Financing for Sustainable Urbanization: PFI/PPP in Japan

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Introduction

- Infrastructure challenges in Japan:
  - Japan needs rehabilitation and improvement of its old infrastructure most of which is constructed through 1950-60's.
  - deeper involvements of private sector in both managerial and financial aspects are considered necessary.
- Notable features of the current infrastructure policy in Japan:
  - promoting public-private partnership (PPP) with "concession" in the operating stage
  - Introducing government infrastructure funds

The Purpose of this Presentation

- Reviewing the recent development of Japan's infrastructure policy very briefly.
- Assessing the current infrastructure policy from the "incomplete contracting perspectives" (Hart (2003)): financing schemes can be interpreted as incentive devices among the agents concerned.

Infrastructure in Japan (1)

- Traditionally, most infrastructure in Japan has been constructed and operated by the public sector through public funding (tax and national/municipal bond) with conventional procurement.

Infrastructure in Japan (2)

- However, notice the following features:
  - As notable exceptions, electricity, gas, and urban railways, although heavily regulated, has been constructed and operated mainly by private companies.
  - For financial aspects, governmental financial Institutions (e.g., Japan Development Bank) have made subsidized loans to those companies in monitoring continuously.
- These features can be interpreted as:
  - Utilization of expertise of private sectors
  - Governance of the agent through financial devices

PFI in Japan (1)

- 1999 Act on Promotion of the PFI
  - promoting *private sector's involvement in both financial and managerial aspects*
  - *project finance* establishing SPC (not corporate finance): 90% of bank debt; 10% of equity mainly by constructors
  - project type: providing services sold to the public sector: <u>lack of incentive scheme</u>

PFI in Japan (2)

- 2011 Amendment of the PFI act:
    - introducing "concession" as an incentive device: *the right to operate exclusively on a long-term basis*
    - examples: airports, roads, water systems, sewages
- 2013 Governmental infrastructure fund (PFIPCJ)
    - mezzanine financing (e.g., subordinated loans, preferred stocks)
    - *expected to create the infrastructure financial market* to attract private investment funds in addition to banks

Economics of PPP in Infrastructure (1)

- An infrastructure project needs a long period of time
  - → a lot of contingencies *not contractible*
  - → organizational form matters: allowing certain agents the residual control rights (Incomplete contracting).
- Based on the framework of Hart (2003), seminal work for economics of PPP in this line, I analyze a simple infrastructure project model.

Economics of PPP in Infrastructure (2)

Project

- An infrastructure project with a public goods nature: generating social benefit not traded in the market.
- The project consists of 2 stages: "building" and "operating".
- In the building stage, there are 2 types of investment that are *not contractible*.
  - type1: improving whole service including social benefit
  - type2: cutting cost *but deteriorating social benefit*

Economics of PPP in Infrastructure (3)

<u>Delegation</u>

- The government wants to delegate tasks to an agent of the private sector to utilize his expertise.
- However, *the agent should be monetarily incentivized* to take any action since he is of the private sector.
- The government has *two incentive devices*:
  - <u>bundling</u>
  - <u>concession</u>

Economics of PPP in Infrastructure (4)

Bundling

- Investment in the building stage affects the operating stage.
- Thus, the agent in the building stage should be incentivized to invest considering the performance of the operating stage.
- Bundling two stages could improve such an incentive since it allows the *agent to be rewarded over the both stages*.

Economics of PPP in Infrastructure (5)

<u>Concession</u>

- Concession gives the agent <u>the right to operate exclusively</u>.
- This could *improve an incentive to invest since he could take all the profit from his operation*.
- However, concession itself will not improve the agent's concern about social benefit at all.
- *The government keeps the ownership*. Given the concession, however, the government can dismiss the agent only when the latter violates policy conditions explicitly specified.

Economics of PPP in Infrastructure (6)

PPP

- PPP is defined as a long-term contract that allows the agent:
  - concession in the operating stage
  - bundling of two tasks: building and operating

Economics of PPP in Infrastructure (7)

<u>Results:</u>

- PPP *improves the investment level* compared with the conventional procurement.
- PPP causes *a conflicting effect on incentives*:
  - encourage type1 investment improving operating efficiency
  - encourage type2 investment deteriorating social benefit

Economics of PPP in Infrastructure (8)

Main message

- *PPP could be effective but is not alone a sufficient instrument to enhance social benefit*.

Intuition (obvious)

- An infrastructure project has public goods nature that is not internalize any scheme in the market economy.

Financing Schemes as Disciplining Devices (2)

Debt through governmental financial institutions

- Debt is interpreted as contingent governance device: banks interfere only when companies are in trouble.
- This can mitigate incentive problems of companies although more minute mechanism should be examined.
- In fact Loans by Japan Development Bank were considered effective by quite a few academic research.
- However, we now want to utilize private investment funds.

Financing Schemes as Disciplining Devices (1)

Equity holding by the government

- The scheme gives the government the right to interfere, by definition.
- However, it provides too much power: the government can always interfere; this can *adversely affect the agent's incentive to invest appropriately*.
- In fact, Japan has found that many companies with joint ownership of both public and private sectors (called "third sector companies" in Japanese) to result in failure in the 1980's.

Financing schemes as Disciplining Devices (3)

<u>Governmental infrastructure funds with the financial market</u>

- Governmental infrastructure funds monitors the invested projects from both the policy and economic perspectives.
- Given efficiency of the financial market, the information by monitoring by the governmental funds can be correctly conveyed to the other investors.
- Thus, governmental infrastructure funds can help the financial market as a whole to work as a discipline device.

Conclusion

- Japan promotes PPP with concession as an incentive scheme to encourage private sector's investments in infrastructure.
- Although, unlike conventional procurements, the current scheme affects the incentives to investment, it causes conflicting effects.
- The governmental infrastructure funds could complement PPP with concession in helping the financial market work as a discipline device.

Reference

- Hart, O. (2003), "Incomplete contracts and Public Ownership: Remarks and an Application to Public-Private Partnership", *Economic Journal*, Vol. 113, No. 486: 69-76.