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Risk allocation negotiation in Public Private Partnership (PPP) projects in China

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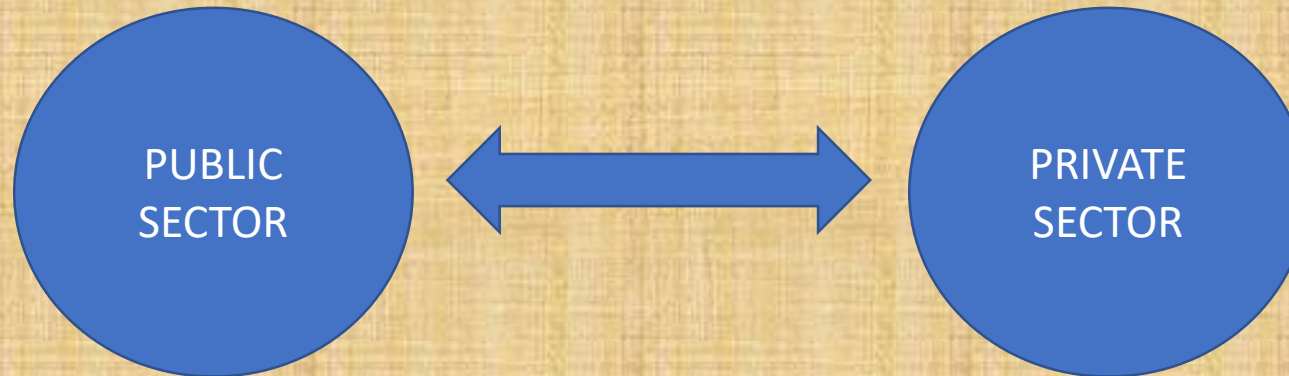
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Outline

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- Background
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- Risk allocation
- Risk allocation negotiation
- Bargaining game theory
- Influencing factors of risk allocation negotiation
- Hypothesis for different private sectors
- Aims & Objectives
- Methodology

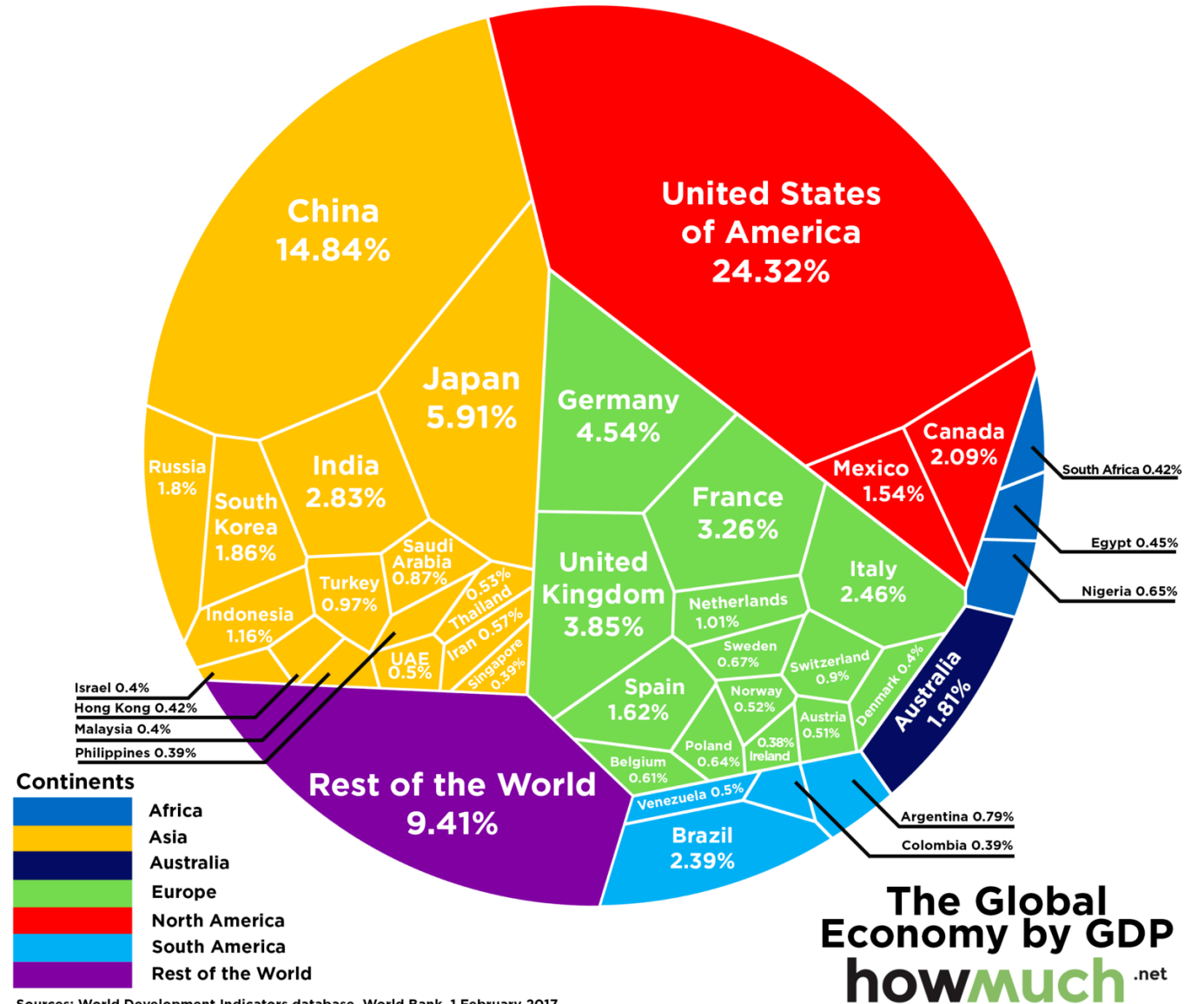
What is Public Private Partnership?

- Grimsey and Lewis (2002, pp.108) define PPP as 'agreements where public sector bodies enter into long-term contractual agreements with private sector entities for the construction or management of public sector infrastructure facilities by the private sector entities, or the provision of services (using infrastructure facilities) by the private sector entity to the community on behalf of a public sector entity'.



- The Ministry of Finance of the People's Republic of China (2018, pp. 2) defines PPP as “a cooperation process between government or public sector and private sector which employs the private resources in providing public products and services and brings benefits to both sides” (author's translation).

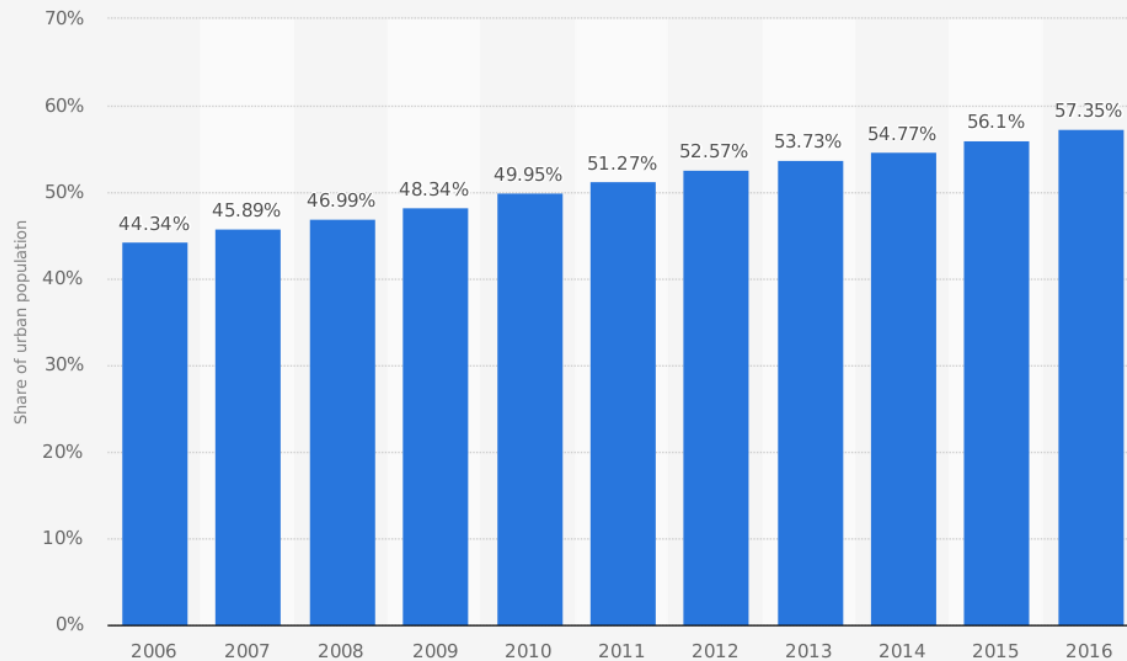
Background



Background

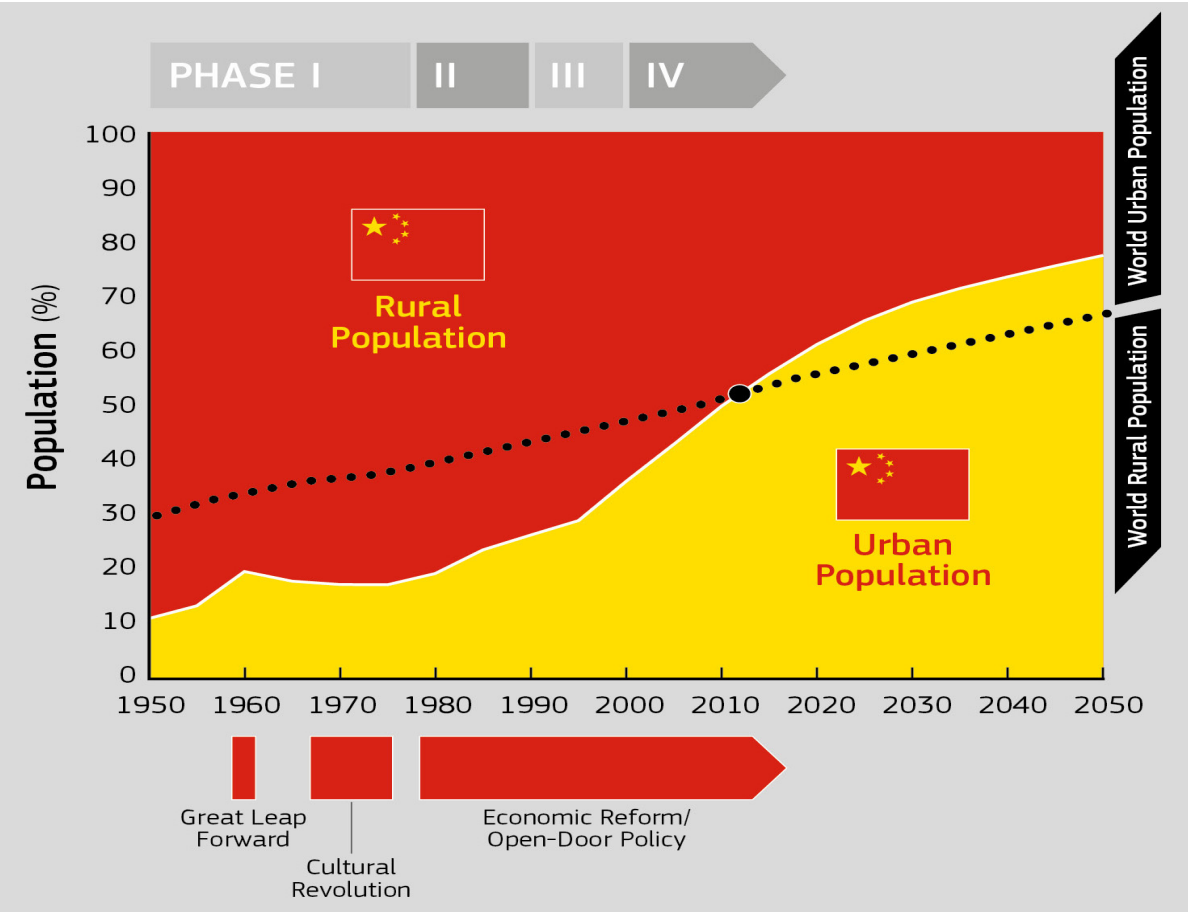
Urbanization in China

Degree of urbanization in China from 2006 to 2016



Source
National Bureau of Statistics of China
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Additional Information:
China; National Bureau of Statistics of China; 2006 to 2016





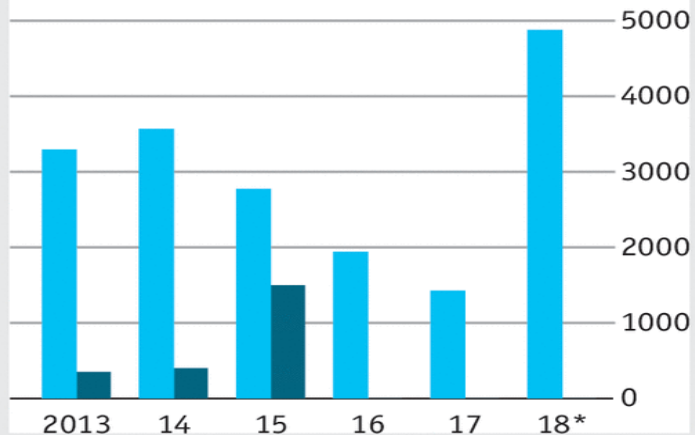
Huge demand
for
infrastructure
projects

Debt of the local governments

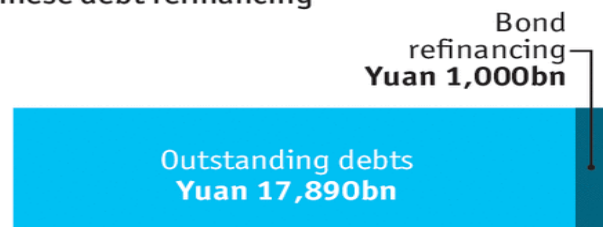
Paying their debts

Chinese local government debts, Yuan bn

■ Bond issuance
■ Debts up for repayment



Chinese debt refinancing

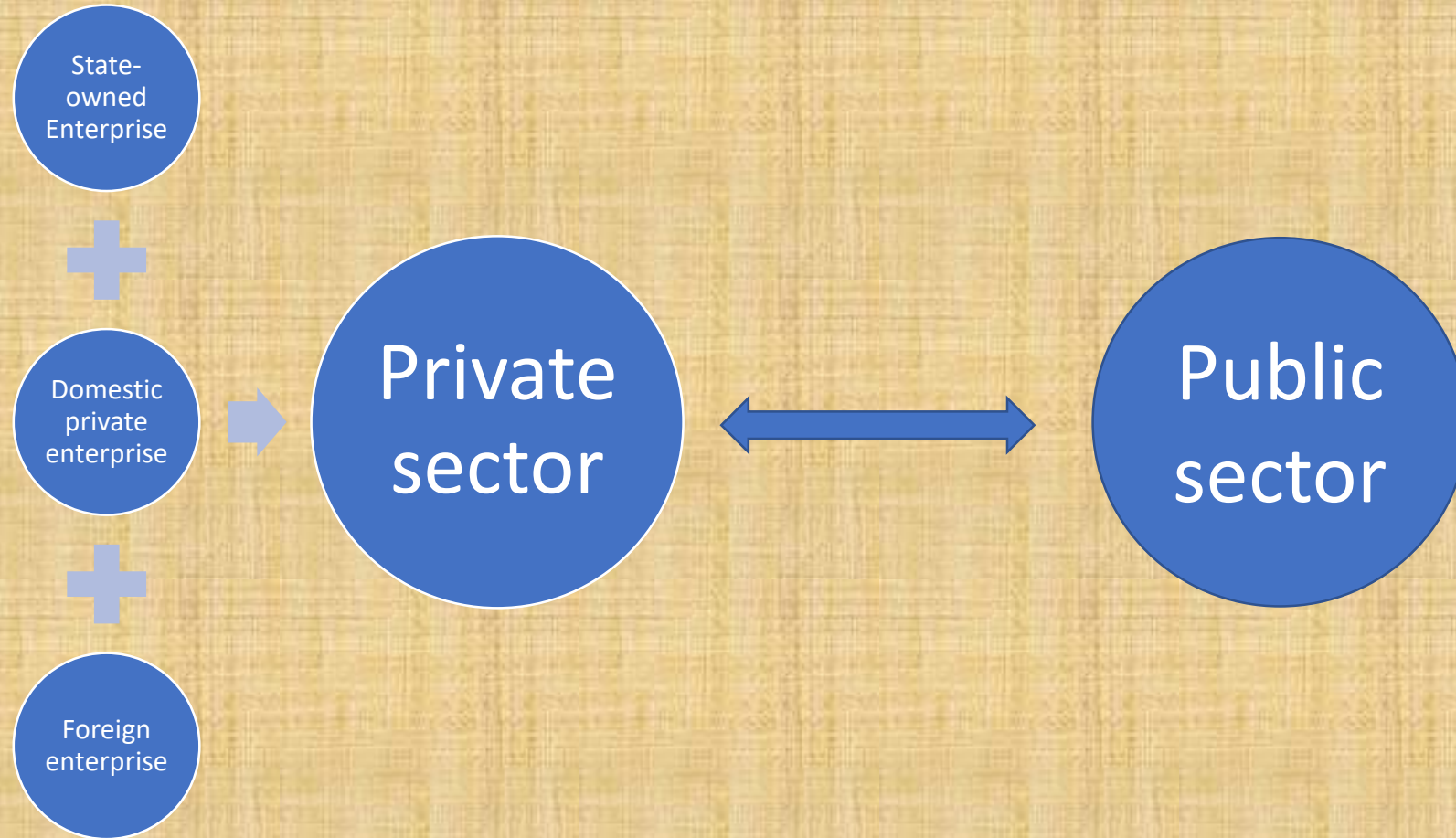


*And after

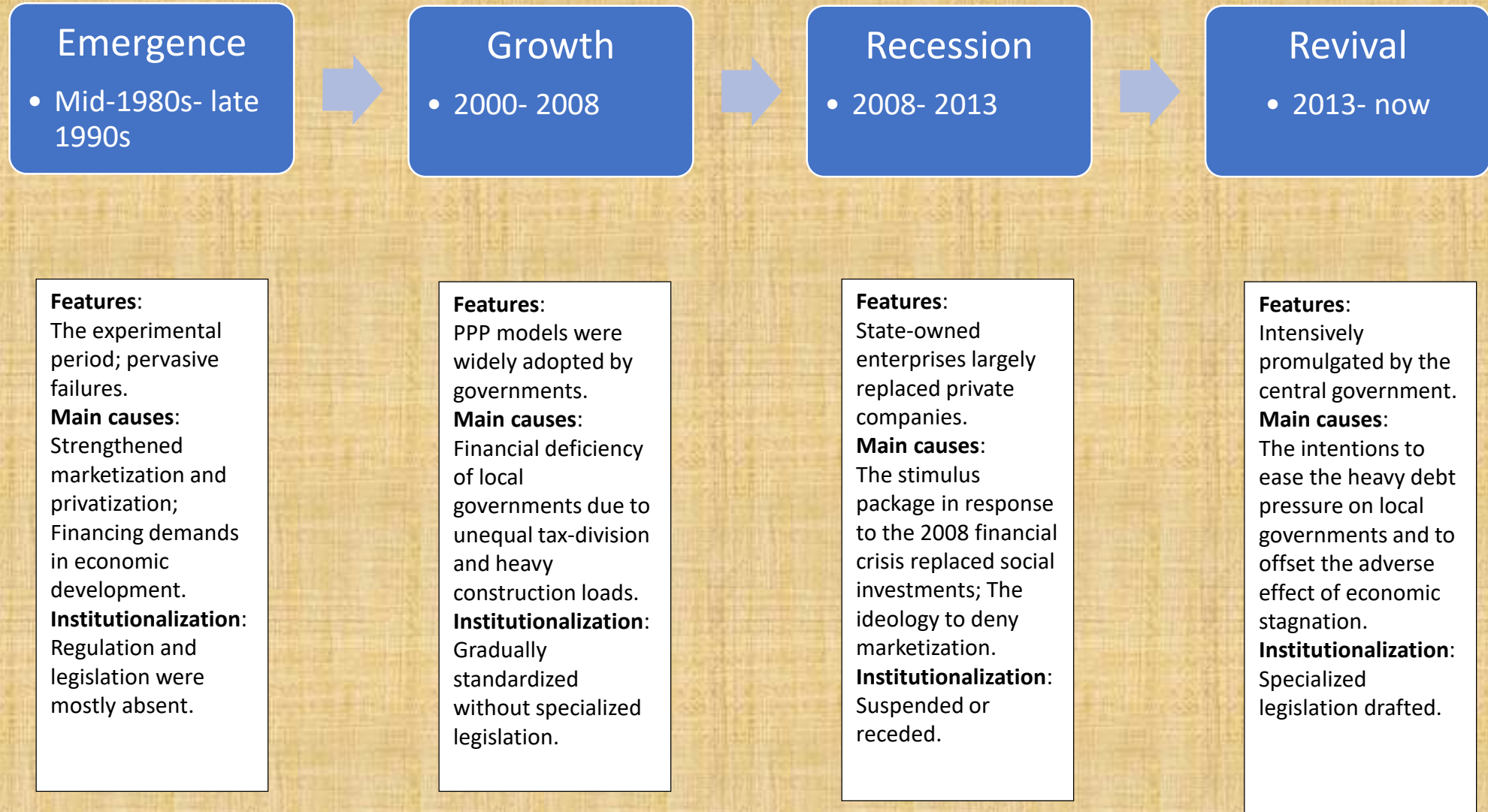
Sources: National Audit Office; Ministry of Finance



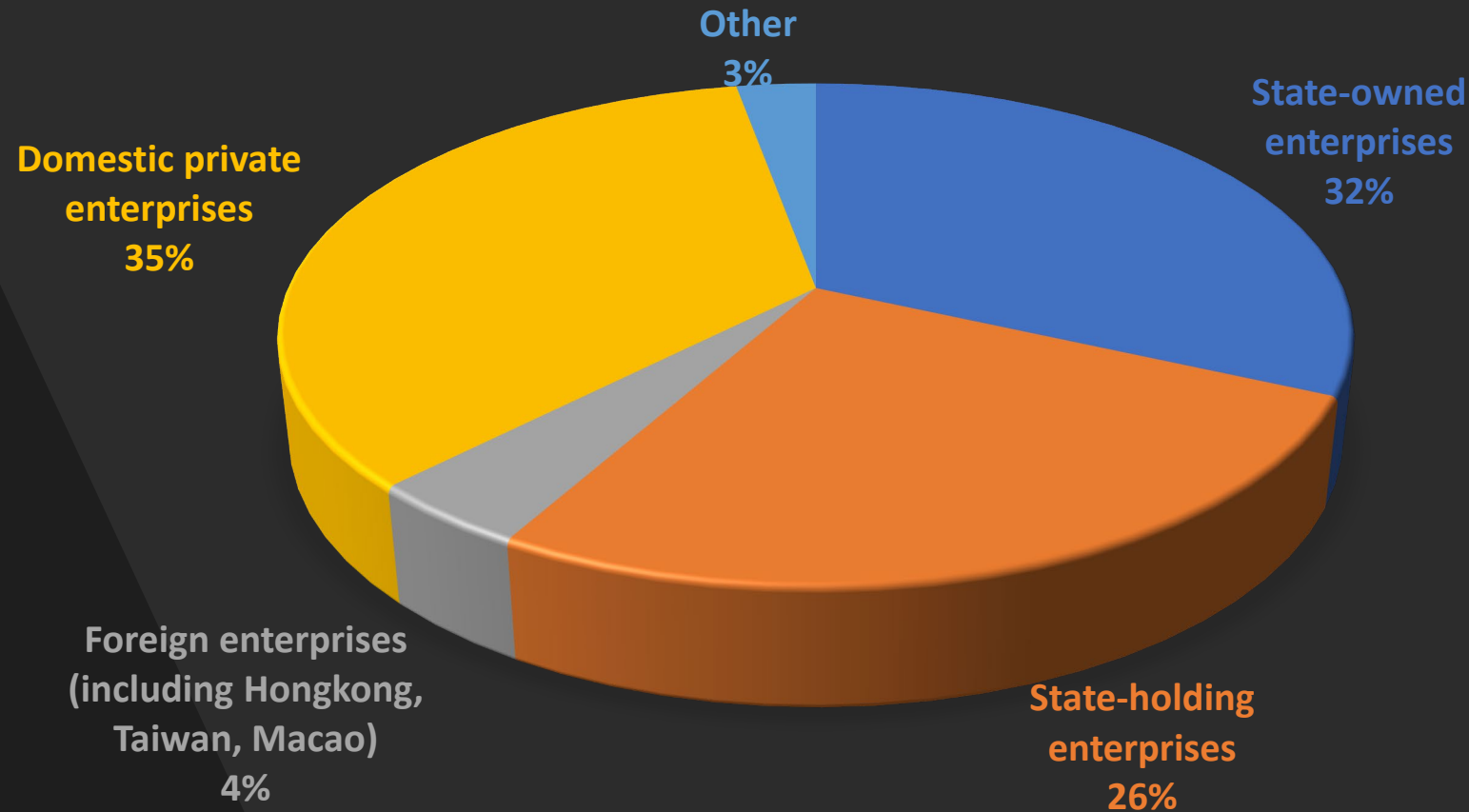
What does the second 'P' mean in China?



Development of PPP in China



Main types of private sectors in Chinese PPP industry



(Ministry of Finance, 2017)

Risks in PPP projects

- Design risk
- Construction risk
- Finance risk
- Operation & Maintenance risk
- Legal risk
- Policy risk
- Demand risk
- Force majeure risk



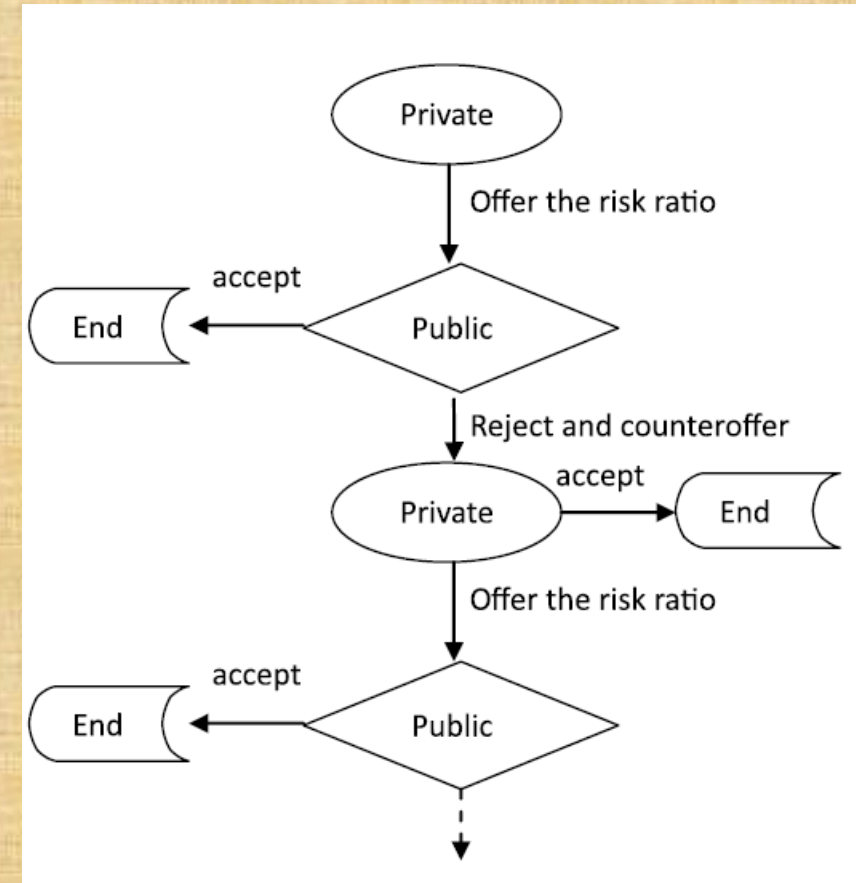
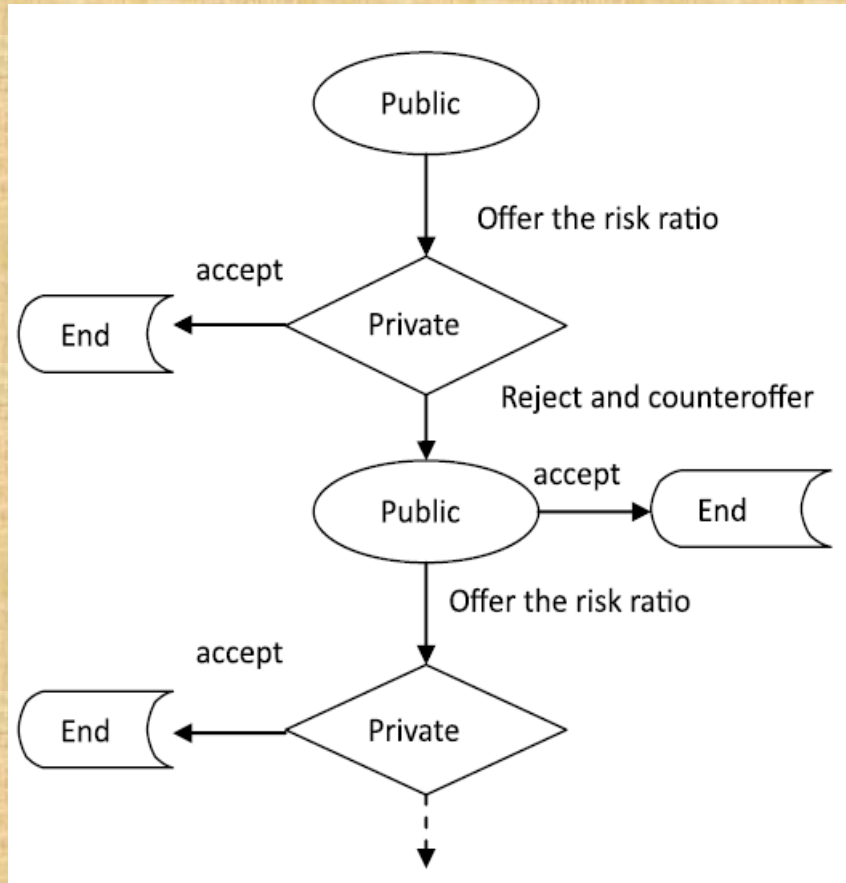
How to allocate these risks
among the parties involved?

Risk allocation in PPP projects

- Risk allocation refers to an assignment of risks between the PPP project's participants, that is between the public and private sector (Li *et al.*, 2005).
- Risk allocation is undertaken through risk transferring from the public sector to the private sector.
- Risk transfer is one of the most significant advantages of PPP/PFI model (Froud and Shaoul, 2001; Tan, 2012; Kwak *et al.*, 2009; Akintoye *et al.*, 2003).

However, the current risk allocation practice in China is still far away from ideal and caused failures of many PPP projects in China!!! (Shrestha et al., 2018)

The risk allocation negotiation process



Li et al. (2017)

Bargaining Game theory

- A bargaining game is a process in which players have a common interest and realise that profit is an agreement rather than a disagreement but there are still some conflicting interests (Shen et al., 2007).
- The players reach an agreement through the bargaining process of offers and counteroffers (Muthoo, 1999).

Influencing factors of risk allocation negotiation from the perspective of bargaining game theory

Sequence of alternating offer

Player makes the first offer will have the advantage in the case of both parties want to reach an agreement as early as possible (Li et al., 2017). Normally, the sequence of alternating offer is mostly dependent on the relative position of the players (Zhang¹ and Zhang², 2017)

Discount factor

Negotiation cost occurred when one more round bargain happens and it consists of the cost of time, the cost of opportunity for other investments, and the cost of information collection (Zhang¹ and Zhang², 2017).

Asymmetric degree of information

There are two kinds of bargaining game: complete and incomplete information games. In a complete information game, all the information is free to all the players while the players do not have all the information about the others in an incomplete information game (Li et al., 2017). The negotiation between the public and private sectors is a typical incomplete information bargaining game. The public or the private sectors do not have a full understanding of the information and strategies of the others.

The Hypothesis for the characteristics of different types of private sectors in risk allocation negotiation in Chinese PPP projects based on the bargaining game theory

	Sequence of alternating offer	Discount rate	Asymmetric degree of information
State-owned enterprise	*	+	+
Foreign enterprise	+	*	-
Domestic private enterprise	-	-	*

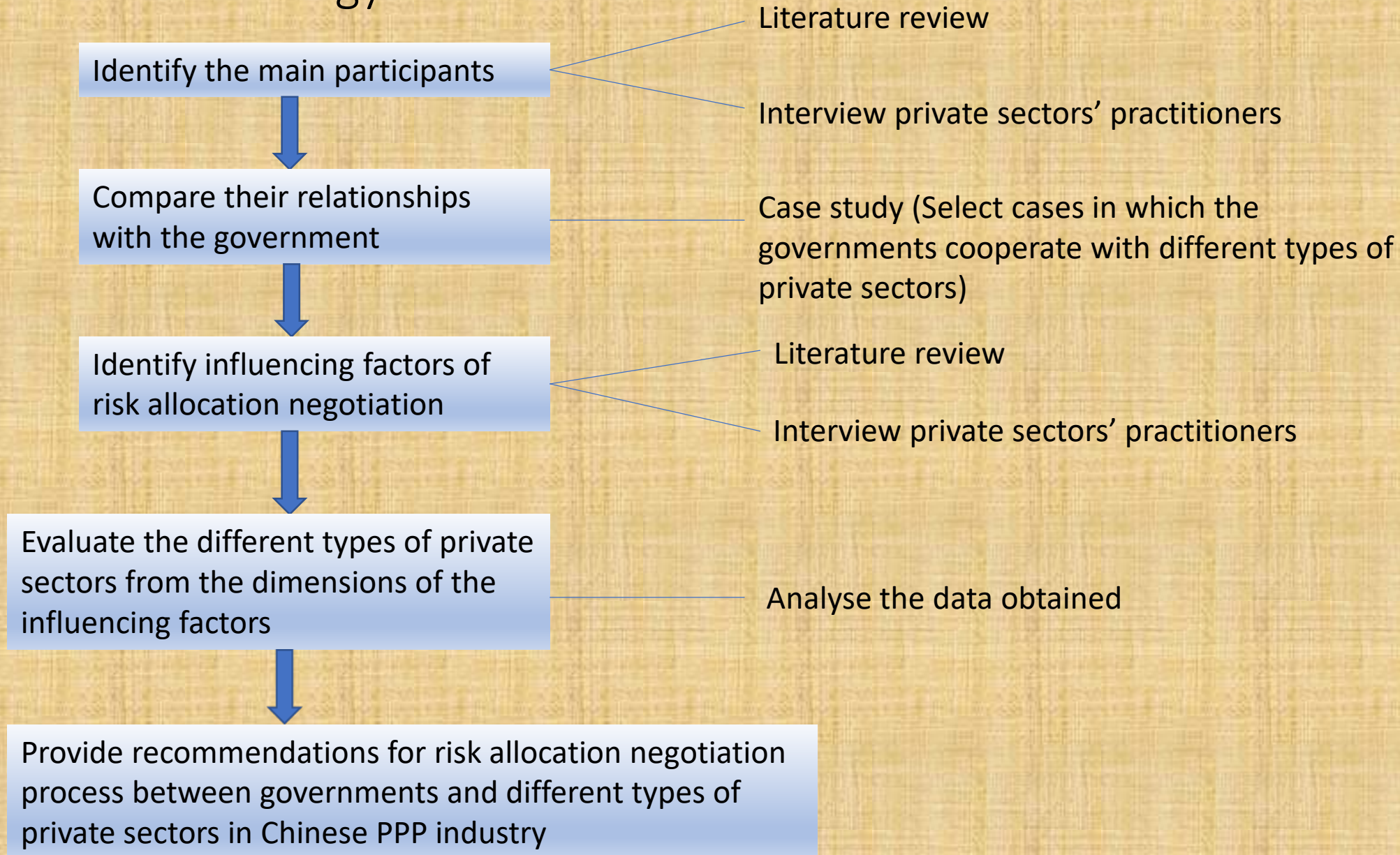
Research aim:

To understand the relationships between influencing factors for risk allocation negotiation and different types of private sectors in Chinese PPP industry.

Objectives:

1. To identify the main participants in the private sector of Chinese PPP projects and their advantages and disadvantages in implementing PPP projects.
2. To compare the relationships between the government and the different kinds of private sectors in PPP projects in China.
3. To identify the factors influencing the negotiation of risk allocation plan in PPP projects in China.
4. To evaluate the different private sectors from the dimensions of the influencing factors and identify how these factors influence on these private sectors in the negotiation on risk allocation.
5. To provide recommendations for risk allocation negotiation process between governments and different types of private sectors in Chinese PPP industry.

Methodology



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Thank you for listening!
Any questions?