

## Capital Risk Assessment of S Company's Overseas EPC Project

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**Keywords:** Capital Risk Assessment, Overseas Project, EPC Project

**Abstract:** Chinese enterprises often encounter capital risks when undertaking overseas engineering projects, which will affect the stability of the corporate capital chain. The degree of risk of capital risk varies in different regions. Therefore, if overseas projects want to develop quickly and steadily, they need to predict, prevent and control the financial risks in the country where the project is located. This article mainly takes S company's overseas EPC project as a case, analyzes the project's capital risk points, and builds a capital risk assessment system based on this, to help Chinese companies predict and prevent and control capital risks of overseas project.

### 1. Introduction

Compared with developed countries in Europe and the United States, Chinese companies started overseas investment later. But in recent years, under the "Belt and Road" initiative, the scale of overseas investment by Chinese companies has grown steadily and the speed of development has been rapid. As of May 2020, China has signed 200 cooperation documents for jointly building the "Belt and Road" with 138 countries and 30 international organizations, which have extended from Asia and Europe to Africa, Latin America, and the South Pacific. According to the Statistical Bulletin of China's Foreign Direct Investment in 2018, China's foreign direct investment was \$143.04 billion in 2018, making it the second largest foreign investor in the world. The flow and stock of foreign direct investment are among the top three in the world, accounting for a record high. More than 80% of countries (regions) in the world have Chinese investment. At present, Chinese foreign investment covers 188 countries and regions around the world, and more than 10,000 overseas enterprises have been established in countries (regions) along the "Belt and Road".

The EPC general contracting mode is one of the general project contracting modes. It is also the general contractor of the project providing the owner with integrated services of engineering, procurement, and construction in accordance with the content of the contract, and is fully responsible for the quality, safety, progress, and cost of the construction project. At present, the EPC is very popular in China. The infrastructure project management of overseas owners is relatively careless, and they have insufficient knowledge of construction project risks and are difficult to control. Based on this, EPC general contracting management mode is usually adopted.

The support of the "Belt and Road" policy has enabled the rapid development of overseas investment by Chinese enterprises, but the rapid growth of investment scale inevitably generates many risks, and capital risk is one of them. Undertaking overseas projects of the EPC mode requires hiring local labor, purchasing local building materials, and even dealing with the local government. Therefore, whether the project can progress smoothly, whether the payment is received smoothly, whether the capital flow is smooth, that is, the degree of capital risk in overseas projects, is often related to the country where the project is located. In this regard, only by strengthening the anticipation and management of capital risks can overseas projects develop in a healthy and orderly manner.

Therefore, this article uses S company's overseas EPC project as a case to discuss the capital risks that overseas projects may encounter, and establish a sound capital risk assessment system to help Chinese companies effectively identify, evaluate, prevent and control risks from the source before undertaking overseas projects, and help them carry out project management more smoothly.

## 2. Literature Review

Li Yongjie (2012) believes that the environment of international engineering projects is more complicated than that of domestic projects. Therefore, the types of potential risks in projects are richer and more difficult to manage. If overseas construction projects want to realize expected profit, they must be able to identify and prevent and monitor potential risks one by one, and continuously improve their overseas risk response level[1]. In terms of risk research on overseas engineering contracting projects carried out by Chinese companies, Qian Dandi (2009) investigated the financial risks of international projects and found that exchange rate fluctuations, price increases, contract performance and contract changes, tax laws and foreign exchange control risks are international The main financial risks faced by engineering companies[2]. After analysis, Wang Ru (2012) pointed out that when Chinese companies undertake overseas engineering projects, the risks they encounter mainly include external risks and internal risks. The internal risks come from the aspects of strategy, integration, operation and human resources. External risks comes from politics, economy, market and law, and competition in the same industry[3]. Zhang Chao (2013) focused on the exchange rate risk in the financial risks of international engineering contracting projects, and pointed out that this risk is a risk that any international engineering contracting company must face. The consequences of exchange rate risk may be loss or profit. Benefits need to be viewed dialectically by the enterprise, but in reality, the loss caused by exchange rate risks are more than the benefits[4]. Liu Feng (2014) proposed that in recent years, Chinese enterprises have participated in international engineering general contracting projects. Financial risk control in overseas engineering general contracting projects is an important link for enterprises to control the risks of overseas engineering projects. The contractor must pay special attention to the control of many financial risks, such as cost control and foreign exchange changes, to ensure the ultimate profit of the project[5]. Huang Yongye (2019) pointed out that Chinese foreign engineering contracting projects are mainly concentrated in underdeveloped countries and regions. These places often have low levels of economic and social development, political turmoil, terrorism, religious issues, and third-country interventions. Multiple factors are intertwined, making the host country's political environment extremely complex and making the implementation of overseas projects facing huge challenges[6]. He Junpeng (2020) believes that general contractors will face various risks in the process of executing overseas projects, such as political, economic, social and cultural risks, and some unforeseen risks[7].

In summary, there are two main types of documents that study the risks of overseas construction projects. One type focuses on political, economic, social and cultural risks, and qualitatively analyzes overseas construction projects from these perspectives, and makes recommendations for project management; The other type focuses on the financial risks, the overseas project are mainly analyzed from the perspectives of exchange rate changes and costs. In general, there are few literatures to quantitatively analyze the capital risks of overseas engineering projects. Therefore, this article synthesizes the domestic and foreign research , qualitatively analyze the risks of overseas funds from the four parts (political risk, legal risk, social and cultural risk, exchange risk), and conduct risk scores through an indicator system to comprehensively evaluate the risk brought by overseas projects to the capital chain.

## 3. Project Analysis

### 3.1 Project Background

In January 2018, Chinese company S and Sri Lanka X company signed a project for the development and renovation of a fuel plug system at an international airport in Sri Lanka, including a new "tarmac E" fuel plug system and the upgrade of existing aviation fuel supply facilities at the airport Transformation. The project is guaranteed by the Ministry of Finance of Sri Lanka. The total investment of the project (including tax price) is 51.5 million dollars. It is mainly carried out in the form of EPC+F operation mode. S company is responsible for project design, construction, procurement and financing. The project structure frame diagram is shown in Figure 1.

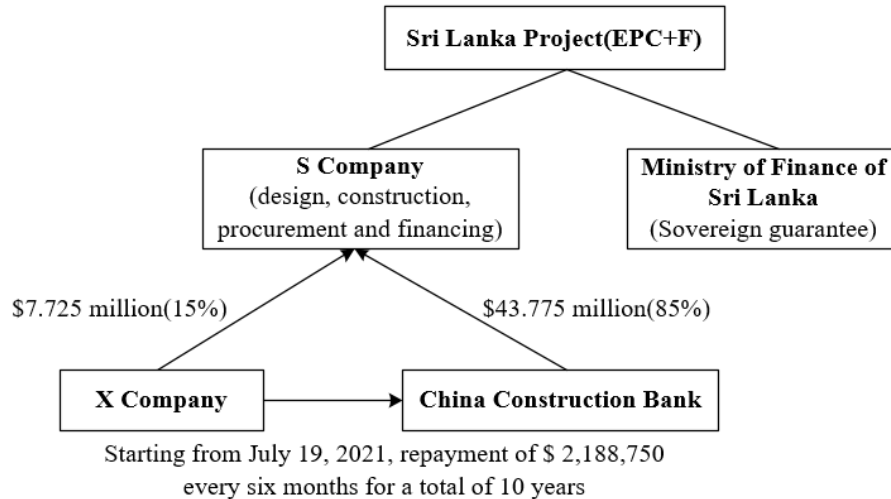


Figure 1. Sri Lanka Project Structure

Because X company has short-term financing difficulties, in order to ensure the smooth completion of the project and the smooth progress of the overall project contracting, company S lends funds in the early stage of the project and allocates funds to the project. Later, Company X will make up the fund and pay the project cost in full. This kind of operation method puts huge pressure of fund on the project contractor in the early stage, and the project contractor has a great risk of capital return, but this mode can maximize the success of the bidding. Therefore, in order to ensure stable cash flow and smooth return of funds for S company, it is necessary to be vigilant against the risks of overseas project funds to prevent the capital chain from breaking.

### 3.2 Risk Analysis

#### (1) Political Risk

Political risk refers to the possibility of the unstable political situation of the country where the project is located, frequent changes in policies and regulations, etc., which may adversely affect investors. If the country's political stability is not high, military coups, armed conflicts, or foreign invasions often occur. If Chinese companies want to safely enter overseas markets, they must first make an effective assessment of foreign country's political risks.

Sri Lanka implements Western-style democracy, separation of powers, and multi-party competition. Over the years, party disputes have continued, and political concepts have been divergent. It is easy to cause friction and even war. Sri Lanka ended its more than two decades of civil war in 2009. The political situation has gradually stabilized, and the domestic economy has slowly begun to prosper. The Sri Lankan government is also continuously introducing preferential policies for foreign investment companies to invest in the country to improve the country's infrastructure. China has financed Sri Lanka to build railways, new airports, ports, highways and other projects, becomes Sri Lanka's largest lender and has a historical relationship of friendly cooperation with its ruling party. However, in January 2015, Metripala Sirisena was elected as the new president, suspending all Chinese projects in Sri Lanka on the grounds that Chinese investment projects in Sri Lanka harm the country's environment and unclear accounts. In April 2019, Sri Lanka experienced another large-scale civil unrest, which caused continuous political unrest, and had a major impact on people's lives and property safety. Political risks have had a certain impact on the progress of S Company's project in Sri Lanka.

It can be seen from this that if S company wants to successfully carry out projects overseas and accurately assess capital risks, it must carefully study and analyze the country's political risks in advance to avoid unnecessary losses. Summarizing the political risks existing in Sri Lanka and combining with the types of political risks in other countries, the political risk indicators selected in this article includes: Security Apparatus, Factionalized Elites, Group Grievance, External Intervention, Bilateral political relations with China.

## (2) Legal Risk

Law is a kind of social rules, a code of conduct formulated or approved by the national legislative department. The laws of any country are sacred and inviolable. The contractor's losses due to legal risks are also extremely serious, which has a great impact on the process and cost of the project.

When contractors carry out EPC+F projects overseas, they need the support of local laws very much. The EPC+F project involves many laws and regulations, so for contractors, a friendly legal environment is particularly important. Sri Lanka has a relatively complete legal system and a relatively high level of legality. Contractors can avoid most of the risks when carrying out projects in compliance with the law. In addition, Sri Lanka has signed a BIT agreement with China, which represents a friendly investment environment and guarantee.

In summary, in the part of legal risk, this article selects three indicators, Legal Degree, BIT or not and Labor Market Regulation. Legal Degree can represent the quality of contract performance and the awareness of property rights protection. The higher the degree of legal system, the lower the risk; signing a BIT means that there is an insurance or guarantee system for domestic and overseas investment, and the legal environment is more friendly.

## (3) Social and Cultural Risk

There are different forms of customs, culture, order and other unstable factors in various fields, classes and industries in the society where international engineering contracting projects are located. These factors will cause conflicts, affect social stability, and hinder project construction and operation.

Sri Lanka has always attached great importance to education. 83% of the population have received education above high school, adult literacy rate reached 91.2%, and secondary school enrollment rate reached 98%, making it one of the countries with the highest proportion of educated population in developing countries. The more popular the education, the higher the quality of the nationals. Therefore, the quality of employees employed in Sri Lanka is generally higher, which reduces the risk of the project. The main religions in Sri Lanka are Buddhism, Hinduism, Islam and Christianity. Stabilizing factors: Sri Lanka has an average annual population growth rate of 0.7% in the past ten years. The population is not evenly distributed, mostly concentrated in the south, and the ratio of men to women is slightly out of balance, with more boys and girls. The male labor force of the right age has a decreasing trend and an aging trend. Under such a demographic structure, labor costs are relatively high, which will increase the risk for the project party; in addition, due to the long-term civil war and the 4.21 Incident, Sri Lanka is facing refugee plight, which will become a social instability factor and increase Socio-cultural risks.

In summary, four indicators are set in terms of social culture: Education level is used to evaluate the quality of the people, Religious Conflicts, Demographic Pressures, and Refugees and IDPs are used to evaluate social stability.

## (4) Exchange Risk

The international project background of this project and the implementation mode of this project involve the payment of domestic loans, the settlement of the EPC main contract, the settlement of the general contract of the project to the partial subcontract settlement and other forms of currency exchange. Due to the long construction period of the EPC project, the slow return of funds, and the income from the project is generated in the host country, there will be an unstable exchange rate difference between the country where the enterprise is located and the country where the project is located. Most countries along the "Belt and Road" have lagging economic development, their national foreign exchange reserves are limited, and the currencies of many countries are not freely convertible. Therefore, exchange rate fluctuations in the international financial market and the host country's main currencies will indirectly cause the decline in project value or the loss of revenue. In addition, since the EPC project has a long construction period, the exchange rate is constantly changing during this period, and the amount of the project is relatively large, slight fluctuations in the exchange rate may have a significant impact.

As Sri Lanka has a weak industrial base and lack of resources, a large amount of industrial raw materials may need to be imported, which in turn generates payments in U.S. dollars or RMB. In

addition, funds from domestic accounts to engineering construction departments may be redeemed in U.S. dollars or RMB. However, the settlement currency of the EPC contract is agreed to be rupee or U.S. dollars. If the project payment is finally settled in rupee, coupled with exchange rate fluctuations, it may cause a large deviation in actual income. In addition, Sri Lanka is a developing country with backward economic development, insufficient foreign exchange reserves and a downward trend for years, so the ability to pay will also be severely affected. Therefore, the exchange risk has a great influence on the capital risk of the return.

Combining various indicators used in domestic and foreign literature, this article uses Inflation Rate, Interest Rate Change Rate, Exchange Rate Change Rate, Foreign Debt/GDP, Short-term Foreign Debt/Total Foreign Debt, and GDP Growth Rate to measure exchange risk.

#### 4. Risk Assessment System

In summary, the political stability of the country where the project is located, the bilateral relationship with China, the legal environment, social culture, and economic conditions will have an impact on the progress of the project and the company's ability to pay. It will also seriously affect the ability of overseas companies to timely repay. If the capital chain breaks, the contractor will face greater capital risk.

In order to avoid facing such a dilemma again, this article summarizes the risk points of S Company's Sri Lanka project, and combines the literature to establish a risk assessment system for overseas project funds, so that Chinese companies can predict the capital risk of overseas project when they want to undertake overseas projects, as shown in Table.1.

Table.1. Capital Risk Assessment of Overseas Project

First level indicator	Second level indicator	Weights	Third level indicator	Weights	Index description
Capital Risk of Overseas Project	Political Risk	0.4	Security Apparatus	0.2	Internal conflict and distribution of non-state armed forces, the higher the score, the greater the risk.
			Factionalized Elites	0.2	Conflict and competition between local and national leaders, the higher the score, the greater the risk.
			Group Grievance	0.2	Contradictions and violence between various groups in the country, the higher the score, the greater the risk.
			External Intervention	0.2	Foreign funding and intervention measures such as sanctions or military invasion, the higher the score, the greater the risk.
			Bilateral Political Relations with China	0.2	Friendship with China, the higher the score, the lower the risk.
	Legal Risk	0.16	Legal Degree	0.4	Performance quality, property rights protection, the higher the score, the higher the degree of legality, the lower the risk.
			BIT or Not	0.3	BIT stands for Bilateral Investment Treaty, which is an important international legal means to strengthen the overseas investment insurance or guarantee system. <sup>10</sup> , means signed and effective; 5, means signed and not effective; 0, indicates not signed. The higher

First level indicator	Second level indicator	Weights	Third level indicator	Weights	Index description
					the score, the lower the risk.
			Labor Market Regulation	0.3	Labor market regulation includes employment and dismissal regulations, minimum wage and working hours regulations, etc. The higher the score, the lower the labor market regulation and the lower the risk.
	Social and Cultural Risk	0.16	Education level	0.4	Average years of education, the higher the score, the lower the risk.
Religious Conflicts			0.2	Whether there has been religious conflict. 10, indicates that there has been a religious conflict; 0, indicates that there has not been a religious conflict. The higher the score, the greater the risk.	
Demographic Pressures			0.2	Population-related issues, such as food shortages, population growth and mortality. The higher the score, the greater the risk.	
Refugees and IDPs			0.2	Displacement and refugee related issues, the higher the score, the greater the risk	
	Exchange Risk	0.28	Inflation Rate	0.2	Inflation Rate (Rate of Price Inflation) = (Current Price Level - Base Price Level) / Base Price Level, therefore, the inflation rate can be expressed indirectly through the CPI growth rate.
Interest Rate Change Rate			0.1	Under the conditions of market economy, the market risk assumed by contractors can be predicted by monitoring the real interest rate. The greater the rate of change in interest rates, the greater the loss to contractors. Real interest rate = nominal interest rate - CPI growth rate.	
Exchange Rate Change Rate			0.3	Large exchange rate changes will bring exchange rate risk to the settlement of project payments. Real exchange rate = nominal exchange rate * (foreign CPI / Chinese CPI).	
Foreign Debt/GDP			0.1	This indicator is used to indicate the total amount of foreign debt. External debt refers to the balance of external debt at the end of the year.	
Short-term Foreign Debt/Total Foreign Debt			0.1	This indicator is used to indicate the term structure of foreign debt. Short-term foreign debt refers to debt with a maturity of one year or less.	

First level indicator	Second level indicator	Weights	Third level indicator	Weights	Index description
			GDP Growth Rate	0.2	Excessive economic growth will lead to overheating of investment, expansion of credit demand, excessive risk-taking by financial institutions, and increased systemic risks. The slow economic growth will reduce investment, reduce corporate income and profits, affect its cash flow, and make it impossible to pay for the project in time.

## 5. Risk Prevention Measures

### (1) Political Risk

Political risk refers to the possibility of the unstable political situation of the country where the project is located, frequent changes in policies and regulations, etc., which may adversely affect investors. If the country's political stability is not high, military coups, armed conflicts, or foreign invasions often occur. If Chinese companies want to safely enter overseas markets, they must first make an effective assessment of foreign country's political risks.

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## 6. Conclusion

Through the above analysis of the Sri Lanka project, we found that the political turbulence of the country where the project is located may affect the progress of the project at any time; Social and cultural differences and differences in laws may cause friction between the project party and the contractor in communication, making it difficult to achieve unanimous opinion; Excessive exchange rate fluctuations can easily cause losses to projects settled in foreign currencies. The economic stability and economic prosperity of the country where the project is located will also affect the efficiency of the country's enterprises. When the efficiency of the enterprise is not good, it often

defaults on project payments. Therefore, the above problems will affect the speed of overseas project funds collection, and even cause losses, affect the circulation of the capital chain, and become a capital risk for the contractor. Based on the above considerations, this article considers four aspects of political risk, legal risk, social and cultural risk, and exchange risk, and establishes a risk assessment index system for overseas project funds to help Chinese companies predict capital risks before undertaking overseas projects. Take precautions as soon as possible to avoid facing this dilemma again.

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