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A Comparative Study of Insurance Policies Worldwide in Public Private Partnerships

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***Abstract*—**The frequent occurrence of failures in PPP projects which caused great loss has raised attention from the government as well as the concessionaire. PPPs are complex arrangements for its long operation period and multiple players. Many types of risks in PPP projects may cause the project fail. The insurance is an important tool to transfer the risks. Through a comparison and analysis of international government PPP guidelines and contracts as well as the case studies worldwide, we have identified eight main insurance principles, discussed thirteen insurance types in different stages. An overall procedure would be established to improve the practices in PPP projects.

***Keywords*—**Public-private partnerships, insurance, contract, risk.

I. Introduction

PUBLIC PRIVATE PARTNERSHIP (PPP) is widely used worldwide nowadays for its huge benefits. It is believed to be the most important financing tool for public infrastructure [1]. However, in light of the failures in PPP projects, it is becoming extremely difficult to ignore the existence of risks. Insurance can play an important role in addressing the issue of risk because the risk can be transfer to the insurance company [2]. Insurance is defined as "a group of individuals (called "insured") transfer risk to another party (called the "insurer") in order to combine loss experience, which permits statistical prediction of losses and provides for payment of losses from fund contributed (premiums) by all members who transferred risk" [3]. It is also known as an "agreement where, "for a stipulated payment called the premium, one party (the insurer) agrees to pay to the other (the policyholder or his designated beneficiary) a defined amount (the claim payment or benefit) upon the occurrence of a specific loss" [4]. Currently, there is no comprehensive study on the insurance policy for the PPP projects. Papers published in major journals showed some real cases of PPP projects but lacks a systematically summarizing guideline. In this paper, different kinds of the insurance policy for PPP projects worldwide are reviewed to highlight the successful framework and to identify the gaps in some countries.

II. Review of International PPP Insurance Policies

The research involved a systematic review of the contents of public disclosures written by the major government unit.

Based on the data collected, this paper focuses on eight areas (the United Kingdom, Philippine, Australia, India, the USA, Canada, Mainland China and Hong Kong) and the World Bank, including model contracts and project contracts.

These countries were further grouped into eight regions, which are Sub-Saharan Africa, Middle East and North Africa, Europe and Central Asia, South Asia, East Asia and Pacific, Latin America and the Caribbean, North America. We also considered the International and Regional Organizations.

A. Sub-Saharan Africa

The Africa is the lowest developed region compared to others. More risks are inherently involved here, especially the political risk. The failures of PPP projects are mainly caused by political conflicts and weak government capacity [5]. The PPP Unit South Africa, National Treasury issued the "Standardised Public-Private Partnership Provisions" in 2004 to address the main issues that usually happen in PPP projects within the contract [6].

B. East Asia and the Pacific

The Council of Australia Government published the "National Public Private Partnership Guidelines" in 2011, including the Volume 7 "Commercial Principles for Social Infrastructure". Also, the Department of Treasury and Finance in Victoria established the "Partnerships Victoria Detailed Guidance Material: Updated Standard Commercial Principles" in 2008 [7]. The New Zealand Treasury endorsed the "Contractual Framework of the Standard Form Public Private Partnership (PPP) Project Agreement: Overview" in 2013 [8]. The purpose of this guidance is to provide an overview of the contractual framework. The ministry of finance in Singapore issued the "Public Private Partnership Handbook" in 2012 to guide the PPP project [9]. The Efficiency Unit in Hong Kong established "An Introductory guide to PPPs" to instruct the PPP projects [10]. Also, we choose a project "Route 3 Country Park Section- Tai Lam Tunnel and Yuen Long Approach Road" [11]. The National Highway Authority of India has issued the "Model Concession Agreement" [12].

C. Europe And Central Asia

The UK established the "Standardisation of PF2 Contracts" in 2012 [13]. UK has ample experience in PPP projects and the guidelines have the significant influence worldwide.

D. North America

In the USA, the Federal High way administration established many concession agreements of PPP projects. We selected two projects, Texas Toll Roads Statewide Open-Road Toll Collection System Project (TX Toll Collection System) [14] and North Tarrant Express Segment 3 IH 35W Managed Lanes Project [15]. In Canada, the Great Vancouver

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Transportation Authority provided the Golden ears bridge project agreement [16].

E. International Organization

World bank established an "Insurance Checklist" in 2016 to provide a high-level guide to the issue of insurance [17]. Asia Development Bank also generated a "Tool Kit for Public-Private Partnerships in Urban Bus Transport for the State of Maharashtra, India" [18]. This tool kit is used for public entities in Maharashtra state PPP projects in urban bus transport. It also provides a reference point for other cities in developing countries. EPEC developed a sourcebook for PPPs in TEN-Transport in 2011[19].

III. Principles of Insurance

The rules are summarized through the documents and literature, namely: the project, the countries' policy and any endorsement issued. Three typical countries, Australia, UK, and US has been selected to identify. Generally accepted insurance rules are summarized as follows, the definition are mainly from the book [20] and the guidelines.

A. Non-Vitiation

If one insured party does something to modify the insurances, the lenders' coverage will not be affected [20]. It is also called a 'breach of provision' or 'breach of warranty' clause.

B. A waiver of Subrogation

The insurer who makes payment may be empowered to any share in a later recovery that is made by the lenders; The repayment to the insurer is only acceptable to the lenders when the debt is fully repaid [20].

C. Warranties

If broken entitles the insurer to terminate the contract from the time of the breach regardless of whether the breach is material. The term "warranty" is therefore used in a similar sense to that more readily associated with general contract law with the term "condition".

D. Utmost Good Faith Contract

The purchaser of insurance usually provides a proposal with information it requires to the insurance company. Sometimes the proposal form is designed by the insurer, for some specific dangers to be insured.

E. Loss Payee

The lenders' agent bank or security trustee is also regarded as sole loss payee on policies covering loss or damage [20].

F. Fortuity(Accidental)

The fortuity is basic to the insurance because that the risk usually happens not as anticipated or planned. The term "Fortuitous" means accidental, unwilling or unexpected.

G. Changes in and Cancellation of the Policy

The insurer need to give the lenders prior notice of any proposed cancellation or change, and agrees that the policies cannot be revised without the lenders' agreement [20].

H. Severability

The policies are stated to operate as providing separate insurances for each of the insured parties [20].

IV. PPP Insurance Types

PPP projects usually contain a lot of different types of risks in different stages. Both parties need to consider what risks need to be insured and whether such insurance is available in the host country. As shown in Table I, 13 types of insurance types are identified from the guidelines. Below is a summary of the insurance types appropriate in a project:

A. Asset Insurances

1. Insurance during transportation

All the materials and equipment used for the project should be insured during shipment to the site. This coverage may include marine cargo insurance [17]. The transported goods insured are subject to risks that may happen during transportation.

2. Insurance of project assets

All the equipment and materials should be insured up to delivery to the site. Such as the contractor's equipment on the site which is vital to progress or this kind equipment's loss can seriously affect the progress of the works [17]. The private should be responsible to restore the damaged project assets if an insured event happens.

3. Construction all-risk policy

All operations and assets on the site during the construction should be covered by Construction all-risk ("CAR") or construction and erection all-risk ("CEAR") insurance. But the war-risk usually excluded from this insurance [17].

4. Operational damage

In operation period, the project insurance should cover all-risk insurance, especially the property damage during operations [17].

5. Builder's risk insurance

This type of property insurance which cover the damage to buildings when they are under construction [21].

B. Liability Insurances

1. Professional indemnity ("PI")

PI insurance covers design or engineering defects due to the professional negligence provided by contractor or its designers. [6].

TABLE I
Principles of Insurance

	Australia	UK	US
Non-vitiation	✓	✓	
A waiver of subrogation	✓	✓	✓
Warranty	✓	✓	✓
Utmost good faith contract	✓	✓	✓
Loss payee	✓	✓	✓
Fortuity(accidental)	✓	✓	✓
Changes in and cancellation of the policy	✓	✓	✓
Severability	✓	✓	

The Main Categories of Insurance Coverge		UK	Philippine	Australia	USA	World Bank	HK	Mainland China	
Asset insurances	Insurance during transportation		√	√		√		√	
	Insurance of project assets			√	√	√			
	Construction contractors' all-risk policy	√	√		√	√	√	√	
	Operational damage					√			
	Builder's risk insurance				√			√	
Liability insurances	Professional indemnity				√	√	√	√	
	Third party liability insurance	√	√	√	√	√	√		
	Environment pollution liability insurance	√			√		√		
	public liability insurance			√					
	Automobile liability insurance			√	√	√			
	Workers' compensation, employer's liability		√	√	√	√	√		
	Commercial general liability insurance				√				
	Directors' and officers' liability insurance					√			
Revenue insurances	Consequential loss					√			
	• Delay in start-up insurance	√					√		
	• Business interruption insurance	√			√				
Peripheral insurances	Mechanical or electrical failure					√			
	Political risk					√	√		

Fig. 1 PPP Insurance Types

2. Third Party Liability Insurance

The project should be covered the whole period by liability insurance for any claim by third parties [17]. It protects against the claim of any loss caused by a driver who is not the insured.

3. Environment Pollution Liability Insurance

This insurance covers the losses resulting from pollution, including the costs of restoration and cleanup, other injuries or deaths caused by pollution [22].

4. Public Liability Insurance

The insurance protects you when the personal injury or property damage happened to the public or other clients because of your business. They will provide the costs and other legal expenses correspondingly [23].

5. Commercial General Liability Insurance

This insurance provides liability insurance for general business risks [17].

6. Automobile Liability Insurance

The ownership, maintenance or use of all owned, leased vehicles used during construction and operation should be insured [17].

7. Workers' Compensation, Employer's Liability

The construction contractor and the operator will be responsible to its workers or employers for benefits [17].

8. Directors' and Officers' Liability Insurance

The private company will want to be protected from the possibility that a director's or officer's act or omission may have an impact on the project [17].

C. Revenue Insurances

1. Consequential Loss

The private company obtains insurance coverage for consequential losses. These include delayed start-up, advance loss of profit and Business interruption insurance [17].

2. Delay in Start-Up Insurance

The delay in start-up usually causes huge loss to the following part. This insurance will cover the loss of revenue or profit due to a delay.

3. Business Interruption Insurance

The business income should be insured if a loss happens because of an interruption by an event such as fire or a natural disaster [24]

D. Peripheral Insurances

1. Mechanical Failure

The mechanical breakdown may not be included in the operational insurance. Then a separate insurance is needed as a result. The cover of this insurance will depend on problems and the replacement cost [17].

2. Political Risk Insurance

The political risks such as war risks will be covered. The multilateral agency or export credit agency usually will be involved [17].

V. Conclusion

PPP projects face multiple uncertainties for its long-term and many players. The insurance is a good tool to transfer the risk and increase the successful rate. Different kinds of the insurance policy for PPP projects worldwide have been reviewed. Eight main insurance principles, Non-vitiation, a waiver of subrogation, warranty, Utmost good faith contract, Loss payee, Fortuity (accidental), Changes in and cancellation of the policy, Severability have been identified. Thirteen major insurance types have been recognized for SPV to choose. In the future, we would identify the key insurance types needed in PPP different stages.

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