

Problems and Solutions of Construction Budget Overruns in China's Engineering Projects

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Abstract: The rapid development of the construction industry has driven the construction of engineering projects in China. However, there are currently many construction projects with budget overruns, resulting in reduced economic benefits of the project. Therefore, this paper elaborates the importance of construction budget of engineering projects, and then proposes the reasons for construction budget overrun of engineering projects: imperfect construction budget plan, lack of supervision in the implementation of construction budget plan, insufficient level of cost management personnel, and construction materials affected by the supply market. Finally, we propose measures to solve the budget overrun of engineering project construction: improve the project construction budget plan, strengthen the supervision of the implementation of the project budget plan, improve the professional skills of budget staff, and stabilize the supply price of construction materials.

Keywords: Engineering projects; Construction; Budget overruns

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1. Introduction

Construction projects are a huge and complex project. The project capital investment is large, the construction cycle is long, the control of cost throughout the engineering construction project, the control of engineering cost is the premise of the enterprise to obtain better economic benefits, but also an important guarantee for the completion of engineering construction. The project budget, as the basis for cost control in engineering, is related to the whole project, and budget management activities should be constantly integrated with business, information resources, and funds in the enterprise^[1]. From the decision-making level, the budget of engineering

construction projects requires a reasonable assessment of the raw materials, labor costs and machinery costs used in the engineering construction process, so as to ensure the accuracy and reasonableness of the budget plan, guarantee the quality of engineering construction, and provide a guarantee for the project managers to make scientific decisions. Therefore, when assessing the construction cost of the project, it is necessary to evaluate the construction drawings, construction standards and site conditions to control the project budget and prevent the project from overspending on the budget.

2. The importance of project construction budget

2.1 Control project cost

The cost of an engineering construction project is holistic and complex, requiring the budget staff to calculate the quantity of work through the construction drawings as well as the cost quotas and prices of construction raw materials to determine. Engineering personnel optimize labor management and rationalize the allocation of resources by determining the breakdown of construction costs of engineering projects by determining the funds invested in each part of the project^[2]. The budget staff needs to make a good budget plan before the construction of the project, so as to provide reference for the enterprise to develop the construction plan of the project and better control the construction cost of the project. In the preparation of the engineering budget scheme, it is necessary for the budget staff to develop the project budget scheme reasonably according to the actual project volume and in strict accordance with the budget quotas, so as to lay down the prerequisite for the rationalization of the project cost and thus enhance the economic benefits of the enterprise.

2.2 Facilitate cost management

Engineering cost management plays an important role in engineering project management and is a key link in controlling project construction costs. Therefore, the adequacy and reasonableness of the project budget funds are related to the quality of the project construction, and have a greater impact on the overall cost management of the project by the cost estimation staff. The project cost budget plan involves various aspects such as design drawings, construction techniques, construction plans and profits to accumulate experience and provide reference for later project construction. From the point of view of project control management, engineering cost can facilitate the project construction site personnel for cost management, save huge manpower management costs, and provide scientific basis for the project leader's decision making. Further stimulate each project manager to give full play to his advantages, ensure the quality of the project^[3], efficiently start the construction of the project, improve the economic efficiency of the project,

and ensure the maximum profit of the project while maintaining the quality of the project.

2.3 Promote project construction in an orderly manner

Construction is a complex system project with tightly integrated construction processes, so it is necessary to ensure that the construction is carried out in an orderly manner. The project construction budget can directly provide a basis for the project cost, while a scientific and reasonable project budget will provide important support for the development of the construction plan and the selection of construction technology later. Therefore, carrying out budget formulation for project construction to ensure the accuracy and reasonableness of the budget can promote the construction project in an orderly manner, prevent the problem of reworking the project due to substandard quality, and reduce the risk of engineering construction. Therefore, in order to improve the economic efficiency of engineering projects, expand the profit income at the same time and ensure the quality of the project, it is necessary to strengthen the budget of construction projects, to provide a reliable guarantee for the cost control of the project later, to further promote the efficient operation of the construction of the project, to avoid the situation of delay caused by insufficient budget, to improve the core competitiveness of construction enterprises, and to promote the development of the construction industry.

3. Reasons for overspending of construction budget of engineering projects

3.1 Incomplete construction budget

Many construction enterprises do not pay attention to the budget program prepared, despite the work of cost cost budget control, do not calculate the project volume for the budget program according to the actual situation, and develop the lowest possible cost target by analyzing various factors of cost reduction^[4], which makes numerous differences between the actual construction of the project and the budget preparation program, and the

situation of budget overrun of the construction project. In addition, the construction cycle of the project is long, less than two or three years, more than seven or eight years, the time span makes the construction enterprises in the preparation of cost budget program, not from the perspective of long-term cost objectives to control costs, only consider the current bidding price, choose the winning bidder with low bidding price, resulting in further compression of the project budget. Fewer budgeted funds at their disposal make construction units face problems of cost overruns in construction when faced with rising material costs or construction changes. Finally, because the project construction unit is equipped with fewer cost management talents, it cannot record all the necessary costs for the construction of engineering projects, while rejecting unreasonable expenditures, making the project construction unnecessary budget overruns and affecting the progress of the enterprise's engineering construction.

3.2 Lack of supervision over the implementation of construction budget plans

The implementation of the program requires the supervision of personnel, and the cost management of engineering costs from the beginning to the end of the entire project construction process. Therefore, it is necessary to effectively implement the supervision and management of the budget program, to implement the use of funds in the whole process of construction projects from preparation to implementation, to do a good job of cost control, and to prevent the project from budget overruns. The operation of the project requires the coordination of all departments of the company. However, in many projects in China, there is a lack of cooperation and communication between various departments, which makes many of the problems that arise do not receive timely feedback, resulting in a lag in information collection and a lack of practical implementation of cost control measures, which are not solved in a timely manner, resulting in construction cost budget overruns. Therefore, enterprises need to set up special supervisors to supervise the program. Ensure that the construction of the project is carried out in strict accordance with the framework

of the budget program and cannot be changed without authorization, and that problems found in the supervision process are corrected and fed back in time. At present, in many construction projects, the lack of supervision of the budget scheme and the imperfect management system cause many unnecessary extra expenditure costs, which is the main reason for the overspending of the project budget, further enhancing the cost of the project, reducing the profit of the enterprise, and failing to achieve the goal of the project budget control, which may even affect the construction quality of the project.

3.3 Insufficient level of cost management personnel

The complexity of engineering projects requires a high level of cost management personnel. Managers must have a solid professional foundation as well as rich practical experience in engineering project management, be able to face the situation of different projects with flexible cost management, and at the same time be able to prepare a reasonable project budget plan, accurately detect the links that affect the project budget overrun, and manage the cost of the whole process of construction of the project, the quality of the manager directly affects the efficiency and effectiveness of the internal control of the project^[5]. However, at present, there are only a few colleges and universities in China that set up engineering costing majors, and some of the cost management talents cultivated are not solid in professional knowledge, not comprehensive in preparing engineering budget plan and lacking in cost management ability, etc. At the same time, some cost management personnel lack the spirit of seeking truth from facts, and in the face of project budgeting, they do not actually conduct field research on the actual situation of project construction and research on the raw material supply market, relying only on their own experience to make judgments, which makes the budgeting scheme prepared and the actual cost expenditure do not match. Especially when the price of raw materials rises, the chances of the actual construction cost exceeding the budget increases greatly, which seriously affects the subsequent construction activities of

the construction unit.

3.4 Building materials affected by supply market

For construction projects, construction materials constitute the basis for the construction of the project, and the cost of raw materials occupies a dominant position in the construction cost of the project, which has a great impact on the cost of the project. Generally speaking, the cost of construction materials occupies more than 60% of the construction cost, but construction materials are also affected by market economic policies, and the price of construction materials is in a state of fluctuation, which makes it impossible to accurately grasp the price of construction materials and brings difficulties to the project budget plan. Coupled with the long construction cycle, it is difficult to ensure that the construction material prices will not produce large fluctuations during the construction cycle. When the material prices increase by a large margin, it will greatly increase the cost of construction, resulting in project budget overruns and bringing great resistance to the construction project. Therefore, in the preparation of the project budget plan, it is necessary to give the project a certain amount of free funds to cope with the situation of rising construction material prices, and at the same time record the feedback of the price information of raw materials in the construction market in a timely manner, and make a good forecast analysis. When a trend of significant increase in material prices is detected, timely construction material purchases are made to avoid adding additional construction costs and to provide support for project cost budget management.

4. Solutions to project construction budget overrun

4.1 Improve the project construction budget plan

In order to better control the problem of budget overrun, it is necessary to develop the project construction budget plan from the source to do, and put the engineering budgeting into a scientific and standardized track^[6]. First of all, budget personnel need to carefully survey the construction design drawings, calculate the actual

volume of work, combine the actual project geography, rational use of funds, while analyzing the important construction procedures in each phase to prevent major risks of construction changes, and do a good job of setting aside funds. Secondly, budget staff need to fully research the raw material market under the premise of clear engineering and construction standards, and make good records on the quality, price and performance of materials. At the same time, prepare a backup raw material supply plan to avoid project stoppage due to unavailability of raw materials caused by unexpected events. Finally, the budget staff should be realistic and arrange the quantity of construction materials used, the number of construction personnel and the number of machines used in each construction stage based on the determined project volume to ensure the maximum use of construction resources and to form a perfect project budget plan. In addition, enterprises need to set up a high level and efficient preparation team when preparing the project budget plan, and play the respective strengths of team members to prepare and improve the project construction plan to ensure the scientific rationality of the budget plan.

4.2 Strengthen the implementation and supervision of the project budget plan

The project budget plan is designed to be implemented in strict accordance with the plan during the construction of the project. In order to prevent the emergence of overspending budget situation, it is necessary to strictly supervise according to the program requirements, optimize the construction organization design, and make reasonable arrangements for the whole construction process^[7], so as to ensure the steady progress of project construction, which is an important measure to control the cost cost of engineering construction. Therefore, enterprises need to develop a whole process budget supervision system for engineering projects, clarify the duties and obligations of supervisors, and at the same time adopt random inspection from time to time to check budgets at all stages of the project. At the same time, it strengthens the synergy and cooperation of various departments, deepens the connection between

budget staff and various departments, and strengthens the quality of cost control work. When the budget expenditure encounters problems, it is necessary to analyze and solve them jointly with all departments, and make reasonable planning for cost control again. At the same time, it is required to keep a record of every expenditure of the project, so as to facilitate the inspection and supervision of the follow-up supervisors and establish a perfect supervision and management system to effectively prevent the problem of project budget overspending.

4.3 Improve the professional skills of budget staff

The degree of professional skills of the budget staff directly determines the accuracy of the budget proposal. Therefore, a perfect and accurate budget plan requires a high degree of professional skills of the cost estimator. At the same time should have a wealth of experience in project cost management, cost staff in the management, should accurately determine the matters that have an impact on the budget overrun and the cause, and accurate analysis. For example, in the actual construction of engineering projects, there are many uncertainties that can lead to construction change problems, such as the occurrence of construction collapse, construction quality problems, etc. In this case, it is necessary to use the free funds in the budget for collapse treatment and project rework, which requires the use of additional human resources to carry out the work, forming a huge construction cost and forming a budget overrun. Therefore, budget personnel are needed to inspect and supervise the quality of the project, stop the quality problems and correct them in time to ensure that no safety accidents occur and reduce the construction cost expenditure. At the same time, enterprises need to improve the professional skills of budget personnel, solid foundation of professional knowledge, strengthen the cost consciousness of budget personnel^[8], regularly train personnel, establish a perfect personnel training mechanism and organize assessment, effectively improve the professional skills of budget personnel, and invite domestic experts to hold knowledge lectures from time to time to help budget personnel better understand the development of the industry. After

the completion of different engineering projects, budget personnel are required to summarize in time, compare the difference between the actual completed project construction cost cost and the budget, and organize budget personnel of different projects to communicate and learn from experience, help budget personnel to form a complete management knowledge system and master more fields of knowledge, which is important to prevent project budget overruns, and improve the professional skills of budget personnel, which can enable enterprises to obtain higher economic benefits.

4.4 Stabilize the supply price of building materials

Construction materials as the basis of engineering construction, the larger the scale of project construction, the longer the construction time will be, and the more construction materials will be consumed. Therefore, a precise grasp of construction materials is required when preparing the project budget plan. The prices of construction materials are affected by many external factors, such as the influence of macroeconomic policies, supply and demand and other factors, which cause unreasonable price increases of construction materials^[9], increasing the difficulty of scientific preparation of engineering budget schemes and bringing uncertainty to the budget control work. Therefore, the budget staff in the preparation of the budget program to in-depth market research, combined with the project cycle and collect information on the fluctuations of material market prices for scientific forecasting, not to the current market price for the preparation, the need to give a certain range of material prices space, or through the enterprise and material suppliers to sign long-term material supply contracts, so as to stabilize the supply price of construction materials, to avoid the risk of budget overruns brought about by the sharp increase in the price of construction materials.

5. Summary

With construction projects now underway, budgetary control is a guarantee of good economic benefits for the

business. Therefore, enterprises need to pay attention to the preparation of the project budget program, improve the construction budget program of engineering projects, and pay attention to the training of budget personnel, which is conducive to improving the quality of engineering construction, forming the core competitiveness of enterprises and promoting the stable development of the construction industry.

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