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Analysis of the Misunderstandings in the Economic Evaluation Method of Electric Power Project

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ABSTRACT. *This paper mainly studies the common economic evaluation methods of electric power engineering at the present stage. It mainly explores the two misunderstandings of "reinvestment theory", "measurement complexity and the existence and uniqueness of solution", and analyzes the disadvantages of these two misunderstandings in the economic evaluation of power engineering projects.*

KEYWORDS: *economic evaluation, evaluation method, misunderstanding*

1. Introduction

Power engineering projects involve a wide range of content, huge engineering volume, and need a large amount of capital, manpower and material resources are invested, therefore, the power engineering project before and after the project is launched, it is necessary to conduct an economic evaluation of the power project for quantify the economic benefits brought by power engineering projects. At this stage, for electricity.

The economic evaluation of a project mainly refers to the internal income of the project rate as the main evaluation index. Internal revenue the calculation of the rate can reflect the most big gains are important for the quality and economic benefit of power engineering has an important impact [1]. The internal rate of return is usually affected by cash flow can accurately reflect the profitability of power engineering projects ability, so it is widely used in the economic evaluation of power engineering projects.

However, in the actual calculation process, the internal rate of return has relatively. The complex and tedious measurement process is difficult to apply to some special work project. Therefore, people consider calculating the external rate of return to replace generation internal rate of return, it is precisely because of this idea that power. The economic evaluation of engineering projects has entered a misunderstanding. The most common economic evaluation

The method misunderstandings include "reinvestment theory", "measurement

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complexity and the existence of solutions""Presence and uniqueness". This article focuses on the analysis of these two misunderstandings and research, analyze the two major misunderstandings in the economic evaluation of power engineering projects. There are disadvantages in this regard.

2. Misunderstandings in the "reinvestment theory"

At this stage, the "reinvestment theory" exists in the economic evaluation of power engineering projects. Many economists believe that the method of calculating the external rate of return can be used to calculate the external rate of return in the economic evaluation of power engineering projects. As an economic indicator to measure power engineering projects [2]. This is the primary misunderstanding of the economic evaluation method of power engineering projects. The traditional economic view believes that when the internal rate of return is used as the economic evaluation method of power engineering, it involves

The "reinvestment doctrine" reached can not meet the objective and practical requirements. The “reinvestment theory” that appears in the economic evaluation of power engineering projects means that since power engineering is a dynamic construction process, the investment funds involved in the engineering project are also dynamic, that is, to

For power engineering projects, the investment income obtained in each phase of the engineering project can be used for the investment of the next phase of the project, which forms a reinvestment, and the investment interest generated can be counted as the internal rate of return of the project. Reinvestment of power projects can realize the continuous value-added of project investment. However, in the actual construction process of a power engineering project, the investment income or cash flow obtained after the completion of the project is difficult to invest in the original power engineering project, and the process of reinvestment cannot be realized, that is, each phase of the project The investment income of the project cannot be included in the rate of return of the engineering project. The reason for this situation is that in terms of capital gains, there is a large gap between the income of electric power projects every year and the initial investment funds.

In the later stage of the project, the use time is short, this method of reinvestment cannot obtain higher economic benefits, and it may also appear that the rate of return is lower than the benchmark rate of return. In addition, there are some economists who believe that the benchmark discount rate can be used as the reinvestment interest rate. In the actual investment of power projects, the social profit rate, investment return rate and other factors are comprehensively considered to calculate the rate of return, which is closer to reality. And take this part of the income as the external rate of return. The misunderstanding of this idea is that the benchmark discount rate is not calculated by scientific and rigorous methods, but through market analysis and investigation, combined with the decision-making of the investment department, and finally formed some parameters. It can be said that there are many benchmark discount rates. Subjective factors are easily affected by objective factors, which in

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turn affect the accuracy of the external rate of return [3]. Therefore, the existence of "reinvestment theory" is important for the economics of power engineering projects.

Evaluation is a misunderstanding and requires relevant personnel to attach great importance to it. 2 Misunderstandings in "computational complexity and the existence and uniqueness of solutions" Power engineering projects use internal rate of return for economic evaluation must be calculated strictly, carefully and scientifically. When calculating the internal rate of return, the calculation process involves high-order equations. When calculating, each calculation step needs to be accurately calculated, especially the calculation of the discount rate. People need to calculate the net cash present value and the discount rate equal to 0. Usually it cannot be calculated through a one-time calculation, but needs to gradually narrow the calculation range in the continuous calculation process, and finally obtain the discount rate [4]. Not only is the calculation very cumbersome and complicated, but there are also situations where there are no solutions or there are multiple solutions, which leads to the calculation of the internal rate of return, which is difficult to accurately reflect the real economic situation of the project, and people often cannot figure out which one It is the true internal rate of return. At this time, people will fall into the misunderstanding of "computational complexity and the existence and uniqueness of the solution" [5]: Compared with the external rate of return, the calculation of the internal rate of return is too complicated, and it is easy to have no or multiple solutions. ; If the external rate of return is used for calculation, a unique calculated value can be obtained, which is used as the economic evaluation index of the project. In the actual economic evaluation process of power engineering projects, when calculating the external investment rate, if the power project adopts multiple equal investment in installments, the calculation of the external rate of return of the engineering project involves the calculation of cash flow relatively simple; if calculation If you encounter high-order equations in, then there will be no solution or multiple solutions in the calculation of high-order equations [6]. If a power engineering project adopts multiple phases and batches of unequal investment, the calculation of cash flow will have a relatively high degree of complexity. Affected by the calculation of higher-order equations, there will also be no solution or

Not the only solution. It can be seen that in the economic evaluation of power engineering projects, when calculating the external rate of return, regardless of whether the project is a multi-stage equal investment or an unequal investment, the calculation of the external rate of return will use a higher-order equation, which not only makes the cash flow Calculation becomes more complex

Miscellaneous, it will also lead to no solution or multiple solutions in the final calculation result.

3. Conclusion

The economic evaluation of power engineering projects refers to the use of economic index evaluation methods to measure the economic benefits of power engineering projects. Under normal circumstances, the internal rate of return is a

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more commonly used economic indicator evaluation method, but because the internal rate of return is too complex and cumbersome in the calculation process, it is difficult to calculate. At this time, people often fall into two misunderstandings, that is, "reinvestment theory" and "computational complexity and the existence and uniqueness of solutions". Scholars of the "reinvestment theory" believe that the external rate of return of a project can be calculated to replace the internal rate of return of the project, and the external rate of return is used as an indicator to evaluate the economics of the project [7-9]. The misunderstanding of "computational complexity and the existence and uniqueness of the solution" appears mainly because when calculating the internal rate of return, the high-level calculation method is used, and it is easy to have no solution or multiple solutions. Some scholars tend to use external how the rate of return is calculated. The two misunderstandings are the main misunderstandings in evaluating the economic indicators of power engineering projects. When calculating the internal rate of return, they should be avoided, and the calculation method of the internal rate of return should be improved to ensure the accuracy of the economic evaluation results of power engineering projects.

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