

Research on Financial Risks of PPP Projects from the Perspective of Business and Finance Integration

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Abstract

In recent years, with the development of scientific and technological means, accounting has become increasingly intelligent, and the development of PPP projects in China is also facing new challenges. The traditional financial operation model has been unable to meet the requirements of various business activities throughout the life cycle of PPP projects. Business and finance integration is the general trend. Based on this background, this article first introduces the development status of PPP projects in China, and then explains how the integration of business and finance can be applied in all stages of PPP projects and the related financial risks. Finally, from the perspective of business-financial integration, it puts forward countermeasures to prevent the main financial risks in the whole life cycle of PPP projects. It provides reference for the financial risk prevention of PPP projects under the integration of business and finance.

Keywords

Business-financial integration; PPP model; Financial risk prevention.

1. Introduction

PPP projects originated in the United Kingdom in the 1980s. The government and social capital parties cooperated. The government establishes policy standards and builds a cooperation system, while the private capital provides funds, technical support and advanced management experience. Both parties coordinate with each other, share risks and benefits [1].

This new financing mode of public-private joint venture has sprouted in China since the 1990s. This model meets the need of actively cooperating with foreign businessmen and pressing for international integration. In May 1995, approved by the State Planning Commission, Guangxi Laibin Power Plant Phase II project became the first BOT pilot project in China, opening the prelude to the application of PPP model in China [2]. Since then, The PPP model has been in a groping stage in China, and the development of domestic PPP projects has encountered many difficulties. For example, when foreign capital no longer has obvious advantages in domestic PPP projects, the financing channels of PPP projects are still single. The extreme bidding behavior in the bidding process causes a large number of social capital to withdraw; Local governments and investors are short-sighted. In order to get rid of some complex projects in time, the government delivers projects with large funding gaps and lack of successful experience to investors, lacking consideration of future social and economic benefits, which ultimately leads to project failure. In order to regulate the implementation of such projects, the state has started legislation, but it has been suspended for various reasons [3]. Until September 2014, the Ministry of Finance issued the Notice on Issues related to the Promotion and Application of the Cooperation Model between Government and Private Capital, which for the first time regulated various economic activities in the whole life cycle of PPP projects and made clear requirements on the obligations to be fulfilled by the cooperation between the two parties. After the release of the document, the development of PPP projects in China has entered a

period of acceleration. For different types of PPP projects, the Ministry of Finance, the Ministry of Transport, the Ministry of Housing and Urban-Rural Development, the National Energy Administration and other departments have issued a series of PPP project guidance and implementation opinions, PPP mode in China has formally entered the standardized development stage [4].

By September 15, 2021, according to the statistics of the Project management database of the National PPP Comprehensive Information Platform, there are 10,082 PPP projects in China, and the total amount of the project management database has reached 15.7697 billion yuan. In the past five years, the number of PPP projects and the proportion of different types of PPP projects in China are shown in Figure 1 and Figure 2. After the 18th National Congress of the Communist Party of China in 2013, in response to the national call to vigorously develop urban infrastructure construction, the number of PPP projects in China has become increasingly large and reached a peak in 2018. These projects are mainly municipal engineering and transportation projects. In the past two years, due to inadequate risk prediction of PPP projects implemented in previous years, some local governments faced financial difficulties and social capital faced financial pressure, resulting in the failure of project delivery on schedule. As a result, the number of PPP projects in the database has fallen sharply in the past two years and stabilized in a relatively controllable range [5].

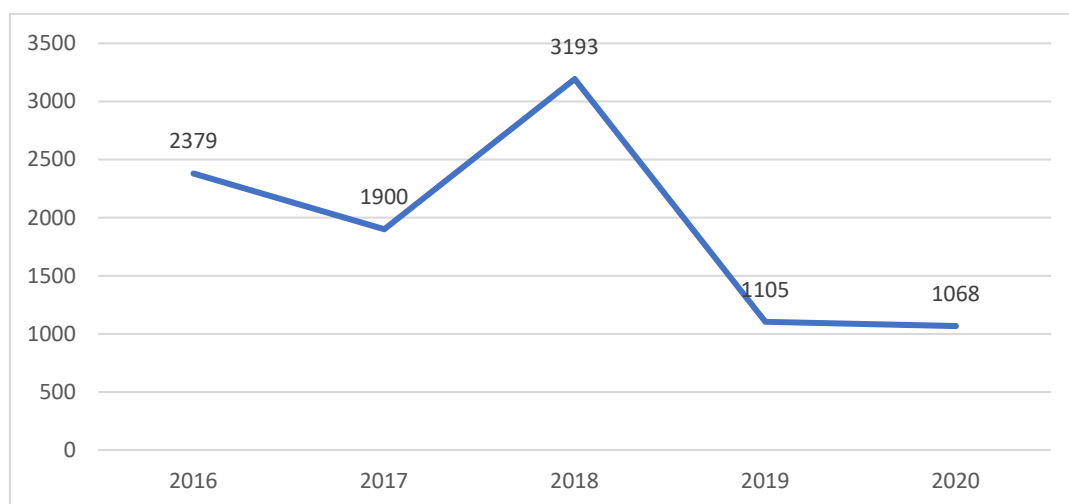


Figure 1. Line chart of the number of PPP projects in 2016-2020

With the progress of modern scientific and technological means, the application of Internet of Things, big data, cloud computing, 5G and other technologies is both an opportunity and a challenge for the development of PPP projects [6]. These advanced technological methods optimize the business management of the entire life cycle of PPP projects, reduce the possibility of information errors due to human reasons, and improve the efficiency of information use and transmission. At the same time, it also puts higher requirements on traditional financial personnel. Personnel need to understand more complex business information and master richer business skills. Otherwise, it is easy to increase the communication cost between different business departments, reduce communication efficiency, and increase the financial risk of the project due to the lack of timely information transmission. With the development of intelligent accounting today, the prevention of financial risks of PPP projects in my country still needs to be improved in many aspects. For example, the measurement of financial risks of PPP projects lacks specific quantitative indicators; the business management model of PPP projects still needs to be optimized.

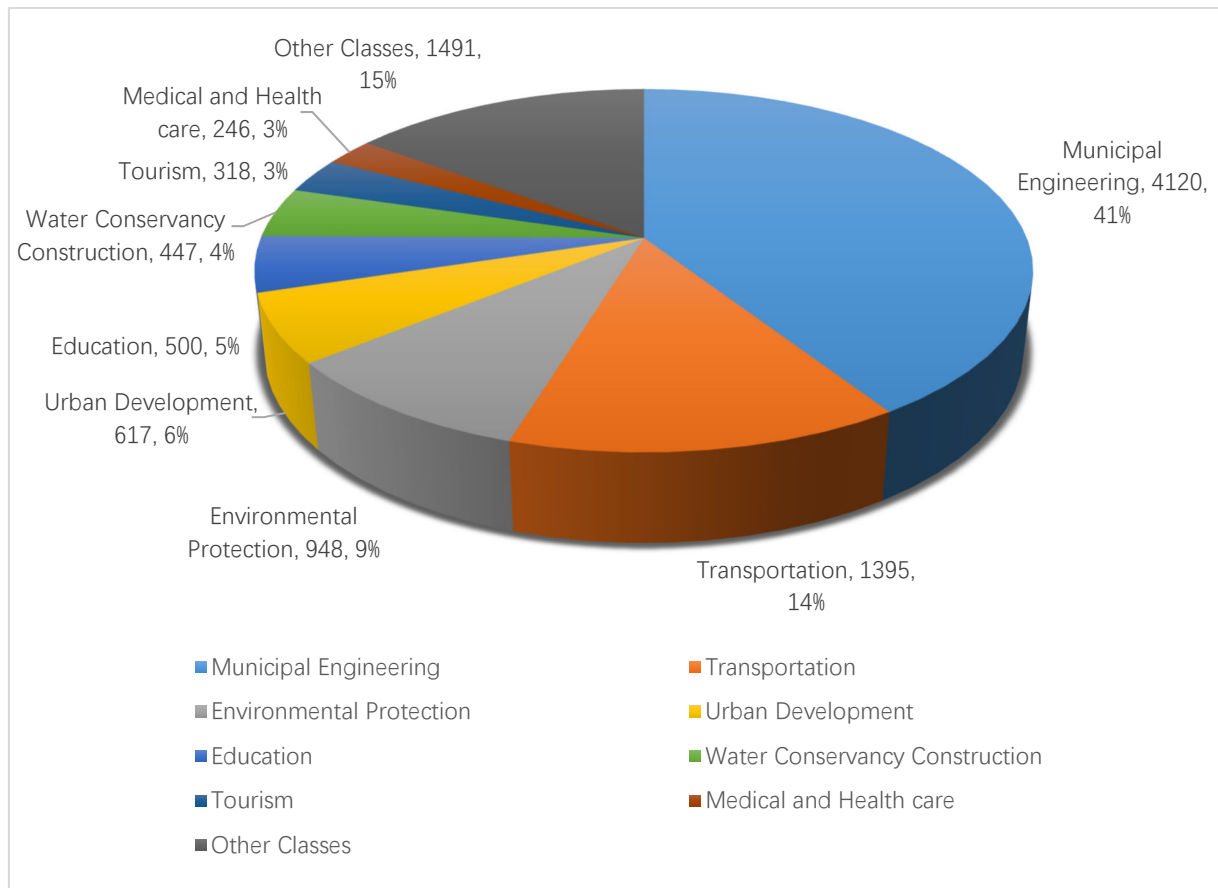


Figure 2. Percentage of the number of various PPP projects

In view of the above-mentioned financial risks of PPP projects, strengthening the integration of business and finance is the main trend in the future development of PPP projects. Regarding this research, Xiao Xvdong and Hu Xiumei briefly described how PPP projects achieve the integration of industry and finance at all stages and conducted simple financial analysis, but they did not conduct in-depth exploration of the financial risks of PPP projects under the integration of business and finance[7]; Gao Hua et al. quantified the financial risk of PPP projects by constructing a system dynamics model for the financial risk of the whole life cycle of PPP projects, but did not point out how the integration of business and finance has an impact on the financial risks of PPP projects[8]. With reference to previous research results, this article explores the application of PPP projects in different stages of the integration of business and finance and the existing financial risks based on the perspective of business-financial integration, and proposes corresponding risk prevention measures.

2. The Financial Risks of the Integration of Business and Finance in PPP Projects

2.1. Project Preparation Stage

The main task of the PPP project preparation stage is to organize the management structure, compile and review the project plan. The BOT model is a relatively common operation and management model for domestic PPP projects. In order to ensure the smooth operation of the three stages of construction, operation and transfer of this model, a special project company needs to be established on the basis of the company's existing business departments. The project company prepares specific plans for project financing, procurement, and execution. In the process of preparing the plan, the requirements for the comprehensiveness of the

company's financial staff are getting higher and higher, and the finance department and other business departments need to cooperate with each other and strengthen communication. For example, financial personnel should conduct market information research together with marketing personnel, organize and calculate the collected data, compile the most suitable plan for the current market environment, and provide effective decision-making information for the follow-up phase of the company's PPP project; financial personnel and administrative personnel participate in negotiations with the government, keep abreast of government subsidies and local government debt management policies, and take precautions for fund-raising; financial personnel should communicate with the company's legal department personnel on a regular basis, and provide opinions on the formulation and improvement of the company's articles of association.

The main risk in project preparation comes from project financing. The main financing channels of PPP projects are shown in Figure 3. In recent years, local governments tend to adopt austerity debt management policies, which further limits the single source of funds for PPP projects and makes PPP project companies more dependent on huge bank loans. If the project company's business and financial departments are not well integrated, financial personnel do not fully understand government subsidies and local debt management policies, and insufficient market information research leads to misjudgment of the future market situation. These errors will affect the project financing companies make an accurate estimate, once the project income cannot meet the expected economic benefits, huge debt service pressure will bring to the company [9].

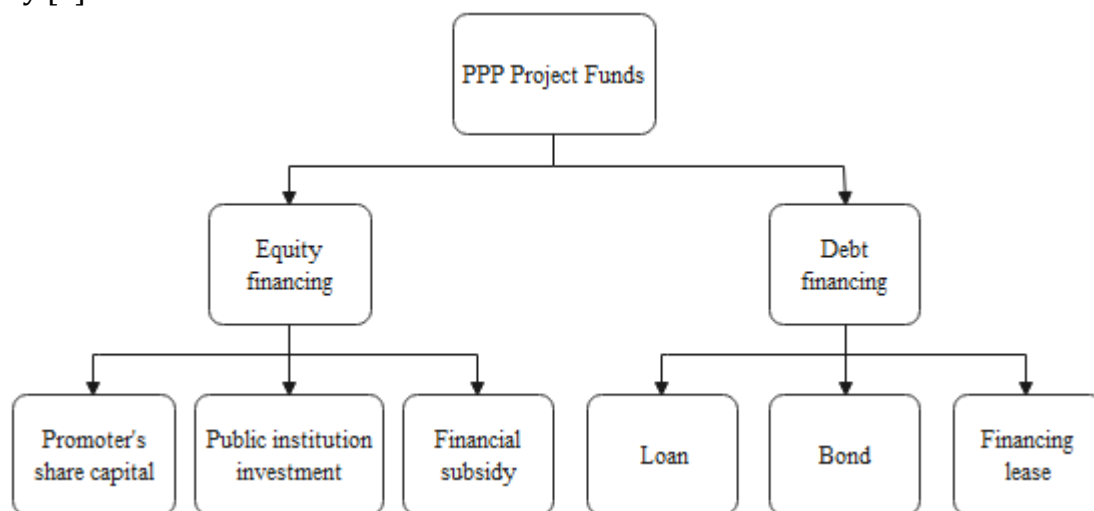


Figure 3. Main financing channels of PPP projects

2.2. Project Construction Phase

At this stage, the PPP project has officially entered the construction, and the financial staff at this stage will have more complicated financial work. Project companies often involve more businesses in the construction phase. The organizational structure of the project company is shown in Figure 4. In order to perform their own financial work, financial personnel need to actively participate in business work. First of all, the finance department needs to understand the feasibility of various technical implementations in the project construction process from the technical department, and make adequate plans to ensure the smooth progress of the construction process; the finance department also needs to participate in the procurement of raw materials and technical equipment. Grasp the market trends of purchase volume, purchase prices and material prices, and provide information for formulating reasonable financial budgets; Financial personnel should also go deep into the front line of construction, and with the assistance of the construction department, regularly check the construction materials and check the loss of production equipment. Make accurate estimates of the construction progress

and performance indicators; At the same time, the finance department should strengthen communication with the quality and safety department to understand the hidden dangers of the project in time to deal with financial risks that may arise at any time.

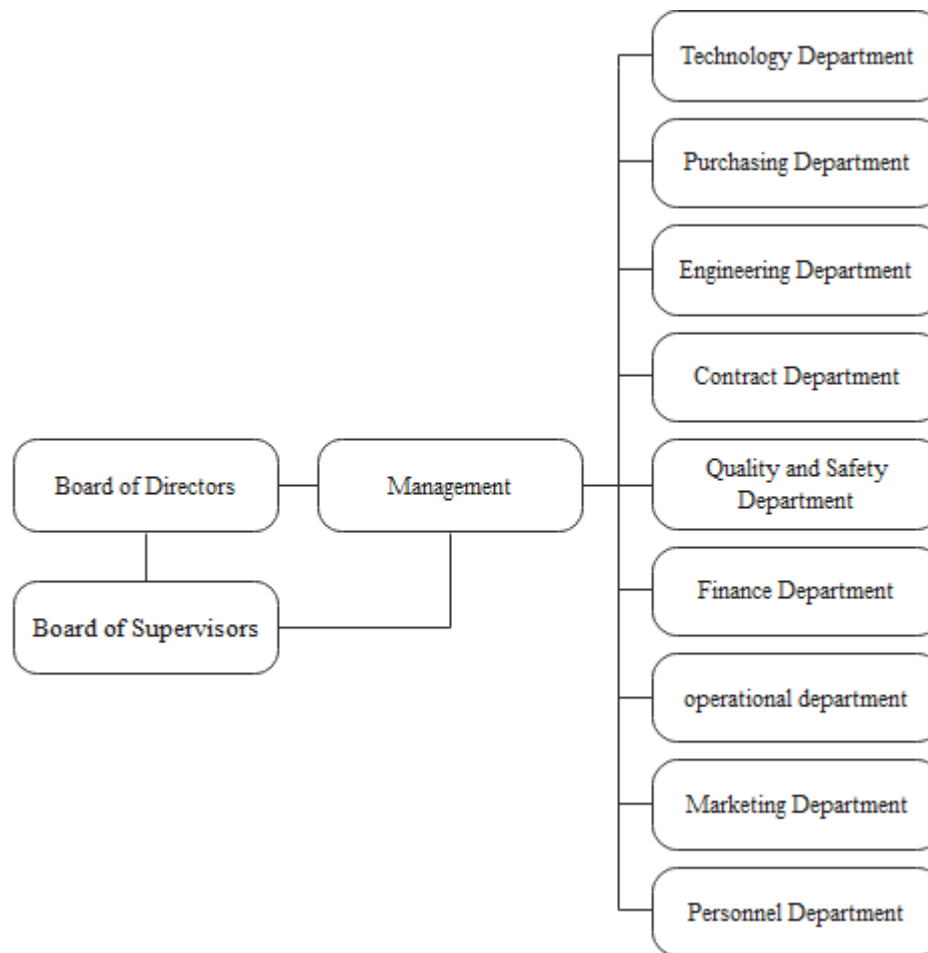


Figure 4. Organizational structure chart of PPP project company

The main risk in the construction phase is cost overruns. Cost overruns risk comes from many aspects, among which the change of raw material market price is one factor. The rise of raw material price leads to the actual cost exceeding the estimated cost, which brings cost overruns risk to enterprises. Most of the PPP projects and urban infrastructure construction, public transit, urban greening, and water conservancy projects and so on, these projects face uncertainty in the process of construction, such as affected by natural weather, increased difficulty of project construction, the construction period delay, in order to in accordance with the scheduled deadline completion, need to increase the workload of each worker or hire more workers, Labor costs increase. In addition, in the past two years, due to the outbreak of COVID-19, PPP projects under construction were forced to stop work. During the shutdown, workers' welfare, workshop expenses, and epidemic prevention and control materials purchased and human resources used by enterprises increased the project costs.

2.3. Project Operation Stage

The information construction in the project operation stage is crucial. The financial department needs to work together with the business department to avoid information asymmetry among departments, find the defects in the company's internal control system as soon as possible, clarify the responsibilities of each department, and solve the defects and problems in a targeted manner. Financial personnel should work with the operation department, marketing

department, contract department and other departments to conduct comprehensive budget management during the operation phase. Comprehensive budget management includes not only financial budgets, but also business budgets, salary budgets, etc., and financial personnel should obtain contract performance from the contract department, Obtain the latest market development from the Marketing Department, and obtain information on operating pricing and operating workload from the Operations Department. Combining this information, financial personnel work closely with other relevant business personnel to actively grasp market development trends and determine the impact of future market trends on operating prices and workload [10].

The failure of project revenue to reach the expected target is the main financial risk in the operation stage of the PPP project. In the preliminary bidding process, in order to attract more social capital parties to bid, the government generally makes a commitment to subsidize the social capital parties during the project operation period. This shows that the government is not fully sure whether the project operation can realize the benefits. PPP projects must always be carried out under the support of national policies. Once the national policy changes during the project operation period, due to the government's subsidy commitment and the income distribution plan reached by the two parties have been made, the social capital side will face greater financial affairs than the government department. risk. In addition, some government officials abused their powers, excessively interfered in the normal construction and operation of the project, and hindered each other with social capital, which seriously affected the progress of the project and made it difficult to recover project funds in time [11].

2.4. Project Exit Stage

During the investment withdrawal stage, financial personnel should propose investment withdrawal methods and plans based on factors such as the type of enterprise, the stage of enterprise development, current and future market preferences and other factors. The main investment exit paths of PPP projects are shown in Figure 5. These investment exit methods mainly include equity transfer, asset securitization, legal reduction of registered capital, or effective linkage of qualified PPP projects with the capital market. The social capital side relies on the secondary market transaction realized investment withdrawal. No matter which way of investment withdrawal is adopted, it will involve different stakeholders. When choosing the way of investment withdrawal, the financial department must take into account the interests of all parties, unite with other business departments, and choose an effective way of investment withdrawal that is in line with the interests of the company on a reasonable and legal basis.

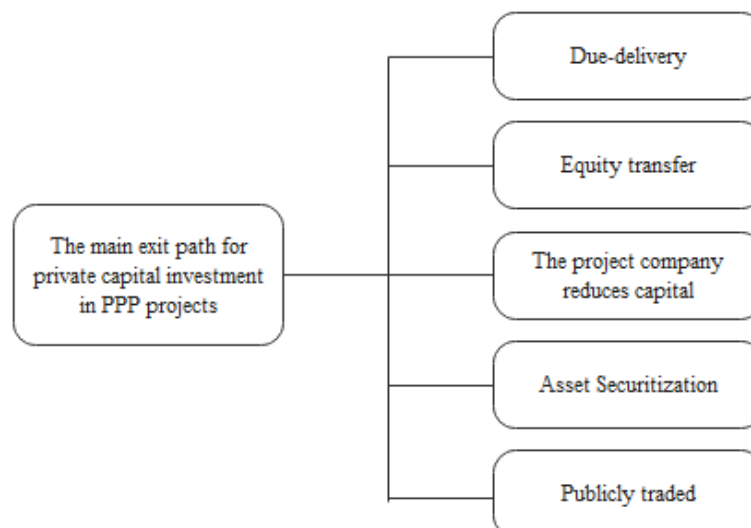


Figure 5. The main exit path for private capital investment in PPP projects

During the project exit stage, financial personnel need to prepare financial statements. In the preparation of financial statements, financial personnel should try their best to collect relevant information within the whole life cycle of the project. These data are kept by different business departments. When financial personnel obtain them, it is inevitable that there will be omissions or misstatements of data, which may affect the authenticity and reliability of statements. After the completion of the project, third-party auditors will review the financial report. Given the large amount of construction of most PPP projects, it is difficult for external auditors to complete the audit work within a short period of time, which will bring the risk of delayed financial final accounts to the project company [12].

In the final transfer stage of PPP projects, the final distribution scheme of the benefits attracts much attention. In each stage, there are uncertain factors affecting income, such as insufficient information collection in the early stage, low cost estimation, changes in the external market environment during the construction and operation period, and the influence of force majeure factors. If the actual income does not meet the expectations, the income distribution plan cannot be implemented on schedule, resulting in income distribution risks.

3. Proposals for Financial Risk Prevention of PPP Projects from the Perspective of Business-financial Integration

3.1. Focus on Cultivating Good Professional Quality of Business-financial Personnel

High-quality professional financial personnel are an important guarantee for the smooth progress of PPP projects. With high-quality professional financial personnel, financial risks can be effectively reduced at any stage of the PPP project life cycle. Business-financial personnel are generally transformed by financial personnel through learning and understanding the various business processes of the enterprise. In daily work, financial personnel strengthen communication with business personnel through project exchange meetings, training meetings, etc., to understand the business model and project progress of the company. After high-quality financial workers are familiar with the business process of the project, they will generally give some valuable advice to the business department personnel from the perspective of financial risk control, such as comprehensive budget management and cost output control.

Therefore, from the beginning of the project preparation stage, we must attach importance to the training of professional and financial personnel's professional quality. Companies should organize financial personnel to participate in business training meetings on a regular basis, and invite business department personnel to introduce their respective department's work objectives, management models, and process transformation methods. Or decentralize financial personnel to the front line of business work to guide business personnel in related financial work, collaborate with each other, and improve together. At the same time, in order to improve the ethical quality of business and financial personnel, companies should formulate higher standards of ethics, put forward higher requirements on the professional ethics of employees, and select outstanding ethical pacesetters in various departments, and link professional ethics evaluation with employee benefits. Guide employees to standardize their own behavior and form a good atmosphere within the company.

3.2. Establish A Comprehensive Budget Management System

Doing a good job of budgeting is the basis for other activities of the PPP project. Financial personnel control costs and predict benefits by preparing financial budget statements. Business departments measure the efficiency of each stage and the progress of the project according to the budget. Traditional budget work is often done by the finance department alone. Due to the lack of participation of the business department, many details in the business work are ignored,

which greatly reduces the effectiveness of budget management. Therefore, it is necessary to introduce business departments when carrying out budget work. The financial department and the business department jointly conduct a comprehensive and integrated analysis around the budget content and build a comprehensive budget management system [13].

The construction of a comprehensive budget management system should first clarify the ultimate strategic goal of the PPP project. PPP projects face many uncertain factors in the construction phase. When carrying out comprehensive budget management, it is necessary to make a plan for the project to be unable to proceed smoothly due to uncertain factors. According to the actual completion of the project and the changing trend of the external environment in the future, actively adjust the budget target to avoid project interruption due to insufficient budget and bring risks to the enterprise in terms of cost overruns, fund recovery, and profit distribution.

3.3. Taking Cost Management As An Opportunity to Strengthen the Integration of Business And Finance

Cost management can be seen as the link between the financial department and the business department of a PPP project to cooperate. When conducting cost management for PPP projects, personnel in business departments such as design, construction, and operations need to focus on material costs, labor costs, and loss of machinery and equipment. The goal of the business department is to control costs and increase financial returns. Fully consider various financial data during management, actively cooperate with financial personnel, and use cost management as an opportunity to realize the integration of business and finance. The personnel of the business department should judge whether the allocation of material and labor costs is reasonable based on the completion of the project. Financial personnel participate in the business system and judge whether the funds are sufficient and whether the cost is effectively controlled through the business activity data and various financial data provided by the business department [14]. In order to reduce costs, the project company can formulate relatively conservative operating policies, such as reducing the proportion of credit sales and actively recovering accounts. At the same time, the PPP project company can set up an evaluation mechanism within the company. Under the premise of ensuring the quality of business completion, compared with budgeted costs, departments with better cost control can obtain some employee benefits.

The integration of business and finance in cost management can integrate enterprise resources to the greatest extent, do a good job in the reallocation of resources, and reduce unnecessary material and labor costs. The cooperation of the two departments enables the project company to make the most effective cost control decisions at all stages of the PPP project, and to improve the level of enterprise cost management.

3.4. Build A Shared Information Platform under the Integration of Business and Finance

At present, the asset management system, cost management system and project operation system of many PPP projects are managed by various specialized departments, and each system is relatively independent. In the whole life cycle of PPP projects, business departments and financial departments cannot achieve good information exchange. There is an urgent need to establish an information sharing platform. With this platform, the information of the PPP project at each stage of the life cycle can be quickly transmitted between different departments, and the communication efficiency between employees in each department is greatly improved. PPP projects of information sharing platform should integrate the whole life cycle of the business and financial information, make the platform collection asset management, budget management, cost control, project operation, progress of the investigation and the financial

business activities into an organic whole. The accounting caliber is consistent with the time dimension, and financial information and business information can be reviewed by the project's financial personnel on the platform at the same time [15]. In addition, a unified information platform can conduct self-risk assessments, identify abnormal data and determine the possible sources of risks based on the reasonable range of various business financial data, reduce the risk of low-level errors due to artificial reasons, and greatly guarantee the normal progress of PPP projects.

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