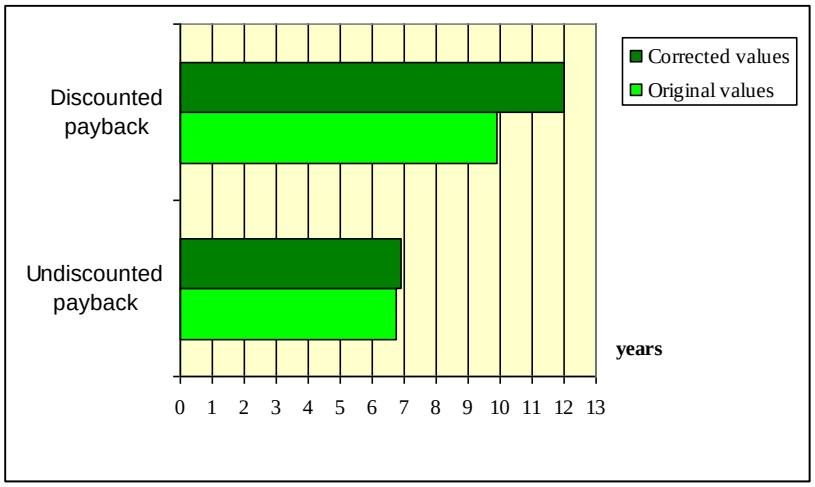
Conclusion: Over the whole lifetime CZK 2,202,569 are missing the investment to be returnable.

4 CONCLUSIONS

The found out results are summarized in Graph 4. It was unambiguously proved for the presented project that the result of the investment efficiency and hence the decision to accept or reject the project can be completely principally affected by the option of the static method instead of the dynamic one, as the time factor plays in the investment decision-making one of the key role. Another issue is the prediction of both capital expenditure, and especially then the annual costs on investment, and in particular the annual increase in sales due to the investment. There is an error in that the project was not designed in the optimistic, neutral and pessimistic scenarios with predicting changes and their intensity round about. The firm should then select the methods with a higher informative capability than is the payback period, namely the method of net current value and internal rate of return that would be for this case particularly suitable, as no transitions from positive to negative cash flows for each year of the project occur here.

A separate chapter is the analysis of taking the effects of inflation on cash flows of the project into account. From the initial input values it is difficult to determine, whether and how inflation was taken into account.

Graph 4 Payback period of the investment using the static and dynamic methods and the influence of the input data on the result of the evaluation of the economic efficiency of investment



Recommendations:

The firm should pay the time, energy and money to verify, whether the achieved results of the investment project are in compliance with the planned intentions and what are the real financial effects from the investment. The firm should conduct a post-audit – a complex retrospective analysis of the evaluation of investment projects in a specific period after their implementation. In this case (as the investment implementation was distributed into two years) after 4 -5 years. Within the post-audit deviations from the initial assumptions could be timely found out and thoroughly analyzed and their causes determined, while a space would occur for coordination of the found out deviations and so any spread of the shortcomings and errors into other projects could be avoided.

The findings presented in this paper can be generalized to all investment projects implemented in all sectors of our national economy. Neither the mining industry is an exception.

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RESUMÉ

Podnik, který chce dlouhodobě prosperovat, se neobejde bez investic. Vzhledem k tomu, že finanční zdroje, které má k dispozici jsou omezené musí pečlivě zvážit, jak s nimi naloží a pečlivě vybírat mezi jednotlivými investičními projekty, ty, které mu přinesou maximální ekonomické efekty. Při hodnocení se vychází ze studie proveditelnosti, kde jsou pro tento účel použity statické nebo dynamické metody. Vstupními jsou na základě reálných odborných odhadů určené investičních výdaje, a v jednotlivých letech provozu investice peněžní toky, popřípadě zisky, výše odpisů.

Základním problémem je již přístup firem ke zpracovávání studie proveditelnosti, zejména v oblasti obnovy je považována za zcela zbytečnou a nákladnou záležitost. Dalším problémem je volba vhodné metody

hodnocení. Doba návratnosti, které byla u konkrétního projektu požadována jako stěžejní ukazatel se lišila o 3 roky, když byl vzat v úvahu faktor času a použita diskontovaná doba návratnosti. Zvláštní pozornost si vyžaduje volba diskontní sazby. Úskalím byl u uvedeného projektu také odhad vývoje tržeb. Po provedení reálné korekce se projekt ukázal jako zcela nepřijatelný.

S každou investicí jsou spojena rizika, které souvisí s proměnlivostí faktorů v okolí, z nichž mnohé jsou podnikem neovlivnitelné, ale mohou způsobit, že předpokládané ekonomické ukazatele se od skutečných mohou značně lišit. Proto by měla být prováděna zpětná vazba formou post-auditu, kde by byly včas zjištěny a důkladně analyzovány příčiny odchylek od původních předpokladů.