Risk Management and Governance for PFI Project: Technology Policy Lessons from the Case of Japan

by

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Abstract

Japan has a long history of Public-Private Partnerships (PPPs); however, it has experienced many failures but learned various lessons from them. The representative example is a management failure of the third sector, which is a joint corporation capitalized by both the public and private sectors. In fact, many of the third sectors were successively bankrupted or serious questions were raised concerning their decision processes and management systems. This is because the governance of the third sector did not have a specific system for responsibility sharing but instead relied on a cozy relationship between the public and private sectors.

Based on these experiences, the new scheme "Private Finance Initiative" (PFI) was introduced and actively promoted with great expectations. PFI is based on the concept of clarifying the responsibility by contractual governance, which solves the problem of the ambiguous risk sharing. Because the definite risk allocation of the PFI makes it possible to produce the private sector's ingenuities, many successful projects have been implemented to achieve economical and efficient operations. Currently, the PFI projects in Japan have been limited in their application area and scale, but both are expected to increase due to an amendment to the PFI law that was enacted in May 2011. Hence, this thesis reviews the problems of Japanese PFIs and proposes policy recommendations.

By citing some case studies, this thesis describes some problems that exist in Japanese PFIs regarding the public-private relationship, risk management, contractual governance, and decision-making process. Regarding the relationship and risk management, this thesis claims the need for risk workshops, an effective use of private finance, and an improvement of guidelines for a better risk allocation. Concerning the contractual governance, the thesis discusses the need to develop precise contract standards or guidelines that allow for the creation of proper incentives for the private sectors and the flexibility to appropriately deal with the risk and uncertainty derived from a long-term contract. With respect to the decision-making process, it also claims to increase the transparency and accountability of PFI projects through an evaluation by a third party.

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Table of Contents

Introduction	13
Chapter 1: History of PPP in Japan	15
History of PPP	15
Definition of PPP	16
Failure of Third Sector	
Troubled Cases of Third sector	19
[Third Sector] Izumisano Cosmopolis Plan	19
[Third Sector] Kansai International Airport	20
[Third Sector] Tokyo Bay Aqua-Line	
Summary	
Chapter 2: Introduction of PFI in Japan	25
History of PFI	
Overview of PFI	
Process of PFI	
Difference between PFI and Conventional Delivery Method	
Evaluation of the Value for Money (VFM)	
Project Scheme of PFI	
Classification of the PFI	
Record of PFI in Japan	
Trend Classified by Facility Ownership	
Trend Classified by Project Type	
The Reason Why the PFI in Japan is not Prevalent	
Circumstances of Public Sector	
Circumstances of Private Sector	
New PFI Act	
Background on the Implementation of the New PFI Act	
Operation Right (Concession system)	
Proposal by the Private Sector	
Summary	
Chapter 3: Case Studies of PFI	
Successful Cases of PFI	
[PFI Third Sector] Chubu Centrair International Airport	41
[PFI] Lowdham Grange Prison (UK)	

[PFI] Luton Airport (UK)	
Risk-Actualized Cases	44
[PFI] Taraso Fukuoka	45
[PFI] Omihachiman City General Hospital	47
[PFI] Spopark Matsumori	
Summary	
Chapter 4: Risk Management of PFI	53
Overview of PFI Risk Management	
Concept of Risk	
Classification of Risk	
Risk Treatment	
Appropriate Risk Allocation	
Current Methodology of Risk Allocation	
Proposal of the Framework of Risk Classification	
Simulation of Risk Allocation Based on the Framework	
Improvement of Contract Expertise	
Flexibility of Contract	
Real Option Approach	
Implementation of the Risk Workshop	63
Utilizing the Monitoring Function of Financial Institutions	64
Summary	
Chapter 5: Potential Problems and Possible Solution in Japanese PFI	67
Limitation of VFM Indicator	
Quantification of Risk	67
Arbitrariness of the Discount Rate	
Arbitrariness of Reduction Rate	
Limited Scope of Assessment	
For Designing Better Indicators	69
Why Adopt PFI?	69
VFM Driver	
Benefits and Disadvantages of PFI	70
Third Party's Evaluation	71
Project Evaluation by Third Party	
Evaluation Points for Project Evaluation	
Check System at Each Stage of Project	
Development of Audit Framework	
Summary	74

Conclusion	76
Bibliography	77
Appendix 1: Japanese-Style Governance System for Public Projects	83
Legal System	
Tendering System	
Contracting System	
Response to Globalization	
Summary	
Appendix 2: Related Regulations in Japan	91
Legislation Restricting Private Sector's Entry	
Appendix 3: Additional Risk Actualized Cases	
[PFI Third Sector] Hibiki Container Terminal Project	
[PFI] Nagoya Port Italian Village	
[PFI] Kochi Health Sciences Center	96

List of Tables

Table 1: Types of PPP	16
Table 2: Strength and Weakness of PPP Methods	17
Table 3: History of Law and Guideline of PFI	26
Table 4: Process of PFI	27
Table 5: Number of Projects in Each Field (As of December 31, 2010)	34
Table 6: Example of the Private Sector's Ingenuity	40
Table 7: Risk Classification and Examples	54
Table 8: Potential Risk Treatments	55
Table 9: The Statistics of Risk Allocation	57
Table 10: Risk Allocation using Risk Allocation Cube Model	60
Table 11: Potential Benefits and Disadvantages of PFI Contracts	71
Table 12: Evaluation Point of PFI.	73
Table 13: International Comparison of the Number of Legal Professionals and Civil Suits	83
Table 14: Tendering Systems for Public Works Implemented in Japan, US, and UK	85
Table 15: Comparison between GCW and FIDIC	87
Table 16: PPA Laws and Private Sector Provision	92

List of Figures

Figure 1: Process Diagram of PFI	27
Figure 2: Comparison of Public Works under Conventional Delivery Method and PFI	28
Figure 3: Concept of VFM (in the Case of the Same Public Service Level)	29
Figure 4: Concept of VFM (in the Case where the PSC is Equals to LCC)	30
Figure 5: General Project Scheme of PFI	30
Figure 6: Changes in the Number of Projects and Project Costs (Cumulative Total)	33
Figure 7: Increased Number of Projects and Project Costs	33
Figure 8: Percentage of Projects Classified by Facility Ownership	35
Figure 9: Percentage of Projects Classified by Project Type	35
Figure 10: The Scheme of Operation Rights (Concession System)	37
Figure 11: The Method of Variable Service Fee	50
Figure 12: Process of Risk Management from the Recognition to the Allocation	55
Figure 13: Risk Allocation Matrix	58
Figure 14: Risk Allocation Cube	59

Abbreviations

AC	Audit Commission
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
BTO	Build-Transfer-Operate
CDP	Competitive Dialogue Procedure
DBFO	Design Build Finance and Operate
EU	European Union
FIDIC	Fédération Internationale Des Ingénieurs-Conseils
GCW	Standard Form of Agreement and General Conditions of Government Contract Works of Building and Civil Engineering Construction
JV	Joint Venture
LCC	Life Cycle Cost
MLIT	Ministry of Land, Infrastructure, Transport and Tourism
NAO	National Audit Office
NPV	Net Present Value
OECD	Organisation for Economic Co-operation and Development
PFI	Private Finance Initiative
PPA	Public Property Administration
PPP	Public Private Partnership
PSC	Public Sector Comparator
RFP	Request for Proposal
RO	Rehabilitate-Operate
SPC	Special Purpose Company
UK	United Kingdom of England and North Ireland
VFM	Value for Money

Introduction

Japan has a long history of public-private partnerships (PPPs). It has promoted many projects based on the policy of PPP in various forms since the enactment of the "Private Sector Resources Utilization Law" under Prime Minister Nakasone in 1986. Japan, however, has experienced many failures in the long history of PPP. The representative example is the management failure of the "Third Sector¹", which means a joint corporation invested by both the public sector and private sector. In fact, many of the third sectors, which were mainly in the field of urban development, were successively bankrupted. In addition, large projects conducted by the third sector, such as Tokyo Bay Aqua-Line and Kansai International Airport², have raised serious questions because of their optimistic demand forecasts and extremely large project costs in spite of their low profitability. The reason for these failed or questionable projects is because the governance of the third sector did not have a specific system of responsibility sharing but instead relied on a cozy relationship between the public sector and private sector, and, eventually, the overall governance of the project did not appropriately function.

Based on these failed experiences, the new scheme "Private Finance Initiative" (PFI) was introduced and actively promoted with great expectations. PFI is based on the concept of clarifying the shared responsibility by contractual governance, which solves the problem of the ambiguous risk sharing that existed in the third sectors. Because the idea of a definite risk allocation of PFI made it possible to produce the private sector's ingenuities, many successful projects have been implemented that have achieved economical and efficient operation by utilizing the dynamism of private sectors. However, there are few PFI projects in Japan in the area of core infrastructure, such as airports and railways, while most of the projects are in building construction. Yet, under these circumstances, an amendment to the PFI law was enacted in May 2011 aiming to double the scale of the PFI operations in the subsequent eleven years. This progression would be expected to further increase the application field and the market size of the PFI. Based on this situation, this thesis reviews the previous experience of Japanese PFIs and tries to propose policy recommendations aiming for a better PFI project implementation in the near future. The following is a description of the structure of this thesis.

Chapter 1 reveals the history of the introduction of PPP policy in Japan, cites some cases of failure of previous third sector projects and takes into consideration the lessons learned from those cases.

Chapter 2 explains the general description of a Japanese PFI, which has been promoted due to the failure of the third sector. Also, it clarifies the reason why the Japanese PFI has not yet been prevalent. In addition, by pointing out the future expansion of the Japanese PFI market that is

¹ "Third Sector", in Japanese, means the joint sector of the first (public) and the second (private) sectors.

² Kansai International Airport Co., Ltd. is strictly not a "third sector" based on the general Commercial Code, but equivalent to a special company based on the special law (Kansai International Airport Co., Ltd. Law).

expected by the introduction of the new PFI law, this chapter considers the idea of further activation.

Chapter 3 introduces actual cases of PFI. In the first half, it presents the cases that have been reported to be successful and reviews key points of the effective use of the private sector's dynamism. In addition, it also introduces two successful cases from the abundant experience of the UK. In the second half, it introduces three failed cases and carefully examines the cause of the failures from the perspective of risk management.

Chapter 4 discusses the risk management of PFI. After presenting an overview of risk management of the PFI based on the "Risk Allocation Guideline" developed by the Cabinet Office in Japan, it will consider the issues of risk management in Japanese PFI in more detail from several perspectives, which are mainly based on the lessons learned from the failed cases described in Chapter 3.

Chapter 5 considers the potential problems at the decision-making stage of the PFI projects, separate from the individual risk management problems. After pointing out the limitations and problems of the Value for Money (VFM) indicator, which is commonly used for the decision making of PFI projects, it explores the essential issues existing in the PFI method. Finally, it discusses the potential for a third party's evaluation as one of the possible resolutions of those problems.

Chapter 1: History of PPP in Japan

Japan has long history of PPP. This chapter reveals the history of PPP policy in Japan, cites cases of failure of the third sector scheme and takes into consideration the lessons learned from these cases.

History of PPP

The history of public-private partnership in Japan can extend back to the "min-katsu" (private resources mobilization) policy in the era of the Nakasone cabinet. Min-katsu was the policy resulting from the expansion of domestic demand and aiming to utilize the vitality of the private sector to resolve the deficit balance of foreign trade.

In 1985, the National Land Agency³ produced the capital reform project that had promoted large-scale city development by the private sector, especially in the Tokyo area. In 1986, the Private Sector Resources Utilization Law was enacted under Prime Minister Nakasone, which was when the Kansai International Airport and Tokyo Bay Aqua-Line (which will be described in detail later) were planned as two major projects utilizing the private sector's resources for public works to promote efficient projects.

In 1987, the Resort Law was enacted, and the development of resorts using the third sector was promoted in rural areas. During this period, a number of third sectors were utilized as a new private method for mainly resort facilities. The third sector, however, had an unclear mechanism regarding where the responsibility lay, and many projects collapsed in the 2000s because it was not fully functional in the time of a recession. In addition, during this period, three large corporations (Japan National Railways, Nippon Telegraph and Telephone Corporation and Japan Monopoly Corporation) were privatized, and JR, NTT, and JT (Japan Tobacco) were born.

In 1988, the Association for Corporate Support of the Arts Council was established at the peak of the so-called bubble economy, and the corporate social contribution became a major topic. It has been called a new PPP era since this time.

In 1989, the symposium of PPP (public-private partnership in urban development) was held in the Japan-US joint base, where the PPP cases of both countries, the historical circumstances in the United States, the whole concept of organization about the public-private cooperation, the mechanism of financing, and the regulation policies such as taxation, subsidies, and incentives were reported.

³ National Land Agency was merged into Ministry of Land, Infrastructure, Transport and Tourism (MLIT) on January 6, 2001.

Afterwards, there was a short void of city development; however, the discussion of PFI-targeted public services and public works projects became popular again, and the PFI Law was promulgated in 1997 and executed in 1999.

Definition of PPP

This section defines the scope of PPP in Japan. In fact, there is no specific definition of PPP in Japan or in other countries, such as the US and UK; however. in general, PPP is a method that develops social capital by taking advantage of the capital and knowledge of the private sector and enhancing the quality of public services. The popular types of PPP are described in the Table 1 and the strengths and weaknesses of each type are described in Table 2.

Type of PPP	Description
Privatization	Privatization is the process of transferring an existing public entity or enterprise to private ownership. It can be done with or without competition.
Third sector	There are several definitions for third sector, but in general, it is the management entity capitalized collectively by the public sector including government agencies (first sector) and private sector (second sector).
PFI	PFI is the method which achieves efficient service provision by commissioning the life-cycle of project from plan to construction and maintenance as well as finance to private sector, changing the way of thinking from the purchase of facilities to the purchase of service.
Competitive sourcing	Competitive sourcing assumes a competition for work between the government and the private sector, and can result in activities being performed either by government (in-house) or by contract personnel depending upon who wins the competition.
Outsourcing	Outsourcing is a management strategy that contracts out organizational activities to vendors or suppliers who specialize in these activities in order to perform them more efficiently and effectively.

Source: Created from Gansler (2003) "Moving Toward Market-Based Government: The Changing Role of Government as the Provider", IBM Endowment for the Business of Government

Type of PPP	Strength	Weakness
Privatization	 If competition is introduced, customers receive better prices and higher performance for private services formerly provided by government monopolies. Government assets can be converted into revenue through sales to private firms. Excess capacity of government facilities can be addressed through privatization-in-place, maintaining jobs and, if competition is introduced, using facilities more effectively. 	 Where there were once public monopolies, privatization may produce private monopolies, not competition. Governments can maintain control over newly privatized firms, preventing open market competition.
Third Sector	 Can freely active out of institutions and limitations. Can deliver large size projects with high fund-raising capacity. The principle of self-support and beneficiaries-pay allows for expanding projects. Also enables the diversification of public services and cost reducing. 	 Tend to make over investments based on optimistic demand forecast. Can lack the power of self-judgment and overestimate the public credit. There can be the degradation and contraction of public services and steep rise of project cost. There can be a cozy relationship between public sector and private sector and a less awareness of project.
PFI	 Allows the government to finance facilities or services needed, but which it could not afford to publicly fund. Makes the most productive use of valuable government assets by bringing in revenue, reducing overhead costs, and providing investments for facilities; and can be used to address excess capacity. 	 Authority can be blurred and roles made unclear between public and private partners. The government assumes a greater portion of risk compared to other forms of privatization.
Competitive sourcing	 Introduces competition (vs. prior monopoly), which promises to raise performance and significantly lower costs. Allows historic government workforce an opportunity to bid to retain the work (vs. outsourcing or privatization). 	 Will have an impact on government workforce (both in morale and in limited involuntary separations). The process is both time-consuming and expensive—as well as very complex.
Outsourcing	 More efficient because of competition and manager's direct observation. Enables the government to take advantage of specialized skills, new technology, and innovation that are lacking in its own organization. Can reduce dependence on a single supplier (i.e., the government), and the potential for future competition provides a continuing incentive for higher performance at lower cost. 	 Can limit the flexibility of government in responding to emergencies if not provided for in advance, via the contract. Can cause personnel disruptions and transition problems if not planned well. Contracting processes can be complex, time consuming, and costly if proper management and a standardized process are not provided.

Table 2: Strength and Weakness of PPP Methods

Source: Created from Gansler (2003) "Moving Toward Market-Based Government: The Changing Role of Government as the Provider", IBM Endowment for the Business of Government (Gansler, 2003)

Failure of Third Sector

This section considers the problems that exist in the third sector. Third sectors were consistently established based on the Private Sector Resources Utilization Law (1986) in the era of the Nakasone Cabinet. Although third sectors existed before the enactment of this law, the law spurred the establishment of third sectors. The third sector is a stock company capitalized by both the private sector and public sector, and it aims to implement profitable projects that play a public role. The main advantages of third sector include the following:

- Accomplishment of a large-sized project: in the case of the project implemented by national or local governments, the size of the project is limited by the limits of subsidies, tax revenue, and bond issuance. However, the third sector can deliver large projects, such as port facilities, industrial parks, and integrated resort facilities, by introducing funds from the private sectors in addition to the funds of a national or local government.
- Improvement of project management ability: the third sector can improve the management skills of businesses by taking advantage of the private companies' management knowledge, human resources, and motivations. In addition, the third sector has an advantage in the mobility of business operations. In the case of a project implemented by the national or local governments, an agile operation is difficult because decisions on the budget need the votes of the Diet, the subsidized project is constrained in its use, and a change of the plan regarding the business is not easy. The third sector, however, is an organization independent of the government. Therefore, it is easy to make decisions for business management compared to the administration of a national or local government.

Based on a consideration of these benefits, it was expected that a synergistic effect would be produced by combining the government's credit and funds and the private sector's funds, human resources, motivation, financial knowledge of management, and technology. However, those expectations eventually resulted in failure in most cases.

It has been reported that many third sectors suffered financially or went bankrupt because this method did not have a strict contract governance mechanism defining the risk allocation between the public sector and private sector. In short, an ambiguous relationship without a contract lowered the private sector's management efforts and produced a cozy relationship between both sectors. That is, the third sector had a habitual dependence on the public sector due to the thought that the ultimate responsibility, including relief and assistance for the operating body, belonged to the government. Thus, in the third sector, because the financial support was made only at the beginning of the project in the form of capital, the operation body had less incentive for cost reduction and service improvement and likely would create a moral hazard.

The additional problem is that the third sector could also create the structure of a collusive relationship between the public and private sectors. The private sectors, which invested in the third sector, likely did not expect a high investment return on the project itself. Rather, they were

interested in the close relationship with the public sector and aimed to increase the probability of accepting project contracts in related areas in the future. Thus, the scheme of the third sector mixed the capital and human resources together, which aimed to prevent public agents and private companies from taking advantage of their positions.

Troubled Cases of Third sector

This section will first present the case of the "Izumisano Cosmopolis Plan" that went bankrupt in the mid-1990s. This project is a typical case of the failure of large-scale development projects by the third sector.

[Third Sector] Izumisano Cosmopolis Plan

-- Bankruptcy due to economic bubble burst



Basics

- In 1980, the plan for establishing the new airport (Kansai International Airport) led to a proposal to modernize the local industry in south Osaka, entice new industries, and procure lands for them.
- In 1987, the third sector area developer "Izumisano Cosmopolis Ltd." was established. It consisted of the Osaka City, general contractors, and banks, etc.
- The planned area was 100.14 ha. Regarding the financial planning, the business profitability was predicted to be a profit of 6.7 billion yen.

Unforeseen Impact

- In November 1994, the acquisition of land ended, but the enticement of businesses did not go smoothly. As a result, the company went bankrupt due to the increased interest costs from the land acquisition in 1998.
- The collapse of the bubble economy had begun in 1991, and the industrial companies that the developer tried to attract did not have the surplus money to establish laboratories and buy the high-cost land.

Causes of problems

- Ambiguous responsibility: it has been noted that the Board of Directors of Izumisano Cosmopolis was representative of the "creditor" as the capital investor rather than the company directors. (Kawato, 2011)
- **Bubble economy:** Izumisano Cosmopolis was a development company born in the era when people believed the land prices would continue to rise. The project was based on the reckless idea that the latent return would increasingly grow upon buying more land.

The following cases are two typical mega-projects, which were actively promoted under the "min-katsu" policy of the Nakasone Cabinet at the end of 1984: Kansai International Airport and Tokyo Bay Aqua-Line. These public works were also carried out by using the third sector method.

[Third Sector] Kansai International Airport

-- Construction cost severely exceeded the initial forecast



Basics

- In the 1960s, the construction of "Kansai Second Airport" was proposed based on the supposition that Itami Airport could not deal with the demand for expansion due to a lack of space.
- In 1987, the first period of construction started, which included an artificial island (515 ha), a terminal building, and a runway. The construction of the artificial island was completed in 1991 and opened in September 1994.
- The seventh airport construction plan from 1996 defined the main airport construction in the metropolitan area as the highest priority. Although the runway still had enough space based on the plan estimates (over forty thousand landings and takeoffs per year), the

second construction of a second artificial island (528 ha) and 4,000-m runway was started. The second construction was completed in August 2007.

Unforeseen impact

- Price boost and ground sinking occurred. As a result, the construction costs reached more than 1.5 trillion yen, which severely exceeded the initial estimate.
- The debt including interest for Kansai International Airport Co. was more than 1.3 trillion yen (as of 2011).

Causes of problems

- **Difficult negotiation:** the national government experienced difficult negotiations with local authorities over acceptance of the construction of the airport; as a result, it was constructed in a relatively disadvantageous place with high costs and less convenience.⁴
- **Optimistic demand forecast:** in fiscal year (FY) 2000, the estimated number of landings and takeoffs was 198,000, whereas the result was 124,000.
- Loose management of construction cost: an incorrect estimation of a price boost, additional construction due to ground sinking, the burden of interest because of a completion delay, and lack of careful scrutinization of the supplier of earth and sand.

With respect to Kansai International Airport, because the business became rigid with a huge debt due to the repayment of interest, New Kansai International Airport Co. was established on April 1, 2012 to integrate the operation of Kansai International Airport and Itami Airport in preparation for new PFI scheme "concession system". For details, see the section of "New PFI method" in Chapter 2.

⁴ The original plan was for Kansai International Airport to be constructed off the coast of Kobe. However, because of the opposition of Kobe City due to a noise problem, the Ministry of Transportation changed the plan to off the coast of Senshu, which is five kilometers away from the coast and whose water depth is greater than 20 meters. Afterward, both Hyogo Prefecture and Kobe City were interested in the airport again because the noise problem was resolved by improvements of the aircraft materials. The Ministry, however, advanced the plan for off the coast of Senshu without reconsideration. (Hyougothiikiseisakukenkyukiko Foundation, 2010)

[Third Sector] Tokyo Bay Aqua-Line

-- Large debt result from optimistic demand forecast



Basics

- Tokyo Bay Aqua-Line consists of bridges and tunnels across the Tokyo Bay in Japan, which connects the cities of Kawasaki (Kanagawa Prefecture) and Kisarazu (Chiba Prefecture).
- It was constructed with the expectation of an expanded domestic demand, and a spread of the effect to the local economy was expected by bureaucrats, politicians and big business, especially in Chiba Prefecture.
- The total length of these bridges and tunnels is 15.1-km, which includes two 9.6-km tunnels underneath the Tokyo Bay and two 4.4-km bridges. The construction cost was 1.44 trillion yen.
- The operation company, Trans-Tokyo Bay Highway Co., was established in 1986, and capital was raised from the Japan Highway Public Corp. ("Dorokodan"), local public organizations, and private companies based on the Act on Special Measures Concerning the Construction of the Trans-Tokyo Bay Highway. The construction started in 1989, and the road was open in 1997.

Unforeseen impact

- For the first two years (1998-1999), the average traffic volume was less than half of the estimated volume.
- Immediately after the realization that the project was not economically sound, the project scheme was changed to a system such that the Japan Highway Public Corp. incurred all of the project risks and the project company conducted the construction and abandoned the completed road to the control of the Corporation⁵.

⁵ Currently, the project company stays in the black accepting the management of "umi-hotaru (artificial island having commercial facilities, at the cross-over point between the bridges and tunnels)" from Highway Public Corp.

Cause of problems

• **Optimistic demand forecast:** there is the opinion that the largest reason for the questionable demand forecast was the political impact⁶.

It should be noted that because the actual traffic volume was far less than the estimated volume, a social experiment of reducing the fee charge (e.g., lowering from the original \pm 3,000 to \pm 800 for each ordinary vehicle) has been conducted since 2009. In this current year (2012), the traffic volume has increased by 65% compared with 2008, which was just before the start of the social experiment. (Chiba Prefectural Government, 2012)

Summary

The "min-katsu" policy carried out by Prime Minister Nakasone in the 1980s was aimed at expanding domestic demand under the circumstances of the time, such as the slump in the domestic economy, the harsh requests to reduce the trade surplus from abroad, and the fiscal reconstruction. It has been noted that although the idea of "min-katsu" was good, there was insufficient knowledge to promote it. It has also been said that despite the successful introduction of private funds, the inflexible scheme decided by the government and the irresponsible system that resulted from the interdependence between public and private sectors led to the failures and problems of the projects.

Through the experience of these failures, Japan recognized a great principle. That is, the national and local governments should not expect private sectors to give priority to public interests, and the private sectors should not rely on the public sectors to avoid business risks in the setting of public credibility. There was always an optimistic idea that they could succeed by the "ambiguous trust relationship" between the public and private sectors.

In the late 1990s, a new mechanism was introduced that could control and incorporate both sectors which have inherently different natures. The next chapter will present an overview of the new mechanism, PFI, including its introduction and its development history.

⁶ It was noted that the project was promoted on the abstract pretext of regional development and excursion of technology postponing the discussion of risk allocation. (Hasegawa, *Public Works - Its Ideal and Reality-*)

Chapter 2: Introduction of PFI in Japan

Based on the lessons learned from the failures of the third sector, great hope and positive support have been placed of the PFI. The PFI has resolved the problem of a cozy relationship between the public and private sectors by using contractual governance, which can clarify the risk allocation⁷. However, the PFI has not become as widespread in Japan as it has in other developed counties.

This chapter explains the history and the structure of the PFI in Japan. By clarifying the characteristics of Japanese PFI regarding its decision-making process, scheme, types, and bidding process, it considers the reasons why the PFI has not yet become widespread in Japan.

History of PFI

The PFI came into existence in the UK in 1992. In the UK, administrative reform was started that aimed for accomplishment of "small government" during the Thatcher Administration. During this period, many of the developed countries had a policy of "neo-conservatism" demanding "small government". The Thatcher Administration promoted the management reconstruction of an inefficient public company and focused on privatization. Thus, the PFI is a compilation created on the basis of the administrative and financial reform policies including privatization, which had been tried for more than ten years by the English government.

Conversely, the PFI in Japan emerged in 1997 as the highlight of an emergent economic policy, and a PFI promotion draft law was submitted to the Diet in 1998. The PFI Law was enacted in July of 1999 and executed in September of 1999. In fact, the Japanese PFI was categorized as one of the economic measures, so its mechanism has not been understood sufficiently. Since the enactment of the PFI Law, however, the fundamental mechanism and goal of the PFI, which was aimed at an efficiency and effectiveness of public service, have been gradually understood, and the number of PFI projects has progressively increased (the number of PFI projects was 366 and the cost was approximately 3.2 trillion yen as of March 2010. See the section "Record of PFI in Japan").

In the UK, which Japan used as a model when introducing the PFI, the number of PFI projects was 698 as of April 2011 (National Audit Office, UK, 2012) and its capital value reached 52.9 billion pounds. In addition, according to the Organisation for Economic Co-operation and Development (OECD), PFI/PPP has also been promoted in European countries, such as France, Germany, Italy, Spain, Portugal, Ireland, and Hungary, and other developed countries, such as the United States, Australia, Canada and South Korea (OECD, 2008). Many of the countries use a PFI/PPP for the

⁷ There is no example that the national government takes a state in Special Purpose Company (SPC). There are some exceptional cases that the local governments take a state in SPC such as "Hitachinaka Container Terminal" and "Kurashiki City Recycling-Based Waste Disposal Facility".

provision of a public service of a tangible fixed asset or infrastructure, such as roads, with the aim of utilizing the private sector's finances, technology and ingenuity.

In Japan, Cabinet Office has strengthened various guidelines since the enactment of PFI Law in 1999. Representative example of guideline of PFI includes the following: "Process Guideline" (January 22, 2001), "Risk Allocation Guideline" (January 22, 2001), "VFM Guideline" (July 27, 2001), "Contract Guideline" (June 23, 2003) and "Monitoring Guideline" (June 23, 2003).

Year	National Statute, Guidance, etc.
1999	Enactment of PFI Law Creation of The Committee for Promotion of PFI
2000	Publication of Policy Framework
2001	Release of • Process Guideline • Risk Allocation Guideline • VFM Guideline • Revision of PFI Law
2003	Release of Contract Guideline Monitoring Guideline
2004	Release of Interim Report of the PFI Promotion Office
2005	Revision of PFI Law
2006	Release of a guidance for dialogue (an arrangement paper by directors of relevant ministries and agencies)
2007	Report of the PFI Promotion Office Revision of • Guidelines for the Implementation Process of PFI Projects • VFM Guideline
2008	
2009	Release of:Basic Approaches to Issues on PFI ContractsBasic Approaches to Service Specifications relating to PFI Contracts

Table 3: History of Law and Guideline of PFI

Source: Government of Japan, Cabinet Office, PFI Promotion Office,

http://www8.cao.go.jp/pfi/e/4history.html; Tashiro, T. (2009). Japanese PFI in School Sector

Overview of PFI

Process of PFI

The general process of the PFI consists of three stages and seven steps, as described in Table 4. The detailed decision-making diagram on the first stage, selection of particular project, is described in Figure 1.

 Table 4: Process of PFI

	Step 1	Invention of project	
Selection of particular project	Step 2	Evaluation, Selection and declaration of particular project	
	Step 3	Formulation and declaration of enforcement policy	
Offering and selection of	Step 4	Offering, evaluation, selection and declaration of private business operator	
	Step 5	Execution of agreement	
Implementation of PFI project	Step 6	Implementation and monitoring of project	
	Step 7	Completion of project	

Source: Government of Japan, Cabinet Office, PFI Promotion Office. *Process Guideline*, http://www8.cao.go.jp/pfi/guideline2_p.pdf



Figure 1: Process Diagram of PFI

Source: The Cabinet Office of Japan, PFI Promotion Office (2011). *Current Status of PFI*, www8.cao.go.jp/pfi/pdf/221231pfidata.pdf

Difference between PFI and Conventional Delivery Method

In the Japanese conventional project delivery system, the government orders the private sector to perform the design work, construction, operation, and maintenance separately. In addition, even though the project lasts for a long time, orders are placed every year. However, in the delivery system of the PFI, all the work is ordered as one project using a long-term contract. This enables the undertakers of a project to utilize the private sector's managerial skills and technical capabilities for the public facilities, manage risks efficiently and combine all of the design-build-maintain-operate steps to achieve a higher profitability. Figure 2 compares public works under the conventional delivery system with ones under the PFI. (Ohama, 2008)



Public Works under PFI

Figure 2: Comparison of Public Works under Conventional Delivery Method and PFI Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). PFI Annual Report (FY 2009)

Evaluation of the Value for Money (VFM)

In PFI projects, the concept of the VFM indicator, which represents an efficient and economical use of government funds, is significant. The VFM is fundamentally produced from two aspects, the enhancement of service quality and the reduction of cost. If the service quality remains unchanged, a lower cost can achieve a higher VFM; however, if the cost is the same, a higher service quality can result in a higher VFM. According to the "VFM Guideline", the selection of PFI projects should be based on whether the project can be achieved efficiently and effectively by the private sector, and this decision is evaluated through the concept of the VFM.

Fundamentally, the VFM can be calculated by comparing the public sector comparator (PSC⁸) with the life cycle cost (LCC⁹) of the prospective PFI project, each of which should use the net

⁸ The PSC is the net present value of the estimated amount of public financial burden throughout the project period when the public sector conducted the project by itself. It is calculated based on the appropriate cash flow projection for the lifetime of the project, and a prospective formation, such as outsourcing, should be assumed. The calculation includes all the summation of all costs accrued over the various stages, including the design, construction, operation, and maintenance stages. Risks in these stages and indirect costs are also quantified and included in the PSC.

present value (NPV) of the project. Figure 3 shows this basic concept of the VFM. The following equation is usually used for the calculation of VFM.

$$VFM = PSC - LCC$$

$$VFM(\%) = \frac{PSC - LCC}{PSC} \times 100$$

(Where PSC = Public Sector Comparator; LCC = Life Cycle Cost of the PFI project)



Figure 3: Concept of VFM (in the Case of the Same Public Service Level)

Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). PFI Annual Report (FY 2009)

Under the premise that the LCC of the PFI is equal to the PSC, the VFM is supposed to be calculated as the difference of the service levels between the PFI and the conventional delivery system (the concept is described in Figure 4).

⁹ The LCC is the net present value of the financial cost the public sector would spend for the project privately managed under PFI. PFI projects are assumed to be a single project combining design, construction, maintenance, and operation of the public facilities. In comparison with the PSC, collateral facilities are excluded from PFI cash flow. The calculation should be made on a clear basis backed by the investigation of the market or the similar experiences.



Figure 4: Concept of VFM (in the Case where the PSC is Equals to LCC) Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). *PFI Annual Report (FY 2009)*

Project Scheme of PFI

In PFI projects, the government does not draft a direct contract with the companies that actually perform the business functions such as the design, construction, operation and maintenance, but instead, it only contracts with a project company that is referred to as a special purpose company (SPC). Figure 5 shows the general project scheme of the PFI. By establishing an SPC, the PFI project can be conducted without being influenced by the financial conditions of those companies that compose the SPC. Also, the SPC allows for project finances, which is the general financing method of a PFI. Furthermore, the establishment of the SPC can contribute to the needs of the public sector, which wants to avoid a business risk other than the PFI as much as possible.





Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). PFI Annual Report (FY 2009)

Classification of the PFI

Types of Facility Ownership

There are four main types of facility ownership in Japanese PFIs, as follows: BTO (Build-Transfer-Operate), BOT (Build-Operate-Transfer), BOO (Build-Own-Operate), and RO (Rehabilitate-Operate).

- I. **BTO (Build-Transfer-Operate):** a private contractor designs and builds a facility and transfers the legal ownership to the public sector upon completion. The contractor operates and maintains the facilities, which are owned by the public sector.
- II. BOT (Build-Operate-Transfer): a private contractor designs and builds a facility and performs the operation and management while retaining the ownership of the facility even after the completion. The ownership is transferred to the public sector at the end of the project period.
- III. BOO (Build-Own-Operate): a private contractor designs and builds a facility and performs the operation and management while retaining the ownership of the facility even after the completion (i.e., this is the same as the BOT); however, at the end of the project period, the contractor dismantles and removes the facility.
- IV. **RO (Rehabilitate-Operate):** after a private contractor repairs a facility, it operates and maintains the facilities until the end of the project period.

Types of Project Operations

The project operations of the PFI fall into the following three main categories: service sold projects, financially free standing, and joint ventures.

- I. Services Sold Projects: a private contractor is responsible for the design, construction, and operation and maintenance of facilities, and the public sector pays a "service fee" in accordance with the public services provided by the contractor for beneficiaries. The operator's cost of service is fully recovered by the service fee paid by the public sector.
- II. **Financially Free-Standing Projects:** a private contractor is responsible for the design, construction, and operation and maintenance of facilities though its own funding. The cost will be recovered by "use fee" from the beneficiary (user). In this case, a payment of a "service fee" from the public sector does not occur.
- III. Joint Ventures (JV): this type of project is a mixture of the services sold project and financially free-standing project. The project is financed by both a "service fee" from the public entity and a "use fee" from the beneficiary.

Types of Tendering

In a PFI project, instead of the conventional bidding method where the winning bidder is selected by the main standard of the lowest price, it is the principle to adopt the integrated evaluation method, which considers various factors including the quality and the price. All the PFI projects conducted by the national government are fundamentally based on this method. However, the projects conducted by the local governments prefer the open-application proposal method.

- I. Integrated Evaluation Method (Open Tendering): a method to evaluate the overall quality and the bidding price and to select the winner that received the best rating. To use this method, determining and advertising the standard for the winning bidder (i.e., the specific mechanism of overall greatest value) in advance is required, and changing the standard after the publication is prohibited. In addition, after the determination of winner, the concrete rating results are made publicly available.
- II. Open-Application Proposal Method (Single Tendering): a method to choose a single contractor that proposes the best plan by evaluating the proposed plans that the bidders have created based on the request for proposal (RFP). In this method, it is possible to negotiate with the best proposer and to request to change or improve the project content. If the negotiation breaks down, the orderer can negotiate with another (second best) proposer. This method also allows the orderer to change the conditions advertised at the time of the open application. It should be noted that because this method is single tendering and falls into the exceptional case, it could be approved only when satisfying certain criteria.

Record of PFI in Japan

Japanese PFI Law mandates the publishing of an "execution plan", including a summary of the project. Since its enactment in 1999, the project costs and the number of published execution plans of the PFI have increased steadily. At the end of fiscal 2009, the total number of published execution plans reached 366, and the total project cost reached approximately 3.2 trillion yen (See Figure 6). However, as for the implementation status of each fiscal year, the number of published execution plans in recent years has been on a decline (See Figure 7). In addition, the application scope is limited to the building facilities, such as city hall, school buildings, and housing for government workers, and the cases of backbone infrastructure are only a small part, such as the development project of the Haneda Airport International Terminal (See Table 5).



Figure 6: Changes in the Number of Projects and Project Costs (Cumulative Total) Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). *PFI Annual Report (FY 2009)*



Figure 7: Increased Number of Projects and Project Costs

Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). PFI Annual Report (FY 2009)

5 2142	Administrator			Tatal	
Fields	State	Local	Other	lotal	
Education and Culture (e.g. school, library, etc.)	1 (1)	90 (66)	32 (28)	123 (95)	
Life and Welfare (facility for social welfare for aged, etc.)	0	17 (15)	0	17 (15)	
Health and Environment (hospital, waste disposal facility, etc.)	0	64 (45)	2	66 (45)	
Industry (sightseeing facility, etc.)	0	13 (10)	0	13 (10)	
Town Development (park, airport, etc.)	6 (6)	34 (28)	0	40 (34)	
Public Safety (police office, prison, etc.)	7 (6)	14 (11)	0	21 (17)	
Government building and accommodation	44 (21)	8 (5)	1 (1)	53 (27)	
Others (complex facilities, etc.)	4 (1)	38 (30)	0	42 (31)	
Total	62 (35)	278 (210)	35 (29)	375 (274)	

Table 5: Number of Projects in Each Field (As of December 31, 2010)

Note: The numbers in parentheses are the number of service in operation, which also includes ended projects.

Source: The Cabinet Office of Japan, PFI Promotion Office (2011). *Current Status of PFI*. www8.cao.go.jp/pfi/pdf/221231pfidata.pdf

Few cases of PFI have been applied to the social infrastructure because private sectors have little knowledge of it for the reason that it had been typically the responsibility of the government and because the institutions, which enable private sectors to enter the market, have not yet been functional. Furthermore, the fundamental reason is that there was no social agreement for the private sectors to develop social infrastructures (See Appendix 2).

Trend Classified by Facility Ownership

The number of projects classified by facility ownership reveals that most businesses adopt the BTO method when the ownership of the facility during the project period is on the administrator's side. For example, BTOs account for 76% of the projects in FY 2009 (See Figure 8). Based on this, the following reasons have been noted: (1) the BOT or BOO method, where the ownership of the facility during the project period is owned by the operator side, can produce little VFM because of real estate acquisition tax, property tax, and city planning tax, (2) the equal footing of the subsidy system has not been fully achieved, and (3) many projects need the business operations to be performed directly by the administrator.

Trend Classified by Project Type

As for the projects classified by project type, the service sold projects account for a majority of the projects (e.g., more than 80% in recent years), which means that the reality of a Japanese PFI is close to the installment payment of the facility maintenance costs. The financially free-standing project that collects a fee from users has not become widespread (approximately 4% of the total).



Figure 8: Percentage of Projects Classified by Facility Ownership Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). *PFI Annual Report (FY 2009)*



Figure 9: Percentage of Projects Classified by Project Type Source: Government of Japan, Cabinet Office, PFI Promotion Office (2011). *PFI Annual Report (FY 2009)*

The Reason Why the PFI in Japan is not Prevalent

It has been noted that the unavailability of a traditional PFI Law is one of the reasons why the PFI projects in Japan are not widespread. In addition to the institutional environment, there are other reasons why the incentive to utilize PFIs was low for both the public and private sectors. (Deloitte Touche Tohmatsu LLC, 2011)

Circumstances of Public Sector

- A lack of external pressure resulted from the mere shell of governance (e.g., insufficient accountability to the public due to the lack of visualization of business conditions)
- Vertical structure of the Ministries presiding the businesses and facilities and the Cabinet Office promoting the PFI (e.g., constraints based on the public procurement system and constraints based on the individual laws regulating the businesses, such as the Port and Harbor Law, Airport Law, and Road Law.)
- Low awareness of the staff and a lack of leadership by the chiefs who should carry out the reform (e.g., personnel-related issues including a personnel evaluation system)

Circumstances of Private Sector

- Barriers to entry and constraints on the legal system (e.g., constraints of public ownership (See Appendix 2) and the lack of consideration of funding and tax)
- Low entry incentive resulting from the little room for improvement in the operation based on the government-led scheme
- Questions or concerns about PFI projects (e.g., the existence of past failure cases)

New PFI Act

Background on the Implementation of the New PFI Act

The PFI Promotion Office of the Cabinet Office has discussed the possibility of amending the PFI Act to resolve these issues and, in May 2010, published a report requiring the government to amend the PFI Act to permit the private sector to enter into the economic infrastructure business as a special exception to current regulations. At the same time, the Cabinet meeting adopted the New Growth Strategy in June 2010, which emphasized the necessity of introducing the private sector's management knowledge and private finance in economic infrastructure to promote the export of the infrastructure business by the private sector. The New Growth Strategy also requires an amendment to the PFI Act and announced that the government aims to implement PFI projects in the amount of 10 trillion yen over the next 10 years. In response to the report by the PFI Promotion Office and the New Growth Strategy, the Amendment to the PFI Act was proposed by the Cabinet Office and adopted by the Japanese Diet in May 2011. (Anderson Mori & Tomotsune Law Firm, 2011)
Operation Right (Concession system)

The new PFI Act provides that the national government, the local governments, and other public bodies may create a right to operate the economic infrastructure, which means that the public bodies transfer the "Operation Rights" to the private sector to operate the facility and receive user's fees as income while the public bodies keep ownership. The creation of Operation Rights is regarded as a delegation of the public sector's power to operate the infrastructures. This means that Operation Rights function as an exception to the regulation of economic infrastructure, which enables the private sector to enter the infrastructure business. (Anderson Mori & Tomotsune Law Firm, 2011)



Figure 10: The Scheme of Operation Rights (Concession System)

Source: Anderson Mori & Tomotsune (2011). Enactment of the new PFI Act and Airport Privatization

Proposal by the Private Sector

The public procurement regulations of Japan have not been significantly changed for more than 60 years, and there are only three basic methods of procurement, as follows: open and competitive bidding, designated competitive bidding, and discretionary contract (See Appendix 1). The use of a discretionary contract is limited to cases that satisfy strict conditions under the public procurement regulations. There is no specific statute that prescribes the tender process of PFIs, and the current public procurement regulations lack a system for effectively incorporating the innovation of the private sector by means of a project implementation initiated by the private sector's proposal and communication through contract negotiations.

The new PFI Act introduced a system to encourage private sector proposals. Once a private sector party submits a proposal for a new PFI project, the relevant governmental authority is obliged to examine and respond to it. To promote private sector proposals, the PFI Promotion

Office of the Cabinet Office is considering publishing a guideline to treat such proposals preferably in the tender process of the PFI. (Anderson Mori & Tomotsune Law Firm, 2011)

Currently, the project management integration of Itami Airport and Kansai International Airport is arranged as the first projects that take advantage of the concession system based on the new PFI Act. It aims to improve the management of the Kansai International Airport Co., Ltd. by compressing its huge debt (approximately 1.3 trillion yen) by collecting a concession fee from the private operator; therefore, building the scheme for it has become an urgent task.

In addition, the Government of Japan has started creating model cases using the new PFI method, including a project involving all 29 airports managed by the national government and projects involving the water and sewerage systems that are owned and operated by local governments. Additionally, projects for the restoration of the Sendai airport and the water and sewerage systems in the Tohoku region that utilize the PFI are also being planned. (Fukuda & Taniyama, 2011)

Summary

This chapter provides the history of the introduction of Japanese PFIs and an overview of its institutions. The PFI has been introduced with an expectation of overcoming the failure of the third sector; however, at present, it is not sufficiently prevalent in certain fields, such as large-scale infrastructure. This is because there are problems, including barriers to entry, constraints on the legal system and a low entry incentive, that have resulted from the government-led scheme

In light of these problems, the new PFI Act was proposed by the Cabinet Office and adopted by the Japanese Diet in May 2011. The new PFI Law allows the private sector to enter the new facility management and to sell the rights to operate a government-owned facility to private companies based on the concession scheme. In addition, the new PFI Law allows for business proposals by the private sector, which would increase the number and scale of PFI projects.

Also, an increased number of projects would require more practical effort for the dissemination of the PFI. This would include the need for support of the local governments. There would be many challenges, such as providing expertise of the PFI to local governments, establishing organizations that support a series of practical processes from planning to operating, and creating a system to support the planning and operation of PFI projects.

Chapter 3: Case Studies of PFI

This chapter introduces real cases of PFI. The first half of this chapter presents cases that have been reported to be successful and reviews the effective uses of the vitality of private sectors. In addition, it also introduces two successful cases from the abundant experience of the UK. In contrast, the second half introduces the risk-actualized (troubled) cases.

Successful Cases of PFI

This section illustrates successful cases where the PFI projects have been characteristically effective. There are two types of successful PFI cases, as follows: the cases utilizing the private sector's ingenuity and the cases taking advantage of the private sector's efficient management. Table 6 shows an example of the ingenuity and flexible handling of private entities.

Project	Primary Contractor	Type Facility Ownership Project Operation	Summary	Effectiveness by PFI
Central Government Building no.7	 Ministry of Education, Culture, Sports and Science Ministry of Land, Infrastructure and Transport Board of Audit 	BTO Services sold projects (private right floor is financially freestanding projects)	 Construction started in January 2005, and completed in October 2007. 33-stories public building and 38-stories private building About 19-years project period 	 Built private facilities in addition to the government facility taking advantage of surplus area Placed green rich square, in the center of the city block Proposed skyscraper reducing environmental impact Adopted damage control frame as seismic technology
Inagi Municipal Central Library	Inagi City	BTO Services sold projects (only cafeteria area is financially free-standing projects)	 Services started in 2006 Maintenance and operation of public library and learning based study facilities 	 Improved services and accomplished efficiency by introducing IT technologies such as IC tag, automation archive, and automatic lending machine Improved convenience of users extending opening hours
Igusa Care House, Suginami Ward	Suginami Ward	BOT Financially freestanding projects	 Construction of care house About 21.5-years project period (construction is 1.5 years) 	 Transferred demand risk to private sector (Private sector receives usage fee from users and pay the rent to public sector) Improved the residents' convenience using the original proposal from the private sector
Haneda Airport International Terminal (Terminal Project)	Ministry of Land, Infrastructure and Transport	BTO Financially freestanding projects	 First Airport PFI project Service started in October 2010. 69ha with 34 gates 30-years project period 	 Terminal project construct efficient building having simple traffic line, which was planned emphasizing on agility
(Apron project)		BOT Services sold projects	 5-stories public building (Total floor: approximately 54,000 m²) 30-years project period 	 Apron project adopted a "fatigue design approach", which enabled the constructor to confirm that the most inexpensive unreinforced concrete pavement met the required performance (NIKKEI Construction, 2010)
Mine Rehabilitation Program Center	Ministry of Justice	BOT Services sold projects	 The first domestic PFI prison (capacity: 1,000 persons) 20-years project period 	 The electronic lock that can be remote-manipulated and the grasp of position information by IC tags made it possible to achieve an effective security Achieved VFM of approximately 4.8 billion yen (8.5%)

Table 6: Example of the Private Sector's Ingenuity

Source: Mizuho Research Institute (2010). For New Era of Public Service Outsourcing, etc.

Next is a case that has achieved an economical business operation through the private sector's management efforts.

[PFI | Third Sector] Chubu Centrair International Airport

-- Project cost saving and construction period shortening



Basics

- Chubu Centrair International Airport is an airport on an artificial island in Ise Bay, Tokoname City in Aichi Prefecture, which is 35 km (22 mi) south of Nagoya in central Japan.
- Central Japan International Airport Co., Ltd was established in 1998. The construction of the artificial island was started in 2002. The airport was opened in 2005.
- This project was selected as the first model project of PFI.
- Was ranked first in the Airport Service Quality Awards by the Airports Council International four times in the past¹⁰.

Successful factors

- Efficient management of private sector: the project was conducted by the private company, Chubu Centrair International Airport Co., which has had the CEO from TOYOTA Motor Corporation from the beginning. Indeed, it is not a completely private sector due to 40% government subscription, but it receives recognition as a fine example for using the private sector's funds and efficient management experience.
- **Cost savings of construction:** the construction costs were rigorously controlled by the management efforts of the private company (Ohno, 2004) ¹¹. As a result, the project costs were successfully reduced to 595 billion yen, while the original estimate was 768 billion

¹⁰ There is the opinion that it cannot be accurately defined as a PFI project since there was no process of public offering and selection (Center for Autonomy, 1999)

¹¹ As the effort for cost saving, SPC had repeatedly negotiated with bidder, collected information about construction materials by itself without using a commercially-supplied quantity surveys, and organized a special cost management team which had continuous discussion with the design sector who is indifferent to cost reduction from the planning stage.

yen (Nagano Board of Trade, 2006).

• **Concept of flexible design:** in the design stage, there was a concept to keep the airport plan compact and then to expand it when the user demand increased (Nagano Board of Trade, 2006). This is a good example of using the concept of real option approach.

Next, successful cases from the UK will be introduced. The first case is a prison that has achieved a reduced life cycle cost, and the second case is an airport that used the method of concession.

[PFI] Lowdham Grange Prison (UK)

-- Success in reducing operating costs by effective design



Project overview

Project area	Prisons
Orderer	HM Prison Service
Contractor	Lowdham Grange Prison Services Ltd (Joint venture company equally owned by Serco Group plc and Wackenhut Corrections Corporation)
Project period	25 years from 1998
Project method	Design, Build, Finance & Operate (DBFO), one of the methods of PFI
Corporate structure	Financially free-standing project
Amount of the contract	35 million pounds

Basics

• Project includes the construction and the 25 years operation and maintenance of prison, which can accommodate 500 prisoners. The total project cost is covered by capitals and bank loans of the parent company. After recovering the funds by the fee the government will have continued to pay for 25 years, then the contractor will transfer the facility to the government.

Successful factors

- **Reducing operating costs:** the crossroads shape of the prison allows for monitoring with a small number of staff; as a result, the number of staff (labor costs) could be reduced by 25%. In addition, by improving the treatment of prisoners, the project could also reduce the number of riots and the damage to the facilities. (Hiromatsu, 1998)
- **Reducing construction costs:** using the method of on-site assembling, the construction period of the cell could be cut in half.

This project greatly reduced the entire cost because the private sector designed and constructed the prison by itself while aiming for future efficiency of operation and maintenance. The reduction of the life cycle cost, which will be described later, is one of the VFM drivers that can increase the economic efficiency of a PFI. This case is a good example for reduced life cycle costs by designing the facility efficiently and taking into consideration the long-term operating cost.

The next case, Luton airport, is an example of successfully using the method of concession.

[PFI] Luton Airport (UK)

-- Rapid response to growing demand by private's update investment



Project overview

Project area	Airport
Orderer	Luton Borough Council
Contractor	London Luton Airport Operations Ltd (investor: Abertis, Aena)
Project period	Contracted in 1998, operation started in 1999 Concession period: 30 years
Project method	Concession
Corporate structure	Financially free-standing project (Contractor make payment in accordance with the amount of traffic management during the period)
Amount of the contract	Construction cost: \$ 140 million

Basics

- Initially, the airport had been managed and operated by the local government, but there was no prospect of securing the financial resources for the investment for replacement due to the increased demand, and the concession system was introduced in 1998.
- The project included the expansion (construction of the terminal and expansion of the aircraft parking facilities) and the operation and maintenance of the entire airport. The orderer (municipal) owns the facility. The operator, London Luton Airport Operations Ltd., collects a use fee and will recover all of their initial investment by the fee.
- Luton Airport is the fifth largest airport in the UK, and it is a representative example of successful PPP in the UK, which was honored as the "Best PPP" in 2004.

Successful factors

- **Rapid response to growing demand with ancillary facilities:** the facilities were renewed in 1999. In addition to an expansion of airport taxiways, the project enhanced ancillary facilities, such as shops, parking, and a railway station. The number of passengers was nearly doubled from 3.4 million in 1997 to 6.5 million in 2001 (reaching 8.7 million in 2010) (Deloitte Touche Tohmatsu LLC, 2011).¹²
- **Revitalization of the regional economy:** with the increase in airport passengers, airport-related businesses, such as tourism, retail, and transportation, and trade-related businesses have become more popular, and new employment opportunities were produced.

In this way, through the promotion of a public-private partnership that utilized private funds and ingenuity, Luton Airport has played a major role in the economic development of the region as a whole and had a profound effect not only directly on airport industries but also on peripheral businesses by producing new jobs.

Risk-Actualized Cases

This section describes actual cases where the risks have become apparent in the PFI projects. Although there are various reported cases where risks became apparent in Japanese PFIs, this chapter will introduce three characteristic examples, as follows: (1) the case of a health facility for citizens that went bankrupt (Taraso Fukuoka), (2) the case of a similar health facility that partially collapsed from an earthquake due to a construction defect (Suppark Matsumori), and (3) the case

¹² The main cause of increase in demand is due to the growth of budget airlines, but the use of PFI method helped to raise funds for facility expansion.

of a hospital with a PFI contract that was halted due to the city's financial difficulties (Omihachiman City General Hospital).

[PFI] Taraso Fukuoka

-- Bankruptcy of PFI operator and project halt



Project overview

Project period	16 years (operation period is 15 years)
Project method	вот
Corporate structure	Services sold projects + Financially free-standing projects
Selection Method	Open-application proposal method (single tendering)
Amount of the contract	1.19 billion yen (Service charge)

Project Scheme



Basics

- The plan of this project was to construct a citizen health spa, including a fitness club, by using thermal energy produced by disposal burning to obtain the residents' acceptance for the construction of a disposal center.
- In March 2000, the implementation plan was published. The consortium, whose head was a construction company (Ohki Co.), was established in November 2000, and the contract was made in February 2001.
- After the design and construction, Taraso Fukuoka was opened in April 2002.

Unforeseen impact

- The SPC was in the red from the first year, and the balance had not improved in spite of various countermeasures. Eventually, the result was an excessive debt in FY 2003 (ending in March 2004).
- The Ohki Co., which was the largest capital investor of the SPC (Taraso Fukuoka) and had supported its financial management, began civil rehabilitation proceedings in March 2004 and ended in impossible-to-continue support.¹³

Causes of problems

- Excessive transfer of demand risk: bid with a significantly low operating price that was based on an optimistic demand forecast ¹⁴. ¹⁵
- **Inflexibility of project schedule:** the city had set one year as the period from the publication of the policy implementation to the agreement. It lacked time to modify the schedule in accordance with the progress of the business and could not get sufficient applicants from the private sector.
- **Operator's poor risk management:** the city was not fully aware about the need to perform their own monitoring of financial management to prevent bankruptcy. Also, the city did not prepare in advance for the provisions of the ordinances and procedures about the change of the business operator in case the business management deteriorated.

¹³ The facility was closed in November 2004 once, but the new SPC took over the scheme of this project in February 2005, and it opened again in April of the same year.

¹⁴ The application period was extremely short (two weeks) and only two companies applied the bid. There is the opinion that it had been possible to find that the demand forecast of Ohki Co. was too optimistic compared to other companies, if there would have been plural bidders with longer application period. (Oshita, 2007)

¹⁵ Suzuki points out that one of the reasons for this is that the administrative agent (Ohki Co.) was a construction company. There was the incentive for a construction company to discount the service purchase fee keeping the construction cost high. (Suzuki, 2011)

• **Project finance did not work:** the city could not deal with the financial suffering of Taraso Fukuoka because it had excessive expectations for the project fund, including that the fund should have properly evaluated the economic efficiency of the project and the reliability of the SPC, although the fund was almost risk-free because the financial institution obtained the security.

The biggest cause of the bankruptcy of Taraso Fukuoka was the allocation of demand risk. According to the contract, the scheme allowed Taraso Fukuoka to receive a flat-rate service charge from the city in addition to variable usage fees from the users. Taraso Fukuoka, however, was to eventually bear a greater risk because it made a bid with an extremely low service charge. The Fukuoka City PFI Promotion Office reported that "even now, it is still difficult to judge whether the Taraso Fukuoka itself was appropriate for PFI project where the private business operator bears the demand risk (Fukuoka City PFI Promotion Committee, 2005)."

Although the optimal allocation of demand risk is not simple, the lesson learned from this project is that the contractor was extremely optimistic in estimating the demand risk. Oshita called this situation "the paradox of demand transfer". This is the phenomenon that "if the overall demand risk was transferred to PFI operators, private operators which can make a realistic assessment about the demand risk does not bid" or that "an operator with optimistic for business risk is likely to be selected because the low but reliable VFM proposal lacks competitiveness (Oshita, 2007)."

In other words, because there is a tendency for the demand forecasts by the private enterprise applicants to be optimistic, the public sector should take advantage of consultants who can predict in a neutral and objective manner. Additionally, there is a possible way to mitigate the demand risk by changing the payment of the service fee by the city in accordance with demand fluctuations.

[PFI] Omihachiman City General Hospital



-- Midway annulment of PFI contract by the offer from the city

Project overview

Project period	33 years (construction: 3 years; operation: 30 years)
Project method	вот
Corporate structure	Services sold projects + Financially free-standing projects (convenient facilities)
Selection Method	Open-application proposal method (single tendering)
Amount of the contract	68.4 billion yen (construction: 24.4 billion yen; operation: 44.0 billion yen)

Project Scheme



Basics

• Because of the aging of the city hospital, the city decided to construct a new hospital using a PFI, which opened in October 2006.

Unforeseen impact

- The city offered an annulment of the contract based on the reason that the city and the hospital would financially collapse due to a lack of funding if this PFI project continued.
- As a result of the consultation, both parties agreed to cancel the contract in 2009. At the same time, the city paid the penalty (approximately 20 billion yen) to the contracted companies.

Causes of problems

• **Public sector bore all demand risk:** there was no incentive for the SPC to maintain the medical service and management quality due to the fixed payment, which was stipulated in the contract. Even though the city expected the SPC to provide the best service, the

SPC had performed only the things specified in the contract upon receiving the fixed commission.

- Ambiguous and incomplete contract: there was no specific arrangement for monitoring tasks and service penalties, which kept the mutual consultation ineffective.
- Lack of proper partnership: there was a lack of communication between the city, which assumed the core operation (hospital), and the SPC, which assumed the non-core operations.
- **Political decision:** it has been noted that because the PFI method could save money for the initial investment and level the financial burden for a certain period, there was a political decision by the mayor at the time to strongly promote the PFI. (Oshima, 2009)
- Indirect commission: an administrative agent of the SPC was a construction company (Obayashi Co.), which was not able to fully utilize the expertise of health care. Because the business employed a secondary consignment system through the SPC, the command procedure was cumbersome and became inflexible. (Omihachiman City General Hospital, 2009)

It has been noted that there was little incentive for the private sector in the hospital management of the PFI. As for the expenditures of the hospital, the labor costs for the physicians and nurses accounted for 50% of the overall cost. Obayashi et al. stated "there is no reason that commissioned works such as cleaning, medical office work, and food service are to become cheaper by PFI method since even public hospitals have been promoting the commission for them. On the contrary, it is natural to think that a PFI project become more expensive than a public's straight contract due to the SPC's pursuit of its own interest. What remains is only a reduction of material costs." (Obayashi & Iriya, 2009) In this regard, the hospital PFI requires a more careful creation of incentives and a consideration of cost savings by PFI method.

The fundamental problem that led the city to financial difficulties in the case of the Omihachiman hospital was that the city was too optimistic of a prediction for the demand risk, which is the greatest risk of a business. Another big problem was that the contract scheme did not transfer any demand risk to the SPC. If the scheme had made the service fee variable to reflect the demand, the SPC would have been able to calculate the project costs more appropriately by considering the impact of demand risk before the bidding process. Therefore, there would have been an effective incentive for the SPC to exert management effort even during the operating period.

[Example of utilizing the lesson]

Yao Municipal Hospital: public and private sectors shared the demand risk

The Yao Municipal Hospital adopted a scheme that shared the variable demand risk between the city and a private operator, whose service fee was composed of a "fixed payment" (fixed amount to be paid over the project period) and a "demand fluctuation payment" (variable amount taking into account the number of actual demand) (see Figure 11). This scheme allowed for a stabilization of the financial condition of the private sector because even if the number of patients decreased, the minimum fixed costs could be paid, which corresponded to the labor costs that were occurring at all times. Also, it created an incentive for the private operator to improve the operations due to the variable payment reflecting the demand fluctuation.



Source: Government of Japan, Cabinet Office. *Guideline for the introduction of PFI project*. http://www8.cao.go.jp/pfi/tebiki/jirei/jirei16_01.html

[PFI] Spopark Matsumori

-- Operation halt due to facility collapse



Project overview

Project period	17 years (operation: 15 years)
Project method	BOT
Corporate structure	Joint ventures (services provision fee + use fee)
Selection Method	Open tendering using overall greatest value method
Amount of the contract	about 3.8 billion yen

Basics

- This project plan was to construct a citizen facility (e.g., spa using thermal energy produced by disposal burning, gym and green space) with the construction of a disposal center.
- In November 2002, the implementation plan was published. The consortium, whose administrative agent was a construction company (Senken Kogyo Co. Ltd.), won a bid in December 2003, and the contract was started in March 2004. Spopark Matsumori was opened in July 2005.

Unforeseen impact

- Due to an earthquake (M7.2) on August 16, 2005, the ceiling of the indoor pool fell, and 26 users were injured.
- Operation was halted for four months.

Causes of problems

• Shoddy construction: the ceiling collapsed because the anti-vibration bar was not installed, which should have been initially put in. Notably, this shoddy construction was largely attributable to the situation where any responsibility for accidents caused by risk was not transferred to the private sector.

• Absence of supervisory function: there was a problem in the supervisory function, which lacked the proper partnership between the designer, superintendant and constructor.

To reduce the construction defect risk, a strengthening of the supervisory function would be primary. The orderer must have the ability to fully understand the contents of the submitted project documents and to evaluate them properly. At the same time, by recognizing the cost-cutting efforts of the operator towards compressing the construction costs, the orderer should strengthen the inspection system to ensure the required strength and avoid shoddy construction throughout the project period from the design to the completion.

It can be also observed that there was a problem in the way the risk of building damage was shared. There is an opinion that arranging for a payment reduction of the facility maintenance costs would give an economic incentive to the operator to ensure the safety of the facility. (Nagoya Urban Institute, 2008)

Summary

This chapter introduced several cases of both successful and failed PFIs. The successful examples were projects that were able to utilize the private sector's strength, originality and management efforts. In the case of Chubu International Airport, it succeeded in reducing significant construction costs through the private company's cost-cutting efforts, which would not have been achieved by the conventional method. The case of Lowdham Grange was successful in reducing the life cycle costs by the creative design that achieved an efficient operation. In the case of Luton airport, the PFI concession method enabled to respond the rapid growth of demand with the ingenuity of facilities.

As for the troubled cases, this chapter introduced three examples of projects that were interrupted and whose risk became actualized. Taraso Fukuoka was bankrupted due to the poor project finances and the excessive relocation of demand risk. Ohmihachiman General Hospital almost collapsed financially because of an improper design for setting up a management incentive, an ambiguous contract, and a poor partnership between stakeholders. In the Spopark Matsumori case, the project was halted due to a facility collapse. One of the causes was shoddy construction, which potentially resulted from a disabled supervisory function and insufficient risk relocation to the private sector.

The subsequent chapters will discuss the issues related to the whole PFI system, such as risk management and decision-making processes on the basis of lessons learned from the cases described in this chapter.

Chapter 4: Risk Management of PFI

This chapter discusses the risk management of a PFI. First, an overview of risk management based on the "Risk Allocation Guideline", which the Cabinet Office in Japan has developed, is reviewed. Then, the issues of risk management in Japanese PFI are considered in more detail from the following four viewpoints: risk allocation, expertise of contract, risk workshop, and monitoring by financial institutions.

Overview of PFI Risk Management

Regarding the risk management of a PFI, "Risk Allocation Guideline" were compiled in 2001, which provided the basic concept of risk allocation between the selected operators and the public facilities administrator and assumed risk elements and their considerations based on the idea that "risks should be allocated to the party best able to manage them." (Government of Japan, Cabinet Office, 2001) This section organizes and presents an overview of the risk management that is listed in the actual guidelines.

Concept of Risk

Risk means the possibility of interruption or discontinuation of projects or economic losses when it becomes apparent, although its exact impact cannot be assumed at the time of the contract. To continue to implement PFI projects stably and continuously, advanced clarification of the assumed risks during the implementation of the project and specification of the measures to be taken when the risk becomes actualized are required.

Classification of Risk

In PFI projects, the risks that should be assumed in advance are expected to be numerous because not only is the project team composed of a number of parallel organizations, including private enterprises, the public sector, and financial institutions, but also because the project period is lengthy. Therefore, to smoothly recognize or evaluate the risks and their allocations, it is valuable to analyze the risk from various perspectives. Table 7 is a summary of the main classifications and specific examples of these risk classifications.

Process of Risk Management

Risk management means effort for reducing the probability that risk exists to the greatest extent possible and effort to minimize the consequences and their impact as much as possible if the risk became apparent. Also, it refers to effort to reduce the impact on the project and prevent the collapse of the project. Figure 12 is an example of a process from the recognition to the allocation of risk for a PFI project, which is leading up to the sharing agreement.

Classification	Examples				
Risk	1. Commercialization planning stage				
	2. Facility design and construction stage				
stage	3. Operation and maintenance stage				
Stage	4. Completion stage				
Risk	1. Completion risk	Construction cost/period and quality, etc.			
classification by	2. Production risk	Operation, maintenance, etc.			
business	3. Market risk	Demand forecast, actual support, etc.			
	(External risk)				
	1. Economic cause	Prices, interest rates, exchange rate, etc.			
	2. Political cause	Regime change, tax, law, regulations, etc.			
Risk	3. Cause by natural phenomena	Geology, meteorology, disasters, etc.			
classification by	(Internal risk)				
cause	4. Social cause	Labor issues, environmental issues, etc.			
	5. Technical cause	Safety, reliability rate, innovation, etc.			
	6. Cause by partner	Management foundation, reliability, etc.			
	7. Cause by team/human	Consultant, leader			

Table 7: Risk Classification and Examples

Source: Nagoya Urban Institute. (2008). Research on PFI.

Risk Treatment

After analyzing and assessing the risks, the way to respond to these risks should be considered. The potential risk treatments include the following four measures: (1) avoidance, (2) reduction, (3) retention, and (4) transfer. Table 8 shows a concrete example and summary of how to respond to these risks. These measures are not uniform, but it is customary to address the risk by combining multiple measures.

As stated above, this section describes an overview of the general process of risk management from risk perception to risk treatment. In Japan, risk management is implemented in accordance with the principles of these procedures; however, there remain various challenges for risk allocation, contract expertise, risk workshops, and monitoring of financial institutions. In the following section, risk management-related issues will be analyzed in more detail from these four viewpoints by exploring the individual risks in real cases, which were discussed in Chapter 3.



Figure 12: Process of Risk Management from the Recognition to the Allocation

Source: Merna & Owen (1998). Understanding the Private Finance Initiative: The New Dynamics of Project Finance, Euromoney Publishing Ltd

Table 8: Potential Risk Treatments

Treatment	Concept
Avoidance	When there is no ability to respond to a risk between the parties, they share a risk by considering the consequences in the case that the risk was actualized.
Reduction	Manage a risk by utilizing a variety of techniques and minimize the degree of its impact to an acceptable level. It is fundamental to reduce the probability of occurrence and devise a plan, which can suppress the damage when the risk occurs.
Retention	Retention is adopted for a risk that can occur but cannot be eliminated. There are two methods for this treatment: dealing with the risk when it occurs without being prepared in advance or setting aside the necessary time and funds in advance. In the latter case, the cost can be lessened if the risk appears.
Transfer	By transferring the negative impact of the risk to a third party, such as investors and the trustees, it is possible to avoid the financial impact. Usually a payment to the party who can accept the risk is required. Although the contract price could become high, there is a merit to reducing the uncertainty of the cost in the early stages of a project.

Source: Nagoya Urban Institute. (2008). Research on PFI.

Appropriate Risk Allocation

This section discusses the appropriate risk allocation method. In PFI projects, it is necessary to decide how and how much of the various inherent risks should be borne or shared by the public and private sectors.

Current Methodology of Risk Allocation

There have been many discussions about the risk allocations of PFIs. For example, the "Risk Allocation Guideline" published by the Cabinet Office in 2001 shows the assumed risk factors, their considerations and the basic concepts of risk allocation between an orderer and contractor based on the principle that "risks should be allocated to the party best able to manage them". However, this guideline did not refer to a concrete risk allocation method. In March 2009, the Japan Research Institute (JRI) published the research paper "Research for Risk Management of PFI Project" as commissioned research for the Cabinet Office, in which the JRI analyzed various individual risks characteristic of PFI and proposed the risks that should be borne by the public or private sectors, based on past cases of risk allocation. For example, the paper compiled the statistics of cases of risk allocation regarding different risks and categorized them in to the following: (1) cases where the risk was borne by the public sector, (2) cases where the risk was borne by private sector, and (3) cases where the risk was borne by both sectors. The result is partly described in the Table 9. (Japan Research Institute, 2009).

As can be seen from Table 9, many risks are shared between both the public and private sectors. With respect to the risks, which were to be borne by either one or the other either of them, it seems to roughly reflect the principle that "risks should be allocated to the party best able to manage them". The following sections explore the factors that determine the proper risk allocation in more detail.

Proposal of the Framework of Risk Classification

As stated above, the methodology of risk allocation for individual risks has been analyzed based on past cases of actual PFI projects. This section tries to organize the preferred risk allocation method based not on the experimental approach but on the theoretical approach. Also, it considers the utility of the proposed method by an application of the above-mentioned case studies.

		Risk Allocation (%)			
Stage	Risk	Public	Private	Public and Private	
Common	Force majeure	9.30	2.00	88.70	
	Laws and regulations change	15.00	2.40	82.60	
	Funding	0.40	92.60	7.10	
	Acquisition of permit	1.50	26.40	72.20	
	Residents Corresponding	7.10	3.00	89.90	
	Third person liability	0.40	31.80	67.80	
	Tender documentation	99.20	0.00	0.80	
	Tax change	2.40	13.90	83.70	
	Environmental	0.00	66.80	33.20	
	Interest rate	3.80	49.10	47.20	
	Agreement	1.00	12.60	86.40	
Research and Design	Surveying and research	2.90	11.20	86.00	
	Design change	16.50	6.50	76.90	
	Site procuring	40.00	26.30	33.70	
Construction	Delay construction	0.70	23.40	75.90	
	Increased of construction cost	0.70	9.70	89.50	
	General damage	0.40	90.30	9.20	
	Performance s	0.00	96.10	3.90	
	Price fluctuation	1.60	63.40	35.10	
Operation and Maintenance	Unachieved requirement level	0.40	90.90	8.70	
	Facility damage	3.10	20.20	76.70	
	Maintenance cost	3.80	33.30	62.90	
	Plan change	62.70	2.90	34.40	

Table 9: The Statistics of Risk Allocation

Source: Japan Research Institute (2009). Research for Risk Management of PFI Project

First, I propose a framework, the "risk allocation matrix¹⁶", classifying the individual risks into a two-dimensional matrix (See Figure 13). As stated above, the main principle of risk allocation is that the risk should be borne by those who can 'manage' it. If the word "manage" is considered more carefully, it should be categorized roughly into two processes, as follows: "perception or analysis" and "control or communication". The former is based on the standpoint of identifying the risk itself, while the latter addresses how to deal with the risk. The

¹⁶ Miller and Lessard proposed a similar risk classification approach along two axes: the extent to which risk are controllable and the degree to which risk are specific to a project or systematically affect large numbers of actors. It is the framework for managerial strategies to cope with risks classifying the space into four risk management techniques: (1) shape and mitigate; (2) shift and allocate; (3) influence and transform institutions; and (4) diversify through portfolios (Miller & Lessard, 2001). The "risk allocation matrix", on the other hand, classifies the space from the private sector's relative perspective for risk compared to private sector.

"risk allocation matrix", therefore, aims to perform a mapping of individual risks by using two scales, "predictable" and "controllable", based on the two standpoints.



Figure 13: Risk Allocation Matrix

The vertical axis, "predictable", indicates the degree that the operator (private sector) can perceive and predict the risks. In other words, a predictable risk means that there are sufficient statistical data of a similar risk in actual cases or that the probability [distribution] of the risk can be calculated. If a risk were predictable, the affect of the risk would become clearer (i.e., the expected value of the loss can be calculated) by the prediction. Therefore, if this type of risk is borne by the private side, the risk is likely to be clear, which can also contribute to removing the asymmetry of information.

Conversely, the horizontal axis, "controllable", indicates the degree of flexibility that the private side has to reduce the risks or the damage resulting from the risks by utilizing their ingenuity. In other words, controllable risk is the risk whose probability of actualization can be reduced by the private sector's efforts or their original ideas. For example, these risks would include the facility damage risk, which can be reduced by using security cameras, the missing goods risk (e.g., books in public library), which can be reduced by putting IC tags on the goods, and the demand risks, which can be overcome by improved user-friendliness (See the examples described in Chapter 3). Therefore, if the private sector bears this type of risk, they have an incentive to exert their originality.

Considering the preferable risk allocation for risks in each quadrant, the risks in the upper right quadrant of the matrix are would be preferably borne by the private sector. Risks in the lower left quadrant of the matrix, however, also have a rational reason for being borne by the public sector. As for the upper left quadrant and lower right quadrant, a more detail consideration using additional axes should be taken into consideration, which form a "risk allocation cube" with the original two axes (See Figure 14).



Figure 14: Risk Allocation Cube

The third axis, "acceptability" indicates the degree that the private sector can tolerate the risk by their managerial capability. This could possibly be called the indicator that is inversely related to the expected value of the loss resulting from the risk. Acceptability should be taken into consideration to ensure the continuity of the PFI project. For example, small risks can be accepted by an SPC without major problems; however, if the risk is too big, there is a great possibility that the SPC would go bankrupt, similar to the experience of Taraso Fukuoka. Alternatively, this risk could become a burden on the operator's management, such as the large debt of Kansai International Airport. Also, the bigger the transferred risk becomes, the more likely the competitiveness can be inhibited upon bidding.

Simulation of Risk Allocation Based on the Framework

Here, I would like to consider the preferred risk allocation for each risk, which was described in the actual case studies. Table 10 calculates the preferred risk allocation by considering the characteristics of each risk and assigning points based on six levels (0 to 5) for three factors (acceptability, controllability, and predictability). Although this method includes arbitrary assumptions, it can be useful for analyzing the characteristics of each risk.

Case	Acceptability ¹⁷	Controllability	Predictability	Total	Preferred Risk Allocation	Actual Case
Construction defect risk (Spopark Matsumori)	4	5	5	14	Private	Public
Demand risk (Omihachiman City General Hospital)	2	1	5	8	Private & Public	Public
Demand risk (Taraso Fukuoka)	<u>0</u>	4	3	7	Private & Public	Private
Here, the points in each category range from 0 to 5. A larger the number indicates a greater degree of each factor. The criteria of preferred risk allocation (total point) are the following: 0-4: public; 5-10: private & public; and 11-15: private.						

Table 10: Risk Allocation using Risk Allocation Cube Model

Table 10 will be analyzed more in the following sections.

Construction Defect Risk (Spopark Matsumori)

For a construction defect risk, a small risk should be borne by the private side. In the case of Spopark Matsumori, the ceiling collapsed from the earthquake because of a construction defect. In this case, all the building damage risk had been borne by the public side and contributed to the poor construction. However, if the cost of the damage was supposed to be borne by the private sector, this situation could have been avoided.

The risk of a construction defect can be minimized by strengthening the cooperation of the design and construction sectors and by improving the supervisory function. In this regard, the controllability of this risk is high. Also, the predictability that estimates the cost impact of the strength defect due to poor construction can be considered "high". As for the acceptability, this would depend on the size of the loss. In this case, if the risk was only the interior collapse, the acceptability would be high because the cost is not big. Thus, in the case of Supopark Matsumori, the three elements are all high, which would suggest that the building damage risk should be borne by the private sector (regarding only the small-scale collapse¹⁸).

¹⁷ From the viewpoint of bankruptcy risk, it would be important to consider the relative risk size according to the operator's management scale. Thus, one possible idea is that the indicator should reflect the sensitivity to the Net Present Value (NPV) of the overall project.

¹⁸ In the case of large-scale damage risk (such as building collapse caused by the earthquake), the loss cost is very high and acceptability is low. In addition, predictability is also very low. Therefore, it would be preferable to be borne by public side.

Demand Risk (Omihachiman City General Hospital /Taraso Fukuoka)

Risk allocation of demand risk varies depending on the nature of the project. For example, if the project were a renovation of existing facilities or construction of highly public or highly regional facilities, like Omihachiman City General Hospital, the demand would be predicted relatively accurately from historical data, such as the utilization rate of similar facilities or the neighborhood population. However, it is difficult to increase demand by a corporate effort; therefore, the controllability is low, while the predictability is high. However, if the facility has relatively low public nature or there is no similar facility in the past, such as for Taraso Fukuoka, accurate demand forecasting is difficult, but there is room for increasing demand by corporate efforts. In this respect, the controllability is high, whereas the predictability is low.

As for the acceptability, in cases where the fee income accounts for a majority of the business revenue, the NPV of the entire business has an extremely high sensitivity to the revenue. In addition, there are also cases where the variation of demand risk (volatility) is presumably high. In these cases, the acceptability could be low.

These observations suggest that it would have been better to share the risk between the public and private sectors in the cases of both Taraso Fukuoka and Omihachiman City General Hospital.

In the case of Omihachiman City General Hospital, the public side bore all of the demand risk under the scheme where the public side received the variable use fee from the users, while the service charge, which the public paid to the SPC, was a fixed amount. Therefore, despite the project having a high predictability, the government had planned a high-risk project without the supervisory function of the private sector by not being able to take advantage of the risk calculation (due diligence) by the private sector. As a result, the public bore the great demand risk by itself. If the contract scheme had appropriately shared the demand risks by varying the service fee paid by the public to the SPC, which would be dependent on the variable service fee from the users, it would have been able to increase the accuracy of the total project cost (NPV) calculation, which includes the demand risk. Also, it might have been able to reconsider a reduction in the project size that would be commensurate with the city's finance scale at an earlier time.

In the case of Taraso Fukuoka, although the project had high demand risk, all the risk was supposed to be borne by the private sector¹⁹. However, if the demand risk was shared

¹⁹ The report of Fukuoka City noted that "it has taken a scheme to set the service provide fee paid by the city of Fukuoka independently of the number of users, and it did not completely transfer the demand risk to the private sector (Fukuoka City PFI Promotion Committee, 2005) ". However, considering that "the service provide fee from the city of Fukuoka" is the flat-rate fee and not dependent on the number of user, and that the service provide fee was supposed to be proposed by public sectors at the time of the competitive bid, it would be more correct to say that the demand risk was completely transferred to private operators.

between the public and private sectors by varying the annual services fee based on the fluctuations of demand, terrible situations, such as bankruptcy of the SPC, might have been avoided.

This section considers the possible risk allocation method based on the framework proposed above and by applying the risks from actual cases. In fact, the numbers used in the simulation are subjective and do not have a clear basis, but the claim here is that the three degrees of acceptability, controllability, and predictability are important elements that should be considered in risk allocation. This type of simple framework could be an effective approach to analyzing the nature of the risks in individual projects and to understanding the priority of risk allocation.

Improvement of Contract Expertise

To operate the risk allocation continuously during a long-term project, a strict contract between the orderer and contractor is required. However, the PFI contract in Japan has also been shown to have a large imprecise zone in comparison with that of other countries.

Based on the "Contract Guidelines", the PFI Promotion Office, has issued the "PFI Standard Contract 1" (March 30, 2010) as one of the practical guidelines for the government's PFI contracts, which can also be referred to the local government. This standard, however, has some problems in the following points:

- Limited-target: the standard is intended only for financially free-standing projects and BTO-type projects and is not intended for services sold projects and BOT-type projects, which are expected to be more common in the future.
- Contracts in favor of the public sector: there is a proviso that "if the consultation between the public and private sectors has not been settled within a certain period of time, then the administrator (orderer) determines the cost and measures as a tentative response and notifies the selected operator."
- Ambiguous contracts: the operator's proposals and tender documentations tend to be ambiguous. There are no rules of documentation of the content at the time of the contract despite changes that have been made orally, which could cause a conflict or misunderstanding between the public and private sectors. Also, vague expressions are frequently used, such as "it is prescribed separately", in the standard contract.

Thus, the tendency of a contract to favor the public sector and the ambiguity of the contract are considered to be derived from the traditional Japanese style of governance (refer to Appendix 1).

Flexibility of Contract

The important thing for long-term contracts such as PFIs is a flexible agreement that can accommodate the future uncertainties. This flexibility, however, is not intended to tolerate

changes in the contract by consultation after an offer while the service level remains unclear. Rather, it means that the contract should clearly define the procedures and requirements of future changes regarding various terms, such as the contents, business area, and reduced service fees, while expecting as many alternative situations as possible.

For example, in the case of Omihachiman Hospital, there was a problem, and the unyielding contract did not allow for a response to the demand risk. Oshima highlights that it was a big miscalculation to have introduced a hospital PFI that lacked flexibility for many things over a long term that had been defined by the contract (Oshima, 2009).

To build a mechanism for change, the setting of a clear service level in the original contract is required. Without a clear service level, there could be a variety of problems, such as the contractors being unable to show the basis for calculations at the time of a contract change. In addition, to carry out an objective calculation for the amount of contract change, it would be valid to make a consensus in advance for the financial models (business plan) including the details of the cost. Currently, such a prior agreement practice is not present in Japan, but it would be an option to form a system to agree on a financial model.

Real Option Approach

In the field of civil infrastructure, many studies have revealed that the flexible design and phased development method by using a real options approach could improve the value of the projects. For example, Ohama reported that the "Tokyo Bay Aqua-Line Project", which was introduced in Chapter 1, could have had reduced risks and enhanced project values if it had applied the real options approach (Ohama, 2008).

In another public project, there are some papers reporting the possibility of applying the real options approach. For example, Sato considered the real options approach for a public hospital and noted the possibility of setting the extension option to decide the timing for constructing a hospital (Sato, 2007). However, there is no case reported that has applied the real options method to the actual decision-making process of PFI projects in Japan. When using the real options method, a setting of the scenarios and the service level clearly enhances the expertise of the contract setting, including a change in the contract and its amount.

Implementation of the Risk Workshop

In the case of Supopark Matsumori, which was the situation where both the operator and the public side were not aware that the risk for facility damage was a major factor, which led to human injury and operational disruptions. Because the operators were not fully aware of the risk for a collapsed ceiling, which resulted from the structure and design of the building, they failed to act towards preventing this.

Risk perception is a starting point of risk management. The proper risk perception makes it possible to consider the measures for preventing the actualization of risk in advance and to minimize the risk impact when it becomes actualized. Therefore, it is necessary to increase the ability of risk perception of both the public and private sectors at the first stage of risk management. In a general PFI project in Japan, a "risk allocation table" is created by the public and private sectors to perceive specific and common risks. However, for the specific risks in each project, the public sector usually does not have sufficient technical knowledge. Furthermore, there is no place where the public and private can communicate for recognition of such risks.

As a countermeasure against these challenges, the implementation of risk workshops is an effective method. Risk workshops are a place where stakeholders, such as private operators, the public sector, and a project advisor, meet together to recognize the various risks accurately and discuss their appropriate allocation and treatment methods. By providing this kind of forum for direct dialogue between public and private sectors, they can communicate with each other about the overall risk-related issues including the specific risks of a particular project. In addition, it would be expected that the private side could propose risk management ideas to the public sector that go beyond the traditional flow that the public side proposes the idea of risk allocation to the private side.

In PFI projects in the UK, there is a forum called the "competitive dialogue procedure (CDP)" where the orderer and bidders can discuss and strictly clarify each risk. Under the CDP, authorities enter into a dialogue with bidders about their requirements before issuing a final tender. After the final tender has been submitted, an authority may only fine-tune and clarify. Thus, CDP can enhance the function of a risk perception between stakeholders. For the Japanese PFI to consider the system of a risk workshop as an improvement in the robustness of the contract, this CDP approach could be a useful reference.

Utilizing the Monitoring Function of Financial Institutions

Project finance is a financing method to limit the repayment to within the cash flow generated by the business itself, and it does not depend on the value of the collateral and the creditworthiness of the company. In general, financing is made to the SPC, which was established to execute the business, and retroaction to its parent companies is limited. The reason why the project finance method is desirable for PFI projects is that it can block the effects of corporate performance that make up the SPC and ensure the independence and stability of the business. In addition, the lenders play an important role in reviewing whether the private operators have the creditability and ability to accomplish the project; therefore, the lenders can contribute to the stability of the business through financial monitoring and intervention during the operation stage. The reason why such actions can be expected is because the lenders also have a risk that their loans may not be fully repaid if the project has a problem, which can damage the cash flow, or if a source of repayment

disappears. Therefore, project finance has a mechanism through which lenders can enhance the stability of the business by managing the existing risks to pursue economic benefits.

However, in the Taraso Fukuoka case, the purchase of the facility was an obligation rather than the right of Fukuoka City by the operator's rationale. For this reason, the lender was guaranteed to get the purchase amount even in case of the project's bankruptcy and was completely risk-free for repayment of the loan. Therefore, the lender did not have an incentive to check the financial conditions of the operator through financial monitoring and intervening. Fukuoka City lacked the recognition of a financial scheme at all, and the city was not able to quickly respond and take steps towards business restructuring even when the conditions of Taraso Fukuoka became worse.

The monitoring function of financial institutions is not only one of the advantages of a PFI but also the intent of private finance. Financial institutions determine whether they can fund at the planning phase by reviewing the contents of the business plan and checking the validity, stability, and profitability of the business to manage the loan risk. In addition, they continuously check whether there is a problem in the management of private businesses through monitoring at the management phase and attempt to restructure the business through project intervention if a risk would be actualized. This inspection mechanism of the business plan and operation by the financial institution is intended to introduce private capital into public works. A further understanding of the project finance and its effective use is required for the public sector.

Summary

The features of risk management of PFI projects in Japan include the presence of the imprecise zone of agreement and the lack of management expertise. As for the risk management expertise, many cases of failure have been reported where a risk was actualized by inappropriate risk sharing or an inefficient operation was made by incomplete contracts. In addition, to appropriately exercise the monitoring function of financial institutions, a better understanding of project finances by the public sector is required.

Additionally, in the PFI contract in Japan, there is a imprecise zone and a tendency to respond to risks on the basis of a conventional but obscure agreement, as compared to the contracts in other countries such as the UK. The UK-styled contract scheme is not necessarily desirable for Japan from the viewpoint of both the public and private sectors; however, in the future, it will be necessary to consider a more reasonable risk management and contract method.

It cannot be denied that the relationship between the public and private sectors still maintains the tradition of an "ambiguous relationship", which has been unique in Japan (for details, see Appendix 1). Therefore, clarification of the responsibilities of risk allocation by utilizing the opportunity of a risk workshop and building an equal relationship between the public and private sectors allowing for their mutual understanding is required.

Chapter 5: Potential Problems and Possible Solution in Japanese PFI

The previous chapter investigated the method of proper risk management on the basis of the case studies where the risk had become actualized. This chapter considers potential problems at the decision-making stage of the PFI projects, apart from the individual risk management problems. After pointing out the limitations and problems of the VFM indicators used in the decision-making process of PFI projects and examining the issues pertaining to the application of the PFI method in the first half of the chapter, the second half discusses an evaluation by a third-party organization as an approach to the resolution of those problems.

Limitation of VFM Indicator

It is obvious that the VFM indicator can be used for judging the propriety of the PFI method, but this indicator has various limitations and problems. These problems will be explained below.

Quantification of Risk

VFM guidelines include the following three major ways to quantify the risks: (1) a way to assume the plural combinations of the probability that a financial burden would occur in the future and the amount of it at the time, then to calculate the sum of product of those numbers for each year, and to convert it into the present value²⁰, (2) a way to calculate the product (present value) of the probability of occurrence of financial burdens during the entire project period and the amount of them, and (3) a way to use an estimate of insurance premiums. The guidelines, however, just present the above-mentioned concepts and do not present a concrete methodology, such as eliminating the arbitrariness of the probability calculation.

For example, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) published the "simple VFM simulation model" in 2003 and an Excel spreadsheet for the "simplified calculation tool for VFM" in 2008, but they do not contain any concepts of probability [distributions] or a modeling method for it. Because the risks and uncertainties are not considered at all, the calculation of VFM is unreliable. However, if it provided a modeling

$$ENPV = \sum_{a} \sum_{i} \frac{1}{(1+r)^{i}} \int x_{a_{i}} f(x_{a_{i}}) dx_{a_{i}}$$

²⁰ If you dare to express this in a formula, it would be as follows:

Where ENPV = Expected Net Present Value of a project; r = risk free rate; i = year; $a_i = individual risk after i year(s)$; $x_{a_i} = cost$ resulted from the risk a after i year(s); f = probability density distribution. However, unless the guideline indicates concrete method about how to model the probability distribution of the cost, this approach is no more than a mere theory.

method for high-risk parameters such as the "user fee income", the simulation and sensitivity analysis could become more reliable.

For example, in France, the "Guideline for Finance Study of the Pre-Assessment" has been published with an Excel simulation tool, where a variety of probability distributions are set for each risk. Also, it is stipulated that a practitioner should input parameters, such as average value and standard deviation, on the basis of an expert opinion. Thus, there are devices for a reliable simulation. In the UK, there is the idea of "optimism bias". Optimism bias is based on the fact that the parameters, such as cost and demand, tend to be evaluated optimistically while ignoring a variety of unknown risks. This is also an effective device to prevent the manipulation of the estimated parameters.

Arbitrariness of the Discount Rate

As for the arbitrariness of the social discount rate, the Board of Audit of Japan has published a report "Implementation Status of PFI Projects" in an annual report for FY 2010. It reveals the situation that the discount rates used to evaluate the VFMs varied between each project (Board of Audit of Japan, 2011). For example, although the VFM guidelines recommend using the risk-free rate for the discount rate of the VFM, more than half of the PFI projects have adopted a value of 4.0%, which is listed in the MLIT's guidelines for a conventional project "operation policy of cost-benefit analysis" without clear grounds.

Arbitrariness of Reduction Rate

The reduction rate is an arbitrary percentage often used for the estimation of the VFM. In many projects, when estimating the VFM, expense items, including design cost, construction cost, operation and maintenance costs, are usually reduced to be multiplied by a certain reduction rate to simplify the calculation of the PFI-LCC. According to a survey conducted by a public sector about the calculation method of the VFM, nearly half of the businesses that responded had calculated the expense items of the PFI-LCC using reduction rates. However, most of the reduction rates were adopted without a clear basis, so they seem to be rather arbitrary.

Limited Scope of Assessment

There is also a problem in the scope of the project assessment by the VFM indicator. The current VFM assessment is targeted only for the amount of public financial burden. VFM, however, originally was aimed at examining how much the PFI project could supply high-value services compared with the payment of the orderer. The improvement of the value of services includes improvements of the convenience due to the private sector's ingenuity, the increase in the number of users, and the effect of early and fast service provisions. In the present situation, however, such factors are not considered when calculating the VFM, and their effects are only considered as the reduction of costs by using the aforementioned unclear "reduction rate".

For Designing Better Indicators

As described above, the VFM indicator commonly used in the PFI has some problems including that its scope of assessment is limited to the public financial burden and it lacks reliability and objectivity. It cannot be completely denied that there is a risk when the public sector calculates a positive VFM in an arbitrary manner, based on the preset goal of introducing the PFI because of the necessity of funding. To improve such problems, it is desired to create a sophisticated evaluation scheme and the multilateral indexes and to increase the transparency by designing an objective assessment process.

- Creation of multilateral indicators and evaluation scheme: the current assessment process by a VFM indicator lacks the perspective for improving services by just focusing on reducing costs and leveling fiscal spending. In considering the nature of the new public-private partnerships, it is desirable not only to consider the viewpoint of the existing VFM assessment but also to create a scheme that can consider the elements that would be difficult to quantify or organize, such as the service level, convenience, safety, regional revitalization, and economic ripple effect.
- **Increasing transparency:** in most of the actual cases, when the national government and local governments plan the PFI project, they contract with private advisors and ask for a calculation of the VFM. However, as they are advisors who the national or local governments have hired, they are in a position to accept and achieve the request of such clients. In order for national and local residents to enjoy high-quality public services with a low cost, an external evaluation system by third-party organizations would be needed play an auditing role and scrutinize the VFM calculation process objectively and neutrally, separate from the intent of the national and local governments.

Why Adopt PFI?

This section considers once again the pros and cons of using the PFI method by going back to the original idea. It examines the fundamental issues about what are the strengths and weaknesses of the PFI method and which factors can drive the VFM or accomplish the goal of the PFI. In considering this, it would be helpful to review the expertise of the UK, which has experience with PFI projects.

VFM Driver

Based on the UK experience, Her Majesty's Treasury notes the following as key factors that drive VFM:

- The optimum allocation of risks between the various parties
- Focusing on the whole life costs of the asset
- Integrated planning and design of the facilities-related services

- The use of an outputs specification approach to describe the Authority's requirements
- A rigorously executed transfer of risks to the parties which are responsible for them
- Sufficient flexibility to ensure that any changes to the original specification can be accommodated at reasonable cost;
- Ensuring sufficient incentives within the procurement structure and the project contracts to ensure that assets and services are developed and delivered in a timely, efficient and effective manner
- The term of the contract should be determined with reference to the period over
- There are sufficient skills and expertise in both the public and private sectors
- Managing the scale and complexity of the procurement

Accordingly, VFM can be achieved "by establishing a competitive and contestable market for infrastructure projects; from private sector innovation and skills in asset design, construction techniques and operational practices; and from transferring key risks in design, construction delays, costs overruns and finance and insurance to private sector entities for them to manage." (Grimsey & Lewis, 2004)

However, Kaneko et al. pointed out that most of the Japanese PFI projects that have been conducted so far were recognized to produce a significant VFM, but a substantial portion of the VFM resulted from an enhancement of the transparency of procurement procedures and not from the PFI method itself. In other word, this VFM was not necessarily produced by exercising creativity through the collaboration of public and private sectors (Development Bank of Japan, Research Center for Regional Policy, 2004). Also, Noda claims that the cause of a high VFM in Japanese PFI projects is considered to be largely a result of the principle of competition (Noda Y., 2004). In this way, a review of the more fundamental VFM drivers is required for the PFIs in Japan.

Benefits and Disadvantages of PFI

The National Audit Office (NAO) in the UK issued a report called "Lessons from PFI and other project" in 2011, where it has warned against the easy choice of the PFI method by describing disadvantages of the PFI contract, remarking that "Government should also do more to act as an 'intelligent customer' in the procurement and management of projects." It summarized the benefits and disadvantages in Table 11.

It is remarkable that the potential disadvantages in the table included specific weaknesses in the PFI, such as an inflexibility, increased cost of finance, and the ultimate risk on the public sector. It is noted that a conventional scheme can be desirable for some project than a PFI scheme (Bennett & Iossa, 2006). It is also said that, in the UK, a PFI was successful in some cases, such as prisons, but failed in other cases, such as schools and hospitals. The former

cases include the Lowdham Grange Prison that achieved a reduction of the life cycle cost by an efficient design that took into account the future operation and management (described in Chapter 3). However, in the cases of schools and hospitals, they have few advantages for the operation and management; as a result, schools and hospitals built by a PFI were typically of low quality with high operation and maintenance costs (Shimono, 2010).

Potential benefits	Potential disadvantages
 The delivery of an asset which might be difficult to finance conventionally. Potential to do things that would be difficult using	• The prospect of delivering the asset using private finance may discourage a challenging approach to evaluating whether this route is value for money.
 conventional routes. For example, encouraging the development of a new private sector industry. Encouraging the allocation of risks to those most able to manage them, achieving overall cost efficiencies and 	 Reduced contract flexibility – the bank loans used to finance construction require a long pay back period. This results in long service contracts which may be difficult to change.
 greater certainty of success. Delivery to time and price. The private sector is not paid until the asset has been delivered which encourages timely delivery. PFI construction contracts are fixed price contracts with financial consequences for contractors if delivered late. 	 The public sector pays for the risk transfer inherent in private finance contracts but ultimate risk lies with the public sector. Private finance is inherently complicated which can add to timescales and reliance on advisers. High termination costs reflecting long service contracts
• The banks providing finance conduct checking procedures, known as due diligence, before the contract is signed. This reduces the risk of problems post-contract.	 Increased commercial risks due to long contract period and the high monetary values of contracts. Increased cost of finance since the credit crisis.
 Encouraging ongoing maintenance by constructing assets with more efficient and transparent whole-life costs. Many conventionally funded projects fail to consider whole-life costs. 	
 Encouraging innovation and good design through the use of output specifications in design and construction, and increased productivity and quality in delivery. 	
 Incentivizing performance by specifying service levels and applying penalties to contractors if they fail to deliver. Fewer contractual errors through use of standardized 	
contracts.	

Table 11: Potential Benefits and Disadvantages of PFI Contracts

Source: NAO. (2011). Lessons from PFI and other projects. National Audit Office, UK.

In fact, there is the aspect that public sectors will likely adopt PFI methods due to the need for funding and the convenience of leveling fiscal spending. The suitability of a PFI varies depending on the nature of the project. It is necessary to properly understand the VFM driver and proceed with a study of the introduction of a more appropriate PFI scheme.

Third Party's Evaluation

As described so far, one of the major problems in the Japanese PFI system is the lack of transparency. That is, there are problems including the conventional practice of ambiguous contract

and the presence of uncertainty and arbitrariness in the calculation process of VFM. Fortunately, the social costs resulting from these problems, such as disputes between the orderers and contractors, seem to be small, but the potential uneconomical factors based on the ambiguity of the decision-making process and other factors are assumed to be high. This section, therefore, proposes an evaluation scheme by third parties that could enhance the accountability and improve the transparency, thereby eliminating the aforementioned ambiguities.

Project Evaluation by Third Party

At this time in Japan, the third party's project evaluations have been conducted by the following two agencies: The Administrative Evaluation Bureau (AEB) of the Ministry of Internal Affairs and Communications and the Board of Audit of Japan. For example, the AEB recommended the following four remedial measures: "securing objectivity and transparency of VFM calculation", "facilitation of risk allocation and appropriate risk management", "definite implementation of monitoring" and "creation of environment where private operator can exercise its ingenuity and apply the PFI method easily" (Government of Japan, Ministry of Internal Affairs and Communications, Administrative Evaluation Bureau, 2007). The Board of Audit also pointed out the specific circumstance where there is no specific method to determine the discount rate for the VFM calculation and the criterion for revising a contract sum at the time of the contract change (Board of Audit of Japan, 2011). Although both agencies' points are reasonable, they do not go far enough to mention the potential risks or inefficiencies of the individual projects and the fundamental effectiveness of the projects.

However, the PFIs in the UK experience a comparatively sufficient project evaluation by the National Audit Office (NAO). The NAO has conducted an evaluation of PFI/PPPs and published 112 reports about it between 1997 and January 2012 (National Audit Office, UK, 2012). The evaluation target ranges from individual projects to cross-sectional projects. The contents of the evaluation reports differ from each other, but they are fair enough to include an objective evaluation of the project, clarifications of problematic points and their factor analyses, and a proposition for remedial measures. Moreover, there is a feedback mechanism that the evaluation results are certainly provided to the contractors. (Sasaki, 2008)

To strengthen the project evaluation in Japan, improving the abilities of the government is required. To do so, there are many challenges demanded of the public sector, such as the method for including PFI professionals in each third party and creating a specific career path to nurture the professional.

Evaluation Points for Project Evaluation

To conduct a feasible project evaluation, the development of an objective framework or evaluation point is needed. For example, the Board of Audit conducts a general audit based on
the viewpoints of "Accuracy", "Regularity", "Economy", "Efficiency", and "Effectiveness" ²¹. However, PFIs require other specific viewpoints because of the long-term nature of the project.

Sasaki (2008) cites the following five viewpoints, which are needed for an evaluation of a PFI project: "Relevance", "Achievement", "Procurement", "Efficiency", and "Continuity" (See Table 12). In particular, the Procurement, Efficiency, and Continuity are characteristic evaluation points for a PFI. Procurement is unusual in that the public agencies procure the service from PFI operator. As for Efficiency, the evaluation point is greatly different from the general project evaluation based on the performance measure of the VFM and the evaluation of risk allocation. Continuity is also specific to a PFI due to the structure where a public company conducting a PFI project always has a risk of bankruptcy. (Sasaki, 2008)

Evaluation Point	General meaning
Relevance	Evaluate the validity to conduct the project and its goal setting
Achievement	Evaluate how well the project accomplish the purposed goal
Procurement	Evaluate whether public side can procure service appropriately from PFI operator
Efficiency	Evaluate whether the project is implemented efficiently
Continuity	Evaluate whether the public service is provided stably and continually

Table 12: Evaluation Point of PFI

Source: Sasaki, J. (2008). *Evaluation of PFI Project -System and Methodology-*. Journal of Mitsubishi Research Institute (45), 6-31, 2005.

Check System at Each Stage of Project

In addition to defining the evaluation points described above, making the evaluation points more specific with respect to each stage of the project is also required. For example, the PFI evaluation in the UK is implemented in the following three main stages: before the project, in the middle of the project, and after the project. An evaluation performed before the project is made by the agent administrating the project. Regarding this pre-evaluation, there is the "Value for Money Assessment Guidance" edited by the HM treasury in 2004, which defines the specific procedures. The evaluation during the middle period of the project is conducted by various government agencies, including NAO, Audit Commission (AC) and governing agencies. The NAO evaluates the central government-related projects, while the AC evaluates the local government-related projects (Sasaki, 2008).

Development of Audit Framework

To make the audit at different stages and the evaluation points more effective, the NAO has developed an audit manual "A framework for evaluating the implementation of Private Finance Initiative projects", where the phase of the project is broken down into the following six stages: strategic analysis, tendering, contract completion, pre-operational implementation, early

²¹ Paragraph 3, Article of 20 of the Board of Audit Act

operational, and mature operational. Furthermore, the NAO defines six key business-management themes that apply at every phase of a PFI project, as follows (National Audit Office, UK, 2006):

- The project fits with the business requirements of the Authority
- PFI is the appropriate delivery mechanism
- Stakeholders support the project's progress
- There is good quality project management
- There is an optimal balance between cost, quality and flexibility
- Effective risk allocation and management is taking place

In this way, the framework configures a matrix with six stages and six themes, all of which have concrete checkpoints. For example, at the cross section of the first phase "Strategic Analysis" and the first theme "The project fits with the business requirements of the Authority", the NAO defines a list of key points to be considered when making an investment decision for a PFI project, as follows:

- Have clear objectives for the project been set?
- Does the project meet policy imperatives?
- Was the project assessed as being priority?
- Has a preliminary evaluation of the benefits sought been made?
- Has long term commitment to the project been demonstrated?
- Are the project outcomes clear?
- Have the project's wider socio-economic benefits been quantified?
- Does the proposed solution clearly meet business requirements?

In this way, the NAO's framework provides the audit points in detail even in the decision-making phase of the project. In Japan, however, there is no such specific framework or audit manual. By providing detailed audit points at each stage, including the decision-making phase, and defining the role of third-party organizations and the scope of their evaluation, the accountability and transparency of the project would be enhanced, thereby preventing sloppy risk management and opaque decision-making processes. In addition, it would be also required to strengthen the function of the third-party organizations. As mentioned before, there is an opinion that the problem of an optimistic demand forecast sometimes stems from political pressure. Strengthening the audit function of third-party organizations could also help suppress such a failure of the government.

Summary

This chapter considered the potential problems in the scheme of PFI, focusing on the decision-making process and evaluation function, separate from the risk-actualized cases described

in previous chapters. Fortunately, there are not many conspicuously failed cases, except for the cases shown in this paper, in Japanese PFI projects. This chapter, however, pointed out that there are many potential institutional problems of PFI, which have not come to light.

First, it pointed out that the process of project assessment using the indicator VFM is lacking in objectivity. It also claimed a need for developing refined guidelines that can eliminate the arbitrariness in the parameter settings and constructing an effective scheme of multi-faceted project evaluation.

Furthermore, a decision-maker needs to determine that the benefits of the PFI outweigh the disadvantages, by taking into consideration the "VFM driver". The PFI method uses private financing with a higher interest rate than the public bonds issued by the governments. In other words, if the PFI method were used without careful consideration, the entire financial burden on the public side would probably increase. Thus, it should be recognized that unless the improvements in the VFM outweigh the increase of funding costs, there is no logic for using private funds.

Finally, this chapter claimed that an evaluation by a third-party is valid for increasing the transparency of the project implementation, including its decision-making processes. It is also essential to clarify the evaluating role and scope of each party and set the evaluation points for each project stage, as has been advanced in the UK. It would also be an effective way to develop the evaluation framework by providing detailed audit points.

Conclusion

Japan has repeatedly experienced many failures and learned various lessons in its long history of public-private partnerships. Truly, each failed project has its own particular causes. However, if you look for the common denominators among them, they would include the "ambiguous relationship between public and private sectors", "insufficient knowledge of contractual governance and risk management", and an "opaque decision-making process".

The scheme of the third sector, of which many projects failed, had included all of the above factors. In fact, the scheme lacked the specific contractual governance based on the assumption of the ambiguous trust relationship and had the characteristics of a government-led project, where the principles of competition did not work. For these reasons, this unclear responsibility sharing created a cozy relationship between the public and private sectors; as a result, the scheme deadened the vitality and ingenuity of the private sector that had effectively produced them.

Under the lesson of the third sector's failure, a new method of PFI was introduced with high expectations. Based on the three principles of "contract", "objectiveness", and "independence", the PFI has been actively promoted as a replacement for the third sector to overcome its disadvantages. Of course, however, the introduction of the PFI has not solved all of those problems. Some of cases of failure, such as those described in this paper, have proved the weakness of the Japanese-style PFI.

The insufficient knowledge of risk management and contractual governance might be derived from the traditional Japanese-style governance that relies on the ambiguous trust relationship. To overcome the problems related to the risk management, it is required for the government to promote risk workshops for improving the stakeholder's risk perception, to understand the mechanism of private finance, and to further strengthen the guidelines, including those for a better risk allocation. To improve the contractual governance, it would be effective to develop more precise contract standards, create incentives for the contractor to be innovative, and stipulate detailed mechanisms for change by assuming various future scenarios.

There are also problems in the opaque decision-making process, including that the VFM indicator for determining the PFI method is quite arbitrary and the project evaluation system for PFI is not sufficient compared to other countries. To increase the transparency of the process for decision making, it is necessary to improve the accountability. And to do so, it is essential to strengthen the "evaluation governance." At each phase of the project period, including the project-planning phase, an independent audit by third-party organizations, such as the Board of Audit, would be required. There are many challenges left for them including the development of audit frameworks.

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Appendix 1: Japanese-Style Governance System for Public Projects

This appendix considers the general problems separate from the specific problems in a PFI. Looking at the traditional "Japanese-style" governance system in public projects, you can see that it is quite different from those of other developed countries and has some general issues in social structures.

As stated in this paper, a PFI is based on contractual governance, where the contract defines the detailed risk allocation and specifies the responsibility sharing. The PFI project can be delivered only when the contract can properly function. However, the Japanese legal system is quite different from those of other countries. The Japanese institution of public purchase is also distinct compared to them. This appendix explores the mechanism of Japanese contractual governance and mentions the existing problems in the recent global movement.

Legal System

To begin, this section considers the legal environment in Japan. Table 13 shows that the number of legal professionals and civil suits in Japan are much smaller than from other countries, including the US and EU countries.

		Japan	US	UK	Germany	France
Legal professionals	Total number	20,000	941,000	83,000	111,000	36,000
(judges, prosecutors)	Per 10,000 people	1.59	34.48	14.08	13.51	6.1
[in 1997/1998]	New qualified	1,000	57,000	4,900	9,800	2,400
Number of civil suits (ten thousand) [in 1997]		42	1800	233	210	111

Table 13: International Comparison of the Number of Legal Professionals and Civil Suits

Source: Yamada (2002) "Law School" Heibonsha Ltd., Publishers; Murayama, et al. (2003) "Sociology of Law", Yuhikaku Publishing

It has been said that the Japanese tend to avoid contention, value a spirit of harmony and try to negotiate a solution as much as possible even if there is a conflicting opinion. For example, Prof. Takeyoshi Kawashima, the authority of the sociology of law, stated that in the traditional Japanese legal consciousness, the rights and obligations are intentionally ambiguous, and it is preferential that they not be conclusive and clarified. He also stated that in Japan, those who bring a lawsuit tend to be branded with the words of "crazy lawsuit" and "belligerent". This cultural background has prevented the legal system from developing compared to other countries. (Kawashima, 1967)

Tendering System

After understanding the legal system as described above, this section considers the system of public procurement-related institutions. Table 14 describes the tendering systems for public works implemented in different countries. The bidding and contract methods for public work contracts in Japan are different from those in other countries because each country has created them to reflect the features of its construction market, economic institutions, and practices.

The characteristic tendering systems in the US is based on competitive negotiated proposals and the best value. Under the system of competitive negotiated proposals, the government presents a "Request for Proposal (RFP)" to bidders, and the bidders submit proposals to meet the needs of the government. The government then examines and evaluates the proposals to choose a contractor from among them. In this process, the government is allowed to discuss with bidders regarding defects of their specifications, and the bidders are given the opportunity to revise their proposals before the selection of a successful bidder. In this negotiated proposal to win a contract, which disclose the names of other bidders, the number of these competitors, and the proposals made by other bidders, and each bidder will make effort to create the best proposal to win a contract, which will promote competitive pricing. In competitive negotiated proposals, the government needs to predefine factors to be evaluated to ensure the "best value" for the government. The government should always consider various factors, including price, quality, qualification of employees, business management, and past performance. In evaluating these factors, it is required to attribute more importance to a narrative description than to a quantitative evaluation and rating by scores, and the evaluation results should be explained by narrative descriptions.

The biggest feature of Japan's traditional bidding system, however, is that it lacks competitiveness compared to other countries. For example, the "designated competitive bidding system", which can preclude the general entering, is widely conducted for public works²². As for the criteria for being awarded a contract, the lowest bid price was adopted as the principal criterion²³, which can hardly prevent collusive bidding. In addition, the Public Accounting Law does not permit any negotiations for placing orders for public works, and the national government does not negotiate with bidders. These characteristic institutions have eliminated the competition, formed a hotbed of bid rigging, and created a mechanism that produces cozy relationships, including the protection of local suppliers.

²² The open and competitive bidding system is conducted for large public works that are covered by the WTO Agreement on Government Procurement.

²³ In fiscal 1999, however, competitive bidding in which not only the bid price but also technical advantages and quality are evaluated (called "technical proposal integrated evaluation system") was also approved based on comprehensive agreement with the Minister of Finance. It should be noted that the bidding method of PFI applies "Integrated Evaluation Method (Open Tendering)" in principle rather than the lowest price as described above.

	Japan	US	UK
1. Basic law and regulation	Public Accounting Law	Federal Acquisition Regulation (FAR)	Public Works Contract Regulations (PWCR)
2. Characteristics and problems of the traditionally implemented tendering and contracting systems	Lack of competition due to designated competitive bidding and collusive bidding	After a contract is awarded to a bidder who proposed the lowest bid price, changes are often made to the contractual terms, which eventually raises the construction cost.	After a contract is awarded to a bidder who proposed the lowest bid price, the contractual terms are often changed at the construction period, which eventually raises the construction cost"(claim culture").
3. Current tendering an	nd contracting systems		
Basic system	 Open and competitive Bidding Designated competitive Bidding Discretionary contract 	 Simplified acquisition procedures Sealed bidding Competitive negotiated proposals 	 (1) For contracts at or above the threshold ① Open procedure ② Restricted procedure ③ Negotiated procedure (2) For contracts below the threshold ① Open procedure ② Restricted procedure ③ Negotiated procedure ③ Negotiated procedure
(Remarks)		The basic rule is" full and open competition" regardless of the tendering systems. Traditionally, system ② was more often utilized, but in recent years, system ③ is mainly applied.	The following contracting systems have been recently recommended (in principle). The relations between the orderer and the contractors are shifting from hostile ones to cooperative ones. ① PFI(or PPP) ② Design-build system ③ Prime contracting ④ Framework agreement
	Not negotiable	Negotiable for ③	Negotiable (even after bids are submitted
Negotiability	Some incorporated administrative agencies and local governments experimentally conducted negotiations.	The" bake-off" process and incentive contracts are often utilized.	
Similarity with Japanese systems		 ① Simplified acquisition procedures ≒ Discretionary contract system ② Sealed bidding ≒ Open and competitive bidding 	 ① Open procedure ≒ Open and competitive bidding ② Restricted procedure ≒ Public invitation-designated competitive bidding
Criteria for awarding a contract	Lowest bid price	Lowest bid price for ② Best value for ③	 Lowest bid price Most economically advantageous tender The basic rule is "to maximize Value for money (VFM)."
(Remarks)	The technical proposal integrated evaluation system was introduced by some agencies. The evaluation factors and their weights should be announced in advance. The division method is often used for evaluation.	(2) The best value analysis explains why a bidder was awarded a contract in a narrative manner. The evaluation factors and their weights should be announced in advance.	 ② Most economically advantageous tender ⇒ Comprehensive evaluation The evaluation factors and their weights should be announced in advance.

Table 14: Tendering Systems for Public Works Implemented in Japan, US, and UK

Source: Ono, T., & Harada, Y. (2006). A Comparison of Tendering and Contracting Systems for PublicWorks between Japan, the United States and EU Countries. Government Auditing Review, Vol. 13, Board of Audit of Japan.

Contracting System

The contract system in Japan has many ambiguous factors compared with the US and EU countries. For example, the Japanese contract standard, the "Standard Form of Agreement and General Conditions of Government Contract for Works of Building and Civil Engineering Construction (GCW)", stipulated that "any matter which is not set forth in this agreement or contract shall be prescribed after consultation between first and second party if necessary." Because the Japanese construction industry is fundamentally based on mutual trust, it is assumed that both parties will find a convincible direction and respect each other's position without clear stipulations on the contract about how to resolve conflicts and contract modifications.

Table 15 compares the GCW with the FIDIC's²⁴ Conditions of Contract, which has become the de facto standard for international construction contracts. This comparison reveals that GCW is a relatively "ambiguous" contract standard. For example, in the GCW, the contract amount is the total value, and it demands a breakdown of the amount. However, the FIDIC has a standard contract based on the quantity surveying, which requires a submission of a detailed bill with quantities showing the unit prices for each item at the time of bidding. Furthermore, in the GCW, there is no establishment of a "third-party engineer", and the design changes can be freely ordered by orderer. In terms of changing the procedure of the construction period, GCW states that it shall be determined by a consultation between the orderer and contractor, whereas FIDIC stipulates that the contractor shall have the right to extend the completion time limit by the claims. In addition, the GCW does not mandate to stipulate the definition of a term that the contractor cannot figure out, and GCW extensively uses the term "good faith", which all make the contract ambiguous.

Despite such an ambiguous contract system, there is a cooperative relationship rather than a hostile one in the Japanese public-private partnership. In fact, there were few cases where a confrontation was actually brought to "the committee for construction work dispute adjustments" in the Japanese construction contracts. The reason for this is as follows. In a usual contract, the orderer plays a leading role with respect to the contract changes. The contractor is the agent of construction based on the "fair and equitable principle²⁵" in the Civil Code and is required to not cause a moral hazard. Furthermore, "contractors often respond flexibly to the needs of the orderer [...]. Contract prices are seldom markedly raised due to changes made to the contractual terms after a contract is awarded." (Ono & Harada, 2006) In Japan, because the relationship of the contractor with an orderer should continue for the long term, it guarantees the effectiveness of the "fair and equitable principle" working between them.

²⁴ The acronym FIDIC stands for Fédération Internationale Des Ingénieurs-Conseils, French for the International Federation of Consulting Engineers.

²⁵ The "good faith principle" is the principle prescribed by Article 1-1, paragraph 2 of the Civil Code that "The exercise of rights and performance of duties must be done in good faith". According to the study of Kobayashi et al., "good fair principle" means the law of prohibition of moral hazard using the information asymmetry (Kobayashi, Omoto, & Yokomatsu, 2001).

	GCW (Japanese contract standard)	Fidic 1999 conditions of contract for construction
Amount of the contract	 Total value contracts Submit a breakdown²⁶ 	 Contract based on quantity surveying Submit a detailed bill of quantities showing unit prices for each item at the time of bidding
Payment of the price	Pre-payment, (fee-for-service) partial payment	Monthly fee-for-service payment
Engineer	-	 Orderer appoint the engineer carrying out the delegated obligations under the contract If engineer needs to obtain the approval of orderer before exercising the authority, its requirements should be described in the special conditions Engineer can give the contractor the necessary instructions, and issue additional or modified drawings.
Clarification of contract	Specify the agenda among the orderor and contractor in the particular specification	Clarify the responsibilities in the contract book
Design changes	 Orderer can change the design books Orderer must change the fee amount or construction period, if needed. 	 Engineer is able to invoke the change by the request of the proposal submission or instructions against orderer
Change of co nstruction period	Consultation between orderer and contractor If the consultation was not be settled, orderer can set the change and notify it to the contractor	 Contractor is entitled to extend the time limit for completion by the claims under certain conditions
Change of contract pr ice	Consultation between orderer and contractor in some cases, or the price can be set based on the unit price in the detailed statement If the consultation was not be settled, orderer can set the change and notify it to the contractor	-
Claim	-	 Orders notifies the engineer about the extension of completion time and additional payments Engineer answers approval or disapproval of the claim
Resolution of Disputes	 Arbitration or mediation by the Construction dispute mediation by Construction Work Dispute Examination 	 Arbitration by Dispute Adjudication Board (DAB) International arbitration
Other	 No term definition Frequent use of the term "good faith" 	• -

Table 15:	Comparison	between	GCW	and FIDIC
1 4010 101	Companyour		0011	wind I IDIC

Source: Government of Japan, Ministry of Land, Infrastructure, Transport and Tourism (2010). Attempt of orders and contracts with reference to the FIDIC

It is said that this Japanese system has some advantages from the viewpoint of the social cost. In a country with an adversarial contractual relationship, where the incentive of moral hazard works

 $^{^{26}}$ Since April 2010, a new method was applied in the general civil engineering work under the direct control of the government, which requires the agreement of unit price after total price contract.

strongly between contracting parties, the country must prepare a final judicial binding, such as arbitration, to achieve a faithful relationship of rights and obligations of the contract, which produce transaction costs, such as proof cost and judicial cost. However, in the case where it is guaranteed that both contracting parties adhere to the "fair and equitable principle", the country can save significant transaction costs to run the relationship of rights and obligations of the contract, and an efficient contract can be carried out. (Onishi 2005)

Response to Globalization

As seen above, by creating a closed society to avoid competition, Japan has created a society that does not require judicial costs that pertain to disputes by nurturing a long-term "ambiguous trust relationship". This mechanism has been quite convenient in an era when the country has been able to grow domestically.

However, we cannot ignore the flow of globalization. With respect to the response to globalization, there is an opinion that Japan had fallen into a long period of low growth since the collapse of the bubble and a citizen's major idea became conservative and introverted; as a result, Japan did not obtain the benefits of globalization. For the Japanese economy and companies to take advantage of the growth opportunities brought by globalization, it is essential to carry out necessary policies, such as the structural reform and market openness, and respond appropriately to the resistance against dramatically changing the current policy (Urata, 2009).

The biggest problem with the globalization of the construction market would be the disputes between the domestic orderers and foreign national contractors that are derived from cultural and institutional differences between countries, as stated above. Resolving such disputes efficiently would depend on whether the orderers could build a trust with the foreign enterprises as they do with domestic enterprises. To ensure the efficiency of dispute resolution, disclosing information on the claim arbitration processes and strengthening the system for conflict resolution will be needed. In addition, it would also be required to introduce rigorous contract methods such as FIDIC's standard. In fact, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has recently conducted a mock trial using terms and conditions based on the FIDIC as the country's first trial²⁷. However, this is still a modeling stage, and an accumulation of knowledge would be required for the future popularization. In the long term, we also might have to address the contract-based society and the expansion of the judicial system.

²⁷ MLIT conducted the auction of the "No. 129 lamp bridge superstructure work for Sagamihara IC on Sagami Expressway" in accordance with the terms and conditions of FIDIC. Ohmoto Gumi Co., Ltd. has made a successful bid in February 2011. In this trial, the mock role of a third party engineer was played by a committee composed of staff of the Kanto Regional Development Bureau of MLIT.

Summary

The legal system in Japan is characterized by the small number of lawyers and lawsuits compared with those of European countries and the US. Therefore, there would be the cultural behavior of caring about large population-based principles and mutual aid and avoiding disputes by solving them through dialogue. There is also a deeply rooted problem of the closed social structure that has been built up over a long period. That is, Japan has built an ambiguous trust relationship between the public and private sectors without increasing the competitiveness and even by passing over the bid rigging. In other words, there is the cooperative incentive for the private sector to obey the public sector to continuously obtain work in the long term, which does not cause a moral hazard. Based on this relationship, the ambiguous contractual governance with weak legal system has functioned well without any major problems (in a different form from the US and Europe).

There are advantages and disadvantages to this peculiar Japanese contractual governance. The advantages are, for example, that it can eliminate the costs for the conclusion of contracts and litigation. The disadvantage is that competitiveness is not sufficiently exhibited, which produces collusive bidding, and the contract cost will inevitably remain high. Although there are advantages to the traditional Japanese governance, when considering the trend of globalization, there are many opinions that the risks and the lack of opportunity resulting from keeping a closed society would be larger.

All in all, there are many problems in the "Japanese-style governance" that would have to be improved. First, there is a need to change the contractual governance to be independent of the "ambiguous trust relationship." Improving the expertise for contracts by assuming various bidders and contractors would be required. Another important thing is to improve the transparency, fairness, and accountability in the decision-making process to enhance the competitiveness. The elimination of collusive bidding alone is not enough; it is also essential to promote competitive bidding to enhance the competitiveness and to eliminate the entry barriers.

Appendix 2: Related Regulations in Japan

Legislation Restricting Private Sector's Entry

In Japan, economic infrastructure projects have been limited by provisions under the Public Property Administration (PPA) Laws. These laws regulate assets that the public sector manages, such as roads, sewerage and city parks. Under this collection of laws, the role of the private sector is limited. These laws specify that the private sector cannot either own specified public infrastructure or operate or manage public infrastructure.

The complete scope of work the private sector can undertake under the collection of the PPA Laws is set-out in "On the scope of work private sector parties can undertake on public facilities" published in June 2004. The outcome from a selection of the responses is included in the table below:

Situation	Legislation (Area)	Details		
Anyone (Private or Public) can manage the facility	Railway business law	Under the Railway business law, there are no restrictions on who may operate the railway business. The private sector has historically participated in the railway business.		
	Road transportation law	The road business operator (National/Regional Governments) can contract private sector operators to undertake business on its behalf, but ultimate responsibility to third party users rests with the road business operator (Government body).		
	Port Law	Jnder the Port Law, the establishment and management of port facilities is not imited to the public sector. There are a number of port facilities that are established and managed by private entities.		
	Aviation Law	The actual establishment and management of the airport facilities are governed by the Aviation Law, and private entities may also be managers of the facility.		
The private sector is not allowed to be a manager of the facility	Airport Maintenance Law	 The Airport Maintenance Law provides that National and Regional Governments must maintain airports that are considered to be part of the aviation network and share in the expenditure based on certain allocation. 		
	Road Law	 The Road Law provides exclusive rights to MLIT/ Regional Governments for a multitude of matters including: newly establishing, renovating or managing a road; making decisions on changing the routes; starting/ceasing public use of a road; determining the use for the road etc. The private sector may undertake the actual activities of construction and maintenance. 		
	City Park Law	Establishing, managing, and setting restrictions on use - the rights to carry out these are exclusively provided to the National/regional Governments under the City Park Law. PFI operators may undertake certain activities approved by the manager of the Parks such as holding events, functions and classes in the Park, maintenance activities, cleaning, gardening activities.		

Table 16: PPA Laws and Private Sector Provision

Source: JETRO (2010). *Public Private Partnerships in Australia and Japan*. http://www.jetro.go.jp/en/reports/survey/pdf/2010_01_other.pdf

Appendix 3: Additional Risk Actualized Cases

[PFI | Third Sector] Hibiki Container Terminal Project

-- Business bankruptcy derived from the optimistic demand forecast



Project overview

Project period	25 years
Project method	BOT
Corporate structure	Financially free-standing projects
Selection Method	Open-Application Proposal Method (Single Tendering)
Amount of the contract	- (Capital of SPC: 3.85 billion yen)

Basics

- In May 2000, published project implementation policy and selected the preferred negotiator. SPC was established in January 2004. Started business in April 2005.
- By the PFI project joined by a foreign company (PSA Singapore), it aimed to achieve "quality and internationally competitive service, not losing to the major ports of Asia" and "the cheapest port in Japan".

Unforeseen impact

- The amount of cargo handling was 5,823 TEU²⁸ in FY 2005 and 29,358 TEU in FY 2006, which was significantly less than the demand forecast (70,000 in FY2005 and 140,000 TEU in FY 2006)
- Reduced capital to ¥ 10 billion in response to the excess debt and the worse management of SPC. The scope of the operator's businesses was significantly reduced from a centralized business to facility management business such as maintenance and inspection of facilities of the terminal.

²⁸ 1TEU = 20-foot container

• In July 2007, termination of the contract, (greatly reduces the work to reduce the personnel into one-third) Operator was changed from the SPC to the City of Kitakyushu.

Causes of problems

• Inadequate quantitative assessment: the assessment of the financial burden just included a qualitative assessment which noted that "the burden of the public will not occur since it is financially independent service" and that the project "can be expected" to improve service levels and cut overall costs by the private sector's efficient operation, and a basis of whether efficient and effective operation can be achieved or not had not been sufficiently established. (Governement of Japan, Ministry of Internal Affairs and Communications, Administrative Evaluation Bureau, 2008)

[PFI] Nagoya Port Italian Village

-- Business bankruptcy by the culture of collusive management



Project overview

Project period	16 years
Project method	BTO (square-garden), BOT (parking structure) and ROT (warehouse)
Corporate structure	Financially free-standing projects
Selection Method	Open-Application Proposal Method (Single Tendering)
Amount of the contract	-

Basics

• In this project, PFI scheme was adopted by receiving concrete proposals from private companies from the study stage. In the public offering, the applicant company was only one company and the company was selected as a result of the examination. Italian village was opened in April 2005 in accordance with the Aichi Expo.

Unforeseen impact

• The number of visitors in the first year (2005) had reached 4 million, but in 2006 after the Expo ended, it was less than 2 million. Then the SPC "Nagoya Port Italian Village, Inc." fall into financial difficulties and went bankrupt in May 2008. The contract was canceled in September 2008.

Causes of problems

- Culture of collusive management: the management was ill-planed such that the contract was downplayed, and the business plan and financial plan at the time of project proposals were significantly changed
- **Insufficient monitoring:** after the commencement of business, monitoring by the public was not fully functional. The financial monitoring in conjunction with the financial institutions also did not function well. (Government of Japan, Cabinet Office)

[PFI] Kochi Health Sciences Center

-- Rigid contract and failure of the creation of management incentive



Project overview

Project period	30 years
Project method	BTO (main hospital facility) BOT (staff quarters)
Corporate structure	Services sold projects (management of general services facilities: financially free-standing projects)
Selection Method	Open-Application Proposal Method (Single Tendering)
Amount of the contract	213.19 billion yen (Construction cost: 33.7 billion yen; equipment purchase cost: 15.1 billion yen; management and operation cost (including interest expense) 1,644 billion yen)

Basics

• The need to redevelop the hospital was increased due to the aging of the prefectural hospital. The Hospital opened as the first hospital using PFI in March 2005.

Unforeseen impact

- The hospital has been continually in the red. In 2008, the cumulated deficit reached 8.1 billion yen and faced management crisis.
- In June 2009, SPC proposed to have a consultation regarding termination of the PFI contact. The contract was cancelled in March 2010.

Causes of problems

- Failure of creating management incentive for SPC: a payment to SPC was immobilized regardless of business performance. As a result, it had the SPC to be uncooperative lacking management for the company commissioned, not improving the items that do not meet the required service level.
- Inflexible contract: because of the long-term contract for 30 years, it is difficult to make a flexible contract which can appropriately cope with new problems associated with

changes in the medical and economic environment.

• Lack of communication and understanding between the public and private sectors: due to the frequent personnel changes in both SPC and the city, it was difficult for both sides not only to have smooth communication, but also to accumulate expertise and meet the needs of medical practitioners. (Sano, 2007)