

Risk Analysis and Countermeasures of BT Financing Mode of Science and Technology Small and Medium-sized Enterprises

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Abstract: The BT financing model is an evolution of the BOT model and a new way of financing technological innovation projects. From the perspective of small and medium-sized technology-based enterprises, this paper focuses on the operation process of BT financing mode for scientific and technological innovation projects, and analyzes the risks of enterprises implementing BT financing mode. Combined with the operation experience of BT project, the risk prevention countermeasures of BT financing model are put forward from the perspectives of BT project initiators and investors.

1. Introduction

The BT model is "Build-Transfer", which is an evolution of the BOT model. Drawing on the application experience of the BT model in the construction of government non-operating projects, aiming at the operating characteristics and financing difficulties of small and medium-sized technology-based enterprises (SMEs), it is proposed to use the BT project financing method to solve the problem of "landing" of the project, that is, through the contract method, the technology A certain technological innovation project of a small and medium-sized enterprise is handed over to an investment institution (which can be a project company or a financial institution), and the investment institution is responsible for the investment, financing and construction of the project, and will be handed over according to the contract after the project is completed. As the repurchase of the project, the repurchase shall be carried out according to the agreement and the repurchase payment shall be paid in installments.

2. Operational procedures of the BT financing model for technology-based SMEs

2.1 Project decision-making stage

The decision-making phase of the project is the selection and determination of the project. According to the development needs of the enterprise, the sponsor studies the project based on the actual situation, development prospects, economic and technical conditions of the project, and determines whether the project operates through the BT mode. The premise of project decision-making is to obtain stable income during the project recovery period. The persistence and reliability of the project's income are the root causes of attracting project investors. In addition, the originality of scientific and technological innovation projects is also essential. After further investigation, analysis, and approval of relevant departments, the primary selected technological innovation projects are finally determined as feasible BT projects.

2.2 Project bidding stage

In the preparation stage of bidding, small and medium-sized technological enterprises entrust the bidding company to carry out bidding work. The bidding company prepares a feasible bidding document and relevant technical information according to the requirements of the enterprise, the most

important of which include: project technical parameters, project memorandum, pre-qualification Criteria, Concession Agreement Content and Bid Evaluation Criteria.

The bidding company must first complete the pre-qualification examination and analyze the potential investors in terms of organizational status, construction experience, operating ability and financial strength. After the investor has passed the pre-qualification examination, he must submit the technical bid and economic bid documents of the project in accordance with the requirements of the bidding documents. Finally, the bid evaluation committee conducts a comprehensive comparative analysis of the bidding documents according to the bid evaluation method stated in the bidding documents, and determines the winning bidder. [1]

2.3 Set up a project company

After the winning bid is confirmed, the investor shall set up a project company in accordance with relevant regulations. The project company shall be responsible for the financing, construction and project management of the BT project, and sign a repurchase contract with the project sponsor or its designated institution.

Project companies are established by investors to implement specific technological innovation projects. Legally, the project company is an independent legal entity that bears full responsibility for the BT project and has an independent legal personality. The advantage of this is that the investor's own funds are separated from the project company's assets, and the responsibilities are independent.

2.4 Financing and construction stage

The project company is specifically responsible for the investment, financing, construction and management of the project. The project company generally signs a general construction contract with the contractor in the form of a "turnkey project" with a fixed price and a fixed construction period. The project company established the corresponding engineering technology and economic departments to manage according to the construction contract, urge the construction unit to standardize the construction, and timely allocate the project payment to ensure that the entire project is carried out in a planned way according to the expected investment, project scale, project quality and project progress.

2.5 Project handover and repurchase phase

After the completion of the project construction, the project company shall transfer the right to use the project to the project sponsor according to the provisions of the BT investment and construction contract. After the project sponsor receives the project, it should operate the project in accordance with the contract requirements, and at the same time, there must be relevant guarantee measures to ensure that the repurchase funds of the project investors are paid on time.

3. Risks of BT project financing

3.1 Financing risk

3.1.1 Guarantee risk of financing ability

Financing construction is an important part of the BT model. Successful project financing is the most critical competitiveness for project sponsors. Therefore, whether the investor or project company has good credit and economic strength under strict financial policies, and can carry out full financing has become the key to the success of the project.

Technology-based SMEs must have precise market positioning, innovative projects must have market development potential, project value must be assessed objectively and accurately, pre-financing forecasts must be accurate, and the adverse impact of unstable factors on project operations must be eliminated as much as possible, so as to ensure that technological innovation can be transformed and expanded. The business scope and profitability of the enterprise. In the process of financing, there are also many uncertain factors that affect financing, such as changes in national

financial policies, adjustment of interest rates, etc., which will affect the financing of construction funds required by the project, and even lead to the termination of the project operation.

3.1.2 Risk of capital turnover

If the risk assessment is insufficient when the BT financing contract is concluded, the investor's qualifications and abilities are not inspected, and the preliminary preparation work is insufficient; or the enterprise operation and management efficiency is low, the financial statement analysis ability is low, the investment and financial management ability is poor, and the capital use efficiency is low. Due to the lack of financing ability and management ability, the efficiency of capital turnover is low, the credibility of the enterprise is reduced, and the capital turnover is ineffective, which seriously leads to the rupture of the capital chain and the inability of the project to operate, and the investor will bear the responsibility for breach of contract.

3.2 Repurchase risk

3.2.1 The risk of liquidity of the project

The core of scientific and technological development projects is novelty and originality. The construction period of the project is long. After completion, whether the product is in the mature stage or the research and development stage, the market demand level, and the update of the patented technology have seriously affected the project's monetization ability. Once the technological "innovation" fails, the market share that the company has obtained will soon be divided up by substitutes or competitors. If it cannot continue to occupy the market, it will not be able to obtain continuous income, and the ability to pay for repurchase will be greatly reduced. [2]

3.2.2 Financing risks of technology companies

When the credit rating of a technology company is low, its own operating conditions and resource allocation determine whether it can create value for the market, and whether it has cash flow and stable economic benefits. Of course, this also determines the company's first source of repayment. If the company has poor efficiency or unfavorable operations, it is very likely that it will not be able to repay the repurchase payment on time in accordance with the contract.

3.3 Transfer risk

There is a risk of payment time at handover. On the one hand, it is an early repurchase. If the sponsor repurchases in advance according to the original contract amount, the sponsor can reduce the return on investment because it reduces the investor's capital occupation fee; on the other hand, it is a delayed repurchase. Insufficient human capital or no financial resources to repurchase the project at this time will greatly increase the operational risk of the project, and even affect the operation of the sponsor enterprise.

3.4 Legal risks

There is no clear legislation on BT projects in China, and there is a risk of unclear rights and obligations. Different regions, different BT projects, whether to set up a project company, whether to bid, as well as the boundaries of government supervision and the qualification requirements of investors. Therefore, for investors, there are no clear legal provisions for the claims of the BT project, the clear definition of the rights and obligations of all parties, and the definition of the property rights of the government sponsors and investors before and after the project construction to the repurchase. In the event of disputes, there may be unreliable risks, and it will be more difficult to protect the interests of investors. [3]

3.5 Project control risk

3.5.1 Cost control risk

In the construction of the BT project, the main cost risks are: the increase in costs caused by the increase in the unit price of labor and main materials; inflation and bank interest rates during the

project construction period; the delay of the construction period and the improvement of technical and environmental protection requirements will lead to increased investment risks.

3.5.2 Quality control risk

Quality risk mainly arises in the construction stage. As an investor in the BT model, it is also the main body of the construction. In the project construction, due to the weakness of its own technical strength, self-owned construction facilities and corresponding management capabilities, projects with complex technology or even using patented technology have to go through and only qualified and competent subcontractors can fully realize the overall construction of the project. If the selection of subcontractors is inaccurate, or if the subcontractors are selected and their construction process is poorly monitored by themselves or through agents, construction quality problems may occur. After the project passes the completion acceptance, who will be responsible for the quality problems during its use is also a problem to be solved by the BT project.

3.5.3 Completion acceptance risk

Whether the BT project can complete the completion acceptance according to the time and quality agreed in the contract will directly affect whether the project can be successfully repurchased and the rate of return can be realized as soon as possible. The main factors affecting the quality and progress are the technical preparations in the early stage, insufficient material preparations or limitations of construction management capabilities, insufficient funds, weather and other reasons, which will lead to the failure to deliver on time for acceptance. Click, the repurchase link can only be entered after the project is accepted.

4. Risk prevention measures for BT project financing

4.1 Risk prevention measures for technology-based SMEs (sponsors)

One of the most important factors that seriously affects the bad credit of enterprises and hinders the smooth development of BT project financing for technology-based SMEs is the low quality of enterprise managers, poor operating conditions and financial system confusion. When the project company (investment institution) selects and examines investment projects, it is not only to review the technological innovation project itself, but also to comprehensively consider the goodwill and credit, operation management, management personnel and technology developers of technology-based small and medium-sized enterprises. , examine the possibility of this technological innovation project being transformed into productivity and profitable in the future production development chain of the enterprise. Because the value of technological innovation projects is closely linked to the development of enterprises to a certain extent, if it is necessary to promote the development of this business, it needs to be improved from the enterprise itself.

4.1.1 Improve the credit level of the enterprise itself

If an enterprise wants to enhance the attractiveness of technological innovation projects, it is first and foremost to improve the management level within the enterprise itself and enhance the credit status of the enterprise [4]. On the one hand, establish and improve the governance structure of the enterprise, which conforms to the requirements of the enterprise organization in structure, and forms a corporate governance structure in which management power, decision-making power and supervision power are mutually restricted. On the other hand, it is necessary to establish a credit management system. The soundness of the system is related to the rapport with financial institutions. The third is to strengthen the quality of managers and improve the management ability of relevant personnel of the enterprise. Finally, it is necessary to further improve the financial system and financial internal control system to improve the efficiency of the use of funds.

4.1.2 Prevent the operational risks of project financing

In response to the corresponding project operation risks, enterprises need to cultivate a management team with high professional quality and rich practical experience, establish project operation risk

assessment and protection measures, and improve the legal knowledge level and project management level of project managers. At the stage of signing the contract, it is necessary to have a deep understanding of the project and the credit of the official party, and to identify possible risks and propose corresponding control measures. At the same time, enterprises need to pay attention to the latest developments in the industry in a timely manner, strive to learn and master the changes in the field of technology, be novel and original in technical research, and also understand the main characteristics of the same type of technology when providing projects, and fully evaluate the feasibility of the project.

4.1.3 Enhance the originality of technological innovation projects

For technology-based enterprises, technological innovation is the core key to their survival. Enterprises should confirm the technological innovation achievements in a timely manner and increase their emphasis on technological innovation. Enterprises should pay more attention to the value of their assets while paying attention to their scientific and technological value. They can actively use them for project financing, change "knowledge" into "capital", expand the source of funds for enterprises, and solve the problem of financing bottlenecks.

4.1.4 Continuously improve the innovation ability of enterprises

First of all, technology-based small and medium-sized enterprises need to continuously improve and strengthen the management level of scientific and technological innovation. Enterprises should protect the projects in the stage of generation, development and market operation of technological innovation projects. Secondly, it is necessary to strengthen the combination of production, education and research, and screen projects with the market demand as the goal. This requires strengthening exchanges and cooperation with relevant scientific research departments to jointly launch products with high technology content. In addition, technology-based SMEs should strengthen the corporate incentive mechanism to attract outstanding talents to serve the company's research and development, thereby generating high performance and making the company's innovation capability sustainable.

4.2 Risk prevention measures for investment institutions (project companies)

4.2.1 Cultivate evaluation teams and scientifically select development projects

The value evaluation work of technological innovation projects requires evaluators to have strong professional and comprehensive capabilities. It is necessary to establish an elite team that matches the project evaluation. In order to achieve accurate evaluation results and reduce costs, third-party professional evaluation can also be used. Institutions, if conditions permit, select as many institutions as possible for cross-evaluation, so that the project screening results are more accurate and objective.

4.2.2 Improve access conditions for technological innovation projects

Setting higher access conditions and excluding some intellectual property projects with bad records or poor credit can reduce the cost of financing review and avoid the waste of social resources. Before selecting a project for investment, the economic and social benefits of the entire project after its completion should be evaluated to determine the feasibility and suitability of the project, which in turn affects the investment orientation and project repurchase guarantee [5]. For enterprises with lower risk and better credit, the financing procedures can be appropriately reduced and the project transformation can be realized more quickly and conveniently.

4.2.3 Cultivate specialized project management talents and improve the operating procedures of project financing business

Improve the risk management awareness of project implementation and management personnel, and cultivate professional talents related to scientific and technological innovation projects and intellectual property rights, which will help standardize business operations and improve the service level and efficiency of financing, thereby reducing the actual risk of financing business. Rate.

4.2.4 Ensure the source of repurchase funds

BT project investors should ensure the source of repurchase funds and various guarantee measures, and the relevant authority or financial department should issue a commitment document as an annex to the contract to avoid risks. It is also possible to require a third party to provide repurchase guarantee or asset mortgage for the BT project initiator to ensure the smooth implementation of the project.

4.2.5 Take out commercial insurance

Insuring commercial insurance for BT projects is also an effective means of preventing unsystematic risks [6]. According to the characteristics of the BT project itself, it is possible to consider insuring all risks of construction projects, project repurchase insurance, and other additional risks related to project operation, so as to disperse possible risks to the greatest extent.

5. Conclusions

The economic and legal relationship between all parties in the BT project is relatively complex. There is still a lot of room for the improvement of the operation mode of the BT project of small and medium-sized technology enterprises and the improvement of domestic laws, policies and investment environment. In-depth discussion, formulate corresponding risk control and sharing mechanisms, protect the rights and interests of all investors, and promote the diversified development of financing models for small and medium-sized technology enterprises.

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