



PUBLIC-PRIVATE PARTNERSHIPS IN CHINA

GOVERNANCE LOGIC AND POLICY IMPLICATIONS

Shikun Qin



Public-Private Partnerships in China

Since 2014, China has developed what is now the world's largest public-private partnerships (PPPs) market. This book provides a comprehensive and empirically grounded exploration of China's experience with PPPs.

Based on a detailed project-level dataset collected between 2014 and 2023, the author examines China's PPP governance from multiple perspectives. The analysis covers policy evolution, institutional experimentation, and regional diffusion patterns. It also investigates the fiscal incentives shaping local government behavior and the institutional constraints embedded in existing regulatory arrangements. The empirical chapters assess the extent to which spatial diffusion theory, transaction cost theory, capital structure theory, and cutback management theory explain the dynamics observed in practice, while also offering a timely assessment of recent PPP reforms in China.

This book will be of interest to scholars seeking to understand the evolution of PPP governance, as well as policymakers and practitioners looking for evidence-based insights.

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Preface

This book offers a comprehensive and empirically grounded examination of China's experience with public-private partnerships (PPPs). Since 2014, China has developed what is now the world's largest PPP market. While the scale of this expansion is striking, systematic academic analyses that synthesize its lessons remain limited. This book addresses this gap by examining a decade of PPP practice in China and presenting evidence that clarifies how the model operates in a non-Western context and why it provides relevant insights for other countries.

The analysis draws on a detailed dataset of more than 9,000 project-level observations collected between 2014 and 2023. On this basis, this book examines China's PPP governance from multiple perspectives, including policy evolution, the extensive involvement of state-owned enterprises, regional diffusion patterns, fiscal incentives shaping local behavior, and the constraints embedded in existing regulatory arrangements. The empirical chapters assess the extent to which theoretical approaches such as spatial diffusion, transaction cost theory, and cutback management help explain the observed dynamics.

This book highlights the global relevance of PPPs and the significance of China's market. PPPs are widely adopted across both developed and developing countries, and China now operates the world's most extensive and diversified PPP market. This combination of global relevance, scale, and institutional complexity provides a valuable setting for analyzing contemporary PPP governance. It draws on a uniquely detailed dataset encompassing more than 9,000 PPP projects. This dataset covers the full project cycle from initiation to operation and enables a level of analytical depth rarely achieved in existing studies. At the same time, this book offers a timely assessment of China's recent PPP reforms. Ongoing adjustments to the PPP framework create an important moment to review the outcomes of the past decade, and this book provides an early and systematic evaluation of these reforms while considering their implications for other jurisdictions. By linking theoretical insights with the realities of implementation, this book aims to offer a grounded perspective on PPP governance that is relevant to policymakers, researchers, and practitioners.

The writing of this book builds on my prior research in this field. During my time working at a government consulting firm around 2018, PPPs were at the height of their development in China, and I witnessed both their rapid expansion and their

subsequent decline. Motivated by this experience and my interest in the topic, I left my position in 2019 to pursue doctoral studies and engage in more systematic research on PPPs. I remain convinced that there is much more to be understood about the policy dynamics underlying PPP development and that further inquiry can yield broader policy and theoretical insights.

This book is supported by the National Natural Science Foundation of China (Project No. 72504229) and was completed during a visiting period at George Washington University. Parts of this book have been published in journal form. The main content of Chapter 3 appeared in *Review of Policy Research*, Chapter 4 in *Cities*, and Chapter 5 in *Public Performance & Management Review*. The author gratefully acknowledges permission from the respective publishers. The author is grateful to collaborators and colleagues for their valuable feedback, including Zhi-rong Jerry Zhao, Weijie Luo, Hui Kong, Haitao Ma, Lang (Kate) Yang, and Yaling Wang. Appreciation is also extended to the Routledge editorial team in Beijing and to the anonymous reviewers for their valuable and constructive comments on this book. Finally, the author expresses sincere thanks to his wife for her unwavering support during the visiting period in the United States.

Washington, D.C.
Shikun Qin
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1 Introduction

Abstract

This chapter introduces the core concepts of public-private partnerships (PPPs) and reviews their diverse national practices. Drawing on several theoretical perspectives, it explains the development and governance logic of PPPs. This chapter also outlines the distinctive features of this book, including its interdisciplinary analytical framework and its use of an extensive project-level dataset. It concludes by presenting the structure of this book and clarifying how each part contributes to understanding the evolution and governance logic of PPPs in China.

1.1 What is Public-Private Partnership?

Although public-private partnerships (PPPs) have been widely adopted worldwide, no single, universally accepted definition exists. The World Bank defines PPPs as “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.”¹ The European Investment Bank similarly describes PPPs as arrangements between a public authority and a private partner to deliver infrastructure projects and services under long-term contracts, in which the private partner assumes substantial risks and management responsibilities.² The Asian Development Bank defines PPPs as agreements between the public and private sectors for the provision of assets or services, such as power, water, transportation, education, and health, in which risks are allocated between partners and payments are linked to performance to create efficiency incentives.³ The United Kingdom describes PPPs as arrangements in which the government transfers exclusive rights to a private operator or investor to develop or operate infrastructure facilities under specified conditions for a fixed period.⁴ The United States Federal Highway Administration distinguishes between greenfield and brownfield PPPs, emphasizing structures such as Design-Build-Finance-Operate-Maintain (DBFOM) concessions that transfer responsibilities for design, construction, financing, operation, and maintenance, including the collection of toll revenues, to private partners.⁵ These definitions are broadly consistent in emphasizing long-term contractual arrangements, the transfer of responsibilities and risks to the private sector, and the use of performance-based incentives.

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In China, official policy documents also provide definitions of PPPs. For example, the Ministry of Finance (MoF), in its *Notice on Issues Concerning the Promotion and Application of the Public-Private Partnership Model* (Caijin [2014] No. 76), defines PPPs as long-term cooperative arrangements in the fields of infrastructure and public services. Under this model, social capital typically undertakes most responsibilities for the design, construction, operation, and maintenance of infrastructure and obtains reasonable returns through user charges and, where necessary, government payments. Government agencies are responsible for regulating prices and service quality to ensure the maximization of public interest. Unlike commonly adopted international definitions, a distinctive feature of China's PPP model is that "social capital" includes not only private firms but also state-owned enterprises (SOEs). As clarified in the MoF's *Operational Guidelines for the Public-Private Partnership Model (Trial)* (Caijin [2014] No. 113), social capital refers to domestic and foreign corporate entities operating under modern enterprise systems. As a result, the definition of partners in China's PPP framework is broader than in many other countries.

Cooperation between the public and private sectors has a long history, dating back at least to the Roman Empire. Such cooperation has taken various forms, including mixed enterprises, outsourcing contracts, and subsidy arrangements (Wettenhall, 2003; Forrer et al., 2010). The concession model in France, often regarded as a traditional form of PPP, has existed for several centuries. The modern terminology of PPP has emerged more recently, particularly as an instrument of New Public Management (NPM). In the United Kingdom, the Conservative government introduced the Private Finance Initiative (PFI) in 1992 during a period of economic downturn following the speculative bubble of the 1980s (Shaoul, 2011). Although PPPs were later discontinued in the United Kingdom due to concerns over value for money, they have continued to diffuse globally (Quiggin, 2019), especially in developing countries facing significant infrastructure financing needs. China's large-scale adoption of PPPs provides a prominent example of this trend.

In response to substantial infrastructure demand, several countries and regions have introduced major investment initiatives to promote PPP development. For instance, the European Union launched the Juncker Plan in 2014, aiming to mobilize hundreds of billions of euros for investment in transport, energy, and information technology infrastructure, with significant reliance on private sector participation. Financial support for the plan has been provided by institutions such as the European Fund for Strategic Investments and the European Investment Bank. In the United States, the Trump administration announced an infrastructure plan in 2018 to modernize aging infrastructure, emphasizing the mobilization of private investment, greater decision-making authority for local governments, and the removal of regulatory barriers. While similar in intent to the Juncker Plan, this initiative has not been fully implemented.

PPP is a broad concept, and no single model exists globally. Practices vary significantly both across and within countries. Classic models include the French concession model, also referred to as Build-Operate-Transfer (BOT), which relies on user charges and allocates most operational risk to private firms; the United Kingdom's Private Finance Initiative (PFI) and Private Finance 2 (PF2) models, which use availability payments to address revenue shortfalls and place greater

operational risk on the public sector; and U.S. models such as Design-Build (DB) and DBFOM, which are typically applied in specific sectors, particularly transportation, and emphasize PPP as a project delivery tool. Across countries, PPPs are most commonly used in sectors such as transportation, healthcare, education, and environmental protection, although their relative importance varies. For example, healthcare PPPs are more prominent in Canada, whereas transportation projects dominate in Europe and the United States. China's PPP model draws on international experience while encompassing a wide range of infrastructure and public service sectors, resulting in considerable diversity.

1.2 Theoretical and Conceptual Foundations of Public-Private Partnership

1.2.1 New Public Management

Max Weber's rational-legal bureaucracy model conceptualizes government as an organizational form characterized by clearly defined divisions of labor, hierarchical authority, and formalized rules, aimed at achieving impersonal and professional administration to enhance efficiency. However, traditional Weberian bureaucratic structures often encounter limitations in interdepartmental coordination, the allocation of responsibilities, adaptability, and information transmission. Beginning in the 1970s, the New Public Management movement emerged in response to fiscal stress, including rising budget deficits in some countries, and the growing difficulty of traditional administrative systems in adapting to evolving economic conditions. In the context of globalization, improving public management capacity became a widely shared objective.

A central premise of NPM is to treat government more like a firm, introducing reforms designed to enhance efficiency and managerial performance. The United States under the Reagan administration and the United Kingdom under Margaret Thatcher are often regarded as leading examples of such reforms. The core principles of NPM include an emphasis on professional management, explicit performance standards and measurement, output control, decentralization, competition, the adoption of private sector management practices, and a focus on efficiency in the use of rules and resources. In the United Kingdom, public sector reforms facilitated the marketization of public resources, contributing to a wave of privatization and the development of the PFI, a form of PPP. These reforms sought to improve service quality and efficiency by enabling governments to deliver more and better public goods and services with fewer resources.

Although policy practices associated with NPM have produced notable outcomes, they have also faced increasing criticism as reforms have progressed. In response, post-NPM paradigms have emerged, including New Public Service, network governance, holistic governance, digital governance, and public value management. While retaining an emphasis on results, these approaches place greater weight on citizen-centered governance and more balanced, collaborative relationships among multiple actors.

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1.2.2 *Transaction Cost Theory*

Transaction cost theory originates from Coase's analysis of markets and hierarchies and examines the costs that arise in contractual exchanges due to bounded rationality, information asymmetry, and incomplete information, as well as their implications for governance structures (Williamson, 1985). This perspective challenges the traditional assumption of zero transaction costs and offers a useful framework for explaining organizational arrangements (Zhou et al., 2003). Unlike conventional cost concepts, transaction costs encompass a range of expenses incurred in market exchanges, including the search for and selection of partners, contract negotiation and drafting, performance monitoring, and dispute resolution. According to this theory, incomplete and asymmetric information increases transaction costs and shapes the choice of governance arrangements. For this reason, transaction cost theory has been widely applied in public administration to explain variation in governance structures (Petersen et al., 2019; Casady et al., 2023).

A central concern of transaction cost theory is the relationship between markets and hierarchies, particularly the conditions under which one form is preferred over the other. If firms could obtain all necessary inputs through the market at low cost, internal production would be unnecessary. However, when market transactions are associated with high costs due to information problems, issues such as adverse selection and moral hazard may arise. Beyond a certain threshold, hierarchical organization may become a more efficient alternative. This logic extends to the public sector in the form of the make-or-buy decision. Governments must determine whether to provide public services directly or to outsource them, depending on the level of transaction costs associated with different types of goods and services (Brien, 2023; Brunjes et al., 2023). This framework is especially useful for understanding when PPPs are appropriate and in which sectors they are most likely to be effective.

Within this framework, asset specificity and measurability are two key dimensions for assessing transaction costs. Asset specificity refers to the extent to which an asset cannot be redeployed for alternative uses. High asset specificity can create mutual dependence between contracting parties, increasing the risk of opportunistic behavior and raising transaction costs. Measurability refers to the extent to which outputs can be clearly specified and evaluated. When outputs are difficult to measure, the risk of contractual failure increases, leading to higher transaction costs. In the context of PPPs, a substantial body of research applies transaction cost theory to assess variation in transaction costs across projects and their implications for governance structures (Brown & Potoski, 2003; Tan & Zhao, 2021; Xiong et al., 2022).

1.2.3 *Relational Contract Theory*

PPP projects typically involve long-term cooperation that can extend over several decades, making contractual arrangements central to safeguarding the interests of both public and private actors. According to Hart (2003)'s contract theory, contracts

are inherently incomplete due to information asymmetry and bounded rationality, meaning that not all contingencies can be specified *ex ante*. Formal contracts, therefore, allocate residual control rights to address unforeseen circumstances and limit opportunistic behavior.

While contract theory offers an important governance framework, legal mechanisms alone are not sufficient. Compared with formal contracts, relational contracts constitute an informal governance mechanism in which performance is sustained not primarily through legal enforcement but through commitment and trust developed over long-term relationships (Bertelli & Smith, 2010). In contexts where markets are limited in scale or legal systems are less developed, relational contracts can mitigate transaction costs associated with asset specificity and function as an effective governance arrangement (Williamson, 1985; Domingos et al., 2025).

The concept of embeddedness provides a useful starting point for understanding relational contracts. Originating in Granovetter (1985)'s sociological analysis, this perspective departs from the traditional economic assumption of atomized and fully rational individuals by emphasizing the role of social networks in shaping economic behavior. Building on this framework, Zhou et al. (2003) apply social network theory to examine how inter-firm connections influence contract formation and contractual forms, showing that network embeddedness plays a significant role in shaping contractual relationships. In the context of PPPs, relational contracts are therefore likely to influence organizational behavior and project performance.

Despite their potential to facilitate cooperation, relational contracts also entail inherent risks. Because they rely on informal agreements and trust rather than explicit legal provisions and formal oversight, they may create opportunities for corruption and rent-seeking (Williamson, 1985). Their subjective and uncertain nature can also increase the risk of non-compliance when conflicts of interest arise (Baker et al., 2002).

Social network analysis provides a useful analytical tool for identifying problematic forms of relational contracting. Closely related to relational contract theory, this approach focuses on patterns of interaction among individuals and organizations and helps to illuminate information flows, resource allocation, and power structures in complex systems. By applying network-based measures, including concepts such as scale-free and small-world structures, researchers can identify collusive behavior in procurement processes (Xiao et al., 2021; Wang & Ran, 2023) and trace the evolution of partnership networks in PPP projects (Wu et al., 2025), thereby shedding light on the dynamics of relational contracting.

1.2.4 Institutional Economics

In recent decades, the role of institutions in promoting economic growth and social development has attracted sustained scholarly attention (North, 1990). The design and implementation capacity of administrative institutions constitute the foundation of effective public governance (Wilson, 1991). Institutional design extends beyond the formulation of laws and policies to include the ability of government organizations to operate efficiently, implement policy, and respond to societal needs.

A well-developed institutional framework provides clear guidance and implementation pathways, helping to ensure that policies are carried out as intended while reducing uncertainty and risk. This is particularly important in complex and rapidly changing environments, where institutional flexibility and adaptability are essential (North, 1990; Fukuyama, 2004).

From an institutional perspective, legitimacy is a central driver of behavior among market actors. The attainment of legitimacy signals recognition and support within the market. Contractual forms are therefore shaped by the institutional environment, as they embody underlying norms of legitimacy (Zhou et al., 2003). Institutions also provide the foundation for other governance mechanisms. Weak institutional arrangements can amplify information frictions and transaction costs and may hinder the formation of stable relational contracts.

Institutional conditions are a key determinant of PPP performance. Stable legal frameworks can enhance investor confidence, whereas policy uncertainty may discourage private participation. PPP arrangements typically involve multiple stakeholders and substantial transaction costs, creating risks of moral hazard and adverse selection. Effective institutional design is therefore central to PPP governance and remains a persistent concern in both theory and practice.

1.2.5 *Infrastructure Governance*

The concept of PPP has evolved from earlier models such as BOT and PFI, and its meaning continues to develop over time. Looking ahead, infrastructure governance may increasingly replace PPP as a central analytical concept. Some international organizations have already adopted infrastructure governance as a core framework, and the scope of infrastructure policy has broadened.

The concept of governance has become increasingly prominent across fields such as public administration, business management, law, and economics. The OECD defines infrastructure governance as the policies, frameworks, norms, processes, and tools used by public bodies to plan, make decisions, implement, and monitor the entire life cycle of public infrastructure.⁶ This includes interactions within government as well as between government, the private sector, users, and citizens. It encompasses the full lifecycle of infrastructure assets, although resource-intensive activities are often concentrated in the planning and decision-making stages. More specifically, it covers various forms of public-private interaction, including traditional public procurement, SOEs, PPPs, concession arrangements, and privatization. The OECD also identifies key challenges for governments, including developing strategic visions, managing integrity risks, selecting appropriate delivery models, ensuring sound regulatory design, integrating consultation processes, coordinating across levels of government, maintaining affordability and value for money, improving data generation and disclosure, ensuring lifecycle performance, and strengthening infrastructure resilience.

Viewed separately, infrastructure and governance are both broad concepts. Infrastructure includes a wide range of physical assets and services, such as roads, hospitals, buildings, courts, educational facilities, and prisons, as well as related

service systems, including legal, security, and education systems. Governance is an inherently flexible and abstract concept, often associated with more inclusive and collaborative approaches to decision-making, in which authority is not confined to government but shared with firms and civil society actors. When combined, the concept of infrastructure governance extends well beyond the scope of PPPs.

Within this broader framework, Hodge and Greve (2019) identify several defining features. These include the central role of politics in infrastructure decision-making and provision, the diffusion of authority across multiple actors, the distinction between past and emerging approaches, the emphasis on hybrid institutional arrangements, attention to long-term strategic issues, a shift away from procurement-centered perspectives, a more critical view of technocratic assumptions and contractual solutions, a focus on the full set of core tasks in infrastructure delivery, and the encouragement of interdisciplinary analysis.

Although this book focuses on the governance logic of PPPs, its analysis also extends to the broader field of infrastructure governance. These domains share common characteristics, including complex coordination across sectors, interdisciplinary approaches, and close interaction between governments and firms.

1.3 Analytical Approach and Data

PPP spans multiple disciplinary domains. This book adopts an integrated, interdisciplinary perspective, drawing on public administration, political science, economics, public policy, and geography. It also employs standard empirical methods to examine policy effects and underlying mechanisms, including instrumental variable models, spatial econometric models, and regression discontinuity designs. This combined approach enables a more systematic examination of the patterns and underlying logic reflected in PPP project data.

The analysis is based on one of the most comprehensive project-level datasets available on China's PPPs and uses quantitative methods to examine the governance logic of PPPs in China. Particular attention is given to the period from 2014 to 2023, during which PPP expansion accelerated rapidly before entering a phase of contraction. The data are primarily sourced from the China PPP Center (CPPPC), administered by the MoF, and further compiled and supplemented through the third-party platform Bridata.⁷ As many PPP projects remained at the planning stage and did not proceed to procurement, this study focuses on projects that completed procurement and were included in the CPPPC database between 2014 and 2023. The final sample comprises 9,131 projects, with a total investment exceeding 13 trillion yuan (approximately US\$2 trillion). As inclusion in the CPPPC system was generally a prerequisite for receiving government payments and served as an indicator of regulatory compliance, this dataset captures the vast majority of implemented PPP projects during this period and can be treated as a near-comprehensive dataset. However, owing to data limitations for certain explanatory and dependent variables, some chapters of the analysis are based on data covering the period from 2014 to 2019.

It is also important to note that in 2023, the CPPPC ceased operation in response to a range of issues associated with PPP implementation under the MoF-led

framework in China. In 2024, the National Development and Reform Commission (NDRC) established a new PPP project registry, which primarily records a limited number of concession-based PPP projects.⁸ In practice, PPP projects relying on government payments have largely been discontinued. This transition in project registries marks the end of one phase of PPP development in China. The CPPPC database captures the trajectory of PPP expansion between 2014 and 2023, whereas the NDRC registry represents a new and more constrained phase of PPP development after 2024. Given that the vast majority of PPP projects in China were initiated during the 2014 to 2023 period, it is an appropriate moment to provide a systematic assessment of PPP development over this decade.

1.4 Structure of this Book

The remainder of this book is organized as follows. Chapter 2 introduces the institutional background and development patterns of China's PPP system, along with its key achievements and limitations, using descriptive statistical analysis. Drawing extensively on figures and tables, this chapter provides a comprehensive overview of a decade of PPP development in China. Readers seeking a general understanding of the current state of PPPs in China may focus on this chapter.

Chapters 3 to 5 employ empirical models to examine the core institutional logic of China's PPPs. Chapter 3 focuses on a defining feature of the Chinese PPP model, namely the extensive involvement of state-owned capital. Chapter 4 draws on spatial diffusion theory to explore the mechanisms underlying the rapid expansion of PPPs across regions. Chapter 5 examines the financing dimension of PPPs, situating them within a capital structure framework and analyzing them alongside debt financing. Together, these chapters provide a deeper understanding of the institutional characteristics of China's PPPs and the underlying mechanisms that shape their development.

Chapters 6 and 7 analyze PPPs from a public finance perspective, with particular attention to their fiscal motivations and consequences. Chapter 6 applies cutback management theory to examine how fiscal stress arising from PPPs and debt obligations influences local government expenditure allocation. Chapter 7 evaluates whether fiscal rules can constrain the expansion of PPPs and examines the conditions under which such rules fail, along with their consequences. These chapters are particularly relevant for scholars and practitioners interested in public finance. As fiscal stress intensifies across countries, the relationship between PPPs and fiscal conditions has become increasingly significant, suggesting a closer integration between PPP governance and public finance.

Finally, Chapter 8 synthesizes the findings of the preceding analysis and presents the policy implications.

Notes

- 1 World Bank, "PPP Online Reference Guide: Introduction," available at: https://ppp.worldbank.org/PPP_Online_Reference_Guide/Introduction
- 2 European Investment Bank, "EPEC (European PPP Expertise Centre)," available at: <https://www.eib.org/en/products/advisory-services/epec/index>

- 3 Asian Development Bank, “Public-Private Partnerships,” available at: <https://www.adb.org/publications/public-private-partnerships>
- 4 UK Government, “Public-Private Partnerships: A Basic Introduction for Non-Specialists,” available at: <https://www.gov.uk/research-for-development-outputs/public-private-partnerships-a-basic-introduction-for-non-specialists-topic-guide>
- 5 United States Federal Highway Administration, “Public-Private Partnerships,” available at: <https://fhwaapps.fhwa.dot.gov/planworks/Applications/Show/public-private-partnerships>
- 6 OECD, “Towards a Framework for the Governance of Infrastructure,” available at: <https://ppp.worldbank.org/sites/default/files/2022-03/Towards-a-Framework-for-the-Governance-of-Infrastructure.pdf>
- 7 BRIDATA, available at: <https://www.bridata.com/>
- 8 National Development and Reform Commission PPP Project Registry, available at: <https://www.tzxm.gov.cn:8081/aweb-ui/#/ppp/project-publicity/project-publicity-list>

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