Risk Management of the "Belt and Road Initiative" Projects – An Empirical Study on Investments of the Chinese State-Owned-Banks in the Region

Lei Kong

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Declaration

I, Lei Kong, declare that the PhD thesis entitled “Risk Management of the 'Belt and Road Initiative' Projects – An Empirical Study on Investments of the Chinese State-Owned-Banks in the Region” has not been submitted for any other degree or professional qualification. Except where otherwise indicated, the work presented in this thesis is my own.

Signature: 

Date: 20/12/2022

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Abstract

This thesis attempts to examine the current risk issues of state-owned banks for their involvement in the 'Belt and Road' projects, and to develop a unique risk management framework. It is found in the literature that financial policies and intermediaries play a fundamental role in cross-border investment and requires careful consideration of appropriate methods and regulation instruments, as cross-border investment always involves risks. Developing countries with relatively immature market systems may still need policy-based financial provision at the present stage. Together with an evaluation of traditional measures adopted by firms involved in OFDI, the study tries to identify the potential risk factors that affect BRI projects by looking at various contemporary risk factors. The investigation of the relations between SOBs and development finance that has been overlooked in the existing literature becomes the foundation of this research, whilst thorough evaluations are given to the challenging issues among these projects.

This research adopts qualitative research methods, in which the adoption of case studies and interviews as the primary approaches, combined with documentary analysis throughout the research process. The carefully selected cases and correspondent analysis of parallel comparisons provide essential clues for identifying, classifying and prioritizing the risk factors associated with the BRI project. This study aims to reveal the particularities of the state-owned investments of BRI project financing to achieve the research objectives by connecting the theoretical construction with risk management issues. This respect goes beyond the traditional perspective of overseas investment risk management as it endows the classical theory with specific implications under empirical evidence.

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Abbreviations and Acronyms

ADB	Asian Development Bank; African Development Bank
AIIB	Asian Infrastructure Investment Bank
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BOT	Build-Operate-Transfer
BOO	Build-Own-Operate
BOOT	Build-Own-Operate-Transfer
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China, and South Africa
BRIDI	Belt and Road Infrastructure Development Index Report
BTO	Build-Transfer-Operate
CBD	China Development Bank
CCCC	China Communications Construction Company
CDOs	Collateralized Debt Obligations
CEEC	Committee for European Economic Cooperation
CGD	Centre for Global Development

CHINCA	China International Contractors Association
COSO	Committee of Sponsoring Organizations
COOEC	China Offshore Oil Engineering Corporation
CPCC	China Power Construction Corporation
CPIC	China Power Investment Corporation
CRC/CRCI	China Railway Construction (International)
DAC	Development Assistance Committee
ECRL	East Coast Rail Line
EPC	Engineering Procurement Construction
EU	European Union
EXIM BANK	Export-Import Bank of China
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIH	Global Infrastructure Hub
ICRG	International Country Risk Guidelines
IMF	International Monetary Fund
IPP	Independent Power Producer
ISID	Inclusive and Sustainable Industrial Development
IWEP	Institute of World Economics and Politics
LNG	Liquefied Natural Gas
MDGs	Millennium Development Goals
MDBs	Multilateral Development Banks
MOFCOM	Ministry of Commerce
NBS	National Bureau of Statistics
NDRC	National Development and Reform Commission

OECD	Organization for Economic Co-operation and Development
OFDI	Outward Foreign Direct Investment
PFI	Private Finance Initiative
PPP	Public-Private-Partnership
RMF	Risk Management Framework
RVA	Risk and Vulnerability Assessment
SAFE	State Administration of Foreign Exchange
SASAC	State-owned Assets Supervision and Administration Commission
SDGs	Sustainable Development Goals
SINOSURE	China Export & Credit Insurance Corporation
SMEs	Small and Medium-size Enterprise
SOBs	State-Owned-Banks
SOEs	State-Owned-Enterprises
SPE/SPV	Special Purpose Entity/Special Purpose Vehicle
SRM	Social Risk Management
SSA	Sub-Saharan Africa
SSDC	South-South development Cooperation
STEM	Science Technology Engineering Mathematics
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
WTO	World Trade Organization

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Chapter 1. Introduction

1.1 Overview

It has been nearly two decades since the 21st century, and the economic pattern of human society produced tremendous change. Along with the progress in other fields, improving people's living standards has become a significant concern of all countries. However, it is not a simple task for all nations since many governments are desperate for economic growth; it becomes vital to develop cross-border trade as the drive to countries, especially those with substantial development demands. For instance, FDI could solve the thirst for capital requesters and bring higher yield or investment diversification to the capital providers. But not all countries can attract FDI, especially the less developed ones in Eurasia, where more than half of the world's population inhabited this largest landmass on earth, with many are either landlocked and unable to conduct international trade effectively or are unable to obtain sufficient external funds due to various problems. It must be mentioned that the world we live in is full of uncertainties, and some seemingly controllable events are likely to become common challenges for all humankind. The global COVID-19 pandemic that started at the end of 2019 is a typical example, as an editor of *The Economist* contends, "*it (the COVID-19) will probably cause the most brutal recession in living memory*" (The Economist, 2020). How to efficiently conquer the economic difficulties while achieving sustainable growth becomes the core issue troubling all countries, no matter their development stage.

No one would doubt the role of fiscal policy and intermediaries in cross-border investment as a basis for trade development. However, appropriate methods

and means still need to be considered carefully since there are always potential risks involved in transnational investments. There are two contradictions in meeting the financial needs of international investment among developing countries: 1. The traditional global economic structure is incompetent to meet the rapidly growing investment and financing demands from developing countries, especially in the fields of infrastructure investments; 2. developing countries with relatively immature market systems may still need policy-based financial support at the current stage (Wang & Gao, 2019). How to manage the risks that are challenging cross-border investment still require sincere cooperation and elaborate design between countries. Most of the current studies emphasise on specific market and industry investment, or FDI from developed to developing countries as the traditional aid program; there is a lack of investigation on the newly emerged BRI investment model in regarding of its risk behaviours. Therefore, the empirical research on relevant projects may become the focus and paradigm in future studies.

1.1.1 Research Background

As the fastest growing exporter of overseas investment in recent years, China's contribution comes from more than three decades of rapid economic growth and foreign policy changes. As its economic power grows, communist leaders hope to use it to impact other issues. For example, they put forward the strategy of ‘Great Western Development’ in the era of Jiang Zemin, hoping to narrow down the gap between the western inland regions and the eastern coastal areas in the case of China's colossal landmass and uneven development (Ferdinand, 2016), and then use this experience in seeking to build trade relations with neighbouring countries to secure the enormous energy demand for the industrialisation process. Thus, not like previous practice and stance, China is not planning to be a silent partner but rather a

shareholder with an elaborate strategy – it has successfully attracted global attention by proposing a global economic cooperation strategy known as the ‘one belt and one road’ initiative (later referred as BRI) in late 2013, which involves infrastructure development and investments in over 100 countries and international organisations. It is China's greatest global economic ambition so far, aiming at stimulating economic growth in a vast area covering sub-regions in Asia, Europe and Africa, which accounts for 65% of the world population and 30% of world GDP (Huang, 2016). The Chinese financial institutions (SOBs) have provided more than $440 billion for BRI infrastructure projects (Chen, 2019).

Though as a platform for transnational investment, financing is crucial to the construction of the BRI projects. Investment in cross-border infrastructure requires massive funding and long-term commitments and often involves different kinds of risks and political sensitivities. As a result, official investors like the state-owned banks (SOBs) have played leading roles in supporting this initiative since they are more patient and risk-tolerant than private investors, as long as they operate under commercial rules (Zhai, 2018). Accordingly, although the SOBs are strong supporters of the national policy, so to have obligation and responsibility to take the BRI financing project; nevertheless, as initiator, the Chinese government is not prepared to let the financing projects of state institutions bear all the consequences alone. In a highly centralised administrative system, the decision agents need to identify, analyse and evaluate the risks in all project life cycles and use their organisational structure and administrative practices to act on the risks in favour of the project (Rodrigues-da-Silvaa & Crispima, 2014). Again, the BRI construction is mainly concentrated in infrastructure investment, with the characteristics of significant capital demand and an extended repayment

cycle. Not to mention the uneven development level of loan receiving countries, which also have cultural and religious differences and are highly likely influenced by the geopolitics of extraordinary powers; these factors would further extend the challenges in securing the project finance of BRI.

Generally, current studies mainly focus on the procedures and outline of risk management in overseas investments, which lack comprehensive, in-depth, accurate, customized information required for BRI project financing risk management of Chinese SOBs (Yin & Zhou & Wang, 2018). There are few studies of rendering to the particularity of BRI background, such as the geopolitical risk and trade security issues behind the game of great powers that impacts the FDI in the region; then a systematic assessment is necessary as well as specific suggestions on how to manage these risks, especially on how to put forward targeted and operational advice for SOBs of China. At the same time, it is imperative to establish a practical framework to assess and prioritize the risk level to fulfil all stakeholders' requirements among these projects. This research or study aims to make up this research gap by providing some empirical evidence.

1.1.2 Importance of the Research Issue

In recent years, nearly every issue concerning China's development has aroused controversy. It is seemingly prevalent in Western politics and academia to criticize the communist government's proposals with significant international influence, let alone something as phenomenal as the whole set of BRI (Cai, 2018; Hillman, 2018; Balasubramanyam, 2015). The attitude towards BRI, though is different throughout the world – enthusiastic within China and other regions with Chinese cultural influence; warm welcomed in Africa, Southeast Asia and most Arab countries; less warmed in Japan,

Russia and central Asia; looked on by the U.S. and partly Europe (Cai, 2018; Sachdeva, 2018; Shichor, 2018). This is rather complex. On the one hand, it is due to the ‘taking sides’ problem caused by different systems and ideologies behind each country; on the other hand, it is also caused by the significant variances of self-participation ability among countries brought by different stages of social and economic development.

Some scholars have suggested that BRI's proposal is not intended to export communist values based on their way of thinking, but that China's governance model and successful economic development experience could provide other developing countries with meaningful references (Zhang, 2018; Zhou, 2018). Nonetheless, to many others, BRI's intentions are not as simple as they appear; China wants to leverage its economic capabilities to perform a unique diplomatic function and achieve higher political goals at the expense of other countries' autonomy (Arduino & Gong, 2018). From the above points of view, the research on BRI project financing would hardly remain purely economic. For its part, China's state institutions would provide funds to ensure the success of the BRI projects without reservation; for Western countries, the BRI is likely to bring more profound influences beyond the economic level – no matter from the perspective of global governance or regional interests – thus require prudent reassessments and keep an eye on; for the host countries who are hunger for economic provision from China but do not intend to disappoint traditional Western powers, there is a high chance that they will wobble in the long run (Yu, 2017).

The BRI proposed to develop the new Silk Road Economic Belt and 21st Century Maritime Silk Road to promote economic cooperation among

countries along the proposed routes. It is a systematic project, "*which should be jointly built through consultation to meet the interests, and efforts should be made to integrate the development strategies of the countries along the Belt and Road*" (BRI, 2015). This initiative aims to take advantage of the massive demand of developing countries for infrastructure construction and the asymmetry caused by their low economic capacity, then use institutional advantages to open up investment and financing channels and strengthen the orderly free flow of factors and effective allocation of resources through FDI. It is worth mentioning that infrastructure investment not only can bring economic growth but also has a vital role to play: being a public or quasi-public good (e.g., transportation, telecommunication, energy, water, sanitation, housing, and educational facilities), the investment of infrastructure could improve income distribution of wealth as well as people's standard of life. If infrastructure increases inequality, it loses the essence of public goods (Tian & Li, 2019). Nevertheless, high-quality investment requires institutional improvements in host countries that are difficult to accomplish. The BRI could provide meaningful experiments at this time.

As a critical area of superstructure construction, the BRI intended to further market integration and create regional institutional cooperation that was originally lack of but the benefit to all (Benard, 2020; Flint & Zhu, 2019; Liu & Tian & Liu, 2018; Chen & Hou & Xiao, 2018; Ferdinand, 2016). The inadequate and inefficient traditional international financial structure could be supplemented by the provision of additional liquidity from the BRI, which planned to build a multi-layered financial system that would offer some meaningful opportunities. Some scholars have argued that the BRI participants can obtain rich credit financing from China and boost economic growth through financial cooperation. China can enjoy the dividend of

economic development in its neighbouring countries and secure a high return on investment (Wu & Pan, 2019). The financial strategy of this initiative is practically consistent with Ocampo's argument on international financial structure, in which an integrated regional economic order should comprise of multilateral development banks, several large regional commercial banks and sub-regional institutions of specific arrangements (Ocampo, 2017).

However, the big question is who would continuously provide the required fund over the next several decades (Łasak & van der Linden, 2019)? Though the total investment needs in the region are difficult to calculate precisely, it is going to be astronomical – for instance, some estimation it is expected to cost more than $1 trillion (£760 billion) (Benard, 2020); others consider only the total investment required to cover the transport and infrastructure (not including water and power) for the coming five years is estimated between $ 1 to 8 trillion (Hillman 2018; Ho 2017). Some also appraised that South Asia and South-East Asia alone will need at least $3.6 trillion over the period 2010-2020 in domestic infrastructure investment if the requirements of urbanization and growing population are to meet in these countries (Wolff, 2016).

As governor of China's central bank at the time, Yi stated three main ways for China and BRI participants to conduct financial cooperation in the past few years: through collaboration between Central Banks to maintain the stability of regional financial markets; establishing regional financial institutions or providing policy loans to BRI, and participating in infrastructure investment through their state-owned financial institutions; and to offer financing services to overseas branches of Chinese institutions and Chinese residents in the region (Yi, 2014). The idea was near-perfect, but the reality did not live up to

expectations – government-funded institutions are still the dominant force foreseeably (Mustapha & Prizzon, 2017). It has already been fully recognized that being the most active player in international project investment and financing, the determinants of BRI projects cannot be separated from the operation of SOEs from China. They are the main force of OFDI along the belt and road countries from China, while the private sectors only play a supplementary role at the present stage (Liu & Tang & Chen & Poznanska, 2017).

It is worth mentioning that the project financing arrangements should be tailored to specific circumstances of countries and projects deliberately because although there is no difference between China's state-owned commercial banks and development banks in the eyes of other countries, their essential disparities can still have impacts on specific projects; this would be analysed and explained by attempting to use different project case studies, which would be further positioned in this study. Obedience and efficiency are two key features of these state institutions of China, which have already played and would possibly keep playing an even more significant role in other developing regions that are thirsting for external capital (Blanchard & Flint, 2017). Although this would draw many critiques from the Western governments, media and public opinion: for instance, the massive Chinese-funded projects as economic intrusion or economic colonialism to the underdeveloped countries (Balasubramanyam, 2015); the opaque loan vetting processes and possible corruption they may cause through the operation of the official institution (Hasan & Rahman & Iqbal, 2017); the whole plan (BRI) is "*loose, ever-expanding nature, and a lack of project transparency*" (Hillman, 2018).

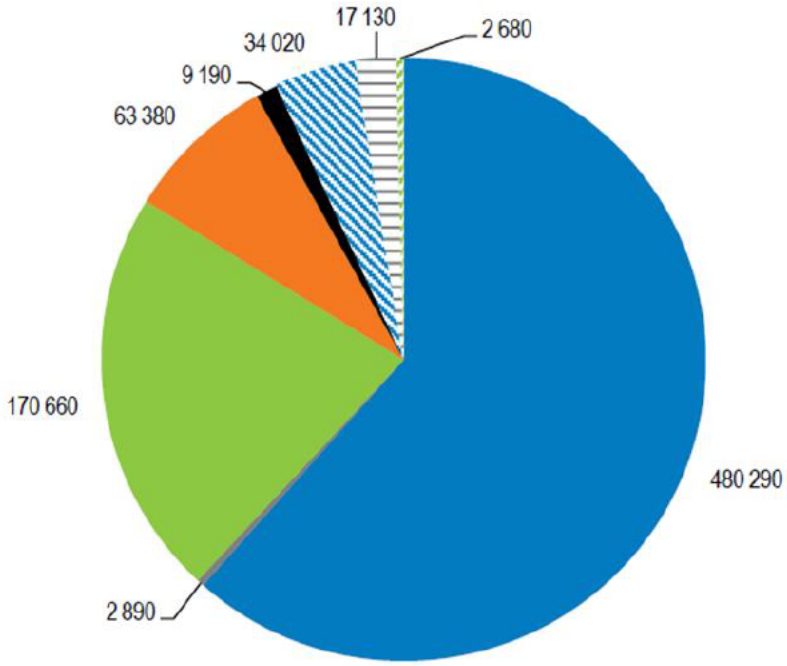
As a one-party state, China no doubt would follow its path and promote BRI construction with the focus on economic cooperation: the future success of the BRI could be ensured while remaining wary of falling into a Western-style debt trap that burdened many developing economies during 70-the 80s (Shichor, 2018). To guarantee this, it is necessary to utilize China's state capital into development project financing on the infrastructure sector of these developing partners, and to some extent, institutionalize the regional financial order through investments (Wang, 2019). It is worth noting that these government-led projects are of great intricacy and require excessive patience and effort of both the investing and host countries to achieve the desired results (Garcia-Herrero & Xu, 2018). In practice, state institutions like the SOBs who's responsible for project financing may have to bear greater risks, given that they have much less strategic resources and experiences than their Western counterparts. Therefore, the focus of this study is to empirically investigate some specific cases (investment projects), find out the experience and remaining problems of SOBs as a financier in risk practice, and further develop targeted risk management strategies. In the meantime, further discussion is needed on the differences between state-owned financial institutions engaged in development finance projects and traditional Western investment (Lv & Guo & Chen, 2018), as well as overall assessment of the unique risk structure that naturally exist in these projects (Wang & Xie, 2019).

1.1.3 Infrastructure Investment and SOBs

With more than a decade of continued openness and cooperation (by attracting FDI), China has also begun to deliver interest in rules and order. As some scholars have pointed out, the decisive factors in China's OFDI or, more specifically, among its BRI collaboration are the so-called 'policy indicators': institutional distance, economic freedom, and bilateral trade relations (Li & Huang & Dong, 2019). Obviously, China has been cautious on institution-

building and showed more interest in exporting capital and technology, while it's discourse of the BRI highlights "modernity, multiculturalism, and cross-regionalism" (Wu & Pan, 2019). Cross-border investment on infrastructure is a powerful vehicle (Figure 1.1, while an appropriate mechanism aiming at resource-sharing could make the New Silk Road looks more acceptable (Berlie, 2020).

Figure 1.1 Chinese OFDI in infrastructure, cumulative national amount in USD (Millions), 2005-2018[1]



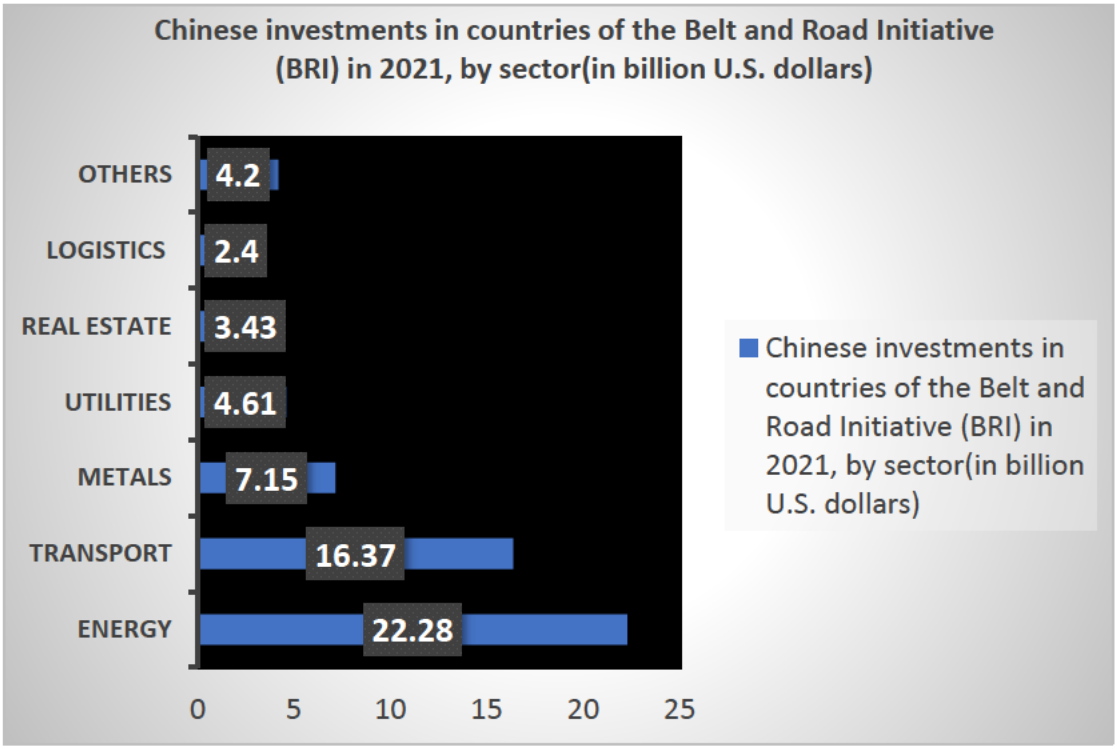
BRI participating economies	480,290
SSA	170,660
Latin America	63,380
Middle East & North Africa	34,020
Australia	17,130
EU	9,190
North America	2,890
Other economies	2680

Source: author compiled (2020)

The appeal of the BRI infrastructure is its comprehensiveness. Joshua (2019) points out that it contains the 'core' infrastructure such as concrete, steel, machinery, and equipment needed to build ports, railways, roads, pipelines, and special trade zones. This category can also include telecommunications, water supply, sanitation and sewage, electricity, and natural gas pipelines; these take over more than 80% of BRI projects (2021 data) and are to be

arranged according to the need of different participants (Figure 1.2). With further development and deepening, BRI also includes the building of 'soft' infrastructure, such as financial institutions, research institutions, cultural exchanges and diplomatic channels that facilitate economic cooperation (Ibid). The necessary maintenance and renewal enable the infrastructure to function for a more extended period, while modern logistics support trade growth. It's important to note that all of these projects are funded by China's state-owned financial institutions (SOBs) to some extent, which means, massive projects allow them to effectively harness excess savings and exert influence (Xie, 2018).

Figure 1.2 Chinese investment along the BRI by sector, 2021



Source: authors compiled (2022)

The Belt and Road infrastructure investment projects are mainly public goods that are expected to play a long-term social role in the host countries. However, due to the particularity of its nature – high risks, large amounts of capital, long periods and unstable returns – private capital simply cannot (do not want) participate effectively, while diversified development financing is the trend (Dunford, 2020). Therefore, as Ocampo (2008) argued, reasonable financial arrangements (transnational investment) should be structured and diversified. Shang (2019) contends that, the BRI financial structure should focus on improving the capital replenishment mechanisms of major financiers[2] to meet future demand. However, for the above-complex reasons, not only are private sector participation unlikely to increase in the foreseeable future, but even multilateral financial institutions are holding back (Kobelkova, 2017). Thus, an in-depth study on the risk management of BRI projects from the perspective of SOBs would be beneficial to the future participation of stakeholders involved.

The international attention to China's BRI strategy and the impassioned discussion about its soaring impact on international financial order is rising (Mathews, 2019). At this point, it must be recognized that there are significant disparities amongst the BRI participants, and the challenges from the financial realm may have the most unpredictable impacts. The author believes that the findings of this study will supplement to the current literature regarding to the risk management practices that the Chinese SOBs would encounter. It as well shed light on the importance of development financial activities that all stakeholders involved in account of this issue. The questions that arise make it indispensable to face the current

[2] China Development Bank, Export-Import Bank of China and SINOSURE alone account for more than 60% of total project financing (BRI portal, 2020).

situation and complexity of the arguments, as the possible answers will be sought in the following chapters.

1.3 Aim, Objectives, and Research Questions

1.3.1 Aim of Research

This paper examines the significance of risk management for SOBs of China for their involvement in the BRI projects and to develop a targeted Risk Management Framework. Based on the evaluation of traditional risk management frameworks and measures adopted by firms involved, the investigation of SOBs is given regarding to their development project financing activities which has been overlooked in the existing research. Meanwhile, the study focusses on the classification and prioritization of sources that affect the management of risks on these projects by looking at various factors that the Chinse SOBs may face in the BRI region.

1.3.2 Research Objectives

As scholars have pointed out, the risk management process is to “identify, characterize threats; assess the vulnerability of critical assets to specific threats; identify ways to reduce those risks” (Arduino and Gong, 2018). Considering that many countries along the BRI have complex and variable conditions, comprehensive risk management is essential for these SOBs involved in project financing. The corresponding RMF can provide important information and reference for institutions involved in the projects in BRI counties and offer policy suggestions to the relevant stakeholders. To provide a thorough perspective among the research objectives, more contemporary issues regarding the risk issues of BRI projects should not be lost sight of in the study. For instance, the potential impacts of the growing U.S-China tension imply geopolitical ambiguity in the long term (a new cold war?); the

increasing demands on environmental protection and development of green finance that bring more rigid obligations and standards to Chinese firms that are investing abroad; the foreseen impact of the COVID-19 pandemic and its effects on the BRI projects, etc. In the meantime, this study will focus on the analytical approach to the risk management of project financing, giving evaluation to specific cases of SOBs from China in the BRI region. In the building of RMF, different types of risk factors will be measured as variables and evaluated respectively. Therefore, this project will have several specific research objectives:

1. to identify the research gap of risk issues of BRI investments in general, and BRI project risk management in particular through the examination of existing literature;

2. to identify the significant implications of development project financing model and the state-owned nature to the BRI investments;

3. to provide analysis to the risk-relating factors and reveal the importance of risk management issues on BRI projects funded by the Chinese SOBs that operate in the region;

4. to develop a risk management framework (RMF) to classify and prioritize the risks associated with the project finance of Chinese SOBs through an analytical approach to provide policy and practical suggestions for the stakeholders involved.

These outcomes of the study may influence the investment and, in turn, the financing activities or performance of the existing projects in the long term. Hence, a proper analysis will be given to the influencing factors as variables to produce a comprehensive conclusion as possible in this research.

1.3.3 Research Questions

To better accomplish the research objectives, it is necessary to address the following main questions and sub-questions in the thesis.

Central questions of research:

- ‘How to assess the risks associated to development project finance within the context of BRI?’; and,
- ‘What are the weaknesses that appear to the current risk management measures involved in on-going projects?’; and,
- ‘How to develop a targeted risk management framework towards the Chinese SOBs and other stakeholders of BRI projects?’.

Sub-questions of the research:

- ‘How to categorize and prioritize the different risk factors associate with the development project finance of the BRI projects?’;
- ‘What are the approaches or methods used in the risk management process of current projects?’;
- ‘How to identify the weakness of current risk management measures?’;
- ‘How would the state-owned nature affect project financing, and to what extend?’;
- ‘Who are the stakeholders of the BRI projects?’.

Empirical evidence will be provided based on the investigation of selected research objects (SOBs) through the discussion of the above questions. Again, as pointed out above, the current research only focused on the listing, introducing, and general identification of risks; there is no systemic analysis of

the risk management in the BRI context, nor mention studies related to the SOBs from China. Subsequently, the former research's lack of thorough investigation and evidence on the financing risks on specific case studies make this thesis's grounding and innovative standpoints. Consequently, the survey of current risk management approaches can further provide detailed analysis to participants in the BRI projects. Various factors also need to be addressed to evaluate risk management better.

1.3.4 Research Results and Contributions

This research focuses on risk management and contributes knowledge to associated areas through targeted empirical investigation. It goes beyond the traditional theories related to international investment risks and clearly defines the scope of the 'Belt and Road' projects. The authors distinguish the particularities of infrastructure investment that funded by Chinese policy finance. It is found in the preliminary investigation that the traditional concept of development finance is closely related to the BRI project in terms of definition, object and scope; however, with the exploration of this study, the differences between the two have become unambiguous. The empirical investigation found that, although similar to the previous aid programmes, the BRI projects are widely interpreted and viewed as the 'Chinese model' that different from traditional development model in terms of funding sources, investors, and nature of contractors, as well as their strategic intentions originating from an official context (Hameiri & Jones, 2018). In addition, the current financing model with state-owned funds as the main body makes the risk management behaviours are of great differences. SOBs' experience with flexible adoption of PPP model in financing projects and their unique risk preferences are mutually validated in the literature and case studies. Thus, this study pays special attention to the differences between the BRI and

traditional investment in terms of financing patterns, risk factors and specific causes of problems.

The theoretical basis of this study involves risk management, project financing and institutional theories, which are built on the learning of the investment and financing structure of the BRI. Based on the case studies and interview results, the author incorporates the unique nature of financing for the BRI projects into the proposed RMF. The framework is in line with the basic principles of innovation integration, in which meets the policy initiatives for the stakeholders involved. Therefore, the targeted RMF proposed in this study and the theoretical basis built around it have then become the most important contribution of this study. Based on this framework, the project company can make risk decisions prior to the landing of specific project, to evaluate and rank potential risks, and promote investment and financing activities more effectively. This process is determined by the decision-making body, rather than risk itself as objective factors (Radoi, 2018). This study combined with the views of predecessors, broadens the dimension perspective of the existing risk management research in the context of cross-national investment.

1.4 Compendium of the Research Methodology

In the context of interpretivist epistemology, this paper adopts the qualitative approach as the primary research method. Interpretivism is well combined with basic theory to reasonably explain things' internal development and nature based on the changing external phenomena (Mutch, 2005). Therefore, if an approach in business studies can provide practical adequacy, it is valuable and can provide stakeholders with an understanding of a phenomenon. Since both the philosophical perspective and methodology of

research emphasize the contextual dependence of knowledge and theoretical development, the experience and explanation of phenomena in life becomes an integral and valuable approach (Beuving & de Vries, 2014; Faber and Scheper, 2003; Taylor, 1974). In addition, the study decided to adopt the qualitative research method because of its flexibility, which allows maximum interaction between researchers and participants.

The qualitative research paradigm starts from the natural social environment to provide a reasonable explanation to a set of research questions or hypotheses. It benefits researchers in discovering new variables and relationships in the process by redefining research goals and objectives, thus revealing complex processes and illustrating their impact on social contexts (Shah & Corley, 2006). Unlike quantitative approaches, qualitative research can provide descriptions of things in a complex social context, sufficient for understanding people, organizations, governments, and multilateral institutions involved in the study. Because this complex of correlation is not explicable by mere data and calculations – that is, the often-contradictory behaviours, beliefs, opinions, emotions, and relationships between individuals and organizations (Denzin & Lincoln, 2018). Qualitative research can also effectively identify uncertainty and validity of information, which accelerates decision-making behaviours (Henning & Van Rensburg & Smit, 2004).

This research adopts a qualitative research method, in which the adoption of triangled analysis combined eight case studies and 20 in-depth interviews, accompanied with documentary analysis. The case studies and correspondents attempt to evaluate BRI project financing risks effectively through their research and analysis. Sample selection of cases is a rigorous

and complex process. Due to many similar cases, several criteria need to be met – contract amount, location, degree of progress, geopolitical connection, etc.; summary and parallel comparison of cases can provide important clues for research objectives (Clifford, 2010). At the same time, due to the particularity of this study, the method of interviewing key people was adopted as the primary data collection. Of course, interviewees must meet the research design criteria – screening, establishing contacts, scheduling interviews, conducting interviews, text translation, and data analysis – to ensure the consistency of the research process, the adequacy of data, and the validity of the analysis results (Yin, 2018).

1.5 Scope and Structure of the Thesis

This study aims to increase the knowledge of Chinese state-owned enterprises in BRI countries by referring to literature on risk management and development project financing. To address research questions, this thesis will analyse existing research that relies on the contextual focus of BRI, which focuses on examining the impact of development project finance. An in-depth investigation to identify, classify, and rank these risk factors among projects will be employed by examining whether such institutional forces transmitted with state-owned institutions exert extraterritorial influence on their overseas performance. Meanwhile, the paper will also attempt to discover how and why domestic policy influences these institutions by providing logical explanations. Meanwhile, the article will highlight the notion of development finance under the institutional perspective to discover the risks related to project financing in host countries faced by Chinese SOBs. It will recall the traditional risk management measures by reviewing the Basle Accord, frameworks from the World Bank, the Chinese official regulations, and other prevalent approaches, then try to generalize their inapplicability on development project financing in the BRI context. The research results would contribute to the current research

gap by developing a unique RMF based on case analysis of 8 typical infrastructure construction projects and results from in-depth interviews with key personnel on SOBs project financing risk-related knowledge. The research outcome could facilitate enterprises currently engaging or investing in BRI projects by providing policy suggestions to relevant stakeholders, including regulators, contractors, and financial institutions. The research contribution of this thesis will be how better to integrate the home-country financed projects with local investment requirements and manage risks under the RMF.

This thesis contains eight chapters, and the main body consists of six chapters that aim to address the research questions mentioned previously. Explicitly, it is made up of seven chapters: an introduction (chapter one), two background chapter that serves the function of a literature review (chapter two and three), one chapter as an explanation of the research methodology and methods (chapter five), and the chapters serve as the research findings and results (chapter five, six and seven), and the conclusion comes last (chapter eight). In what follows, I briefly outline each chapter.

The second chapter is a literature review of risk management. It introduces the general concept of risk over investment, risk management methods and the assessment and evaluation of potential risk sources faced by the BRI projects. This review provides an overview of the applicability and effectiveness of current literature on these risk management approaches and models. In investigating primary risk factors, including the political and geopolitical risk, the economic and financial risks, social and environmental risk, legal and regulatory risk, and the impacts of COVID-19 pandemic,

positioning the risk source provides insights towards BRI related project financing. The most significant difference between the BRI investment and traditional FDI is that the former has embedded direct official attributes, whereas it is difficult to comprehensively the conventional measures. According to the analysis of the results, the previous research results are not universally inclusive in applying the projects in most cases.

The third chapter mainly reviews the historical origin of development project financing, its concept and development trend among international investment and financing markets. The chapter first traces back to the traditional development financing model from a historical perspective and explores the role of government and its relationship with commercial financing. Then, it evaluates the application of project finance in international investment from perception, characteristics, and specific application. In reviewing China's transformation in its role-playing from international aid to buy, it discusses the practical application of policy guidance and its large foreign reserves. The experience of its rapid establishment of credit in international development loans for developing countries is also evaluated. At the same time, this chapter also discusses the PPP projects as an essential form of market participation in project construction. It approximates the current challenges and future development trends of BRI project financing.

The fourth chapter explains the research methodology and research methods. First, it analyses the importance of interpretivism to this research from the perspective of philosophical epistemology and compares the difference between positivism and interpretivism. The use of interpretive paradigms to construct holistic analysis has the potential to build theories to comprehend

better institutions, actors and their associated behaviours in risk management and decision-making processes. Secondly, this chapter describes the study's overall design, which aims to understand the risk factors, determine, and measure the status of risk management related to BRI projects, and provide valuable suggestions for stakeholders. This will go beyond mere descriptive research and involve broader and deeper social and humanistic factors in the whole research process. Third, the chapter details an interpretive approach using selected case studies, interviewing specific key personnel, with the interpretation of important. The validity and implementation of the proposed research methods are described in detail to match the listed research questions. Finally, the analytical framework designed by the author is described, with perspectives to obtain practical research analysis and corresponding results.

The main content of chapter Five is to examine the analysis results of case studies. First, eight typical cases are investigated thoroughly, and each case is provided with an in-depth discussion from the introduction, operation, problems encountered, and its developments. The risk factors extracted from the case study results will be categorized and summarized separately, laying a foundation for the following interview question design and the final RMF proposal.

Chapter six is to evaluate the data of crucial personnel interviews. NVIVO is used to stratify the research questions from core to additional questions. Thus, interviewees' answers are scrutinised based on discourse and context explanations. Finally, the analysis process and results are summarized. The

hierarchical model framework based on the analysis results will provide an essential reference for the research conclusions in the next chapter.

As the main aim of this study, chapter seven proposes a unique risk management framework (RMF) for the BRI project based on the analysis of case studies and interview results. The conceptual structure of RMF is composed of four interconnected systems: "Risk Assessment" - "Risk Prioritization" - "Risk Treatment" - "Monitoring and Review". Simultaneously, the framework covers "Steps", "Methods", and "Process description" as the three corresponding cross-dimensional organizational relations when it is adopted. Although each is a complete and independent operation system, these four links not only have an internal logical relationship but are also interconnected. Besides, one of the critical components of the framework is a 'BRI risk information database' that involve risk information sharing among the stakeholders. Lastly, in this chapter, the risk management strategies from the perspective of SOE and government will be present, respectively.

The final chapter summarizes the main conclusions and research results, discuss the paper's contributions and implications, and points out the limitations of the research. This chapter will also provide implications for managers and decision-makers and suggest potential avenues for future research.

Chapter 2. Literature Review I: Risk Management, Traditional Approaches, and Assessment of Risk Factors towards the BRI

2.1 Introduction

Many scholars have studied FDI as the most important means and source of economic growth in developing countries in particular, which can benefit from improving the overall economic capacity of host countries and have a positive impact on their financial industry from an institutional perspective. "*The empirical analysis showed that FDI plays a more significant role in promoting financial development in countries with higher quality institutions, lower corruption, better legal order, and less ethnic conflict*" (Aibai & Huang & Luo & Peng, 2019). This also reflected the success of FDI projects that directly relate to the economic improvement of host countries. Can many developing nations that are less developed in terms of system, hardware, and complex social conditions make more reasonable use of FDI? Perhaps the Chinese government hopes to provide valuable answers through this grand scheme. The policy implications of the BRI include facilitating various measures by participating countries to encourage FDI inflows, particularly by improving the quality of institutions and creating a better cross-broader investment environment. This placed higher requirements on the overall design of the BRI, especially in safeguarding and regulating those FDI projects in the region.

It is conceivable that the Chinese government has made sufficient ideological preparations to deal with various situations as early as formulating this plan (Andornino, 2017). Nevertheless, the international political and economic *status quo* is far more complex, and the existence of various potential risks have made what seemed a perfect plan fragile. A reality that many people

ignore is that China's overseas investment has been more concentrated in developed countries, especially around Europe, in recent years. This might be partly explained by the high-risk situation in many countries in the BRI region. Nonetheless, this trend is likely to turn in the future with the expansion of BRI – while there is a rising protectionist climate in the Western countries (notably the U.S), together with pressure from Chinese regulators to halt unproductive investment in advanced economies – China is to shift more investment to the BRI regions (Garcia-Herrero & Xu, 2018).

If the BRI pursues economic cooperation and global governance, the situation is still very complicated and challenging under the current international scenario. Many projects are being awarded to the contractors in this region, with most of the funding coming from China. Since then, Chinese companies will face two risks: project contracting and foreign direct investment (Zhou, 2018). Without a careful analysis and elaborate design, many investment projects could quickly get into trouble in some high-risk countries and, in turn, will undermine the confidence of both donors and hosts. Another perspective confirms the importance of policy-based finance in developing countries to attract foreign capital and grow their economy. Therefore, it is essential to conclude works of literature on risk management before building any new concept in the context of BRI investments.

This chapter will review the risk management concepts, identify significant risk sources, and emphasize the importance of project risk management. In recent years, different risk management approaches have been developed by academia, and the effectiveness of these models has been empirically tested—however, few literatures on applications of practical projects of risk management measures in BRI project financing. One of the critical points of this chapter is to identify and define the risk factors present in BRI

investments and how SOBs deal with them. This inquiry process will find gaps in previous studies and lay the theoretical foundation for the methods and paths adopted in this research. This chapter will review and summarize these traditional risk management measures to find out their limitations in the BRI context to justify the necessity of this study.

2.2 Conceptualizing Risk Management

2.2.1 Diversified Definitions of Risk Management

Hedges (1952) contend that Allan Willett, a scholar of Columbia University, was one of the first in economics to make a systematic study of the concept of ‘risk’ in his paper "Economic Theory of Risk and Insurance", where he defined risk as "*the objective expression of uncertainty about the occurrence of undesired events*". However, the specific meaning of the term in the academic community has not yet formed a consensus until today. The U.S. COSO Committee also defines risk as "*the possibility that an event will occur and have a negative impact on the realization of objectives*" in “Comprehensive Framework of Enterprise Risk Management” (COSO, 2004). The popular thought is that risks may bring positive and negative effects. A negative impact represents a risk, hindering value creation or destroying existing value. Approving events may offset negative ones or represent opportunities, which is the likelihood that an event will occur and positively impact the realization of a goal that supports value creation or retention. Combining the two with management thinking feeds opportunities into the strategy or goal-setting process to develop plans to seize them (Ibid).

Although there are different definitions of risk in the academic world, after the comparison of different views, it can be found that scholars' cognition of risk has the following two aspects in common: first, the risk is uncertainty, which is

the deviation between objective results and subjective expectations; second, risks are universal and cannot be eliminated (Radoi, 2018; Bradshaw, 2015; Zwikael & Ahn, 2011; Jorion, 2009). As investment involves risks, managing risk is an essential means to ensure the return on investment. Risk management identifies the risks in investment and applies appropriate methods to deal with them. It is necessary to reduce or increase risk, depending on complex factors, especially for cross-border investments. This chapter provides an overview of the study's theoretical basis, which is to simultaneously review the risk management of cross-border investment from a traditional perspective and explore new challenges that it may face under the BRI framework.

"*Risk assessment is a forward-looking activity*", Bradshaw (2015) contend that, in the field of investment, individuals, financial institutions, project managers, and many other institutions face a certain level of risk that must be addressed proactively. In an investment decision, investors can either accept the risk or try to reduce it. If they choose a negative response and engage in inadequate risk management, they may experience serious consequences. When investors take appropriate action based on their investment objectives and risk tolerance, they may reduce potential investment losses. Therefore, risk management should be active, not passive (Baker & Filbeck, 2015). Meanwhile, the management of risks is crucial in the project management area, as this discipline involves many organizational functions and their related risks. As scholars pointed out, projects usually possess high levels of uncertainty, and risk management is a critical consideration in many business areas to deal with this, which "*impacts profitability, efficiency, and sustainability*" (Zwikael & Ahn, 2011).

In their paper, Baker and Filbeck (2015) also defined the concept: "This

consists of all actions needed to mitigate the risk and *alleviate the consequences of unwanted events. It involves selecting appropriate risk-management techniques, making optimal decisions, and implementing and reviewing the risk management process".* Jorion classified risk into three categories: 'known knowns', 'known unknowns', and 'unknown unknowns', corresponding to different levels of uncertainty, so various tools can be adapted to deal with these risks, respectively (Jorion, 2009). Fairley (1994) specifies seven steps in earlier times as "(*1) Identify risk factors; (2) Assess risk probabilities and effects; (3) Develop strategies to mitigate identified risks; (4) Monitor risk factors; (5) Invoke a contingency plan; (6) Manage the crisis; (7) Recover from the crisis*". The essential for risk management is particularly evident in infrastructure investment, especially in large cross-border projects that involve external financing.

Some scholars describe risk management as a two-step process: identifying the risks in an investment and then dealing with them best-suited (Serpella & Ferradab & Rubioa & Arauzoa, 2015; Rodrigues-da-Silvaa & Crispima, 2014). Bender and Nielsen (2009) pointed out that investors should establish a risk management framework consistent with their investment objectives and time range. An appropriate and effective framework needs to measure, monitor, and manage the underlying drivers of risk and avoid excessive exposure to these risk factors. Although these three parts of risk management have different perspectives, they are interdependent and should be fully considered in the investment process. Others argue the appropriate risk management framework should be able to function during regular times and extreme events (Baker & Filbeck, 2015). Based on the review of relevant literature, from a technical point of view, the investment risk management process can be divided into risk identification, risk analysis, risk evaluation, risk treatment and risk monitoring, with specific explanations as follows:

Table 2.1 Summary of conceptual steps of investment risk management

Steps	Definition	Authors
Risk Identification	To reveal what, where, when, why and how the companies, institutions, governments, and individuals influence their judgment of risks, it is the process of defining risk events and their relationships that may hinder the achievement of investment objectives.	Fairley (1994); Erb & Harvey & Viskanta (1996); Jorion (2009); Zwikael & Ahn (2011); Joseph (2013); Rodrigues-da-Silvaa & Crispima (2014); Baker & Filbeck (2015); Bradshaw (2015); Hammoudeh & McAleer (2015); Serpella & Ferradab & Rubioa & Arauzoa (2015); Radoi (2018)
Risk Analysis	Involves establishing a comprehensive assessment of the probability that a risk event will occur and its potential outcomes	
Risk Evaluation	Compare the size of each risk factor and rank them in order of prominence and consequence.	
Risk Treatment	Also known as risk handling. In this step, risk mitigation strategies, prevention mechanisms, and contingency plans are created based on the assessed values for each risk factor.	
Risk Monitoring	Risk management is an ongoing dynamic process that changes and adapts over time. Repeated and continuous monitoring of the process ensures maximum coverage of known and unknown risks.	

Source: author compiled

2.2.2 The Importance of Risk Management

Risk management is a relatively new concept, which was not widely discussed in the industry until the 1990s. Therefore, risk management systems need to be implemented only in those sectors that use derivatives for financial transactions (Radio, 2018). These methods have later spread to other areas of financial services, as well as the associated risks such as credit risk, operational risk, and even model risk have arisen. As the most active participant in international project investment and financing, global banks have attracted much attention in this field not only do they occupy a particular position in the financial system given their role in the payment and credit

network, but also because of their vulnerability to loss of confidence (Peihani, 2016). A banking crisis threatens the bank themselves, the financial system, and the broader real economy. Safety mechanisms, such as deposit insurance and 'lender of last resort', have been set up to protect against these external risks. However, they are costly and may encourage banks to engage in over-lending behaviour, exacerbating the moral hazard problem.

From the 2008 subprime debt crisis to the 2010 sovereign debt crisis, the shock from global financial turmoil remains in people's memory and left a huge question mark to academia. Why does the international community try to establish an international banking regulatory organization after the collapse of the Bretton Woods System in the 1970s still cannot effectively prevent systemic financial crisis starting from the banking sector today? There are, of course, very complex factors. Nonetheless, Peihani (2016) believed that Basel Accord has failed to achieve its intended goal of ensuring the stability and soundness of the banking system. These agreements have proved inadequate, pro-cyclical and overly dependent on internal risk models and credit ratings, nor is there a minimum standard to protect the system from liquidity risk (Ibid). Of course, the purpose of this study is not to discuss models of financial risk management in the banking industry. Nonetheless, the research objects involve financial institutions – SOBs and their overseas investment projects – especially in BRI participating countries; a review of the traditional risk-related issues is somehow necessary.

The risk management process is different in the non-financial sectors. Radoi (2018) contended that the operating costs are very high in the risk management department that unbearable for the SMEs. To offset the impact of market fluctuations, they can seek other external funding sources such as securities or bonds. Establishing risk management departments requires

specific budgets, which large organizations may only support, and establishing a proactive risk management policy at all decision levels. Obviously, in the transnational cooperative investment project, the financing party should have more risk management experience to assist the borrower in completing the project finance. For instance, to most countries involved in the construction of the BRI projects, their motivation comes more from recognizing the practical significance of the strategy in promoting their economy and development goals, especially in improving their infrastructure through foreign investment (Arduino & Gong, 2018). Due to the lack of economic capacity and experience in large-scale infrastructure construction, some countries rely heavily on investment countries' support in capital, human resources, technology, supervision and other aspects. This means that Chinese companies will have to be more confident and patient on projects operating and be prepared to invest heavily in risk management along with these BRI neighbours.

In recent years, infrastructure deficits have become the most prominent deficits governments have had to deal with, particularly in Asian countries that have laid out development plans to sustain expected GDP growth by investing heavily in this field (Srivastava, 2016). As it has been claimed by some scholars, managing and accessing risk is a significant area of project management because it must anticipate the occurrence of events that may adversely affect a construction project and determine which actions can minimize the adverse impact (Serpella & Ferradab & Rubioa & Arauzoa, 2015). One of the leading roles of a project manager is to deal with emergencies or risks that constantly occur during the management of a project; their role can be challenging and inefficient if risk management is not fully implemented or supported from the very beginning. There must be an appropriate and systematic approach that makes risk management an

effective and efficient function, and more importantly, all types of knowledge and experience are required (Ibid). In a typical scenario, when firms carry out business activities abroad, they will be influenced by external factors from external environments regarding their home country and host countries. Some researchers also discussed the influence of the host country's institutional environment on the overseas expansion of foreign firms, especially on the choice of location, entry strategy and performance (Matthews, 2013).

Child and Marinova (2014) pointed out that the government's participation in the overseas expansion of Chinese SOBs is sensitive to both local and host country backgrounds. The impact of the institutional and political system in these contexts should be considered. According to the official propaganda, one of the strategic focuses of BRI is the construction of an extensive market – it requires regulatory collaboration, rule building, supporting laws, etc. There may be hidden dangers if only engaged in projects without paying attention to the construction of a proper framework that aims to deal with the existing and potential risks that financial institutions may face. Risk awareness is a priority for financial institutions before entering unfamiliar industries or territories, especially when those risks come in different forms (Joseph, 2013). Given the particularity of BRI, the impact of geopolitical challenges, regional security, social and environmental conflicts, and so forth can all be influential to the deployment of projects (Gong, 2020). This paper will review several traditional and classical risk management frameworks, attempt to evaluate their applicability from the perspective of BRI project finance, in providing critically exploration.

2.3 Review of Important Risk Management Frameworks

Various approaches to assessing and managing risk have emerged in the

business arena over the past several decades. The method is employed depending on the type of specific business or industry. Risk is also one of the critical capital performance indicators projected in numerous supervisory regimes. This section first starts with the management framework or system currently used in this field, analyze the critical risk management methods from the three dimensions of the institutional, governmental and social, and evaluate their applicability to BRI project financing. In addition, key risk assessment models towards the BRI by influencing institutions will also be summarized, as the different emphases can contribute to knowledge.

2.3.1 The Basel Accord and Banking Regulation

As the oldest and most important financial institutions in the global economy, banks in all countries are the most heavily regulated ones (Andrianova, 2012). However, banks still face risks, such as the project's failure by a borrower who then has difficulty making repayment due to misconducts, or more seriously, hazards caused by other macro factors of the economy. As the leading lenders of BRI project financing, SOBs contain features that ordinary banks do not have, but they are still banks by nature and are subject to the Basel Accord regulations.

After WWII, world governments had a consensus in finding it necessary to set up a mechanism for transnational cooperation to monitor and regulate Central Banks' functioning, facilitate international settlement, and repair the global trade order destroyed by war and chaos (Mishkin & Eakins, 2015). The collaboration of major Western countries led to the Bank for International Settlements (BIS) in the 1930s: a 'banker for Central Banks' to assist in pursuing monetary and financial stability and promote international cooperation. The Basel Committee on Banking Supervision (BCBS) is the

primary global standard-setter for the prudential regulation of banks and provides a forum for regular cooperation on banking supervisory matters (The BIS, 2020). Although the commission does not have any formal supranational authority, it is the global banking regulator, and its recommendations have been widely implemented by the member and non-member states (Peihani, 2016). As the sole international regulator, it requires that credit institutions meet disclosure requirements and comply with market discipline, and the banks are subject to special supervision (Mishkin & Eakins, 2015). The Basel framework is the complete set of standards of the BCBS, whose members have agreed to implement these standards and apply to international banks under their jurisdiction. The framework went through three main stages and several essential revisions.

2.3.1.1 Basel I

Basel I was issued in July 1988 to strengthen the soundness and stability of the international banking system and provide an equitable framework for capital adequacy internationally. Its primary focus is on credit risk and risk weighting of assets. Different bank assets are given different risk weights, and Banks calculate these capital ratios to determine their capital adequacy. Banks must maintain an adequate capital ratio to meet the requirements. However, this would limit their ability to make more loans. The profit-seeking nature of commercial banks has led them to avoid these restrictions by securitizing assets – such as issuing large amounts of mortgage-backed assets (e.g., CDOs) – which the monthly payment instalments support the underlying value. Meanwhile, the involvement of government agencies promoted the use of these high-risk assets because they are seen as risk-free (guaranteed by the government). The lack of sensitivity to risks of Basel I have been widely criticized because the risk-weighting framework reflects only

a broad range of loan categories rather than physical risk (The BIS, 2020).

2.3.1.2 Basel II

The ‘New Basel Accord’ is, also known as Basel II, was published in 2004, which expanded the definition of the risks for the %age of capital to be retained incorporated with financial and operational risks, by creating an international standard for banks as well as regulators (Tian, 2017). As a more robust risk management practice, one of its major innovations is to adopt more effective use of the risk assessment provided by banks' internal systems as an input to capital measurement. The revised framework involves three pillars: the first pillar is credit risk-centric as to set the minimum capital requirement (8%), but has since been expanded to include a standardized approach, based on internal rating systems as well as the credit risk securitization framework, and including operational and market risk accounting. Banks can measure operational risk in several ways, such as the primary metrics method or advanced measurement approach based on four types of data - internal loss data, external data, scenario-based analysis, and business environment and internal control factors (Allen & Powell & Singh, 2015).

The second pillar underlines regulatory review procedures, which is built into the capital framework to require regulators to oversee the bank's risk profile and external management environment and require banks to maintain higher than the minimum level of capital adequacy ratio based on specific internal evaluation mechanisms regarding the risks they take. At the same time, regulators are responsible for supervising banks for each project, including determining whether bank managers and board members can govern their own capital needs according to different risks. Regulators should take

measures proactively in the case of declining bank capital (Allen & Powell & Singh, 2015). The third pillar of Basel II highlights the role of market discipline for the first time, enabling banks to operate healthily and efficiently and maintain adequate capital levels. The new framework stressed that riskier banks are at a disadvantage, having to pay higher risk premiums, and additional guarantees or other safety measures are required. The new Basel rules also require the market to regulate the safety of the financial system, requiring banks to disclose important information (capital structure, risk exposure, capital adequacy ratios and risk management strategies) promptly for market participants to make judgments accordingly (The BIS, 2020; Allen & Powell & Singh, 2015).

2.3.1.3 Basel III

Basel III is similar to its predecessor, which focuses on setting international standards for capital requirements of the banking industry while correspondingly recommending voluntary standards for stress tests and market liquidity risk. It considered the 2008 subprime mortgage crisis and the associated systemic risks in many of its terms. Tian (2017) contend that, given the focus on the crisis and its after-effects, the main objective of the regulation is to increase bank liquidity and reduce bank leverage. The revises have been made as it shifts essentially from risk-sensitive to capital intensive in the perspective of risk management[3].

[3] The key development of the Basel III summarized in "Commercial Banking Risk Management" (Tian, 2017): 1. Further raising capital adequacy ratio requirements. Basel III introduced capital conservation buffer to enhance the ability of banks to absorb losses during the recession, and countercyclical capital buffer given additional capital requirements for large banks to reduce the moral hazard by 'too big to fall'; 2. Set strict capital deduction restrictions. Changes have been made to capital requirements for minority stakes, goodwill, deferred tax assets, unrealized returns on joint-stock investments in financial institutions, debt instruments and other investment assets; 3. Expanding the coverage of risk assets. Raise capital requirements securitization risk exposure, increase the value at risk under stress, raise capital requirements for trading businesses; 4. Introduce leverage ratio and gradually include it in the first pillar. To make up for the shortage of capital adequacy requirements that cannot reflect the expansion of total assets on and off the balance sheet, as well as to reduce the loopholes caused by the calculation of capital requirements for

2.3.1.4 Assessment to the Basel Accords

From the perspective of risk management of financial institutions, the Basel Accord Framework primarily focuses on the following – market risk, credit risk, and operational risk – these risk-sensitive matters are being treated separately. These types of threats are three components of Basel II's Pillar 1 on regulatory capital and directly relate to the requirements for measuring what capital ratios banks should hold (Tian, 2017). As discussed above, the Basel Committee proposed targeted revisions to the market risk framework in 2018 to determine whether banks' internal risk management models adequately reflect the vulnerabilities faced by individual trading desks. However, these internal models can only be used by the largest banks that satisfy qualitative and quantitative standards imposed by the Basel Accords (Tian, 2017); many institutions that conduct project financing in developing countries struggle to meet these standards (Zhang, 2017) fully. It is also indicated that the financial crisis of 2007 has shown that the banking regulatory framework developed and implemented under the three Basel Accords over the past several decades relies heavily on the supervision of individual financial institutions, with the oversight of the syndicated model of a joint investment by several banks, which commonly seen in international project financing. In addition, there is criticism that the Basel Accord failed to observe the collective behaviour of financial institutions and the consequences of its significant impact on the real economy, leading to the occurrence of systemic risks (Drakos and Kouretas, 2015).

Greuning and Bratanovic (2009) believe that the regulatory authorities should design appropriate assessment methods by considering the exact nature of

assets after the conversion of weighted coefficient; 5. Strengthen liquidity management to reduce relevant risk in the banking system and adopt regulatory indicators, including liquidity coverage and net stable asset ratios.

the risks involved. When the nature of risks changes, the offsetting of risks due to market differentiation may lead to inaccurate exposure. For example, Liquidity risk should be considered primarily on a market-by-market or currency-by-currency basis. Basel II recognizes the need for an adequate cross-border understanding of capital standards in international banking groups. Practical cooperation and coordination between the home and host country regulatory authorities of cross-border investments are essential in successfully implementing the agreement. When a global bank is engaged in international business, the implementation of Basel II requires it to obtain approval from the relevant host country regulator to use some advanced measures (for example, internal ratings-based approach for credit risk or progressive measurement approach for operational risk) (Greuning & Bratanovic, 2009). Moreover, international banks may need the approval of their home regulators to implement consolidated supervision. However, the degree and nature of co-operation between supervisors among these different roles may vary. Whatever arrangements are in place, international banks will play an essential role in assisting supervisors in carrying out their work effectively and efficiently across national borders (Ibid).

2.3.2 Evolution and Regulatory Framework of China's OFDI

Since the turn of the millennium, one of the most remarkable phenomena globally has been the continuous growth of China in various capacity indicators. It covers various fields, including production and trade, finance, military and geopolitics, culture and institutions, ecology, and energy security. China has developed into an important regional and global actor, playing a decisive role in international structures, agreements, and relationships (Leandro & Duarte, 2020). Actively or passively, China has become the founder and rebuilder of new institutions and orders that are very different

from those that dominate modern global markets; BRI is one of the most influential. As a one-party autocratic country, the significance of system construction and policy promotion is self-evident (Bader, 2015). Therefore, it is necessary to review the policy evolution of OFDI in China over the past decades to examine its applicability to the development of risk issues regarding the BRI investments.

2.3.2.1 Four stages of developments

Since the 1980s, China has reformed and opened and continuously promoted the international economic cooperation strategy of ‘mutual benefit and common development’ through bilateral and multilateral arrangements (Mitrovic, 2018). The logic of economic development led the CCP to take a completely different path from that of the former Soviet Union, which can be interpreted from the four stages of development:

The first stage is the period of an internal accumulation from the founding of New China to the reform and opening up (1949-1978) (Huang & Xie, 2020). In the decades after founding the People's Republic of China, the industry and industrial system were just built, but there was no ‘going out’ at the enterprise level. Foreign aid at the national level has become the main form of foreign economic exchanges. Due to the international situation and domestic development limitations, Chinese enterprises and Chinese capital invested in other less developed countries and regions in foreign aid and development finance. The construction and development of its domestic economic and industrial system have achieved leap-forward growth in just a few decades, laying a solid foundation for the ‘going out’ (Lv & Guo & Chen, 2018).

The second stage is the initial exploration period from the reform and opening

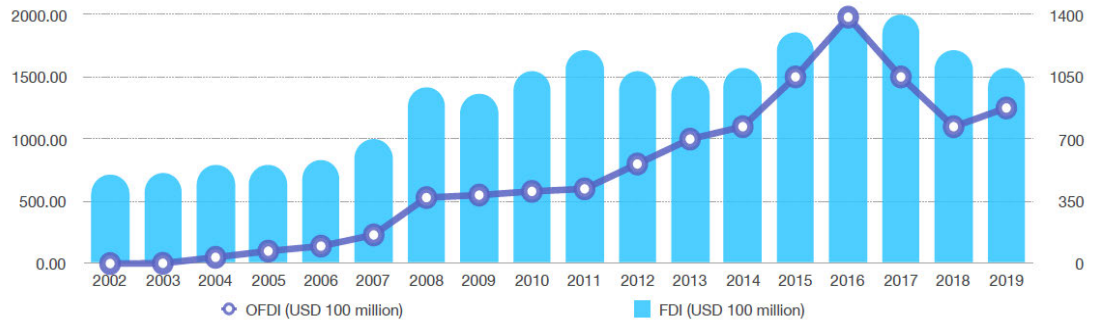
up to the WTO (1979-2001) (Huang & Xie, 2020). After the reform and opening up, Chinese enterprises began the early exploration of ‘going out’. In August 1979, after The State Council put forward the idea of ‘going abroad to set up enterprises’, some professional foreign trade companies engaged in import and export business for a long time and enterprises with foreign economic cooperation experience took advantage of their advantages and first went abroad to invest (Mitrovic, 2018). After the 1990s, more prominent and medium-sized SOEs in the energy sector were the main force to invest overseas. In the same period, the foreign contracted projects started from the turnover of 2.8 billion US dollars in 1992. Then in less than 20 years, the contracted scale reached 10 billion and 100 billion, becoming one of the critical ways for domestic enterprises to ‘going out’ (Huang & Xie, 2020).

The third stage is the period of rapid development (2002-2012) from China's accession to the WTO. At this stage, China's FDI attraction rose steadily after reaching a high point in 2011 and remained stable for several years (Ibid); the development of OFDI showed the same trend but proliferated after 2011 (Figure 2.1). After China entered the WTO, with the deregulation of ‘going global’ and the establishment of relevant service systems, Chinese enterprises' outbound investment has been significantly accelerated. The form of ‘going out’ of enterprises tends to be diversified, the global distribution is more extensive, and the investment industry and the main body tend to be diversified (Shang, 2019). More and more large SOEs, including financial institutions, are emerging internationally.

Since the 18th National Congress of the CPC, the fourth stage is since the proposed BRI in 2013. As shown in Figure 2.1, China's utilization of FDI and OFDI showed a similar trend, with steady growth before 2016 and a decline. As China's economy is deeply integrated into the overall development trend of

the world economy, foreign investment has achieved leapfrog development (Lv & Guo & Chen, 2018). The internal reform has made substantial progress in investment facilitation: the examination and approval management procedures have been simplified, online filing has been fully realized, the management system of OFDI has changed from approval system to record system in general, and the facilitation of cross-border flow of people, goods and capital has been dramatically improved, laying an institutional foundation for BRI's comprehensive rollout (Huang & Xie, 2020). In 2015, China's OFDI exceeded the amount of FDI utilized for the first time as it once reached nearly $200 billion in 2016; it reached $117.12 billion in 2019, down 9.8% year on year, as the overall volume continued to decline (Ministry of Commerce, 2019). Some experts believe that the ‘double decline’ after 2016 is inseparable from the sanctions and trade war against China adopted after the Trump administration took office (Shih, 2020).

Figure 2.1 China's OFDI, and utilization of FDI, 2002 to 2019



Source: author complied (2020)

2.3.2.2 Evolution of policy management systems

In terms of management systems, the Chinese government departments have been continuously streamlined administration and delegated power to support

enterprises to ‘going global’ and steadily promoted the transformation from the approval to the filing system (Huang & Xie, 2020). From the early stage of reform and opening up in the 1990s, China suffered from a severe shortage of foreign exchange, and its enterprises lacked international experience. Therefore, a strict examination and approval system was adopted for OFDI. In 2004, The State Council issued the Decision on the Reform of the Investment System, marking the form implementation of China's outbound investment management system based on the examination and approval system. From 2014 to 2018, the National Development and Reform Commission and the Ministry of Commerce successively issued the ‘Measures for The Administration of The Approval and Filing of Overseas Investment Projects’ and the ‘Measures for the Administration of Enterprises' Overseas Investment’, continuously easing restrictions on overseas investment and steadily promoting the shift from the approval system to the filing system, which confirms the trend of OFDI utilization illustrated in Figure 2.1. At present, it is mainly adopted the negative list management mode.

In the last decade, China began to make significant OFDI and quickly became the most important foreign investor in emerging markets. Then the official regulatory framework for OFDI is 1. Promoting and supporting foreign direct investment and fostering globally competitive Chinese enterprises; and 2. Strengthen institutional frameworks, particularly to encourage OFDI, which contributes most to the national development (Huang, 2018). A few subsequent policy documents guided OFDI in different sectors, and industries (Table 2.2) restated these two objectives. For example, easy procedures for approving non-financial (mainly infrastructure) and financial services; promoting investment and risk management through monetary and fiscal measures; obtaining international support through foreign aid; signing international investment agreements to acquire information (Sauvant & Chen,

2014). This shift in management thinking laid the policy foundation for the smooth implementation of BRI and later became a driving force for the government to implement internal reforms.

Table 2.2 Evolution of management system for overseas investment projects, pre-2004~2018

Time	Way	Administrative privileges
Before2004	Examination and approval system	Projects with a Chinese investment of more than US $1 million shall be submitted to the National Development and Reform Commission for approval
2004.07	Authorization	Non-resource development projects of more than US $10 million and resources development projects of more than US $30 million shall be approved by the National Development and Reform Commission or submitted to The State Council for approval
2011.02	Authorization	Non-resource development projects of more than US $100 million and resources development projects of more than US $300 million shall be approved by the National Development and Reform Commission or submitted to The State Council for approval
2014.04	Records+Authorization	Projects exceeding US $1 billion and sensitive projects shall be approved by the National Development and Reform Commission or submitted to The State Council for approval. Other projects shall be filed for record
2014.12	Records+Authorization	We will use the "negative list" approach to identify sectors and directions for outbound investment that are restricted or prohibited. With the exception of sensitive projects that require the approval of the National Development and Reform Commission, all other projects are subject to a record-keeping system
2018.03	Records+Authorization	The information reporting system will be cancelled, local procedures for preliminary examination and reporting will be cancelled, and travel standards and filing procedures for investors will be relaxed at the latest

Source: author compiled (2019)

2.3.2.3 Assessment to the regulation framework

As the most critical policy tool to guide OFDI, this management framework only confirms the status of designated Chinese enterprises when making investments by both location and identity regarding risk management issues: *"Enterprises and financial institutions that are registered in mainland China and operate there as the principal location of their business, as well as financial institutions that provide finance for OFDI by the enterprises mentioned above, can apply for investment insurance from SINOSURE*" (Sauvant & Chen, 2014). These policies make enterprises' dominant position clearer; they help to improve the transparency and stability of the OFDI policies, and greatly facilitate the overseas investment activities of Chinese SOEs (Wang & Gao, 2019). With further deregulation, streamlining administration and delegating power, enterprises have become more independent and enthusiastic about outbound investment.

The documents and regulations show that China has essentially closed regulatory loopholes at all stages of OFDI. It expands the scope of the law to include overseas investment by foreign entities controlled by Chinese enterprises and citizens, innovates the regulatory mechanism, and improves joint supervision and project monitoring (Table 2.2). Methods include online tracking, written inquiries, random verification, project completion reports, material adverse event reports, and significant problem inquiries (Ministry of Commerce, 2021). The government used its institutional strength to improve disciplinary measures for the supervision of SOEs, using the ‘blacklist’ system to establish records of violations and publish them on a national credit information sharing platform for collective punishment with other relevant departments. These practices are conducive to the growth of outbound

investment by enterprises and lay the policy foundation for transnational projects under the BRI framework.

2.3.3 World Bank's Approach on Social and Environmental Risks

2.3.3.1 Social risk management

Scholars and even international institutions have paid attention to the social risks that developing countries and vulnerable groups need to face in the past several years. Purely from the perspective of economics, the free flow of capital can certainly bring funds and opportunities required for economic growth to developing countries; still, many questioned whether the increased options are for all of the few, and the imbalance in developing countries due to lack of policy measures and regulations (Koehler, 2015; Jiang, 2014). As one of the most influential international financial institutions for many decades, the World Bank has long been concerned about social inequity and committed to helping mitigate social risks, particularly in developing countries (Rozenberg & Fay, 2019). Its social protection department published a working paper on 'Social Risk Management' to provide a complete account of the uncertainties brought by globalization and its adverse effects, whereas "*it can increase the vulnerability of major groups in the population through higher income variability combined with marginalisation and social exclusion*" (Holzmann & Sherburne-Benz & Tesliuc, 2003).

Holtzmann and Kozel (2007) made an in-depth study of the relationship between social risk factors and management measures based on two critical assessments: 1. the poor are often the most vulnerable to risks and are the most vulnerable in society, as they are likely to suffer the worst consequences of shocks at the economic level; 2. the poor have the least means of dealing with these risks and their high vulnerability makes them risk-averse and

therefore unable or unwilling to engage in high-risk/high-reward activities (ibid). Therefore, their access to resources and management tools should be increased. Drawing from its experience in international aid and development finance and the focus on long-term socio-economic development in third world countries, the World Bank has developed a new conceptual framework called the ‘Social Risk Management (SRM)’.

The framework introduces the concept of information asymmetry, listing several vital factors affecting risk management, including the source and form of risk substances, more risk management strategies, several institutional arrangements for risk management, and the nature of its multiple suppliers (Holzmann & Kozel, 2007; Holzmann & Sherburne-Benz & Tesliuc, 2003). The focus of the mechanism is to replace inefficient response strategies with planning and tools to help countries and regions anticipate and prepare for shocks (Ibid). There are also widespread doubts about the practical application of SRM. First, there have been few experimental studies of SRM, which casts doubt on the feasibility of the framework in international development. Second, it is sometimes seen as a neoliberal framework that limits government intervention and only responds when the market fails. There is a lack of risk regulation and examination of reality in situations where higher returns are encouraged through risky activities (McKinnon, 2002). Of course, the positive significance of this framework is that it provides the World Bank with pioneering and thinking in terms of management reform and innovation regarding social risks.

2.3.3.2 Environmental and Social Framework

“*The World Bank Environmental and Social Framework sets out the World Bank’s commitment to sustainable development through a Bank Policy and a*

set of Environmental and Social Standards designed to support borrowers' projects to end extreme poverty and promote shared prosperity." [4] (The World Bank, 2021).

As the world's foremost multilateral lending institution, the World Bank has been attaching greater importance to underlying principles of development financing. Because the essence of it is to finance and invest in promoting economic growth and imbalances in developing countries in many related areas, involving that of "*labor rights, non-discrimination, climate change mitigation and adaptation, biodiversity, community health and safety, and stakeholder engagement, and so forth*" (The World Bank, 2021). As a significant internal reform in decades, the World Bank released an updated version of its safeguards policy, the 'Environment and Society Framework' (ESF), in October 2018. During the development of this framework, the ESF consultations have sparked a significant debate on ensuring sustainability and fairness in development operations while respecting the national autonomy of lending countries (Jokubauskaite, 2019). This is not only a consequence of the bank's value but also reflects the importance that governments, industry and academia attach to the issue.

From the perspective of project risk management, ESF requires the borrower to follow good international practices and improve the environmental and social performance of the invested country on the principle of compliance. From the host country's perspective, it provides innovative means and opportunities. It facilitates the regulation of environmental and safety risks associated with the country's development agenda during project operations

[4] ESF. (2017). The World Bank. https://thedocs.worldbank.org/en/doc/837721522762050108-0290022018/original/ESFFramework.pdf.

(Ormaza & Ebert, 2019)[5]. As its name implies, the ESF is designed to protect the host country's natural environment and local people from possible negative impacts of development financing. The above safeguards will guide negotiations on development financing agreements between the World Bank, its borrowers and private investors (Jokubauskaite, 2019). The ESF's official function is to manage development financing projects, so the legal force only applies through the implementation of financing agreements of participants. However, this is only a tiny part of the legal impact of the ESF rule in practice, given the Bank's role in shaping project financing and the coordination and trade-offs of environmental, social and economic commitments in each project. In the negotiation of development finance projects, this safeguard gives scope to the conditions and obligations of the stakeholders in each case (Ibid). In this sense, ESF as a practice-oriented standard of conduct applies to stakeholders involved in developing project financing in many situations.

The innovation of ESF is reflected in promoting global governance and sustainable development concepts in developing host countries through specific financing projects. Areas of concern may include labour and indigenous protection, land and environmental protection, human rights and economic development tolerance, multilateralism, etc. (The World Bank, 2021). The World Bank enhanced the implementation of ESF through its influence to be informally accepted by countries with various legal systems. Some see the development and promotion of ESF reveal that the developing

[5] As a protective management treaty, the ESF enables the Bank and borrowers to:1. Address the issue of extending the scope of assessment and management of environmental and social risks and potential impacts by borrowers. Risks and impacts such as climate change, biodiversity, community health, road traffic safety, disability, occupational health and safety, and ways to ensure that vulnerable individuals and groups can benefit from projects;2. Recognizes the importance of strengthening national environmental and social management systems and supports capacity-building consultations with client countries;3. Develop their engagement plans and disclosure of environmental and social documents through ongoing stakeholder engagement and disclosure to improve project transparency, design and implementation (The World Bank, 2021).

world is willing to internalize and comply with environmental and social standards. The discussion and design process reflects the profound evolution of global governance rules – through the treaty and policymaking of the parties, the ruleset of international institutions replaces traditional management methods (Jokubauskaite, 2019; Ormaza & Ebert, 2019).

2.3.3.3 Assessment to the Social/Environmental framework

It is shown that focusing on reducing vulnerability may be more effective than alleviating poverty. As a relatively vulnerable group, less developed countries and developing countries are more likely to be exposed to negative consequences and shocks at the international economic level. Therefore, their risk appetite differs from developed countries; they are unable or unwilling to engage in relatively high-risk activities or investments (Holzmann & Sherburne-Benz & Tesliuc, 2003). This makes it harder for them to access more development resources from the purely commercial and investment sectors, thus favouring development finance provided by multilateral institutions (Gransow & Price, 2019). The preventive measures under the ESF framework may effectively reduce the possibility of risk occurrence, and the countermeasures can lessen the negative impact of risk occurrence. When developing countries have access to financing instruments, it becomes an opportunity for them to move out of poverty; yet under the clause's action to develop scientifically and sustainably and reasonably drive the distribution of benefits between the parties (Cassimon & Essers, 2017). This is both the end and the means of development (Ibid).

However, the legality of these safeguards has been hotly debated, and they also face essential implementation issues. In theory, projects provide

concessional financing to recipient countries by attaching conditions to loan agreements under ESF. Therefore, the critical question is how to ensure that it becomes an effective vehicle for sustainable development while avoiding infringement of sovereignty and addressing the issue of default (De Moreloose, 2019). It is believed that, in addition to the need for further reform of the World Bank depending on project implementation, a rigorous assessment of the appropriate context in which recipient countries implement the safeguards is vital to the risk management process (Gransow & Price, 2019).

2.3.4 Discussion on the Applicability of the Above Frameworks in BRI Project Financing

Firstly, China's SOBs have their particular attributes and will still be subject to the Basel Accords in conducting overseas investment and financing activities. Over the past few decades, Chinese companies have carefully followed international rules, especially when it comes to financing and outbound investment; the odds of systemic risk arising from non-compliance by its financial institutions are generally low (Callahan, 2016b). Meanwhile, it is difficult to carry out risk control of Chinese enterprises' investment behaviour in BRI countries solely based on the regulations of the Basel Accords. The things that need to be scrutinised are other non-credit risks that have not been identified within the framework, such as geopolitical risk or environmental risk beyond individual financial institutions' control level (Child & Marinova, 2014). These factors are closely related to China's SOBs (both state-owned commercial banks and policy banks) may face when investing in BRI-related projects. In addition, since many BRI projects involve large-scale infrastructure and are operated in a project financing mode, it is challenging to control risks by regulating banks' financing behaviour alone.

Secondly, based on the examination of the regulatory framework of government and the documents reviewed, it can be concluded that the traditional, official management-led approach is not an adequate response to the changing international landscape and the diversified risk structure that BRI will encounter in the future. The main weaknesses are as follows: 1. The supervision subject is Chinese enterprises (especially SOEs), while the BRI project financing model is diversified and involves many stakeholders, making it impossible to conduct comprehensive management; 2. Lack of effective risk identification, classification and prioritization system makes it difficult to effectively evaluate the project from the initial stage; 3. Excessive policy orientation may lead to the "swarm" effect, causing financing enterprises to crowd into a specific country or field, resulting in uncertain risks (He & Lin, 2020; Leandro & Duarte, 2020; Bandiera & Tsiropoulos, 2019; Huang, 2019). Considering that BRI inherits some characteristics of traditional investment, but also has its unique features and stands facing an increasingly complex and challenging international situation. Therefore, it is necessary to straighten out the construction of a foreign investment risk system from the perspective of the management subject on the one hand and jointly formulate sustainable risk prevention and management strategies from the perspective of enterprises at the same time.

Thirdly, the World Bank’s ESF have enhanced countries' understanding of social and environmental risks and strengthened the investigation and assessment of the vulnerability of certain groups, providing insights for risk management. The BRI participants are also likely to welcome these protections, many of whom struggle to break out of poverty and are eager to access outside resources. Their disadvantages are evident, both focusing on a single layer of risk factors and lacking the evaluation of other factors

involved. At the same time, as discussed above, both SRM and ESM come from the World Bank, and their binding force and applicability are limited to its specific development financing projects; they do not influence projects implemented by other financial institutions (Gransow & Price, 2019). Therefore, it is difficult for them to evaluate and supervise the Chinese SOBs as the primary funding provider in the BRI investment. Finally, these management measures, especially ESF, require the inclusion of restrictive clauses in the agreement to constrain the host country's behaviour to obtain preferential loans (Jokubauskaite, 2019). This is not consistent with the practice standards of the BRI projects, especially in some sensitive areas (such as human rights, labour standards, etc.) covered, which are something that the signatories try not to get in touch with.

2.3.5 Other Risk Assessment Models towards BRI

In investment risk assessment, many vital studies focus on the measurement of country risk. These studies mainly assess the risk levels of countries along the BRI and draw risk maps with quantitative methods by designing specific systems and taking groups in different countries as samples. Table 2.3 summarizes some of the results from major research institutions that used their methodology to assess the risk of international investments (including BRI).

The Economist Intelligence Unit (EIU, 2019) considers ten separate risk criteria and up to 220 indicators through an internal operational risk model to evaluate the overall business operation risk model in terms of the BRI. It provides a quantitative assessment of the risk to profitability of investment enterprises in a particular country. EIU's research also innovatively provides market Risk scenario analysis of several BRI countries, which more intuitively

reflects the risks. Another study worth noting is the “Risk Rating Report of China's Overseas Investment Countries” (IWEP, 2019), published annually by the Chinese Academy of Social Sciences, an official think tank that focuses on investment risks in countries along BRI. The national strategic global think-tank country risk rating project team who completed the report, which covers risk assessment among 57 major target countries (of 35 samples along the BRI), found that developed economies were generally rated better than emerging economies. According to the ranking, Singapore has been ranked first for consecutive years, and Germany has also scored high in all indicators. Although emerging economies have maintained sound bilateral relations with China, they still face high investment risks due to the complex political and economic situation. This report is relatively authoritative research results in China and provides a good reference for Chinese enterprises to invest along the BRI.

Similar studies include the “Key economic and social indicators of BRI Countries” by China Development Bank (CDB) and United Nations Development Program (CDB-UNDP) (2019); the “The Global Risks Report” published by World Economic Forum (2020); The International Country Risk Guide (ICRG) by the PRS Group (2020); and The Belt and Road Infrastructure Development Index Report (BRIDI) that jointly made by China International Contractors Association (CHINCA) and Global Infrastructure Hub (GIH) (2019). From different perspectives and emphases, these reports and guidelines rely on the assessment system or framework established and use multi-level and multi-indicator quantitative analysis to evaluate the international investment environment, including BRI countries, from the database (Table 2.3). These research results provide an essential and objective reference for this study and give the author targeted thinking.

The above literature showed that in terms of transnational investment risk identification, existing studies mainly analyze uncertainty and BRI's potential challenges and show that the most direct risks facing in the future only come from specific countries along the route, which is very difficult for risk prevention and governance (Huang, 2016). At the risk level of OFDI, most existing studies analyze the risk factors of BRI countries from the perspective of the political and economic environment, respectively, and believe that political turbulence, financial freedom, exchange rate fluctuations, cultural (religious, ethnic) conflicts and other risks affect their acceptance of investment (Chen & Fan & Zhang & Mo, 2019).

Previous research on investment risk assessment is mainly focused on specific fields or projects involving some micro-level risk factors. However, there is still a lack of research to assess the overall risk of cross-border project investment from global and national risk factors. The assessments, as mentioned earlier, study the dangers of countries along the route but does not consider the perspective of enterprise investors (especially SOBs) nor analyzed the impact of risks on future enterprise performance. Insight of the background of this study, it is obligatory to explore a framework over project risk management in the BRI context by identifying different risk sources. They are not only intrinsically linked but also closely related to the Chinese SOEs in practice.

Table 2.3 Summary of essential risk assessment methods towards BRI

Research Title	Method or Process	Main Risks or Risk Factors	Number of Indicators/Variables	Sources
Country Risk Model – "Country Report" and "Country Profile"	Operational risk model; risk scenario analysis	Sovereign risk, currency risk, banking sector risk, political risk, economic structure risk, overall country risk.	Ten significant categories, up to 220 indicators	The Economist Intelligence Unit (EIU), 2019
Key economic and social indicators of BRI Countries	Infrastructure Risk Score for BRI partner countries; Social Security Index of Belt and Road Initiative partner countries	Financial risk, legal and political risk, cultural risk, conflict risk, debt sustainability risk, environmental and social risk	Risk level: 1-5, with 5 is the highest	China Development Bank (CDB) and United Nations Development Programme (CDB-UNDP), 2019
The Global Risks Report 2020	Statistical analysis based on the "World Economic Forum Global Risks Perception Survey 2019-2020."	5 Major risk factors: economic, environmental, geopolitical, social, technological	30 global risk indicators	World Economic Forum, In partnership with Marsh & McLennan and Zurich Insurance Group, 2020
Risk Rating Report of China's Overseas Investment countries	Research methods based on the identification and evaluation of sovereign risk	National risk rating systems: economic fundamentals (11 subindexes), social	42 sub-indicators in five categories, covering 114 sample countries[6].	Institute of World Economics and Politics, National Think Tank, Chinese Academy of

[6] The newest 2021 Report provides three special reports on: 1. investment risks in countries along the BRI, 2. investment risks in the RCEP region, 3. COVID-19 and investment risks. http://iwep.cssn.cn/xsjl/xsjl_yth/202104/t20210423_5328638.shtml.

Research Title	Method or Process	Main Risks or Risk Factors	Number of Indicators/Variables	Sources
		resilience (8 subindexes), relations with China (6 subindexes), solvency ability (9 subindexes), political risk (8 subindexes)		Social Sciences (IWEP), 2019-2021
The International Country Risk Guide (ICRG)	Fixed weight risk assessment through assigning risk points to a preset group of factors	Political, financial, and economic risks	22 variables and each subcategory have a separate index: Political Risk 100 on points, Financial Risk on 50 points, and Economic Risk on 50 points	The PRS Group, 2020
The Belt and Road Infrastructure Development Index Report (BRIDI)	GDP weighted average index, Statistical analysis	COVID-19 pandemic, geopolitical risk, financial and debt risk, global climate risk	Four dimensions of development environment, development demand, development heat and development cost among 71 countries	China International Contractors Association (CHINCA), China Export & Credit Insurance Corporation (SINOSURE), and Global Infrastructure Hub (GIH), 2019

Source: author compiled from multiple sources

2.4 Identification of Risk Factors over the BRI Investment

The BRI strategy has made progress in several high-risk regions. Still, it faces significant challenges due to country differences along the routes, particularly from the perspective of the financial providers that are critical to the development of China's OFDI projects. Complex geopolitics, lack of multilateral free trade security system and effective investment cooperation mechanism have restricted the depth and breadth of intra-regional cooperation; still, it should be recognized that the BRI is likely to bring about a strategic conflict among the major powers, through its influential overseas investment projects, by bringing closer relations with the participating countries and thereby challenging the existing international order (Arduino & Gong, 2018). For the 'one belt' participants, the main problems are political instability, civil unrest, religious conflict, poverty and terrorism, which will seriously affect the progress of bilateral co-operations. The disputes among maritime rights of the South China Sea are mainly focused on the 'one road' neighbors and naval transport safety issues; the geopolitical tussle over the Strait of Malacca is undoubtedly not to be underestimated too (Mayer, 2018).

Many international institutions have conducted similar research on country risks, such as the World Bank, the IMF, OECD, PRS Group, etc. It is hoped that these analysis reports can give relatively objective and pertinent suggestions to international investors concerning risk management issues. SINOSURE released the annual report[7] to assess country risks based on the

[7] China Export & Credit Insurance Corporation (SINOSURE) is a state-funded and policy-oriented insurance company established and supported by the state to promote China's foreign economic and trade development and cooperation. The Country Risk Analysis Report is one of the core information products released by SINOSURE annually since 2005. Based on the business practices and experience of SINOSURE as well as its internal risk research team and technical resources, the report provides an in-depth research and systematic analysis of relevant country risks using objective, independent assessment methods, in a bid to serve Chinese interests from a Chinese perspective. https://www.sinosure.com.cn/.

BRI projects it funded, in which measures the average default risk paid by the enterprise and the extent to which the financial commitment of the enterprise is affected by the local business, economic and political outlook, etc., which has become an essential reference for investors towards BRI country. It can be seen from the 2018 report the average risk index of most developing countries is relatively high, which illustrates the complexity and objective situation of BRI projects.

The BRI contains complicated and changeable international relations, as many participants incorporate substantial geopolitical implications as previous colonies or dependencies with power politics are wrestling behind them. The chaos and humanitarian crisis caused by the withdrawal of U.S troops from Afghanistan in 2021 is a case in point. From a global perspective, the BRI integrates East and West, South and North, and focuses on great powers' competition for resources and global influence (Cheng & Song & Huang, 2018). From these perspectives, giving proper analysis to different risk sources at national and international levels is crucial to the sustainability of the BRI projects (Arduino & Gong, 2018). Thereby, the risk management of project financing, especially in cross-border investment, inevitably becomes an indispensable requirement among the whole investment process, as it is the systematic process of identifying, analyzing, and responding to project risks (Jorion, 2009; Fairley; 1994; Erb & Harvey & Viskanta, 1996). Then a comprehensive assessment of different risks in certain regions is the prerequisite to ensure smooth investment.

The current BRI project risk management research mainly focuses on individual industries, fields, or country studies on bilateral cooperation. Studies have been carried out on key construction projects such as high-speed rail, ports, and hydroelectric power stations, all urgently desired in BRI

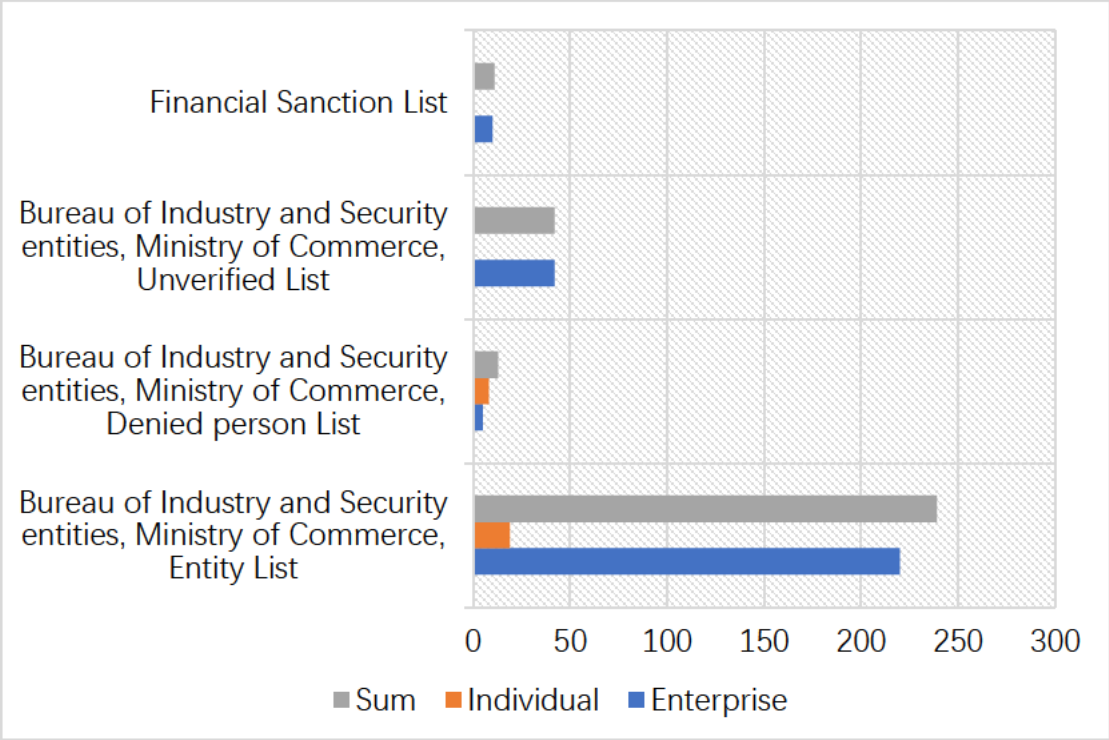
countries. However, there is still a lag of studies of the overall framework towards the risk issues of BRI project financing, especially regarding the development project finance in the region. As discussed previously, the risk is ubiquitous and a kind of uncertain. Risk assessment should first understand the source, nature, and composition of bets, the first step of OFDI risk identification (Xu & Chung, 2018). Chinese enterprises, especially SOBs, are the major BRI financing players. Whether the related risks can be effectively identified is a vital link affecting the function of real projects they conduct. Therefore, it is necessary first to consider the risk factors brought by the macro-environment along the route to provide a theoretical basis for further analysis and formulation of relevant strategies. Based on the review of official documents and literature analysis of previous research background, the author will classify and identify the significant risk factors of BRI project financing in the following section.

2.4.1 Political and Geopolitical Challenges

In recent years, under the influence and impetus of the significant adjustment of the U.S diplomatic strategy, the policy environment of global cross-border investment has undergone significant changes. Protectionism and anti-globalization are on the rise in some major developed countries, and they have strengthened foreign investment screening under the pretext of protecting national security (Yang, 2018). Investment access screening in specific sectors or countries has become stricter with more non-transparent clauses directly or indirectly targeting Chinese enterprises. The Trump administration launched a 'trade war' against Chinese companies and individuals in early 2018 and joined forces with the EU and other international organizations to impose sanctions. By 2019, thousands of entities and individuals had been sanctioned for 'security concerns', posing a massive

threat to the safety of investments from China. The imposed embargo on high-tech products such as chips and lithography machines on national security grounds, carry out anti-dumping and countervailing investigations on steel and photovoltaic industries and restrict the mergers and acquisitions process of high-tech enterprises (Balli & Uddin & Shahzad, 2019). Despite targeting China mainly due to the scale of its trade and manufacturing, the resistance of global capital and innovation factors to flow between developing countries and some developed countries has increased significantly.

Figure 2.2 Sanctions against Chinese entities, 2020



Source: author compiled

Political risk can be defined as host country government intervention in the operations of MNEs, restrictions on foreign enterprises from specific countries or industries, and uncertainties in the business environment due to changes in the political situation (Casson & Lopes, 2013; Alon & Herbert, 2009; Erb & Harvey & Viskanta, 1996). Political risk is indisputably superior to all other

risks because it dominates investment intention and behaviour to most international investors. A fundamental assumption in the comparative works of literature is that a stable political environment and regulatory framework can support the global investment of firms (Alon & Herbert, 2009). Traditionally it includes nationalization risk, war risk and transfer risk (the risk of losses caused by investors' inability to repatriate their profits and assets through foreign exchange control and other measures by the host government); some argues that it can also include terrorist acts and ethnic and political violence and tensions (Casson & Lopes, 2013). In short, it will be a relatively broad definition of international investment.

However, significant political events in the past decades, including the Cold War, various revolutions, and terrorist attacks, have profoundly changed how transnational corporations perceive the external environment (Casson & Lopes, 2013). This indicates that the role of external background forces in the formation of cross-border business transactions needs to be considered in the comprehensive assessment of investment countries (Meyer & Peng, 2016). Geopolitical risk, also known as country risk, refers to a loss of foreign investors caused by events controlled by the state or social events in international economic activities due to external forces (Balli & Uddin & Shahzad, 2019; Zhang & Xiao & Liu, 2019). As a result, some have come to see geopolitics not as a predictive framework but as a concern about the promise of pluralism of political interests (Blanchard & Flint, 2017).

The conventional understanding of Western economics holds that it is logical to move from the rise of nations to the export of capital and values (Arduino & Gong, 2018). Based on this point of view, in the initial stage of putting forward the BRI, it faced more doubts and even criticism from Western governments, public opinion, and academia. Arase (2015) sees the BRI as reshaping the

Asian regional order to ensure Chinese's continuing economic development and political dominance "*to secure China's future as a great power*". Fallon (2015) accuse it is 'aiming nothing less than rewriting the current geopolitical landscape'. Similarly, some others consider the BRI's purpose is to challenge the existing international order – with U.S dominance and shared value among the West – and try to create a Chinese-centered order in Asia and surrounding regions (Andornino 2017; Miller, 2017; Bhattacharya, 2016). As knowledge of the BRI has expanded, some scholars have begun to question its normative and dimensional nature and suspect that it is trying to facilitate Chinese economic and political influence to construct an informal hierarchy of new values, as much as China's rising status in the surrounding region; moreover, it is doing so in its way (Li, 2019; Vangeli, 2018). Thus, the trade-offs between BRI's promise of economic benefit and political interests and the relevant concerns about 'winner country' and 'loser country' are prevalent (Blanchard & Flint, 2017).

Obviously, among other research areas, geopolitical motivations behind the BRI have been paid the most attention and widely discussed, as it might be seen as a potential threat to its neighbours and the ideologically opposite countries (Cai, 2018; Shichor, 2018). For example, it has been deliberated that the necessity of advancing China's domestic economic transition and the countermeasures to the 'Asia-pivot policy' adopted by the Obama administration have been the key drivers behind President Xi's stratagem. Some argued that the announcement of BRI signified the shift of China's foreign policy stance from passive and reactive to proactive or even aggressive (Yu, 2017; Wang, 2016). However, some scholars take relatively moderate views on China's rise in discussing how the BRI has systematically reshaped the regional and even international order through new concepts, norms and rules of 'global governance' (Arduino, 2018; Nordin and

Weissmann, 2018; Miller, 2017).

Not surprisingly, this kind of criticism is widely welcomed. Skeptics have raised questions among the investment model – the crucial part of it – BRI is seen as a government-controlled initiative (financial statism?) that market and economic norms seemed hesitant and have not yet fully committed; it permitted mainly underdeveloped capital markets and monetary systems (Sun & Hou, 2018). To others, the China-led financing form could be tricky: Mathews (2019) accuses the BRI could become 'debt trap' - the CGD[8] report identifies 23 countries involved in the BRI projects which appear to be at risk of debt distress; it is also lack of transparency or general rules in the granting procedure. Gabusi (2017) pointed out that there is too much reliance on public finance and SOEs in low-return projects in high-risk countries, which lack attention to political, credit, and operational risks.

In short, the consensus view of the BRI is that it is a Chinese 'grand strategy' of geopolitical threat and contend that China is seeking to reconstitute the Eurasian regional order with new governance ideas, norms, and rules that might shape the traditional one (Lin, 2019; Zhang, 2018; Nalbantoglu, 2017; Banerjee, 2016; Callahan 2016a). If successful, the cluster's most likely winners are the megacities of Eurasia and, most importantly, China itself; the potential losers are countries not included in the BRI, notably, the US (Nordin & Weissmann, 2018). Consequently, many Western commentators, especially the U.S, were quick to dismiss it or even hostile to it as a purely geopolitical threat (Balli & Uddin & Shahzad, 2019; Hillman, 2018; Blanchard & Flint, 2017; Ferdinand, 2016). Although Chinese officials and scholars from around the world who have decent understandings of the BRI tend to view it in a

[8] CGD works to reduce global poverty and improve lives through innovative economic research that drives better policy and practice by the world's top decision makers. https://www.cgdev.org/page/annual-reports.

positive lens, the initiative is still hugely controversial for the following possible reasons: first is the ambiguity of the BRI's goals and approaches; the second reason lies in the apparent gap between China's pacifist rhetoric and assertive behaviour in recent years; the third reason is related to the "neo-colonialism" discourse surrounding the potential outcomes of the BRI (Li, 2019; Buranelli, 2018; Zhang, 2018; Balasubramanyam, 2015). Overcoming these doubts requires more patience and logical explanation, and the trust built through the mutual benefit of actual projects between China and participating countries.

Judged by previous experience China's capital 'going out' has traditionally gone to developing countries rich in natural resources. Still, it has invested more in developed countries in recent years, indicating the increase of various risks in developing countries (Li, 2019). This is very interesting because China's rise and the BRI were seen as a threat, but it also feels the same. As the BRI construction involves more than 100 countries and regions and relevant peripheral markets, many of whom suffer weak economic base and complex geopolitical relations (Chen & Hou & Xiao, 2018), and potential tension of religious belief and other social inequalities are intertwined; some of them are facing leadership transition, democratic/political transition, ethnic conflicts, and other multiple contradictions (Jing, 2018). Many of these projects in the region have massive investment and uncertainty upfronts with the arduous and enduring construction process. Yet, they are easy to maintain and operate once completed and bring stability and long-term benefits to the locals (Flint & Zhu, 2019). Arguably, they are easy to be coveted and nationalized by the host government or suddenly fall into some unpredictable trouble like many precedents. Therefore, the study and generalization of these cases will have profound significance, and the examination of their complexity can play a positive role in the future development of the BRI.

2.4.2 Economic and Financial Factors

Like Arduino suggested, “*economic returns and risks management in outbound investment activities are two sides of the same coin*” (Arduino, 2018), which requires a deeper understanding and mature means of both sides before investment. From the Western perspective, BRI is more political, but the economic benefits to the host country in the deployment process cannot be detached (Li, 2019; Buranelli, 2018; Chen & Hou & Xiao, 2018; Hillman, 2018). China's strong desire for global economic exchange through the BRI to promote its sustained domestic economic growth may be the first step towards so-called "reluctant hegemony" as it is drawn to a series of security commitments. It is to protect its citizens and assets and secure the economic and diplomatic demands by reassuring its neighbors and potential Western partners during the next few decades (Cai, 2018; Banerjee, 2016).

Therefore, the project investment’s economic factors must be assessed to control risks appropriately. One example is worth mentioning. In November 2014, the Mexican government officially announced the cancellation of the Mexico City-Queretaro high-speed rail project won by an international consortium led by China Railway Construction (CRC) (Reuters, 2018). According to an analysis, this is the result of the political game between the ruling party and the opposition party of the Mexican government. Instead, more people believe that there are deeper economic reasons, such as the unruly of project land acquisition and disputes over the project’s financing model (Hexun, 2015). Nonetheless, the host country's political instability will positively impact investment projects economically.

Macroeconomic factors reflect the dynamic changes of economic growth in the host country and interact with political, institutional, and social

environment factors, likely to produce cross risks and affect FDI. Empirical studies indicate that the economic factors that significantly promote FDI inflow in host countries include market size, economic growth rate, national income, resource status, labour force quantity, degree of opening to the outside world and a series of macroeconomic variables (Wolff, 2016). Suppose the recipient country has no apparent advantages or even disadvantages in these aspects. The above factors will become the economic risk restricting FDI inflow, which is common in developing countries. Many BRI participating countries face slow economic growth, small market capacity, low national income, backward industrial development, and insufficient effective demand. At the same time, back infrastructure often means that transportation difficulties lead to high logistics costs, and a low degree of opening policy often means high access threshold and high transaction costs (Aibai & Huang & Luo & Peng, 2019; Blanchard & Flint, 2017; Wang, 2016). At this point, the better the macroeconomic situation of the host country, the more conducive to creating a stable economic and social development, which can further create a better external environment for the FDI inflow.

One example is the review by Hammoudeh and McAleer (2015) of research on mainland China economic indicators affect trade in Taiwan and Hong Kong: it is a simple model based on Neo-Keynesianism, and there are four internal variables: output, interest rates, the price level and real exchange rate; and two external variables, the production and economic policy of China monthly index of uncertainty. Other scholars use the following financial foundation indicators - average GDP per capita, real GDP growth rate, annual inflation rate, budget balance as a %age of GDP, foreign debt as a %age of GDP, and exchange rate stability – to estimate an economies' OFDI status (Duan & Ji & Liu & Fan, 2018). The research result shows that whether domestic output or other variables are affected by uncertain economic

conditions in the short or long run (Alexopoulos & Cohen, 2015), as they are influenced by the stability of the Chinese market and policy status. This further shows that BRI, as a strategic investment platform led by the Chinese government, would hurt its long-term development when the domestic economic risks increase.

From the operational level of overseas investment, Bandiera and Tsiropoulos (2019) summarizes the financial risks that firms may encounter in the following aspects: 1. Financing terms risk. Large infrastructure projects are often associated with direct borrowing (usually in foreign currency) or the issuance of guarantees. The projects' refinancing, liquidity, and currency risks can increase local governments' debt burden and debt servicing pressure. 2. Risks of collateralized debt financing. In this case, a default would result in an asset loss, and the loss in revenue associated with the asset would further complicate financial management. 3. Risk from recurring costs. Contractual obligations can include maintenance fees or ongoing inputs, so higher costs and commodity price volatility can result in a higher fiscal outlay. 4. Contract risk allocation. During the implementation of the project, there may be events that trigger the breach or breach of contract terms, which requires cooperation between the contracting parties. Risks may also increase in the absence of pre-agreed project disputes or default management procedures. 5. Asset management risk. In addition to liabilities, the risk of a large project will come from failure to generate revenue (e.g., royalties or leases, operating income, etc.) or failure to generate revenue from private investors. 6. Default risk. The chances of default risk arising from various other factors are almost impossible to avoid entirely.

From the perspective of some other scholars, financial risk is more challenging even at the best of times, especially when macroeconomic

uncertainty or financial risk is evident (Chen & Fan & Zhang & Mo, 2019; Arduino & Gong, 2018; Baker & Filbeck, 2015). Infrastructure investment is an important driving force for economic growth, and finance is a core tool for the real economy and regional cooperation. It is of great significance to provide financial support for BRI construction (Zhou and Lin, 2018). The economic and debt risks of international investment projects mainly refer to the sovereign credit risks of the host country. Among the forms of global capital flows, FDI is most affected by the political and economic fluctuations of the host country (as discussed above), and it is difficult to exit in time when risks occur, which is likely to cause significant losses to investors. Once the host country's foreign debt/GDP ratio rises and the solvency declines, the financial and debt risks rise, impacting the enterprises (Haenle, 2017; Garcia-Herrero & Xu, 2018). Financial and debt risks mainly include inflation, interest rate and exchange rate levels, stability of the financial system, the sovereign credit status of the host country, such as foreign debt level, deficit status, terms of trade, and so on (O'Trakoun, 2018; Wagner & Marsh, 2006). According to the experience of the financial crisis in 2008, if the host country has a high possibility of financial risk or difficulty in debt repayment, it will have a significant impact on the macroeconomy and spread over to other areas and regions rapidly, leading to the failure of project investment and even worse, systemic risk and financial crisis.

Under the new trend, the international governance system has undergone profound changes in recent years, and economic globalization has taken on new momentum and direction (BRI Portal, 2019). With the rise of emerging economies and developing countries, their global governance voice has gradually increased, forming a multi-polar pattern (Benard, 2020). The rapid development and close integration of international trade and transnational investment have jointly constructed the division of labour system among the

global value chain, transforming from state-driven to MNE-driven (Lv & Guo & Chen, 2018). Trade is driven by investment, and through trade, asset achieves their position in the global value chain. However, the international economic order still faces challenges from neoconservatism and unilateralism, and progress on traditional issues such as market opening and joint construction of standards is slow (Leandro & Duarte, 2020).

Downside risks and uncertainties in the world economy have increased. After the 2008 financial crisis, the global economy fell into a long cycle of low growth, and global GDP, trade and transnational investment maintained low growth for a long time. Since 2016, international, multinational investment has declined for three consecutive years. In 2019, the figure dropped to around 1.3 trillion US dollars, roughly the same as in 2009, a significant decline and the lowest level in history. In 2020, essential economies showed negative growth due to the impact of COVID-19 (Ministry of Commerce of the PRC, 2021). Major international organizations have downgraded their forecasts for world economic growth in 2021, and sluggish world economic growth has not improved significantly. Sovereign transaction risk, debt risk, national default on maturing loans, external fund crunch of international financial institutions, and debt problems are heating up again. All these need to attract sufficient attention and give corresponding evaluations from enterprises involved in the BRI.

2.4.3 Social/Environmental Factors and the Green Finance

BRI Countries have significant differences in energy and resource endowments and solid economic complementarities, so they have tremendous potential for cooperation. According to some estimates, the proven reserves of oil, natural gas, and coal in nations under the BRI make up

58.8%, 79.9%, and 54.0% of the world's total, respectively (Duan & Ji & Liu & Fan, 2018). Its significance lies in the effective use of China's abundant capital and engineering skills to invest in the infrastructure in partner countries along the routes; it is the necessary condition and purpose of BRI's existence. Nevertheless, some of the possible social and environmental impacts of BRI projects caused by energy exploitation have already emerged. This section will review the literature on the risks factor, consider the concept of 'green finance' that has attracted attention in recent years, and examine their influence on BRI investments.

2.4.3.1 Environmental standard and associate risks

An appreciated scientific journal 'Nature' published an editorial in May 2019, offering a brief assessment of BRI's sustainability based on interviews and reports. The article highlighted three concerns that China and its partner nations need to consider: "*1. the close relationship between science projects and commercial companies; 2. the BRI projects are proceeding without a rigorous assessment of environmental risks or the impact on local residents; 3. the lack of transparency, in regarding of specific information including a number of projects, funding, etc."* (Nature, 2019). One of the most striking issues for many researchers is the interconnections between three issues of "environmental responsibility (planet), economic responsibility (profit) and social responsibility (people)" (Sarfraz & Qun & Hui & Abdullah, 2018), as they relate to almost all projects (mainly infrastructure-related) over the BRI region. Another article published in the same journal also expressed concern about the high pressure that the BRI project could put on the environment along the route, as it is indicated, "*Global warming and permafrost melt have already destabilised existing infrastructure, including the railway from Beijing to Lhasa… extraction and use of raw materials will further exacerbate carbon*

emissions, requiring new mitigation measures" (Yang & Flower & Thompson, 2019).

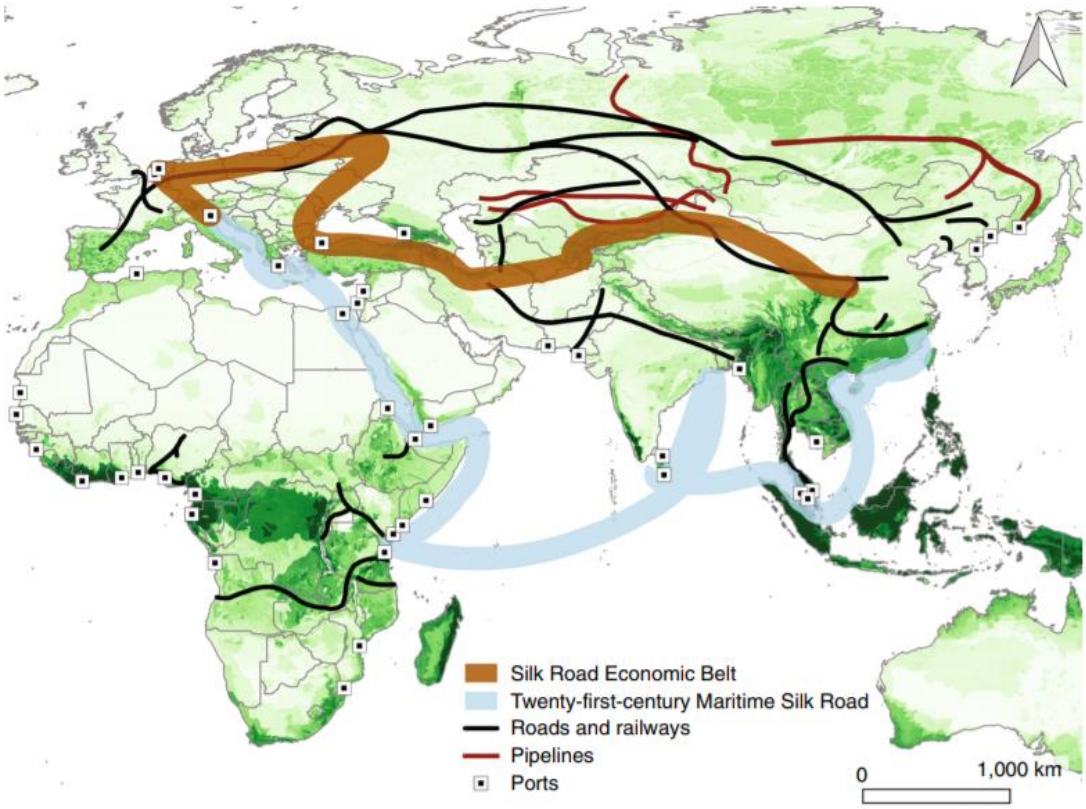
These concerns are not groundless since the growth of transnational investment brought by the increasing material needs of human beings has been accompanied by the deterioration of the global environment. In recent years, the rapid expansion of project construction encountered a certain level of resistance from residents in different regions in the developing world. As one of the largest foreign investors, the Chinese government developed a 'Social Stability Risk Assessment' as an effective tool for local governments to predict likely project-related 'social risks' that might cause social turbulence and unrest (Gransow & Price, 2019). Nonetheless, till today, relevant risk management practices of SOBs in their overseas projects have suffered for the legislation procedure still being in the stages of guidelines, policies and regulatory documents, host country lack of laws and institutions, and absence of accountability for violations or non-compliance (Gransow & Price, 2019).

There are also many critics from academia or even the Chinese public on applying these standards: poor implementation of CSR strategy for undertaking projects; the construction process lacks communication with residents and disclosure of crucial information; infrastructure investment can exacerbate social tensions and polarization (Jiang, 2014). The challenges facing corporate investment in social risk are complex and reflective, not to mention the difficulties similar companies may face when 'going out'. Therefore, a more balanced strategic approach is needed to reduce social risks and impacts and protect investment security. Consequently, some researchers begin to make a meaningful attempt to balance sustainable development and the associated risks of the BRI projects. In one research, the author adopts the method of Social Network Analysis to examine the

decisive risks by the application of stakeholder theory, in which the analytical results reveal that stakeholders need to check the control points for potential risks in different project stages (Ma & Wang & Tseng & Chiu, 2018). By analyzing the role each stakeholder (e.g., contractor, owner, designer, government, supervisor, etc.) plays at different stages of project operation and the risks they may face, the article suggests that a critical part of a green development project is the implementation phase, which requires the cooperation of all stakeholders to reduce risk (Ibid).

The severe decline of the global ecological environment required countries to establish environmental protection mechanisms and change the pattern of economic growth (COSO, 2018). It is foreseeable that environmental protection and energy conservation industries will become essential engines of sustainable economic growth, directly reflected in international trade (Liu & Tian & Liu, 2018). As Figure 2.2 shows, BRI's two routes cover an extensive geographical area across the Eurasian land bridge and the traditional maritime trade corridor, including Malacca. The terrain and landform are complex and changeable, and the ecosystem is diverse, many of which involve fragile ecological protection requirements. Without a suitable risk assessment of the geographical location involved in a specific project, it is easy to cause damage and to be resisted by residents.

Figure 2.2 Infrastructure situation and ecological environment among the BRI



Source: adopted from Ascensão & Fahrig & Clevenger & Corlett & Jaeger & William & Pereira (2018)[9]

There have already been many practical cases. Jing (2018) and Sheng (2018) both considered that the dominant reason for suspending the Myitsone dam hydropower station invested by China Power Investment Corporation in Myanmar is not purely environmental. However, at least ostensibly, the project was delayed because of protests from residents over the company's failure to adequately assess and protect the environment. Similarly, the $1.5bn Hambantota port project funded by China Communications Construction in Colombo, Sri Lanka, was halted in 2015 because of environmental violations and opaque procedures (Xinhua, 2017; Huang, 2019; Zhang & Xiao & Liu,

[9] Environmental value is shown in green (darker green corresponding to more value), integrating data on terrestrial biodiversity, key habitants, wilderness and environmental services, https://www.nature.com/natsustain.

2019). In a BBC report, Hambantota port looks like a classic case of the 'debt trap' – where local governments sign deals with Chinese SOEs to achieve short-term success and attract foreign investment – and plunge themselves into an unaffordable debt cycle (Limaye, 2017). A worse scenario happened as fears of land sales to foreign companies have sparked mass protests between residents and the government, with environmental concerns at the heart of the appeal.

The failure cases all arise from the lack of information acquisition, commonsense expectations, decision-making choices, dialogue, and communication among stakeholders in business, politics, environment and society (Huang, 2019). Although both Sri Lanka and Myanmar projects have got restarted and later achieved good results, the impact of early obstacles remains a cause for vigilant (Arduino & Gong, 2018). OFDI is bound to face more uncompromising environmental standards and requirements in this respect. Companies engaged in cross-border trade and the government behind them need to make proactive preparations or conduct a new round of assessments of projects already underway. Whether or not these criticisms are objective and fair, the environmental impact of large-scale infrastructure construction projects in developing countries cannot be ignored. Measures and carbon emission commitments issued by governments under the ‘Paris Agreement’ framework are bound to have a series of influences on the smooth progress of the BRI (Hardiman, 2020).

As has been widely discussed, one of the main aims of the ‘going out’ policy that drives China’s OFDI is to secure its energy demand in a longer perspective. Some scholars have tried to frame the Chinese government's energy investment management direction over the past few years. Comparing environmental policies with those of Europe (which is moving from ecological

stewardship to affordability), China's policy change was driven by a greater emphasis from accessibility to environmental stewardship – low carbon growth – in central strategic thinking and the real bilateral business relationship. Even with traditional Multilateral Investment institutions, their Chinese counterparts are rapidly increasing the requirements in these areas (see Appendix V: Environmental and social framework objectives among institutions). New renewable energy and green technology projects are being promoted through BRI and electricity infrastructure that is being privatized. However, Gippner and Torney (2017) acknowledge that chemical, infrastructure, and other emission-intensive industries are still relatively large investment objects in terms of investment. Their study did not distinguish between SOEs and private sector investors, which is one of the main differences that require further investigation of the BRI investments.

2.4.3.2 BRI and the Green Finance

Among other economic activities, capital flows to the areas with the highest returns due to its profit-driven nature, as the massive infrastructure investment that is taking place in developing countries has the potential to attract capital. According to a report on the development of green production capacity cooperation in energy-intensive industries issued by the Natural Resources Defense Council (NRDC), countries and regions along the BRI (including EU states) cover nearly 5 billion people. They have an economic aggregate of about 39 trillion us dollars, accounting for 70% and 52% of the global total, respectively (Belt and Road Portal, 2019). Infrastructure cooperation is a priority area and focus of the BRI projects, which will pull up the demand and energy consumption for cement, steel and glass. Energy-intensive industries have a 'lock-in effect' due to their significant environmental impact, high carbon emissions and considerable investment. It is not difficult to assume

that the future global infrastructure investment will occur in the BRI countries at large, and much of carbon dioxide emissions will come from the construction and operation of these infrastructure projects (Green Finance, 2019). Therefore, the future investment in the BRI region may have a significant impact on the global climate and the ecological environment.

These issues contribute to the emergence of Green Finance, which was developing in recent years and be perceived as "*financing of investments that provide environmental benefits in the broader context of environmentally sustainable development*" (Green BRI, 2019). As early as 2012, the regulator body of China's SOBs – 'Banking Regulatory Commission' – issued a 'Green Credit Guidelines', which required them to ensure that all overseas investment projects are programmed to identify effectively, manage and monitor environmental and social risks (Green credit guidelines, 2012). BRI projects are being designed to stand up to international standards, including sustainability goals, increasing focus on building green infrastructure and creating even more diverse investment opportunities. According to an HSBC survey, 97% of European investors, 85% in the U.S. and 68% in Asia, planned to increase their climate-related or low carbon investments (Funding the BRI, 2018). Therefore, it is becoming a vital principle widely recognised by countries in international investment and becoming a significant indicator in the risk management of cross-border investment of financial institutions[10]. Being the primary carrier of the BRI projects, SOBs should also actively respond to all possible impacts of green finance.

[10] President Xi declared: "we (BRI Countries) are obliged to build an ecological system that respects nature and braces green development over the BRI" (Xi, 2017). As an essential outcome of the 2018 China-UK economic and financial dialogue, the 'BRI Green Investment Principle' is being widely accepted (see Appendix IV: List of signatories of the GIP, last updated 2021): according to the latest statistics , 39 major financial institutions around the world had signed the principle (Rodgers, 2019).

As a development goal billed as environmentally friendly, climate-resilient, and socially inclusive, BRI has integrated its sustainability principles into participating institutions' asset classes, financial products, and project implementation and management (Rozenberg & Fay, 2019). As a further measure, China's Ministry of Commerce and the Ministry of Ecology and Environment Issued the 'Green Development Guidelines'[11] for Overseas Investment and Cooperation on July 15, 2021, to further "*accelerating the green development of foreign investment cooperation, establishing and improving a green and low-carbon circular economy development system, leading the international cooperation and competition, and fostering a new development paradigm*" (Ibid). These passionate promises are ambitious, but it is often easier to raise a flag than implementation. Since this agreement is not legally binding, adapting these principles merely relies on the voluntary joint operation of the investor and the host country, so the specific effect is debatable. After all, for many less developed countries along the route, the desire for economic growth is more robust than environmental protection (Mabey & McNally, 1999). Therefore, considering the impact of social and environmental factors in risk management and evaluating and prioritising according to the empirical study will become an essential part of the RMF construction in the results of this study.

2.4.4 Legal and Regulatory Risks

When studying the legal and institutional challenges enterprises face in overseas operations, Lin (2018) believes that legal risks include fairness, efficiency and effectiveness of the judicial system, the enforceability of

[11] 'BRI Green Investment Principles': 1. Integrating sustainability into corporate governance; 2. Fully understand ESG (environmental, social, governance) risks; 3. Full disclosure of environmental information; 4. Strengthen communication with stakeholders; 5. Make full use of green financial instruments; 6. Adopt green supply chain management; 7. Capacity building through multi-party cooperation (Green BRI Center, 2021).

contracts, non-discrimination against foreign companies, constraints on monopoly and unfair competition, etc. Regulatory risks refer to the corresponding actions taken by the government when changes in laws and regulations affect the market or industry. Greuning and Bratanovic (2009) also reveal that "*legal and regulatory frameworks for institutions, markets, contracts and actions, and failure resolution, clarify the game's rules for financial institutions and markets*". They believe that managers should be thoroughly familiar with the relevant societies' laws, regulations, and regulatory frameworks before evaluating financing projects. This is not only because the bank's business must comply with it but also because it provides the principal environment for the investor's business, including the objectives and scope of its activities.

The rapid development of outbound investment has brought colossal market demand for cross-border professional services, especially finance, accounting, and legal services. However, the lag in development among these realms has seriously restricted the growth of outbound investment in China and other developing countries. Lv, Guo and Chen (2018) contend that the international competitiveness of the Chinese financial institution (SOBs) is relatively weak, and cross-border capital services for enterprises are minimal. SOEs find it challenging to revitalize overseas assets effectively, and private enterprises have limited domestic financing channels. Financing difficulties and high financing costs remain the core bottlenecks restricting the overseas investment of Chinese enterprises (Shang, 2019). Compared with developed countries in the West, China has yet to make sound and specific laws on foreign investment, replacing them with decrees and regulatory measures issued by government departments. As a result, when engaged in BRI projects with large investment scale and extensive regional involvement, the functions of relevant government institutions are scattered, professional

service institutions and experts are seriously insufficient, since the development of institutions that provide professional service lags behind (Booth & Smith, 2018). Many Chinese enterprises, including the SOEs, have low awareness of legal compliance and social responsibility in host countries, damaging Chinese enterprises' reputation and China's international image (Brautigam, 2009).

With the continuous expansion of the scale of 'going global' of Chinese enterprises, the pressure of compliance of global operations is increasing (Huang & Xie, 2020). While the trend of globalization deepens, the concept of compliance for transnational investment is also varying. In addition to anti-commercial bribery, anti-money laundering, anti-monopoly, data protection, anti-financial fraud, and other fields have been brought into compliance scope, many countries have gradually accepted broader concepts, including environmental protection standards and human rights protection (Huang, 2016; Sauvant & Chen, 2014). Innovating compliance systems have become international rules that multinational enterprises must abide by. Frankly speaking, the high compliance risk of Chinese enterprises is also due to the frequent sanctions imposed by Western countries in recent years due to their 'political and values alliance', which have become a stumbling block for the sustainable investment of the BRI (Wang & Xie, 2019). Especially when the US is increasingly put under pressure through the 'entity list' with obvious political overtones has become an essential means to suppress the development of SOEs. The challenge for most Chinese companies is to control the legal and regulatory risks to consolidate further OFDI projects launched or implemented.

In addition, knowledge of laws and regulations can promote appropriate measures and actions in a crisis (Greuning & Bratanovic, 2009). However,

policymakers have only mentioned the importance of institution-building in many cases, but it is still lagging in practice. Booth and Smith (2018) also noted that most BRI projects are in developing countries with poor economic capacity, social instability, prominent ethnic and religious issues, and lack of legal protection for investors. It's easy to get into trouble if you don't know or are unfamiliar with the uncertainties of the local legal system or regulations. Many BRI projects under construction ignore risks and obstacles both offshore and onshore, are unfamiliar with local laws and regulations, cannot respond to sudden changes, lack legal expertise, and even have colossal security costs, which may bring huge losses to their operations (Li & Huang & Tian, 2019).

Under such circumstances, infrastructure investment projects and personnel from China may be exposed to risks and even violent crimes (Arduino & Gong, 2018). This situation is not difficult to understand – China has a unique legal system, institutional construction and relevant practices are very different from its neighbours. In a system where regulatory authority is vested in a single agency (or organization, or government), regulation is seen as more efficient and effective because disputes over the interpretation and application of the framework are minimized (Booth & Smith, 2018). Yet it is almost a different story when a large number of projects are launched in some countries along the route, as Ferdinand (2016) concerned, "*few of these states are noted for the rule of law*", and "…*if a Chinese company operating there (the BRI region) were taken to court by local businesses and appeared to receive unfair treatment from a less than impartial local legal system, what could and would either the company or the Chinese state do about it?*"

It has already been recognized that "*the business climate and institutional quality in a country heavily influence indigenous and foreign firms*" (Chen &

Jiang & Lin & Zhao, 2019). The social and legal systems of BRI countries and regions vary widely. The legal system issues may include environmental protection, labour, intellectual property rights, investment management and taxation; different legal systems are prone to the risk of asymmetric legal information (Arduino & Gong, 2018). In addition, imperfect legal practices make it difficult for enterprises to invest in these countries, as disputes between Chinese companies and local parties would affect project contracts, cross-border mergers and acquisitions, cross-border arbitration, and litigation. Other risks may include market access restrictions with special requirements for foreign investment or opaque review procedures for cross-border mergers and acquisitions, which may significantly increase the difficulty for Chinese companies to operate (Xiao, 2019).

Visible cases can tell that the Chinese enterprises still do not have an excellent method to deal with these harsh situations, except to appeal through inter-governmental mediation, which may still be a long and challenging process. A typical case is that the China Railway Construction (CRC) lost 4.1 billion yuan over its first Mecca light rail project – Makkah Metro Pink Line: the 18-kilometre project connects religious sites around Mecca and Medina, Saudi Arabia, served explicitly for the hajj. Nonetheless, after the construction contract was signed, the project owners increased planned capacity changed other instructions, with a severe delay of the underground pipeline networks and land requisition and demolition. As the sponsored contractor, CRC had to significantly increase the volume of work to ensure that it was completed on time. Eventually, in 2018, CRC regained the operational project contracts and conducted the Mecca Metro operation and maintenance (CRC, 2019). The company is still negotiating with the owner regarding the above change claim (Baidu Encyclopedia, 2019). Considering the lengthy period and procedural complexity of transnational litigation, the final settlement of claims and results

are far from being settled. Another meaningful study conducted by Zhang and Xu (2017) attempted to prove the impact of institutional distance on China's OFDI through empirical results of cross-year panel data. Based on China's investment in BRI regions and the fixed-effect regression model, the study finds that institutional distance plays a vital role in China's OFDI and suggests that SOEs should consider it when choosing investment destinations (Ibid).

The above arguments discuss the influence of legal and institutional risks on overseas investment from different perspectives. It can be concluded that when investing and financing BRI projects, Chinese enterprises, including SOBs, need to fully consider the possible negative impact on the project due to the lag of the host country's legal and regulatory systems and to make an appropriate evaluation to mitigate adverse consequences.

2.4.5 The Risk Posed by the Global Pandemic

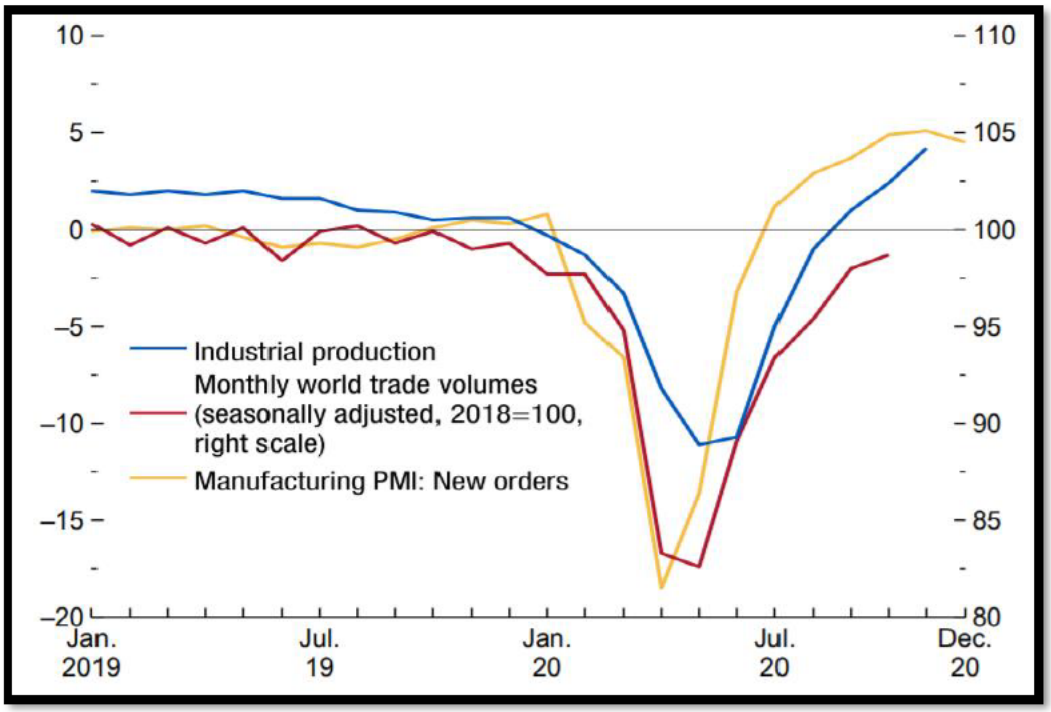
When investigating the risk factors of transnational investment projects, it is necessary to consider the impact of some irresistible and unexpected global or regional emergencies. This may include natural disasters (e.g., earthquakes, floods, tsunamis, forest fires, etc.) and the spread of major infectious diseases. Some scholars have already started to estimate how the COVID-19 pandemic would affect international investment and trade, with concerns about its economic consequences growing strong enough to trigger a global financial crisis (Baldwin & di Mauro, 2020). BRIDI said in its annual report that COVID-19 is the top risk for the development of the infrastructure sector at present, because "although most countries will start COVID-19 vaccination in 2021, due to multiple factors such as capacity, transportation and international relations, the global promotion and vaccination of vaccines are facing difficulties" (BRIDI, 2021). Unlike the impacts of natural disasters

that are devastating in a relatively short period and controllable on a centralized or consolidated scope, the damage to the global society from this highly contagious disease would be more severe and far-reaching. The next part will take an in-depth look at the COVID-19 pandemic by reviewing the most recent research articles and reliable media coverage to summarize its potential impact on the global economy.

2.4.5.1 Global responses

The unparalleled epidemic broke out in late 2019 in Wuhan, a mega-city of more than 10 million people in central China. Although tracing the origin of the virus is still controversial today, the world has seen some experience of chaos, turbulence, and helplessness in the beginning. Few have predicted that the outbreak is spreading uncontrollably globally in less than a month, even with severe measures adopted internationally toward China, like massive flight disruptions and even border control and lockdowns worldwide. It can be seen from Figure 2.3 a world-class lockdown means a slowdown to contraction of macroeconomics, from stagnation in production and consumption to a halt in international trade and cross-border investments (Mann, 2020). Restrictions on the free movement of people have led to a sudden suspension of tourism, business travel, international study, etc., bringing the world to a standstill.

Figure 2.3 Global activity indicators 2019-2020 (annualized %)



Source: World Economic Outlook 2020, IMF

Some are concerned that the 'trickle-down economics'[12] is broken, lead to less demand for products, slow trade disruptions in supply chains, inability to continue production, and fall in commodity prices due to declining demand (e.g., for oil, gas, raw materials), with positive effects for countries that import resources and adverse effects for countries that predominantly export commodities (Wang, 2020). As the mood of fear is widespread, the market needs to confront its biggest rival ever. *The Economist* (2020) released an editorial – "*The right medicine for the world economy*" – to investigate how the pandemic fears can be economical and health crises. *Wall Street Journal* (2020) reported the decline of European stock markets, after a sharp sell-off in Asia, with China, Japan and South Korea down between 3% and 5%, respectively. More remarkably, with the unstoppable trend, people worldwide

[12] The trickle-down economics is the economic proposition that taxes on businesses and the wealthy in society should be reduced as a means to stimulate business investment in the short term and benefit society at large in the long term (The Balance, https://www.thebalance.com/trickle-down-economics-theory-effect-does-it-work-3305572).

caught up under the gaze of global media coverage witnessed a historic moment on 21st April – "*US oil prices turn negative as demand dries up*" (BBC News, 2020). Exporters in major developing countries face increasing financial pressure as global energy demand plummets. Standard & poor's and Moody's recently downgraded the credit ratings of countries involved in the BRI and heavily indebted to China. Nigeria, for example, is estimated to owe China more than $4 billion, and its oil and petroleum products account for 94% of its exports (Klein, 2020).

Lack of understanding of an unknown disease leads to panic, which has been infinitely magnified in the information era. Many scholars have begun to express their anxieties and make predictions for future trends of the global order. Barua (2020) states the "*macroeconomic impacts on production, supply chain, trade, investments, prices, finances, exchange rates, growth, and cross-border cooperation - of the COVID-19 outbreak*". Gopinath (2020) considers the international society to face multiple crises – "*a health crisis, a financial crisis, and a collapse in commodity prices, which interact in complex ways*", and much more would agree that this economic shock is likely to cause lingering pain and more enormous damage than any other crises in modern society. According to the study of Baldwin and di Mauro (2020), pandemics affect all major economies, including G7 countries, which account for 60% of world supply and demand (GDP), 65% of global manufacturing and 41% of global manufacturing exports. Consequently, with these economies now severely affected, the rest of the world will suffer inevitably. Di Mauro (2020) refers to this result as 'macroeconomic flu', which leads to a decline in output in the short term, followed by a rapid recovery as demand revivals in general terms. Nevertheless, a pandemic like COVID-19 would create unprecedented shocks to the global economy because "*the size and persistence of the economic impact are unknowable*" (Baldwin & di Mauro,

2020).

Although it is still challenging to quantify the prolonged economic impact of the outbreak as it continues to spread and develop for over two years, academia has tried to do so. While COVID-19 developed into a global pandemic, the cost of output loss could rise to trillions of dollars. There are already signs that these unfortunate predictions are taking shape, just like some probable scenarios that have been described by scholars from different perspectives (Baldwin & di Mauro, 2020). The OECD researchers created a simulated base-case scenario and a downside scenario using a National Information Global Exchange Model (NIGEM). The base-case results suggested a modest recovery after a sharp decline in global growth in the first half of 2020. Still, the downtrend also significantly decreases confidence and a more pronounced and prolonged slowdown (Boone & Haugh & Pain & Salins, 2020). McKibbin and Fernando (2020a; 2020b) employs Dynamic Stochastic General Equilibrium and Computable General Equilibrium modelling, which proposes seven pandemic scenarios and shows that GDP growth of major world economies will decline amongst all of them.

Arezki and Nguyen (2020) discuss the potential impact on specific countries or regions. Several factors are likely to influence North Africa and the Middle East: oil prices, value chains and travel interruptions. A border closure would inevitably hit many economies rigidly, especially given that the current pandemic could be the start of several waves. Cecchetti and Schoenholtzon (2020) reveal banks' vulnerability to possible economic shocks derived from the epidemic and discuss the problem with the effective control of bank runs. Mann (2020) and Tonchev (2020) suggested that the interconnectedness of global commodity markets, financial markets, public sentiment, and the economy could worsen the international economic situation and pose

considerable challenges for policy responses led by significant economies. Wren-Lewis (2020) started his argument from an economic, financial point of view, combined with a practical sociological approach. That is to say, the problems that may arise in an initially healthy economy after the outbreak of a pandemic – production stagnation, falling demand, school closures, weaker consumption – short-term fiscal and monetary policies should be under constant assessment under such circumstances. The situation might also remind people of the great plague of the Middle Ages – which happened in 1346-51 and had more than 100,000 people killed – even a plague wall (Mur de Peste) was built in Provence by the French King. More comparisons provided by Voth between Wuhan and Marseille (the then epicentre) are supplied as both employed drastic restrictions of mobility for people to prevent the spread of the disease (Voth, 2020); unfortunately, none of these extreme measures seems to have worked as intended. This would spark widespread debate, both within and outside academia, about how much liquidity is desirable to keep the basic economy going in an era of globalization when pandemics break out.

Tonchev (2020) contends that although it is too early to make predictions, three possible scenarios are based on the current international situation. The best-case scenario would be a moderate economic shock that could hopefully be resolved through the existing international order and financial instruments. A more likely scenario is that, because of the widespread disruption caused by the impact of a pandemic on overall economic behaviour, the demand for reconstruction cannot be met by an unstable global institutional structure, even if existing resources are fully mobilized. Yet the worst-case scenario could be dreadful, with a potentially historic and devastating economic collapse leading to social and political upheaval in many countries, a seismic shift in the world order, and a dramatic reduction in connectivity between

nations. The first two signs are visible as new strains of the virus continue to emerge among the second half of 2021, whereas the likelihood of the worse scenario increases even with some countries announced to ease most restrictions.

2.4.5.3 The BRI amid covid

Worries in China and within BRI countries on the adverse economic impacts of COVID-19 intensified. A famous Hong Kong press *South China Morning Post* published a review article – "*How the coronavirus pandemic has trapped China's Belt and Road Initiative between a rock and a hard place*" – by Brian P. Klein (2020), a former US diplomat and strategic advisory and political risk analyst. He argues that the current pandemic is expected to push the global economy into its worst recession since the 'Great Depression' and last long. Thus many developing countries as primary recipients[13] of BRI or other policy loans will undoubtedly be gravely hit by the weakness of their health systems and large populations. In responsibility and answering calls from many poorer regions, China and other creditors (G20) agreed to roll over the debts to halt both principal and interest payments through at least 2020, even if this was a departure from China's usual policy. No one to ensure that all these projects are carried out or completed under restrictive measures until the outbreak is alleviated; the projects may encounter difficulties in personnel, funds, equipment, logistics and other aspects (Erie, 2020).

[13] BRI countries: Afghanistan, Albania, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, Bhutan, Bosnia and Herzegovina, Brunei Darussalam, Bulgaria, Cambodia, Croatia, Czech Republic, Djibouti, Egypt, Arab Rep., Estonia, Georgia, Greece, Hong Kong SAR, China, Hungary, India, Indonesia, Iran, Islamic Rep., Iraq, Israel, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyz Republic, Lao PDR, Latvia, Lebanon, Lithuania, Macedonia, FYR, Malaysia, Maldives, Moldova, Mongolia, Montenegro, Myanmar, Nepal, Oman, Pakistan, Philippines, Poland, Qatar, Romania, Russian Federation, Saudi Arabia, Serbia, Singapore, Slovak Republic, Slovenia, Sri Lanka, Syrian Arab Republic, Taiwan, China, Tajikistan, Tanzania, Thailand, Timor-Leste, Turkey, Turkmenistan, Ukraine, United Arab Emirates, Uzbekistan, Vietnam, West Bank and Gaza, Yemen, Rep.

The global spread of COVID-19 has severely impacted the global economic system. BRI projects face significantly increased operational and policy risks in host countries (Baldwin & di Mauro, 2020), which can be summarized as follows: 1. overseas project managers and labor personnel are affected by domestic isolation or entry and exit control, hindering relevant exchange and cooperation mechanisms; 2. the trade of goods imported from China for overseas project equipment or raw materials is controlled, and the progress of project implementation is affected; 3. the spread of COVID-19 in some host countries has caused economic and social unrest, posing new threats to the sustainable operation of projects and the safety of overseas personnel; 4. anti-China forces in some countries may take advantage of this issue to introduce policies that are not conducive to Chinese enterprises, and local staff may be discriminated against. The uncertainties of China-US economic and trade frictions and the global spread of COVID-19 have further increased the potential risks and uncertainties of China's outbound investment (Tonchev, 2020). Since 2017, Chinese enterprises' outbound investment has decreased for three consecutive years due to comprehensive factors at home and abroad.

The resulting economic losses cannot be quantified since the pandemic is far from over with the emergence of highly transmissible variant strains. There is also a problem of opaque and statistical omission in many developing countries. Yet the near term and potential threats must be considered in the project risk assessment of investment enterprises. According to newly published reports, the global growth is projected at –5.2 % by the World Bank of baseline forecast envisions in 2020, using market exchange rate weights (World Bank, 2020). While the global economy contracted by -3.5% in 2020, the pandemic severely impacted vulnerable groups – women, youth, the poor, informal workers, and those working in contact-intensive sectors (IMF, 2021).

Amid mass vaccinations (especially in developed countries), governments hope for a turnaround since it (global economy) is projected to grow 5.5% in 2021 and 4.2% in 2022 (Ibid). However, the uncertainty of new waves of outbreaks has raised concerns.

Despite the efforts of governments to respond with fiscal and monetary policy sustenance, there is no way to avoid facing the worst global recession in decades (IMF and The World Bank, 2020). There are already signs and evidence that new mutant strains have spread worldwide, particularly in India and Brazil (Ibid). China's economic recovery has been much faster than expected and shown capabilities in many aspects since the third quarter of 2020 and continues to grow in the first half of 2021. Although its full-year GDP growth just reached 1.9 % (IMF, 2020), it was the only major economy to post positive development for the past year. This is undoubtedly good news for the BRI, but the situation in other parts of the world generates uncertainty to its prospects. If SOBs cannot correctly consider the pandemic's impact, it will likely stagnate existing projects as no country can remain immune to globalization. After all, it is something like the IMF Managing Director Kristalina Georgieva (2020) remarked, "*a crisis like no other*".

2.4.6 Summary of Main Risk Sources towards the BRI Investment

The existing research on BRI investment risk has become popular in academia, and their emphasis and scope of coverage are different. Some scholars have considered a single risk category or industry; for example, Jorion (2007) identifies credit, operational, and liquidity risks as other significant considerations for investors. Others deliberate risk management from various industries, respectively. For instance, Ren and Du (2018) proposed a risk assessment model for industry investment in marine foreign

trade economic zone based on quantitative analysis that can be used to predict the risk of industry investment in the BRI countries. Another study discussed the problems caused by the uncertainty of risk that occurs during the construction of coal companies, such as determining and classifying various risk factors, establishing a predictive index system and applying it to the probability of risk occurrence related to the construction of coal mines in the region (Li & Huang & Tian, 2019).

As it has been evolved, the more contemporary authors contend that at the macro level, several risk categories must be identified among international investments, especially in the developing countries: political and geopolitical risk; economic risk; financial risk; legal and regulatory risk; social and environmental risk (Huang, 2019; Sheng, 2018; Duan & Ji & Liu & Fan, 2018). Based on the literature exploration and official documents examination, this study identifies and summarizes the main risk factors that BRI will encounter from the aforementioned aspects. Some of these factors are derived internally from the host country. Some are from external/geo-relational reasons and sudden global events like the Covid-19 pandemic. Due to the significant uncertainty, they bring to the BRI projects. Following are the classification of primary risk factors discussed and summarized by their definitions, characteristics, and research authors (Table 2.4).

Table 2.4 Identification of BRI investment risks, their characteristics, and the key authors

Classification	Definitions	Characteristics/features	Key Authors
Political and geopolitical challenges	Political risk: nationalization risk, war risk and transfer risk, terrorism, ethnic crisis, political violence and tensions. Geopolitical risk, also known as country risk, refers to the possibility of a loss of foreign investors caused by events controlled by the state or social events in international economic activities.	Political risk is indisputably superior to all other bets in global investment because it governs investment intentions and behavior in various ways. It can be embodied as follows: • Protectionism • Nationalism • Strict scrutiny of foreign investment • Sanctions and embargos • Arbitrary antitrust investigation • Restrict mergers and acquisitions • Boycotts • Regional armed conflict • War	Balli, Uddin and Shahzad (2019); Li, (2019); Lin (2019); Flint and Zhu (2019); Mathews (2019); Zhang, Xiao and Liu (2019); Arduino (2017, 2018); Arduino and Gong (2018); Buranelli (2018); Cai (2018); Hillman (2018); Mayer (2018); Nordin and Weissmann (2018); Shichor (2018); Sun and Hou, (2018); Yang (2018); Vangeli (2018); Zhang (2018); Blanchard and Flint (2017); Gabusi (2017); Miller (2017); Nalbantoglu (2017); Yu, (2017); Bhattacharya (2016); Callahan (2016a); Wang (2016); Arase (2015); Fallon (2015)
Economic and financial factors	Macroeconomic factors reflect the dynamic changes of economic growth in the host country and interact with political, institutional and social environment factors, likely to produce cross risks and	Indicators: average GDP per capita, real GDP growth rate, annual inflation rate, budget balance, foreign debt, exchange rate, interest rates, price level, and economic policy. Influential factors: market size, economic growth	Benard (2020); Leandro and Duarte (2020); Aibai, Huang, Luo and Peng, (2019); Bandiera and Tsiropoulos (2019); Chen, Fan, Zhang and Mo (2019); Li (2019); Arduino (2018);

Classification	Definitions	Characteristics/features	Key Authors
	affect FDI. Financial risks: financing terms risk, risk of collateralized debt financing, risk from recurring costs, contract risk allocation, asset management risk, default risk, inflation, interest rate and exchange rate levels, stability of the financial system, the sovereign credit status of the host country, and so on.	rate, national income, resource status, labour force quantity, degree of opening.	Buranelli (2018); Cai (2018); Chen, Garcia-Herrero and Xu (2018); Hou and Xiao (2018); Duan, Ji, Liu and Fan (2018); Lv, Guo and Chen (2018); O'Trakoun (2018); Zhou and Lin (2018); Blanchard and Flint (2017); Banerjee (2016); Huang (2016); Wolff (2016); Wang (2016); Alexopoulos and Cohen (2015); Baker and Filbeck (2015); Hammoudeh and McAleer (2015); Wagner and Marsh (2006)
Environmental Standard and Green Finance	Environmental damage is caused by an increase in economic activity (FDI) – the flow of natural resource-based goods and investments growing faster than economic output – it has traditionally relied on the use and exploitation of natural resources, especially agriculture, mineral and fuel production. Environmental degradation:	Primary responsibilities of FDI: environmental responsibility (planet), economic responsibility (profit) and social responsibility (people). Critics of BRI projects: poor implementation of CSR strategy; the construction process lacks communication with residents and disclosure of crucial information; infrastructure investment can exacerbate social tensions and polarization. 'BRI Green Investment Principle': to support the	Gransow and Price (2019); Huang (2019); Zhang, Xiao and Liu (2019); Arduino and Gong (2018); Buranelli (2018); Duan, Ji, Liu and Fan (2018); Jing (2018); Liu, Tian and Liu (2018); Ma, Wang, Tseng and Chiu (2018); Sarfraz, Qun, Hui and Abdullah (2018); Sheng (2018); Gippner and Torney (2017); Jiang (2014); Mabey and

Classification	Definitions	Characteristics/features	Key Authors
	greenhouse gas emissions, deforestation, loss of biodiversity. Green Finance: financing investments that provide environmental benefits in the broader context of environmentally sustainable development.	construction of green BRI through financial means, integrate environmental factors into project planning and construction, expand green investment and reduce high-carbon and polluting investment through environmental risk analysis, enhanced disclosure and product innovation.	McNally (1999)
Legal and regulatory risks	Legal risks include fairness, efficiency and effectiveness of the judicial system, the enforceability of contracts, non-discrimination against foreign companies, monopoly and unfair competition constraints, etc. Regulatory risks refer to the corresponding actions taken by the government when changes in laws and regulations affect the market or industry. Legal and regulatory frameworks for institutions, markets, contracts and	Legal compliance of FDI: anti-commercial bribery, anti-money laundering, anti-monopoly, data protection, anti-financial fraud; broader concepts including environmental protection standards and human rights protection. Different legal systems are prone to the risk of asymmetric legal information. Bad legal practice will affect project contracts, cross-border mergers and acquisitions, cross-border arbitration and litigation. Critics of BRI projects: ignore risks and obstacles both offshore and onshore, are unfamiliar with local laws and regulations, cannot respond to	Huang and Xie (2020); Chen, Jiang, Lin and Zhao (2019); Li, Huang and Tian (2019); Shang (2019); Arduino and Gong (2018); Booth and Smith (2018); Lin (2018); Lv, Guo and Chen (2018); Zhang and Xu (2017); Huang (2016); Ferdinand (2016); Sauvant and Chen (2014); Brautigam (2009); Greuning and Bratanovic (2009)

Classification	Definitions	Characteristics/features	Key Authors
	actions, and failure resolution clarify the game's rules for financial institutions and markets.	sudden changes, lack legal expertise, and have colossal security costs.	
The risk posed by a global pandemic	A pandemic is an epidemic in which an infectious disease spreads over a large area, such as multiple continents or worldwide, affecting many people. Epidemics with stable numbers of infections (such as relapses of seasonal flu) are usually excluded because they coincide in most parts of the globe rather than spreading worldwide. A global pandemic is a health crisis, a financial crisis, and a collapse in commodity prices, which interact in complex ways.	Public health measures to control the spread of the disease: quarantine, isolation, social distancing and tracking contacts. Restrictions on the free movement of people have led to a sudden suspension of tourism, business travel, international study, etc. Economic impacts: trade disruptions in supply chains, declining demand, fall in commodity prices, production stagnation, weaker consumption. Sociological impacts: school and university closures, high unemployment, social unrest, rising crime rates, widening gap between rich and poor, Impacts of COVID-19 on BRI projects: 1. Personnel affected by quarantine or immigration control; 2. Trade of imported goods affects the progress of the project; 3. The epidemic has	Arezki and Nguyen (2020); Baldwin and di Mauro (2020); Barua (2020); Boone, Haugh, Pain and Salins (2020); Cecchetti and Schoenholtzon (2020); Defterios (2020); Di Mauro (2020); Gopinath (2020); Lu, Zhao and Li (2020); Mann (2020); Klein (2020); McKibbin and Fernando (2020a; 2020b); Tonchev (2020); Voth (2020); Wang (2020); Wren-Lewis (2020)

Classification	Definitions	Characteristics/features	Key Authors
		caused economic and social turmoil, posing a security threat to the sustainable operation of the project and overseas personnel; 4. Anti-China forces in some countries take the opportunity to excite and introduce unfavourable policies to Chinese enterprises, and employees may be discriminated against.	

Source: author complied

2.5 Summary

This chapter provides a literature review on risk management. Firstly, risk and risk management are defined, and the standard measures are evaluated differently. The study summarizes current literature and debates on the applicability and validity of these methods and models. Risk management is a relatively new concept, and its processes and systems are still evolving. Most financial institutions, giant international banks, have internal assessment systems for risk valuation and management. The causes of risk are affected by various factors, so detailed analysis is required under the given conditions for reasonable interpretation (Radio, 2018). In recent years, the rapid improvement of risk management, especially after the subprime crisis in 2008, is mainly due to the development of information technology, the implementation of financial policies, the Basel Accords framework, and other regulatory measures from Multilateral Organizations.

The traditional risk management instruments are efficient and explicit in content and can be very sophisticated in real-time applications to assess and determine bank risks. However, in most cases, it can only evaluate specific types of risks (credit risks in particular) and are challenging to apply to practical problems that international banks may encounter in host countries. In BRI deployment, many infrastructure construction projects are focused on developing countries. These projects require a lot of money, time, equipment, and a constant supply of resources (Cheng & Song & Huang, 2018). Therefore, when SOBs (as the primary financier) conducts project investment in the BRI, the risk factors involved cannot be evaluated and appropriately managed by traditional methods since they focus on policy lending and development financing.

This chapter summarizes the factors that would affect the BRI project – political and geopolitical risks, economic and financial risk, environmental risk and green finance, legal and regulatory risks, and the Covid-19 pandemic – the positioning of these factors provide insights into the BRI related risk management. It is worth noting that the most significant difference between BRI and traditional FDI is that the former has a solid official attribute. Still, at the same time, it is different from development financing in the general sense. It is the product of China's unique national system. In the following chapter, the concept of development project financing and its application in the BRI investment will be investigated in discovering the research gap and justify the value of this study.

Chapter 3. Literature Review II: Development Project financing and the BRI Experience

3.1 Introduction

The financing needs of developing countries face many difficulties, especially when it comes to large infrastructure investment projects, which are often urgently desirable. Domestic capital markets and the public sector in less developed countries and regions cannot meet the massive demand for investment alone, not to mention the adverse consequences of over-borrowing from international financial institutions. Unfortunately, the global financial crisis of 2008 and the last European sovereign debt crisis significantly reduced the traditional sources of financing for infrastructure, leaving many indebted countries in trouble (Coleman & Feler, 2015). Some academics started to review Basel III for contracting the regulatory framework of the financial sector at both national and international levels while long-term

loans are tightened. This provides commercial banks with more incentive to focus on short-term liquidity and solvency and preference for temporary and low-risk projects (Williams, 2014; Griffith-Jones & Kollatz-Ahnen & Andersen & Hansen, 2015). Viewed from other perspectives, it also provides a clearer sight of development finance from policy loans in filling the current gap (Wang, 2016) and the more critical roles those emerging actors like China play in this field (Giorgioni, 2017).

This chapter reviews two important theoretical contents of the thesis: development finance and project financing. In terms of development finance, it begins with the analysis of its origination, development, and upsurge in recent decades and discusses its concept, essence, essential functions and its relationship with commercial finance. And the following part reviews relevant literature on project financing, mainly rereading its functions and applications in traditional investment projects and its applicability in recent BRI projects. Through these reassessments, this chapter attempts to clarify the underlying connections – from official aid progressively to project financing – how the altering pattern of transnational investment reveal the evolution of China's OFDI and the inevitability of appearance of the BRI (Dunford, 2020). The concepts review sheds light on possible BRI development complications and further explains what needs to be involved in the region's risk management of state-owned financial institutions.

In the third part of this chapter, China's unique experience in development financing projects is evaluated by combining the two essential theories reviewed above. On the one hand, as a traditional ‘recipient country’, foreign aid and investment have contributed significantly to China's economic achievements today (Mosley, 2017). On the one hand, as an emerging ‘donor country’, it started to use its vast foreign capital reserves and unique

institutional advantages to export capital and technology to the world. China has transformed its identity rapidly in decades (Dollar, 2018; Mosley, 2017). The rise of China in this area, as a governance system quite different from that of the Western world, raises some questions about whether its experience with foreign aid can be applied to BRI projects. If so, what challenges and problems might these projects face in financing? In the face of global economic weakness and rising regional trade protectionism, how can the huge amount of investment from SOBs control various risks (Ohashi, 2018)? This chapter attempts to provide further discussion on the above issues by combining the literature review and the previously established risk management knowledge.

3.2 Theorizing Development Finance

Financial assistance to developing countries has changed dramatically over the past decades. The shift in donors, incentives, and means give recipient countries more options to finance their national development. At the same time, some formerly indebted states have improved their economic capacity and moved from low-income to lower-middle-income countries, close to the income threshold and no longer eligible for concessional loans from multilateral development financial institutions. Yet this shift does not mean that they will soon become solvent. Some authors have expressed explicit concerns over these vicissitudes of economic landscape: change of status of these recipients implies a rising share of non-concessional sources of financing, and financing infrastructure via international capital markets and PPPs imposed more challenges to their weak institutions and governance over debt obligation (Cassimon & Essers, 2017). While emerging sovereign donors can provide additional capital to boost growth, financial terms are tricker as they lack transparency. Mustapha and Prizzon illustrated that

“*liabilities are attributed to state-owned enterprises*” (Mustapha and Prizzon, 2017), yet both parties share project risks.

Emerging donors has not been a new concept, and studies over the past decade have made it clear that the line between ‘recipient’ and ‘donor’ was blurring. As a growing contributor, not all countries are willing to disclose their statistics in the traditional way (like the DAC), classified as ‘aid donors’. Countries that are sensitive to this label are more likely to frame their actions as "South-South development Cooperation" (SSDC), which means the collaboration between developing countries (Kragelund, 2010). The fundamental difference is that SSDC providers see themselves as mutually beneficial with their partners - they reject the idea that some countries are pure ‘donors’ and others are pure ‘recipients’. In these partnerships, fund providers emphasise exchanging technical skills through specific projects rather than absolute preferential financial support. It should also be noted that in the SSDC cooperation mode, suppliers usually include the purchase of their goods and services in the cooperation terms. For example, China often provides aid programmes in the form of a ‘package’ that includes not only concessional loans, donations, and debt relief, but also investment planning advice and preferential trade services (Zimmermann & Smith, 2011); this is consistent with some of the principles proposed in the BRI cooperation framework. The following sections will clarify the basic concepts of development finance, its evolution and trends in recent years, and a recap of China's unique experience from it and its significance to the initiation of BRI.

3.2.1 The Concept of Development Finance

Developmental finance is the deepening and development of policy-based financial conditions, which realizes the relevant development goal and makes up for the defects of the backward systems in many parts of the world. It

enjoys unique advantages in achieving a compelling connection between the government and the market and overcoming ‘government failure’ and ‘market failure’ (Shang, 2019). Development financing is jointly owned and authorized by official institutions. National credit reflects the government's will; adequately employed, it can be a powerful instrument in conjunction with capital markets for many developing countries. From this perspective, development finance aims to ensure that the necessary financial resources are mobilized and utilized efficiently and sustainably in promoting development and achieving specific developmental outcomes and objectives.

In recent years, scholars consider development financing is a pervasive concept domain, which includes not only the use of international financial resources, official development assistance and overseas development aid, foreign direct investment, migrants’ remittances as well as micro-financing, it can also include the private sector in the development or the role of other types of financing innovation means (Biekpe & Cassimon & Verbeke, 2017; Giorgioni, 2017). Development finance has also involved even more diverse areas, such as enhancing recipient countries' trade capacity and economic growth through financial project cooperation, improving individual financial inclusion and financial literacy, and creating more systemic issues such as more favourable global governance and green finance. These practices of development finance contribute to maintaining reasonable economic and financial security and enhancing competitiveness (Stallings & Kim, 2017). This seems at odds with the OECD's original definition, which was very narrow and restrictive, regarding economic development as the sole purpose of foreign aid. For these financial instruments to succeed in many recipient countries, they may need to reach beyond the economy.

Indeed, as naturally established to be OECD’s Development Assistance

Committee, the Development Assistance Committee (DAC) became the principal coordinating agency for the aid programs of member states. Still, other equally essential means of promoting development should not be excluded, although they may appear to have more excellent motivations and objectives as a political act. As Copper (2016) noted, donor countries need to take these factors into account because they are the essence of what drives governments to the initiative and make aid decisions in the first place. For example, Chinese aid is not fundamentally different from Western aid regarding preferential financial flows. However, suppose the purposes, principles, and practices of China's external development finance are compared with the set of standards by the traditional Western models, such as operating methods and transparency. In that case, there are significant differences between the two (Dunford, 2020). These comparisons are of great significance to the research question related to the origination of BRI, so they will be discussed in detail later in this chapter.

Development finance is also facing practice changes as a constantly updated and enriched concept. In the views of some authors, the single concentration of global resources to achieve multinational goals may diminish the primary responsibility of individual states to use public funds (finance) for domestic development in the first place and may also obscure their considerable relative potential. Its capacity far exceeds that of any source of international development finance (Biekpe & Cassimon & Verbeke, 2017). This goes along with the 'rely on yourself' principle consistently emphasized and flaunted by the Chinese government. The UN's Addis Ababa Action Agenda aims to align all resource flows and policies with sustainable development and integrate all SDGs[14] implementation tools into a comprehensive financing framework to

[14] The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At

support and implement the 2030 Agenda. This agenda introduces the concept of 'sustainable development' beyond previous policies, through policy actions to achieve 'economic, social and environmental' three-dimensional development goals: sustainable global economic activity (production and consumption), environmental protection, and green finance (Murphy, 2016). The realization of these goals cannot do without the support of innovative development means.

From the international perspective, the global participants engaged in development finance are mainly multilateral organizations and institutions – the World Bank Group, The International Monetary Fund (IMF), the World Trade Organization (WTO), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Development Program (UNDP) (UN, 2016). Other academics have also pointed out several new institutions have emerged in recent years, adding vitality to this field. For example, the BRICS Development Bank, the Asian Development Bank, the African Development Bank, the Asian Infrastructure Investment Bank (AIIB), etc. The emergence of these institutions has provided more financial options and support for developing countries in hardship to get necessary funds for development, and the sharing of information and mutual learning of experience among member states have provided policy advice and guidance for direction (Gallagher & Kamal & Jin & Chen & Ma, 2018). Furthermore, development financial institutions are often given the highest score by international rating agencies, and their influence on member countries provides a strong guarantee for them to leverage funds in the global market,

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its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. https://sdgs.un.org/goals.

as well as provides a demonstration for a poise between public and commercial capital risk selection (Mustapha & Prizzon, 2017).

3.2.2 The Importance of Development Finance

3.2.2.1 Foreign aid and emerging donors

From the economic development experience of numerous countries, development finance has long-term financial support for constructing one's economic foundation. Most developing countries have a large population, low GDP per capita, unbalanced development, and unsound market (Miyamoto & Biousse, 2014). Lack of funds is commonly seen in strategic areas such as infrastructure and pillar industries (energy, chemicals, and manufacturing) related to the overall development of the national economy (Mosley, 2015). Development financial institutions are naturally government-funded but mainly adopt market-oriented operation mode, which can directly provide massive long-term funds to the bottleneck mentioned above through project financing to support the sustainable development of the economy. Yet, as Mosley (2017) criticizes, seven decades after the modern form of foreign aid began, wealth inequality between the North and the South remains. This inequality is even rising among some developing countries – they continue to be exporters of primary commodities and importers of manufactured goods. The issues mentioned above inevitably raise concerns about the evolvement of aid flows.

As discussed earlier, existing literature generally defined foreign aid[15] in the context of the Western narrative, predominantly based on the financial system established after WWII. As the OECD has referred it, a grouping of industrialized countries who traditionally provide concessional loans to the

[15] Aid refers to help given to developing countries, defined as those with a per capita income below a certain level, or funds given to multinational institutions such as the UN Development Program or the World Bank. Export credits are usually defined as foreign aid by the OECD (Copper, 2016, p.169).

developing countries defines it: "*(foreign aid) is a grant or loan from the official sector with the primary objective of promoting economic development and welfare...on favourable financial terms*" (Stephenson, 1981). Foreign aid is regarded as an essential means of development finance and is concerned as much as foreign investment. The two concepts are sometimes fussed, especially when standing behind different political and economic views. Perhaps the vagueness and lack of clarity between them are what many developing countries need. For them, the attention is not on the conceptual distinction between 'grants' and 'loans' but on whether it can assist the growth of the economy of recipients (Stallings & Kim, 2017; Copper, 2016).

Another prevalent perception in development finance is that foreign aid has long been a vital instrument of a country's foreign policy. As mentioned earlier, this is not only the traditional practice of Western industrial countries, but some emerging governments started to use aid as a foreign policy tool in recent years. The relevant literature focuses on emerging donors, who are less inclined to follow OECD/DAC guidelines than Western donors with traditional characteristics (Dunford, 2020; Arora, 2017; Stallings & Kim, 2017; Copper, 2016; Zimmermann & Smith, 2011). This evolution draws the attention of academics and policymakers, which may be more interested in the differences in aid delivery between emerging donors and traditional donors than the recipients, as shown in related literature[16]. Stallings and Kim (2017) studied emerging aid and made solid contributions. They argued that traditionally if counted as official development assistance by the DAC, it must include "*official financial flows managed with the primary objective of promoting the economic development and welfare of developing countries, which are concessional and account for at least 25 per cent of grants*" (valid

[16] Non-DAC donors more than doubled aid to Southern recipients during 2010–14, reaching over US$ 24 billion in 2014. See http://devinit.org/development-cooperation-emerging-providers-rising/.

document in tracing the evolution of DAC procedures can be found in OECD, 2006). In comparison, emerging donors are broadly defined and vary in their means of providing aid.

For a long time, traditional donor countries have been dominant in international aid, accounting for more than 90% of the total foreign assistance provided; they also control the formulation of principles, forms, standards and monitoring and evaluation system of international aid (Manning, 2006). Boone (1996) contend international aid is gradually divided into two groups with unequal status: traditional aid donors and traditional aid recipients. Traditional aid recipient groups are economically and politically vulnerable and heavily dependent on aid providers (Arora, 2017). Although Arab countries, the EU, and the DAC have a long history in providing foreign aid outside the traditional donor system, the concepts, principles, and monitoring standards are the same (Kragelund, 2010). Even though Russia adopted a different approach, its rapid withdrawal of aid after the collapse of the Soviet Union brought controversy. At the beginning of World War II, the camp of developing countries also provided a certain amount of aid to other less developed countries under the framework of South-South cooperation; yet this still did not break through the mode of mutual assistance, and the amount of aid was almost negligible compared with traditional aid donors (Kragelund, 2010; Manning, 2006).

In the 21st century, a few developing countries like China, India, and Brazil, in particular, have increased their economic strength and international influence regarding foreign aid. The amount of aid provided by these countries keeps expanding, and the interaction between aid and recipient gradually realizes institutionalization (Arora, 2017). For instance, the establishment of the China-Africa Cooperation Forum and the India-Africa Summit are the main symbols

of this trend. So far, these groups have become increasingly prominent donors nonnegligible forces in international aid – emerging developing donor countries (Stallings & Kim, 2017). It is important to note that these donors are also still traditional recipients, as they have not yet wholly left aid status. Being a relatively general term, all donor countries outside the conventional DAC system are called emerging donors, who can be roughly divided into several specific types: EU and OECD donor countries (that are not DAC members), Arab donor countries, emerging developing donor countries, and Russia (post-Soviet Union) (Ibid). The other groups of donors did not deviate from the traditional aid system in nature, only left Russia being a unique one: it inherited the legacy of the Cold War aid system that the Soviet Union built to counter the U.S influence, but it has since then been controversial in its efforts to collect debts from heavily indebted countries, including many in Asia and Africa (Gerocs, 2019).

In the above comparisons, Western countries generally believe that aid should be based on democracy, governance, and human rights, with particular emphasis on labour rights, environmental protection, and political reform, which has raised more concern in recent years as the international situation has undergone remarkable changes (Stallings & Kim, 2017). Meanwhile, traditional donors are also disputed over the precedence of aid and loans: the US prefers the former, while most European donors prefer the latter, like other East Asian donors (Mawdsley & Savage & Kim, 2014). May this be why some emerging donors have shown little interest in joining the DAC, as have Arab donors who follow the model of ‘South-South-Development-Cooperation’; they strive to distinguish themselves from traditional donors in restricted aid (Brautigam, 2011). Instead, it is being argued that the emerging donors and SSDC providers emphasis more on mutual benefits (China adopt the concept of ‘win-win’ situation), regional

stability, infrastructure development; it may bring insights into successful economic growth, poverty reduction and transformation (Mawdsley & Savage & Kim, 2014; Tsopanakis, 2013; Zimmermann & Smith, 2011). This, however, raises the question of the terms of risk for the use of external funds in recipient countries since aid is more easily restricted than loans, and a combination of the two may be a new idea in this area.

3.2.2.2 Role of government in development finance

In economics, many theories have been controversial due to their applicability among different stages of history, such as the role of government and the market in the financial field. Although there are many pieces of literature to address the issue, the role of government in the financial market is still controversial, especially in the post-financial crisis (2008 subprime-debt crisis). After all, government influence is pervasive in this field, whether as an initiator or policymaker (Dinc, 2005). At the national level, the government plays a leading role in the development of financial institutions its owned or has been the shareholder of; at the international level, intergovernmental cooperation or decent relations could also indirectly influence the investment of multilateral financial institutions, let alone the story of donation or aid (Zhou & Xiong, 2017; Lewis-Workman, 2018).

Table 3.1 Role of government in financial development

Perspectives	Role of the Government	Functions
Development View	Regulator/Producer	Intervene and develop financial institutions
Political View	Conservator	Do not intervene to avoid more problems or conflicts.
Boundaries View	Guardian	Conditional intervention

Source: adapted from Arora, R. (2017)

It has been claimed that the degree of government intervention varies from country to country, and direct market intervention in developing countries is often more significant and more extensive than in developed economies (Wee, 2002). Some scholars agree on the complexity of this issue and try to explain it from different angles. Arora (2017), among other academics, deliberated three perspectives of government intervention in the financial development of the state (Table 3.1). The first one belongs to the ‘development view’, which, based on the supply-side approach, believes that the government should intervene and develop financial institutions, especially at a stage when a country's economic capacity and market are not mature. Various studies with historical evidence are provided as government played a positive role in igniting financial development; the author also finds that it can prove the supporting role of developmental financial institutions (especially development banks) in financial inclusiveness and their counter-cyclical characteristics on the national economy in challenging times (Coleman & Feler, 2015). Studies have shown that state financial institutions actively engage in behaviour that providing loans to businesses during periods of increased financial risk and recession, avoiding the moral hazard problems that are often seen in private banking, and encouraging restraint behaviour; these activities by state banks are often seen as ‘counter-cyclical’, boosting financial inclusion, and promoting economic stability (Bertay, 2015; Coleman & Feler, 2015; Andrianova 2012; Cole 2009). The government's upbeat assessment of financial regulation is also noteworthy.

The second thought is known as the 'political view', which believed that government intervention might lead to problems – including misallocation of resources, excessive intervention, corruption, inefficiency and low level of financial development – studies failed to collect evidence that government

intervention in the financial sector can have a positive impact (Meier & Rauch &, 2000). Other similar studies have been critical of the government's ownership of public banks, pointing out that the government's ownership of banks leads to the improper allocation of resources, which harms financial development and economic growth (La Porta & Lopez-de-Silanes & Shleifer; 2002); compared with loans from private banks, loans from state banks are politically motivated (Dinc, 2005); there is a negative correlation between government shareholding and bank performance due to the exciting relationship (or reward structure) between bank management and politicians (Cornett & Guo & Khaksari & Tehranian, 2010). The research evidence acknowledges the impact of banking reforms in many countries on the industrial structure and argues that the weakening role of the government and the relaxation of banking regulations can lead to increased competition and more efficient allocation of resources.

Some scholars believe that the state's role in development theory oscillates between laissez-faire and state interventionism (Raymond, 2010). On the one hand, interventionists advocate large-scale government actions to solve the problem of market failure; neoliberals, on the other hand, demanded the opening of markets and the spontaneous use of the 'invisible hand' (free market) to guide economic growth and market prosperity (Zimmermann & Smith, 2011). Thus, between these two opinions, there is a thought that limited, specific government intervention can have a soothing effect on the financial sector. This broadly endorses government interference but requires limiting themselves to boundaries outside economic infrastructure, institution-building, regulatory reform and the competitive environment (Arora, 2017).

Related research examined government performance during financial crises and found that fiscal policy in difficult times was more potent in managing

problems than monetary policy, underscoring the active role of governments (Laeven & Valencia 2013; Freixas & Mayer, 2011). Beck (2013) argues that governments should focus on policies that encourage the private sector. These include policies that focus on market development, promote macroeconomic stability, and strengthen credit information; market-based approaches, including regulatory reform, tax reform, and procedures to enhance competition; policies to stabilize markets, improve financial literacy and consumer protection through regulation. Wen and Luo (2015) believe that the government plays an irreplaceable role in constructing the financial system. When a country's economic level reaches a certain level, relatively mature institutions emerge, presupposed by industrialization and financial infrastructure.

Although the positive counter-cyclical role of public institutions in times of economic recession has been acknowledged in many recent pieces of literature, some of the questions they present in ordinary times still bring mixed answers. The results may remain uncertain because it is widely believed in the West. As a World Bank working paper stated, "*state-owned enterprises tend to impede the development of the financial sector, leading to slower growth*" (World Bank, 2001). However, governments still have a valuable role in regulating, building financial infrastructure and promoting macroeconomic stability. It can be seen from the previous discussion of emerging donors and their development models that government leadership can support the financial and economic sectors to move in the right direction at the early stages of economic development (Beck, 2013; Andrianova & Demetriades & Shortland, 2008). This principle also provides a sound theoretical basis for multilateral financial institutions and governments seeking diversified financing opportunities.

3.3 The Development of Project Financing

3.3.1 The Trend of Using Project Financing in the Investment Market

Since the collapse of the Bretton Woods system in 1973, the global economic governance has been influenced by the ‘neoliberal’ trend, which overemphasizes economic liberalization and free markets, thus inevitably limiting the ability of governments to act as regulators and coordinators. As a result, the inadequate supply of public goods in each country will eventually lead to global market failure. This problem cannot be overcome effectively by relying only on the automatic adjustment of the market mechanism and the partial adjustment of the global economic governance system. Because although national markets have gradually become global markets driven by globalization, the guaranteed system behind them is still national (Benard, 2020). Once the financial market problem arises, the risk of each country's resistance and resilience to stress is the first to be tested.

Starting from oilfield development projects in the United States in the 1930s, the application of project financing gradually expanded to the development of various industries. Yescombe (2013) considers that project financing first emerged in developed economies. Rising oil prices have boosted funding for natural resources projects in the 1970s, evidenced by the early development of oil and gas projects in Australia's North Sea. Similarly, the British road system was updated and upgraded in the late 18th and early 19th centuries, using private sector funding based on toll revenue. The expropriation of foreign investment in many developing countries in the 1950s and 1960s led to a gradual decline in foreign private sector investment in key sectors such as infrastructure and natural resources. Still, this trend began to reverse in the 1980s with the pursuit of external finance (Ibid).

Investment and financing include two economic activities, which can be completed by one subject or by different subjects (Berkovitch & Kim, 1990). Investment in the narrow sense refers to enterprises and other issues that use their funds not only to collect capital interest but also to support the production and operation of different subjects and obtain business dividends. Investment in the broad sense refers to all the capital financing behaviour of enterprises. Financing can also be divided into narrow sense and general sense. In the minor mind, financing refers to raising funds for its production and operation; in contrast, in the broad sense, financing refers to raising funds, but the specific use is not limited and can continue to be nested (Yescombe & Farquharson, 2018).

The trend of globalization and the gradual opening of public utilities worldwide has driven the long-term growth of project financing since the 1980s. No matter in developed or developing countries, project financing, as a long-term financing model for capital-intensive projects, has predictable cash flow and financial structure that other investment models can't compare with. The ideal is for international project investors to apply the development experience of one country to projects in another country and for their financiers and consultants to do the same (Yescombe, 2013). Being the most active players in international investments, large international banks and capital-intensive industries are increasingly interested in project financing, which is considered a theme of innovation, especially when the world economy entered a slow recession following the Western debt crisis in 2010.

Project financing is most used in those economic sectors that require heavy capital expenditure for their development, have long-term, capital-intensive assets, extended amortization, and payback periods (Kolodiziev & Tyschenko & Azizova, 2017). It is well suited to financing infrastructure projects,

especially in developing countries that cannot finance these projects in any other way (Triantis, 2018). It takes the excellent operation status of the project itself and the cash flow after the project is completed and used as the repayment guarantee for financing, which has become a vital financing method for sizeable international development projects in the field of transnational investment today (Srivastava, 2016). Triantis (2018) lists several prerequisites that to be satisfied to make project financing work well: (1) a stable political, regulatory and investment environment in the host country;(2) a well-functioning global market, environment and sufficient capital;(3) reasonable industrial structure, legal and regulatory system and fair competition mechanism;(4) identifiable, quantifiable risks and valid contracts;(5) sufficient and predictable cash flow;(6) policy that ensures the long-term viability of the project. Stimulatingly, several of these points are responded to the international investment risk factors defined in the previous chapter, which supports the validity of arguments in this research. This also illustrates the similarity and necessity of project risk management in international investment activities.

3.3.2 The Distinct Nature of Project Financing

3.3.2.1 Definition of project financing

In essence, project financing is the signing of a contract between the partners to form a legally independent entity "*with the sole purpose of executing a project with a finite life*" (Byoun & Kim & Yoo, 2013). It has a unique loan structure that relies on cash flow from the project's operations to be repaid and is secured against the assets and interest of the project. As a result, it is regarded by scholars as an innovative risk-sharing mechanism, which combines organizational structure with the capital structure to maximize project value and optimally allocate project risks (Alam & Yin & Ali & Ali &

Noor & Jan 2019; Byoun & Kim & Yoo, 2013; Esty, 2003). It generally does not require a credit guarantee from investors or a guarantee of tangible assets, nor a promise of repayment from the official department (Garcia-Herrero, 2017). It has also been pointed out by Joseph (2013) that a combination of debt and equity usually funds the loan, as it is difficult for sponsors to raise enough equity for large projects on their own. This nature determines that enterprises involved in project financing need to use non-recourse or limited recourse financial structures to lend for long-term infrastructure, industrial projects, and public services (Joseph, 2013; Byoun & Kim & Yoo, 2013), which are widely used in developing countries that are eager for infrastructure construction.

As an essential choice for the government to provide public services and carry out infrastructure construction, the project financing model offers a new way of thinking to solve the excessive economic liberalization and the free market. Some previous scholars have discussed the meaning of project financing. Berkovitch and Kim (1990) and Esty (2003) believe that project financing can reduce institutional costs resulting from underinvestment in large and high-risk projects, such as mines, pipelines, power plants, roads, railways, factories, manufacturing plants, etc. Leland (2007) argues that project financing can increase ‘financial synergies’, which typically include greater overall funding capacity, cheaper financing for assets that remain in the company, and protection of the company's core assets from the risk of bankruptcy. Berkovitch and Kim (1990) also consider that the priority of bank debt and the control dividend policy in project financing further mitigate the problem of underinvestment or overinvestment that may occur in different market structures.

Similarly, Yescombe (2013) contend the principles of project financing are

usually involves significant infrastructure, with a long construction cycle and long service life, so the funding must also be long term; lenders rely on the future cash flows that projects are expected to generate to pay their interest and fees and repay their debts. Therefore, the project should be legally independent and financially self-sufficient. The project company is a legal entity directly involved in the construction and management of the project and bears the debt. It is also the core of the organization and coordination of the whole project development and construction, and the investors own all or part of the project company's equity. Thus, summarizing the previous viewpoints of other scholars and combining his ideas, Triantis (2018) defines project financing from a rather extensive perspective:

*“It is the art and skill of piecing together new business development elements, financial engineering techniques, and a web of contractual agreements to develop competitive projects and make the right decisions to raise funding for industrial or infrastructure projects on a limited/nonrecourse basis where lenders look to the cash flow for loan repayment and the project assets for collateral.” --“*Project financing for Business Development”, Chapter 1 (Triantis, 2018).

3.3.2.2 Characteristics of project financing

Unlike taking assets as collateral determines the amount of financing by the value of assets, sufficient cash flow is the basis of project financing. Because various infrastructure projects differ among asset types, profitability objectives, capital requirements, and corresponding risks, their returns from financing also vary. Nonetheless, since they all belong to infrastructure projects, some common characteristics are shared, illustrated by various scholars (see Table 3.2). Yescombe (2013) describes the two elements of the

project financing structure – 1. the equity provided by the project investors and 2. the debt provided by one or more lending institutions – they constitute the foundation on which project financing can be implemented. Joseph (2013) further elaborates on several common characteristics of project financing, and Triantis (2018) discuss the different stages of project financing and the associated risks in his articles. Some similar conclusions are drawn, and they seem all to agree that the ideal situation is for all the participants to share the risks in project financing. Below is the summary of some common characteristics of project financing from previous studies (Table 3.2):

Table 3.2 Summary of project financing characteristics by key authors

Authors	Process	Participants	Benefits	Risks or Risk Factors
Joseph (2013)	Construction Phase; Start-Up Phase; Operational Phase	Sponsors; Project Lenders; Project Contractors/ Consultants/ Lawyers/Accountants; Governments; Multilateral Agencies	Scarce Resources; Risk Sharing; Off-Balance Sheet Debt; Avoidance of Restrictive Covenants; Tax Considerations; Extended Tenor	External Risks; Industry Risks; Internal or Entity Risks; Financial Risks; Project Specific Risks; Project Financial Viability Risks
Yescombe (2013)	Development phase; Construction phase; Operation phase	Construction Contractors; equipment suppliers; operators or maintenance contractors; Input Suppliers; Offtakers; other project companies (investment funds, institutional investors); Contracting Authority; Advisors from various fields	High Leverage; Lower Cost; Borrowing Capacity; Risk Limitation; Risk Spreading/Joint Ventures; Developer Leverage; Unequal Partnerships; Long-Term Finance; Enhanced Credit; Reduces Need for Outside Investors; Tax Benefits; off-balance-sheet Financing	Commercial risks; Macro-economic risks; Regulatory and political risks;
Triantis (2018)	Setting up and screening; Project evaluations;	Project team[17]; Government; Project	Reasonable cost for funding; Increases borrowing capacity for sponsors; Risk avoidance; Higher leverage of off-balance-	Project construction and completion; Host country macroeconomic conditions;

[17] Project team include: project executive, project manager, sub project teams (business development, engineering and technology, sales and marketing, finance and accounting, legal, market research and competitive analysis, and strategic project forecasting);

Authors	Process	Participants	Benefits	Risks or Risk Factors
	Important deliverables; Financing structuring	sponsors[18]; Project company; Lenders; Advisors, Consultants, and Insurers[19]; Multilateral and unilateral institutions; Engineering, Procurement, and Construction (EPC) contractors; Technology and equipment providers; Project offtakers and suppliers; Operation and management company	sheet activities; Suitable for large projects with long construction periods; Support of high-quality counterparts; Professional and responsible lenders; Better management of project company; Increases public infrastructure investment for greater project value and efficiency; Increases tax revenues (host government) and provides tax benefits (participants); Reduces the cost burden for the host country government	Political situation in the host country; Host country social and environmental issues; Commercial or market conditions in the host country; Host country legal and regulatory environment; Structuring of project financing; Project company operating conditions; Project administrative issues; Force majeure

Source: author's compilation from various sources

[18] Project sponsors include: project developers making strategic investments, companies looking to increase their international presence and profits, industrial construction contractors, equipment providers;

[19] Advisors, Consultants, and Insurers include: Bid and Procurement Advisors, Engineering and Technology Advisors, Financial Advisors, Insurance Advisors, Legal advisors, Market Assessment and Project Evaluation Consultants (Triantis, 2018).

(1) Participants and responsibilities

Intersecting and overlapping tasks with roles and responsibilities in infrastructure projects require participants with different project financing skills and experience to perform, often in a lengthy and complex process. These factors may vary depending on the sponsor, the country, and the financing capacity of the organization and project (Byoun & Kim & Yoo, 2013). Therefore, it is necessary to clearly delineate the roles and responsibilities of sponsors, participants and numerous third parties. Another key requirement is team coordination to advance the project with quality assured deliverables (Ibid). The complex structure of project financing makes it has stakeholders more than ordinary financing model; Joseph (2013) argue that they primarily include: the project sponsors, project lenders (banks and other financial institutions), project contractors, both governments, and other service providers (consultants/lawyers/accountants, material supplier, etc.). Yescombe (2013) and Triantis (2018) put some weight on the project teams, off-takers and various kinds of advisors (Table 3.2).

The Project Company is a legal entity created by the sponsor to own the project assets, enter into contracts and agreements, and manage the project's cash flow (Yescombe, 2013). It exists to maximize the efficiency of the project execution and the completion of various benefits. While fulfilling its contractual obligations, it typically provides support for project financing by signing 'subcontracts' designed to transfer risk from the project company to other parties as part of the lender's guarantee program (Ibid). Meanwhile, most project investors lack the necessary knowledge, skills, and resources; the workload in the project financing process is enormous. At this point, the project company's team is critical. Senior managers typically lead the project team with industry experience, capabilities, and resources on the project. It

plays a crucial role in developing and overseeing the completion of the project (Triantis, 2018). The project team consists of sub-teams with experience in new business development, engineering and technology, sales and marketing, finance and accounting, legal, market research and competitive analysis, and strategic project forecasting (Kolodiziev & Tyschenko & Azizova, 2017). It may also include representatives from other stakeholders who coordinate with the team leader.

Project financing is a tricky issue; the issue of coordination is often reflected in the difficulties encountered by a specific project. Financial institutions (including banks, export credit agencies, etc.) are the leading providers of project financing funds, one or two banks or a syndicate of more than a dozen banks (Triantis, 2018). In addition to providing partial equity funds, project investors generally provide specific credit support to the project company through direct or indirect guarantees (Alam et al., 2019). It is usually not the deal for commercial banks who lack experience in this area because it differs from short-term credit. For example, the riskiest part of some projects is the construction phase, such as hydroelectric power; for chemical industries, the start-up phase usually is more challenging. These require specialized knowledge and skills and long-term experience working with project developers. Therefore, a certain number of professionals who are "…*interdependent and require a high level of communication, coordination, cooperation, and collaboration and, most importantly, skilful project management*" (Triantis, 2018) are hired as financing consultants to ensure the success of the project. These people are usually specialized heads and members of the finance departments of investment banks, financial companies, commercial banks, or sometimes from government departments. They often accomplish tasks by setting up thematic groups (Aibai & Huang & Luo & Peng, 2019).

Buyers of project products also play an essential role throughout the project lifecycle. The sale of products is generally achieved through a long-term agreement with the buyer in advance, and the stable future cash flow resulting from such an agreement forms the credit basis for bank financing (Triantis, 2018; Joseph, 2013). For instance, economic growth in developing countries has brought the pursuit of energy projects. The prices have fluctuated dramatically due to the change of pattern among supply and demand of the global market. Therefore, the key often lies in whether a stable and long-term sales agreement can be signed with the buyer in the product sales contract to meet the loan provider's requirements (Garcia-Herrero, 2017).

In addition, the role of government and project consultants cannot be ignored. The responsibilities of the host government depend on the nature of the project, the type, the shareholding status of the public sector, etc. (Triantis, 2018; Joseph, 2013). Sometimes, government agencies also need to provide specific resources and services in project financing. The importance of consultants is evident in the fact that the public sector in most developing countries has traditionally relied on sponsors, financiers, and multilateral development agencies from developed countries for project management and experience transfer. Its responsibilities cover all aspects of project initiation, evaluation, financing, construction, and post-operation operations, including risk assessment and due diligence in some cases (Ibid). In the early days, various consultants came from developers and financing institutions. Still, with the international division of labour and the development of the industry, many of these tasks are now taken on by external consultants (Garcia-Herrero, 2017).

(2) Phases of project financing

A good project process provides a platform for communication, coordination, cooperation, and collaboration for financing projects (Joseph, 2013). In this process, project goals are highly correlated with deliverables, and procedures ensure that the project team needs the time and funding to produce the desired results effectively. According to Table 3.2, the first is the critical period for any project, when project financiers come up with the money to pay for materials, equipment, and related costs (Triantis, 2018; Joseph, 2013). Depending on the case's complexity, the construction period can range from a few months to several years. Later in this phase, the project's success is verified as funding dries up. In the financing structure analysis stage, through the in-depth and extensive study of the project, the project financing consultant assists the investors in formulating the financing plan, signing the relevant memorandum of understanding, confidentiality agreement, etc., and establishing the project company (Ibid).

At the second phase, as construction is completed and the necessary technology is acquired, the testing period starts to ensure that all machinery, equipment, and personnel function properly and produce good results (Triantis, 2018; Joseph, 2013). This may last several months and would probably end with multiple trial runs. The risk at this stage is that with the increase of loan interest, if the project is delayed in delivery, it may incur a high-cost burden or even lead to a liquidity crisis, which requires seeking additional financing (Garcia-Herrero, 2017). Finally, after the pilot run is completed, the project operates and generates a revenue stream as planned. The challenge is then in the business operation of the project and the delay in payment of loans (Joseph, 2013).

Triantis (2018) believes that the project financing process refers to the steps

and actions of project construction, development, and financing to raise funds. Therefore, the project financing process should be transparent on timing and task allocation of specific tasks. Nevertheless, this is tough in practice because uncertainty and change happen all the time. He believes that the selection of projects should be completed first. Then in the financing negotiation stage, financing consultants will represent investors to communicate with banks and other financial institutions to provide project information and financing feasibility reports. Through site visits, due diligence and rounds of negotiations, investors and lenders will work together to draft documents related to the financing (Ibid). At the same time, the investor also needs to sign the relevant documents, such as the bank's sales guarantee agreement. Contracts are likely to be negotiated back and forth in the investor's best interest to the extent acceptable to the lending bank (Srivastava, 2016).

In the project evaluation stage, the sponsor organizes other parties to evaluate the external environment, risks, and trends, identify the project constraints, significant issues, engineering and technical issues, and determine the financial requirements (Triantis, 2018; Joseph, 2013). After creating the feasibility study, the decision team moves the project to the next stage. In this case, the lender needs to study the project company's cash flow estimates and ratios to obtain the funder's cost-effectiveness and ratios assessment (Byoun & Kim & Yoo, 2013). In the financing execution stage, banks would get involved and strengthen the supervision of the project execution process (Srivastava, 2016). Usually, the lending banks would supervise the progress and participate in decision-making. Meanwhile, it will manage and control the loan capital input and cash flow of the project following the provisions of the financing documents. Banks' participation helps investors strengthen the control and management of project risks to a large

extent so that all parties involved can share risks and benefits (Triantis, 2018; Joseph, 2013).

(3) Common characteristics of project financing

According to the studies of different authors (Table 3.2), there are some common characteristics in the implementation processes. Firstly, it has limited recourse or no recourse. In other forms of financing, while investors borrow from financial institutions for the project, the debtor is the investor rather than the project itself (Triantis, 2018; Joseph, 2013; Yescombe, 2013). Investors provide guarantees to repay debts out of their assets or income; creditors have full recourse to the debt, and investors must repay the loan even if the project fails. Therefore, the financing person's loan risk in this mode is relatively small, while the investor should bear part of the responsibility for the debt (Ibid). The lending bank may have recourse to the investor of the loan for a certain period (e.g., the duration of the project construction) or within a specific scope (subject to the terms of the contract); once the project is completed or particular criteria are met, the loan becomes non-recourse (Byoun & Kim & Yoo, 2013).

Secondly, the project financing risk is dispersed, so is the complexity of the guarantee structure (Joseph, 2013). Since project financing generally requires large amounts of capital and carries high risks, the provision of funds often involves multiple financial institutions. The degree of risk undertaken by all parties shall be defined through written agreements. According to Byoun, Kim and Yoo (2013)'s research, the syndicated loan[20] structure will form a tight

[20]**Syndication loan** project financing generally has the following characteristics: 1) the provided loan can meet the borrower's long-term and large capital needs. Commonly used in transportation, petrochemical, telecommunications, electric power and other industries, new project loans, large equipment leasing, enterprise merger and acquisition financing, etc. 2) it takes less time and effort to raise fund. After the loan terms are agreed upon between the borrower and the arranging bank, whom shall be responsible for the formation of the syndicate. For instance, in the execution stage of the loan, the borrower does not have to

and complex security system. Project risks are shared among syndicated members, in which the loans are diversified across projects that banks can readily assume project risk in return for greater control. Under this circumstance, one (or several) banks that have obtained the loan business take the lead, and the parties involved (banks, non-bank financial institutions) use the same loan agreement to provide financing to the same borrower at agreed terms and conditions (Triantis, 2018; Garcia-Herrero, 2017; Yescombe, 2013).

Thirdly, project financing typically has a large financing proportion and high financing cost (Triantis, 2018; Joseph, 2013). It mainly requests to consider whether the project can generate enough cash flow to repay the loan in the future and the risks existing in the project itself. There is not much requirement on the equity capital invested (Ibid). It is more complex than other investment models and is a considerable challenge for any lender. In this case, most or all the financing is through bank loans (Srivastava, 2016). As discussed above, due to the high risk associated with project financing, complex financing structure and guarantee procedures, and multiple participants, much work and processes need to be completed in the early stage, as well as costs usually incurred in advance – such as financing consulting fee, lawyer fee, deposit, etc. (Garcia-Herrero, 2017; Srivastava, 2016).

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face all the contracting members, and the related loan management work such as drawdown, repayment of principal and interest is completed by the agent bank. 3) various forms of syndicated loan operations are provided, and a variety of currency choices or combinations can be arranged accordingly. 4) if a single bank acts as the lead bank, its loan share shall not be less than 20 percent of the total amount of syndicated financing; the distribution to other members shall in principle be no less than 50 percent. According to the lead bank's responsibility for the arrangement, the distribution of syndicated loans can be divided into three types: full underwriting, partial underwriting and best-effort marketing. 5) after the signing of the syndicated loan agreement, the lead bank will collect funds to provide loans to the borrower according to the amount and schedule determined by the relevant loan conditions, and accept the authorization of the syndicated bank to supervise the loan funds. This responsibility may be assumed by the lead bank or negotiated by the syndicate members. (Hill and Hult. (2018). Chapter 8: Foreign Direct Investment. International Business. McGraw Hill, Renmin University of China Press, P 168-191.)

Finally, project financing can isolate project risks through the established ‘entity’, or ‘SPE’ (Special Purpose Entity) according to the definition from Basel II (Basel Committee on Banking Supervision, 2005), and remove them from the project sponsor's balance sheet (Alam & Yin & Ali & Ali & Noor & Jan, 2019). Therefore, the project failure will not affect the sponsors’ balance sheets and other common shareholders, enabling them to maintain acceptable existing financial ratios and credit ratings (Joseph, 2013). For project investors, the benefit and value of off-balance-sheet financing allow companies to invest more with limited resources, especially when investors' investments exceed their assets (Ibid).

3.4 China’s BRI and Development Project Financing

The world economy has undergone fundamental changes since the subprime crisis in 2008 – major economies were experiencing weak growth, development in different regions was further differentiated, and the international economic pattern is becoming increasingly complex. On the one hand, the traditional model of global governance led by developed countries, especially the US, was increasingly challenging to reflect the interests and demands of developing countries (Nalbantoglu, 2017). Changes in the global economic pattern have put forward higher requirements for global economic governance (Garcia-Herrero & Xu, 2018). On the other hand, more flexible models of regional economic cooperation were emerging one after another on a global scale, which can more reasonably reflect the interests of all parties and become a community of interests that integrates political, economic, and cultural fields (Huang, 2016).

The Chinese government, academia and business community have all

responded to this trend, as the BRI can be seen as a new cooperation model and new proposition for global economic governance – although the underlying ideology (of BRI) is seen as "*relational governance than rule-based governance*" by some scholars (Wang & Zhao, 2021). For example, China has a long tradition of providing aid to Africa that dates to the 1950s. China's aid and financing measures to many countries on the African continent give it a prominent position in Africa's infrastructure construction. Its influence on some countries even exceeds that of traditional donors (Tan-Mullins & Mohan & Power, 2010). From China's point of view, its experience in infrastructure construction, mineral resources exploitation and modern agriculture in economic development is in line with the development needs of recipient countries (Wu & Pan, 2019). From pure foreign aid to development financing projects, countries that have worked together for years with China would naturally become more and more applicable to the BRI framework.

3.4.1 Controversy over China's Development Financing Activities

3.4.1.1 Voices of critics

International Monetary Fund defines the forms of international investment from the perspective of assets as the following:

"*(1) Foreign Direct Investment (FDI), (2) Foreign Securities Investment (FPI), (3) Financial Derivatives, (4) Other investments including trade credits, loans, currencies and deposits, as well as Official Development Assistance (ODA) or foreign aid, (5) Reserve assets including gold, Special Drawing Rights (SDR), IMF reserve position, Foreign Exchange and Other Rights*" (Statistical Division of the IMF, 2002, p.10).

Thus, although it is not strictly a profit-oriented financial behaviour,

international aid is also a type of investment. According to some scholars, overseas development assistance, foreign direct investment, migrant remittances, and microfinance, as concepts that belong to the broad field of development finance, are all sources of income that developing countries rely on (Biekpe & Cassimon & Verbeke, 2017; Giorgioni, 2017). Therefore, it is in the self-interest of both donor and recipient countries to closely follow developments in this area.

As discussed above, the emerging developing donor countries have a dual status of being both donor and recipient. These donor countries achieved national independence or unification only after World War II, and their economic strength was relatively weak. Their aid amount and international influence could not be compared with traditional donors (Mawdsley & Savage & Kim, 2014). However, China is one prominent example of rapid economic development and an ever-increasing amount of foreign aid that gradually posed particular challenges to traditional donor countries (Kitano, 2018). This behaviour of export financing, which is entirely different from the conventional model and values, is bound to bring many disputes.

Different countries are involved in international aid for other purposes. Developed countries provide aid to developing countries and heavily indebted countries because of humanitarianism and the maintenance of the existing international order, as well as the need of building value alliances (Lewis-Workman, 2017); emerging donors hope to enhance international exchanges and further economic cooperation with recipient countries after their financial capacity are strengthened (Mosley, 2017; Mawdsley & Savage & Kim, 2014). As a developing country, China's development experience might be more conducive to understanding the needs of recipient countries (Zhou, 2017). Therefore, it promotes the mode of aid and investment at the same time in the

provision of financing so that the status of donor and recipient countries could be equally treated.

Nevertheless, the complex role of China in international aid and investment is somewhat controversial. As a traditional recipient, China has received all kinds of aid from Western countries in the post-war era until it has been tapering off in recent years. At the same time, since the 1950s, China has attached great importance to South-South cooperation and provided a large amount of assistance to other developing countries, especially in Africa (Stallings & Kim, 2017). When its national strength was still relatively weak, these activities did not attract much concern. Yet as China’s international influence has grown, its outward economic impact, including aid and economic cooperation with developing countries, has proliferated (Strange & Dreher & Fuchs & Parks & Tierney, 2017; Tsopanakis, 2013). The rise in power has raised attention from the West, especially on its state system and different ideology, with some even describing it as a ‘rogue donor’ (Dreher & Fuchs, 2015; Reisen, 2007) or ‘revisionist’ state who is attempting to overturn the existing international order (Hameiri & Jones, 2018; Kragelund, 2010). Broich (2017) even dig into China's aid activities in Africa and attempts to prove that authoritarian regimes receive more Chinese development finance than democratic ones.

This complexity is not only because of the challenges its rise poses to traditional donors and investors but also because of the different ways of implementation due to different institutions and philosophies. Brautigam (2011) argues that China's aid programme is widely seen by critics as prominent but focused on propping up pariah regimes or paving the way for Chinese companies to access resources. Some are also concerned that China's actions could undermine hard-won reforms in aid and official finance

(Winter & Wilson, 2010). Stallings and Kim (2017) contend that, by not following the DAC's definition of the grant component required for ODA, but rather mixing official with other financial flows, much of China's development assistance behaviour is seen as providing funds to advance its political or commercial interests rather than promoting the development of poorer countries. Similar arguments are from Winter and Wilson (2010): "*The Chinese system deviates from the OECD approach, which is to divorce official state support from commercial arrangements by private actors*". These accusations also pointed to other emerging donors but are mainly aimed at China.

3.4.1.2 Sounds of advocacy

The spirit of South-South Cooperation is the guiding principle of China's foreign aid, and it adopts a different concept from the traditional donors (Arora, 2017). The emergence and fundamental value of BRI are to break the conventional model of international aid and seek breakthroughs, promote aid activities in a new form based on bilateral interests and achieve mutual benefit and win-win results. During such interactions, the characteristics of pertinence and experience output are prominent and greeted by recipient countries (Brautigam, 2011). The admirers believe that the leverage provided by Chinese finance forms an essential counterpart to the official assistance provided by DAC donors, allowing countries to develop infrastructure and invest in productive activities that have been neglected by OECD development cooperation in recent years (Ibid).

Critics aside, Stallings and Kim (2017) also point out that China is seen as lending mainly not to heavily indebted developing countries, but to countries with rapidly growing foreign exchange reserves (oil exporters); seemingly, it is

helping recipient countries repay their debts by stimulating their exports and maintaining steady GDP growth. Frankly speaking, many governments that receive aid from China are considered corrupt, but studies found the corruption level in these countries decreases after that (Wolff, 2016). This may be because China has taken more interest in the governance of these partners recently, not just to respond to criticism but also as a consideration for sustainable growth and future cooperation (Kong & Gallagher, 2017). The experience of this dual role gives China the potential to balance outward export (economic strength) with the maintenance of the international order, which is essential in the current complex global situation.

Other scholars have also studied China's emergence as a funder in this realm and exciting findings. Levy (2011) reviewed one famous book, “The Dragon's Gift: The Real Story of China in Africa” (Brautigam, 2009) and concluded that China’s emergence is not a surprise, somewhat a long-time preparation and different from other traditional participants. On the one hand, China's approach to aid is almost entirely project-oriented but with some different characteristics. Although western countries' assistance to developing countries after World War II was mainly carried out based on projects, since the 1990s, these development finance began to focus more on policy, institutional building and promoting reform (Strange & Dreher & Fuchs & Parks & Tierney, 2017). On the other hand, Chinese investment projects in Africa are development financing based on commercial terms – projects guided by government policy and operate since commercial interests. These projects are designed to make profits rather than assist local policy reforms (Blanchard, 2020). China utilizes its experience in identity transformation – from recipient country to donor country – to promote outbound investment and exchange natural resources for infrastructure construction and related skills and knowledge from developed countries (Tsopanakis, 2013). After decades

of rapid growth and accumulation, China now has enough stock of resources – capital, equipment, machinery, and technology – to export to other developing countries, which align with the 'going out' policy and later the proposal of BRI (Boute, 2019).

As a new platform for development project financing in China, BRI aims to reconfigure its external economic sector through China's strong economic growth while exporting to partners. It is an almost complete upgrade of the traditional international aid model, with infrastructure-focused, and a platform and mechanism to maintain multichannel engagement with partners (Huang, 2016). By leveraging the successful experience of emerging economies (mainly by China), identifying and matching the specific needs of participating countries and making them new economic pillars in the region (Buranelli, 2018). However, due to the lack of a unified coordination mechanism, conflicts between different systems, and the high risk of cross-border projects, the road to success is still bumpy (Huang, 2016).

3.4.2 Application of Development Project Financing in the BRI

3.4.2.1 The status quo of development project financing in China

Dunford (2020) and Copper (2016) have combed China’s development financing evolution, which can be summarized as the following three stages: the first stage is the primary stage of policy-based finance, which uses government finance to make up for market failure. The second stage is system construction, which develops finance to participate in economic activities with national credit, promoting and improving the market and system. The third stage is participating in the operation as a market subject (Ibid). With the full development of the market and the continuous improvement of various systems, national credit is separated from the

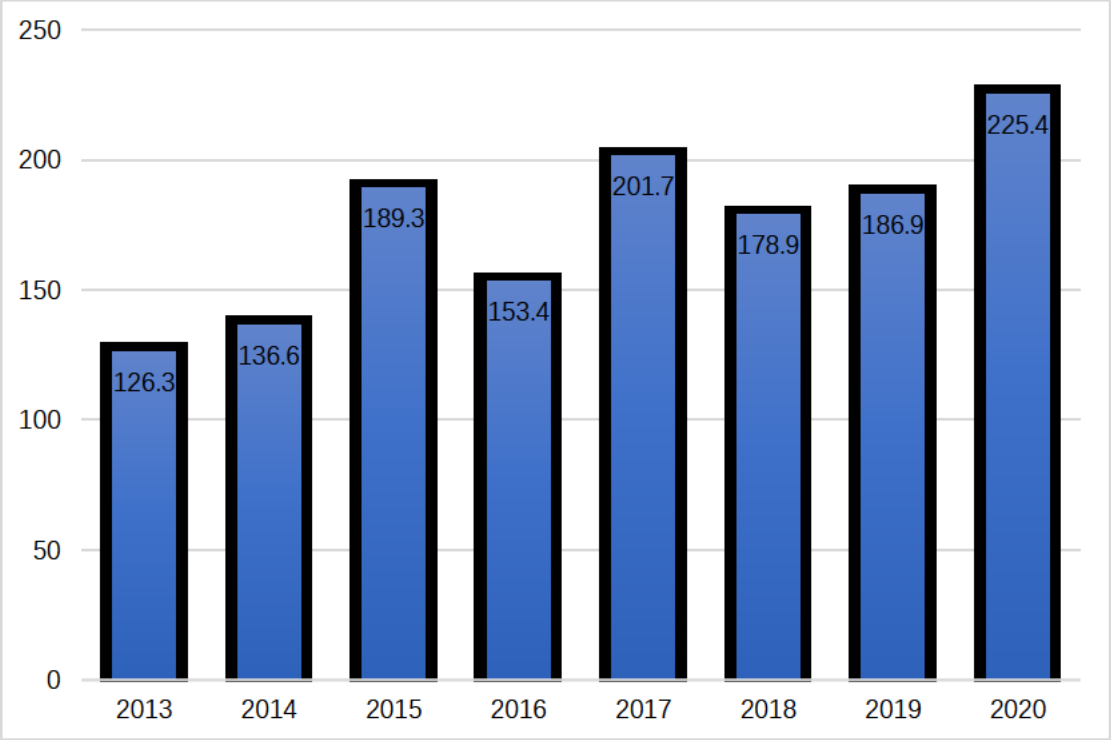
financial operation. The latter is wholly brought into the track and framework of the market (Murphy, 2016).

After studying the unique model of Chinese development finance, some scholars put forward the view that it is different from policy finance. The former refers to the financing of financial funds, which operate with market orientation and effectively guide the private sector funds to distribute to reasonable industries (Aibai & Huang & Luo & Peng, 2019). The international capital market's general trend is to transform financial funds into credit funds to improve operational efficiency. At the same time, in most developing countries, including China, financing channels are mainly realized through financial intermediaries (e.g., SOBs), and development financing bears long-term tasks different from policy finance (Yescombe, 2013). Although there is government intervention and supervision, the capital operation of development finance is market-oriented, with a transparent pricing theory and property right system (Yi, 2014). For example, development finance is mainly the most advanced project for resolving property rights disputes in developed countries.

In a proposed multi-layer financing framework of the BRI, the leading players at different levels have dissimilar financing models. For example, domestic policy banks mainly provide low-interest and long-term credits such as concessional loans, concessional export buyer credits and special-purpose loans, and strategic equity investments through multilateral or bilateral funds (Shang, 2019). These funds are channelled mainly in project financing to specific projects in host countries. State-owned commercial banks (primarily the ‘big four’) have overseas branches and provide a full range of loan products, mainly in the form of bank credit (off-balance sheet), syndicated loans, domestic and foreign bonds, and cross-border comprehensive financial

services to different projects (Ibid). Emerging multilateral development financial institutions, such as the Asian Infrastructure Investment Bank (AIIB) and the Silk Road Fund, target the BRI projects and provide diversified and innovative loan models in the form of credit, bonds, equity investment and insurance and based on international standards (Gransow & Price, 2019). As seen from the statistics below (Figure 3.1), with the advancement of BRI, the overseas investment stock of Chinese SOBs has increased significantly in recent years.

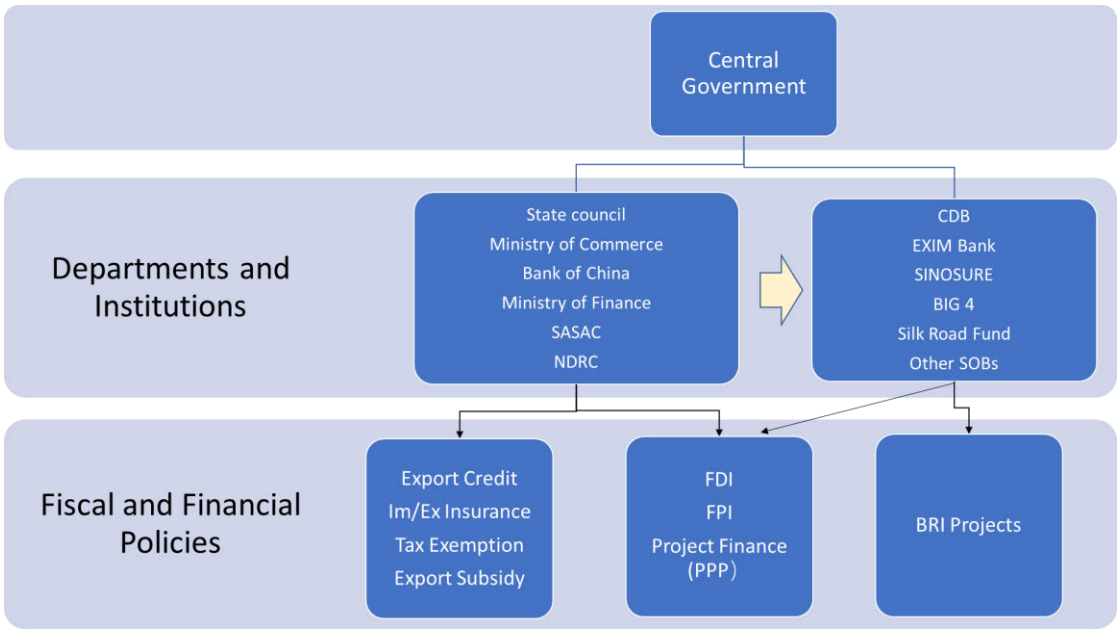
Figure 3.1 China's investment in countries along the BRI, 2013 to 2020 ($ billions)



Source: author complied (2021)

With the gradual improvement of China's financial system reform, the financing scale has expanded year by year. In principle, BRI welcomes traditional multilateral financial institutions worldwide to provide loans to the BRI projects, mainly on preferential interest rates and terms; they may also

cooperate with Chinese SOBs for investment and financing (Aibai & Huang & Luo & Peng, 2019). According to police documents, other major affiliated financial institutions involved include export credit insurance companies, law firms providing overseas investment guarantee and export credit insurance, investment and financing consulting services, and accounting firms (OECD, 2018). China's state system requires the government to play a central role in supervision and approval. On the one hand, it provides policy support for the BRI investment; on the other hand, separate departments are responsible for examining and approving projects of different natures. Based on literature study and analysis of policy documents, the above discussions can be summarized as the BRI financing structure through the following Figure 3.2 BRI project financial structure model:



Source: author

Some also believe that China's development finance adopts the national credit system and market and does not take profit as the primary purpose but relies on market performance to survive and maintain asset quality (Aibai & Huang & Luo & Peng, 2019). Such funds are concentrated in a particular area

(the BRI), which aims to achieve the economic and social development of the investment object and does not involve the interests of individuals or institutions (Murphy, 2016). This will help to maintain the government's image enhance its national credibility. At the same time, later private capital can then be brought in slowly, as other modes of cooperation such as PPP can be adopted to diversify risks (Srivastava, 2016). These views are in harmony with Yescombe's (2013) idea, who contend that large-scale public sector projects in developing countries have traditionally been financed through international banking credit markets, multilateral development financial institutions (such as the World Bank), or through export credits to developed countries. However, with privatization and financial deregulation, private financing through PPP would change how major infrastructure projects are financed, then shift a significant portion of the financing burden to the private sector (Delmon, 2010). Although the risks are dispersed accordingly, higher requirements for corresponding project financing management are put forward.

3.4.2.2 Application of the PPP projects in the BRI

(1) The concept and structure of PPP

"PPP is a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance." (PPP Knowledge Lab, the World Bank, 2021).

The history of private capital involvement in the transport sector can be traced back to the canal and road concessions in Europe and the US in the 17th century, the construction of the US railroads in the 19th century, and many early public transport systems. The private sector develops public infrastructure under various municipal concession or franchise arrangements. It generates revenue from ticket prices and land development (Economic and

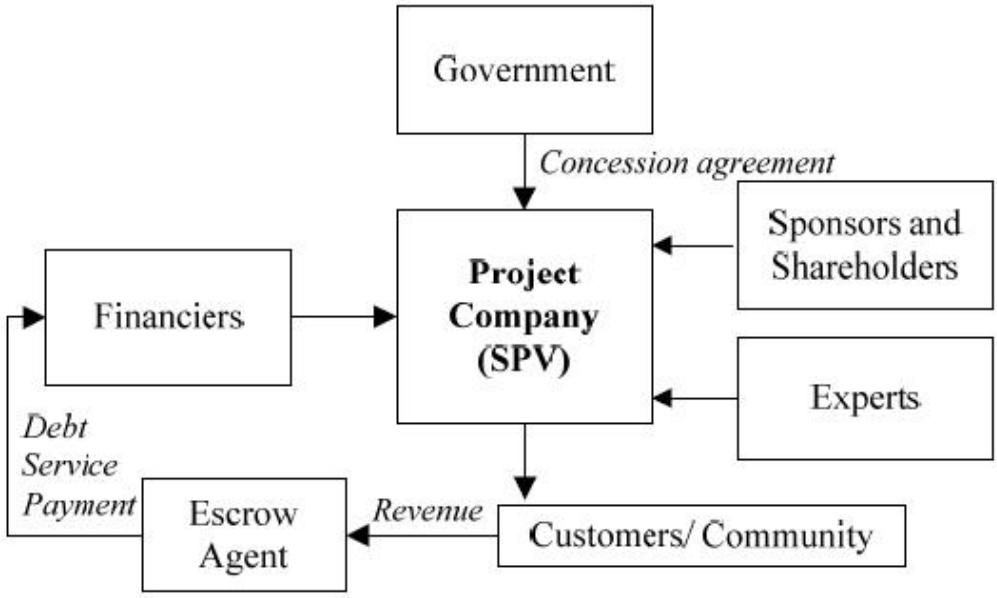
Social Commission for Asia and the Pacific, UN, 2008). As a particular type of project financing, the concept of Public-Private Partnership (PPP) originated from the PFI (Private Finance Initiative) proposed by the UK. In the 1990s, PFI raised money for the UK government through social capital, reducing the government's fiscal expenditure and ensuring that the UK had enough money to develop public services. Over a considerable period, responsibility for public services, such as transport and health, has shifted from the public to the private sector (Eaton et al., 2007).

Triantis (2018) argues that project financing, which is generally considered a broad conceptual area, also include development financing, asset-based lending, cash flow, and covenant light lending; it mainly finances PPP projects used for land acquisition and to finance economic development projects such as ports, airports, roads and Bridges. Yescombe and Farquharson (2018) believe that there are two main PPP models: the construction or renovation of public infrastructure (such as roads, bridges, tunnels, airports, ports, railways, etc.), which generate revenue from tolls, fares, or similar fees charged by users (‘user charges’); the other form is the ‘PFI (Private Finance Initiative) model’: construction or renovation of public buildings (such as schools, hospitals, prisons, public housing or government offices) and other public infrastructure (such as roads, railways, water treatment facilities or sewage treatment plants), in which the income is derived from fees paid by the contracting authority (the ‘service fees’) (Ibid).

Figure 3.3 shows a typical PPP structure, which involves contractual arrangements between many parties, which may include: government, project sponsor, project operator, financiers, suppliers, contractors, engineers, third parties and customers (Triantis, 2018; Yescombe & Farquharson, 2018). The figure shows a simplified PPP structure, yet the actual structure depends on

the type of partnership and could be more complex. It should be noted that the ‘financiers’ refer to all parties of the investment project, generally equity and debt investors, which may include domestic banks, international banks, other financial institutions, bilateral and multilateral donor agencies, development banks, etc. In addition to the government being the regulator and fully involved in the project, sponsors, other investors, and a team of experts will also serve in the SPV, which is no different from project financing. When the PPP project is completed and delivered, the cash flow generated by its operation will be fed back to the escrow intermediary and eventually repaid to the financiers. China’s SOBs often use this model in typical BRI projects, which are essentially development financial institutions that use PPP projects to invest in large projects in countries along the route.

Figure 3.3 Typical structure of a PPP project



Source: ESCAP, UN (2008)

(2) The types of PPP model

From the popular trend, PPP projects are mainly operated by private

contractors, conducive to the coordination between government and social capital. But for the private enterprise, this kind of mode bears the greater risk and heavier capital burden (Yescombe & Farquharson, 2018). At the same time, as can be seen from cases in the past, some PPP projects have caused disputes due to the control rights and due revenue issues (Kolodiziev & Tyschenko & Azizova, 2017). According to Yescombe (2013), the PPP model can be divided into four types in respect to their risk-bearing capacity: Build-Operate-Transfer (BOT) Projects, Build-Transfer-Operate (BTO) Projects, Build-Own-Operate-Transfer (BOOT) Projects, and Build-Own-Operate (BOO) Projects. The choice of a specific model depends on the exact situation of the project. The following is a summary of key authors' definitions of PPP modes (Table 3.3):

Table 3.3 Summary of PPP type, operation mode and degree of privatization

Mode	Description	Degree of privatization
Build-Operate-Transfer ('BOT')	Government departments sign franchise agreements with project companies to authorize them for project preparation, construction process and post-stage management, collect fees within a specified period and use this cash flow to make repayment or even earn some profits. After the expiration of the specified franchise period, the government can take back the management right of the project unconditionally. The Project Company may also obtain leases for the project site and associated buildings and equipment during the term of the project, which is known as build-lease-transfer (BLT) or build-lease-operate-transfer (BLOT).	low
Build-Transfer-Operate ('BTO')	Like BOT projects, the contracting authority does not take ownership of the project until construction is completed.	low
Build-Own-Operate-Transfer ('BOOT')	Private enterprises raise funds in the form of franchise project companies, which own the project ownership after the completion of the project construction and receive the project profits during the period. When the franchise expires, ownership will pass to the public sector. In practice, BOOT mode is only applicable to large infrastructure projects such as water, electricity, transportation and energy.	medium

Mode	Description	Degree of privatization
Build-Own-Operate ('BOO')	A project company ultimately owns the ownership of the project through a private partnership or international consortium, so the private company receives the residual value of the project. The specific method is to construct a project and transfer ownership to the project company after completion. The government or the public sector will acquire the project company when the project service is needed. On the one hand, the public sector saves a lot of resources (human, material and financial) through this mode, learn advanced technical means from enterprises, and retains fees to ensure the competitiveness of the public sector. On the other hand, project companies can get paid and expand their assets. Ownership of these projects remains with the project company throughout their life cycle, for example, privatization of power stations in the power industry privatization of hydroelectric power stations or mobile phone networks.	highest

Mode	Description	Degree of privatization
Transfer-Operate-Transfer ('TOT')	For an infrastructure project that has already been built, the government department of the host country or the relevant SOEs have the right to use the project for a certain period and transfers the ownership in the form of a contract. This model involves the transfer of ownership from the government to the firm and finally move back to the government, with all profits going to the private firm during the transfer. Similar to China's land contract system.	medium

Source: author's compilation from multiple sources (PPP Knowledge Lab, 2021; Yescombe & Farquharson, 2018; Delmon, 2010; ESCAP, 2008)

If related to the BRI, the level of privatization of different modes varies as preferences are other in different regions, so does the related risks. Generally, the private sector assumes low stakes, the financial participation is high, the proportion of the BOT model is high, and the enterprises still return to the government after the operation (Xenidis & Angelides, 2005). Yet, in regions with higher levels of economic development, the private sector tends to be riskier, and the variation is also related to the degree of financial support. Developed countries, for example, are more likely to follow a ‘big market, small government’ model, so many utilities rely on market forces (Aibai & Huang & Luo & Peng, 2019). Of course, this ultimately depends on the nature of the project, the preferences of the host country and the circumstances of the host country and is negotiated through a series of complex negotiations.

(3) The development of PPP modes over the BRI

As with domestic public infrastructure projects in China, direct fiscal investment is likely to result in inefficiency and rigid management; however, there is also resistance to bringing in social capital alone. Social capital is also reluctant to get involved in BRI projects for its for-profit and cash flow reasons (Garcia-Herrero & Xu, 2018). Therefore, the PPP model is considered suitable for matching BRI projects in countries along the route with its unique nature and characteristics. This is also valued by the Chinese authorities because, on the one hand, it can make up for the shortage of state-owned assets, and on the other hand, it can drive and activate social capital forces.

At the beginning of 2017, China's National Development and Reform Commission, together with 13 departments, jointly established a ‘BRI PPP Working Mechanism’ to “*coordinate and manage investment projects, to better use of the PPP model to promote infrastructure interconnectivity and encourage and help Chinese enterprises to go out and push related*

infrastructure projects to the ground" (National Development and Reform Commission, 2017). According to the policy document, the leading role of policy-based finance and the central role of commercial finance should be given full play, bank-enterprise cooperation mechanisms should be improved, and financial institutions should be supported to expand low-cost credit financing channels. At the same time, expand export insurance coverage, innovate risk-sharing mechanisms, and reduce insurance costs. Direct financing and equity investment should play a balanced role in BRI construction (Ibid).

Table 3.4 National infrastructure PPP projects of BRI countries from 2012 to 2018

Region	Active project	Contract completed	Cancelled projects	Projects in crisis	Summary
East Asia	550	0	1	1	552
Central Asia	1	0	0	0	1
South Asia	348	0	18	1	367
Europe	174	0	0	0	174
The Middle East & North Africa	34	1	0	0	35
BRI Country Total	1107	1	19	2	1129
Global Total	1822	1	21	2	1846

Source: ‘Private Participation in Infrastructure Annual Report’, World Bank (2019)

As shown from above Table 3.4, the implementation of PPP projects in BRI countries accounts for more than 60% of the global total. Asia has the most construction projects, accounting for more than half of BRI's total. It is worth noting that although there are many active projects, most of them are infrastructure construction with large investment amounts and long construction periods, so the number of successful contracts is small. According to the regional distribution, Asia and Europe is the leading investment region, followed by the Middle East and North Africa. The project environment in the Middle East is deprived, and the domestic situation is unstable, so there is a risk of project deficit. From the perspective of the regional structure, East Asia has the most significant number of active projects. This region, represented by China, has the essential infrastructure construction projects, accounting for 33.87% of the total BRI and nearly 70% of the total in East Asia (PPI Annual Report of World Bank, 2019). Other Asian regions have the trouble of lower economic development and inadequate infrastructure basis (Reconnecting Asia, 2021), so it has great development potential from BRI's point of view.

According to an investigation of the National Development and Reform Commission for the declaration of typical PPP cases, the overseas investment projects involve more than the BRI routes. They are distributed in all continents (National Development and Reform Commission, 2020). From the perspective of host countries, the infrastructure in Africa is poor, the infrastructure condition in South America and Southeast Asia is somewhat essential and developed countries in Europe with better but relatively old conditions. From the perspective of the industries involved in the project,

investment mainly involves transportation, energy, communication, and road administration (Delmon, 2010). It should be noted that although PPP is widely used in BRI as a primary form of development project financing, it does not mean that it will be smooth sailing in terms of project risk management. The next part investigates the challenges BRI financing faces using the existing and latest data as evident while combining with the recent literature for further exploration.

3.4.3 Challenge to Manage Risks on the BRI Project Financing

From a technical point of view, the BRI, when carried out well as planned, will last for decades or more and could promote connectivity for more than half the world's population and economic cooperation between hundreds of countries and institutions in different regions (Shichor, 2018). Deploying projects in dozens of countries from developing to developed simultaneously are a considerable challenge given the complexity of undertaking these investments, expressly in term of financing (Li & Huang, 2019). With strong government support and the collaboration of participants, China's SOBs have achieved some success but with risks cannot lose sight of. The massive projects that are funded by BOSs are mainly focused in public sector, which is flawed in the market of the developing countries with foreseen challenges: foreign exchange fluctuation, the risk of recession, the price is not stable, ‘crowd out’ the private sector investment, legal and regulatory issues, the lack of existing infrastructure, corruption and bureaucracy, and the ‘control issues’ from geopolitical pressure (McKenzie, 2017). Based on the above literature reviews, the relevant issues and data will be discussed from the following aspects.

3.4.3.1 Imperfect financial structure

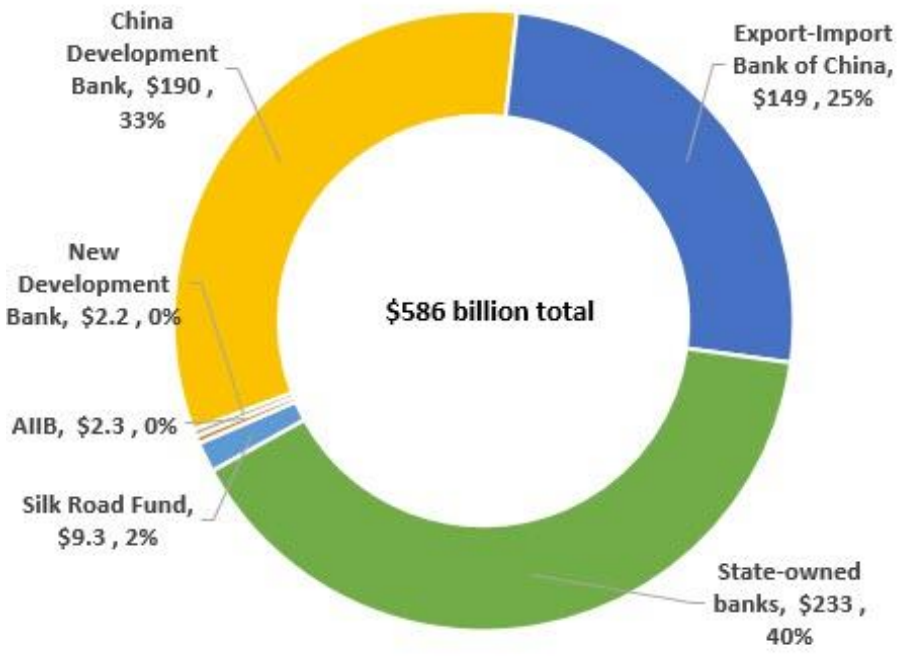
After 40 years of modernization (‘reform and opening up’), China has formed a new situation of infrastructure overcapacity, domestic demand is challenging to meet, yet rapid economic development together with the surge of energy demand; the national infrastructure construction of BRI routed countries has just started and as there is an urgent demand (Benard, 2020). Therefore, based on infrastructure for energy, mutual benefit and reciprocity can be achieved based on establishing a good cooperation model (Yi, 2014). Furthermore, infrastructure construction and upgrading have improved economic development in countries along the Belt and Road (Callahan, 2016b). Regional economic growth has enhanced people's consumption ability, and the improvement of living standards has further promoted energy consumption and reduced energy production costs. For China, the output of excess infrastructure capacity is conducive to the long-term development and upgrading of the infrastructure industry, effectively driving the digestion of excess production and promoting domestic employment.

But this is the ideal. According to various estimates, Chinese SOBs, as the main financier of BRI projects, is still far from meeting the long-term needs of countries along the belt and Road in the future (Ranjan, 2019). The main reasons are as follows: First, from the perspective of capital sources, the main construction funds of BRI are sovereign bank loans, policy loans, development project financing and other types of commercial bank loans, which are mainly provided by Chinese institutions[21] (Figure 3.4) and are

[21] official statistics showed that Chinese enterprises (SOEs) had achieved the target of an average annual growth rate of 15% and an average annual sales revenue growth of 4.5% in the process of output capacity (BRI Ministry of Commerce of the PRC, 2021). Until 2019, 81 central enterprises have undertaken more than 3,400 projects along the route since the deployment of the initiative (BRI Portal, 2021). Chinese companies signed 6,944 new contracts in 62 countries extending the BRI, with a total value of 154.89 billion US dollars, up 23.1% year on year, accounting for 59.5% of the total value of newly signed contracts in the same period. Turnover was $97.98 billion, up 9.7% year on year and 56.7% of the total for the same period (BRI Ministry of

invested together with various national sovereign wealth funds.

Figure 3.4 BRI funding by source by the end of 2018



Source: The National Bureau of Asian Research[22] (2019)

Secondly, many scholars have pointed out that diversified financing structures or arrangements are needed for BRI to achieve sustainable development in the future (Wang, 2019; Garcia-Herrero & Xu, 2018; Kobelkova, 2017). Multilateral Financial Institutions[23] have not yet played a more prominent role as initially designed: the World Bank or ADB provide only small amount of loans or donations; Even the newly established AIIB has only made a limited contribution (Tian & Li, 2019). Traditionally, they have been important players

Commerce of the PRC, 2021).

[22] NBR is an independent research institution based in Seattle and Washington, D.C. It brings world-class scholarship to bear on the evolving strategic environment in Asia through original, policy-relevant research, and we invest in future by training the next generation of Asia specialists. https://www.nbr.org/.

[23]The BRI route welcomes many multilateral financial institutions including the Asian Development Bank, the European Bank for Reconstruction, the Asian Infrastructure Investment Bank and the BRICS' New Development Bank, etc. (BRI portal, 2020).

in global infrastructure development, providing capital, knowledge, technology and experience to developing countries and coordinating aid recipients and participants more effectively. However, multilateral development banks generally have regional characteristics, making it difficult to coordinate infrastructure projects across regions. In terms of its nature, traditional multilateral financial institutions need to provide financing in multiple fields, including infrastructure, while BRI focuses on infrastructure construction in developing countries (Gong, 2020). In addition, as discussed above, many concessional loans to developing countries from institutions such as the World Bank and IMF come with strings attached: for example, they do not lend to authoritarian governments, or they need to take human rights issue into account – this contradicts with BRI's 'non-intervention' principle (Banerjee, 2016).

Both the Chinese government and researchers agree that BRI's huge future funding gap cannot be met through official financing alone (Nalbantoglu, 2017). The best solution is to establish a multi-level, structured international financing platform and introduce capital from other countries globally, including multilateral financial institutions, commercial banks, sovereign funds, and private capital (Ocampo, 2008) to finance the BRI jointly. For the past several years, according to the ADB, the private investment in China and other developing countries has been meagre (0.03% and 0.2%), and "*with the private sector estimated to invest around $63 billion at present, expanding private finance by the required level is no doubt a major challenge*" (ADB, 2017).

A reasonable explanation for this problem is that the benefits and risks of large infrastructure projects are not matched, resulting in less enthusiasm for private capital to participate (Kobelkova, 2017). Even the PPP model, which is

expected to continue to be encouraged in the future, will not achieve the desired level. The effectiveness of private capital participation in project financing is affected by various factors such as different systems, regulations and economic cycles. Most of the countries along the BRI have the problems of political instability, unsound legal system, low market maturity, and frequent ethnic and religious issues – factors that hinder commercial lending and private investment (Shichor, 2018). And even if private capital is involved from the start, it is often difficult to solve the problem of the profit model after completion. As mentioned earlier, infrastructure is often built not for profit, but to meet development needs and improve the quality of life; Huge capital costs and long payback periods discourage private capital because they cannot afford inefficiencies. As a result, BRI has to rely on project financing from Chinese SOBs when the participation of international multilateral financial institutions is low due to various factors and private capital is reluctant to intervene under the current model. This fact requires project companies to conduct more complete risk analysis when launching new projects, to identify and prioritize sources of risk in target countries, and to integrate the results into an appropriate framework for better assessments.

3.4.3.2 The trends of BRI: data and analysis

In the past, international capital has always focused on projects inside of China. Still, their attention is shifting to schemes initiated by China towards the world, including China's investment (Wolff, 2011). The vast potential of developing markets and emerging economies with relatively cheap labour reveals unmissable opportunities, which lay under the BRI construction; however, complex and diverse national conditions and profound religious influence may put uncertainties on its weight. According to reports conducted by some research institutions, many of these countries have low sovereign

credit ratings and high-risk factors in political, economic, financial, security, legal and other aspects. These factors will hurt the overall operation and earnings of project financing. Numerous institutions surely put much weight on this momentous event, its future development, and its role in decades.

The following Table 3.5 collects statistics from reports published by traditional institutions, including the Export-Import Bank of China, the China Development Bank, the official think tank, and the World Bank. They focus on different indicators, including core economic and social indicators, country risk rating, Belt and Road infrastructure development index, sovereign rating, and business environment index. It makes sense to pick out these important indices and put them together for parallel comparisons since they can intuitively reflect the coexistence of opportunities and challenges.

Table 3.5 Comparison of country Risk, infrastructure investment rating and business environment rating among 30 major countries along the BRI (based on the 2019 rank of FDI net inflows)

Country/Region	Key economic and social indicators of BRI Countries 2018[24], CDB-UNDP		Report of Country-Risk Rating 2019[25], IWEP		BRIDI Ranking 2019[26], CHINCA & SINOSURE			Ease of Doing Business Ranking 2020[27], The World Bank Group	
	Rank	FDI Net Inflow 2018 ($ BN)	Rank	Rating	Rank	BRIDI Score	Sovereign Rating	Rank	DB Score
Singapore/ASEAN	1	82.0	1	AA	13	116	AA	2	86.2
Indonesia/ASEAN	2	20.0	23	BBB	1	138	BBB	73	69.6
Vietnam/ASEAN	3	15.5	25	BBB	2	123	BB	70	69.8
Thailand/ASEAN	4	13.2	16	BBB	14	115	BBB	21	80.1
Turkey/CEE[28]	5	13.0	24	BBB	54	106	BB	33	76.8
Poland/CEE	6	11.3	5	A	30	110	AA	40	76.4
UAE/West Asia	7	10.4	4	A	3	123	A	16	80.9

[24] "Harmonizing Investment and Financing Standards towards Sustainable Development along the Belt and Road - Economic Development along the Belt and Road 2019" is jointly published by China Development bank (CDB) and United Nations Development Programme (UNDP). Available at: https://www.cn.undp.org/content/china/en/home/library/south-south-cooperation/harmonizing-investment-and-financing-standards-.html.

[25] "Report of Country-risk Rating of Overseas Investment from China（CROIC-IWEP, 2019）" is a research report published annually by Institute of World Economics and Politics, National Think Tank, Chinese Academy of Social Sciences.

[26] "The Belt and Road Infrastructure Development Index (BRIDI) 2019" is jointly published by China International Contractors Association (CHINCA) and China Export & Credit Insurance Corporation (SINOSURE). Available at CHINCA's Country Risk Database: http://www.chinca.org/upload/file/20190529/bridi2019en.pdf.

[27] Note: The rankings are benchmarked to May 1, 2019, and based on the average of each economy's ease of doing business scores for the 10 topics included in the aggregate ranking. Doing Business database. World Bank Group, 2020.

[28] Note: CEE refers to Central and Eastern European countries.

Country/Region	Key economic and social indicators of BRI Countries 2018[24], CDB-UNDP		Report of Country-Risk Rating 2019[25], IWEP		BRIDI Ranking 2019[26], CHINCA & SINOSURE			Ease of Doing Business Ranking 2020[27], The World Bank Group	
	Rank	FDI Net Inflow 2018 ($ BN)	Rank	Rating	Rank	BRIDI Score	Sovereign Rating	Rank	DB Score
Philippines/ASEAN	8	9.8	15	BBB	11	119	BBB	95	62.8
Russia/Europe	9	8.8	7	A	5	123	BBB	28	78.2
Malaysia/ASEAN	10	8.6	12	BBB	10	119	A	12	81.5
Czech Republic/CEE	11	8.5	10	BBB	33	109	AAA	41	76.3
Egypt/North Africa	12	7.4	33	BB	16	114	CCC	114	60.1
Romania/ CEE	13	6.9	6	A	34	109	BBB	55	73.3
Panama/Central America	14	6.6	N/A	N/A	N/A	N/A	N/A	86	66.6
Serbia/Europe	15	4.1	N/A	N/A	50	106	B	44	75.7
Morocco/ North Africa	16	3.6	N/A	N/A	N/A	N/A	N/A	53	73.4
Ethiopia/Africa	17	3.3	N/A	N/A	N/A	N/A	N/A	159	78.0
Cambodia/ASEAN	18	3.1	19	BBB	25	111	B	144	53.8

Country/Region	Key economic and social indicators of BRI Countries 2018[24], CDB-UNDP		Report of Country-Risk Rating 2019[25], IWEP		BRIDI Ranking 2019[26], CHINCA & SINOSURE			Ease of Doing Business Ranking 2020[27], The World Bank Group	
	Rank	FDI Net Inflow 2018 ($ BN)	Rank	Rating	Rank	BRIDI Score	Sovereign Rating	Rank	DB Score
Bangladesh/South Asia	19	2.9	22	BBB	N/A	N/A	BB	168	45.0
Bulgaria/ CEE	20	2.6	9	BBB	27	111	BB	61	72.0
Slovak Republic/Europe	20	2.6	N/A	N/A	18	113	AA	45	75.6
Ukraine/Eastern Europe	22	2.5	34	BB	69	96	CCC	64	70.2
South Africa/Africa	23	2.3	N/A	N/A	N/A	N/A	N/A	84	67.0
New Zealand/Oceania	24	1.6	N/A	N/A	N/A	N/A	N/A	1	86.8
Slovenia/Europe	25	1.5	N/A	N/A	29	110	A	37	76.5
Belarus/Europe	26	1.5	29	BB	41	108	BB	49	74.3
Croatia/Europe	27	1.3	N/A	N/A	20	113	BBB	51	73.6
Lao PDR/ASEAN	27	1.3	11	BBB	35	109	CCC	154	50.8
Myanmar/ASEAN	27	1.3	21	BBB	36	109	B	156	46.8
Albania/Europe	30	1.2	N/A	N/A	39	109	B	82	67.7

Using the core economic and social index as a benchmark, the author ranked the 30 BRI investing countries and three equally important indicators in table 3.5. In general, the comparison shows that these very different indicators can provide some reasonable explanations for the performance of these countries in attracting BRI investment from various aspects. Countries with better economic and social development indices are also relatively low in country risk, and their BRIDI rankings are relatively stable. For example, Singapore, Vietnam, Indonesia, Thailand, Turkey, Poland, the United Arab Emirates, the Philippines, Russia and other countries rank basically at the top in these three index systems. Another noteworthy phenomenon is that Southeast Asian countries, as the leading BRI investment flows to the region, rank relatively high in BRIDI despite their poor performance in terms of country risk, which also shows the investment confidence of Chinese official institutions in these countries[29]. As the most attractive destinations for BRI investment (Table 3.6), the same group of countries are consistent with the statistical comparisons above, which fully demonstrates that one of the significant characteristics of the BRI financing trend is its complexity of risk matters.

Table 3.6 Major BRI investment destination countries at the end of 2019 (Millions of USD)

Country/Region	2019 Flows	2019 Stock	Rank
Singapore	4825.67	52636.56	1
Indonesia	2223.08	15132.55	2
Vietnam	1648.52	7073.71	3
Thailand	1371.91	7185.85	4
UAE	1207.41	7635.67	5

[29] According to the "2019 Statistical Bulletin of China's Outward Foreign Direct Investment" (Ministry of Commerce & National Bureau of Statistics & State Administration of Foreign Exchange, 2020), by the end of 2019, Chinese investors had set up nearly 10,000 overseas enterprises in BRI countries, with a direct investment of US $18.69 billion in the same year, up by 4.5% year on year.

Country/Region	2019 Flows	2019 Stock	Rank
Laos	1149.08	8249.59	6
Malaysia	1109.54	7923.69	7
Kazakhstan	786.49	7254.13	8
Cambodia	746.25	6463.70	9
Iraq	887.09	1377.52	10

Source: author adopted from "2019 Statistical Bulletin of China's Outward Foreign Direct Investment" (Ministry of Commerce & National Bureau of Statistics & State Administration of Foreign Exchange, 2020)

3.5 Summary

It is evident that the main characteristics of overseas investment risks along the BRI route are the interweaving and overlapping of diversity and high portfolio risks; therefore, it is essential to develop an elaborate system to secure the financing projects. As many scholars have already studied, risk management in project financing includes maximizing the probability and consequences of positive attributes and minimizing the likelihood and consequences of characteristics adverse to project objectives (Karim, Aly and Mohamed, 2017). Besides, many Chinese firms operating in the region still lack practical experience in risk management due to the limited research assessments. Perhaps they should pay more attention because China is the leading provider of the funding and construction capability of the BRI (Arduino and Gong, 2018), which means the SOBs and their financing activities have the most significant stake, and in turn, the greatest risk. Therefore, for SOBs from China, whether policy banks or commercial banks under the government's guidance, both need to find more appropriate risk assessment and control approaches. Otherwise, they may not be able to bear the

consequences of investment failure on their own in the long term.

This chapter mainly reviews the historical origins of development project financing, the development of its concept, and its application in the international investment and financing market in the era of globalization. Scholars suggest that when developing countries attract global investment, they should give full play to the role of development finance, make up for market defects and failures, and build an efficient and healthy market (Biekpe & Cassimon & Verbeke, 2017; Giorgioni, 2017). In reviewing China's transition from the host country to sponsor country of international aid and investment, it also discusses the effective use of policy guidance and substantial foreign exchange reserves, credit in international development loans, and the rapid establishment of credit in developing countries. Finally, this chapter sorts out the challenges BRI faces in the process of financing, conducts in-depth analysis based on specific data and literature, and forecasts the future development trend.

Chapter 4. Research Methodology and Research Design

4.1 Introduction

The purpose of this chapter is to explain the research methodology and introduce the design for the characteristics of this study, including the process of data collection and the analysis of the research methods. The chapter firstly reviews the concepts and theories of research methodology and focuses on the research methods and strategies to determine the uniqueness of this study. After an in-depth examination of the two different attributes of philosophical thinking, the strengths and limitations of interpretive positivist approaches and their appropriateness are then discussed, with detailed

projection onto this study. After that, this chapter discusses the validity and reliability of the chosen methods of this study.

The third part of this chapter discusses this study's research method. First, it justifies the selected research methods, then the research design of this study is introduced. On this basis, the methods used in this study are described in detail: case studies and semi-structured interviews are the main approaches and analysis of policy documents as essential supplementary elements. Then the fourth part of this chapter focuses on the analytical framework of this study; throughout the design and interpretation of the RMF proposition, this interpolates section analysis of selected case studies and logical development of interview questions. At the same time, this section describes the procedures for data collection and the process of relevant fieldwork and adoption covering each stage of the research.

4.2 The Philosophical Standpoint

It is crucial to introduce an epistemological stance before conducting an empirical study of risk management in BRI investment projects since it is an epistemology that reflects one’s worldview and how one knows it. The research aims to examine the implications of risk management for Chinese SOBs involved in the BRI project and to develop a unique risk management framework (RMF) subsequently, then may contribute as policy suggestions to the stakeholders involved. Therefore, this is rather detailed research involving a wide range of knowledge background, region, and research field, which needs to be designed and grasped from a macro level then comes down to specific businesses and projects. Therefore, I have adopted the philosophical position of interpretivism in the research use to its appositeness in establishing a methodological world view and achieving the best research

results through appropriate methods.

4.2.1 Interpretivism as Research Epistemology

In contrast to positivists who emphasize the world's independence and reject the idea that society constructs the human world, interpreters hold that the world is socially or discursively constructed. People's interpretation or understanding influences social phenomena. A corollary interpretive position is that it is challenging to analyze events objectively because the researcher's subjectivity heavily influences the propositions studied: this can include cultural, ideological, political, religious, or racial beliefs. Interpretivism believes that reality is not objectively determined but is socially constructed (Mutch, 2005; Husserl, 1965). They are interested in the society that is made up of human beings and tries to understand the social world order within the context; they don't follow regular patterns like the natural world, and all behaviour depends on how humans perceive their situation (Beuving & de Vries, 2014).

Interpretivism studies the meaning of human interaction to understand how people define, interpret, and behave by collective definitions of the world and its elements in daily life (Atkinson, 2012). The power of society is fantastic because it works through the experiences of every individual, and to understand how it works, researchers must understand and interpret these experiences (Beuving & De Vries, 2014). To recognize social life, an individual needs to understand the process used by others to analyze situations and experiences and how they choose their behaviors among other individuals in society (Oliver, 2012). Social sciences should principally aim for hermeneutical understanding (Verstehen) (Taylor, 1974). Others have reasoned those natural sciences are analytic, whereas the social sciences are synthetic (Hayek, 1952). In addition to being much more heterogeneous than

natural sciences (Gewirth, 1954), social sciences are also largely context-dependent (Faber and Scheper, 2003).

From the ontological perspective, the interpretive reality is multiple and socially constructed, and there is no objectivity (Decrop, 2004); the main goal in the interpretive paradigm is to understand the world that is made of human experiences in its subjectivity; researcher needs to get inside the people studied and know how they see the world in achieving the goal (Cohen et al., 2007). Social constructions like language, shared meanings and consciousness are the only access to social reality (Antwi & Hamsa, 2015). From an epistemological point of view, the knowledge studied is not only about observable phenomena but also about beliefs, values, causes, and understandings: knowledge is constructed and subjective (Ibid). The researcher and the studied group are not separate but have an interactive, cooperative relationship (Decrop, 2004). Cohen contends that theory does not precede the research but follows the study; therefore, researchers can build their ideas through experience, understanding and interpretation (Cohen et al., 2007).

Furthermore, interpretivists are interested not in quantity. Still, the richness and quality of the information gathered, so a smaller sample is preferred because the purpose is to gain insight into specific phenomena in context (Decrop, 2004). They focus on meaning rather than measurement methods, such as unstructured observation, ethnographic studies, case studies, in-depth and open interviews, documentation, and discourse analysis. In these research methods, researchers can record the dynamic information of study participants by sensory, check what is happening, and even participate in activities and refer to their own cultural and social background (Antwi & Hamsa, 2015). The advantage of this model is that it attempts to understand

the benefits of context, thereby gaining a deeper understanding of the complexity of phenomena insights that are interpreted by insiders in different environments and cultures while giving importance to values, prejudices, ideas, perspectives, and feelings (Tribe, 2001).

4.2.2 Contrast of Interpretivist and Positivist Approaches

There are two fundamental types of research in general: descriptive and explanatory. For some philosophers, the former include observation and reasoning were the best means of understanding human behaviour, and positivism was, therefore, an almost perfect form of philosophical thinking because it claimed that "real" knowledge came from the experience of natural phenomena and their properties and relationships (Antwi & Hamsa, 2015). Information obtained from sensory experience becomes, through reason and logic, the sole source of all definite knowledge. In other words, positivism holds that all proper knowledge is posterior knowledge. Starting from this position, some believed that physics is “science par excellence” whilst maintaining that social sciences are no different from natural sciences (Baškarada & Koronios, 2018). In addition, positivism better applies to the study of assumptions made up of stable and unchanging reality, and researchers tend to believe in objective, real-world, and transcendent epistemological positions (Alise & Teddlie, 2010).

Many in academia, especially sociology, believe that people with high research skills can successfully deploy a mixed research methodology. This view is often controversial, with opponents arguing that the other side focuses too much on the compatibility of research methods and neglects the philosophical nature of each research paradigm (Young & Freytag, 2018). The positivist and interpretivist paradigms are based on different assumptions about the world’s heart, and then they require other tools and procedures to

find the desired data types (Ochieng, 2009). This argument is hard to make right because people tend to adopt methods influenced by their socialized worldview. For example, positivist researchers believe that reality is objective and can be measured by attributes independent of researchers and tools; knowledge is accurate and quantifiable (Henning & Van Rensburg & Smit, 2004). While Johnson and Onwuegbuzie (2004) acknowledge that qualitative and quantitative methods may apply to different situations, they also recognise that methodological science – the laws that govern the natural sciences – is the path to compelling explanations and practical knowledge.

Some scholars prefer the positivist approach because it would facilitate much evidence to support the research results. This influenced many sociologists, and in some social sciences, including business and economics, they mimic and reach their conclusions by applying research methods from so-called 'hard' (STEM) disciplines. This leads to a hypothesis-deductive approach, in which the placement of the test is questioned, and assumptions that do not meet more stringent criteria are rejected. Some positivist researchers believe that testing hypotheses through objective empirical investigation can improve understanding of reality (Young & Freytag, 2018). However, as knowledge has developed, there has been a growing recognition of the need for empirical and theoretical approaches, especially in the social sciences. The complexity of the world cannot be defined in simplistic terms. There are many interrelated aspects of human social functioning in a complex and interrelated environment. Therefore, there is a need for collaborative and comprehensive research on these interconnections and ways to promote them (Wilkinson & Young, 2013).

From a methodological point of view, critics have identified that the lack of attention to epistemological and ontological issues may be related to the

default adoption of traditional positivist consensus (Denzin, 2017). Baškarada and Koronios (2018) contend that social sciences and natural sciences differ in their respective question areas, which should not simply be viewed as substitutes and thus cannot be directly compared – natural science is analytical, while social science is comprehensive. In contrast to the natural sciences, which deal primarily with quantitative aspects, the social sciences may be mainly interested in qualitative characteristics and aim precisely at hermeneutic understanding (Verstehen) (Taylor, 1974; Weber, 1949). In addition to being more heterogeneous than natural science, social science also relies heavily on examining and interpreting research background (Faber & Scheper, 2003). As time goes by and the context transforms, the nature of the people and objects also studied changes (Robertshaw, 2007). It must be acknowledged that the positivist paradigm has come to be regarded as the dominant model for quantitative research in the social sciences, which, in contrast, can hardly be said to produce universally applicable theories and explanations. This result is contradictory and inevitable because human nature has complexity and particularity, which must be explained through more methods, standards, evidence and cases.

After that, with the development of knowledge, there are increasing calls in empirical and theoretical approaches based on recognising social sciences' anthological and epistemological position regarding interpretive world view. Walsham (1993) believes that there were no "correct" or "incorrect" theories in the interpretation tradition; on the contrary, the judgment of research significance should be based on the "interest" of researchers and people involved in the same field. Gephart (1999) argues that interpretivism assumed knowledge and meaning were acts of interpretation so that no objective knowledge could be independent of human thinking and reasoning. Myers (2009) believes that access to reality can only be achieved through social

constructs such as language, consciousness and shared think. These philosophical views of interpretivism refute ontological and cognitive perspectives and deny positivism's methodological view that sociological research can only be interpreted through a single reality. The world's complexity cannot be defined in simplistic terms, and human social function has many interrelated aspects in a complex and interrelated environment. Therefore, there is a need for a collaborative and overall study of these interconnections and methods to facilitate these studies (Wilkinson & Young, 2013).

Explanatory research usually consists of theory construction and theory testing (De Vaus, 2002). Theoretical construction starts from observing things and phenomena and develops theories based on the data and information obtained from observation by induction and reasoning. In contrast, a theory test begins with an analysis of an idea. It uses deductive reasoning to derive a set of propositions from the study to predict how things will develop in the real world. De Vaus (2002) believes that even though theory construction and testing jointly construct a continuous research process, they endure interacting with each other even through different methods.

This fits well with the approach planned in this study. BRI is a newly emerging phenomenon in recent years, and its theoretical framework and related testing process are still evolving. I intend to explore an appropriate risk management framework (RMF) by analysing institutions (SOBs) and the risks they may encounter in BRI investment projects. In this process, the power represented by the institution is often proactive and intentional. We might often identify a project as good or bad by its focus and risk preferences. Yet this is not absolute, and people also believe they could monitor the long-term consequences of their actions. In addition, the institution's project

management is also dynamic, responding to altering circumstances and variations in the surrounding environment (political, economic, trade, etc.). The managers can also reform their preferences and perceived risks and dynamically adjust their course of action over time along with the situation. Thinking about their relationship dialectically helps to understand that the role of risk management in BRI projects is a justly significant matter.

4.2.3 Justification of the Research Methodology

Philipsen (2018) believes that theory building can explain social phenomena by conceptualising and establishing a framework for understanding knowledge production. This differentiates between the context of discovery, which involves problem definition and initiates ideas, and the context of justification that encompass hypothesis testing and its improvements (Bhattacharya, 2008). Therefore, a more systematic understanding of the context of discovery is employed and thus how original explanations (hypotheses and theories) are formulated and created in this study, which can be "*contributions that focus primarily on theoretical advances without relying on data solely*" (Yadav, 2010). This interpretive philosophical position facilitates forming "*an intersubjective co-constructed and typified reality*" (Hallebone and Priest, 2009), which is reasonable amongst this research.

Interpretivism tries to understand the meaning of action from the actor's perspective. Still, it rejects the empirical approach, which means that researchers need to understand their judgment on the priority and significance of something from the perspective of others. Actors attach subjective meaning to their behaviours, and the connection between actions and intentions is generated through actors. Thus the aggregation of all actors' behaviours creates collective social life. Interpretivism stresses the importance of interpretation and observation in understanding the social world (Ruhl, 2004).

Other scholars also contend that the interpretive position is more reflective and seeks the liberation of thoughts. In the long run, it is more about encouraging the reader to understand what the institute has to offer, providing enlightenment and understanding (Denzin & Lincoln, 2018). This way of thinking is handy for emerging phenomena of the BRI, which can help people build knowledge from different perspectives. From this point of view, the philosophical standpoint of interpretivism and qualitative research and analysis is undoubtedly practical towards the research objectives of this study.

BRI involves hundreds of countries and organisations, with thousands of projects moving forward simultaneously. The countries along the route have considerable differences in politics, economy, financial market, legal system, and institutional construction. In this case, it is difficult to collect data from public sources, nor to mention the transparency issues of many of the participant developing countries – the published data may not fully reflect the actual situation. Similarly, companies involved would not fully disclose sensitive information related to the risk management practices in their investment process for various reasons, considering their state-owned background and project attributes. This study aims to go beyond pure scientific research based on data analysis and fully understand, identify, and describe the status quo of risk management of SOBs from China when undertaking project financing in these places through empirical studies. The conceptual framework of this study adopts the philosophical standpoint of interpretivism, hoping to promote the value of qualitative data in pursuit of knowledge and thereby achieve the designated research results.

Based on the BRI investment project initiated by the Chinese government, this paper studies the investment of different types of SOBs to discover the rules of relevant risk management approaches. From the quantitative analysis

perspective, data collection is restricted by China's SOBs (such as differences in transparency, institutional and information disclosure, etc.). Meanwhile, BRI projects in participating countries are all in infrastructure investment, indicating tremendous geopolitical and economic implications as discussed in previous chapters. Considering that most participating countries (host countries) are developing countries, their legal and institutional transparency and information accuracy cannot be guaranteed. The purely statistical approach to address macro risk assessment is deficient – the socio-political and economic systems of China and the host countries differ, especially regarding the development finance projects (Benard, 2020). Hundreds of statistical interactions need to be examined to fit the studies, and the results are still hardly comprehensive. Therefore, specific cases need to be analysed to obtain first-hand information to make a thorough evaluation and convincible judgments (Phelan, 2011).

This study explores knowledge in a cross-country, cross-cultural background: the risk management of China's state-owned financial institutions in the BRI region. In lyzing the investment project of both success and failure cases, the research attempts to conclude: if the investment projects based on BRI are facing the same risks as the traditional transnational investment, if different, how to establish a new risk management framework? This, like many research topics based on social phenomena and complex inter-cultural backgrounds, requires a complete and detailed exposition of the object of study. Due to their characteristics, qualitative approaches may have some defects in data collection and analysis. For example, the allocation of language frequencies in the data is ignored because rare and common phenomena receive equal attention. However, Ochieng (2009) argues that qualitative research is good at simplifying and managing data without destroying complexity and context. The common goal is to generate new

methods based on existing data – this study aims to create a unique risk management framework to reflect the reality in BRI investment projects – starting from the perspective of other researchers or previous research findings, and then needing appropriate methods to discover and reason about the data (Arbnor & Bjerke, 1997). This is of great significance for researchers to analyze observed phenomena and construct new theoretical models from the perspective of interpretivism (Philipsen, 2018).

Research method refers to the way of designing research based on science, the process of collecting and analyzing data, and some logical interpretation of actual objects based on theory. Qualitative research involves investigating the answers to a question and systematically using a set of predefined procedures to answer the question. It also gathers evidence and produces findings that are not predetermined and do not apply beyond the immediate boundaries of the study. This is usually a subjective evaluation of the attitudes, opinions and behaviours of the subject, and its results depend on the insights and impressions of the researcher (Sonne & Ingstrup & Hansen, 2018). In contrast, quantitative methods are markedly different. Units of analysis can be called "data" and are the results observed during the data collection process. A significant constraint of the quantitative approach is the narrowness of the theory, i.e., the greater the specificity of the idea or experience, the fewer cases are relevant to the investigation. I find it difficult to reach a general conclusion by evaluating the explanatory statement by reducing the number of cases. The number of relevant explanatory variables is likely to exceed the number of cases (Ragin, 1987).

The idea was initially rooted in the fact that the method of understanding knowledge relevant to human and social sciences might not be analogous as it is used in physical sciences because people understand the world they live

in based on interpretation of their own, and then act on that interpretation accordingly (Hammersley, 2013). In fact, from an interpretive perspective, researchers could be more inclined to have a deeper understanding of the phenomenon and complexity of the truth, such as risks involved in the unique context of the BRI, rather than trying to generalize an overall population-based understanding. In this respect, there are some advantages to this research paradigm. First of all, interpretivism researchers view phenomena from a variety of perspectives. They not only describe objects, people or events but also try to understand them in broader and in-depth social contexts in providing more reliable information of the research objects. Secondly, as one of the advanced methods within this approach, interview "*allows the researcher to investigate and prompt things that we cannot observe, researchers can probe an interviewee's thoughts, values, prejudices, perceptions, views, feelings and perspectives*" (Wellington & Szczerbinski, 2007). Thus, the valuable opinion and comparable data collected through these methods will provide researchers with better insights for evaluation.

At the same time, it is necessary to assess official documents rigorously and reliably to make the research as close to the fact as possible, together with the study from the historical perspective of the BRI proposal and its unique financial structure. For instance, it is reasonably imperative to provide a contextual explanation of the following sub-questions: "what is the silk road economic belt, what is the maritime silk road?", "Why did the Chinese leaders propose this time? What is the underlying intention?" and interestingly, "what are the special feature of the SOBs that operate in the BRI region?". Starting from the interpretive point of analysis, it is through the study of the occurrence and development of matters that happened before and to explore the essence and the traditional method that can be applied now. As a critical part of human history, the economic relations between China and its neighbouring countries

on the route growth to a particular stage must have historical origin and background. Consequently, it could provide a thorough understanding of contemporary issues. This is understandable; however, given the accounting of current research on risk management of project finance investment in BRI countries and the general absence of open quantitative data, I must connect both official and private sources for information and knowledge, especially those that have not been successful in the current BRI investment. This is to analyze the defects of risk management in this process and why existing risk management methods and frameworks are not applicable.

Welch (2018) points out that it is highly inappropriate to insist that all qualitative research follows a particular template; instead, it relies on a practice known as "methodological reflexivity": sensitivity to the challenges and constraints we face in interpreting the social world. This also means responding to the specific content and research requirements and constantly re-examining methodological practices and standards during the investigation. It is also in line with Denzin's view that problems of method begin with the design of research projects and always begin with researchers moving from social research problems to paradigms or perspectives and then to the empirical world (Denzin & Lincoln, 2018). Therefore, when complete and convincing objective data is difficult to be obtained, researchers must consider using specific methods to conduct more scientific analysis and judgment of existing phenomena from the perspective of interpretivism epistemology.

The design of this research syndicates case studies and interviews with key figures “*to assess specific groups of people in specific social contexts based on their values, experience and perceptions of predetermined research base information*” (Welch, 2018). When such research results are combined with analysis on policy documents, they well reflect consideration of problem-

solving and provide critical analysis of research objectives. Again, in answering the set of research questions, the result is to fully understand, determine and describe the current situation of their risk management through the study of demonstrative cases, which goes beyond the pure scientific research based on data analysis. This study adopts a qualitative research method, considering the characteristics and uniqueness of the research objects, and effectiveness of the research process, as well as the rationality of the research results.

4.3 Research Design

Research methods refer to research design and data analysis procedures (Che Rose, 2002). Thus, many research methods can be used, such as personal interviews, case studies, questionnaires, focus group observation, etc. Each approach has its strengths and weaknesses, and the choice of a particular course can vary significantly. According to Denzin (2018), researchers should consider their research methods according to the goals and objectives, time and resources, and cost constraints. Of course, subjective reasons such as researchers' interests and preferences and academic background can also affect the determination of research methods. No matter which method is chosen, or the combination of several methods, its purpose is to provide answers to research questions through logical analysis and achieve research objectives in the process of analysis and solution.

This research revolves around China's proposed BRI and its projects, specifically how the project financing institutions (SOBs) can better manage the risks associated with project financing in participating countries. Imperative concepts are clarified to lay a solid theoretical foundation for this study, such as development project financing, institutional change theory and stakeholder theory. Therefore, based on the previous literature review,

questions regarding to transnational investment risk and their related issues in the context of BRI are clarified throughout the literature review. With further consolidating the foundation of the theoretical framework, the research result will be concluded mainly by combining the analysis on case studies and interviews with key personnel from chosen institutions. Since the BRI is essentially proposed and led by the Chinese government, the interpretation of official policy documents can provide valuable information in responding to the research questions. Explanation of these documents essentially complements case studies and helps to understand the knowledge behind the interviews. These combined research methods can provide a solid description and systematic understanding of the research purpose, master the dynamic interaction process and context, and obtain a more comprehensive perspective.

De Vaus (2002) believes that there are three basic methods to evaluate validity: standard, content, and construct, but this may have limitations in today's rapid reconstruction of knowledge. For example, the compatibility of the standard validity with the new measurement method means the validity of the criteria cannot be determined in some studies. New terms, such as the BRI, have struggled to develop effective measures consistent with traditional standards. Some variables (such as SOBs' particularity in risk management) cannot be accurately measured in this study. This also affects construction validity since it is impossible to establish a relationship between accurately measured results and theoretical expectations. There is no ideal way to test validity, as it depends on how researchers define the concepts to be measured. Since several measurements (or analysis of variables) may produce errors, methods that make reliable measurements are desirable.

The research design of this study is triangulated: First, through literature

review, the research scope is identified at the conceptual level - risk management for cross-border investment and financing of development projects led by state-owned institutions - while locating the gaps of existing research in the BRI context. Secondly, by carefully screening and determining the scope of BRI case study and conducting in-depth analysis and induction of these typical cases, the factors leading to their problems or failures are discovered and summarized. Research questions were adjusted based on these factors and results and further validated in key personnel interviews. Finally, an inclusive project risk management framework (RMF) is constructed based on the summary of various risk factors affecting BRI investment projects. It not only integrates various risk analysis tools adopted by institutions, but also innovatively classifies and prioritizes risk factors and puts forward reasonable policy recommendations according to the interview results. In analyzing risk, this study considers both traditional and new risk factors as well as the characteristics of Chinese SOBs – it recognizes the importance of non-quantitative variables in the analysis.

4.3.1 Case Studies

"*Case studies do not necessarily rely on previous literature or prior empirical evidence. Thus, case studies can be used to theorise even if little is known about a phenomenon.*" –Vissak (2010).

4.3.1.1 Pilot investigation

The case study is a standard research method with outstanding characteristics that make it the choice of many researchers for different types of investigation. It is seen as a method of collecting detailed information over a period through multiple data collection procedures for a single entity or

phenomenon subject to time and behaviour constraints – this may include systems, events, processes, and organizational behaviour (Creswell, 1994). Of course, case studies can be divided into different types, such as exploratory and explanatory. Tellis (1997) considers the former suitable for theoretical development and usually includes fieldwork. The definition of research questions and hypotheses is before the investigation, while the latter is often used for causal inference to help identify causality between different social phenomena or events. In addition, a case study is seen as an in-depth analysis of the individual unit (individual, institution, nation), emphasizing the development factors related to the environment (Denzin & Lincoln, 2018; Tight, 2017). Researchers usually choose one or several scenarios as research objects, systematically collect data and conduct a thorough analysis to discuss the possible status of a particular phenomenon.

Clifford (2010) argued "*both qualitative and quantitative research methods can take the form of extensive research design, highlighting patterns in large representative datasets and intensive research designs that primarily focus on a single case study or a small number of case studies*". Obviously, case study method is of great importance in answering questions like "Which variables were selected, and why?", "how are these variables examined?", "how can these variables be defined and measured?", and "how to select and define the data essential for research? Why?" and so forth. This research explores the investment project risk management under the background of BRI, as previously mentioned, which involves numerous countries, a certain amount of projects, and contains many relatively sensitive areas (some large infrastructure projects are thought to have military implications). Thus, the boundaries between phenomenon and the actual environment are not clear and not easy to distinguish, which is difficult to accurately and directly identify and design systemic and mathematical variables. At the same time, for

various complex reasons, some critical data relating to large infrastructure projects in developing countries along the BRI are challenging to obtain and publicly disclosed data is limited.

As stated in the previous chapters, the thesis of this study focuses on two levels. On the one hand, as a macro transnational investment platform, BRI is influenced by a series of extensive factors, such as the existing international investment and financing system and structure, traditional Western-dominated ideology, and the legacy of the financial development model. On the other hand, SOBs from China are also fettered by local policies, regulations, and cultural traditions in the host countries where they are implanted. Some scholars from developing countries believe that the model of developed countries might evolve in response to this (BRI) new political, economic, and cultural challenges for a long time to come, as China's influence and competition between the traditional powers, especially the U.S., will be intensified. After that, even with some apprehension, developing countries should adjust these theories according to their situations and adopt more open and flexible strategies (Styan, 2020; Dave & Kobayashi, 2018; Sachdeva, 2018; Thuan, 2017). Such complex cross-country and cross-cultural backgrounds involve geopolitics, international economy and other factors that have been discussed previously. The investigation and analysis of certain typical cases can facilitate in identifying the situation and risks that investors may face in this context.

For the above reasons, this study adopted two approaches: 1. The intensive single case study, including interpretative and explanatory, is "…*to provide a history, description or interpretation of unique and typical experiences or events. These events become the basis for developing theory from understanding the context in which certain events occurred*" (Cunningham,

1997). The in-depth analysis of selected single cases, combined with the broader historical and realistic background, provides data support for the theoretical framework of the research. 2. Comparative case studies, including case surveys, case comparisons, creative interpretations, emphasize contrasting observations from varied settings and highlight the development of clear concepts (Ibid).

However, Tellis (1997) argued that it (case study) always relies on a small number of cases (or even a single case) and thus fails to provide a broad summary based on extensive, objective data. Similar thinking may come from the difference between analytical generalization and statistical generalization, which means that case analysis under various variables and specific conditions may not be representative in many cases (Yin, 2008). It is not essential because a deep understanding of a particular event does not always come from mathematical analysis and the generalization of models. Generalizations are critical if careful attention is paid to the specific context and scope, so profound understandings would be gained; in contrary, the goal of a case study is inductive analysis rather than specific objects or events, so it cannot produce rules that are always universally applicable (Byrne & Ragin, 2009).

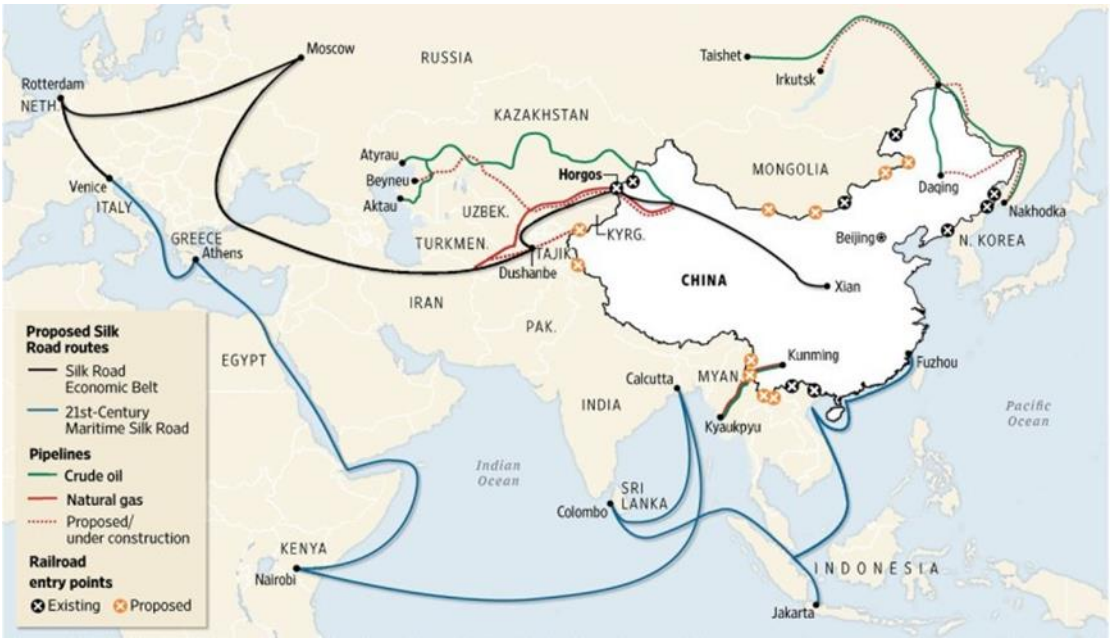
The case study method is suitable for theoretical hypotheses and, therefore, valuable to expanding and promoting the propositions. The comparative analysis of a series of cases under the same historical background (BRI) but with fundamental country differences (politics, economy, culture, etc.) summarizes the similarities and differences to provide a basis for establishing a theoretical framework. The latter part of this section will further illustrate the validity of case selection from different criteria and perspectives; however, it is necessary to clarify the unique conceptual settings among the ‘belt’ and the

‘road’. After all, the geographical notions have critical implications and impacts on the criteria for case selection.

4.3.1.2 Important interpretation of 'belt' and 'road'

As a strategy to endow new meaning to the ancient concept of economic geography, it is vital to further interpret the importance of geographical location in the selection of BRI key projects when screening cases. The BRI contend two fronts under the same strategy with major differences, especially among the regions they cover. As illustrated in figure 4.1, the ‘belt’ is known as the ‘Silk Road Economic Belt’, a land corridor linking the world's two largest economies – China and Europe – through the complex geographical region of Central Asia and parts of the Middle East. This route is a significant corridor that creates new opportunities for Central Asia and Eastern Europe as transit logistical centres and major product suppliers (BRI Portal, 2020). BRI is generally welcomed in the region, but the religious and cultural impacts on national sovereignty and security concerns are miscellaneous (Dave & Kobayashi, 2018).

Figure 4.1 New Silk Road routes and critical infrastructures



Source: Brookings Institution (2019)

‘The 21st century Maritime Silk Road’ is another sub-concept, which provides a densely populated consumer and industrial manufacturing opportunity as a vital sea route. It starts from the southeastern coastal provinces of mainland China and travels south through Southeast Asia, South Asia, the Middle East, and East Africa. Excluding China, the region accounts for 42% of the world's population and 25% of its GDP and is seen as the pole of future growth and economic engine (BRI Portal, 2020). Of course, it is imperative to note the geopolitical complexity of the region: it passes through a critical international maritime route – Strait of Malacca – which is a strategic path since ancient times. Not to mention the Strait of Hormuz as another strategic priority that connects the Indian Ocean to the Persian Gulf is critical to the continued petroleum transport (Blanchard, 2020). The South China Sea is not only a long-disputed region over maritime rights between China and its Southeast Asian neighbors, but also has triggered geopolitical pressures from outside the region in recent years (Thuan, 2017).

Thereafter, factors including geopolitics, macroeconomics, geography,

diplomatic relations, the environmental issues, law and regulation, and other various issues are all needed to be counted over the selection of cases. The above elements are summarized from the most up-to-date reports and literature related to BRI investment, with quick and critical references to the case selection criteria.

4.3.1.3 Validity of sample selection

The criteria for case selection are related to the subject of the study and the questions to be answered, which determines what attributes can bring meaningful data (Byrne & Ragin, 2009). The choice of the number of cases also needs to be considered, linking back to the overall research objectives and the scope of the research questions. For instance, a single case study can confirm or challenge a mature theory or present a unique or extreme case, which refers to the comprehensive analysis of each patient as an independent whole (Denzin, 2017).

It is noticeable that the background and related factors involved in this study cannot be elaborated on and explained in a single case study. Instead, the study fits into the character of multi-case research that is more sophisticated in structure. It typically includes two stages of analysis: intra-case analysis and cross-case analysis (Tellis,1997). The selected cases are extracted and summarized in a unified way based on the former to obtain a more profound description and a full explanation. The alternative cases are also compared in parallel to obtain a more objective evaluation and are required in the analytical process. After all, the author selected eight typical cases and adopted selection criteria mainly based on the following aspects:

1. The property of the project itself matters. The nature of BRI is to attract

countries' participation along the routes in 'large-scale infrastructure' projects. It is not easy to filter through many cases in finding a match for this study, so the 'priority' is the project size, investment amount, and impact. At the same time, from the perspective of the industries of the project, port, railway, and energy are the key ones to pay the most attention to, following the core value. As discussed over the conceptual settings of the BRI, they are not only the criteria for significant projects but also the capital and industries involved for the interests of both countries. Similarly, consistent with the analysis of the obtained policy documents, these are the industries in which Chinese enterprises have comparative advantages, and their 'going out' is in line with the policy guidance from the top-level during past decades (Liu & Tang & Chen & Poznanska, 2017).

2. The author mainly selects those that did not go well or had problems in the construction process. Denzin and Lincoln (2018) argued that the strategies for case selection are mainly random selection or information-oriented selection, and the latter is suitable for this study in apparent terms. There are a lot of BRI-based cases, but thriving and smooth-going cases cannot fundamentally evident the necessity of this research; on the contrary, failure cases or the ones that are not going well have substantial implications. This study mainly focuses on risk, so it is necessary to select projects that have encountered difficulties in their implementation or have stopped or aborted during the whole process. Related questions would include "what factors (or events) caused the unsuccess of the project?", "at what point (process) did this happen?" and "what measure(s) is adopted to control the risk?" etc. The answers to these questions and possible solutions can further verify the results. The causes of the case problem may be different,

and in-depth analysis and generalization can contribute to enlightenment and knowledge for the research results.

3. Another essential principle is that all eight projects are financed (or partially funded) by SOBs; obviously, this is consistent with the objectives of the research design. It is worth noting that with the development and changes of the international situation, the overall conceptual range of the BRI has been expanding in recent years, as more countries that did not belong to ‘belt’ and ‘road’ traditionally have participated. This is undoubtedly a sign of BRI's growing influence, however, the author sticks to cases that adhere to the traditional geographical concept of BRI as they reflect the origin meaning: they usually are developing neighboring countries to China and second world countries in transition; the infrastructure in these countries is either inadequate or ageing and eager to be updated or rebuilt (Shichor, 2018). Eight cases from key BRI regions – Southeast Asia, South Asia, Central and Eastern Europe – are realistic manifestations of the historical significance of the ‘belt and road’ (Miller, 2017). The data is compelling, as major projects are currently concentrated in these regions, reflecting the geographical nature. These projects can be considered as priorities for all sides, and some of them are seen as ‘flagship’ (International Railway Journal, 2019).

The author found in literature exploration that the articles and studies of Western academic and media towards the BRI are primarily based on conceptual interpretation, policies explanation or financial data analysis. There is little objective coverage of specific projects. There is minimal public disclosure available in developing countries, mainly presented in sporadic reports and inter-governmental memorandum. This may be because the

available data are only in Chinese or English, as the disclosure of relevant information in English is also limited in the host countries. To screen meaningful and typical cases from massive projects, the author mainly refers to policy papers and statistical data released from the official sources, including the BRI Portal, China's State Council, National Development and Reform Commission, National Bureau of Statistics; limited case studies from academic journals are also draw attention. Meanwhile, the author widely adopted the publicly released reports from influential institutions like the World Bank, IMF, OECD, the UN Program Development Agency, Brookings Institution, HSBC, etc. Adequate media coverage is also worth considering since they typically track projects that are not going well.

Some scholars mentioned the problem of ‘selection bias’ (of cases), as the value of the dependent variable may be biased as a result, which is a severe statistical problem caused by the underestimation of the relationship between the independent variable and the dependent variable (George & Bennett, 2005). Sometimes it is possible to select the case based on the value of the dependent variable, as this can help determine the adequacy of the chosen results (Ibid). For instance, in this study, what risk factors directly affect (significant/unique aspects) the project’s failure, and what factors may have only indirect effects (common factor)? This is understandable from the perspective of research design. It is necessary to determine the specific circumstances (phenomena or events) behind every case and then provide proper analysis and explanation, rather than simply calculating the frequency of statistical results (Tellis,1997). Although, to some extent, these biases may lead to underestimating and overstating the results, nevertheless, a solid theoretical framework incorporating the research methods can prevent this from occurring.

4.3.1.4 The data analytical process

Data analysis involves examining, classifying, organizing, or otherwise recombining evidence to explore the original proposition of the study (Bhattacharya, 2008). Before I can analyze the data, it is necessary to determine a specific strategy to understand the priority of the analysis. There is great flexibility in presenting case studies in social science research because there is no requirement for a standard or uniform format (Phelan, 2011). Researchers often use an analysis process that matches the research question, studying individual cases in-depth and then summarizing them based on this structure. In this case, author adopted two specific analytical strategies. Starting from the theoretical framework derived from the literature review, the first is to determine research questions that could be resolved through the case studies. Since the plan for data collection is question-based, it already reflects the priority of the relevant analysis strategy. Then the author would develop a descriptive structure to organize case findings and prioritize them by summarizing and categorizing them. The corresponding discussion allows me to connect the actual data and information based on the conceptual framework to find some patterns that contribute to risk management knowledge. Both approaches are helpful for case analysis and can be cross used during the analytical process.

In the design of the analysis structure, firstly, the background of each case is described separately so that readers can perceive the relevance between the choice of topic and the research question. Secondly, the specific problems and phenomena of the selected cases are described and analyzed, following a thorough review based on the information provided. This section will focus on case analysis, which can provoke reflection and lead to later conclusions. Finally, a decision will be drawn through a critical discussion of the relevant

issues reflected in the case. This approach would be valid for improving knowledge of the SOB's risk management behavior in BRI countries by identifying the key risk factors. During the case selection process, the author also found the lack of relevant studies is due to particular bias against state-owned and official enterprises in previous literature and the selective neglect (or downplaying) of failure cases by the Chinese official in directing the BRI propaganda (O'Trakoun, 2018; Kobelkova, 2017, Huang, 2016). Therefore, it is necessary to combine a solid theoretical basis with data from practical experience to construct knowledge and make up for this gap.

The research focus of this thesis is to address the necessary conditions or intervention variables (risk factors) considered from the perspective of risk management when Chinese SOBs invest in the BRI region, rather than the practice of traditional multilateral financial institutions under the same condition. In most cases, it is still necessary to follow the official released data, although they do not always reflect the actual situation, giving concerns on transparency (Chen, 2017). Practically the BRI projects are largely multi-participative, so the information available is memorandums of understanding between governments or institutions or released briefings through the official website of SOBs who are specifically involved in project financing. In the case of screening, I found that the information contained by the above sources is usually limited, so mutual evidence of multiple channels is needed to complete a case study. Therefore, the analysis process of case studies tries to collect meaningful data from different Western and Chinese sources and find relevant academic articles for circumstantial evidence to obtain more objective and genuine knowledge.

4.3.2 Interviews

"(Interview) recognizes research participants as an active part of the process,

rather than just the holders of data researchers are trying to acquire…"; "particular focus is on the research process as key stakeholder along with colleagues, collaborators, and the wider academic community." --(Young & Freytag, 2018).

Interviews can be conducted in several forms. The most common type is open-ended questions; the other is extended to formal questionnaires (structured/semi-structured, or closed-ended) (Kvale,1996). The researcher can dig deep from the information received more directly. In this regard, the main work of the interview is to understand the meaning of answers and then deliver the researcher's interpretation in combination with the knowledge background. This thesis aims to conduct extensive research and further deepen the subject matter, as described previously, to explore pioneering research in this area. Therefore, a questionnaire was considered besides the case method in the initial research design. Yet after certain deliberation and inquiries, I find that the management of these companies holds policies and decisions related to risk management; the questionnaire method based on much grassroots staff is not suitable since they do not master and understand the critical sensitive information. Interviewing the essential personnel is adequate as they have access to important information related to risk management and are involved in the decision-making process in project financing. As a result, a well-designed interview structure can accurately reflect their views on the research questions and help to establish an objective outcome. The research questions are extensive in related knowledge derived from the literature review. Thus, the investigation of cases can identify critical areas and further qualify the interview questions.

4.3.2.1 The selection of interviewees

"*Reality is man's subjective experience of the external world, and therefore reality is socially constructed…it is humanly constructed.*"

--Mutch, C. (2005)

The above worldview is an intentionalist social ontology that explains how social entities such as social groups and institutions are constructed (Detel, 2001). In this respect, social constructivism is somehow like interpretivism in that it describes knowledge as a set of beliefs or mental models that people use to explain actions and events. This way of looking at knowledge is the opposite of empiricism, mainly through the observation and collection of objective data to state the law of matters. Social constructivism tells us that we construct knowledge as ways of understanding the world and that these are only a subset of the many ways (of doing it) (Jackson, 2010). The methods that I employ in this research are to build knowledge that belongs to one of these subsets, which is based on the understanding and interpretation of hierarchical social institutions (groups), as well as the people involved who directly reflect their relevance and value to the research question, and to the effectiveness to the research objective.

Setting some criteria is the first step in selecting interviewees. According to Yin (2018), two essential criteria need to be considered when selecting interviewees and institutions they belong to. First, an institution's internationalization period should be long enough to gather meaningful information about its perception of the risks of investing abroad. Therefore, I chose sample enterprises that have conducted business overseas for at least ten years, which can meet the time requirements of BRI from its inception (2013). The unit of analysis of this study is Chinese SOBs operating in BRI

countries, and this background requires comparing the risk perceptions of sample companies. Due to the particularity of China's state system and the object of this study, people from official institutions or state-owned backgrounds have the value of a high degree of correlation. Yet, because the BRI investment is so broadly connected, professionals from international backgrounds are not excluded. The operation of Chinese SOBs is the core layout of BRI, which have solid practical concerns in terms of risk management. It is necessary to trace existing projects and evaluate their performance with current policy determinants. Hence particular cases and interviewees are chosen in this thesis, respectively, based on this principle. I contact potential interviewees through work contact and personal relationships (former classmates, colleagues, networks from relatives and friends, etc.). During the initial contact with the proposed interviewees, an explanation of the nature of the study is provided, and an anonymous principle is promised. Regular communication with the interviewees is maintained to determine both sides' schedules.

The banking professionals were selected mainly from the following organizations: China Development Bank (CDB) and Export-Import Bank of China (Exim Bank), the leading institutions the main executors of China's outward investment policy. The previous chapter has already illustrated their importance in financing capital among the BRI projects. China Export and Credit Insurance Corporation (SINOSURE) is a state-owned policy insurance company with independent legal status, supporting China's foreign economic and trade development and cooperation, especially in BRI investments. Industrial and Commercial Bank of China (ICBC) is the largest commercial bank. Industrial Bank (IB) is an emerging commercial bank in overseas business. Their involvement and closely related to the BRI policy orientation in recent years. Meanwhile, one participant from the HSBC would provide

interpretation of related knowledge from the unique perspective of co-operation from projects-related international partners.

Second, a high degree of correlation between the research context and the selected subjects must be guaranteed. Yin (2008) argued that respondents need to be familiar with their company's international strategy and operations, as such experience and knowledge can provide value for the design of this study. At the same time, those who worked in the international investment department at the company's headquarters or provincial branch or in positions related to global operations, investment decisions, and risk management were considered the most suitable participants. In other words, they must be ‘experts’ who are experienced in the research topic and related phenomena (Ochieng, 2009). Based on the above criteria, the background selection of respondents is as professional and diverse as possible. Many of them are not only senior executives but also have practical experience in risk-related positions of BRI project financing – e.g. respondents from SOBs, as well as several law firms, worked on projects that were selected from the case studies. They are mainly senior managers or board members from institutions who actively engaged in the BRI projects with years of knowledge and professional experience, not just information holders. This ensures that their statements on the research questions contribute directly to the research results.

Due to the particularity of the questions involved in this research, I also contacted some interviewees who are from non-financial institutions, whose knowledge and work experience can also contribute to the research results. For instance, Chinese government officials responsible for policy publicity and guidance, senior lawyers or partners of international law firms directly involved in the risk assessment and review process of BRI projects, department

managers from construction contractors on BRI projects, and researchers from essential think tanks. They have been involved in research, especially among large-scale SOEs investment projects. They are selected not only because they represent diversified institutions, but they all have direct experience and perspectives in risk assessment and management in existing BRI projects. The specialness of this study lies in the fact that the BRI projects are mainly driven by official sources, where development finance (or arguably policy finance) inhabits the dominant position. Thus, interviewees with dissimilar backgrounds and knowledge can provide critical information from their position and perspective in various issues proposed in the interview.

Meanwhile, I also managed to contact a UN official through a personal connection who agreed to be interviewed on the condition of anonymity for this research. This official has been responsible for developing economic and social affairs in developing countries of the U.N. for years, which provides a more critical interpretation of the research issue. The position and understanding are valuable to evaluating investment risk-related issues in the region. Such interviews can bring diversified answers and more objective interpretations to the research results and undoubtedly facilitate building knowledge in this research. Detailed characteristics of the sample institutions and personnel are shown in Table 4.1.

Table 4.1 Sample interviewee characteristics and interview details

No.	Interviewee	Organisation and location	Professional expertise	Years of work experience	Interview time and duration	Interview form and language
1.	A.	China Development Bank, Beijing	International project review and approval, investment risk management, project operation	23	13th May; 50 mins	Face-to-face; Chinese
2.	B.	Industrial and Commercial Bank of China, Beijing	International investment	25	16th May; 42 mins	Face-to-face; Chinese
3.	C.	Industrial and Commercial Bank of China, Beijing	International project review, legal counsel	7	18th May; 50 mins	Telephone; Chinese
4.	D.	China Power Construction Group Co. Ltd, Beijing	Project supervision and approval, international investment consultation	13	19th May; 1 hour 22 mins	Telephone; Chinese
5.	E.	Freshfields Bruckhaus Deringer, Law Firm, Hong Kong	International investment legal consultant	13	23rd May; 45 mins	Telephone; Chinese

No.	Interviewee	Organisation and location	Professional expertise	Years of work experience	Interview time and duration	Interview form and language
6.	F.	Logie-Smith Lanyon, Law Firm, Australia	Project financing	26	24th May; 40 mins	Face-to-face; Chinese
7.	G.	HSBC, Hong Kong	Project financing	10	24th May; 50 mins	Telephone; Chinese
8.	H.	Industrial Bank, Fujian	Risk management	12	27th May; 42 mins	Telephone; Chinese
9.	I.	Peking University Shenzhen Research Institute, Shenzhen	Cross-border M&A, strategic management	10+	1st June; 36 mins	Face-to-face; Chinese
10.	J.	China Development Bank, Beijing	Risk management	10+	2nd June; 51 mins	Telephone; English
11.	K.	Industrial Bank, Fujian	Overseas project investment, project approval	13	2nd June; 55 mins	Telephone; Chinese
12.	L.	Export-Import Bank of China, Beijing	Project financing	13	2nd June; 46 mins	Telephone; Chinese

No.	Interviewee	Organisation and location	Professional expertise	Years of work experience	Interview time and duration	Interview form and language
13.	M.	Export-Import Bank of China, Beijing	Export credit	10+	3rd June; 35 mins	Telephone; Chinese
14.	N.	Hubei Provincial Customs Declaration Association	International logistics customs clearance, BRI related policy	35	5th June; 50 mins	Telephone; Chinese
15.	O.	National Development and Reform Commission, Henan	BRI investment policy	16	6th June; 30 mins	Telephone; Chinese
16.	P.	State Administration of Taxation, Tianjin	BRI investment policy	30	7th June; 45 mins	Telephone; Chinese
17.	Q.	Ashurst Beijing, Law Firm, Hong Kong	BRI Financing Risk Advisory	17	7th June; 35 mins	Telephone; Chinese
18.	R.	United Nations Headquarters, New York, U.S.	Management of development program/project initiatives	9	11th June; 43 mins	Telephone; English

No.	Interviewee	Organisation and location	Professional expertise	Years of work experience	Interview time and duration	Interview form and language
19.	S.	China Development Bank, Beijing	International project review and approval, investment risk management	11	19th July; 51 mins	Telephone; Chinese
20.	T.	SINOSURE, Henan	International project review and approval, investment risk management	12	21st October; 42 mins	Telephone; Chinese

4.3.2.2 Design of the interview questions

"The choice among open or closed-ended questions depends on many considerations, including the question content, respondents' motivation, methods of administration, type of respondents, access to skilled coders, and amount of time available to develop a set of unbiased answers."

--Ticehurst and Veal (2000).

When constructing a questionnaire, two types of questions can be considered: open questions and closed questions (Ticehurst & Veal, 2000). An open question is also known as an open-ended question; it is like a short answer question in an exam, in which the person writes the answer according to their understanding of the question in the space below each question. Of course, most interviews will not require respondents to answer questions in this form but by tape recording. Closed-ended questions refer to the questions with alternative answers listed in the questionnaire. The interviewees are required to tick or circle the appropriate box; in the recorded interview, interviewees are required to organize and answer questions according to limited options (Reissner & Whittle, 2021). What style is preferable depends entirely on the design of the questions in the questionnaire, which should directly reflect what the researcher wants to learn from the answers and how this information can help achieve the research objectives (Kvale, 1996).

Closed-end questions are generally quicker and easier to answer because they require the shortest writing time (Ticehurst and Veal, 2000). In addition, since the answers to the questions have been classified during the design of the questionnaire, specific categories have been provided so that the interviewees can answer the questions correctly in the direction led by the researcher. This advantage ensures the researcher has the most-wanted

information and makes it easier to organize the interview results. Closed-end questions also have the distinct advantage of providing options to elicit direct answers from respondents, avoiding ambiguity due to sensitivity, expertise, or the respondent's linguistic organization (Reissner & Whittle, 2021). However, the main drawback of this type is the lack of depth and diversity of information obtained (Ticehurst and Veal, 2000). Moreover, closed-end question bias is more remarkable because the researcher may only provide the options they are interested in or wish to have.

On the contrary, the advantage of open-ended questions is that researchers will not disproportionately influence respondents' answers in the questionnaire design. Ticehurst and Veal (2000) argue that the diverse responses of interviewees can provide a rich source of material that researchers may not have thought of when designing the questions with closed answers. However, open questions are not perfect, with the following disadvantages: First, it is more challenging to analyze such questions, and researchers may have misunderstanding biases in the process of analysis; second, the response rate to open-ended questions is relatively low because interviewees often abbreviate or underwrite their answers out of laziness – the situation can be avoided in recorded conversations (Kumar, 2005; Ticehurst and Veal, 2000; Kvale, 1996). However, interviewees may still go off-topic in their answers, which is very common in interviews and requires some conversational skills to guide and resolve. After answering all the questions, the interviewees could express some opinions freely. The professionality of the interviewees can avoid incomplete information caused by difficulties in expression to the most considerable extent, which requires an appropriate screening process to safeguard (Reissner & Whittle, 2021).

The questions of this research design adopt the combination of open-ended

and closed-ended questions. The reason is to get the cognition of the potential risk factors involved in the BRI project from stakeholders as much as possible. Based on the discussion of the advantages and disadvantages of the two types of questions mentioned above, most questions designed are open-ended to get a wide range of answers from interviewees based on their unique knowledge and experience, to avoid prejudice. Closed-end questions mainly aim to investigate the interviewees' knowledge of the prominence and consequences of risk factors, project risk assessment methods, and relevant stakeholders. This is also based on the experience of the previous three pilot interviews, hoping to avoid vague answers from interviewees through natural choices toward core questions.

The designed interview would last within 60 minutes, including a few minutes of background dialogue and 50 minutes of Q&A, in a mixed-structured questionnaire. However, in practice, the actual time of the interview varies due to the very different personalities and preferences towards questions of the interviewees. Still, it can be finished within an hour. Due to the differences in the professional and institutional background of the interviewees, the questionnaire is structurally layered, divided into four parts with different topic focus respectively: 1. A general understanding of the BRI, 2. Risk management evaluation, 3. development project finance, 4. recent trends and developments. The overall logic of question design is consistent with the analysis framework (will be discussed later in this chapter), with issues being expanded gradually. The interview starts with the core questions section and moves on to the additional questions section. The author modified the questionnaire several times according to the effects of the first three interviews. The reason is that some interviewees tend to avoid some questions out of professional sensitivity, and their answers are either very vague or too long. Therefore, the author decided to change some questions

from open-ended to closed-ended and constructed the questionnaire progressively – to enter some sensitive questions when the interviewees were more relaxed.

The author is leading the pace of the question based on how well the interviewee answers it, which do not mean that all questions would be covered. The coverage of questions is determined according to the interviewee's professional and working background and their preferences. Additional "prompts" columns are set at the end of each part to provide an opportunity for the interviewee with heuristic thinking, hoping to expand the topic discussion by knowing more background information. There is random talk time if the interviewee finished earlier and willing to address any subject-related topics. The interviewees are chosen because of their practical and professional experience and knowledge, which can help solve the research problems and provide robust empirical evidence for the research results.

4.3.2.3 The interview process

"A qualitative research interview seeks to cover both a factual and a meaning level, though it is usually more difficult to interview on a meaning level."
–Kvale (1996).

The interview guide for this study is structured to explain the research background, purpose, and methods adopted by this study. It is sent to the interviewee a week or several days before the formal interview. It includes a brief explanation of the research background, purpose and methodology, and a commitment to the principle of anonymity (this is proved to be crucial later). The personal and contact information of the author was provided at the end of the guide to enable interviewees with possible future correspondence. While mixed-structured interviews were employed to encourage respondents to deliver their professional opinions on the questions and avoid confusion (see

appendix I), some interviewees returned the answered questionnaire (electronic version) to the author before the interview. In contrast, others choose to reply in the discussions.

Quite frankly, the undertaking of interviews was influenced by many external factors that deviated from the original design. For example, the travel restrictions from time to time caused by the outbreak in different places, and the new restrictions from the government towards state-owned institutions and their personnel since the start of the Sino-US trade war. Too many interviewees, the planned face-to-face interview needs to be changed to online (telephone), or the scheduled date must be rescheduled a couple of times. During communication before the interview, a few interviewees repeatedly emphasized timing sensitivity. "Some questions should not be asked, some words should not be said, and confidentiality (anonymity) should be paid more attention", according to them. Therefore, it is essential to respect the respondents' personal feelings instead of pushing them to answer discomfort questions.

The intensive interviews were conducted over three months (mainly from May 2021 to July 2021). Every interview is transcribed, translated, and proofread as soon as possible. This ensures the reliability of data while it is stored when the memory is relatively fresh. Due to an unanticipated technical malfunction, one interview was not recorded and had to be scrapped; another one was aborted due to the interviewees' sudden interruption during the interview and reluctance to continue for unknown reasons. Thus, the author conducted 22 interviews, of which 20 were effective, and two were invalid. Except for several face-to-face interviews requested by the interviewee earlier, most interviews have been online since then. The interviews were conducted either in Mandarin (18) or English (2), and each one was recorded individually. After

each interview, the author tried to ask the interviewees to introduce their colleagues who could participate in the study. A total of 6 interviewees provided the contact information of their colleagues. After further contact, 4 of them agreed to participate and be interviewed in a further arranged time; others were hesitant to participate and politely declined the request after some consideration.

4.3.2.4 The data analytical process

"*Interpretivist researchers not only look for the presence or absence of a causal relationship but also the specific ways in which it is manifested and the context in which it occurs.*" --Lin (1998).

(1) Data analysis process and technical route

Qualitative data analysis is to pursue the relationship between data categories and topics while deepening the understanding of the phenomenon. Therefore, the process should not be rigid and procedurally based but needs to be flexible and active in interacting with the data collected (Hilal & Alabri, 2013). It is achieved in this research through the coding process using NVivo for the interview data since "*coding was the most prevalent term used to describe the system of analysis*" (Reissner & Whittle, 2021). After the compilation of interview data, the study adopted a systematic method to analyze the collected. This process involves organizing, generating and categorizing, managing it by observing rules or patterns, and interpreting those patterns in a way that helps knowledge develop (Table 4.2).

Table 4.2 The analytical process and its criteria of interview data

Process	Criteria
Transcription	• Audio transcription, translation, and error correction
Encoding	• Coding based on text (1st level coding) • Sub-classing codes (2nd and 3rd level coding) • Group codes according to research questions (themes) • Optimize codes (check for duplication or error)
Analysis	• Data analyses and interpretation • The hierarchical coding and the adequacy of data are sufficient to research questions
Writing	• Methods outlined • Textual discussion based on research questions

The application of NVivo software enables the author to conduct a qualitative analysis of the data and ensure the validity and reliability of the data and its results. It supports multi-stage research activity management and periodic review by keeping study logs or tabs. Still, it also allows importing and encoding text data, editing, retrieving, reviewing, and recording data (Bandara, 2006). Data can then be arranged as input documents storing concepts, categories, themes, and even temporary ideas; it can save all information encoded under different types. The functionality of NVivo can be divided into three main elements, namely encoding, conceptualization, and data management. Based on the literature of qualitative research methods (Bhattacharya, 2008; Given, 2008) and data processing practices, I summarized the analytical process of interview data and relevant technical standards (Table 4.2). It can generally be divided into four steps - translation, coding, analysis, writing - which certainly is not a complete processing sequence. Each step may need to recall other measures for the supplement, modify or adjust repeatedly. Bluntly speaking, this is a complicated and time-

consuming process.

The first step is transcription, converting audio into text. Since most of the interviews (18) were conducted in Chinese, they were subsequently needed to be translated into English. Don't expect to rely solely on software to do this because the results are not satisfactory. Thus, each text must be proofread by the author respectively, and for error correction. Then the author codes and analyzes each transcript separately, which is the process of within-case analysis (Denzin & Lincoln, 2018; Strauss, 1987).

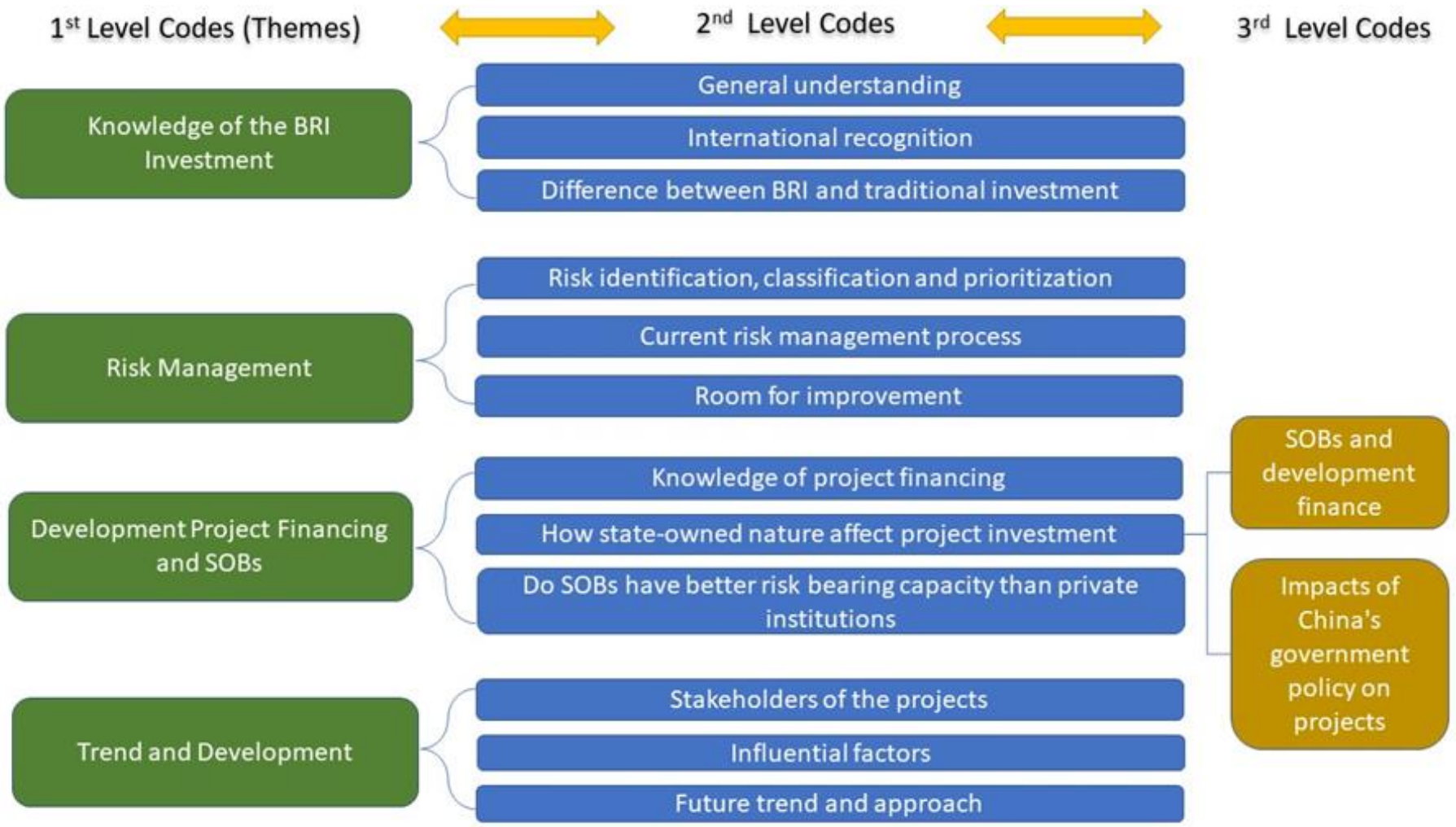
The next step is to encode. After inputting all transcribed texts, the author firstly divided the codes into four topics based on the grouping of interview topics, namely four groups of 1st level codes, which are ‘knowledge of the BRI investment’, ‘risk management’, ‘development project financing and SOBs’, and ‘future trends and development’. As shown in Figure 4.2, the grouping is layered in three steps among the interview data. In the 2nd codes, I identified 12 topics, with each corresponding to the four themes of the 1st level codes. The original plan was to adopt only 1st and 2nd level encoding to avoid duplication and disorientation among the massive amounts of data. However, as the case analysis deepens, the author finds that the topic of ‘development project financing and SOBs’ involves a lot of content, which may confuse the concept. Almost every respondent provides views on the concept of SOBs based on their knowledge and personal experience. There is also further discussion about how BRI investment is influenced by the Chinese government’s ‘going out’ policy. Therefore, the 3rd level of coding was carried out under this category to clarify the concept further.

Of course, the two fundamental concepts involved in this research - 'BRI project risk management' and 'SOBs project financing' – focus on the data

analysis process. As mentioned above, the questions in the first part are set from the experience of several pilot interviews, hoping to gradually build an understanding of the research topic to guide the interviewees into deep topics because of their own identity and sensitivity to the research issues. The 2nd level tree nodes are derived from the interview section and sub-sections. The first part of the interview questions covers a basic understanding of the BRI, its international recognition, and the differences between BRI projects and traditional investment projects. The second section covers broad knowledge of risk management to practically investigate the identification, classification, and prioritization of risk factors. And the current risk management measures, their weakness and suggestions for improvement are also the core to the research finding. At the same time, the questions involved are set based on the literature review and case study analysis. The third area covers related issues and sub-issues of development finance: how the state-owned nature affects project investment and risk tolerance of SOBs. Sub-level topics are designed in discovering development financing practices and policy influence of the Chinese government towards risk-related issues of the BRI. The last part surveys respondents' viewpoints on stakeholders, the most influencing factors, and the future trend of the BRI.

Figure 4.2 provides a code table of tree-nodes using the NVivo to analyse. The source is the interview data, with all respondents providing information by answering questions. However, not all of them covered the whole set of questions, as some respondents offered vague answers to some questions or avoided questions that were relatively sensitive to them.

Figure 4.2 Hierarchical coding diagram


1st Level Codes (Themes)
2nd Level Codes
3rd Level Codes
Knowledge of the BRI Investment
General understanding
International recognition
Difference between BRI and traditional investment
Risk Management
Risk identification, classification and prioritization
Current risk management process
Room for improvement
Development Project Financing and SOBs
Knowledge of project financing
How state-owned nature affect project investment
Do SOBs have better risk bearing capacity than private institutions
SOBs and development finance
Impacts of China's government policy on projects
Trend and Development
Stakeholders of the projects
Influential factors
Future trend and approach

After completing the preliminary coding, the code table must be optimized according to the completed classification check for repetition and error and further error correction (Table 4.2). The author merged nearly similar sub-codes (children codes) into the same higher-level category (parent codes), simultaneously merging unnecessary codes to same-level category, and so on until no further similar or shared code is checked. While developing the hierarchical coding, the correlation between these categories can make the theoretical orientation clearer and provide a more robust understanding of how practitioners view the risk related issues on BRI project financing. This is a practice of knowledge interaction as "*coding is based on the combination of data on the page and empirical data, as well as the knowledge of the technical literature that the analyst brings to the inquiry*" (Strauss, 1987).

(2) Advantages and weaknesses of using NVivo

The study found a dichotomy when using qualitative analysis software. It has the advantage of improving the quality of textual data, which is essential for understanding the research field (Dean & Sharp, 2006). When using the NVivo, the author starts with the basic structure: the information provided by respondents for BRI project risk management and SOBs financing activities and expands these structures into various sub-themes. In addition, using the software, it was found that constant modification and updating of the data was necessary to ensure that all information was loaded and structured into the relevant tree nodes. Exemplary initial tree nodes can lead to faster and deeper analysis, and repeated reviews are critical to monitoring the quality and relevance of these nodes (Ibid).

Problems and limitations coexist in the research practice. First, the author found that NVivo does not perform analysis; it is only practical assistance for sorting, interpretation, conceptualization and retrieval (Buchanan & Jones,

2010). In other words, its primary function is to help researchers classify and identify data, thus facilitating the discovery of results. This makes the process different from quantitative research because it does not run automatically for results. This is due to qualitative research, namely its richness and complexity of unstructured data (Creswell & Poth, 2018). Therefore, researchers must reasonably choose theoretical perspectives and analysis techniques to ensure the validity of results when using the software.

(3) Other issues relating to data collected

The interview questions were drawn from the purpose of the study, as well as an exploration of the background literature. The interviewees were all professionals from the industry, and their responses were based on their expert experience and contributions to the real-time BRI projects. Thus, the collected data, after processing and analysis, have the credibility to explain the research objectives, as well as the credibility to the logical process of discussion.

It is also worth mentioning that some respondents from policy banks and government departments were initially resistant to the audio recording, mainly due to the potential pressure received from their superior or employer. The international environment has changed after the imposed sanctions of the U.S government on Chinese enterprises since 2018. According to the first interviewee (a high-rank executive), all employees in his organization were required to sign a new ‘confidentiality agreement’ in early 2019, which prohibited them from accepting interviews from foreign institutions – “*We need to be vigilant on this because it is a political matter*” (Interviewee A.). In the subsequent interviews, several interviewees also expressed a similar opinion, and they were all executives from SOBs. This can prove the high political

sensitivity of BRI itself from one aspect and also provide important implications for the research results. Indeed, respondents from SOBs were not the only ones who emphasized confidentiality. Two executives from international institutions stressed the same after seeing the interview rundown. This further confirms the delicate role of the core personnel from commercial institutions regarding their opinions on such topics. Fortunately, these difficulties were overcome after repeatedly explaining and stressing the interview's anonymity principle. This also strengthened my confidence to complete this research because these difficulties reflect its originality and uniqueness.

4.3.3 Policy Documents Analysis

Another source of data collected for literature reviews and case studies throughout the research process is the use of relevant policy documents and archives. As introduced in the research background chapter, although BRI was proposed only a few years ago, its origination has a long history tracing back to ancient times. The concept combines the roadmap of early trade with the development concept of foreign investment in the modern 'reform and opening up' policies (Ohashi, 2018). At the same time, due to the distinct nature of BRI (the first transnational investment plan initiated and led by a developing country), although the term 'initiative' is often applied; in fact, the Chinese government and official institutions were required to show and promote the investment in developing countries in the early stage. Thus, the interpretation of relevant government policies and documents at different stages is enormously important to understand the evolution of BRI and its current development. The research context and literature review chapters focus on analysing Chinese economic reform policy and its impact on the BRI and the origin, evolution, and progress of BRI as China's OFDI to position the background of the research issues. All these essential arguments require

interpretation of the key policy documents of the government in different periods, attempting to lay a decent conceptual foundation and analytical framework for the research.

Essential data and documents adopted in this thesis include but are not limited to: officially published documents of the BRI portal, an annual statistical bulletin published by China's State Council, ‘China's overseas investment country risk report’ (2019) issued by the Chinese Academy of Social Sciences (key think tank to the State Council), annual foreign investment guidelines and statistical bulletin established by government departments (Ministry of Commerce, Bureau of Statistics, etc.). Meanwhile, data published by some authoritative international financial institutions and organizations are also referred to and cited in the research. For example, "Harmonizing Investment and Financing Standards Towards Sustainable Development Along the Belt and Road" (2019) issued by the China Development Bank (leading policy bank); "Funding and financing infrastructure: the joint-use of public and private finance" (2019), "Doing Business" (2020) published by the World Bank; "The Belt and Road Infrastructure Development Index Report" (2019) released by the BRIDI; "China's Belt and Road Initiative in the Global Trade, Investment and Finance Landscape" (2018) printed by OECD, and so forth. These documents and reports cover China's foreign investment policy, industrial policy, financial reform policies, BRI statistics, national (regional) risk rating and infrastructure investment condition in developing countries, which enable a deeper and more structured understanding of the issues raised in this study from diverse perspectives.

Meanwhile, combined with the case study analysis, the research result examines the risk management problems faced by SOBs when they provide

funds to BRI countries through project financing. The case study provides empirical evidence to support the thesis through document analysis and to obtain the views of critical participants (stakeholders) on the appropriateness of the proposed risk management framework based on their actual work experience and expertise. The official documents and published information with briefings for internal distribution are collected for reference. Documents include audit committee reports, internal risk management reports, and risk management manuals.

With government and policy support, SOBs are not ensured to avoid losses in participating in overseas projects. Their performance can be seriously undermined by cumulative bad loans, which may affect the bank’s position in the international market (Matthews, 2013). In the highly informationized and transparent global investment world, the reputation of a company or even the country behind it is crucial when facing major decisions. Therefore, sound risk management is always an essential part of a bank’s overall policy and strategy (Liu & Zhang & Xiong, 2020). In the case of SOBs from China, most banks have set up specific risk management procedures; however, the lack of research of a unique and contextualized RMF towards development project financing in BRI countries make this research possible. The use of documentary analysis is not only for validation but also to deepen and expand understanding of BRI-related issues' dynamics. The triangulated research design allows the structure of the whole thesis to be more complete and safeguards the validity and quality of research.

4.4 Research Questions and Theoretical Framework

The core issue of this thesis is to investigate the significance of risk management for SOBs of China for their investments in the BRI and establish

a specialized risk management framework based on the combination of theories and empirical evidence. To clearly show the logical relations of this study, the author draws a table to match the main research questions with the research objectives and proposed research methods (Table 4.3). It should be noted that due to the intense underlying correlations, research objectives and the methods adopted may overlap. This ensures the consistency of research questions and goals from the overall structure and enables each question to incorporate into the overall research design. The answers to these questions will reflect the case study and interview results, which will eventually contribute to the conclusion of this study.

Table 4.3 Matching the research questions with research objectives and methods.

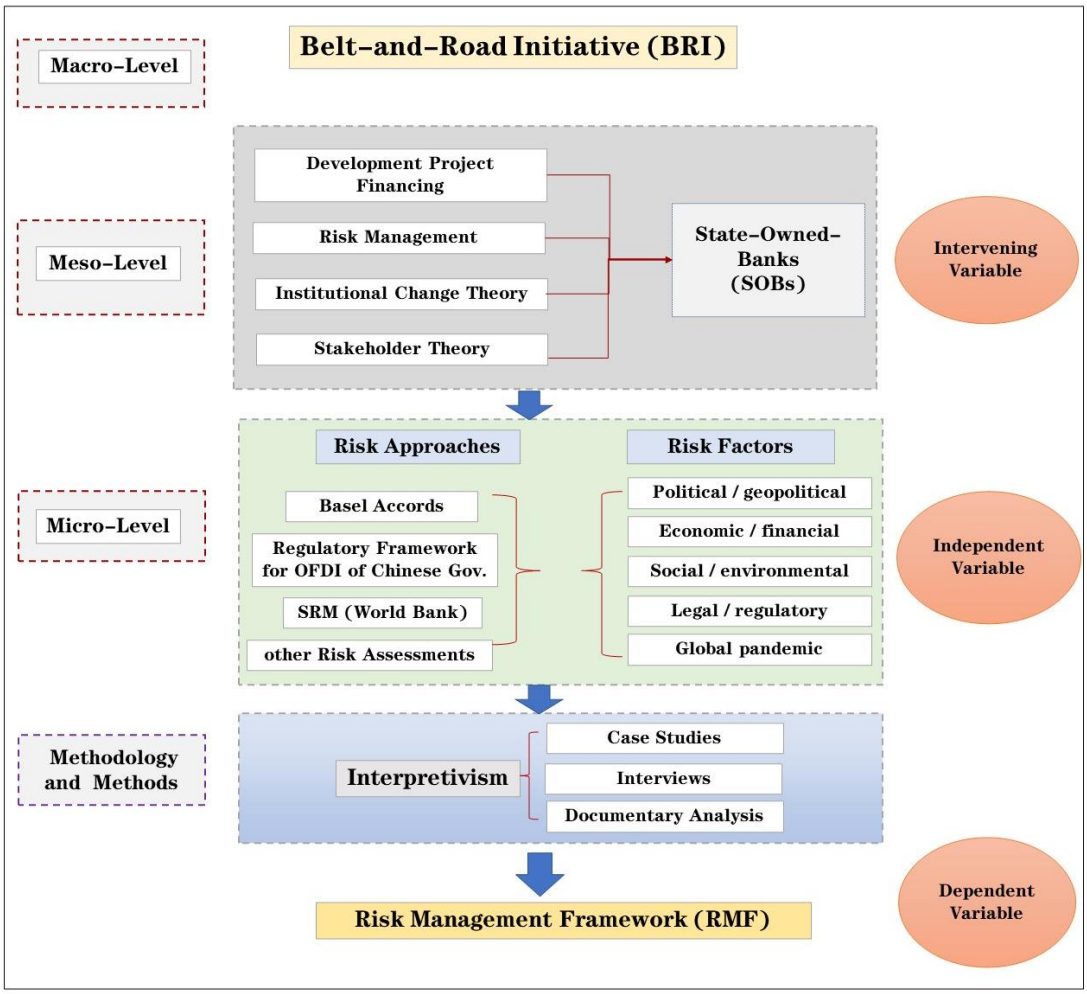
Research Questions	Research Objectives	Research Methods
1. How to identify different risk factors associated with the BRI investments? 2. How to categorize and prioritize these risk factors?	To provide analysis of the risk sources associated with the BRI investments through literature review.	Documentary analysis, case studies, and interviews
3. What are the approaches or methods used in the risk management process of current projects? 4. How to identify the weakness that appears in the current risk management measures?	To identify the research gap of BRI investment in general and BRI project risk management by examining existing literature and empirical evidence.	
5. How does the state-owned nature affect project	To discover the theoretical basis of development project financing in the context of BRI	Documentary analysis,

Research Questions	Research Objectives	Research Methods
financing, and to what extent?	through the examination of existing literature.	interviews
6. What are SOBs' experiences and weaknesses in BRI project risk management?	To discover the experience and weakness of SOBs in BRI project financing risk management through examining existing literature and empirical evidence.	Case studies, interviews, and documentary analysis
7. What factor(s) would contribute the most to the BRI project's failure?		
8. Is a unique Risk Management Framework (RMF) necessary to the BRI projects?	To develop a unique RMF to identify, classify and prioritize the risks associated with the BRI projects. To effectively provide policy and strategic suggestions to the stakeholders involved.	Case studies and interviews

Different analytical techniques are required for case research methods, including selected case studies and professional interviews to connect data and propositions. For case studies where existing theories do not predict the results or explanations are inadequate, process tracing is particularly useful in finding evidence for causal mechanisms and obtaining answers for abnormal cases (George & Bennett, 2005). In this paper, the outward investment of Chinese enterprises is a process of dynamic evolution over time, which has already been discussed in the previous chapter. To examine complexity in detail, process tracing is an effective analytical model for exploring development, as case studies also require substantial evidence of process tracing to filing complex interactions. To better understand the logical structure of this research, author employed a theoretical framework diagram (Figure

4.3) to illustrate the relations among theories and objectives as different set of variables to be defined and analyzed, respectively.

Figure 4.3 Theoretical framework diagram



Source: author

The process of the analysis is closely related to the definition of the variables set in the study. First, the authors define SOBs as a mediating variable, which serves as the basic element of this study at the macro level. Its two unique attributes – state-owned nature and risk management implementer – defined it as the research subject. Its role, nature, and responsibility in the overall layout of the BRI may change dynamically over time, thereby influencing other

variables. As the research focus and conceptual scope, development project financing and risk management affect the risk behaviors of SOBs in the meso-level. The literature review chapter aims to clarify the relationship between them conceptually and locate the research gaps and lead the innovation points. Through an interpretation of policy documents and critical literature, the authors are able to recognize the uniqueness of development financing institutions that are critical to BRI investments.

As the basic theories applied in this study, “institutional change theory” and “stakeholder theory” simultaneously influence the overall research. First, the theory of institutional change employed in this study facilitate to explain the institutional factors in the BRI project financing. It is believed that in the economic activities with deepening division of labor, the transaction chain continues to extend, the information asymmetry between departments becomes increasingly serious, and the transaction cost keeps rising (Brousseau & Garrouste & Raynaud, 2011). Institutional innovation reduces transaction costs and potential risks, thus ensuring complex transaction activities. At this time, people's economic interaction greatly depends on reliable, regular patterns of behavior, and the coordination of these activities requires institutions and institutions (Ibid). Institutions can be regarded as a public good, produced by individuals or organizations. Due to the scarcity of resources, the supply of institutions is limited. With the change of the external environment or the improvement of their own rationality, people will constantly put forward the demand for new systems to achieve the expected increase in earnings (Faghih & Samadi, 2021). When the supply and demand of the institution are basically balanced, the institution is stable; when the existing institutional setting cannot meet the needs, it will cause the change. From this point of view, both BRI, as a new macro institutional arrangement, and SOBs, as the implementing agency, can be understood as the change demand of the

international community for the existing system.

Another important theory involved in this study is stakeholder theory. Stakeholders are groups or individuals[30] who have an interest in the behavior and consequences of an enterprise's production (Phillips, 2003). Each stakeholder group hopes that the organization can provide them with priority when making strategic decisions in order to achieve their goals, but the relevant interests and focus issues of these stakeholders are very different and often contradictory (Ibid). Stakeholder theory requires enterprises to improve the level of governance, taking into account the interests of all parties and social effects. BRI's infrastructure projects involve many stakeholder groups and require consideration of their welfare, given the social effects (quasi-public) of the projects. Thus, putting forward higher requirements for project companies in terms of risk management and control (Ma & Wang & Tseng & Chiu, 2018). Furthermore, the RMF as a result of the study and other policy recommendations based on it will serve all stakeholders' benefits of the BRI project.

The independent variables mainly include the traditional risk management frameworks and other assessment tools that evaluated, and the identification of risk factors for BRI project financing in Chapter 2. SOBs need to review and examine various projects according to these independent variables in different countries and regions. The analytical process and critical evaluation would ultimately lead to an effective dependent variable - a unique risk management framework. As mentioned in the previous chapter, risk management is a

[30] For enterprises, its stakeholders in general can be divided into three categories: capital market stakeholders (shareholders and company capital is the main supplier, product market stakeholders (main customers, suppliers, local communities, and the union), as well as the organization stakeholders (all employees, including managers and general staff) 301. – Phillips, R. (2003). Stakeholder theory and organizational ethics (1st ed.). San Francisco: Berrett-Koehler Publishers.

collection of activities related to risk factors and their assessment, positioning and prioritization (Radoi, 2018). Thus, these can be measured at the micro level by specific SOB operations. In addition, the efficiency and innovation of the Belt and Road investment risk management measures need to be considered. In scientific research, the dependent variable can usually be observed and evaluated; Humanities and social studies are more difficult to monitor visually (Ochieng, 2009). Therefore, in this study, the input values of the independent variables were determined by determined research methods during the observation process. The changes of input values of independent variables such as internal and external risk factors will affect the output of dependent variables. Therefore, the research results are based on the application of case study and interview results. The interaction of these factors and the corresponding analysis can directly promote the result of research.

4.5 Summary

Although there is no such thing as a perfect research paradigm, it is recognized that a suitable approach will have its unique role in providing researchers with a holistic framework and multiple perspectives to interpret significant social issues. Therefore, applying the theoretical basis in research must ensure the best quality of study in conveying its validity, reliability, relevance, and targeted action (Ruhl,2004). Since the BRI is a relatively new concept, the theoretical foundation is still developing and will continue to change along with the international condition. The existing quantitative analysis is more about the data of all investment participants involving various industries and does not consider SOB as a unique research objective. This is most likely due to the absence or incompleteness of available public data; after all, many BRI projects carry high political implications and regional sensitivities that are difficult to be measured tangibly. Characterized as state-

owned, the investment behavior of SOBs expects to follow a unified and generalized guideline – although it is subject to constant revision as time and changing demand – the rule applies. Nevertheless, their investment practices and risk management methods are differentiated, as some standard rules can be drawn from this study.

This chapter analyzes the importance of interpretivism to this research from a philosophical standpoint while contrasting the difference between positivism and interpretivism. It is possible to grow new theories when using the interpretivism paradigm in constructing research to understand the institutions better, the people involved, and their relative behaviors in risk management and the decision-making process (Blaikie, 2004). This study aims to construct a thorough and profound understanding of the risk factors. At the same time, determine and measure the current risk management situation over BRI projects to develop a better approach for the stakeholders involved. This would go beyond the descriptive research paradigm and more humanistic factors implicated in the whole analytical process. As a result, the author adopted an interpretive methodology based on real cases – using selected case studies combined with interviews of chosen practitioners from the industry. The proposed qualitative methods adequately match the listed research questions and connect with the analytical framework. The expected results will be effectively evaluated and achieved in the following chapters.

Chapter 5. Research Analysis and Results I: Case Studies

5.1 Introduction

In today's international community, where the global economy is weak and

various crises are superimposed, the massive demand for infrastructure construction from developing countries undoubtedly drags global attention. In the past few decades, there has been a great deal of research on the impact of infrastructure on economic growth and national welfare. However, it is still difficult to draw consensus because it has complex socio-economic implications. As World Bank economists Rozenberg and Fay (2019) argued, "*infrastructure services depend on much more than just a stock of capital"*. Government invests in infrastructure for various reasons – the pursuit of growth, promoting social equity, environmental protection, public health, political objectives, etc. This complex relationship means it is impossible to determine the optimal level. The trade-off between competing goals means infrastructure planning and investment is essentially a political option (Ibid). The study of typical cases would benefit from understanding both parties' choices.

This chapter aims to demonstrate and analyze the selected cases, evaluate and classify the risk factors that can affect the BRI project from the results, and provide practical insights into their problems. The eight cases were chosen following the criteria explained in the methodology chapter by their significance, typicality, and geographical distribution. In fact, with the development and changes of the international situation, the overall conceptual framework of BRI has been expanding in recent years, as more countries that did not belong to 'belt' and 'road' in the traditional geographical concept, together with some non-typical projects have been included in. However, the selected typical cases are adhered to the conventional concept and focus on the core of BRI – infrastructure construction projects. They reflect a new model of international cooperation for developing countries but with challenges that have not been encountered before (Shichor, 2018).

Therefore, this chapter starts with a detailed introduction to each case's origin, development, and latest progress or status and summarises and compares the risk management problems. A thorough analysis of each case to summarize the influencing risk factors and a horizontal comparison to identify and classify the underlying factors that affect project progress from regional distribution, capital flow, industrial distribution, and relations with China, even geopolitical trends.

5.2 Case Studies: Investigation of the BRI Infrastructure Projects

5.2.1 Case Study 1 – Port Qasim Coal-Fired Power Plant, Karachi, Pakistan

5.2.1.1 Case introduction

As China's closest neighbour and cooperative partner, Pakistan is of great significance to the BRI development in South Asia. Although terrorism and a turbulent social environment have affected Pakistan's stable economic development, the construction of the “China-Pakistan Economic Corridor”[31] has contributed to the improvement and development of Pakistan's domestic economy, benefiting from Pakistan's consistent alignment with China-Pakistan cooperation. In recent years, Pakistan's GDP growth rate has maintained a high level (3.86% on a 10-year average[32]). As Pakistan's industrial-scale

[31] China–Pakistan Economic Corridor is a collection of infrastructure projects that are under construction throughout Pakistan since 2013. Originally valued at $47 Billion, the value of CPEC projects is worth $62 Billion as of 2020. CPEC is intended to rapidly upgrade Pakistan's required infrastructure and strengthen its economy by the construction of modern transportation networks, numerous energy projects, and special economic zones. On 13 November 2016, CPEC became partly operational when Chinese cargo was transported overland to Gwadar Port for onward maritime shipment to Africa and West Asia, while some major power projects were commissioned by late 2017 (CPEC, 2021).

[32] GDP growth (annual %) – Pakistan, the World Bank, https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2020&locations=PK&start=2010&view=chart.

grows, demand for electricity within the country is rising, and the country's existing power supply is insufficient.

Pakistan is rich in solar, hydropower, wind, and other new energy sources and abundant coal resources in terms of its domestic natural resources. Currently, high prices in Pakistan, which is heavily dependent on oil and gas imports, discourage the further expansion of its domestic power infrastructure. Due to the backward level of development and construction, Pakistan cannot balance its supply and demand, let alone establish a unified and efficient power supply network (Shahbaz, 2010). To improve the situation and make up for the shortage of power facilities, the Pakistani government has announced a series of policy supported power projects to encourage foreign and private investors. In recent years, with the steady progress of the BRI between the two countries, several Chinese power companies have invested in construction projects in Pakistan, bringing good economic and social benefits to the Pakistani side, as well as profitability to these SOEs (Wolf, 2020; Ullah & You & Ullah & Ali, 2018).

"Pakistan Project 1" is the coal-fired power plant at Port Qasim, as Prime Minister Sharif of Pakistan calls it, is one of the critical projects to be launched under the BRI framework[33] (Alam et al., 2019). Upon completion of the project, the Port Qasim Power Project Company will hold the ownership and operation of the power station for 30 years, after which it can be handed over

[33] Located in an industrial park approximately 37KM southeast of Karachi, the coal-fired power plant is designed to contain two generating units, each of which has a 660MW generating capacity. It is expected to generate enough electricity annually to meet the daily needs of 4 million households in Pakistan and alleviate the difficult situation of frequent power cuts. This coal-fired power station project is carried out under the BOO (Build-Obtain-Operate) operation of PPP mode and invested by China Power Construction Corporation (CPCC), responsible for all construction procedures. The overall coordination and macro-operation of the project are under the participation and responsibility of Pakistan's Power Infrastructure Commission, and the power plant is sold at about 8 cents per kilowatt-hour. The project began in 2015, and the first generator set was put into operation in November 2017 (Power Technology, 2021).

to the Government of Pakistan for continued operation. Regarding loan financing for the project, the Export-Import Bank of China and the Port Qasim Power Generation Project Company will undertake US $1.56 billion and the US $530 million, respectively, the first half of which will be guaranteed by the Pakistani government (Power Technology, 2021).

5.2.1.2 Case analysis

From the internal national conditions and the actual construction situation of the power station in Pakistan, the BOO mode effectively meets the project's requirements. Adopting this model for the Pakistani government undoubtedly relieves the more significant financial pressure and avoids the project due to limited budget constraints and shutdown. Meanwhile, promoting the pay-for-use mechanism is bound to require the electricity price to be at a reasonable level rather than below the cost price, which is necessary to solve the domestic electricity debt problem (Alam et al., 2019). In addition, compared with the current domestic fuel oil and gas as raw materials for power generation, the project uses imported coal as primary fuel, which will undoubtedly significantly reduce the cost of power generation and effectively expand Pakistan's domestic energy supply structure.

CPCC as the contractor of the power station project, and the Export-Import Bank of China as the financier, the BOO model helps them to achieve a win-win situation in this case. Due to the sovereign guarantee provided by official institutions, CPCC has apparent advantages in obtaining loans and financing. Since there is less project capital cost input, CPCC can stimulate investment, meet the project construction capital demand, and smoothly promote the project construction. In this mode, it has a significant share of project control rights, ownership and management right through the specialized operating

company. The 30-year operation period and the policy support to apply for continued operation after the expiration would ensure the profit margin in the subsequent operation of the project.

Project difficulties and related risks

The first is the macroeconomic environment and regulatory issues. Although terrorism affects the stability of Pakistan, its economy obtained faster growth due to the closer ties with China in recent years. Pakistan has maintained good levels of GDP growth and the gradual increase of FDI to improve the macroeconomic environment and reduce the uncertainty of investments. The construction land of the Port Qasim coal-fired power station is in backfilling area of the seacoast, and there are disputes about the ownership of the area between central and local governments (Power Technology, 2021). Because the related land lease agreement cannot register, the issue caused a 15-month delay and almost affected the project's issuance of loans and construction progress.

The second is the administrative difficulties caused by the difference in policy and legal environment between the two countries. Pakistan lacks domestic power construction equipment required for the coal-fired power plant; such generating units must be imported from China. Although the Pakistani government approved the import of the project of duty-free policy, there are various problems (not apparent) in the actual implementation, leading to interruptions of tax relief. Therefore, the project was put on hold for a short time. In addition, the internal corruption of the Pakistani government is relatively severe, the domestic institutional setup is also complicated, which is causing low administrative efficiency and messy procedures. These aggravate the difficulty in the process of project implementation and prolongs the time of project implementation (Ullah & You & Ullah & Ali, 2018).

Third, there are project operation risks. Although Pakistan is rich in natural and coal resources, the survey results show that the calorific value of coal in Pakistan is low and belongs to low-quality coal. Therefore, the Port Qasim coal-fired power station does not use domestic coal resources but imports coals to ensure coal's quality and price efficiency. However, the full use of internationally imported coal means that import costs and supply will be affected by the international market, and price fluctuations may affect the long-term stable operation of the power station. However, from the perspective of its domestic electricity situation, the government has given subsidies to power generation companies for a long time due to the long-term use of oil and natural gas as raw materials for power generation, which has affected the government budget. Even with the policy guarantees, the Port Qasim project still faces the risk of unpaid electricity bills (Ullah & You & Ullah & Ali, 2018). If the above problems cannot be adequately solved, the construction and subsequent operation of the project will inevitably face various risks.

Finally, Pakistan's political instability and regional conflicts continue, and many political events restrict the smooth progress of overseas investments (Shahbaz & Muhammad, 2010). An excellent political environment is an essential guarantee for the smooth implementation of investment projects, which is also an important influencing factor for reducing the uncertainty faced by enterprises, and a necessary guarantee for participants to obtain rights and interests. A more stable regional political environment and high level and efficient supervision and law enforcement can reduce the uncertainty faced by investors, thus increasing the possibility of investment in risky projects and avoiding the risk of investors being rip-off (He & Lin, 2020).

5.2.1.3 Case summary

The problems mentioned above during the power station construction have been resolved between the two parties, including the Land Lease Agreement and the implementation of tax relief and exemption, which ensured the project's performance. Under the BOO model, the Port Qasim coal-fired power station construction project involves many domestic enterprises. As the contractor and organizer of the project, CPCC work with relevant domestic enterprises as it needs to make overall arrangements and coordinate all links in terms of project design, project contracting, operation and maintenance to ensure the smooth and effective execution of project planning, procurement, operation, and construction by enterprises of all parties (Ullah & You & Ullah & Ali, 2prominent.

As the leading financier, the Export-Import Bank of China participates in this PPP project, expanding the beneficial solution of excess domestic capacity, cultivating relevant talents, and promoting the vital link of BRI financial planning. The foreign project investment and construction of enterprises under the PPP mode involve many matters such as research and planning, contract design, contract negotiation, risk management, compensation and so on. At the same time, professional issues such as financing and guarantee also require corresponding professionals. However, the project's smooth progress is generally inseparable from the high degree of friendly and cooperative relations between China and Pakistan over time, which laid a foundation for a higher level of development in other PPP projects in Pakistan.

5.2.2 Case Study 2 – Myitsone Hydropower Station, Myanmar

5.2.2.1 Case introduction

As a Southeast Asian country that has maintained close economic and trade relations with China, Myanmar joined BRI at an early stage and made some substantial progress. The Myitsone Hydropower Station in Myanmar, known as the fifteenth largest globally, was built on the upper reaches of the main Irrawaddy River. The project started in late 2009 with the Ministry of Power, China Power Investment Corporation (CPIC) and domestic company Asia World. The project is expected to generate enough power that supplies mainly to Myanmar and China, also can be exported to neighboring countries after meeting domestic demand. Since the local power supply is insufficient to complete the project's request, a small hydropower station with a total designed capacity of 9.9 MW was started to serve the project as early as 2007, completed in 2011 (Paungku, 2019).

After the construction of Myitsone Hydropower Station with a planned investment was officially started, the governments of Myanmar and China signed a framework agreement to explicitly support the development and construction of Myitsone Hydropower Station and express their support for the project of CPIC. The project was developed and constructed in the Build-Operate-Transfer (BOT) of PPP mode and transferred to Myanmar free of charge after the franchise period of 50 years. However, the construction has been called off not long after[34], as poll carried out by the Yangon School of

[34] According to the construction contract, Yi Jiang Electric Power will plan to construct seven cascade power stations along the upper reaches of the Irrawaddy River and above the Mi watershed, as well as one construction power station, with a total installed capacity of about 20,00MW, an average annual generating capacity of about 100 billion kWh and a total investment of about the US $3.6 billion (Zhang, 2021). On 30th Sep 2011, the Myanmar government officially halted construction of the Myitsone dam and, sometime later, cut the size of another Chinese-led project – Kyaukpyu – a deep-sea port in the western state of Rakhine, from $7.2bn to $1.3bn (Gong, 2020).

Political Science found that, 85% of people surveyed opposed the dam project (Myanmar Times, January 3, 2017). If it is broadly accurate, the reasons behind project failure and the risk factors are worth exploring.

5.2.2.2 Case analysis

Despite domestic political struggles and environmental protests, experts also believed that Myanmar citizens are worried about excessive debt for the project ("Myanmar curbs Chinese-invested Kyaukpyu port project in Rakhine state due to debt problems", South China Morning Post, 2018). The hydropower station project encountered political risk during construction, influenced by the government credit problem. In September 2011, without informing China, the Myanmar government unilaterally terminated the construction project, which caused significant losses to CPIC. The Myanmar government said that the project would have a very negative impact on the local natural landscape, orchards and crops and that there might be a risk of dam collapse near the hydropower station due to biological factors, which would pose a significant threat to the production, life and personal safety of the local people (Paungku, 2019).

Although opponents of the project believe that the fault is only about 100 kilometres away from the dam, and there is a risk of dam failure, the dam's safety has been scientifically verified in the relevant feasibility analysis report before the construction of the dam. The appropriate situation is also stated in the memorandum between the Chinese and Myanmar governments. According to international standards, there is no fault within 25 kilometres of the dam, meaning there is no danger to the safe operation of the dam. Opponents argue that the Myitsone dam should be built instead of two smaller ones. Still, design experts say it is better to go ahead with the Myitsone dam

for safety, economic benefits and even environmental protection.

Further analysis reveals that the dam's construction has faced such severe protests and opposition mainly because the scale of the project exceeds Myanmar's power demand. The opponent argues that the project from China is damaging the local environment to meet China's energy needs. According to a report of Paungku – an independent, registered local NGO founded in 2007 by a consortium of international and local agencies of Myanmar – "*polluted water expelled from the turbines was to go straight back into the river while an estimated 90% of the power generated would go to China*" (Paungku, 2019). On March 23, 2014, about 100 people marched to the Myitsone hydroelectric project during a protest in Yangon, Myanmar, calling on the government to stop the dam project permanently.

A more subtle and complicated factor is the conflict of interest between the Kachin Independence Army (KIA) and the government. For historical reasons, the KIA has been seeking an armed uprising since the 1960s to declare independence and controls more than 10,000 square kilometres of territory with more than 100,000 population, four administrative districts, 12 counties and 59 districts, an army of over 7,000 people, and more than 5,000 militia. They have signed cease-fires with the Myanmar government several times over the decades but have clashed violently frequently. The Myitsone hydropower project construction land belongs to traditional residents of Kachin; when the dam is completed, the upstream water will rise and inundate an area equivalent to more than 300 square kilometres, "equivalent to the entire area of Singapore" (Paungku, 2019), compress the confrontation with the government's strategic space. This has led to fierce opposition from both the Kachin and the KIA.

A certain number of analysts believed that the project failure results from reasons that are hard to assess individually. Considering the above reasons, although the government had expressed its commitment to continue the construction of the project, the Myanmar government had to face the possibility of widespread riots if it did not stop work and therefore had to put on hold (abandon) the construction of the hydropower station at the cost of massive losses to the investors in the face of the more vigorous civilian opposition.

5.2.2.3 Case summary

We can see the importance of the host country's social, legal system and domestic political situation through case analysis. Even though the Chinese side signed a memorandum of the contract with the Myanmar government to ensure the smooth implementation of the project, it was still unilaterally terminated by the Myanmar government, causing considerable losses to Chinese enterprises. It can be seen from this case that the stability of the social legal system of the route countries of the BRI has an essential impact on the realization of the PPP projects. The imperfect social, legal system and domestic political unrest make Chinese investors face more significant uncertainty and may take greater risks.

5.2.3 Case Study 3 – Colombo Port City Project, Sri Lanka

5.2.3.1 Case introduction

The Port City is located in Colombo's crucial central business district and has a large land reserve. According to the project plan, the port city will combine commercial, leisure and residential functions and create more than 80,000

jobs. The importance of the Colombo Port City project stems first from its special port status. The port has a deep shoreline and can accommodate large and super large deep-water freighters, which is relatively rare in South Asia and has important strategic significance and development value. At the same time, the port could help China to establish a strategic foothold in the Indian Ocean that has been desired for a long time: building a "maritime silk road" that would allow China to exert influence in the region through economic cooperation and partnership with Sri Lanka (Ruwanpura & Rowe & Chan, 2020).

The project is a typical public-private partnership (PPP) project[35] in which China Harbour Engineering Co. Ltd (CHEC Port City Colombo, 2021) is responsible for the investment, financing, planning, construction (including the construction of all municipal facilities within the port city) and a 99-year lease for a portion of the commercial land. The Sri Lankan government is responsible for the project's construction right in the sea area where the project is located, the application of environmental permits, and the supporting work of the peripheral municipal infrastructure. Apart from the port factor, the construction of the port city has created strategic opportunities for Chinese enterprises and capital to enter Sri Lanka. Located in Colombo's central business district and close to iconic buildings like the Hilton Hotel, Colombo Port City has been hailed as the future city. Under a contractual agreement between CCCC and the Sri Lankan government, Chinese companies have the right to develop about a third of the port city. The Colombo Port City

[35] In May 2017, China Development Bank (CDB) signed a loan contract of US $805 million with Harbor City of Colombo in Sri Lanka to provide a loan for the Colombo Port City infrastructure project (Phase I). By the end of 2018, the Guangxi Branch of China Development Bank had issued a total loan of 1.962 billion yuan to the project. . The port project was launched on September 17th, 2014, and funded by the China Communications Construction Company (CCCC). Under a contractual agreement between CCCC and the Sri Lankan government, Chinese companies have the right to develop about a third of the port city. The Colombo Port City Project in Sri Lanka is China's most significant investment project and the largest foreign direct investment project (Chen & Yang, 2019).

Project in Sri Lanka is China's most significant investment project and the largest foreign direct investment project (Chen & Yang, 2019).

The suspension of port construction has caused huge losses on both sides. CPEC says it is losing up to 1 million yuan a month because of the shutdown; on the other hand, residents lose some 5 000 port city jobs, ostensibly the most significant impact. According to the contract terms, the Sri Lankan side is responsible for all losses caused by the work stoppage. However, they never closed the investigation, and the project never started[36].

After repeated consultations and negotiations between the two sides, the newly elected Prime Minister of Sri Lanka finally approved the Port City Environmental Assessment Report in 2016 and resumed the construction of the Port City Project. (Garcia-Herrero & Xu, 2018). The new Sri Lankan government said it welcomes Chinese investment, and other Chinese projects are progressing smoothly and have not been affected. On May 21, 2021, the Sri Lankan Parliament voted to pass the “Colombo Port City Economic Commission Bill”[37], marking a new stage of development of the Port City project.

5.2.3.2 Case analysis

(1) Geopolitical pressure

Sri Lanka is close to India, so it is to foresee such a significant port construction scale can easily fall into the whirlpool of geopolitical influence and great power game. In 2015, post-regime Sri Lanka announced

[36] On August 2, 2016, the Sri Lankan government announced that it had reached an agreement with the investor, who gave up its claim ($140 million), and the Sri Lankan government allocated another two hectares of land to the Chinese investor as compensation (China Harbour Engineering Co.).

[37] SUPREME COURT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA – "COLOMBO PORT CITY ECONOMIC COMMISSION", available at https://www.parliament.lk/uploads/bills/gbills/scdet/6218.pdf.

suspending plans to build the port city. New Sri Lankan President Maizena Sirisena visited China and made it clear to Chinese leaders that the port city project does not comply with local laws and environmental assessment requirements, lacks relevant approval procedures, and needs to reassess the feasibility of the port city (Xinhuanet, 2015). This might be seen as a sign that the current Sri Lankan government is abandoning the pro-China line of the previous one (Ruwanpura & Rowe & Chan, 2020).

Geopolitical impact in Sri Lanka is the most fundamental reason affecting the Colombo Port City project (Garcia-Herrero & Xu, 2018; Zhao, 2018). Limited by the strategy of the great power game, the project's progress is often not determined by itself, rather be seen from the political situation in Sri Lanka. As the new government takes off, it is different from the previous one in terms of investment policy and diplomacy. At the same time, India has been paying close attention to the project's construction, as Sri Lanka is equally great strategic value. India has always expressed its dislike of China's involvement in the construction of the Colombo port, arguing that the participation of Chinese capital would pose a security risk to India. Sri Lanka has to take India's attitude into account, given India's massive influence over it in various aspects (Zhao, 2018). Some analysts also point out that Colombo is so close to Mumbai that its rise could threaten the latter's status as the economic centre of the South Asia Subcontinent (Lin, 2018).

Thus, Sri Lanka unilaterally halted the project just before the Indian Prime Minister visited Sri Lanka in 2015, reflecting Sri Lanka's shifting political orientation in the great power game. Chinese companies must be concerned about the instability of the new government's 'small country' strategy – working with China economically, moving closer to India on regional security, and constantly mediating between the two countries – Sri Lanka needs capital

and technology, as well as safety and stability (Ruwanpura & Rowe & Chan, 2020).

(2) Legal disputes over land leases

Inextricably tied to politics, the project itself has had some legal problems during its construction. Because more land has been reclaimed from the sea than initially planned, which was not included in the original contract, and no environmental assessment report was conducted (Environmental Foundation Limited, 2015). According to Reuters (2016), Chinese companies will own at least 110 hectares of the 269 hectares already reclaimed for the Port City project. However, the Sri Lankan government has also decided that all the land allocated to The Chinese side in the project will be leased for 99 years. The 20 hectares of land as permanent property rights of the Chinese side in the previous agreement were cancelled. A government spokesman said the decision was mainly due to "*India raised concerns (opposition) over Sri Lanka's granting of permanent property rights to land in the vicinity of Colombo port*"[38] (Reuters, 2016). In addition, when signing investment contracts, CPEC ignored Sri Lanka's domestic investment procedures and failed to obtain confirmation from the Sri Lankan Investment Commission as required. Therefore, a complete land lease contract is required; otherwise, even after completion, the rights and interests of the project operator cannot be guaranteed.

(3) Terrorism concern

Religion is an unavoidable factor in violent attacks in areas and many BRI countries (Arduino & Gong, 2018). Contradictions and conflicts between different religions and sects trigger many attacks. With the defeat of ISIS in

[38] Reuters. China's CCCC to resume Sri Lanka port project after 1-year suspension, available at https://www.reuters.com/article/sri-lanka-china-portcity-idUSL3N16N4H3.

the Middle East, many extremists have returned and spread to countries along the route, as some extremist groups have also been trying to gain power and maintain influence (Xu & Chung, 2018). ISIS publicly claimed responsibility for a series of bombings in Sri Lanka; subsequent investigations also suggested the attacks were retaliation for the mosque attack in New Zealand. Many local extremist groups within the country have close links to these extremists (Limaye, 2017). In the context of internal political instability and intervention by external powers, the possible threat of terrorism to the BRI projects cannot be ignored.

5.2.3.3 Case summary

From the ups and downs of the Sri Lankan port city project, we can see that Chinese enterprises should clarify the relevant laws, regulations, and administrative procedures of the host country when carrying out appropriate investment activities. The internal consultation and communication between the Chinese and the Sri Lankan government should not be seen as the guarantee for implementing the project at the enterprise level. The legitimacy of the project in the country should also be ensured in the form of national policies and relevant laws and regulations. In the future, all investment businesses and projects of Chinese enterprises in Sri Lanka should be conducted through the Investment Committee to protect the rights and interests of Chinese investment (Zhao, 2018). The SOEs should strictly abide by the constitution and laws of the host country, legalize and comply with the process of project development, and avoid project shutdown caused by non-political factors.

5.2.4 Case Study 4 – East Coast Railway Project, Malaysia

5.2.4.1 Case introduction

Malaysia East Coast Railway Project is the representative project of the BRI in Southeast Asia and the most extensive infrastructure cooperation project between China and Malaysia. The plan, proposed by the Malaysian Land Transport Commission in 2016, plans a 640Km rail route linking Kuala Lumpur and the East Coast Special Economic Zone. The idea is to boost the economies of the three East Coast states, which have long been seen as the underdeveloped parts of the peninsula and bring them closer to the West Coast[39]. With the great attention of both governments, the Malaysia East Rail Project laid the foundation stone in August 2017. Prime Minister Najib believes the project would improve people's livelihood and economic standards along the peninsular and generate an additional 1.5 per cent economic growth for the three regional countries (Lim & Li & Adi Syailendra, 2021). At the same time, it is also one of the critical projects of Malaysia's transformation to promote exchanges between the people of the east and west coasts of Peninsular Malaysia (Railway Technology, 2021) and is an integral part of the railway planning from Southern China to Indo-China Peninsula to Peninsular Malaysia.

Yet things have changed dramatically since Malaysia's 2018 general election. On July 4th, 2018, the new Malaysian government ordered the dissolution of the Land Public Transport Commission and the suspension of the ECRL while

[39] On November 1st, 2016, China's PM Li Keqiang and the Malaysian PM Najib Razak witnessed Malaysia Railway Connecting Companies, and CCCC signed a $13.1 billion worth of financing framework and project agreement. The latter would construct the East Coast Rail Line (ECRL) under the deal, and the Export-Import Bank of China will provide 85 per cent of the expenditure financing support for the ECRL construction project. The remaining 15 per cent of the funds will be raised through the local investment banks of Malaysia (Railway Technology, 2021; Lim & Li & Adi Syailendra, 2021).

requesting a renegotiation with the Chinese side on the cost issue. After coming to power, Prime Minister Mahathir Mohamad called it an “expensive investment” that would saddle the country with heavy debt, saying the cost was too high for the government to finance such a massive project; in fact, he pledged to review the ‘Chinese venture’ even before the election (Shukry & Ho, 2018). A month later, the Malaysian PM said the administration had received an understanding from China not to object to cancelling projects, including the ECRL. It was studying whether to extend the planned Chinese-funded East Coast Railway.

In April 2019, good news emerged on the ECRL project after nearly a year of suspension. The proprietor of the project signed a supplementary agreement with the contractor, CCCC, agreeing to reduce the contract amount (the contract cost was revised down from Rm81 billion to Rm44 billion), shorten the planned length of the railway, and add the contents of establishing a joint venture to operate the project (Lim, 2019). The new ECRL also has a revised route, mainly due to environmental concerns. The new route will bypass quartz veins, temporarily listed as a UNESCO World Natural Heritage Site, and pass through Negeri Semmeran, which was not originally on the map. After tense negotiations, the ECRL project was restarted on May 2019[40]. This is a sign that the high-speed rail project has overcome various difficulties and is progressing smoothly.

5.2.4.2 Case analysis

(1) Political/geopolitical pressure

The immediate cause of the suspension of the ECRL was the change of

[40] On April 2021, Malaysian Transport Minister announced the government's decision to revive the original route C section of 2016-2017 of the East Coast Railway projects (Railway Technology, 2021). On April 9, 2021, Malaysia East Coast Railway Terengganu North Tunnel officially opened, which is the first tunnel of the whole line with a length of 1,107 (CCCC, 2021).

government in Malaysia in 2018, of a policy fluctuation caused by two administrations having different views on the same project. However, a deeper analysis reveals more complex factors behind the story. These include the struggle between various factions in Malaysian politics, the competition between China and the U.S for regional influence, and the anxiety of the "debt trap" situation (Lim & Li & Adi Syailendra, 2021; Rajan, 2019).

The first concern is domestic political disputes. In the 2018 Malaysian presidential election, different parties put out different campaign strategies and slogans during the election process. Since its inception, the ruling Barisan Nasional party has acknowledged the BRI's contribution to Malaysia's economy. In contrast, the opposition Alliance of Hope has expressed concern about the previous government's alleged corruption in BRI projects and China’s growing influence in the country (Chin, 2021). In the threatening discourse constructed by the latter, the ECRL project is detrimental to the national interests of Malaysia and a full manifestation of the corruption of the former. Therefore, Mahathir had criticized the then ruling party's foreign policy before taking office promised the necessity to review previous project deals with China due to the concern of losing sovereignty and creating corruption.

Other scholars discuss the issue from a geopolitical perspective. Malaysia is a regional power in Southeast Asia, but it is still a typical small country in international politics and economics. In the context of the great power game, small countries usually choose ‘balanced diplomacy’ when dealing with extraordinary powers to maximize the protection of their interests. With the increasingly fierce competition between China and the US over dominance in the Asia-Pacific region, the region’s polarisation has intensified, resulting in the dilemma of strategic choice between the two great powers, even for US's allies in the region (Lim, 2019). With the long-term competition and the

possibility of China becoming potentially more influential in the region, the relationship between Southeast Asian countries and China has become more complicated, leaving limited choices between compromise and neutrality. Reflected in specific investment projects are wobbling attitudes and fluctuating policies.

(2) Debt risk

Another reason worth investigating can be seen as economic risks. Malaysia and China have historically maintained good diplomatic relations and people-to-people exchanges. The economic ties between the two countries have also been strengthened with the launch of BRI. The new Premier called the project to halt is not just because of political struggle but more on the calculation of economic benefits. During his visit to China, Mahathir said the suspension of three joint projects with China was due to "the insolvency of Malaysia's national debt of up to the US $250 billion", as well as other issues to be brought up like “the unfairness of the terms of the contracts and also of the loans” (Yahoo News, 2018); Malaysia's finance minister also said in July 2018 that the ECRL would be financially and economically viable only if CCCC slashed the price of the project (Shukry & Ho, 2018). Lower costs mean that the government could pay less interest on the loans, significantly reducing Malaysia's fiscal burden and giving voters an answer.

(3) Legal/regulatory ambiguities

In addition to the suspension of projects due to the change of government and the subsequent renegotiation of compromise deals at lower costs, other investments in Malaysia are also faced with incomplete domestic institutional construction and opaque relevant policies (Lin, 2019). Firstly, there are many restrictions on foreign ownership in Malaysia; international companies usually must partner with local companies or register subsidiaries, creating obstacles

to entering the country. Secondly, there are many restrictions on individual foreign investors in the country, and the scope of case handling is broad and arbitrary. Furthermore, there are rooms for further improvement of Malaysia's investment environment as some investment provisions are opaquer. If an enterprise wants to obtain a manufacturing license, it must apply to the Industrial Development Authority, and only these examining criteria are more abstract to the overseas investment enterprises (He & Lin, 2020). These problems may lead to the flop of some investment projects.

5.2.4.3 Case summary

The final resumption of the project is subject to meeting Malaysian's conditions, and the two sides have reached an agreement. It is to be seen that the reason why the new Malaysian government stopped the ECRL project is not entirely related to corruption and other political propaganda as claimed on the surface, instead of as a bargaining chip to gain more practical interests and favourable conditions for Malaysia. For example, compared with China's loan interest rate for other countries' key projects, the low-interest commercial loan provided by the EXIM Bank of China for the ECRL project is already relatively favourable, with an annual interest rate of 3.25%. However, the Malaysian side wants to reduce further the price and interest rate (He & Lin, 2020). Additionally, in August 2017, several environmental groups (Malaysian Nature Society, Malaysian Ecology and Environment for Good) urged the government to suspend the East Rail Project, which would lead to massive debt and ecological damage[41]. It adds an element of uncertainty to an already complicated situation.

[41] The Malaysiakini (27th Nov, 2017). The East Railway expropriated forests in the three states and occupied the habitats of Malayan tapirs and other animals. Available at: https://www.malaysiakini.com/news/403459.

5.2.5 Case Study 5 – Jakarta-Bandung High-Speed Railway, Indonesia

5.2.5.1 Case introduction

As the largest economy in Southeast Asia and the fourth most populous country globally, Indonesia is a developing country with regional influence. On the one hand, it has good natural resource endowment and economic development potential; on the other hand, it is confronted with the development bottleneck of a large population and weak transportation infrastructure. The rail industry in the country is particularly underdeveloped, with obsolete lines and equipment and an incomplete rail network, with existing railway lines scattered only in some cities on Java and Sumatra (Lim & Li & Adi Syailendra, 2021). Therefore, Indonesia has an urgent practical need to develop railway traffic. The completion of the project will effectively ease the traffic pressure between the capital Jakarta and Bandung, improve the living standards of local people, promote the development of related industries along the line, accelerate the formation of an HSR economic corridor that promote regional economic development. The project is smoothly promoting despite the impact of the global pandemic[42], which mean that both parties have maintained good collaboration (Wen, 2020).

5.2.5.2 Case analysis

The project signing process has not been smooth sailing. Economic

[42] In October 2015, the Indonesian Ministry of Transport and the Jakarta-Bandung HSR Joint Venture signed franchise agreements; on April 4th, 2016, the EPC contract for the HSR jointly built by China and Indonesian enterprises was signed in Jakarta, which marks the beginning of the complete implementation phase of the project. More recently, on March 8th, 2021, the most extended continuous beam of the railway closed safely and accurately, marking significant progress in the construction of the Jakarta-Bandung high-speed railway; in August, tunnel No.10 and No. 8 were completed one after another, and the only upper span of the railway box girder was successfully erected; on September 21, all the rails needed for the Jakarta-Bandung high-speed railway arrived in Indonesia from China (People's Daily Online. Series reports on the Jakarta-Bandung High Speed Railway, 2021) :http://search.people.com.cn/language/english/getResult.jsp.

considerations come first for significant infrastructure investment projects, as it concerns the national economy and people's livelihood in developing countries. In the early stage of bidding for the Jakarta-Bandung HSR project in 2015, the Japanese also submitted its feasibility study plan (350km/h), which led to fierce competition between China and Japan. In August of the same year, Indonesia announced that it would cooperate with Japan and promised more investment ($6.3 billion) and lower loan rates (0.1%) (Purba & Purba, 2020). Surprisingly, the Indonesian side rejected the feasibility study proposals submitted by China and Japan on September 4th, saying neither proposal was suitable. After careful consideration of the length of the line, traffic demand, stations and project cost, Indonesia has decided to build medium speed railways with speeds ranging from 200km/h to 250km/h. At the same time, the Indonesian government stated that they would not provide government guarantees for the project nor use the government budget.

After a thorough investigation of the actual situation in Indonesia and a reasonable prediction of the project, China agrees that the Indonesian government does not need to provide a sovereign guarantee and government budget for the Jakarta-Bandung high-speed railway project and that China will cooperate with the project based on equality and mutual benefit. The Chinese side holds 40% shares and the Indonesian side 60% shares in the project's joint venture. China proposed to provide a loan of US $5.5 billion for the project – China Development Bank providing 75% of the loan and the remaining 25% as the capital of the project, which the Sino-Indonesian joint venture company provided (Railway Technology, 2021; Purba & Purba, 2020). The loan terms of the Japanese proposal require the Indonesian government to guarantee 50% of the investment and take several years longer of construction period than the Chinese proposal. China's recommendation not to require official loan guarantees or funds from Indonesia was said to have

been a significant factor in the government's decision (Purba & Purba, 2020).

The general view is that the high-speed rail project is not profitable in the short term but in a long time. According to the agreement, the project will cost around 222 million yuan per kilometre, and according to the prediction of the chief engineer of China Railway Tunnel Group, the cost of the high-speed railway will be around 180 million yuan per kilometre, so it is profitable. According to the estimation of the Bandung Institute of Technology, the HSR line will have an average daily passenger flow of about 44,000 at the initial stage (Purba & Purba, 2020). If the average ticket price is 200,000 Indonesian rupiah (about 11 Pounds Sterling), the annual ticket revenue could reach 3.2 trillion Indonesian rupiahs (about 176 million Pounds Sterling). The HSR project franchise would run for 50 years and achieve a significant profit in the long run. However, due to the combined action of various factors, there are many uncertainties from project construction to operation after completion.

(1) Political and geopolitical risks

Different risks arise from Indonesia's complex international situation and domestic political instability. Indonesian President Joko's government is a typical "smaller government, bigger opposition". The opposition party restrains its power, and the Jakarta-Bandung HSR will likely become a victim of the political struggle. Deputy Speaker of the Indonesian Parliament Fafahri-Hamzah has asked President Joko to stop the project’s construction, citing many existing flaws. The cost is too high, and the HSR would quickly destroy the surrounding area’s environment, which leads to landslides. At the same time, the project during construction lacks a license.

Major infrastructure projects in international investment can never be separated from political relations between countries. Besides checks and

blocks from the opposition party, there are also divisions in Mr Joko's cabinet; differences are mainly concentrated between state-owned enterprises and transport ministers: The SOEs Minister, Rini Soemarno, favours the Chinese option; while the Transport Minister, Ignasius Jonan, favours the Japanese Shinkansen option (Wen, 2020). The tendency of government ministries to favour different schemes appears to reflect political differences within the government (internal affair). Still, it demonstrates the impact of the Sino-Japanese high-speed rail competition on Indonesian politics (diplomatic relations). Japan, which failed in the round of the project, has not been reconciled to defeat, which will undoubtedly hurt the smooth progress of the project.

Not to be overlooked is the dispute between China and Indonesia over the islands' sovereignty in the South China Sea, which has directly affected the relations between the two. The only stability in the South China Sea can ensure the security of Chinese enterprises' investment in Indonesia. If there is a clash, the interests of the enterprise will undoubtedly suffer losses due to unexpected situations. In recent years, international doubts about the rise of China, coupled with the "neo-colonialism" rhetoric propagated by the United States and other Western countries (Lim & Li & Adi Syailendra, 2021), may lead to unpredictable risks in the follow-up construction of the HSR project.

(2) Market risk and financial risk

The Jakarta-Bandung high-speed rail project is too costly. It is expected to carry only about 30,000 passengers per day by estimation. The passenger flow is projected to be only diverted from the ordinary road, and no other parallel diversion exists. Studies show that ensuring the level of ridership required for the first year of the HSR system of 8 million to 10 million passengers on each line is critical (Reconnecting Asia, 2021). While this

amount may be realistic in China, Japan and Europe, it would be challenging to reach such a number in the Jakarta-Bandung HSR line (Purba & Purba, 2020). The root of the problem is Indonesia's low social acceptance of public transport and slightly higher ticket prices for the Jakarta-Bandung HSR.

Unlike the traditional PPP financing model, the Jakarta-Bandung HSR adopted a multinational public-private partnership backed by government concessions (franchising), the first example of transnational public-private collaboration in a high-speed railway project. In this cooperation mode, the Indonesian government did not inject funds directly. It did not instantly distinguish between the private and public sectors but only granted concessions and policy support without providing guarantees. The China Development Bank mainly provides the capital. If the high-speed railway is incomplete, the joint venture company will be insolvent and face bankruptcy; the Indonesian government will recover the operation right and ownership of the combined enterprise contracting body. Even if it is not the case, according to the contract, CRRC must be involved in the operation until it is handed over to the Indonesian government 50 years later. This undoubtedly puts forward higher requirements for operational capabilities and increases the participation cost and profitability difficulty, and bring the risk of investment failure to CRRC and other enterprises in the joint contracting body (Kratz & Pavlićević, 2019).

In addition, the price advantage may be difficult to sustain due to the underestimation of project construction costs in China, rising land acquisition and demolition costs, high labour costs, and difficulties in forming economies of scale. The land acquisition, which was supposed to be completed in December 2017, endured close to two-and-a-half years of delay before construction could begin (Lim & Li & Adi Syailendra, 2021). Therefore, the

building will not be completed until 2021 at the earliest at the current pace considering the influencing of the global pandemic. The project's delay will cause the Sino-Indonesian joint venture company to face substantial late fees and other economic losses (Wen, 2020).

(3) Terrorist concern

In addition, Indonesia is an economically underdeveloped country; the domestic political situation continues to be unstable; geographically, it comprises numerous scattered archipelagos, prone to ethnic conflict and policing. The main separatist movements in Indonesia are those in Aceh, in the remote areas of South Malacca and Irian Jaya. The former poses the most serious military challenge to the Indonesian Government and is also the most critical separatist movement and a country in danger of civil war (Kratz, & Pavlićević, 2019). Islamic militant groups in Indonesia, most notably Jemaah Islamiyah, have carried out sporadic attacks against Christians and foreigners. The group, which wants to establish an Islamic caliphate in Southeast Asia, has carried out several deadly attacks over the past decade. Two hundred two people were killed in bombings on the Indonesian island of Bali in 2002 – separatism and terrorism in Indonesia will threaten the personal and property safety of the construction staff of the HSR, which will significantly increase the construction cost in regards to security measures (Lim & Li & Adi Syailendra, 2021). Due to the large passenger capacity of the HSR, the casualties caused by terrorist attacks cannot be underestimated. Thus, the active terrorist activities in Indonesia will threaten the security of the Jakarta-Bandung HSR after it is put into operation.

(4) Environmental challenge

Indonesia is in the collision area of the Pacific, Indian and Eurasian plates; earthquakes and volcanic activities are frequent, the size of the earthquake

every year at least thousands of times. The tsunami that struck off the Indonesian island of Sumatra on December 26, 2004, is still vividly remembered. It swept several Southeast Asian countries, leaving more than 200,000 dead or missing, including nearly 170,000 in Indonesia alone. Due to the unique geographical location of Indonesia, the Jakarta-Bandung HSR is faced with the risk of earthquakes during the construction process and after its operation. Frequent earthquakes will threaten the safety of the construction, which will also increase the project's construction cost and operation cost (Lim & Li & Adi Syailendra, 2021).

5.2.5.3 Case summary

Overseas HSR projects will inevitably involve national and economic security issues (Purba & Purba, 2020). In this case of China's HSR ‘going global’, the financing method of state-owned banks, the policy goal of state-owned construction enterprises to explore the international market, and the competition of big countries behind the project; Inevitably worries the Indonesian government. Based on experience, SOEs have chosen to take on low-price projects, seeking to balance political and economic benefits and rarely working with local unions and communities. This case is typical in multiple risk factors intertwined. During construction and operation, it is often faced with difficulties from local forces and opposition from social groups. This will seriously increase the difficulty of project construction and hurt the publicity of the Belt and Road initiative and China's international image.

5.2.6 Case Study 6 – Budapest-Belgrade Railway Project, Hungary and Serbia

5.2.6.1 Case introduction

The 350-kilometre Budapest-Belgrade railway is a flagship project of China-Committee for European Economic Co-operation (CEEC) "16+1" cooperation. When completed, the railway will connect Budapest, the capital of Hungary, to Belgrade, the capital of Serbia. The construction of this section will connect the two trade routes, which is of great significance to the economic and trade development and connectivity of the Eurasian continent (International Railway Journal, 2019). The complex line, which includes new dual-track sections and additional construction and renovation projects on both sides, will enable Chinese railway standards to be aligned with European Union technical standards. Designed with a maximum speed of 200 km/h, the electrified mixed passenger and high-speed freight rail will significantly shorten the travel time between the two places. The Budapest-Belgrade railway is a milestone project for China's railway infrastructure to compete in the CEE region and the EU market (Belt & Road News, 2019).

The three countries jointly proposed the Hungary-Belgrade railway project in 2013, and a trilateral agreement was signed in 2015. The original construction period was two years and was scheduled to be completed by 2017. On December 23, 2015, the Serbian section of the Budapest-Belgrade railway entered the implementation phase. The Serbian portion was won by a consortium of China Railway Construction International (CRCI), a subsidiary wholly owned by CRC and CCCC. The project’s price tag has been announced as around $2.89 billion but will probably end up at more than $3 billion, which is still far less than a high-speed railway. The Export-Import

Bank of China will finance the project through a 20-year loan of $1.8 billion to Hungary and $1.3 billion to Serbia (International Railway Journal, 2020). Despite the impact of the pandemic and some political pressure from the European Union, the project is proceeding strongly[43]. It is, after all, a public facility that benefits all parties.

5.2.6.2 Case analysis

There are still many worries about whether the project can be completed on schedule, mainly due to the superposition of various risk factors. The main risks encountered by the project are as follows:

(1) Geopolitical risks

When China invests in European infrastructure, it first needs to pay attention to the political risks brought about by geopolitical competition. China's infrastructure investment in foreign countries adopts a mixed aid, investment and trade model, widely disputed in Western countries. China's outbound infrastructure investment is dominated by large SOEs and financed by state-owned policy or commercial banks. Their emergence is subject to ideological restrictions and questions about China's state system (Bader, 2015).

This can be summarized in the case of the Budapest-Belgrade railway. Serbia has maintained good political and economic relations with China in recent

[43] In 2016, the China Railway Consortium signed the contract to construct the Budapest-Belgrade railway project with the Hungarian National Railway Company and the China-Hungary Railway Non-profit Closure Co., Ltd. (a Sino-Hungarian joint venture). In May 2016, the EU started the preliminary phase of the investigation procedure on the railway, and in 2017 officially launched an investigation on the financial feasibility of the railway and the way of bidding to investigate whether the bidding procedure complied with EU laws and then the construction of the project was postponed. The Serbian section has completed the temporary interlocking of the new Belgrade, Zemon and Batainica stations, while the construction of the other sections is still in progress. On October 15th, 2017, China, Hungary, and Serbia held a grand laying ceremony at the Kishkonhorosh railway station along the railway in Hungary, marking the project's significant progress. The Hungarian part has pushed back the construction deadline to the end of 2024 and is due to be operational in 2025 (Belt & Road News, 2021; Ralev, 2021).

years and is very confident about and cooperative with investment from China, so the construction is progressing smoothly. Hungary, which belongs to the EU, is on the contrary. Although it wants to promote the project subjectively, it is controlled by the EU objectively and needs to follow the EU's steps in all aspects. It is also contended by other scholars that Hungary maintains a pivotal position for China and its strategy for Europe (Rogers, 2019; Szunomar & Volgyi & Matura, 2014), and "*Sino-Hungarian relations are in some sense on a course towards stronger and more entrenched interaction, whereby Hungary can act as a gateway to the European Union for Chinese investments*" (Hungarian Investment Promotion Agency, 2016). While it may appear that the project is being halted because of an investigation into differences in technology and standards, some argue that it is common to see the BRI investments are warned and interrupted in Western countries (McKenzie, 2017). Therefore, the results of this case require further observation.

(2) Legal and regulatory risks

The construction of the Serbian section is progressing smoothly because it mainly needs to follow the intergovernmental agreement between China and Serbia and the relevant policies of Serbia's investment and construction. In this section, the DPC (design - procurement - construction) project general contracting mode is directly adopted. The Chinese enterprise consortium is now determined to act as the project's general contractor through bidding negotiation. Hungary, on the other side, which is bound by EU public procurement rules to select contractors by open tender, is a more complicated case. Unable to negotiate directly with the Chinese company, the joint venture company that is named after the Hungarian Railway Company, which organizes the project by global bidding according to the bilateral agreement and the attached procurement rules (Railway Technology, 2021). As a result,

the construction of the railway in the Hungarian section is influenced by EU policies – setting tendering procedures, contracting and procurement regulations, foreign enterprises and other related policies, etc. – and the integrity and strength of the rule of law have a significant influence on both development model and the investment cost of the venture project[44] (Ralev, 2021).

Due to the particular geographical location of the project and Hungary's membership in the EU, the project involves the economic and political interests of the EU, which is attracted great attention. In May 2016, the EU announced a procedural investigation to determine whether the way the bidding was negotiated for the Hungarian section violated the EU's principles of open tenders, which was officially launched in February 2017. After full cooperation of all parties with the investigation, the European Commission confirmed that the project did not violate the relevant policies of the EU Treaty on Business Operations and that the intergovernmental agreement was valid. However, the investigation caused a massive impact on the construction process of the railway, and the project schedule was seriously delayed (International Railway Journal, 2020).

(3) Financing risk

Infrastructure investment projects usually have high costs, are capital intensive, and require long-term and stable financing. During the whole cycle of the project, the construction and supporting service facilities need huge funds, so it is necessary to ensure healthy capital flow conditions. On the one

[44] "The project was subsequently blocked by the European Commission, which in 2017 investigated the Hungarian Railway project on the grounds that "large transport projects must be put to public tender". In Hungary, the project has also met with considerable opposition as some question the profitability of the project. This has led to delays in the Hungarian section of the Railway until 2020" – "Observer", May 2020 at: https://www.guancha.cn/internation/2020_05_21_551182.shtml.

hand, they are a member of the EU, Hungary's project is partly funded by it. However, the EU's recent economic downturn has limited its investment in infrastructure, which brings uncertainty to subsequent loans and repayment ability in the future. On the other hand, as a non-EU member country, Serbia has a higher investment threshold and stricter review procedures, making it difficult to obtain financial support from the EU (Ralev, 2021). The total planned investment of the Budapest-Belgrade Railway is 2.89 billion US dollars, of which SOBs will bear 85%. The acquisition is too high, and the investment subject is single, which will increase the risk of debt crisis and reduce the ability to resist threats (International Railway Journal, 2020). Both the IMF and the World Bank expressed concerns about the project's medium-term outlook for debt sustainability (Gruebler, 2021).

(4) Technical risk

China's railway standards are not the same as those of Central and Eastern European countries, so it has faced technical difficulties and competition from other EU countries in the construction process. On the one hand, the competitiveness of Chinese standards has yet to be improved. In recent years, Chinese railway construction enterprises have continuously innovated and independently formulated standards since absorbing the technological advantages of high-speed railways from Japan, France, and Germany. However, China's high-speed rail standard system still faces widespread acceptance and fierce competition from other technologically mature countries (Gruebler, 2021). On the other hand, differences in standards increase the technical barriers to investment. The European Standards Commission (CEN) and the International Union of Railways (UIC) have set very detailed criteria for the establishment of the high-speed railway system (Ralev, 2021). Chinese railway standards, equipment, and facilities must pass these complex and strict European standards and acquire the certification. Otherwise, they

cannot enter the market (Rogers, 2019).

5.2.6.3 Case summary

Through the analysis and research experience of this case, we can find that, different from the investment in other regions, the investment of Chinese enterprises in Central and Eastern Europe is faced with a mixture of complex factors such as geopolitical risk, legal and regulatory risk, financial risk and technological competition risk (Gruebler, 2021; Bader, 2015). Although Central and Eastern Europe is an economically developed region, its infrastructure construction is ageing and can hardly meet the demand of economic and social development. There is an urgent desire to speed up the construction or upgrade of infrastructure in terms of quantity and quality (Rogers, 2019). For Chinese companies, the infrastructure investment market in this region has broad potential. However, risks must be effectively identified and avoided in project selection and implementation. Otherwise, project contracting enterprises and SOBs may face huge losses due to project delays or failure due to various reasons.

5.2.7 Case Study 7 – Hassyan Clean Coal Project, Dubai, UAE

5.2.7.1 Case introduction

In recent years, the bilateral relations between the UAE and China have developed rapidly based on the BRI. Dubai has also become a vital base city for Chinese SOEs to enter the Middle East. Many Middle Eastern countries have sought structural economic transformation in recent years. For instance, Dubai's electricity supply relays heavily on natural gas power generation; to strengthen the energy infrastructure construction and to reduce dependence

on single energy, the UAE put forward "Dubai Integrated Energy Strategy 2030" (Hao & Shah & Nawaz & Asad & Iqbal & Zahoor & Maqsoom, 2020). The Hassyan clean coal project became an essential part of this strategic plan, launched in July 2014 in Dubai, and is being developed on a build-own-operate (BOO) basis using the Independent Power Producer (IPP) model. In June 2016, Harbin Electric International Engineering Co., Ltd. (known as "Harbin Electric International"), an SOE of China, formed a consortium with General Electric to win the Dubai Hasyan project contract out of a competition involving 46 well-known companies from around the world (Hassyan Clean Coal Project, Dubai, 2020). Therefore, the Hassyan project is essential to diversifying Dubai's energy resources[45].

Construction of the $3.4bn power plant is jointly funded by the Silk Road Fund[46] and Dubai Electricity and Water Authority (DEWA, 51%), the ACWA Power and the Harbin Electric (Hassyan Clean Coal Project, Dubai, 2020). The Chinese SOEs was able to win the project and participate in the equity investment because it provided a very competitive financing solution, combined with the overall tender proposal from China's leading state-owned construction contractors, which led to the successful completion of the project at this stage (SASAC[47], 2021). Other sources of finance like First Gulf Bank,

[45] The Hassyan project consists of four ultra-supercritical units with a total installed capacity of 2,400 MW, capable of burning either coal or natural gas as a backup fuel. The four units will be put into commercial operation in 2023, which will provide 20% of Dubai's electricity energy, significantly reduce the cost of electricity for residents, and provide a power guarantee for the Dubai World Expo. In May 2020, as a major international cooperation project of the BRI and the first clean coal power station in the Middle East, Unit 1 of the Hasyan 4×600MW clean coal power station project in Dubai, UAE, was successfully connected to the grid. This is the first power station project invested, built, and operated by an SOE under the BRI in the Middle East and the region's first clean coal-fired power station (Power Technology, 2021).

[46] The Silk Road Fund is jointly financed by China's four major SOBs (Industrial and Commercial Bank of China, China Construction Bank, Bank of China, and Agricultural Bank of China) (Silk Road, 2021).

[47] The State-owned Assets Supervision and Administration Commission of the State Council (SASAC) is an institution directly under the management of the State Council. It is an ad-hoc ministerial-level organization directly subordinated to the State Council. The Party Committee of SASAC performs the responsibilities mandated by the Central Committee of the Chinese Communist Party. See http://en.sasac.gov.cn/aboutus.html and http://en.sasac.gov.cn/2018/07/17/c_7.htm.

Union National Bank, and Standard Chartered Bank also participates, as a diversified financing model ensured the success of its completion[48] (Power Technology, 2021).

5.2.7.2 Case analysis

While the Hassyan clean-energy plant project is going smoothly, that does not mean there are no risks. Although the United Arab Emirates is a typical Middle Eastern Arab country, it also has a relatively complex political, economic, religious and cultural, geographical environment, a completely different institutional environment from China (Hao & Shah & Nawaz & Asad & Iqbal & Zahoor & Maqsoom, 2020). Underestimation of any aspect is likely to bring incalculable losses.

(1) Political/geopolitical risk

The order of the Middle East has been restructured since the 'Arab Spring', and the regional pattern has become complicated, which makes the investment risks of Arab countries surge. Since the outbreak of 9·11, the U.S has spent massive amounts of money to promote democracy in the Middle East yet has not brought real peace and democracy to the region; Instead, it has plunged Arab countries into war, massive civilian casualties, humanitarian crises and political instability (Wen & Wu, 2020). After demolished of the ISIS, the US began to further strategic contraction and withdrew from the region with no intention to invest more material and military forces in regional wars; this led to the gradual collapse of the Middle East order led by the US after the end of the Cold War (Murphy, 2022). The US army's withdrawal in Afghanistan under the Biden administration can be seen as the signature event of this strategy. Being a regional power and a country that maintains

[48] Hassyan Clean-Coal Power Project details, available at: https://www.gem.wiki/Hassyan_Clean-Coal_Power_Project#cite_note-gulf-10.

good diplomatic relations with the West, the macro-political and economic environment of the UAE is much better than that of its neighbours, which also lays a specific foundation for in-depth cooperation with BRI. However, its domestic political environment is still threatened by terrorism and religious extremism, and its monarchy needs to smooth out the succession. Externally, it is mainly impacted by geopolitics, and its investment environment alters with the international situation (Ibid).

(2) Economic risk

the UAE's national revenue is heavily dependent on oil, mining, tourism, logistics, finance and other industries, and the manufacturing sector is weak, falling into the ‘resource curse’ (Wang & Zhao, 2017). Its economic structure is single, and the means of economic diversification are limited, which confines many investment opportunities from outside. Affected by the low international oil prices since 2014, oil-producing countries are facing structural crises caused by the revolution in energy technology and cyclical crises caused by the decline in global oil prices. After the ‘Arab spring’, the UAE realised the importance of economic diversity, launched committed to the future vision of economic diversification, and struggled to develop tourism, logistics, and other industries (Wen & Wu, 2020). Yet it is still relying mainly on oil rent funding sources, and the industrial technology development of the non-oil sector is still absent. The Hassyan clean coal plant, as the first of its kind in the region, represents a meaningful attempt to further broaden and extend BRI cooperation from the traditional oil and gas sector to manufacturing and high-tech sectors.

High unemployment harms social and political stability in the UAE, further increasing investment risk. Fundamentally, Gulf oil-producing countries are caught up in a structural crisis caused by the energy technology revolution

and a cyclical crisis caused by low international oil prices (Wen & Wu, 2020). Their finances are under tremendous pressure, and oil rents cannot support the welfare of society. Therefore, the UAE launched the labour localization policy to limit the employment proportion of foreign workers in the private sector and promote the employment of local people in the private sector, to alleviate the crowded-out effect of foreign workers on local industries. But locals are more likely to work in the public sector for better pay, social security, and social status; that is to say, the attributes of oil-producing countries and rich social welfare objectively restrict people's employment in the private sector, and the effect of labour localization is limited (Hao & Shah & Nawaz & Asad & Iqbal & Zahoor & Maqsoom, 2020).

(3) Environmental challenges

Dubai is in a tropical region with a typical desert climate, and it is scorching outdoors with temperatures that can reach more than 40℃ from April to October. The weather is relatively dry with little rain all year round. This brought great technical difficulties and labour pressure to the project’s construction. Although some local workers were employed, the skilled workers and the core engineering team were mainly Chinese. Amid COVID-19, it is tough to ensure the construction progress given the border blockade and traffic closure; therefore, the core management team of the Haasyan project from China stayed in the UAE site to ensure the implementation of the follow-up projects (SASAC, 2021). Meanwhile, the port and breakwater of the Hassyan power plant are located in the Jebel Ali Marine ecological reserve region, where the marine area is characterized by excellent diversity and healthy environmental conditions, particularly a large number of living coral colonies. To meet the needs of environmental protection, the project team further investigated the distribution of shallow benthic corals, using various

techniques to estimate their density, species, and distribution[49]. The results provide essential information for coral conservation and migration (Wang & Peng & Xu & Zhang, 2021). In the subsequent construction process, how to ensure that the environment is not damaged is still a problem that the project needs to pay close attention to.

5.2.7.3 Case summary

Both China and Arab countries are in a historical change with both opportunities and challenges. The UAE and other countries are in a period of structural impact and internal political and economic restructuring in the Middle East. The adverse political, economic, and social factors have increased investment risks, weakened investment opportunities and security, and worsened the investment environment. The fundamental way to solve this problem is to adjust the economic structure through economic diversification and further open to foreign trade and attract investment. However, due to the inherent problems caused by the 'oil rent' issues discussed above, coupled with its low level of industrialization, the UAE can only rely on its geographical and resource advantages to develop logistics, tourism, finance, and other services to achieve a diversified economic structure. At the same time, carry out system building to reduce investment risks (Hao & Shah & Nawaz & Asad & Iqbal & Zahoor & Maqsoom, 2020). Of course, as one of the countries with the best comprehensive investment environment in the Middle East, the successful completion and operation of Dubai Hasyan Clean Energy Power Station also show that BRI can bring a new model of win-win cooperation to both sides.

[49] "Story of Project Investment and environmental Protection: Silk Road Fund invested in Hassyan Clean coal power station project in Dubai". See: http://www.silkroadfund.com.cn/cnweb/19930/37577/41880/index.html.

5.2.8 Case Study 8 – Yamal LNG (liquefied natural gas) Project, Russia

5.2.8.1 Case introduction

The adoption of BRI in Russia has gone through ups and downs: from watching and even questioning since its introduction to slowly trying to understand and then to acceptance, it has been a slow process over the years. This is partly because China's investments in Russia have substantial geostrategic implications and the deteriorated relations between the West and Russia in recent years. Suppose China establishes a complete transportation system in Russia. In that case, Russia can benefit from the infrastructure construction and serve as a platform for China to further expand its ties with Europe, so Russia is proliferating in attracting Chinese investment (China Center for International Economic Exchanges, 2019).

Of all the major projects under the BRI, Yamal LNG[50] is undoubtedly a benchmark regarding the world's highest latitude and largest polar project (Wang, 2020b). In December 2013, the final investment decision was made on the Yamal LNG project led by Russia's largest independent natural gas producer Novatek, with shares of France's Total, China National Petroleum Corporation (CNPC) and China's Silk Road Fund. The four parties held 50.1%, 20%, 20% and 9.9% of the shares, respectively, with a total investment of about $30 billion (International Gas Network, 2021). It should be noted that Chinese SOEs alone account for 30% of the total shares of the project.

[50] The name of the project site Yamal means “end of the land” in Russian, is located on the Yamal Peninsula in the Arctic Circle. The project plans to put into operation three production lines, each with an annual production capacity of 5.5 million tons of LNG; So far, the project is going well, and the three-production line was put into operation in December 2017, August 2018, and December 2018, respectively (Total Energies, 2021). “Yamal LNG: the gas that came in from the cold”, available at: https://totalenergies.com/energy-expertise/projects/oil-gas/lng/yamal-lng-cold-environment-gas.

In addition to financial involvement, China is also providing technical support to the project – China Offshore Oil Engineering Co. (COOEC) reached an agreement with the Yamal project in 2014 – it is also the first time China has contracted to build LNG core process modules. Engineers from China can gain knowledge and skills to produce natural gas in such harsh Arctic climate conditions through this engineering project. BRI's position in the world energy market could be significantly enhanced by successfully implementing the Yamal LNG project and the possibility for Chinese companies to participate in other projects in the Arctic energy program (Wang, 2020b).

The location of the Yamal LNG project has also reduced the shipping time through the Northern Sea Route from one month to two weeks, compared with the traditional South China Sea route through the Suez Canal (Xie, 2019). It is believed that, following the success of the project, China is now looking to build a ‘Polar Silk Road’ or ‘Ice Silk Road’ by developing Arctic shipping routes that seem more feasible than the Suez or Panama Canal, which would significantly enhance the confidence of China to step into and develop the Arctic (Watkins, 2020).

5.2.8.2 Case analysis

The Yamal Peninsula LNG project was far from smooth sailing at the beginning of construction and faced risk factors, including complex political factors, enormous credit pressure, and extreme construction conditions.

(1) Geopolitical risk

The first thing to realize is that energy development in Russia, especially in the Arctic, is seen as a geopolitical competition. From the proposal of the BRI until now, many Russian scholars and politicians believed that it was a

strategy to expand China's influence. China would strengthen its control over the ‘middle zone’ in Central Asia, the Middle East, and Eastern Europe to carry out the geopolitical competition with Russia and weaken its strategic position as the former Soviet Union region (Soldatkin, 2014). Others also put forward BRI as China's economic expansion strategy, even though to carry out energy investment and trade with Russia. Still, the manufacturing investment and technology transfer in these regions are much less, making their economies too dependent on energy exports to China and falling into the ‘energy curse’ trap (Cai, 2018). In addition, the logistics channel of the new Eurasian Land Bridge opened up by the BRI will compete with existing ones such as the Trans-Siberian Railway and Baikal-Amur Railway, which is not conducive to the development of Russia's Siberia and the Far East. The logistics system of the new shipping route led by China will marginalize Russia. In the view of some conservative scholars, China may export labour services in investment and trade through BRI. Many foreign workers will flood into the previously sparsely populated Siberia and the Far East, which will become a security risk (Shichor, 2018).

(2) Economic risk

Since the beginning of the 21st century, with the help of its rich oil reserves and military industry, Russia has maintained a relatively high economic growth rate overall. Still, the global financial crisis in 2008 once had a significant impact on its economy. While Russia has recovered quickly from the situation, with growth back at about 5%, it is far from close to the 10% growth rate it enjoyed before. For many years, Russia actively promoted the cooperation between it and Europe, maintained relatively stable relations with the Bush administration and Obama administration, and even expressed the willingness to join NATO for a time (China Center for International Economic Exchanges, 2019). Yet, in March 2014, Crimea declared itself a sovereign state. It

immediately began the process of joining Russia, which quickly completed the procedures and made Crimea become a part of its territory. The US and Europe launched sanctions against Russia simultaneously (Ibid). In recent years, the hostility and economic sanctions have pushed Russia towards China, while the latter is facing a similar situation (Chen & Xie & Shahbaz & Song & Wu, 2021).

Politics and economics are opposite ends of one coin. Economic sanctions-hit Russia's foreign trade hard caused many capitals outflow and the devaluation of the Rouble. Russia's economic growth rate has slowed down, and even the residents have some difficulties in life. In addition, global energy prices continue to fall, with a sharp drop in crude oil and natural gas prices hurting the Russian economy. According to several international media reports, the crisis has led American and some European companies to leave Russia and abandon planned investments and projects. Russian companies find themselves cut off from foreign capital. Credit restructuring and government support have eased some concerns, but energy companies such as Rosneft, Lukoil and Gazprom are struggling to press ahead with previously announced projects (Foy, 2017). In this context, Russia quickly expressed its support for the BRI, hoping to win China's political assistance and strengthen Russia's confidence and chips in a harsh response to US and European sanctions (Foy, 2017).

(3) Technical challenges and the impact of COVID-19

Most of Russia lies north of the Tropic of Cancer, close to the Arctic Circle, and its infrastructure is inadequate, lacking even basic transportation like roads and railways. The Yamal project must be built from scratch, a massive challenge for Chinese contractors and local Russian companies. Military spending is an essential driver of port and shipping infrastructure

development in the Arctic, and many commercial activities funded by private sector investment can only be carried out later. Some object to seeing Yamal as a model for future developments in the Arctic – it is being developed by Novatek, a large private company – is being pushed directly by the federal government (Savard & Nikulina & Mécemmène & Mokhova, 2020). In the long term, direct and active support from top federal officials is unlikely to become the norm.

Meanwhile, Putin believes that the U.S sanctions should not directly hinder the development of technology for Yamal LNG, arguing that Novatek should be as self-sufficient in this respect as possible (Watkins, 2020). Arctic Cascade – based on a two-stage liquefaction process that takes advantage of the lower ambient temperatures of the Arctic climate to maximize energy efficiency in the process – is the first patented liquefaction technology to use equipment produced by a Russian manufacturer (International Gas Network, 2021). Novatek aims to achieve localized manufacturing and construction of LNG trains and modules to reduce the overall liquefaction cost and develop a technology base within Russia. This means that these Arctic LNG projects will not be affected by sanctions by other countries. It is possible that the delay of the fourth train (liquefaction and purification facility) at the Yamal LNG project is because the COVID-19 pandemic seriously threatened the progress of the project (Watkins, 2020). Russia's outbreak is severe; even though there are no reports of many workers in construction units being infected at Yamal LNG project sites, travel restrictions and population movements caused by the epidemic still impact the relative connectivity.

(4) Legal and regulatory ambiguities

The imperfect legal system and regulations in Russia have become another fundamental factor hindering overseas investment. The preferential system for

foreign investment is also unclear, leading to many complex problems. Some laws and regulations in Russia contain too many special provisions to protect national interests, which makes it difficult for transnational investment to achieve the desired results. The same problem caused by corruption deserves attention. While Russia's corruption rate has fallen sharply in recent years, many critical projects that require significant government investment, such as large construction projects or large-scale procurement, have stalled. Many big Soviet-era projects and infrastructure are ageing and in need of repair. Other problems in Russia, such as ultra-nationalism, have also been on the rise in recent years, affecting social order and its attractiveness to outside investors (Wang, 2020b). All these problems can hurt foreign investment.

5.2.8.3 Case summary

The Yamal LNG project is China's most significant investment in Russia to date, is often held up as a model for Sino-Russian Arctic cooperation and a symbol of Russia's easing of foreign investment into the upstream energy sector (Savard & Nikulina & Mécemmène & Mokhova, 2020). There is no doubt that Russia has enormous investment potential, especially considering its abundant energy reserves, to have a great attraction to the Chinese firms over the BRI setting. However, as Russia faces an increasingly challenging international situation and internal conflicts, Chinese companies must consider their security and interests since the domestic political environment and international political relations significantly impact the survival of projects.

Mainly after Russia chose to invade Ukraine, the geopolitical crisis undoubtedly played a decisive role as the influence of Western sanctions will be prolonged and profound. Relations between the United States and Russia

and between the European Union and Russia will play a role in the future progress of the project. Meanwhile, the potential problems of project operation, product transportation and logistics, material supply, payments and exchange rate cannot be ignored due to the international sanctions. These factors would affect the operation of the Yamal LNG project to a large extent. As for whether the project will endure the risks emerging, it relies on the joint efforts of all parties and a relatively peaceful and stable international situation to come.

5.3 Findings

As the world's fastest-growing economy, China's capital stock and OFDI have become a favorite to many other developing countries. The BRI projects are of great significance in this regard. As discussed previously, China's OFDI mainly focuses on energy and infrastructure construction investment and is financed by Chinese SOBs, the main distinguisher with other international investments. The eight cases studied above were selected not only because they include the characteristics of BRI project financing respectively, but these unique attributes can condense important implications for BRI investment risks. The author then draws the following Table 5.1 in summarizing the characteristics of these projects through the above cases.

Table 5.1 Case study summary

Project Name	Location	Construction Cycle	Contractor(s)	Operator	Major Financier	Project Mode	Total Project Cost (Billion $)	Situation of Completion (Yes/No)
Port Qasim Coal-Fired Power Plant	Karachi, Pakistan	05.2015 – 04.2018	China's Power Construction Corporation (51%) and Al-Mirqab Group (49%)	Port Qasim Energy Holding	Export-Import Bank of China	BOO operation of PPP mode	0.53	Yes
Myitsone Hydropower Station	Myanmar	12.2009 (Construction of supporting power station began in 04.2007) –	Ministry of Power (Myanmar), China Power Investment Corporation (CPIC), and Asia World (Myanmar)	CPIC (50-year franchise period)	CPIC (early stage)	BOT operation of PPP mode	3.6	No (halted in 09.2011)

Project Name	Location	Construction Cycle	Contractor(s)	Operator	Major Financier	Project Mode	Total Project Cost (Billion $)	Situation of Completion (Yes/No)
Colombo Port City Project	Colombo, Sri Lanka	09.2014 – 11.2020 (phase I)	China Communications Group (CCCC) and the National Ports Authority of Sri Lanka	China Harbour Engineering Co. Ltd (99-year lease)	China Development Bank	PPP	1.96	Yes (halted in 03.2015, resumed in 09.2016)
East Coast Railway Project	Malaysia	09.2017 – 12.2026 (scheduled)	Malaysia Railway Connecting Companies, and China Communications Construction Group (CCCC)	Malaysia Rail Link Sdn Bhd (jointed owned)	Export-Import Bank of China (85% of loans)	PPP	13.1 (cut to 10.6 in 2019)	No (halted in 07.2018, resumed in 05.2019)
Jakarta-Bandung High-Speed Railway	Indonesia	01.2016 – 2021 (scheduled)	China Railway Construction Corp (CRCC), and a consortium of Indonesia's state-owned enterprises (SOEs)	PT Wijaya Karya Tbk – joint venture (50-year franchise period)	China Development Bank (75% of loans)	Multi-national Business-to-Business of PPP mode	5.5	No

Project Name	Location	Construction Cycle	Contractor(s)	Operator	Major Financier	Project Mode	Total Project Cost (Billion $)	Situation of Completion (Yes/No)
Budapest - Belgrade Railway Project	Hungary and Serbia	11.2016 – 2025 (scheduled)	China Railway Construction International (CRCI), Hungarian National Railway Company	China-Hungary Railway Non-profit Closure Co., Ltd (joint venture	Export-Import Bank of China (85% of loans)	PPP	2.89 ($1.8 billion to Hungary and $1.3 billion to Serbia	No (10.2020 and 03.2021 Serbia section completed)
Hassyan Clean Coal Project	Dubai, UAE	01.2017 – 2023	Harbin Electric International Engineering Co. (China), and General Electric (U.S)	Hassyan Energy Company (joint-venture)	Silk Road Fund (49%)	BOO of independent power producer (IPP) mode	3.4	No (05.2020 unit 1 completed)

Project Name	Location	Construction Cycle	Contractor(s)	Operator	Major Financier	Project Mode	Total Project Cost (Billion $)	Situation of Completion (Yes/No)
Yamal LNG (liquefied natural gas) project	Russia	12.2013 – 12.2017	Novatek (Russia), China National Petroleum Corporation (CNPC), and Total (France)	Yamal LNG	Novatek (50.1%), Petro China (20%) and Silk Road Fund (9.9%), Total (20%)	PPP	26.9	Yes

5.3.1 Industrial Attributes

The high-risk nature of these cross-border investments becomes the primary concern embedded in the BRI deployment, which presents two main characteristics:1. Long investment period; 2. high uncertainty. The risk factors involved are therefore complex. Given that majority of the BRI investment projects are mainly concentrated in the resource-rich countries, they share similar risk structures after that: political/geopolitical risks are prominent, with unitary economic system, lack of financial technology, and infrastructure industry development (e.g., electricity, telecommunications, transportation, logistics, etc.) lags (Duan & Ji & Liu & Fan, 2018). The industrial distribution in typical cases is mainly infrastructure construction, including power stations, ports, and railways, which are the key areas of Chinese enterprises' overseas investment and the demand of BRI partner countries. In addition, with a decent momentum of development in these industries, it is likely to drive the export of relevant equipment manufacturing from China (Shang, 2019). However, it must be noted that these industries are also characterized by high risk, which has high requirements on engineering technology, capital and construction period and may involve the sensitivity and strategy of specific sectors of the host country and easily cause interference from political factors.

5.3.2 Geographical Attributes (culture and ideology)

As stated in previous chapters, due to its historical context, the BRI investment has powerful geographical attributes, mainly distributed in the Southeast Asia-South Asia-Central and South Africa (the road) and the line of Central Asia-Eastern Europe-Middle East-North Africa (the belt). Through a substantial amount of early pilot case investigation earlier, the author found that China's overseas investment in the BRI region is unequal in geographical

distribution. Most have gone to ASEAN[51] nations; this is also reflected in the typical case selection, as four are from this region. This may be because of their similar social structure, related cultural background, and cheaper labour (Booth & Smith, 2018). There are still large numbers of ethnic Chinese in Southeast Asian countries today, and their origin can be traced by the commercial ties established from the Ming Dynasty through the 'Maritime Silk Road'. Instead of forgetting their historical roots, these descendants used their close linguistic and cultural ties to establish ties with China through complex social relations (Stallings & Kim, 2017). And more importantly, these countries have traditionally maintained good political relations with China, cementing the economic footprint there through these projects and crafting an alternative order that benefits both sides (Rana & Ji, 2020).

As a country with critical geostrategic considerations, Russia has also become an important destination for China's outbound investment in recent years. The likely reason is China's hunger for resources and its quest for some external support in the ‘total containment’ initiated by the U.S. in recent years (Wang, 2020b). The current conflict in Ukraine has put enormous geopolitical pressure on Russia; therefore, despite its history of estrangement, it has tried cautiously to accept investment from China. In addition, investment in Central Asia and Central Europe has only slowly begun to take off, and the reasons are complicated. This would not be easy because countries in these areas are not traditionally close to China; it takes time and patience to build trust, whether culturally or diplomatically (Kobelkova, 2017). The fact that these countries are in the heart of Eurasia and far from the coast makes it

[51] The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore, and Thailand. Brunei Darussalam joined ASEAN on 7 January 1984, followed by Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999, making up what is today the ten Member States of ASEAN. See https://asean.org/.

difficult to do business, and their traditional ideological differences with China also made them hesitant about the proposal in the first place (Stallings & Kim, 2017). China has permanently attached great importance to the relationship with countries from these areas since the beginning of BRI. However, the lack of real progress, especially in significant project investment, is mainly due to the uncertainty caused by high risks.

5.3.3 Policy Orientation

The attribute is considered as early as site selection, especially in the decision-making process of financing. Although the government-led SOBs also pursue profit maximisation, they must follow the policy guidance due to their nature (Broich, 2017). There is no doubt that the unbalanced investment in the BRI is closely related to the consideration of risks. Nevertheless, many of them have no chance of being implemented if risk alone is considered. According to the Economist Intelligence Unit[52], the average risk level in the BRI region is much higher than in developed countries, many of which are even higher than the world average, for reasons discussed in chapter 2. ASEAN (except Myanmar and Cambodia) nations, Russia and Mongolia, having relatively lower risk levels, only Singapore is the safest place to invest. Thus, the overall geographical layout from the top design (BRI) requires SOBs and decision-makers to have more 'political vision and big-picture perception' (Interviewee B.). From this perspective, BRI project financing risk management requires a balance between policy orientation and corporate interests.

With constant effort, many projects have taken root in these regions to maintain good bilateral relations with these BRI participants. The port and

[52] Country risk report, Economist Intelligence. https://www.eiu.com/n/solutions/country-risk-service/.

high-speed rail projects are advancing in Southeast Asia. Still, the Budapest-Serbia Railway and Yamal LNG projects have become flagship projects, which both governments highly value. Investment in resources and energy has always been an essential direction of BRI and optimizing regional distribution, and financing structure is the core policy orientation of the Chinese government (Wang, 2016). But it must be said that risk management is a dynamic process (Matthews, 2013). This means that risk factors, as the variables of this study, are changing with the altering situation as corresponding assessment and control measures are to be adapted. For example, the recent war in Ukraine has made Russia the target of international sanctions, and the operation of the Yamal project is bound to be affected accordingly. As a result, the relevant turmoil in Eastern Europe poses risks to many BRI projects that need to be estimated dynamically.

The above case analysis is consistent with the summary from the literature analysis. The existing typical BRI projects fall mainly into three categories: high-speed railroads, extensive energy facilities (oil, gas, coal), cross border electricity constructions (Huang, 2016). On the one hand, these projects mainly belong to the first industrial chain, which allows host countries to obtain economic benefits in a relatively short period through these investments. On the other hand, China can also secure its huge energy demand through exporting capital and technology assistance and fostering local industries in exchange (Ibid). Meanwhile, the distribution of BRI in route countries will be influenced by the orientation of cultural values and policy guidance. The assessment of BRI project risk sources will be further discussed next based on case study findings; some of this knowledge has laid a foundation for the interview questions, while others will be re-verified through the interview findings and ultimately contribute to the research conclusion.

5.4 Discussion

Risk is a kind of uncertainty in all business activities, especially in foreign investment (Baker & Filbeck, 2015). As mentioned above, BRI countries have a high overall risk level due to uneven development stages and diversified macro environments. Chinese enterprises conduct a large amount of OFDI in BRI countries. It is a vital link affecting the smooth progress of construction whether they can effectively prevent and control risks. The risks involved in the BRI projects include the general risks in foreign investment and many special risk factors (Arduino & Gong, 2018). Risk identification is to clarify the source, nature and composition of the risk factors, as it is the first step of the OFDI risk research (Xu & Chung, 2018). This part is based on analysing eight typical cases and categorising them into 'major risk factors', 'common risk factors' and 'unique risk factors' after sorting out and evaluating (Table 5.2). The following discussions will structure an in-depth analysis of the case studies, then summarize according to their respective characteristics in a hierarchical allocation. Thus, it would lay a conceptual foundation for identifying and assessing the project risk factors.

Table 5.2 Identification of risk factors from case studies

Case projects	Major risk factors	Common risk factors	Unique risk factors
Port Qasim Coal-Fired Power Plant, Pakistan	legal/regulatory chaos	macro-economic difficulty; political instability; operational risk	policy clash; bureaucrats and corruption; terrorist concern
Myitsone Hydropower Station, Myanmar	domestic political conflict	poor economic capability; geopolitical concern; social instability	environmental protest

Case projects	Major risk factors	Common risk factors	Unique risk factors
Colombo Port City Project, Sri Lanka	geopolitical pressure	weak economic capability; land lease disputes	terrorist concern
East Coast Railway Project, Malaysia	domestic political wrestling and geopolitical affect	economic concern (debt risk); legal/regulatory uncertainties	environmental protest
Jakarta-Bandung High-Speed Railway, Indonesia	political and geopolitical complexities	debt risk; operational risk; legal/regulatory ambiguities	terrorist concern; the impact of the unique geographic environment on project construction
Budapest-Belgrade Railway Project, Serbia and Hungary	geopolitical pressure		EU scrutiny on legal and regulatory, financing, technical terms of the project
Hassyan Clean Coal Project, UAE	geopolitical pressure	macro-economic difficulty (growth is subject to the fluctuation of oil prices); political instability (royal and religious conflicts continued)	terrorist concern; unique environmental situation; COVID-19 pandemic on project construction
Yamal LNG (liquefied natural gas) project, Russia	geopolitical crisis	slow economic growth; legal and regulatory ambiguities (bureaucrats and corruption)	financial and technical difficulties due to international sanctions; COVID-19 pandemic on project construction

5.4.1 Major Risk Factors

Table 5.2 is established to identify the risk factors involved in the cases to be prioritized. Taken as a whole, each case differs in its allocation of risk factors. It is reasonable considering the differences in national conditions, level of economic development, geographical location, culture and religion. However, patterns can still be found among individual cases. Most projects except ‘Port Qasim Coal-fired Power Plant, Pakistan’ have significant risks related to 'politics or geopolitics'. This is because the country has excellent political ties with China, ensuring the project’s progress is free from external pressure. Even though the ‘Myitsone Hydropower Station, Myanmar’ and ‘East Coast Railway Project, Malaysia’ projects face geopolitical tensions, it is not the primary risk when carefully assessed. The actual pressure is contributed by the conflict from different political forces domestically.

On the contrary, the geopolitical crisis is the core factor to the ‘Colombo Port City Project, Sri Lanka’ and ‘Budapest-Belgrade Railway Project, Serbia and Hungary’. The former needs to balance the pressure from India as its proximity and regional power in the subcontinent. At the same time, the latter has to deal carefully with strict technical standards and legal requirements from the EU. Being close allies to the U.S, India and the EU see China as a strategic competitor and are wary of the BRI investment. In both cases, increased targeted foreign investment scrutiny existed (Yang, 2018). For Indonesia, the ‘Jakarta-Bandung High-Speed Railway’ project has been disrupted by different domestic political forces and external geopolitical pressures at the same time. Despite the final successful bid by Chinese SOEs, it was initially scheduled to open to traffic in 2021, is still under construction due to complex factors.

Geopolitical risk matters the most to the ‘Hassyan Clean Coal Project’ project since the UAE is one of U. S’s closest allies in the Middle East. It is hard to imagine the latter would allow it to have a more intimate relationship with China, even though the UAE has recently been trying to welcome the BRI investments. The Yamal LNG project is another particular case. Although Russia is a global power, due to its consistent pressure from the West (both U.S and EU) – such as the recent overall sanctions – the rapid deterioration of the external political environment motivates it in urgent need of additional support. However, on the one hand, international sanctions caused by the war in Ukraine directly threaten the development of projects, and Chinese companies need to be cautious in this regard. On the other hand, there has always been a wave of thought in Russia that alert to engage with China, fearing that its rise will affect Russia's traditional sphere of influence. Therefore, complex geopolitics are the core factors affecting the smooth operation of Yamal LNG in the later stage (China Center for International Economic Exchanges, 2019).

The countries mentioned above have all maintained good political relations with China; they could have acted as a counterweight and stabilizing force in great power politics. Yet there is a widespread belief in the West, led by the U.S, that the traditional geopolitical balance is being disrupted. China may try to make its exclusive sphere of influence and use the BRI as a source of leverage (Rana & Ji, 2020). In addition, the unique nature of SOBs itself, as the subject of this study, also determines that BRI project financing is likely to be influenced by political pressure from the host country both internally and externally. Hence, the interplay of geopolitics and domestic politics affects these projects, and the competition towards BRI is often ideological rather than pure commercial.

5.4.2 Common Risk Factors

‘Common risk factors’ reflect the difficulties and challenges commonly encountered in BRI project construction and operation in these countries. For instance, economic-related factors are presented in almost every case. It includes the poor economic capacity of the host country, debt risk, low growth, operational risk, etc. These may bring potential financing difficulties, defaults, and other problems to these ‘MEGA’ projects (Li, 2019). BRI certainly has more political implications for the West, but its deployment must bring economic benefits to the host country. China hopes to promote trans-regional economic engagement through BRI to help sustain its domestic economic growth, but the process is bound by a series of security commitments (Hillman, 2018). This is not only to protect its citizens and assets but also to reassure its neighbours and potential partners further afield to ensure economic growth for decades to come. Given that revenues pay for some projects after they are put into operation, the challenges posed by combining economic risk with operational risk cannot be underestimated. For instance, to the ‘Yamal LNG’ project, although it is one of the three projects of completion, it is imperative to ensure its natural gas supply safely and efficiently due to its geographical particularity. Therefore, operational and associated economic risks become common elements at this stage.

Some projects have been postponed because host governments are worried about falling into a 'debt trap' because of the overly colossal amount of the BRI investment (Mathews, 2019). The ‘East Coast Railway Project’ and ‘Jakarta-Bandung High-Speed Railway project’ both experienced delays and even stoppages because of such concern, causing considerable economic losses to both sides. In addition, incomplete laws and regulations and policy incoordination between parties are common, leading to project stagnation. For

example, the host country has complicated approval procedures for overseas investment and unclear ownership in the two rail projects. The dispute over the right (both lease and own) to use the project land appears in almost every case, and it even becomes the core factor affecting the ‘Port Qasim Coal-fired Power Plant’ project. The special case here is the ‘Budapest-Belgrade Railway Project’, and after careful study, the author concluded that there were no 'common risks' affecting its progress. Serbia and Hungary are not an economic powerhouse in Europe, but their overall situation is better than other countries on the route. So, in addition to geopolitics, there are only ‘unique factors’ attached to this case.

5.4.3 Unique Risk Factors

'Unique risk factors' specific to each project were identified differently in the case analysis, which manifested due to the uniqueness of the project's location, environment, society, religious elements, etc. It may include corruption, terrorism, environmental challenges, special geographic or climatic conditions, and the impact of the COVID-19 pandemic. Terrorism threat is the unique influencing factor to the ‘Port Qasim Coal-Fired Power Plant’, ‘Hassyan Clean Coal Project’, and ‘Colombo Port City Project’. Pakistan and UAE are Islamic countries, and their internal political instability results from religious and ethnic conflicts combined with external geopolitical pressure. Sri Lanka is a multi-ethnic and multi-religious country. Although the "Liberation Tigers of Tamil Eelam"[53] as the independence regime was nominally eliminated, many areas are still under the terrorism cloud, bringing great uncertainty to foreign investment.

Environment and its protection have become essential factors affecting the

[53] DeVotta, N. (2009). The Liberation Tigers of Tamil Eelam and the Lost Quest for Separatism in Sri Lanka. *Asian Survey* , Vol.49 (6), 1021–1051. https://doi.org/10.1525/as.2009.49.6.1021.

BRI project. The understanding of it comes from two aspects: 1. Concerns about local environmental damage during the development of extensive infrastructure and energy projects; 2. Influence of exceptional geographical environment of project site selection on construction (Sarfraz & Qun & Hui & Abdullah, 2018). Often, these two considerations are mixed. The ‘Myitsone Hydropower Station’ project was eventually shut down because of domestic political conflict. The protests by local folks about the negative impact a dam might have on the environment contributed to the result. A similar situation also appeared in the 'East Coast Railway Project' and 'Jakarta-Bandung High-Speed Railway' projects, where the final version of the construction plan was revised for smooth construction. The ‘Hassyan Clean Coal Project’ and the ‘Yamal LNG Project’ were facing the challenge of extreme weather, which affects both construction and transportation.

The particular case here is the ‘Budapest-Belgrade Railway Project’, whose risk factors almost need to be classified in this category because it is distinctively subject to EU laws and regulations. This explains why the Hungarian section of the railway has not started construction long after the Serbian team was completed, as it was waiting for approval from the European Commission[54] (Observer, 2020). While causing a row between the two governments, it has also become a symbol of anxiety over China's growing influence in Eastern Europe and throughout the EU. The risk factors are then subject to its particularity, which include delayed construction, bidding challenges, cost accumulation and feasibility; the tender public laws of the EU may also be a stumbling block to the BRI projects (Rencz, 2019). The difference in the progress of the project in Hungary and Serbia reveals the influence and power of the EU; predictably, it will be more difficult for China to

[54] Observer. (2020). The Hungarian parliament has passed a bill to upgrade the Budapest-Belgrade railway. Available at: https://www.guancha.cn/internation/2020_05_21_551182.shtml (Chinese).

promote infrastructure projects in other EU member states.

From the publicly available information, only the ‘Jakarta-Bandung High-Speed Railway’, ‘Hassyan Clean Coal Project’ and ‘Yamal LNG’ projects have been affected by the COVID-19 pandemic. However, it is sensible to assume that these projects are all affected to varying degrees because most of them are still under construction, which requires a flow of people, funding, technical support and another resource supplement. International travel restrictions and logistic disruptions caused by the pandemic cannot be overlooked (Wren-Lewis, 2020). Literature comprehended that from a socio-economic approach, in the long aftermath of a pandemic, short-term fiscal and monetary policy fluctuation of the host country cause problems – stagnant production, falling demand, weak consumption (Ibid). Its impact on BRI projects is unmistakable but hard to quantify.

5.5 Summary

It can be determined from the case study that Chinese enterprises, especially the SOBs, have already encountered problems with BRI investment. Challenges include inadequate transnational operation and standard management, weak awareness of compliance management and social responsibility, and weak risk management ability in dealing with the global process (Sheng, 2018). When the initial dividends of infrastructure construction become fatigued, the legal system and regulatory defects in the BRI regions would appear more prominent. Overlapping conflicts of culture, management, expertise, and standards arise, and investment costs exceed expectations, making it more challenging to operate sustainably in the host countries. Issues and risks accumulated in the early stages of SOBs’ overseas investment and operation projects may flare up (Ruwanpura &

Rowe & Chan, 2020). Therefore, creating risk management methods in line with their conditions and suitable for the BRI region can help project risk warning and identification, crisis disposal, and improve investment management.

This chapter discusses case results and highlights common patterns associated with project risk factors. The case results cover an analysis of selected typical cases, including case progress, problems, risk factors concerned, and a summary. Overall, the eight cases all involved financing from Chinese SOBs, and the contractors were All Chinese enterprises, each operating in a similar mode of project financing. However, in terms of risk management, most of these projects still encounter various difficulties, such as suspension and postponement, even though most of them do not need to worry about financing, supply chain, and operation management. A significant factor of political influence even led to the abortion of projects.

The chapter also examined and summarized the findings from case studies and effectively provided a discussion to explain further the relationship between the complicating factors involved in each case and the problems created by the project. This can directly promote identifying risk factors involved in BRI project financing to further classify and prioritize them over logical interpretations while associating with the theoretical framework established in the literature review. At the same time, the analysis of the case findings also reveals other issues related to project risk management, such as project operation mode and stakeholders. In addition, the case study results provide an essential basis for interview questions and contribute directly to establishing a unique risk management framework.

Chapter 6. Research Analysis and Results II: Interviews

6.1 Introduction

"Concepts will then work or not work; distinctions will be useful or not useful, or modified…so the experienced analyst learns to play the game of believing everything and believing nothing, leaving himself as open as the coding itself."

--Strauss (1987).

The main content of this chapter is to process the interview data. The answers to the research questions are analyzed, and the findings are summarized based on in-depth language and contextual interpretation using the coding method of NVivo. Further discussion is provided from different perspectives to build the connection of theoretical basis and empirical research results to establish a unique risk management framework.

6.2 Interview Findings: Development Financing Model and Risk Management of the BRI Projects

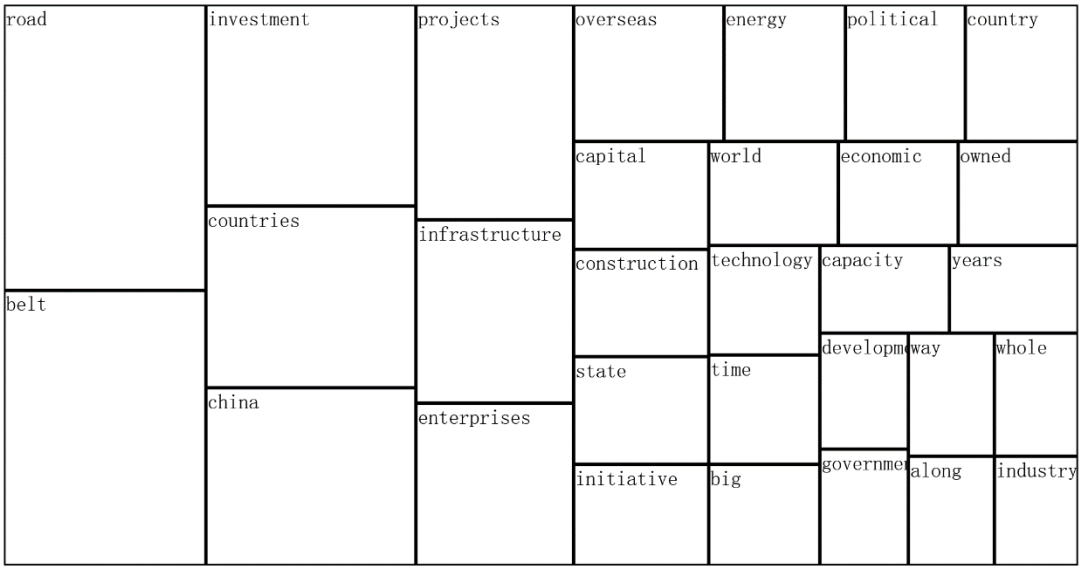
The following are findings from the interview results, which are analyzed through the hierarchical coding method. Through the analysis of the interview data, the respondents' cognition of the research content can be clearly and logically presented through the four parts of the questionnaire. First, respondents reviewed the overall concept of BRI and how the projects differ from traditional international investments based on their professional experience. Secondly, questions are answered related to risk management, expounded problems existing in risk assessment, prevention, control and other aspects of existing projects, and provide opinions on the room for improvement. Thirdly, the particularity of SOBs in BRI project financing is

illustrated regarding the influence of state-owned nature on their risk practices. Finally, the identification of stakeholders, prediction of the influencing factors, and development trend of BRI are presented. They mostly agreed that risk management for BRI projects is complicated because it involves both technical and non-technical issues, and the lack of valuable and reliable information is the main impediment. The existing models were initially designed for the needs of the enterprise at a time when there was no case for BRI projects.

At the beginning of each section, the author presents a query treemap of word frequency results using NVivo based on the content encoded within this section. The query criteria are the top 30 most frequently occurring words of the exact match that the author believes can reflect the conversational focus of each topic since it's impossible to present the complete content. The analysis based on the interview results will run through the entire chapter to appraise risk management issues arising from BRI project finance. The quoted respondent's conversation code will appear in italics when addressing the key arguments. To avoid repeated and lengthy statements, the respondents who deliver the same or similar opinions are classified in one quotation.

6.2.1 Knowledge of the BRI investment

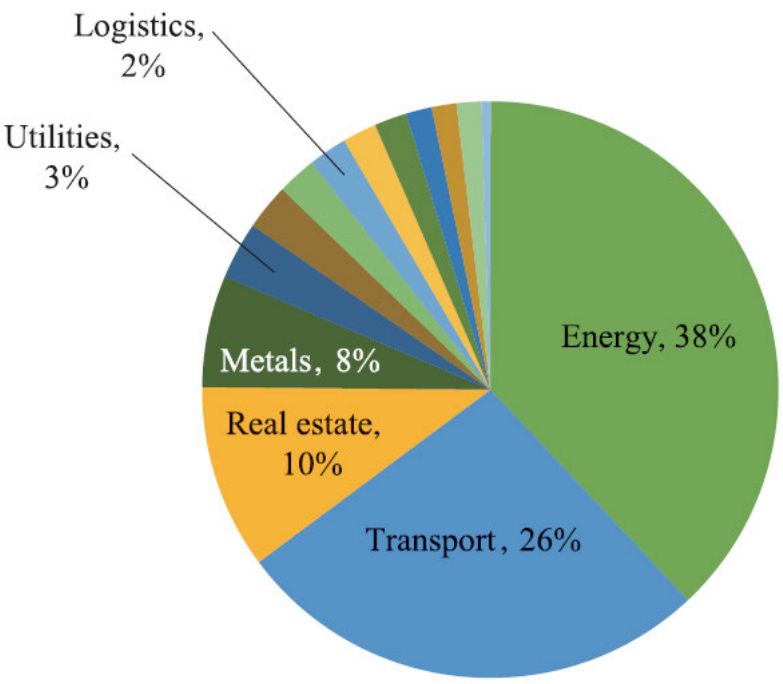
Figure 6.1 Word frequency query result of ‘Knowledge of the BRI Investment’ coding



Evidence showed that most respondents have a positive general view of the BRI investment. They believe that China's direct investment in countries along the route in core area emphasized the primary way to achieve its development strategy and goals. The key areas include energy, resources, transportation, mainly in infrastructure (Figure 6.2). With the continuous progress of all the construction sites, China attaches great importance to strengthening relations with regional countries through trade and capital export and deepening international cooperation. The words of one interviewee can represent the majority opinion:

“I understand that the Belt and Road project that I feel at present is relatively concentrated on, for example, to build railways and highways, then energy, water and hydropower stations, then thermal power stations and some of these network infrastructures, that are relatively concentrated in infrastructure construction.” (Interviewee L.)

Figure 6.2 Chinese investments and construction projects along the BRI by sector, 2013-2018



Source: The American Enterprise Institute and the Heritage Foundation (2019)

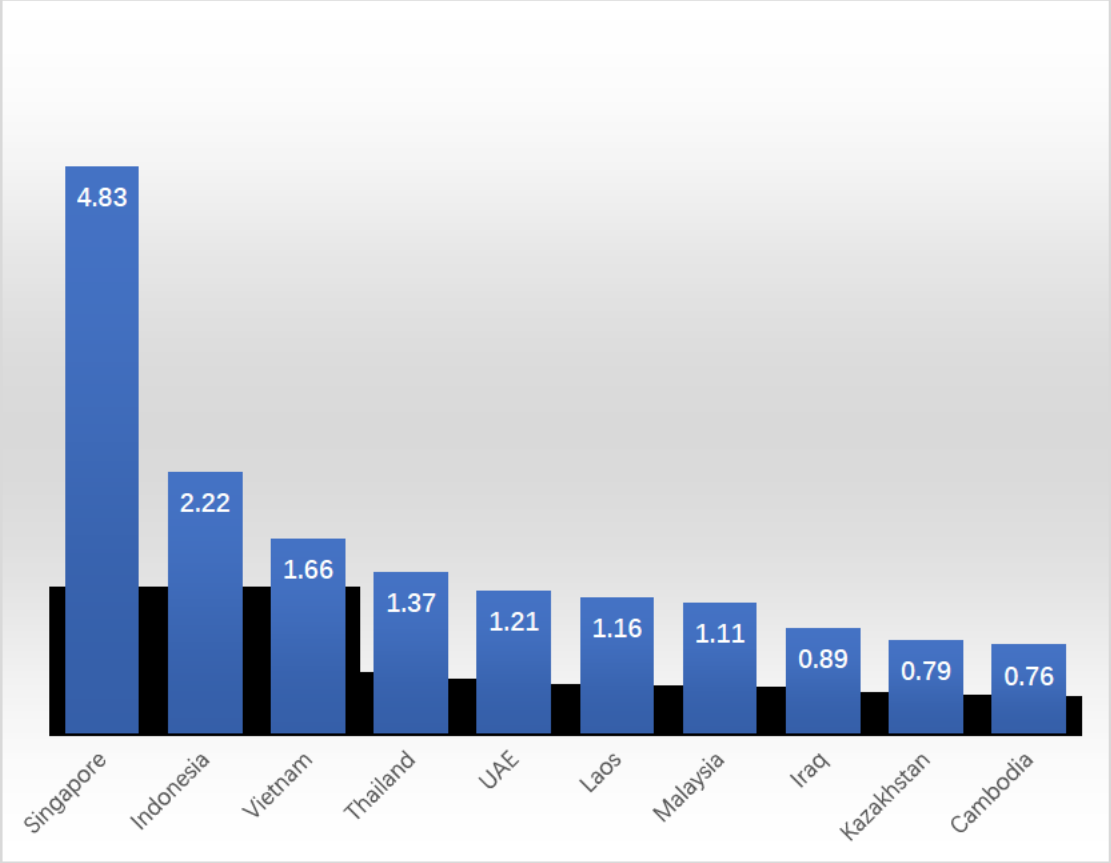
At the domestic level, China's OFDI under the BRI is conducive to transferring the internal excess capacity to optimize the industrial structure and ensure energy security. At the same time, a broader strategic cooperative relationship is established under the new situation of the global economy to enhance the competitiveness of Chinese enterprises. At the same time, the focus on infrastructure projects makes BRI an essential means to ensure China's strategic energy security. So, some respondents have already raised questions concerning security-related issues:

"In addition to the transfer of production capacity, there are also strategic channel issues, such as Malacca's energy security, including oil shipping, pipelines in Myanmar, and Gwadar Port in Pakistan. I think some incomplete strategic locations would cause a problem." (Interviewee K.)

Looking from the international level, BRI is conducive to China's OFDI under driving along with the country's infrastructure and economic growth, promoting the transformation of the pattern of the economic structure while addressing

years of overcapacity domestically. Of course, its (BRI) origin is to share the dividend of development, break the global economy's development imbalance, and shape a new pattern of international trade and economic cooperation. Therefore, several interviewees talked about the positive role of the 'going out' policy in promoting BRI in the early stage.

Figure 6.3 China's investment flows among the top 10 destination countries along the BRI, 2019 (in billion-dollar)



Source: Statistical Bulletin of China's OFDI 2020[55]

[55] On September 29, 2020, the Ministry of Commerce, the National Bureau of Statistics, and the State Administration of Foreign Exchange jointly released the Statistical Bulletin of China's OFDI in 2020 (hereinafter referred to as the Bulletin), officially releasing the statistical data of China's OFDI in 2020. The communique gives a comprehensive introduction to China's OFDI in 2020 in six parts, including overview of China's OFDI, characteristics of China's OFDI, China's investment in major economies, composition of OFDI investors, regional and industrial distribution of OFDI enterprises, and comprehensive statistical data. Available at: http://www.gov.cn/xinwen/2021-09/29/content_6639984.htm.

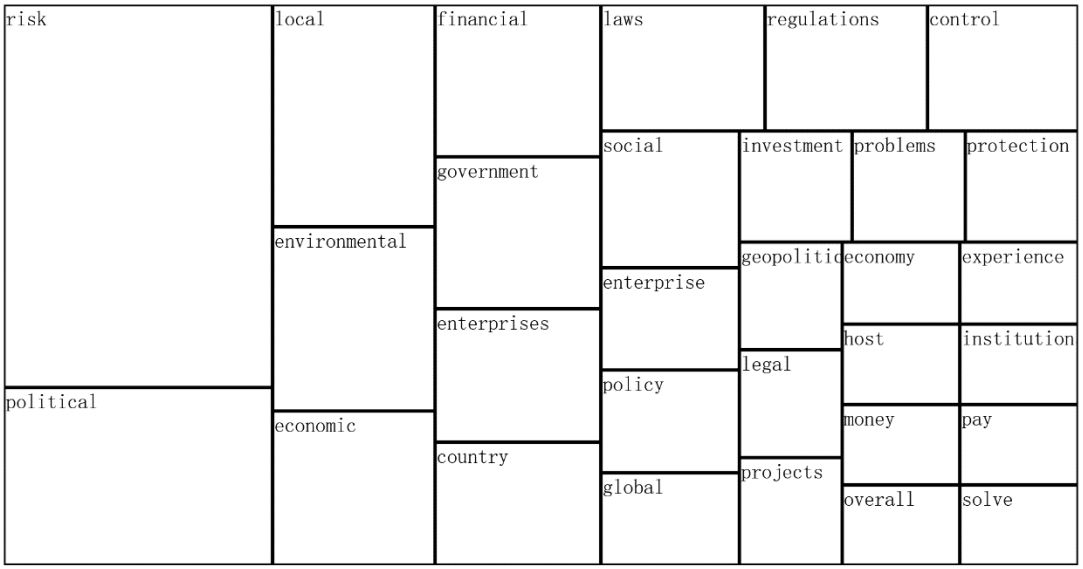
The BRI, as a platform that aims to build large-scale infrastructure and deepen economic cooperation in the region, must first meet its financial commitments. If these projects fail to achieve these goals or push developing country partners into debt, BRI would be unpopular in the long run for losing its fundamental implications (Hillman, 2018). Many respondents started to suggest that the political factor have key impacts from this perspective:

“They (BRI partners) lagging behind us in the main areas, so that our technology and capital have a whole spillover effect. Western firms should be very willing to compete with capital and technology, but it is difficult as far as political factors are concerned. From an economic point of view, the BRI project will be a very good one, at least for employment, GDP, tax revenue, and the whole industry's transformation. So, I think they have no reason to refuse. If there's a reason, it's political.” (Interviewee H. & B. & S.)

BRI was a relatively new concept only introduced in less than a decade, but China's outbound investment preceded earlier. Comparing the BRI investment model and the traditional model can help find some particularities and thus derive targeted project risk management measures. Most respondents believed that the BRI projects differed and explained further according to their professional knowledge and work experience. The main differences include concentrated investment (infrastructure), strong policy orientation, robust official financial support (SOBs), and more welcome by host countries. These findings are consistent with the literature research and conclusions of the case study, which acknowledged that political attributes play a decisive role in the BRI. Meanwhile, almost all respondents admitted that this is a double-edged sword, meaning that these projects come with higher geopolitical risks. This will be confirmed in the following section.

6.2.2 Risk management

Figure 6.4 Word frequency query result of ‘Risk Management’ coding



The second part of the interview focuses on risk management. The core part of the research is to acquire knowledge of risk factor identification, classification, and management issues of BRI project financing from respondents.

6.2.2.1 Risk identification and prioritization

In terms of investment risk identification, existing studies have mainly analyzed the uncertainties and potential challenges of the BRI itself. It is found that the most direct risks it faces come from the specific countries along the route with many complicated and uneven situations, and it is tricky to prevent and manage the external risks (Buranelli, 2018). In terms of risk issues, this study focuses on SOBs, the financing subject of the BRI project, and identifies the main risk factors affecting OFDI based on first-hand data. Based on the literature review and case studies, the author abstracts the key elements and set as a close-open mixture question: “How do you understand the risks associated with the BRI projects? And please rank these risk factors in order of priority, with one being the highest.” (Options: A. Political and geopolitical; B. Economic and financial; C. Social and environmental; D. Laws

and regulations; E. Global crisis and other (please specify)). In this way, respondents spontaneously choose and rank their answers and play with their understanding. The author draws the following Figure 6.5 to show the result of risk identification and prioritization according to their answers.

Figure 6.5 BRI project risk identification and prioritization

Interviewee	Political and geopolitical	Economic and financial	Social and environmental	Legal and regulatory	Global crisis and other
a	1	2	3	4	5
b	1	5	3	4	2
c	1	2	4	3	5
d	1	2	2	4	3
e	1	2	4	3	5
f	1	3	3	2	2
g	1	2	3	4	5
h	1	4	2	3	5
i	1	5	4	3	2
j	1	2	2	1	3
k	3	1	2	3	4
l	1	3	3	2	4
m	1	3	4	2	5
n	1	4	5	3	2
o	1	2	2	4	3
p	1	2	2	2	3
q	1	2	3	4	5
r	1	3	2	2	4
s	1	2	3	3	3
t	1	2	4	3	5

(Instructions: indicated by the colour gamut based on interviewee's choices. Red indicates higher risk, green indicates lower risk, degree increases with the colour deepening)

Not surprisingly, almost all respondents (except one) identified political or geopolitical risks that have the highest impact on the BRI project, consistent with the case study discussion. The BRI runs through Eurasia, and most participants along the route are developing countries, as the political situation is highly uncertain (Li, 2019). On the one hand, the current situation is complicated due to geopolitical pressure. The U.S has attempted to obstruct the development of BRI to maintain the existing international order, where concrete actions have been taken to impose sanctions on numerous Chinese enterprises and individuals (discussed in Chapter 2). Some of its allies also advocate the 'China threat' and the 'debt trap' theory targeted the BRI, over-interpret its strategic goals (Wang & Gao, 2019; Tekdal, 2018). Japan has stepped up its infiltration into neighbouring countries, while India and the Philippines have joined the South China Sea disputes. The BRI is therefore facing enormous pressure, as some participants are already feeling the pinch from their involvement in the actual projects:

"At present, we may pay more attention to the negative information here, because some of our enterprises have been sanctioned by the United States, which is very scary"; "I don't think the situation will get any better in the future as long as the US still sees us as a strategic competitor." (Interviewee R. & B.)

"No matter what kind of investment takes place across national borders, it cannot completely avoid interference from external forces. This is true of our projects in Myanmar and Indonesia. Even if construction is fine and loan approvals are smooth, there will be disruptions in the operational process." (Interviewee C.)

On the other hand, the internal political instability of BRI countries also contributed to terrorism; regions among West Asia, the Middle East, and North Africa have been victimized for many years, and domestic sabotage activities continue to exist. Some countries have frequent civil wars and territorial disputes with neighbours. Other places are in better shape and not free from

regime fluctuations and domestic volatility, resulting in higher instability and greater risk for foreign investment (Balli & Uddin & Shahzad, 2019). Some respondents compared other risks faced by the project with political risks to justify the severity and force majeure of the latter:

“There are two parts of protection or insurance coverage, one is political risk, and the other is an economic risk. For local political riots or turbulent wars, such as Libya, Yemen, Iraq, Ukraine and so on, it is difficult to avoid or simply deal with once they occur. The impact on many projects is very great and fatal.” (Interviewee T.)

The evidence suggests that host governments' national security concerns over strategic assets (infrastructure), ongoing competition for economic dominance, and differing ideologies have subjected BRI projects to a fair degree of regulatory scrutiny (Jing, 2018). Respondents believe host governments are concerned about losing strategic resources and technology to Chinese competitors, which could harm their economic security and competitiveness. For example, there are cases of roads, high-speed rail, ports where Chinese companies' engineering capabilities and economies of scale allow them to enter at lower costs, which forces outside the host country to see as a threat to their competitiveness. Hence the call for stricter regulatory scrutiny to protect their technological competitiveness. In many ways, respondents' responses matched the case study findings, reaffirming the decisive role of a political factor over the BRI investment.

In terms of other common risks, simple statistical results from the conversation content showed that most respondents believe economic and financial stakes are higher than social and environmental risks. A few think the latter is now increasingly becoming a problem. Economic and financial risks are traditionally quantifiable, with methods to mitigate and digest; for instance, multilateral institutions have different criteria for evaluation and assessment.

In contrast, one respondent states that the principles for assessing environmental and social risks usually are vague among the BRI countries, especially with corruption and lack of regulation. It can lead to a high level of uncertainty. He then gave an unanticipated example to illustrate:

“For example, we recently encountered a project that used multilateral agency insurance that required environmental assessment of the project. Through communication with other environmental organizations and experts, we learned that some NGOs, including world-renowned ones, can use the money to help solve many problems, such as paying a fee (compensation) to rearrange the red line (of protection area). The question is, whether local government agencies are also more flexible when they perform laws and regulations?” (Interviewee D.)

The author believes that the answers can verify the results from literature and case studies based on exploiting interviewees’ knowledge. They all approved the given options and then ranked them according to the risk level, some of whom explained further with other factors proposed beyond, as they can still be grouped into the categories provided. For example, the COVID-19 pandemic is already a global crisis; the threat of terrorism can debatably be classified as ‘political risk’, and policy conflicts and bureaucratic corruption can be classified as either legal or political risk. In addition, the operational risk and debt risk belong to 'economic and financial risks', while land lease disputes can be classified as ‘legal risks'. These risk categories summarized by the author based on literature review were verified again in case analysis and interview results, ensuring the validity of the research outcome.

6.2.2.2 Risk assessment measures

When discussing the existing risk assessment methods, the author adjusted the questions several times based on the experience of the initial three pilot interviews and finally chose the closed questions. There are two reasons for this. First, some respondents were unwilling to directly discuss questions

about specific risk management measures related to occupational sensitivity or just gave very vague answers. Second, provide respondents with the most intuitive choices and facilitate precise statistical results. The question set is "What approach or measure are being applied in the risk assessment process of current projects?", and interviewees can make multiple choices from the following options: A. Official policy guidance (of Chinese gov.); B. Macro regulatory frameworks (e.g., the World Bank ESF; the Basel Accords); C. Internal risk control (of SOBs); D. Country risk ratings; E. Risk analysis of special project financing mode (PPP); F. Others (please specify). These options are derived from literature reviews and policy document analysis that reflect most BRI projects' status and have been further confirmed by interviewees. The following table presents the results of this question:

Table 6.1 The choices of interviewees on 'Effective measures'

Effective measures	Number of choices
Official policy guidance	20
Internal risk control	17
Country risk ratings	16
Risk analysis of project financing mode	12
Macro regulatory frameworks	6

Respondents consider the complexity of quantitative models and the large amount of data required for models are significant obstacles to applying existing models by SOBs. After all, BRI projects are inherently different from commercial financing regarding risk issues. It should be noted that, according to the literature review, most of the current relevant studies are presented by quantitative analysis methods, such as various risk ratings based on the establishment of different indicator systems. The indices primarily include market size (total GDP), economic development level (per capita GDP), economic growth rate (GDP growth rate), economic growth rate volatility

(GDP growth rate volatility), inflation (CPI), unemployment rate (unemployed/working population), trade openness, investment openness and capital account openness (Li & Dong & Jiang, 2021; Zhang & Wang, 2019; Rivoli & Brewer, 1997). As revealed in Chapter 2, these index systems continue the data sources commonly used in traditional risk management methods of transnational investment, with no targeted estimation of the unique nature of BRI, for example, to give weight to the political matters involved.

Apart from China's official think tank (IWEP-CASS), the OECD and the World Bank are the only authoritative institutions that have published similar reports; however, they were not continuous studies. The database for BRI project financing in the host countries is lacking apart from statistics released by the BRI Portal, let alone the individual risk assessments towards SOBs. The interview results suggest that, rather than these models, firms attached the most significant importance on ‘official policy guidance’ and their ‘internal risk control’ methods. ‘Country risk rating’ and ‘risk analysis of project financing mode’ are also essential measures, with only a few choices for ‘macro regulatory frameworks’. Of course, this is not to say that these methods are immaterial, yet some consider them with reference value when evaluating one project rather than a basis for project management. It should be noted that some respondents mentioned the commission of a third-party investigation. Even there is no evidence from literature and case studies that many SOBs evaluate risks in this way. Still, it cannot be ruled out that in the future, with the development of a diversified financing model, professional service provided by third-party institutions would be involved in the risk assessment process.

“The risk control process in specific projects is the most important, the enterprise itself is going to do risk identification and risk mitigation assessment.”; “…of course, we’ll see it from the internal backstage of the

project, will also attach importance to the risk assessment models from international enterprises, but the process is different." (Interviewee D. & Q.)

6.2.2.3 Weaknesses and suggestions

This section surveys respondents' views on existing project risk management deficiencies and their suggestions and expectations for improving risk assessment. SOBs mostly rely on government policy guidance and their internal assessment models to assess risks due to the complexity of cross-border risk management and the absence of host-country data. Respondents commented that many existing models are quantitative measures based on data from developed market economies, while capital markets in BRI countries are still in the development stage. The local government has a vital role in the economy. Models based on the host country's data are largely absent. More respondents complained that existing models do not classify and rank projects according to risk factors, so the feasibility and risk level cannot be well evaluated before the project is settled.

"We used many quantitative evaluation models in the project, such as the logistic regression model. They look good in theory, but we face many problems when applying them to real cases. The main thing is the lack of data to satisfy these models, and many projects lack local data sources. In addition, these projects are vulnerable to non-financial factors, and most models use financial data. Existing models do not work effectively in this situation." (Interviewee O.)

At the same time, others believe that Chinese SOEs lack local influence in their investment activities regarding different stakeholders. On the one hand, enterprises do not have a good understanding and mastery of local knowledge, so they cannot make timely and effective judgments about possible risks in project landing. On the other hand, some lack specific analysis and rush into one country when they get policies due to their state-

owned nature. They do not have good communication with local government, agents, and especially the residents, who are supposed to be the largest beneficiary. Ignorance of the understanding and assessment of project stakeholders, especially relating the social and environmental impacts, may lead to some conflicts or adverse situations to the project that have already been discussed in case studies.

"They (SOBs) can easily profit by investing heavily overseas…little consideration is given to local communities. But it is not a long-term success when locals are unhappy." (Interviewee R.)

"In addition, we should bear the burden with the local corporate social responsibility, integrate into, and employ as many local employees as possible. Especially in this way, some of our enterprises may go further to make good profits in those developing countries." (Interviewee O. & H.)

Some respondents acknowledged that Chinese SOEs might be reluctant to take advantage of high-quality but expensive legal, financial, and industry-related advisory services when establishing and developing operations in host markets, adding to their difficulties (Wolff, 2011). This may have something to do with the traditional culture and bureaucracy:

"Because the mainstream of going out is SOB, its process and system determine that it will not necessarily spend enough money to go through the complete compliance process, regulations and procedures. No matter how many lawyers and accountants are hired, no matter how long and expensive the host country needs to license. Which is not good." (Interviewee K.)

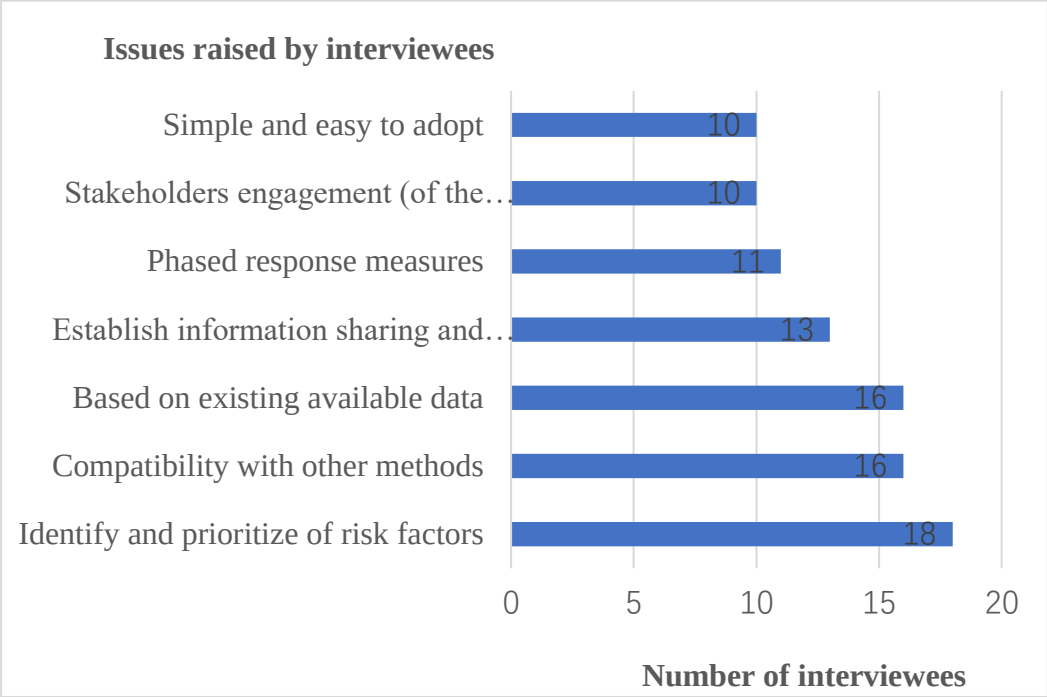
As identified in literature and case studies, problems of BRI risk management arise among areas of imperfect investment and financing guarantee mechanism, inadequate targeted risk assessment, lack of risk early warning and ranking system, and insufficient awareness of national and systemic risks in the host country by SOEs. These questions provide suggestions from the

overall management level and the specific technical level in response to these questions. Many respondents also believe that such frameworks should be comprehensive in management structure and pay attention to existing and available data in a particular application. These practical issues need to be considered in the framework and design of risk management policies.

“The risk issue is complex and depends largely on how much information is available. The host country, the project itself, the external environment, industry-related, etc. These developing countries are often unable to disclose information and data, so it is important to establish an information-sharing mechanism in the overall risk management process.” (Interviewee D. & S.)

From a technical point of view, respondents suggested that enterprises should adopt different measures to deal with risks at various stages of investment. In completing the due diligence report, project risk analysis requires diversified techniques such as workshops, interviews, questionnaires, stakeholder analysis, etc. Institutions can also purchase professional services from third parties for risk assessments. Many respondents suggested that project companies buy various insurance types to prevent risks. If problems are encountered during project implementation, governments can be sought for consular assistance or coordination with host government agencies. Furthermore, if the project suffers losses due to other parties' troubles, firms can also take legal action to claim compensation for their failures. Yet, when it comes to the more fatal political and geopolitical risks, most respondents believed there is no practical way to deal with them. Once a crisis occurs, companies will inevitably suffer losses, which can only be mitigated by anticipating the situation of the host country and buying political insurance in advance.

Figure 6.6 Interviewee’s suggestions for an improved risk management framework



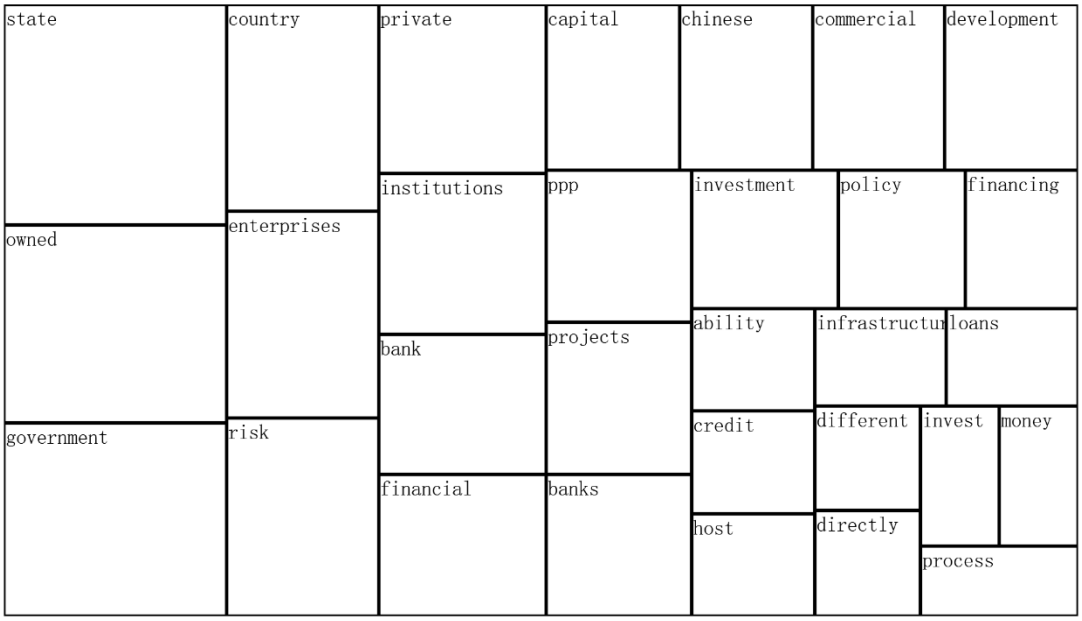
According to the interviewee's opinion on the weaknesses of existing risk management methods and their suggestions for improvement, the author formulated Figure 6.6 to summarize these points. They include: 'identify and prioritize of risk factors', 'compatibility with other methods', 'based on existing available data', 'establish information sharing and coordination mechanism', 'phased response measures', 'stakeholders' engagement (of the PPP mode)', 'simple and easy to adopt'. These main elements summarized what has been mentioned the most (more than ten respondents) in their conversations, which reflect their expectations for the improvement of risk management:

"A targeted framework is required." "As it stands now, SOBs still operate independently, without a unified and flexible risk management approach where other assessment criteria and models can be integrated into." "The World Bank and IMF have their risk management measures, but they are not completely applicable to BRI countries." (Interviewee A. & G. & K. & O.)

6.2.3 Development project financing and SOBs

Figure 6.7 Word frequency query result of 'Development Project Financing

and SOBs' coding



The third part of the interview focuses on development project financing and SOBs, which are two interrelated concepts of the significance of this study. As reviewed in Chapter 3, the unique nature of SOBs and the responsibilities they assume in BRI projects are essential to risk management. At the same time, as SOEs and financing institutions spontaneously, their risk preference, bearing capacity and risk management measures determine the success and future development of projects.

6.2.3.1 BRI and project financing

For BRI, financing is a top priority in infrastructure and a prerequisite for advancing projects in BRI countries. The decentralised financial systems of various countries cannot meet the large amount of capital needed for infrastructure projects, and multi-level regional economic systems need to be established (Ocampo, 2008). BRI project financing is mainly undertaken by China's state-owned developmental or policy financial institutions (or SOBs), such as CDB and EXIM Bank, with state-owned commercial banks. Such diversified financing platforms can provide funds and operate in the form of

banks and funds, independently calculating loans, income, and other vital indicators. The project progress can be reviewed during the lending process so that the development financing goes through the banking system to increase transparency and flexibility while ensuring funding (Xiao, 2019). Many of the respondents agreed with this trend. They mentioned the importance of international multilateral institutions and private capital, especially the PPP model, which has become mainstream in BRI project financing. Its flexibility and adaptability can help complex projects achieve the purpose of risk diversification:

"…other modes of cooperation like BOT, we did in the early stage, these things may also be there, but it is still a three-p project, which may be more conducive to social responsibility, and more conducive to social capital…due to the introduction of government credit. It should be more helpful to reduce the risks of the whole project." (Interviewee H.)

Some respondents believe that infrastructure charges, but ultimately the cost to individuals is less than the increase in utility. This way is conducive to the gradual return of the price and the continuous operation of more benefits. But the essential nature of the infrastructure remains the same, and the management model is more diversified (Ibid). Individual interviewees used mining cases as examples to explain project financing, especially the application of the PPP model in practice:

"In addition, according to many of our current projects, we invest in infrastructure through 3Ps and then pay off the debt by acquiring resources or other products from the host country. This form is different from domestic borrowing and investment." (Interviewee B. & J.)

It is found in the interview that the interviewees differ in the concept of project financing, especially when it comes to PPP mode. Some argue that all forms of project finance can be understood as public-private corporations or some variants of the PPP; others believe that models like BOT or EPC have their

uniqueness. In any case, there is a general recognition of the tendency of this mode extensively in BRI project financing, with the authorization of the host government to the projects, SOBs to provide development financing, SOEs to undertake construction, and project operating returns to pay for loan interest. While recognizing the PPP project financing model, some interviewees also expressed their concern about the complexity of its risk structure, believing that even though there is no defect, in theory, the project execution process is still limited by BRI's characteristics to varying degrees. This puts forward higher requirements for the corresponding risk management.

6.2.3.2 State-owned nature

Several characteristics of project financing could fit naturally with SOBs and were also confirmed in the interview. First, government intervention is inevitable once the market supervision mechanism is not in place. Infrastructure often needs to be constructed by a single enterprise because overall planning is necessary to reduce duplication. Its characteristics determine a large amount of investment and scale effect; its penetration rate, the number of users, the scope of usage cannot be adjusted by the market alone. Second, once completed, is to some extent non-exclusive – as 'quasi-public', private companies cannot form a monopoly or prevent others from using it (Kolodiziev & Tyschenko & Azizova, 2017). These two characteristics require the participation of both governments in the BRI project, especially SOB as a funder, who is of great significance to project implementation.

“In fact, if you look at the policy background, China Development Bank and the Export-Import Bank of China plus SINOSURE, which is state credit insurance, these three institutions can be called policy financial institutions or development finance institutions. The others are the Asian Infrastructure Investment Bank, the Silk Road Fund, the BRICS Bank and other multilateral institutions. This is a wider concept.” (Interviewee T.)

Other respondents contend that most of BRI's early projects are development financing. In contrast, nearly all of them are funded by SOBs, so the whole process from approval, construction to operation would be relatively smooth upon policy-driven of both governments. At the same time, while acknowledging the importance of state-owned nature in driving BRI investment, some also stressed the importance of commercial benefits to the realisation of projects. They argued that though driven by policy, SOBs need to see profits when assessing the viability of a project. According to the analysis of policy documents and some literature, policy-based financial institutions in China usually convey information to the central government through a single channel (China Banking and Insurance Regulatory Commission), hoping that policymaking will be tilted in their favour (Kong & Gallagher,2017). The participation mechanism of pressure groups is not sound, with only the environmental impact assessment of SOEs having a similar process (Li & Ng & Skitmore, 2012). From the respondents' answers, the author learned that SOBs want to strike a balance between political and commercial interests, and specific mechanism demanded that is likely to influence the risk management thinking of the BRI.

"First, of course, (SOBs) must obey the country's grand strategy and overall situation. However, I had to figure out what to vote for and not to vote for, what losses looked like pits that I couldn't just jump into. So still need to make a profit. Some projects may consider national factors, political requirements, and functional conditions, but it should be generally profitable." (Interviewee B.)

"Sometimes, it can be the icing on the cake. On the financing side, for example, banks may be willing to make some concessions on the price of loans. However, in many cases, superiors' demands and policy drives must be considered, even if they are not making money. We're trying to find a balance between the two." (Interviewee Q.)

Infrastructure is a public service rather than a purely commercial benefit,

which means that the input costs of enterprises will be greater than the benefits, which is contrary to the purpose of profit maximization. Therefore, government policies, administrative orders and other laws and regulations should be used to intervene, or financial subsidies should gradually recover investment returns (Giorgioni, 2017). The mainstream view would be that the Chinese government's BRI policy promotes the development of the project and essentially protects the interests of both sides. However, in the interviews, it was found that many respondents do not fully agree with this statement. Some of them hinted subtly that from the perspective of enterprises, they attempted to balance policy-oriented pressure and profits. At the same time, the political forces behind these SOBs will pressure the government through various channels to get the desired policy preference (Kong & Gallagher,2017). Although different from the usual 'pressure groups' of Western politics, similar findings have positive implications for this study.

“Our policies and measures are also aimed at safeguarding the interests of both sides and the implementation of the BRI. There will be no more strings attached or policy changes. As far as I know, I haven't heard of any major problems in this area so far.” (Interviewee B.)

“At that time, (gov.) required all enterprises to go global, but the assessment indicators were aimed at state-owned enterprises. In this regard, the power behind them would strongly influence policy direction.” (Interviewee S.)

Ownership of infrastructure often does not belong to individuals but governments. This may vary from country to country, but the government is assumed to be directly responsible for public goods, so monetary funds and loans from state-owned banks that can be mobilized are the primary sources of construction funds. It should be noted that several respondents from policy banks mentioned the role of interest groups behind and their weight on influencing policy orientation, which can have a considerable impact on risk management and related strategies. Therefore, risk supervision comes from

the government's control of projects and the interaction between SOBs and the government in the whole development financing system. This will be an essential part of the risk management process and play a more significant role in increasing transparency.

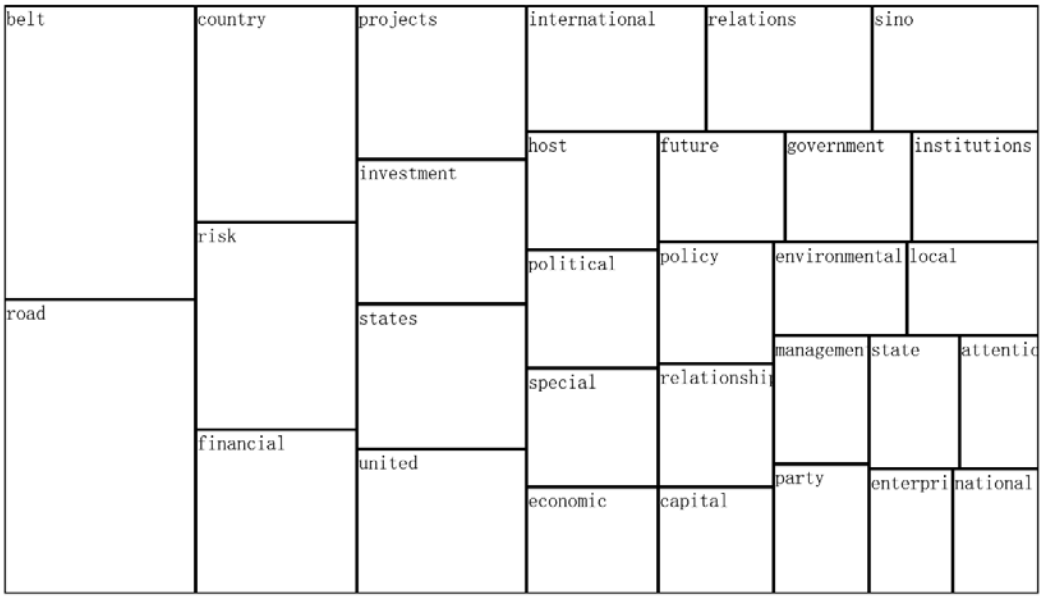
6.2.3.3 Risk bearing capacity of SOBs

In the process of participating in overseas investment, enterprises are constantly faced with various risks, from the capital needs and financing risks of infrastructure construction to the policy changes and social risks in project construction to the operation management and default chances after the completion of the project, which can be said to be everywhere (He & Lin, 2020). It is always a significant and complex problem of avoiding risks and clarifying the undertaking and dispersion of risks. As the BRI projects are cross national borders, countries along the route have significant differences in ideology, economic development level, political system and legal norms, social and cultural customs, etc., resulting in a wide range of risk sources (Gong, 2020). Several respondents explicitly mentioned that state-owned enterprises and financial institutions have greater risk-taking capacity than the private sector due to various reasons.

“If we are talking about a project involving the risk of a sovereign government, maybe state-owned institutions have a stronger voice in diplomatic channels than private institutions, or it is easier to solve problems through these channels.” (Interviewee Q.)

6.2.4 Future trends and development

Figure 6.8 Word frequency query result of ‘Future Trends and Development’ coding



The author guides the respondents to return to the research theme in the last part by investigating their perceptions of BRI project stakeholders, influencing factors and future development trends to further summarise knowledge points on building a unique RMF.

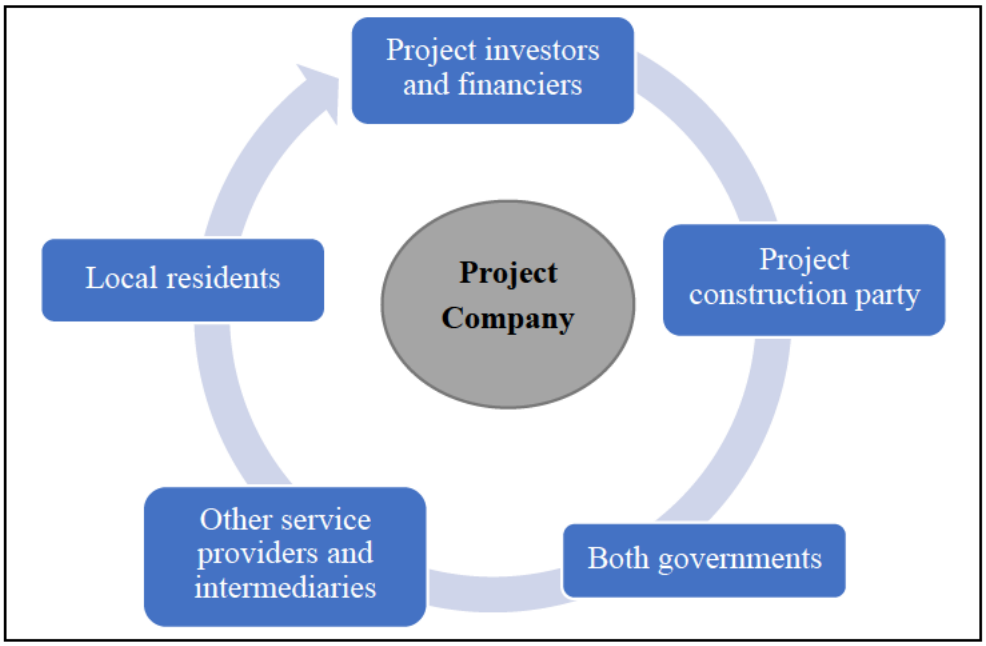
6.2.4.1 Stakeholders of the projects

Reasonable risk sharing is conducive to improving the risk tolerance of all participants and favourable to resisting risks; this is especially true for the BRI projects. Due to its characteristics, not only is a large amount of capital required, but the duration of the project is long, and the number and composition of personnel is flexible. Risks can erupt and cause losses at all stages of a project. All parties in the project agreement need different degrees of involvement, which puts forward higher requirements for the project management level. Therefore, clarifying the interests of the parties involved helps better understand the risk management knowledge associated with the project. In this part, the author sets a closed question: "Who do you think are the stakeholders of the ‘Belt and Road’ project? Multiple Choices." Based on the answers extracted from the case study findings, the authors identified

several important stakeholders as corresponding options: A. Project investors and financiers; B. Project construction Party; C. Both Governments; D. residents; E. Others (please specify). All interviewees chose the first four options, while many chose E and gave corresponding explanations (Figure 6.9).

"I think it covers all of them. There are also some of our other service providers, which are in the whole project, such as law firms." (Interviewee G.)

Figure 6.9 Stakeholders of the BRI project financing



Generally speaking, the local government is responsible for policy adjustment and technical problems like land acquisition during the project process and coordination of all parties when problems arise. Participants of social capital and contractors are more inclined to undertake and solve the possible risks in project construction and operation. The financiers need to supervise the whole project process from the regulator's perspective and reasonably judge the possibility of risk occurrence. Practical risk sharing is conducive to timely solving risks and actively preventing and reducing the impact of risks on

stakeholders (Zwikael & Ahn, 2011). Reasonable risk sharing is as essential as interest sharing. However, many interviewees talked about the difficulties caused by the insufficient coordination among stakeholders in the implementation process.

"People from different sectors need to have regular meetings, and in the event of a risk already occurrence, it is required to allocate tasks and be supervised by clear steps. Some things will go well, and some things won't. As things stand, a good mechanism (to coordinate) is necessary." (Interviewee G.)

6.2.4.2 Most influential factor(s)

As repeatedly discussed, the reasons influencing overseas investment are complex; the BRI project is no exception. The author attempts to identify the most important influencing factor(s) through respondents' answers to increase essential cognition towards risk management of the BRI projects. The proposed question is: "What factor(s) do you think will mostly influence the success/failure of BRI projects in the future?". According to the simple statistical results collected from the answers, respondents consider the following factors as the most influential (Figure 6.10): Sino-US relations; comprehensive conditions of the host country; carbon commitment; Covid-19.

Figure 6.10 The most influential factor(s) on the future BRI investments

list	Sino-US relation	Comprehensive conditio	Carbon commitmen	Covid-19
a	√	√		
b	√		√	
c	√	√		
d	√	√		
e	√	√		√
f		√	√	
g	√	√		
h	√		√	
i	√	√		
j	√	√		√
k		√		
l	√		√	
m	√			√
n	√	√		
o	√	√		
p	√	√		
q	√			√
r		√	√	
s	√		√	
t	√	√		
20	17	14	6	4

According to the results, most respondents (17) believe that the impact of

Sino-US relations on BRI is crucial, which echoes the conclusion of geopolitical factors in the case study. Some of them talked about the rapid deterioration of the ties after Trump took office in 2018 and its direct or indirect impact on investments. This leads to the high sensitivity of such topics and even affects the interview design of this study (discussed in the methodology chapter). Against the backdrop of the US viewing China as a long-term strategic rival, the trend shows no sign of turning whether Republican or Democrat is in power. Given the influence of the US and its allies around the world, SOBs that conduct financing activities in route countries must stay alert and take appropriate measures.

"The trade war between China and the United States started in 2018. The negative impact of deteriorating relations led to our state-owned financial institutions and state-owned enterprises. First, there will be a restriction (on the project), and then a series of sanctions will be formed. Because at present, our financial institutions are actually in the hands of the US, in terms of dollar transactions channel." (Interviewee H. & B.)

The other popular choice (14) of ‘Comprehensive situation of the host country’ is plausible because cross-national infrastructure investment is directly subject to the host countries. Concerns about host countries' economic growth and debt-servicing capacity were raised in their conversations. If geopolitical factors are the external cause, then the internal political environment of the host country is the inner cause. Therefore, how to provide a relatively stable domestic environment for steady growth and establish a sound legal system and management system is a significant issue that BRI countries need to consider for a long time (Booth & Smith, 2018). According to the respondents, national risk assessment has become a significant reference value to measure the feasibility of international investment projects. Major financial institutions and government think tanks have targeted corresponding studies and reports, and SOBs, as BRI's financier, is naturally sensitive to the overall situation in BRI's host country.

“The biggest problem may be a country risk, which has always been well known. In the future, such projects (BRI) could be affected by the country's financial difficulties; like weather, the project can operate and generate revenue (for repayment).” (Interviewee C.)

A few respondents put much weight on the environmental-related factor – carbon commitment. In the previous literature survey, the author found many studies on the constraints of environmental requirements on international trade and investment (Hardiman, 2020). The Chinese government has made many commitments to green finance and sustainable development of BRI, most of which involve its system (Ascensão et al., 2018); it then can expect that neither carbon emissions nor other environmental requirements should be a significant factor in the project's success or failure. In addition, some people consider the COVID-19 as an influencer to the BRI projects. However, according to the subsequent conversation, the still-on-going pandemic would

not have a chronic impact on BRI in the future. Some basic judgments can be drawn from here. Even as the COVID-19 pandemic is now wreaking havoc on the world economy and taking a toll on many BRI projects, the anticipation of its inevitable end prevails (Tonchev, 2020).

"The country has put forward higher requirements for the project's environmental protection, and we have already made commitments of carbon peak and carbon neutrality. All that needs to be done is to agree with the host country on the specific technical details and meet the audit requirements." (Interviewee K.)

6.3 Discussion

Table 6.2 Core interview questions and findings

<table>
<tr><th>Research Questions</th><th>Research Results</th></tr>
<tr><td>How to categorize and prioritize the risk factors associated with the BRI project finance?</td><td>➢ Based on the evidence extracted from the literature review and case studies, a mixture of close-open ending questions is used to obtain the prioritization of risk factors from high to low (1st to 3rd) (Figure 6.5):
<table><tr><th>1st level risks</th><th>2nd level risks</th><th>3rd level risks</th></tr><tr><td>❑Political
❑Geopolitical</td><td>▪ Economic
▪ Financial
▪ Social
▪ Environmental
▪ Laws
▪ Regulation</td><td>o Global crisis (e.g. Covid-19)
o Bureaucrats and corruption
o Ethnic and religious conflicts
o Terrorism
o Technical barriers
o Protests
o Sanctions and boycotts</td></tr></table></td></tr>
<tr><td>What approaches or methods are being applied in the risk assessment process of current projects?</td><td>➢ Classification of risk factors has been obtained earlier in the case study results (Chapter 5).

➢ Based on options extracted from literature research and analysis of policy documents, close-ended questions were used to confirm the following answers (Table 6.1):
o Official policy guidance
o Internal risk control system
o Country risk ratings</td></tr>
</table>

Research Questions	Research Results
	○ Risk analysis on special project financing mode ○ Macro regulatory frameworks
What is the identified weakness in the current risk management measures?	➢ Main problems arise, including insufficient data availability, lack of risk-sharing mechanisms with stakeholders, lack of information channels, and insufficient communication over CSR between SOEs and local communities. ➢ Other issues include noisy policy guidance, rough risk practices, inadequate due diligence, and lack of crisis-handle ability.
How does the state-owned nature affect project financing, and to what extent?	➢ According to both literature review and interview results, the sustainable development of BRI requires the establishment of a diversified and multi-level financing structure. Yet it relays on official capital in the current stage: ○ Large-scale infrastructure investment is led and promoted by governments at any stage. ○ As the prominent financier, SOBs will give full play in BRI project financing for a long time. ○ The political/geopolitical factors are the most influential as policies of the Chinese government directly impact BRI; this factor constrains it in the meantime. ○ The SOBs have greater risk-taking capacity than private-sector funds, but this pattern is worrying based on continuous fiscal subsidies. Thus, the PPP project financing model must be gradually promoted in the future.
Who are the stakeholders of the BRI projects?	➢ According to respondents, the stakeholders include: ○ Project investors and financiers ○ Project construction party ○ Both governments ○ Residents ○ Other service providers and intermediaries ➢ The answers are consistent with the case study findings.
What factor(s) would contribute	➢ Based on respondents, 'Sino-US relations' and ‘Comprehensive condition of the host country 'are the

Research Questions	Research Results
the most to the BRI project's failure in the future?	most critical factors. A few believed that carbon emission restrictions and COVID-19 would also affect the project. This justifies the above ranking of risk factors from another aspect.
Is a unique Risk Management Framework (RMF) necessary to the BRI projects?	➢ Yes, most respondents agreed that establishing a targeted risk management approach is necessary for BRI project financing. They also made several specific recommendations (Figure 6.6). ➢ A 'BRI risk information database' should be established according to the interview findings.

As China's most ambitious strategy over decades, BRI has an exceptional character and meaning. In addition to the characteristics of traditional international investment projects, BRI investment and financing projects are mainly faced with huge capital demand, insufficient supply, and high-risk levels in countries along the route (Arduino & Gong, 2018). When participating in the BRI strategy, enterprises will first face the challenge of enormous country differences in the region. It is easy for those with better economic development and developed markets to carry out relevant financial cooperation; however, it is much more difficult for many lower-growth countries. For example, in Southeast Asia, where many countries are burdened with debts, it is unlikely that make them continue to promote infrastructure construction through more debt, even if these projects would have decent economic benefits and conducive to improving the living standards of the locals (Gong, 2020). As the prominent financier, Chinese SOBs also face weakness in insufficient support of existing credit policies, inadequate risk assessment, debt default and rescue mechanism, investment and financing information transparency (Liu & Zhang & Xiong, 2020). These problems have led to difficulty or loss of some projects and cast a shadow over the future development of BRI. Based on the literature review and case

study, these questions are further investigated through interviews with professionals. The author draws the above table (Table 6.2) to present the main arguments and matches them with the research questions proposed in this study. A detailed discussion can be constructed from the following five aspects:

1. The interview results reveal the risks issues involved in the BRI project based on empirical evidence. As it has been discussed in Chapter 2, among the management process of a transnational infrastructure investment project, the investor should not only have common risk assessment knowledge and skills but also need to accumulate risk identification ability in the macro-level, which puts forward higher requirements for the investment and financing management of projects (Rodrigues-da-Silvaa & Crispima, 2014). BRI projects can be characterized by more risk sources involved and a broader range of risk factors than other investments due to considerable differences in national conditions of BRI countries; the risk factors encountered by the projects are also uneven. However, political factors have the most decisive influence (including domestic politics and external geopolitical aspects of the host country) and are hardly controllable (Li, 2019). They can be identified as significant risks by nature and first-level risks by severity, leading to project difficulties.

   The next thing concerned is the overall situation of the host country, which can be categorized as economic and financial risks, social and environmental risks, and legal and regulatory risks. It is sophisticated, involving institutions and governments in two or more countries regarding different languages and cultures and variances in legal and business systems. In contrast, corresponding risk management requires more

significant input from both sides (Radoi, 2018). They can be identified as common risks by nature and second-level risks by severity likely to cause problems. In addition, other unique factors derived specific conditions of one project, such as bureaucrats and corruption, ethnic and religious conflicts, terrorism, protests and sanctions, etc., also need to be considered in the risk assessment process. At the same time, several respondents mentioned the emergence of the COVID-19 pandemic as a global crisis, resulting in varying degrees of damage to the project. Since not all projects suffer the same, these factors can be identified as unique risks by nature and third-level risks by severity that are likely to cause problems but controllable. This means that different from traditional OFDI, the contracting parties of BRI need to have more extraordinary courage, perseverance, and skills to deal with the risk issues.

It can be concluded that the current risk management methods of BRI projects are relatively straightforward and homogeneous, mainly because the prominent investors are SOEs (including SOBs) who share similar goals. Most BRI projects are guided by official policies and internal risk assessment methods; some also refer to the same country risk ratings and macro regulatory frameworks. For example, like banks, SOB's financing behaviour and risk measures are regulated by the Basel Accords; some projects also refer to the World Bank's ESF guidance in some projects. In addition, as BRI focus on infrastructure, the attribute of public goods determines the application of PPP or similar modes, which play a positive role in risk diversification. Risk analysis on this particular project financing model has been applied in the risk assessment process of many project companies. Most respondents agreed that while the current requirements are met to some extent, these measures are far from enough in practical terms. In other words, a more targeted approach to risk management is

required for the BRI investment to be sustainable in the coming decades and beyond (Li, 2019).

2. As the primary funding source of BRI, the development financing provided by Chinese SOBs is of difference with traditional meaning due to the particularity of the state system, which endows with unique experience in its application (discussed in Chapter 3). On the one hand, BRI project financing is jointly owned and authorised by official institutions, which is a concrete embodiment of official credit; on the other hand, it can be a powerful tool for the host governments to combine with the capital market when applied rationally (Biekpe & Cassimon & Verbeke, 2017). Most respondents agreed that financing for development was to ensure the necessary financial resources were mobilized and utilized effectively and sustainably to promote growth and achieve specific objectives (Giorgioni, 2017). The nature of the BRI project determines the scale effect of its investment amount, and its market penetration, number of users, and scope of usage cannot be adjusted by the market alone; once completed, the project is non-exclusive to some extent, as the private sector cannot form a monopoly over its operation (Kolodiziev & Tyschenko & Azizova, 2017). The nature of infrastructure development fits naturally with SOBs, who are more resilient than the private sector when various risks arise that lead to market failures.

   While acknowledging the particularity of SOBs, many interviewees dialectically interpreted their purpose from historical perspectives. In the early stage of BRI's development, SOBs were guided by official policies and arbitrarily engaged in many projects with high risks and low returns, which caused certain losses to specific investment enterprises and their reputation. The lack of professional knowledge and overall assessment is

not sustainable, and many industry experts, enterprises and governments gradually pay attention to the importance of risk management (Dunford, 2020). At present, although SOBs still advantaged over private firms by nature – such as capital, policy, talent, technical support, etc. – it is hazardous and irrational to rely solely on state-owned capital to bear all the systemic risks since project cooperation increasingly focuses on commercial interests (Stallings & Kim, 2017). Therefore, with the deepening of globalization, there are higher requirements for risk management of transnational investment projects in the future, as the BRI faces an even more diversified and complex risk structure.

3. It can also be concluded from the interview results that in infrastructure projects, overlapping roles and responsibilities over complex tasks require participants with different project financing skills and experience to perform. In project risk management, it is necessary to clarify investors, participants, and third parties (Triantis, 2018; Yescombe, 2013). The complex structure of project financing enables it to have more stakeholders than ordinary financing models, mainly including project investors and lenders (banks and other financial institutions), project contractors, governments of both parties, and other third parties (consultants, lawyers, accountants, material suppliers, etc.). Although specific project companies have been established in many BRI investments, project financing is usually supported by signing ‘subcontracts’ designed to transfer risk from the project company to other parties as part of the lender's guarantee program. However, from the risk management perspective, the project management team composed of different institutions often lacks unified coordination and deployment. The demand difference of risk-sharing of parties leads to the conflict of interest over risk assessment, which leads to management loopholes.

4. Not unexpectedly, most interviewees believe that ‘Sino-Us relations’ and ‘comprehensive conditions of the host country’ are the core factors affecting the BRI in the future. The choice of the former is because as one of the most important bilateral relationships in the world, Sino-US relations are crucial to shaping the future international order and geopolitical landscape (Nordin & Weissmann, 2018); the Us-led alliances is massive resistance to the development of the BRI in recent years (Li, 2019), as empirical evident confirm this judgment from interviews. Remarkably, this can be further evidenced by “EIU Risk Outlook 2022:10 scenarios that could impact global growth and inflation” (EIU, 2021), whereas "The deterioration of US-China relations has forced a complete decoupling of the global economy" is at the top of the list. Besides, three other China-related scenarios made into the top 10: “3: A property crash in China leads to a sharp economic slowdown”; “7: Conflict erupts between China and Taiwan, forcing the US to intervene”; “8: EU-China ties worsen significantly”. Although it cannot be judged that the EIU represents the mainstream view of Western academia, it should be acknowledged that geopolitical factors related to China have become the leading influencer to the world economy regarding risks. This will be explicitly taken into account when establishing the targeted RMF.

5. Moreover, according to respondents, several important mechanisms should be established to improve the framework: 1. A risk information-sharing mechanism should be established within the framework under the premise of extensive data application and international cooperation to enable the stakeholders to efficiently obtain information related to project financing through the platform's involvement in the project risk assessment system in a timely and efficient manner. 2. Establish and improve

multilateral and bilateral mechanisms for investment and financing debt default relief, give play to the interaction between governments at all levels with host countries, maximize benefits for BRI projects and reduce losses caused by risks. 3. Attention should be paid to lobbying groups to play a role in formulating relevant policies so that SOBs can achieve policy objectives while achieving more significant economic benefits.

6.4 Summary

The scale of infrastructure construction requires massive capital to be funded by SOBs alone, but the mode is unbearable in the long run. Given the complex and changing situations in the host countries, it is necessary to establish a multi-layered risk management structure towards the BRI project financing (Gong, 2020). Considering the unique nature of the development financing model involved in the BRI projects, it would identify the related potential risk factors, assess and prioritize the risks, and offer effective treatment methods. In the interim, forming some mechanisms and institutions is also essential. To give full play to the role of the different stakeholders in the project plan and promote the pluralistic capital structure engage in construction (Zhou, 2018).

This chapter mainly analyzed the interview results of more than twenty senior professionals, with relevant discussions from different perspectives providing empirical evidence for research conclusions. The author constructed a theoretical basis for interview questions through information and knowledge accumulated in literature review and case study and conducted a three-level coding system to analyzing the interview content using the NVivo. The topic-related coding provided a thorough understanding of the research questions discussed further to match the research findings. After that, a complete

conceptualisation of the risk factors related to the BRI projects from the perspective of SOBs and the interview results presented in this study can be applied to establish a connection between BRI project financing and risk management capabilities of SOBs. The research results in this chapter contributed to a new perspective for identifying, assessing, and prioritising risks of the BRI projects based on the empirical study. Respondents' comments and suggestions on risk management methods and relevant strategies will be applied in the next chapter to establish a unique RMF.

Chapter 7. The Risk Management Framework towards BRI Investment

7.1 Introduction

From the perspective of risk management, BRI investments' investment and financing guarantee system has not been well established. SOBs involved rely on government regulations and internal control measures in risk control (Xiao, 2019). The BRI region undergoes significant investment risks, which is also the concern of all parties involved. Countries along the route have considerable disparities in their development level and are affected by external factors contributed by geopolitical pressure and international financial crisis (Yin & Zhou & Wang, 2018). Although many projects have already been built, they have encountered difficulties in landing or during the construction process, which led to the financial loss of investors to a certain extent. At present, the BRI has entered a period of rapid growth; then, it is necessary to improve the risk management ability of the stakeholders involved. However, there is much literature on investment risk management, research targets BRI project risks. Existing literature quantification is model-based, primarily design and testing, mainly focusing on a specific industry such as credit, transportation, etc., and generally using market data from international

multilateral institutions (Andric & Wang & Zhong, 2019). This quantitative approach does not apply to BRI countries due to a lack of adequate data, sufficient public disclosure and credit records (Bandiera & Tsiropoulos, 2019).

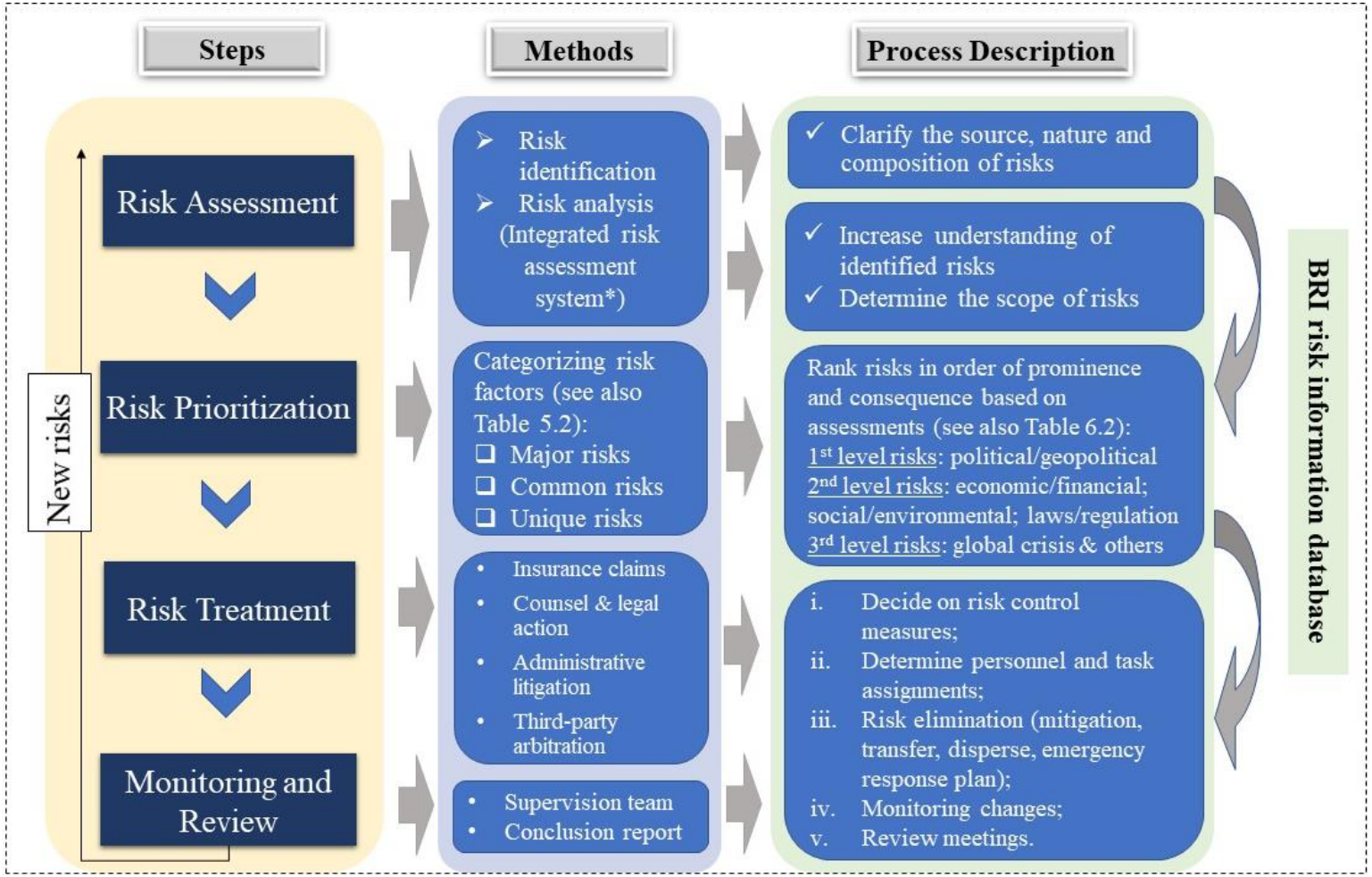
Therefore, this study adopts a qualitative approach to develop a unique and targeted risk management framework based on literature, case studies, and interview findings while considering the uniqueness of BRI projects and SOBs. The RMF is built on a solid theoretical foundation and follows the advice of professional practitioners, so it goes beyond traditional methods to better assess BRI project financing risk from an empirical perspective. This framework is expected to expand the scope of conventional risk management research in international investment theory. At the same time, this chapter will also discuss the risk strategies based on the proposed RMF while considering the current challenges encountered in BRI project investment and financing.

7.2 The Proposed Risk Management Framework

The risk management framework proposed in this paper is mainly based on the findings from case studies and interviews, combined with conceptual knowledge from literature review and understanding of policy documents. Its specific design incorporates respondents' suggestions on improving BRI project risk management (Figure 6.6). The main structure includes four steps of ‘Risk assessment’, ‘Risk Prioritization’, ‘Risk Treatment’, and ‘Monitoring and Review’. At the same time, ‘Methods" and ‘Process Description’ are also included in the framework to elaborate the corresponding working mechanism and functions, as shown below (Figure 7.1). The application of this framework in SOBs participation in BRI project financing can assist in making systematic investment assessments in the early stage of the project, categorising and prioritising the relevant risk factors accordingly, and dynamically treating risks

when the crisis happens. The author also proposes a ‘BRI risk information database’ incorporated into this framework based on the case study results and respondents' suggestions, which provide a better information sharing platform for BRI project stakeholders in terms of mechanism design.

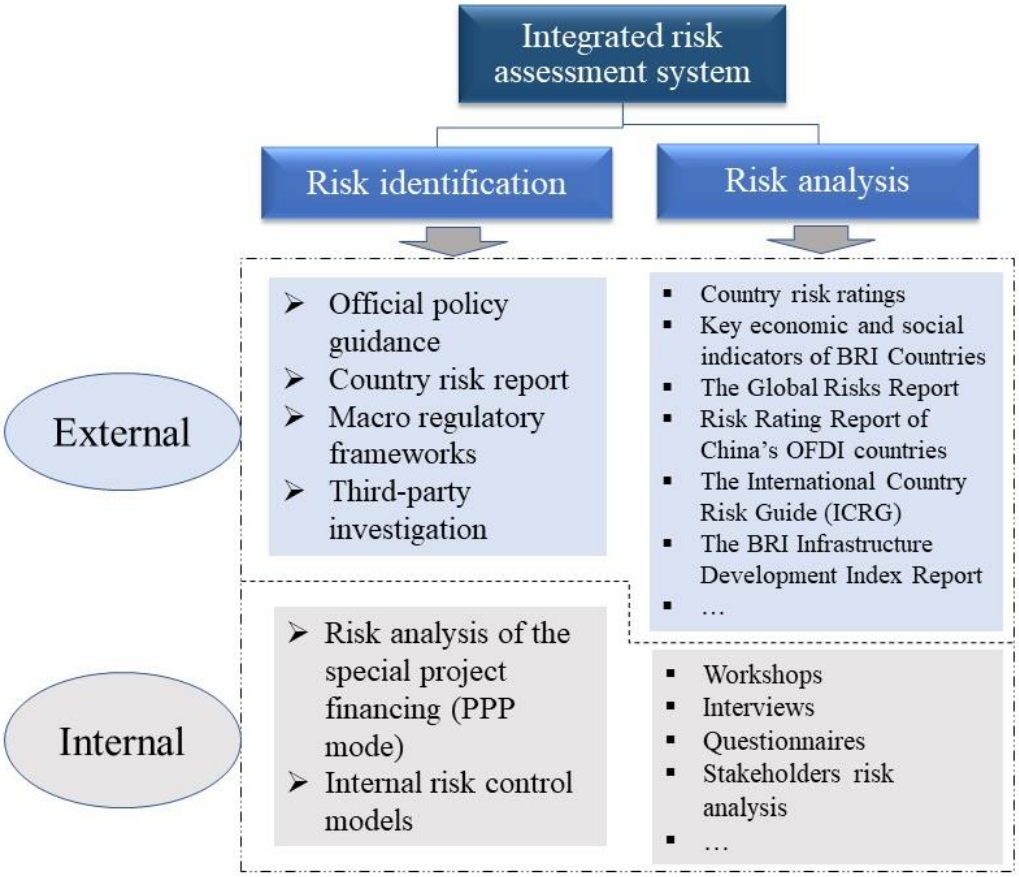
Figure 7.1 The Risk Management Framework towards the BRI Projects



7.2.1 Risk Assessment

The first step in the framework is the assessment of risk factors. Since risk is the uncertainty caused by the deviation between objective results and subjective expectations (Radoi, 2018; Zwikael & Ahn, 2011; Jorion, 2009), understanding its origin and composition becomes a prerequisite for risk management. In the investment field, no matter individuals, financial institutions or investment companies are faced with a certain degree of risk, which can only be recognized and lessened by decision-makers through proactive assessments (Bradshaw, 2015). The appropriate methods adopted by firms investing in BRI countries will directly affect the decision making (Wang & Zhang & Dai, 2018). Therefore, the author introduces an ‘Integrated risk assessment system" (Figure 7.2) as the critical method in this part. Based on the understanding of traditional concepts and the suggestions from interviewees, this system specifies risk identification measures in terms of both 'external' and 'internal'. External methods refer to related risk assessments developed by external institutions that the enterprises of project financing often adopt. They include 'official policy guidance' from the Chinese government, 'national risk reports' and 'macro regulatory frameworks' from key international institutions, and 'third-party investigations' purchased by enterprises through professional intermediaries. At the same time, the internal methods define risk factors from the perspective of the project company through ‘special project financing risk analysis’ of the PPP model and ‘internal risk control models' of the SOBs. Using the two types of tools interleaved (or separately) would improve the quality of available information and the predictive power of the framework, thereby helping to eliminate possible outliers from the sample and avoid bias.

Figure 7.2 Integrated risk assessment system of the RMF



The existence of risk is objective for financial institutions. The volatility of fundamental indicators (such as interest rates and exchange rates) generally does not change due to the behaviour and willingness of financial institutions (Erb & Harvey & Viskanta, 1996). Therefore, strictly speaking, no matter what the risk management level of financial institutions is, the risks they face are the same, but the final effect is different due to the means of implementation (Matthews,2013). When the project risk management team has mastered the essential information by identifying the source, nature and composition of the project risk factors, the corresponding analysis would be conducted to determine the type, scale and possible impact of these risk factors (Bradshaw, 2015). Similarly, the proposed framework divided risk analysis tools into external and internal. The recognised models, including 'national risk rating', 'key economic and financial indicators of BRI countries', and 'the

infrastructure development Index report' etc., are incorporated into the external indicator system (Figure 7.2). Reference should also be made to the target host country's sovereign credit and default risks. At the same time, enterprises participating in the project need to increase understanding of the identified factors through workshops, interviews, questionnaires, stakeholder risk analysis, and other tools, and to apply their internal risk control methods to evaluate risk exposure by determining its potential outcome and scope (Fairley, 1994). In this way, the 'integrated risk assessment system' is designed to comprehensively consider various factors that the environment of the project itself may bring, identify risk factors through a reasonable process, select appropriate assessment methods, and determine the index system to analyse the degree of risks.

7.2.2 Risk Prioritization

As discussed in previous chapters, due to lack of data, opaque information, state-owned nature (SOBs financing) and a series of problems, there is no research on risk management of BRI project financing in the existing literature. Therefore, the critical innovation of the proposed RMF is the insights into the particular risk structure that BRI projects face because it is pretty different from other traditional OFDI. In this process, the core part is to prioritize the risk factors that have been assessed, whereas it works as the second step in the framework. It is both a process of classification and a method of evaluation to the degree of prominence and consequence of related factors (Baker & Filbeck, 2015) that are specified below:

1. According to the methodology derived from case studies and interviews, the political and geopolitical factors are classified as 'Major risk factors' in the framework, with a corresponding rating of 1st level risks. From the results of the case studies, it can be seen that whether the typical projects are successful or not, they are all affected by domestic political

turmoil and external geopolitical pressure; there are even terminated projects due to this influence. The interview results also reflect respondents' prevalent concerns about the so-called ‘force majeure’ of political factors, further testifying the necessity to list it as the most severe risk.

2. The economic and financial risks, social and environmental risks, and risks of laws and regulation are categorized as ‘Common risk factors’ because they frequently appear in case projects which primarily affect the project construction or operation. Suppose political factors are naturally embedded in BRI projects. In that case, the common factors reflect various uncertainties of overseas investment, including the insufficient economic capacity of host countries, debt risks, social unrest, environmental degradation, legal disputes and lack of supervision, and operational risks (Mathews, 2019). They are typically cultivated, covering almost every situation that a BRI project might face in the host country during implementation. Although not usually as lethal as political risks, these common risks are still severe if not handled properly because they are prevalent at different project stages. The corresponding rating is 2nd level risks, which means a close second to political risk.

3. The third category is termed ‘Unique risk factors’, as discussed in Chapter 5; they reflect the uniqueness of the project's environment (internal and external) in different cases. Some are determined by human factors, such as cultural differences, religious and ethnic conflicts, terrorist threats; some of them are determined by the geographical environment, such as the challenges brought to the project construction by both hot or cold extreme weather and peculiar landforms;

there is also the cost to some projects of various restrictions imposed by the COVID-19 pandemic. Besides, some unique factors such as bureaucratic corruption, boycotts and sanctions, protests, technical censorship, etc., can also be classified as ‘common risk factors' due to the broad range. However, after careful consideration, the author still ranks them as unique factors that can be distinguished and carefully examined from other types. Their corresponding rating is 3rd level risks, which is the lowest in the framework – not only are they less likely to occur than different types and can be maintained in a manageable range.

7.2.3 Risk Treatment

The next step in the model is risk treatment, also known as risk handling (Baker & Filbeck, 2015). In this step, risk mitigation strategies are developed for each risk factor separately and hierarchically based on the previous assessment and prioritization results. According to literature analysis and interview results, risk mitigation strategies mainly include the following types. If the project itself is politically risky, as noted earlier, there are few effective ways for companies to deal with it as loss is inevitable. Even though the project company and the SOBs can claim under the terms of the political insurance purchased in advance, claims can also be made through the ‘Bilateral Investment Protection Treaties’[56] established between governments. When other types of risk occur, the project company needs to judge based on the specific situation and usually can take measures including counsel and legal action, administrative litigation, third-party arbitration, etc.

[56] By 2019, China had signed bilateral investment treaties with more than 130 countries, of which 104 had entered into force. Ministry of Commerce, http://tfs.mofcom.gov.cn/article/Nocategory/201111/20111107819474.shtml.

The original purpose of risk mitigation is to make a rigorous feasibility report through a detailed interpretation of the initial risk assessment of the project and eliminate the factors that may lead to risk at the source through decision making (Rodrigues-da-Silvaa & Crispima, 2014). Risk mitigation focuses on taking appropriate measures to reduce the adverse consequences of risk events to a controllable range and reduce the probability of further deterioration (Fairley, 1994). For example, according to the case studies, enterprises usually face high legal hazards in the BRI host country when its legal system quickly leads to disputes. Therefore, it is necessary to collect as much information as possible about investment policy requirements, legal terms on investment and regulations of the host country (through third-party or local consultants) beforehand and reduce the risk coefficient. After the risks are effectively alleviated, corresponding measures should be taken to break down the main risk factors to disperse risks further and reduce losses.

The author then adopted a phased response among treatment and the final monitoring process into five stages, three included in the former: 1. determine risk control measures; 2. determine personnel and task allocation; 3. risk elimination. Based on risk assessment and prioritization results, the project enterprise needs to determine treatment methods, establish an emergency team to assign tasks, and mitigate, transfer, or disperse the risk burden (Jorion, 2009). Given the nature of BRI investments, whose risks are almost impossible to avoid or eliminate in advance, and losses can only be reduced through mitigation strategies; project insurance, contract transfer and project guarantee are standard and can also be achieved by purchasing third-party service products (Serpella & Ferradab & Rubio & Arauzoa, 2015). In addition, enterprises can also use products or services provided by the Chinese policy

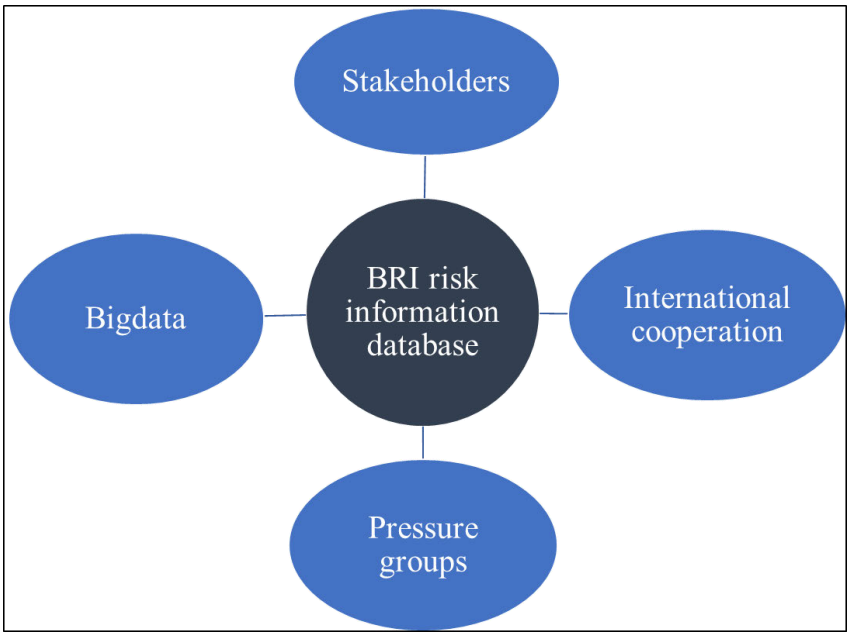
institutions like the Export-Import Bank and SINOSURE to achieve a similar goal. In case of a crisis that cannot be efficiently dealt with (often happens in the BRI projects), the management should start the emergency plan as soon as possible. With given conditions, the project company (and SOBs) should scientifically evaluate the potential consequences of the risk and adopt crisis management measures, including project suspension, postponement, and even withdrawal (Byoun & Kim & Yoo, 2013) as to minimize the loss.

7.2.4 Monitoring and review

The final step in the framework is monitoring and review, which are also the last two parts of the phased response mechanism: 4. to monitor any changes occurring in the process; 5. to have supervisory meetings on the conclusion report. As mentioned above, risk management is an ongoing dynamic process that changes and adapts over time. Repeated and continuous monitoring of the methods employed and their effectiveness ensures the maximized coverage process of known and possible unknown risks (Arauzoa, 2015). Based on the literature and interviewee's suggestions, the author believes that a supervisory team should be set up to review the implementation and effectiveness of risk management measures. This is not an act of condemnation but instead identifying problems and correcting them quickly. Finally, it is necessary to form a complete and detailed effect analysis report and give an evaluation. In the framework system, the ultimate effect of risk management depends on the coverage of relevant measures and the presentation of evidence (Matthews, 2013). This facilitates SOBs and other parties to obtain essential data and provide experience in dealing with similar events in the future.

7.2.5 BRI risk information database

Figure 7.3 BRI risk information database



As an essential complement to the proposed RMF, establishing a risk information database is another crucial aspect of BRI's long-term and sustainable development. From the literature review, case study and interview results, it can be found that one of the difficulties of BRI project risk management is the lack of a comprehensive information-sharing channel or platform (Xiao, 2019). Neither SOBs, the project company, nor even the host country itself can timely and accurately communicate the information about the project and the risks it may encounter to each other. Similarly, they cannot effectively share risk information for others to refer to after they encounter project losses. Of course, this issue has already been discussed in the literature review chapters, partly because many BRI projects are politically sensitive. Thus, neither Chinese investors nor host governments have the motivation to disclose information (Yi, 2014) voluntarily. However, this issue can be solved in the database system design. For example, authorization of access could provide to BRI signatory countries only, or different levels of

information can be obtained according to the permissions of stakeholders. The database design should be based on the actual needs of the project, take the diversified risk information channels as the carrier, and aim at policy suggestion and international cooperation (Xiao, 2019). The design logic of the database can be explained from the following aspects:

1. The first thing to emphasize is the involvement of stakeholders. As discussed earlier, the database requires the participation of governments, financial sectors, enterprises, the social sector of the host country, and other service providing agencies. As the name implies, they are both the direct beneficiaries and risk-takers of the project, who can provide first-hand information of ongoing projects on the one hand and acquire information during due diligence or risk assessment of a new project on the other.
2. Due to the particularity of BRI and it has been suggested in the interview results, a particular collaboration of the multilateral institutions like the World Bank, IMF, AIIB are necessary for the long term; their experience in international investment and risk management are valuable for the development of BRI (Ilhéu, 2020). High-level international cooperation can provide more professional and global knowledge and skills. Risk assessment, rating reports and policy recommendations regularly issued by relevant research institutions can also provide an essential reference for project stakeholders.
3. Ownership of infrastructure usually does not belong to individuals but to governments, which are considered responsible for public goods in most cases (Mosley, 2017). There has been little research on the role of pressure groups in China's political system because of the particular regime of a one-party autocracy. The leading function of SOBs in BRI project financing makes the state-owned nature one of the focuses of

this study. The position of interest groups behind them and their weight in influencing policy orientation may exert considerable influence on risk management and related strategies. It is found in the interviews that risk management comes not only from the government's supervision on the project but also from the games between SOBs and the government policies over BRI development financing. Therefore, the working of pressure groups would be an essential part of the database and plays a more significant role in increasing transparency.

4. Furthermore, the database design should be based on the concept and technology of big-data and dynamic tracking and comprehensively cover relevant project information, such as the risk mentioned earlier in factor analysis. Various reports based on the most advanced intelligent processing technology and real-time analysis help enterprises avoid and judge various systemic risks and provide adequate support for the quantitative management of national risks for future investment (Xiao, 2019). In this way, using a database can be close to the actual project and integrate diversified model systems to meet the information needs of all BRI projects as far as possible.

7.3 Discussion: Policy Suggestions toward BRI Investment Risk Management

BRI's original plan was to gradually attract private capital to achieve the long-term development goal (Belt and Road Portal, 2021), but it hasn't worked out well. Infrastructure accounts for almost 7% of GDP in Asian countries, of which only 0.2% is private capital (BRI Portal, 2020). The main reason for this phenomenon lies in the imbalance between return and risks. The public-private partnership model is a relatively effective alternative, as its function and application in the BRI project financing have been reviewed in chapter 3. It can be said that the participation of private capital is restricted by the host

country's local policies, laws and regulations, regulatory capacity, economic level and other complex factors, so not all PPP projects can achieve the expected benefits (Fay & Martimort & Straub, 2018). While many infrastructure projects rely on the operating income after completion to repay the principal and interest, its profit model and public welfare attributes contradicted essentially. The host countries' low national income level and sluggish economic growth contributed to the increasing defaults in later projects (Srivastava, 2017).

Besides, the research also found that the deprived and opaque information of BRI financing channels may lead to policy risks. Most of the projects are funded by state-owned financing and supplemented by commercial funding, but there is no overall coordination mechanism between the two. This may lead to an imbalance in funding between projects due to policy confusion (Ilhéu, 2020). In terms of performance appraisal, SOBs are dominated by relevant government departments, while commercial institutions oversee the board of directors; the lack of overall design will lead to different financing strategies and risk preferences between the two over the same project. Theoretically, these problems can be alleviated through system construction, which can be illustrated in strategic suggestions from the perspective of the two most important stakeholders – investors and governments.

7.3.1 From the perspective of the investors

Due to the significant differences between countries along the BRI, enterprises that are willing to carry out investment layout need to pay attention to the preliminary field investigation, which includes information collection, data sorting, comparative analysis, etc., and conduct comprehensive and in-

depth research on potential destination countries (Zhou, 2018). At the same time, specific entry strategies should be formulated according to the actual situation of the selected host country. Since then, the risk assessment system would be adopted as soon as possible to deal with the uncertainties before the project landing. While the information resource sharing platform (the BRI risk information database) is available, tangible and comprehensive information can be obtained to improve risk assessment accuracy and effectiveness. Enterprises should carry out this process by rules of scientific decision-making and procedural management to quantify all kinds of risks through calculation and measurement and grasp the possibility and extent of all risks. In the interim, real-time monitoring and dynamic tracking of various indicators should be carried out to make timely adjustments according to the feedback to improve the anti-risk abilities comprehensively.

When undertaking project financing in BRI countries, enterprises should choose the appropriate investment mode according to the specific situation. In the long run, joint ventures (PPP modes) with enterprises in the host country is preferable, which give not only full play to their advantages in capital and technology, but also make full use of local resources, personnel relations and social and cultural advantages, significantly reducing the threshold and possible political risks to enter the host country (Zhou, 2018). It is necessary to foster a professional team familiar with transnational investment, cooperate with scientific strategy and planning, and enhance the comprehensive ability in preventing various risks. The implementation of human resources localization strategy can bring two benefits. On the one hand, talents familiar with the laws and regulations of the host country can be employed to prevent legal risks and utilise their local resources effectively. On the other hand, local staff can reduce the public's hostility to foreign capital and improve the

corporate image. Local employees' religious beliefs and customs should be respected to avoid internal disputes and conflicts (Zhao, 2018). At the same time, employees' risk awareness should be strengthened, and the possibility of risk should be better contained as far as possible in the preliminary assessments. The project company should establish a coordination mechanism to train the employees of different sectors in classification and stratification so that everyone can fully consider the risk factors and improve the overall risk coping ability when doing business.

It has been mentioned by several respondents that internationally corporate social responsibility (CSR) becomes an important indicator to evaluate investment performance, mainly in the following three aspects: First, the protection of employee rights and interests, which has been discussed above; Second, to participate in public welfare undertakings and implement the investment concept of 'community of interests'; Third, to attach great importance on environmental protection, and fulfil relative legal and regulatory obligations (Sarfraz & Qun & Hui & Abdullah, 2018). Enterprises should comply with local rules through standardized and scientific process design and adequate supervision and management, reducing the environmental pollution that the project may cause to the lowest degree (Hardiman, 2020). Enterprises should also strive to achieve energy conservation and emission reduction and comply with the carbon emission commitments of the host country, abiding by BRI's original promise of 'sustainable development goals'[57].

[57] "The Belt and Road initiative offers opportunities for the implementation of the United Nations Sustainable Development Goals", BRI Portal. https://www.yidaiyilu.gov.cn/xwzx/gnxw/11126.htm.

7.3.2 From the perspective of both governments

One of the most important discoveries of this research is that the investment and financing arrangement in BRI countries cannot be separated from the support from the governments, which is determined by the particularity of BRI: system building is the premise of cooperation (Shang, 2019). Both governments protect enterprises through official forces, effectively deal with uncertainties, and build channels and platforms to provide enterprises with financial and technical support and information services. Controversially, a government can export its 'soft power' through a large amount of FDI, and even gradually to build a favourable business environment for domestic enterprises by shaping the existing institutional order (Mayer, 2018); frankly, this is not a BRI precedent as the Western predecessors have been practising for a long time. The government can adopt several approaches towards the future investment of the BRI:

7.3.2.1 Inter-governmental investment agreements

According to the findings of this study, political and geopolitical risks, as the core risk elements of the BRI investment, are complex and changeable; enterprises cannot avoid them on their own. Therefore, communication and consultation between governments are critical ways to promote and guarantee investment in the participating countries (Wang & Zhao, 2021). Dialogue between governments could find common ground for bilateral or multilateral investment treaties, including risk covered in the project cooperation negotiations, trade and institutional barriers, etc. The treaty should be signed based on full consideration of national differences, investment industries, and interest needs, detailing the rights and obligations of both parties to ensure effective implementation. At the same time, the signing of some protective bilateral and multilateral agreements can also give

compensation to the investment enterprises under exceptional circumstances. For example, the practical experience of ‘Bilateral Investment Treaties’ (BIT), ‘Multilateral Investment Treaties’ (MIT) can be used for reference (Wang & Zhang & Dai, 2018); not only they are the critical supplement to commercial insurance, but also to hedge the unpreventable risks in the investment process. The current bilateral financing agreements between the Chinese and host governments lack commercial viability and transparency, leading observers to speculate about the purpose and practice of financing (Gong, 2020), which also need to be improved in the future.

7.3.2.2 Improving insurance system for OFDI

According to the case study and interview results, investment protection agreements and investment contracts cannot cover all political risks, like negotiation, arbitration, litigation, and other measures often fail to timely and effectively protect the rights and interests of enterprises (Zhou & Lin, 2018). Through establishing an overseas investment insurance system, the government and its recognized insurance institutions can provide political risk guarantee for domestic enterprises, which belongs to national sovereign credit insurance (Arduino & Gong, 2018). China's insurance institutions for overseas investment are in the early stage of development, lacking in business experience. Taking SINOSURE as an example, its mechanism combines the right of examination and approval with management, which can speed up the underwriting and improve efficiency, reflecting the system characteristics of state-owned financial institutions (Wang & Zhang &Dai, 2018). However, the existence of this mechanism also causes problems such as business monopoly and regulatory confusion. In terms of underwriting business, it mainly provides a risk guarantee for economic losses caused by political risks such as expropriation, conflicts, war, and default. Though, in the face of BRI

countries' complex and changeable environment, these traditional insurance products are feeble and stiff in terms of insurance type and coverage (Ibid).

Therefore, introducing targeted laws and regulations is urgently required in legalizing the establishment and operation of insurance institutions. At the same time, the legislation of appropriate supervision and aid should be combined to coordinate with the investment protection agreement (Zhou, 2018). Overseas investment guarantee institutions should pay more attention to the mutual restraint between the right of approval and management and reduce internal risks by strengthening the supervision mechanism. Therefore, they can become an essential component of the RMF by providing more complete insurance services for BRI investments.

7.2.3.3 Strengthen and improve the BRI investment risk legal system

For a long time, China, as a developing country, has been paying more attention to the introduction and utilization of foreign capital, showing a pronounced lag in the laws and regulations of OFDI (Booth & Smith, 2018; McKenzie, 2017). Currently, relevant policies for enterprises' investment in BRI are still based on the administrative examination and approval system, lacking applicable laws and insufficient services and protection for enterprises (Lv & Guo & Chen, 2018). Therefore, the government should first establish a complete legal system of OFDI as soon as possible, fully consider the actual situation of the country and the characteristics of contemporary international investment and determine the status and role of OFDI through legislation. Also, the guiding ideology of ‘service and protection’ should be upheld in the legislative process. While standardizing and supervising OFDI behaviours of firms, this principle should be reflected as much as possible, such as simplifying examination and approval procedures, improving administrative

efficiency and providing flexible financing channels. The formulation of relevant legal provisions should fully consider the specific risks of BRI countries to facilitate enterprises with a targeted legal weapon to protect their rights and interests when the crisis happens.

7.4 Summary

Based on the theoretical analysis on risk management and development project financing, combined with the findings of case studies and interviews, this study argues that a comprehensive BRI project risk management framework is necessary for project success. The established RMF can provide comprehensive risk management coverage from approval, construction, and operation management for planned projects. The preliminary risk assessment system effectively identifies and analysis the potential risk factors and then classify and prioritize project risks by adopting appropriate methods and models. Although the level of risk may reduce project performance, some argue that appropriate management plans can mediate this relationship. As a result, projects with higher risk ratings are sometimes more attractive than those with lower risk ratings (Zwikael & Ahn, 2011). A phased response mechanism among risk treatment and monitoring processes would utilize a crisis team to apply mitigation strategies developed for each risk factor separately and a real-time dynamic review of project information by consequent meetings. Finally, according to the conclusion report, the project company can take equivalent measures based on all the available information.

The principles of the RMF combine the knowledge domains of different projects and countries involved in the BRI to improve risk management efficiency in complex environments. These principles can integrate improved management practices with multiple industry areas and stakeholders to

ensure that risk management remains at the core of a project company of the BRI. Along with proposing and concretely explaining the RMF, this chapter provides a discussion based on the framework, namely risk management strategy for future BRI projects. After reviewing the above summary of BRI investment challenges, it starts from the perspective of state-owned enterprises and the government respectively, to conclude the necessary mechanism-building as policy suggestions. The next chapter will review the research findings and summarize the contribution, limitations and implications, and future research in this field.

Chapter 8: Summary, Research Contributions and Recommendations

8.1 Introduction

In terms of traditional overseas investment models, the BRI does not differ much from the vision of western economic interpretation, but that is not enough to explain its meaning. Thinking about it geographically is significant because it was an analogous concept in ancient times, not to mention the strong geopolitical implications today (Dunford, 2020). After that, the Initiative requires a historical reinterpretation of an emerging nation's political, economic, and cultural aspirations (Andornino, 2017). It is also worth noting that China as the initiator is fundamentally different from Western countries in many ways. Therefore, issues related to the BRI need to be explained in depth from different positions and backgrounds from the perspective of interpretivism, combined with empirical evidence from actual cases.

It is found in this paper that BRI projects should be more concerned with the specific risks encountered during investment, given the unique nature of its

financing pattern. This requires further interpretation of the investment modes of Chinese characteristics in combination with the traditional economic theory of risk management and development project financing. Although each part of the empirical research has its uniqueness, it is generally coherent and confirms the research objectives through the theoretical relationships established by all the research findings. The primary purpose of this chapter is to restate the results of the previous chapters and summarize the main findings of the whole study and then provide a discussion of the main contributions and their potential impact on the literature. Finally, it points out the limitations of this study and the future research direction of the BRI investment risk and prospects of the overall development in this field.

8.2 Restatement of the Research Findings

8.2.1 The Theoretical Framework

Chinese enterprises have become more and more active in OFDI over the past decades, especially since the government officially proposed BRI in 2013, which attracted much attention in developing neighbouring countries (Sheng, 20118). However, the construction of these large infrastructure projects led by state agencies is far from smooth, even in countries that maintain reasonable diplomatic relations with China (Shichor, 2018). Given the centrality of financing in the investment process, this paper discussed the development of the BRI project financing in a broader context, emphasising the risk management behaviours of SOBs. On the one hand, classical theories of risk management, development finance would explain the law of development of China's outbound investment and the meaning of related risk issues; on the other hand, emphasize paid to the particularity of SOBs and their specific experience on BRI project financing further clarified the purpose of this research.

For all overseas investment activities, identifying and evaluating relevant factors is to prevent risks effectively. The smooth implementation of SOEs' investment activities along the BRI is closely related to the natural conditions, economic basis, laws and regulations and other factors of the countries involved (Arduino & Gong, 2018). At the same time, they will also be restrained by geopolitical pressure, international financial crisis, COVID-19 and other external factors. Investment industries are concentrated in energy, transportation and other infrastructure fields. Investment areas are focused on Southeast Asia, South Asia, Central and Eastern Europe and other regions with huge differences (Arase, 2015). In addition, due to the particularity of the BRI, most of its investors and financiers are SOEs, which are primarily influenced by relevant government policies. This also raises higher requirements for associated risk identification, classification and prioritization. The analysis and summary of these issues and the presentation of related findings would contribute to constructing a unique RMF from a more comprehensive perspective.

8.2.2 The Research Findings

This paper identified the main risk factors in BRI investment by starting from the traditional concept of risk management and examining the existing measures that have been employed in the investment process (Chapter 2). Reviewing the classic images of development project financing established a theoretical connection through the experience of the Chinese financiers towards BRI (Chapter 3). The findings based on case studies and interviews are by no means independent but rather a continuation of the theoretical exploration. The knowledge of risk management, development project financing and BRI in the literature review played a decisive role in the case

analysis and the design of interview questions. The enterprises, industries and even specific projects involved in the case study are directly related to the interviewees, given their background and experience. These ensure the validity of research methods and the reliability of research conclusions (Chapter 5 & 6). Finally, based on the above findings, this paper proposed a targeted RMF to provide practical reference and policy recommendations for financial institutions, governments and other major stakeholders involved in BRI projects (Chapter 7).

8.2.2.1 The particular risk structure of BRI projects

Table 8.1 Summary of characteristics of the BRI investments

Category	Character
Investment industry	Concentrated in energy, transportation, ports, minerals, and other large infrastructure fields
Investment area	Concentrated in Southeast Asia, scattered in Central Asia, Eastern Europe, Central Africa, and other regions
Subjects of investment and financing	Leading investors: Chinese SOEs Main financiers: SOBs
Financing model	FDI was the primary investment mode in the early stage, but currently, the PPP and other diversified project investment and financing modes are emerging
Risk structure	It is mainly derived from the host country's internal political and external geopolitical pressures, including other common and specific risks.

As pointed out above, compared with traditional OFDI, BRI has specific particularity in industry, region, subject, mode and risk source (table 8.1), as its unique nature is amplified under the same conditions. The particular risk structure of BRI project financing can be summarized as follows:

1. From the regional perspective, the BRI is dominated by developing neighbouring countries geographically distributed in the traditional concept, gradually extending to the west from the north and south lines. Investment in large-scale infrastructure in these regions is consistent with the conventional idea of development financing, but the BRI concept is added. China's SOEs are still the dominant investor, and even materials suppliers and skilled workers are also from China in some projects. The primary financing is dominated by SOBs that mainly adopt the project financing mode of the PPP, and it is expected to introduce international capital (e.g., multilateral banks) in the future. As discussed in previous chapters, the BRI project is currently facing unbalances between financing and risk, which is mainly reflected in two aspects: first, there is a massive demand for infrastructure construction funds (Appendix VIII), but the current fund supply is insufficient; second, the overall risk level of BRI countries is high, with the overall investment environment in countries along the route is complex (Joshua, 2019). If the existing conditions are not improving among financing risk assessment, labour disputes, default and compensation, information transparency, the project financing flow will be impeded (Kobelkova, 2017).

2. The BRI project financing is mainly based on China's national credit, with familiar single capital sources, supply channels, and investment and financing modes, which cannot meet the growing huge demand of countries. Of course, this is also caused by BRI's particularity. On the on hand, the BRI serves as a transnational cooperation platform has been welcomed by developing neighbours for their urgent capital and

technology demands for infrastructure construction. Thus, state-owned policy and development financial institutions and other central state-owned commercial banks are driven by policy to participate and become the main financiers (Wang & Xie, 2019). Nevertheless, traditional international multilateral financial institutions such as the World Bank, Asian Development Bank, and even China-led AIIB have limited participation (Liu & Zhang & Xiong, 2020). This has led to a significant funding gap to the BRI investment in the long run.

3. From the perspective of risk sources, it has gone beyond simple economic risks such as trade, investment and finance. They are not only incorporated with political, economic, legal, social and environmental factors but also affected by culture, religion, terrorism, and the global pandemic. Its risk levels are diversified, including macro and micro-investment risks and strategic and operational risks, more multi-faceted than those investigated by existing risk theories (Yin & Zhou & Wang, 2018). The dominance of political and geopolitical factors is a significant feature of BRI's investment risk structure and some commonly seen factors, such as environmental protests, terrorism, debt default, etc. (Leandro & Duarte, 2020). Some of these factors are problems of the host country, while others are caused by external pressures of the international environment (Zhao, 2018). The risk subjects in the BRI projects are more diversified too. Under the general trend of world economic development and the pattern of economic integration, both enterprises from investment countries and specific projects from recipient countries would become risk subjects.

8.2.2.2 The proposed RMF and its mechanism

The author proposed a unique RMF for BRI projects based on the above findings and an in-depth understanding of literature and policy documents. It optimizes the process from traditional risk management theory and puts forward a structure composed of four interconnected systems: "Risk Assessment" - "Risk Prioritization" - "Risk Treatment" - "Monitoring and Review". Simultaneously, the framework covers "Steps", "Methods", and "Process description" as the three corresponding cross-dimensional organizational relations when it is adopted. Overall, the framework provides BRI project risk management with clearer logical thinking over risk rankings and has the characteristics of easy to adopt, strong compatibility, phase response, and consideration of the role of project stakeholders that have been summarized and suggested in the previous chapters.

Expressly, the RMF adopt the following steps. First, an inclusive and indexed risk assessment system is established. According to the nature of the project, the specific situation of the host country, and the characteristics of the project, enterprises include some important external indicators as a reference to evaluate the risk source fully. At the same time, enterprises can use internal arrows to evaluate and calculate project risk exposure. The second system deals with risk prioritization. The management can judge the degree of risk following the assessment results and rank the risk factors involved in BRI projects based on their severity, range, and depth. At the same time, project companies also need to adopt internal indicators to assist in determining the risk preference of specific projects. The third step is to determine the corresponding indicators at all levels and start the response mechanism for disposal based on the classified results. Personnel allocation and targeted measures including mitigation, diversion, dispersal, or emergency response

would be implemented simultaneously. The final step in the framework is the monitoring and review process, and a supervision team is employed to assess the impact of measures taken dynamically. Crisis management is required for established losses due to unavoidable risks. Finally, a conclusion report on the entire risk management process is developed from which SOBs and other stakeholders can gain experience.

BRI is both an opportunity and a challenge to many participating countries. As discussed in previous chapters, infrastructure investment is exceptional that rich in state-owned (public) nature, with some (ports and railways) projects, are even considered to have military implications (Fallon, 2015). Much of the project-related information is highly sensitive or unavailable for weak public disclosure of host countries. Further strengthening the transparency and eliminating the doubts of participating countries will be the critical issue of BRI project risk management in the long term (Yin & Zhou & Wang, 2018). Therefore, the author also suggested building a risk information database in the overall framework design. It is designed to integrate several factors for a better approach towards the required information and knowledge of BRI projects. It incorporated stakeholders, international institutions, and pressure groups behind SOBs. The extensive data and real-time technology allowed sharing the required information of specific projects timely and effectively.

8.3 Research Contributions

The importance and contribution of this study are mainly reflected in the author's attempt to summarize the risk management experience of state-owned financial institutions in BRI project financing through the investigation of actual cases and deduce a unique risk management framework accordingly. At present, most of the research on BRI investment risk

management is focused on a particular country (region) or a specific type of industry and mainly use quantitative methods to analyze the data; few studies try to explain the theoretical origin (of the BRI) from a contextual background of social and historical perspective, and why these are important for risk management (Huang & Xie, 2020). This study attempted to reveal the particularities of the state-owned investment in BRI project financing to achieve the research aim by connecting the theoretical construction with risk management issues.

8.3.1 Contribution from the Study of Risk Management towards the BRI Investment

This study focuses on risk management and contributes to the existing literature through targeted investigations. First, it goes beyond the traditional risk-related theories in international investment and frames the definition scope in BRI countries. That is to say; the author distinguishes between infrastructure investment guided by Chinese government policy and the particularity of its associated risks. As a result, it raises awareness of the importance of official force in this area and the factors that can influence the success of companies investing overseas. In the investigation, this study pays special attention to differences between BRI and traditional investment in financing mode, risk factors, and specific causes of problems. It complements relevant knowledge by summarizing these problems.

Secondly, the theoretical basis of this framework relates to risk management, project financing, and SOEs, which lay on the underlying structure of the BRI (Yin & Zhou & Wang, 2018). Based on the case study and interview findings, the author incorporated the unique nature of the BRI project financing in the proposed RMF. The framework is consistent with the basic principles of

innovation and convergence, along with policy initiatives targeted at BRI stakeholders, and meets the risk management needs of BRI projects. Based on this framework, project companies can make risk decisions before the landing of projects, assess and prioritize the related risks, and timely respond to the risk treatment in promoting investment and financing activities more effectively. This process is determined by the decision-making body rather than the risk itself as an objective factor (Radoi, 2018). Thus this study combines previous insights and broadens the dimension perspective of existing risk management research.

Last but not least, due to the lack of risk information channels and platforms currently, the author innovatively proposed a ‘BRI risk information database’: it includes the participation of SOEs, intergovernmental collaboration, working of the pressure groups, and international institutions to get access and achieve the purpose of knowledge and information sharing. The application of this RMF is expected to make risk management in BRI projects more efficient, thus making up for the lack of research in related areas. In this respect, this study goes beyond the traditional perspective of risk management of overseas investment and endows the classical theory with specific implications under contemporary practice.

8.3.2 Contribution from the Study of Development Project Financing of SOBs towards the BRI Investment

Another significant contribution of this study is to clarify the concept of development project financing from a BRI perspective. The author found in the early investigation that the traditional concept of development finance is closely related to the BRI project in its definition, object, and scope, in which

“*assuring that the necessary financial resources are mobilized and utilized in an efficient, effective and sustainable way to promote development and meet particular (sustainable) development outcomes and goals*” (Biekpe & Cassimon & Verbeke, 2017). However, with the deepening of the research, the significant difference between the two has become the focus of this research. The empirical investigation found that, although as with aid feature and focused on infrastructure, the BRI projects due to their source of funds, investors, even the construction contractor from China enterprises (SOEs), and the strategic intention derived from the official background are widely read and seen as different from traditional development concept (Hameiri & Jones, 2018). In addition, the current financing mode dominated by state-owned funds (SOBs) makes its risk preference considerably different from that of private capital. The research found that many BRI projects can only be completed under subsidies, especially in the early stage of development. Many interviewees also interpreted 'development financing' and 'policy financing'; this is also the origin of the difference between SOBs and traditional modes in project financing due to its nature.

In addition, the author found that commercial finance, as an essential supplement in fundraising and business areas to the development financing (Dollar, 2018; Biekpe & Cassimon & Verbeke, 2017), is of great significance both in terms of the development needs and the future trend. This is true in the traditional international investment market and is also available in BRI investment, and financing projects as commercial finance from state-owned-commercial-banks also occupies a place. Although it gets a lot of attention because of its nature, its financing decisions are essentially made by specific departments and presented to the board; their risk appetite is also very different from that of development finance (policy finance) institutions (Ibid).

This has also been confirmed in practical research. Therefore, as the future growth point of state-owned commercial finance in BRI project financing, relevant research would strengthen the integrity of risk management knowledge.

Observers of China's infrastructure investment in BRI should be aware that Chinese financing is much more complex because its engagement is "multivariate" (Gong, 2020) due to the unique national governance system and political thinking. Frankly, it finds that neither the system dominated by China nor based on traditional Western patterns can meet BRI's development demands alone. Perhaps the effective combination of the two can become an important growth point in the future. Therefore, the long-term sustainable development of BRI can only be ensured by keeping an open mind and continuing to innovate.

8.4 Research Limitations and Future Research Recommendations

There are also some apparent limitations in this study, which can be opportunities for future research in this field. The research background, data availability, variable measures, and research method will be considered.

Firstly, this paper focuses on the risk management of Chinese state-owned enterprises in BRI investment. Therefore, the research results mainly focus on state-owned financial institutions (policy banks, commercial banks) operating in the BRI countries. However, in the top-level design of BRI, its financing subjects in the region can gradually include multilateral financial institutions, extraterritorial financial institutions, cross-border funds, private capital, etc.,

presenting hierarchical and diversified financing arrangements (Ocampo, 2008). Only in this way can a long-term sustainable development of BRI be maintained. In contrast, private capital and government expenditure are feasible, and the capital chain forms a virtuous circle among investors, financiers, contractors, and operators. Therefore, the relatively narrow sample range is a limitation of this study, but it also reflects the certainty of the Belt and Road in the current development stage. Future research in this field can be considered to expand the scope of study to other potential participants in BRI project financing, such as private commercial banks, multilateral financial institutions, special funds, foreign banks, etc. Data collected on a larger scale and with larger sample size and related research analysis would provide valuable results.

Secondly, in selecting research cases, the author sometimes had to give up the cases due to the limited information disclosure. For example, in screening cases of central and Eastern Europe, it was hoped that the “Polish A2 Highway Project” would be chosen for study (failure case) because it matched several criteria of the sample requirements. However, during the investigation author found there is little public information about the program; not only is there no relevant report on China's official website, but also no academic literature on the reasons for its failure; there are only some press releases on the internet without literary value. It is unclear whether the project has sensitive geopolitical implications or whether the Chinese have voluntarily cancelled the expected cooperation due to unpublicizable reasons. Similar situations often appear in case screening, which brings some regrets to the research. This problem leads to the author’s proposal of a 'BRI risk information database' as part of the overall RMF. The data, information, and

even policy orientation regarding risks can be shared openly and transparently among stakeholders.

Thirdly, during interviews with professionals, some questions initially set had to be modified due to obvious sensitivities regarding the BRI (Li, 20196). The author has explained the interview criteria in detail in the research method section. As most interviewees come from the core departments of state-owned financial institutions, their professional knowledge and working experience are of great significance to this study. However, more than one respondent showed caution in their early contacts with the author, mentioning their organization's request for the silence to external (foreign) interviews. They explicitly explained that this was due to the Sino-US trade frictions from 2018 and the subsequent sanctions to the Chinese firms over several alleged issues. Some interviewees even cancelled the interview invitation after careful consideration.

The author suggests that with the passage of time and the development of BRI, different target populations can be selected as interview objects in future research according to various subjects to avoid the obstacles caused by political sensitivity regarding the BRI projects (Li, 2019). For example, as the same professionals involved in BRI project financing, the third-party personnel working cooperatively with state-owned institutions are relatively relaxed and can discuss research issues more objectively. Their backgrounds can be diverse, including lawyers, consultants, intermediary agents (of the host country or international), foreign bank personnel, etc. The more exciting research will include cultural factors, such as religion, gender, and educational background, that can be considered when screening the sample populations

in the BRI-related projects. Relevant studies show that these factors can also affect the preference of managers or decision-makers when making risk judgments (Joseph, 2013). Although these studies are limited at the current stage – as SOBs are still the primary source of funding for BRI – in the long run, they can contribute value to literature in related fields.

Researchers cannot solve the abovementioned problems, as it involves more profound concerns. The "superficial problems" encountered in BRI's development process can be summarized as technical reasons, which can be solved quickly through intergovernmental consultation, negotiation, multilateral agreement, legal litigation, and other means (Jing, 2018). The so-called "deep-seated problems" are related to the structural contradictions between China, a major emerging country, and developed countries, especially the United States, in its rise (Ibid). In future studies, politics and geopolitics can be considered individually as the core factors affecting BRI projects; when more case samples and relative information are available, meaningful interpretations can then be obtained through longitudinal observation of target projects or comparison of a cross-sectional study on focus groups.

Fourthly, this study focuses on the risk management in BRI project financing and provide policy suggestions based on the proposed RMF. These recommendations focus on the nature of development financing of BRI projects and the official background. They do not delve into the impact of diversified financing models on risk strategies in the future. Nor does it take the enterprise's own internal risk control measures as the primary research direction. Though, from the perspective of enterprises, it is indispensable to

optimize the structure of assets and liabilities, ensure the rationalization of their internal capital structure, and adjust the scale and types of foreign exchange assets in foreign investment (Rodrigues-da-Silvaa & Crispima, 2014). The research in the future may focus on this area by looking into the diverse modes of project financing, multi-channels, and the selection process of appropriate methods according to the host country's credit rating and risk assessment results. Other financially oriented research may include locally issued bonds, or construction costs are offset by exchange projects equal to local resources.

In other words, future research can look at financial instruments to avoid economic risks to a certain extent. Similar to previous research, the characteristics of BRI countries determine that there may be a risk of currency depreciation, which is detrimental to the income of investment enterprises (Xenidis & Angelides, 2005). For example, when signing forward contracts, fixed exchange rate clauses can be considered to avoid the risk of exchange rate fluctuations. Enterprises can use swaps and other common financial derivatives and hedging techniques to reduce the risk of exchange rate changes and interest rate changes. The loan contract of fixed interest rate can be signed with the lending bank to minimise the possible loss caused by the latter. Moreover, factoring and forfeiting business can also be adopted to reduce the receipt and payment risk and credit risk and optimise the cash flow status (Hammoudeh & McAleer, 2015). These specific financial operations can enrich risk management methods, which requires long-term tracking and further research.

The final limitation of this study comes from the thinking over research methods. With over 100 participants in the BRI (will be more in the future), countries along the routes have considerable political differences, economy, financial market, legal system and institutional building (Leandro & Duarte, 2020). Given the current circumstances, it is difficult to collect data from public sources and address transparency issues in many developing countries, where published data may not fully reflect the situation. Similarly, considering enterprises' state-owned background and project attributes, some sensitive information related to risk management practices will not be fully disclosed. These issues have been repeatedly mentioned in this paper. However, the risk management information is in the hands of the management, which is what Radoi (2018) calls the "decision-making body". Therefore, it is tricky to carry out much questionnaire-based research on professional and technical personnel in the current situation. Without statistical inference regarding firm size, staff number, or other project-related data, it is impossible to determine whether these elements would regulate risk perceptions. Nevertheless, a broader sample and investigation coverage is obtained to investigate typical cases while employing quantitative and qualitative methods. In contrast, the reliability and validity of the research conclusions can be improved simultaneously.

As an emerging topic, BRI project financing and the risk management ability of related enterprises have attracted significant attention from academia and provided many opportunities for future research. For a subject with breadth and depth like the BRI, the relevant study must be more comprehensive and practice-based to create academic value in the research realm.

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Appendixes

Appendix I: Interview questionnaire in English

Interview Questionnaire

Note:

The following questionnaire is hierarchically structured and divided into four parts with different focus. The interview can start with the "Core questions" and move on to the "Extended questions" depending on the conversation. Not all questions need to be addressed, as the process will be conducted according to the respondents' answers. The “Prompts” is used to knowing more about the interviewee's background can help you start the conversation.

1) General knowledge of the BRI investment

Topic Focus	Core questions	Extended questions	Prompts
General knowledge of the BRI investment	How knowledgeable of you on investment projects in the BRI context? Are they different from traditional overseas investment projects? How well do you think the BRI has been accepted internationally as a state-led strategy by China?	What's your general impression of the overseas investment of Chinese enterprises? What are your main sources of information and knowledge about BRI investments?	knowledge on work-related issues (years of working, previous positions, professional expertise, etc.)

2) Evaluation of risk management

Topic Focus	Core questions	Extended questions	Prompts
Risk management	Based on your professional knowledge and working experience: How do you understand the risks associated with the BRI projects? Please rank these risk factors in order of priority with 1 being the highest. A. Political and geopolitical ( ) B. Economic and financial ( ) C. Social and environmental ( ) D. Laws and regulations ( ) E. Global crisis ( ) F. Other (please specify)	Which of the following measure(s) are used in the risk assessment process of existing projects? (Multiple choice) A. Official policy guidance B. Macro risk regulatory framework (e.g., World Bank ESF, the Basel Accords) C. Internal risk control（of SOBs) D. Country risk ratings E. Analysis of special project financing mode (PPP) F. Others (please specify) _____ What are the weaknesses of existing risk management models or approaches? What is your suggestion for improvement?	Other information relates to risk factor identification and management measures

3) Development project finance

Topic Focus	Core questions	Extended questions	Prompts
State-Owned-Banks	Are you familiar with the concept of development finance? Do you think the BRI project financing of State-Owned-Banks belong to development finance? To what extend do you think the state-owned nature would affect BRI investments? Do you think SOBs have a better risk bearing capacity than private institutions in overseas investment?	What is your understanding of the project financing mode of the BRI investment? Do you think Chinese official policies will have a direct impact on BRI projects? Do you think development finance will play a dominant role in BRI's future investment in the long term?	The concept of development project finance, the influence of state-owned nature on risk management

4) Trends and future developments

Topic Focus	Core questions	Extended questions	Prompts
Future trend and development of the risk related issue	Based on the above conversation: Who do you think are the stakeholders of the BRI project? (Multiple choice) A. Project investors and financiers B. Project construction party C. Both Governments D. Local Residents (Host Country) E. Others (please specify) Do you think specialized risk management measures are necessary to the BRI projects?	What factor(s) do you think will mostly influence the success/failure of BRI projects in the future? Do you think the current international situation is conducive to the construction and advancement of the BRI project?	Thank you for your time and patience!

Appendix II: Interview questionnaire in Chinese

访谈问卷

说明:

下面的问卷是分层结构的，分为四个部分，重点不同。面试可以从“核心问题”开始，然后根据对话的不同，转向“延伸问题”。并不是所有的问题都需要回答，进度过程根据受访者偏好进行。“提示”用来了解面试者的背景，可以帮助对话。

1) 基本信息

话题聚焦	核心问题	延伸问题	提示
“一带一路”倡议基本信息	从整体上您如何理解“一带一路”倡议？ 您对“一带一路”投资项目了解多少？它们是否与传统的海外投资项目有所区别？ 您认为“一带一路”倡议作为中国国家主导的战略，在世界上接受程度如何？为什么接受程度会有不同？	您对我国企业海外投资的总体印象如何？ 您主要从何种渠道获取与“一带一路”投资的相关信息和知识？	基于与工作经验有关的信息（工作年限，曾任职务，分管业务等）

2) 风险管理

话题聚焦	核心问题	延伸问题	提示
风险管理手段	根据您的专业知识和工作经验: 您如何理解与国际业务（海外投资）相关联的风险？请对“一带一路”项目可能面临的风险因素进行优先排序，1 为最高风险级别。 A. 政治和地缘政治风险 ( ) B. 经济和金融风险 ( ) C. 社会和环境风险 ( ) D. 法律法规风险 ( ) E. 全球性灾难 ( ) F. 其他（请指明) ( ) --- 您认为哪些风险因素会直接导致项目失败，哪些可能产生间接影响? 您认为投资企业如何识别和规避项目关联风险?	根据您的了解: 在现有项目的风险评估过程中，使用了下列哪项措施?可多选。 A. 官方政策指导（文件） B. 宏观风险监管框架(世界银行、巴塞尔协议) C. 企业自身风控手段 D. 国别风险评级 E. 特殊项目融资模式分析（如 PPP） F. 其他(请说明) --- 企业现有的风险管理手段有哪些弱点? 您对此有何优化建议?	投资企业在风险因素识别和风险管理手段上的区别

3) 开发性金融

话题聚焦	核心问题	延伸问题	提示
开发性金融和国有金融机构	您了解开发性金融的概念吗？ *提示：由官方主导的开发性融资服务，带有公益性质。* 您是否认为目前由中国的国有银行所投资的“一带一路”项目属于开发性金融？为什么？ 您认为国有性质（属性）会在多大程度上影响“一带一路”的投资？ 您认为国有金融机构比私人机构（民营企业）在海外投资中的风险承担能力更强吗？为什么？	您对于“一带一路”项目中最普遍的合作模式（PPP）了解吗？你还知道哪些其他类型的合作模式？ 您是否认为中国政府的相关政策会对“一带一路”项目产生直接影响？ 如果答案为是，那么东道国是否也会受到这些政策的制约？ 您认为开发性金融会在“一带一路”未来投资中长期占主导地位吗？为什么？	中国企业在发展项目金融概念上的独特性，以及国有属性对项目风险偏好的影响

4) 近期趋势及未来发展

话题聚焦	核心问题	延伸问题	提示
项目风险管理	基于以上谈话: 您认为“一带一路”项目的利益相关者都有哪些？可以多选。 A. 项目投资方和融资方 B. 项目施工方 C. 双方政府 D. 本地居民（东道国） E. 其他（请说明） _____ 您是否认为“一带一路”项目的实施需要采取专门的风险管理手段（框架）？	您认为哪些因素最能影响“一带一路”项目在未来的成败？为什么？ 您认为当前的国际形势有利于“一带一路”项目的建设和推进吗？为什么？	感谢您的参与!

Appendix III: Country risk rating, 2010-2019

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Ranking
Indonesia	135	146	139	142	138	139	137	140	146	138	1
Vietnam	125	127	124	123	116	118	118	120	125	123	2
UAE	109	108	108	115	110	110	110	123	119	123	3
Pakistan	125	122	119	121	115	115	124	125	128	123	4
Russia	128	131	124	133	121	124	122	122	130	123	5
Brazil	133	131	130	136	127	126	127	119	122	120	6
Saudi Arabia	121	121	118	117	114	119	115	116	115	120	7
India	123	129	127	123	111	113	112	113	117	120	8
Kazakhstan	119	120	117	120	112	116	117	117	119	119	9
Malaysia	108	109	109	113	108	112	114	121	126	119	10
Philippines	113	115	116	118	112	117	114	120	123	119	11
Qatar	110	108	108	107	104	104	107	113	113	117	12
Singapore	119	117	116	117	123	117	112	116	117	116	13
Thailand	112	113	112	114	110	112	112	113	119	115	14
Bengal	115	117	114	120	111	115	114	118	117	115	15
Egypt	116	117	114	115	108	113	115	116	111	114	16
Kuwait	113	110	113	113	108	107	108	114	115	114	17
Slovakia	108	106	107	110	107	109	106	110	113	113	18
Mongolia	120	126	120	122	114	116	113	118	117	113	19
Croatia	105	106	108	109	106	109	106	112	112	113	20
Georgia	113	116	111	114	107	110	107	111	115	112	21
Portugal	105	102	104	108	105	106	103	107	111	112	22
Hungary	101	103	104	106	101	103	103	106	109	112	23
Uzbekistan	109	112	108	111	105	106	108	109	110	111	24
Cambodia	113	116	112	115	105	109	109	110	113	111	25
North Macedonia	109	111	112	112	108	112	107	113	114	111	26
Bulgaria	114	115	115	114	115	115	114	112	113	111	27
Bhutan	110	111	105	112	103	108	107	109	110	110	28
Slovenia	104	103	104	107	103	104	104	107	111	110	29
Poland	110	108	109	111	107	109	110	111	114	110	30

Source: CROIC-IWEP (2019)

Appendix IV: List of signatories of the GIP (last updated on April 30, 2021)

No.	Signatories	Country
1	Agricultural Bank of China	China
2	Agricultural Development Bank of China	China
3	Al Hilal Bank	United Arab Emirates
4	Ant Financial Services Group	China
5	Astana International Exchange	Kazakhstan
6	Bank of Bangkok	Bangkok
7	Bank of China	China
8	Bank of East Asia	China
9	BMCE Bank of Africa	Morocco, Africa
10	BNP Paribas	France
11	China Construction Bank	China
12	China Development Bank	China
13	China International Capital Corporation	China
14	China International Contractors Association	China
15	China Merchants Port Holdings Corporation	China

16	Commerzbank AG	Germany
17	Crédit Agricole-CIB	France
18	DBS Bank	Singapore
19	Deutsche Bank	Germany
20	Export-Import Bank of China	China
21	First Abu Dhabi Bank	United Arab Emirates
22	Habib Bank of Pakistan	Pakistan
23	Hong Kong and Shanghai Banking Corporation Limited (HSBC)	China
24	Hong Kong Exchanges and Clearing	China
25	Industrial and Commercial Bank of China	China
26	Industrial Bank	U.S.
27	Khan Bank	Mongolia
28	Luxembourg Stock Exchange	Luxembourg
29	Mizuho Bank	Japan
30	Natixis Bank	France
31	Ping An Insurance (GROUP) Company of China	China
32	Silk Road Fund	China
33	Société Générale	France
34	Standard Chartered Bank	U.K.
35	Trade and Development Bank of Mongolia	Mongolia
36	UBS Group AG	Switzerland

37	Xinjiang Goldwind Science & Technology	China
38	Swiss Re Group	Switzerland
39	China Re Group	China

Source: Green BRI Center (2021)

Appendix V: Environmental and social framework objectives among institutions

World Bank–Environmental and Social Framework (2017)
1. Prevent and mitigate unnecessary harm to people and their environment in the development process; 2. Manage environmental and social project risks, as a set of international standards for the World Bank, its borrowers, and the development community.[149]
Inter-American Development Bank–Sustainability Framework (2006)[150]
1. Enhance project outcomes promoting environmental and social gains as core aspects; 2. Use safeguards throughout the project's lifecycle to mitigate risks and minimize negative impacts for people and natural resources.
Asian Development Bank–Safeguard Policy Statement (2009)
1. Avoid adverse impacts of projects on the environment and affected people, where possible; 2. Minimize, mitigate, and/or compensate for such adverse project impacts when avoidance is not possible; 3. Help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.[151]
European Bank for Reconstruction and Development–Environmental and Social Policy (2014)
1. Define roles and responsibilities of EBRD and its clients in designing, implementing and operating projects in line with EBRD's Environmental and Social Performance Requirements; 2. Set a strategic goal to promote projects with high environmental and social benefits; 3. Mainstream environmental and social sustainability considerations into all its activities.
European Investment Bank–Statement on Environmental and Social Principles and Standards (2018)
1. Identify and evaluate potential impacts of plans and programs.
Asian Infrastructure Investment Bank–Environmental and Social Framework (2016)
1. Reflect institutional aims to address environmental and social risks and impacts in projects; 2. Support integration and provide a mechanism to address environmental and social risks and impacts in project identification, preparation and implementation, both for AIIB and clients; 3. Provide a framework for public consultation and disclosure of environmental and social information; 4. Improve development effectiveness and impact to increase results on the ground; 5. Support clients, through Bank financing of projects, to implement their obligations under national environmental and social legislation.

Source: policy documents of the World Bank, IDB, ADB, EBRD, EIB, and AIIB

Appendix VI: Comparison of infrastructure construction financing demand estimation among institutions[58]

[58] After the investigation went more comprehensive, the author found that many research institutions, universities and investment banks globally have their targeted tracking and estimation on the BRI projects, especially on the infrastructure investment trend in recent years. The following table reflects the comparison of estimated financing needs of infrastructure construction by renowned international institutions and research centers. Of course, the results are quite different due to the differences in the statistical methods used. They broadly cover infrastructure investment needs worldwide or in major developing countries or countries along the BRI from 2016 to 2030. In terms of the definition of 'infrastructure', the four fields of electricity, transportation, communication, and water supplies are covered in all studies. Due to emphases disparities, each research found its geographical scope.

Data Source	Estimates ($ trillion)	Geography Scope	Time Scope	Sectoral Scope
Institute of World Economics and Politics, Chinese Academy of Social Sciences (IWEP, 2017)	2.9	BRI route countries, except China	2016-2030	electricity, transportation, communications, water, and sanitation
	7.3	Global	2016-2030	
Development Research Center of the State Council, China (2017)	10.6	BRI route countries, except China	2016-2020	electricity, transportation, communications, water, and sanitation
World Bank (2019)	Minimum spending scenario: 9.6	low-income and middle-income countries	2015-2030	electricity Transport, water supply and sanitation, flood protection, irrigation
	Preferred scenario: 22.5			
	Maximum spending scenario: 40.5			
OECD (2018)	95	Global	2016-2030	electricity, energy supply and demand, transportation, water and sanitation, telecommunications
Asian Development Bank (2017)	22.5 (baseline estimate)	Asia-Pacific Countries	2016-2030	transport, power, telecommunications, and water supply and sanitation
	26 (climate change costs)			
Global Infrastructure Hub (2017)	94	50 selected developing countries	2016-2040	electricity, roads, railways, airports, ports, electricity, water, and telecommunication
International Energy Agency	63.8	global	2016-2030	power & electricity, energy supply,

Data Source	Estimates ($ trillion)	Geography Scope	Time Scope	Sectoral Scope
(2017)				roads, railways
McKinsey & Company (2016)	49	global	2016-2030	roads, railways, airports, ports, water, power, and telecommunication

Source: author compiled from multiple sources

Appendix VII: The six economic corridors along the Belt and Road

Geographical Scope	Specification
1. New Eurasian Land Bridge Economic Corridor	Rail to Europe via Kazakhstan, Russia, Belarus and Poland
2. China-Mongolia-Russia Economic Corridor	Rail and the steppe road link with the grand land bridge passing through the Northern part of the region
3. China-Central Asia-West Asia Economic Corridor	Linkages of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Iran, and Turkey
4. China-Indochina Peninsula Economic Corridor	Maritime linkages of Viet Nam, Thailand, Lao People's Democratic Republic, Cambodia, Myanmar, and Malaysia
5. China-Pakistan Economic Corridor	This vital project links Kashgar city (free economic zone) in landlocked Xinjiang (China) with the Pakistan port of Gwadar, a deep-water port used for commercial and military purposes.
6. BCIM (Bangladesh, China, India, Myanmar) Economic Corridor	A vital connection between China and the South Asian Subcontinent also connects East Asia and Southeast Asia

Source: the BRI Portal (2020)

1.The 'New Eurasian Land Bridge Economic Corridor' is built based on modern international logistics systems such as the China-Europe freight train. It will focus on developing economic, trade and production capacity cooperation, expanding cooperation space in energy and resources, and building a large, smooth and efficient regional market.

2. On 23rd June 2016, the heads of state of the three countries witnessed the signing of the sketch of building an economic corridor (China-Mongolia-Russia), which was the first of multilateral cooperation under the framework of the BRI. Currently projects on this route have entered the concrete implementation stage, as no major differences among the three parties in any respect so far.

3. In June 2014, at the sixth Ministerial Conference of the China-Arab States Cooperation Forum, the two sides proposed to build a '1+2+3' cooperation pattern: energy cooperation as the main axis, infrastructure construction, trade and investment facilitation as the two wings, and nuclear energy, space satellite and new energy as the breakthrough areas. In 2016, China has signed cooperation documents on jointly building the 'silk road economic belt' with Tajikistan, Kyrgyzstan and Uzbekistan, and memoranda of cooperation on jointly building the BRI with Turkey, Iran, Saudi Arabia, Qatar and Kuwait.

4. In 2016, China signed memorandums of cooperation on jointly building the BRI with Laos, Cambodia and other countries, and launched the formulation of an outline for bilateral cooperation. China will promote land infrastructure cooperation with Vietnam, launch the construction of China-Laos railway and China-Thailand railway, and promote infrastructure connectivity. All parties agreed to establish economic cooperation zones and explore new models for the integrated development of border economies.

5. The China-Pakistan cooperation is seen as a flagship project of BRI. Both governments attach great importance to it and are actively working on the joint formulation of the long-term plan. Major infrastructure projects are including the Peshawar-to-Karachi Expressway, the second phase of the Karakoram Highway, and the construction of the Gwadar Port Free Zone was accelerated, and energy and power projects along the Corridor were launched rapidly.

6. The second meeting of the BCIM Joint Working Group was held in

December 2014, as the prospects, priorities and development directions were widely discussed and forecasted. However, current progress on the economic corridor is presumably slowed because of territorial and security disputes between China and India. As the two major regional powers distrust each other, the construction of the CPEC in the disputed Kashmir region by China and its closer friend Pakistan upset India (Banerjee, 2016; Patil, 2015). While old problems hang in the balance, new conflicts break out again as bloodshed in Galwan Valley between the two armies on 18th June 2020, which has cast a shadow over the long-term China-India relations (Kazmin & Mitchell, 2020).

Appendix VII: Comparison of infrastructure construction financing demand estimation among institutions

Data Source	Estimates ($ trillion)	Geography Scope	Time Scope	Sectoral Scope
Institute of World Economics and Politics, Chinese Academy of Social Sciences (IWEP, 2017)	2.9	BRI route countries, except China	2016-2030	electricity, transportation, communications, water, and sanitation
	7.3	Global	2016-2030	
Development Research Center of the State Council, China (2017)	10.6	BRI route countries, except China	2016-2020	electricity, transportation, communications, water, and sanitation
World Bank (2019)	Minimum spending scenario: 9.6	low-income and middle-income countries	2015-2030	electricity Transport, water supply and sanitation, flood protection, irrigation
	Preferred scenario: 22.5			
	Maximum spending scenario: 40.5			
OECD (2018)	95	Global	2016-2030	electricity, energy supply and demand, transportation, water and sanitation, telecommunications
Asian Development Bank (2017)	22.5 (baseline estimate)	Asia-Pacific Countries	2016-2030	transport, power, telecommunications, and water supply and sanitation
	26 (climate			

Data Source	Estimates ($ trillion)	Geography Scope	Time Scope	Sectoral Scope
	change costs)			
Global Infrastructure Hub (2017)	94	50 selected developing countries	2016-2040	electricity, roads, railways, airports, ports, electricity, water, and telecommunication
International Energy Agency (2017)	63.8	global	2016-2030	power & electricity, energy supply, roads, railways
McKinsey & Company (2016)	49	global	2016-2030	roads, railways, airports, ports, water, power, and telecommunication

Source: author compiled from multiple sources