

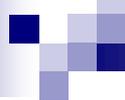
**COLLUSION between PUBLIC
PROCURERS and SUPPLIERS IN THE
CONTEXT OF JAPAN'S PUBLIC PROCUREMENT**

-- RISKS of "UNSUCCESSFUL PROCUREMENT"

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1. Introduction—Motivation and Related Literatures

- Two types of collusion in public procurement

- 1) bid-rigging among suppliers (*Dango* in Japanese)

- Although a contract for an offered object should be awarded to a winner of the auction who is determined by free and fair competition, suppliers may restrict competition by prearrangement among bidders.

(cf) Graham & Marshall (1987), McAfee & McMillan (1992), Athey et al. (2004) showed that partners in collusion may devise some mechanism for dividing their joint profit in order to support their illegal collusion under the framework of auction theory.

1. Introduction—Motivation and Related Literatures

2) Collusion between public procurer and supplier(s) (*Kansei-dango* in Japanese)

-- Government officials may be involved as participants in bid-rigging.

(e.g.) In response to requests from businesses entrepreneurs, the official may designate the winner of the bidding by **implying a preferred winner's name** or even **leaking the reserved price**.

→ Although many economic analyses of corruption exist (e.g. Rose-Ackerman (2006)), relatively few studies analyze corruption in the specific context of public procurement.

1. Introduction—Motivation and Related Literatures

- We focus second type of collusion.

→ it is essential to understand the reasons why Japanese bureaucrats collude with suppliers.

- Motivations of committing illegal actions

(cf) JFTC (2015)

1) Bureaucrats may favor the suppliers located within the region because they are often interested in the growth of a regional economy. → **Localism**

2) In order to maintain the quality of procured goods, bureaucrats may wish to delegate their procurement to the suppliers with good reputation. → **Reputation**

1. Introduction—Motivation and Related Literatures

3) Officials may favor the firm which has met their request satisfactorily in the past. → **Past Performances**

4). Officials may favor the supplier with outstanding experience in public procurement activities. → **Rich Experiences**

5) Officials may be in favor of specific firms to be sure they are offered a new job after their retirement. → **Revolving Door**

1. Introduction—Motivation and Related Literatures

- **Factor (5): Officials pursue their own gain**

→ Compte, et al. (2005) found that an opportunity to rebid in exchange for a bribe may facilitate corrupt collusion on prices between firms. However, they do not explicitly take the quality of procured goods and/or services into account.

- **Factor (1), (2) (3) and (4): Bureaucratic favoritism lead to corruption.**

-- price auction

→ Burguet & Perry (2007), Arozamena & Weinschelbaum (2009) analyzed the effects of favoritism by a corrupt official in a price auction. They found that the favoritism leads to an inefficient result. However, they also do not consider the quality of procured goods.

-- scoring auction

→ Celentani & Ganuza (2002), Burguet & Che (2004) considered the situation in which a corrupt bureaucrat can manipulate quality components of a bidder's score in exchange for a bribe from the bidder, and that such corruption leads to inefficient results in the scoring auction. However, these studies assumed that a public official has sufficient ability to evaluate the quality of procured goods.

1. Introduction—Motivation and Related Literatures

- Factor (2) focus on public officials' “negative” motivation to avoid the risk of unsuccessful procurement.
- “Unsuccessful procurement” occurs when the quality of procured goods is not satisfied with its requirements.
- In order to discuss the risk of unsuccessful procurement, it is necessary to consider the following situations:
 - 1) The quality of procured goods cannot be verified until the procurement object is put into use.
 - 2) The asymmetry of information on quality of goods among official and suppliers—while suppliers can predict the quality of procured goods they will supply, the official does not know.
- ➔ The effects of these factors have not discussed explicitly in the related literatures. Thus, there seem to be no study that links factor (2) to collusion between public procurer and supplier(s).

1. Introduction—Motivation and Related Literatures

- The purpose of this presentation:
 - to examine the idea that this motivation—**avoiding unsuccessful procurement**—constitutes one of the main reasons for corruption in Japanese public procurement.
- By focusing on *kansei-dango*, we clarify that the risk of unsuccessful procurement resulting from the nature of the procured goods may facilitate corruption in the Japanese context.

2. Regulation and Characteristics of *Kansei-Dango*

- Regulatory framework for *kansei-dango* in Japanese public procurement.

-- In Japan, there are two laws that prevent government officials from engaging in bid-rigging.

(1) the *Act Concerning Elimination and Prevention of Involvement in Bid-Rigging* (promulgated in 2003)

-- This law gives the JFTC the ability to investigate *kansei-dango* and requires the public procurer to take adequate corrective measures to eliminate this sort of corruption.

2. Regulation and Characteristics of *Kansei-Dango*

-- This law prohibits following government official's actions in bid-rigging (Article 2(5))

- i) **Instruction** to engage in bid-rigging;
- ii) **Indication** of bureaucrats' wish for a result of tender to a specified firm;
- iii) **Leakage** of confidential information about the tender;
- iv) Any other actions **supporting** bid-rigging.

2. Regulation and Characteristics of *Kansei-Dango*

(2) the Japanese national *Criminal Code*

-- This law prohibits that any person involved in public procurement use fraudulent means or committing an act which distorts the fairness of public auction or bid.

-- After the investigation stage, police or a public prosecutor may prosecute criminal charge against person engaging in *kansei-dango* at any time.

-- person engaging in *kansei-dango* shall be imprisoned up to 2 years or shall be subjected to punitive fine up to 2,500,000 yen (US\$22,750).

2. Regulation and Characteristics of *Kansei-Dango*

- Characteristics of *kansei-dango* (cf) JFTC (2015)
 - Based on the *Act Concerning Elimination and Prevention of Involvement in Bid-Rigging*, there have been 13 corruption cases that the JFTC has exposed. The details of these cases are presented in Table 1.
 - Some information for corruption between a public official and a supplier based on the *Penal Code* prosecuted by police is presented in Table 2.

2. Regulation and Characteristics of *Kansei-Dango*

<Table 1>

Public Procurer	Goods and/or Services procured	instruct	Indicate	Leak	Support
Iwamizawa/Hokkaido	Public Works (Construction works)	Y	y	y	--
Niigata/Niigata	Public Works (Construction works)			y	--
Japan Highway Public Corp.	Public Works (Bridge Superstructure Construction)	y		y	--
Ministry of Land, Infrastructure and Transport	Public Works (Equipment Installation)		y		--
Defense Facilities Administration Agency	Public Works (Construction and Engineering Works)	y	y		y
Japan Green Resources Agency	Investigation, Measuring and Design for Forestry Road	y	y		
Sapporo/Hokkaido	Public Works (Equipment Installation)	y	y		
Ministry of Land, Infrastructure and Transport	Rolling Stock Management			y	
Air Self-Defense Force, Ministry of Defense	Office Supplies	y	y		
Aomori/Aomori	Public Works (Engineering Works)				y
Ibaragi Prefecture	Public Works (Engineering and Pavement Construction Works)	y	y		y
Ministry of Land, Infrastructure and Transport	Public Works (Engineering Works)			y	
Japan Railway Construction, Transport and Technology Agency	Public Works (Equipment Installation)			y	

2. Regulation and Characteristics of *Kansei-Dango* <Table 2>

Year	Public Procurer	Goods and/or Services Procured	Acceptance of a Bribe
2008	Urayasu City, Chiba	Lease of PC	
2008	Kasukabe City, Saitama	Management of Public Facilities	
2009	Tenkawa Village, Nara	Public Works (Construction works)	y
2010	National Institute of Infectious Diseases	Public Works (Repair Works of Building)	y
2010	Saitama/Saitama	Public Works (Repair Works of Play Equipment)	y
2010	Japan Pension Service	Inspection of Pension Documents	
2010	Otsu/Shiga	Cleaning Service for Hospital	
2011	Ministry of Land, Infrastructure and Transport	Public Works (Equipment Installation)	y
2011	Ikeda/Hokkaido	Public Works (Construction works)	
2011	Forestry Agency	Public Works (Engineering Works)	y
2011	Takamatsu/Kagawa	Public Works (Pavement Construction Works)	
2012	Nikko/Tochigi	Public Works (Engineering Works)	y
2012	Itoshima/Hiroshima	Public Works (Drainage Works)	
2012	Meiwa/Gunma	Public Works (Drainage Works)	y
2012	Kagoshima/Kagoshima	Management of Roadside Trees	
2012	Shizuoka Prefecture	Inspection of Public Facilities	y
2013	Ministry of Defense	Design of Next-Generation Helicopter	
2013	Chiba Prefecture	Public Works (Equipment Installation)	
2013	Shimonoseki City University	Public Works (Repair Works of Toilet)	
2013	Hirado/Nagasaki	Public Works (Equipment Installation)	y
2013	Kamiita/Tokushima	Public Works (Construction works)	
2014	Asahikawa/Hokkaido	Public Works (Engineering Works)	y
2014	Masuda/Shimane	Collection and Transportation of Garbage	
2014	Forestry Agency	Public Works (Engineering Works)	
2014	Sohja/Okayama	Public Works (Construction works)	
2014	Sapporo/Hokkaido	Maintenance of Intranet	
2014	Utsunomiya/Tochigi	Inspection of Electric Equipments	
2015	Yamaguchi/Yamaguchi	Public Works (Drainage Works)	y
2015	Nagahama/Shiga	Public Works (Engineering Works)	

2. Regulation and Characteristics of *Kansei-Dango*

- These tables illustrate the major characteristics of cases of corruption between bureaucrat(s) and firm(s) in Japanese public procurement.

1) Corruption cases are frequent in public works.

→ Of the total of 42 cases represented in Tables 1 and 2, 29 (69%) occurred in public works.

(cf) Soreide (2002)

→ In public works, it is difficult for government to confirm the quality of procured products before implementation of procurement.

2) The illegal action that occurs in many Japanese bid-rigging cases is a leakage of secret tendering information. See Table 2.

3) In many Japanese cases, an illegal action is carried out without pecuniary bribe provided to a government official.

→ Table 2 shows that a corrupt official did not receive any bribe in 18 cases (accounting for 62%).

3. The Unsuccessful Procurement of “Experience goods”

- Economic forces facilitating corruption in Japanese public procurement
 - Corruption by bureaucrats in auction processes often exposed in relation to the goods whose quality is not ex ante confirmable by government officials. (esp. public works)
 - These types of goods are called “experience goods.” (cf) Nelson (1970)



We focus on incentive for government officials to collude that emerges from the specific nature of the procured goods.

3. The Unsuccessful Procurement of “Experience goods”

- To do so, it is necessary to take the following factors into account.

1) A bureaucrat does not have ex ante information about the quality of procured experience goods.

2) If the quality of the procured goods is poor, the benefit for the bureaucrat of procuring them may be drastically reduced.

3) The procuring official has less information about the quality of procured goods than bidders.

→ While the firms know the quality of procured goods, a bureaucrat can predict only the quality of the goods produced by the favored firm.

3. The Unsuccessful Procurement of “Experience goods”

- A simple numerical example

- A bureaucrat is planning to procure an experience goods whose quality meets the prescribed level, q^* .

- When he/she procures goods with q^* , his/her benefit is expected to be 250.

- If the quality of the goods is below q^* , his/her benefit is 120.

- Two firms of two types can potentially supply the goods. Firm 1 always produces high-quality goods, but firm 2 supplies goods that do not meet quality level q^* if he/she is a dishonest supplier.

3. The Unsuccessful Procurement of “Experience goods”

- It is assumed that the probability that firm 2 is an honest supplier is $\frac{1}{2}$
- While firm 1's cost of supplying the goods is 100, firm 2's cost if it is an honest (dishonest) supplier is $100+\varepsilon$ (80).



Let us consider the following game-theoretic framework.

-- First stage: the official selects an auction type: simple price or non-competitive.

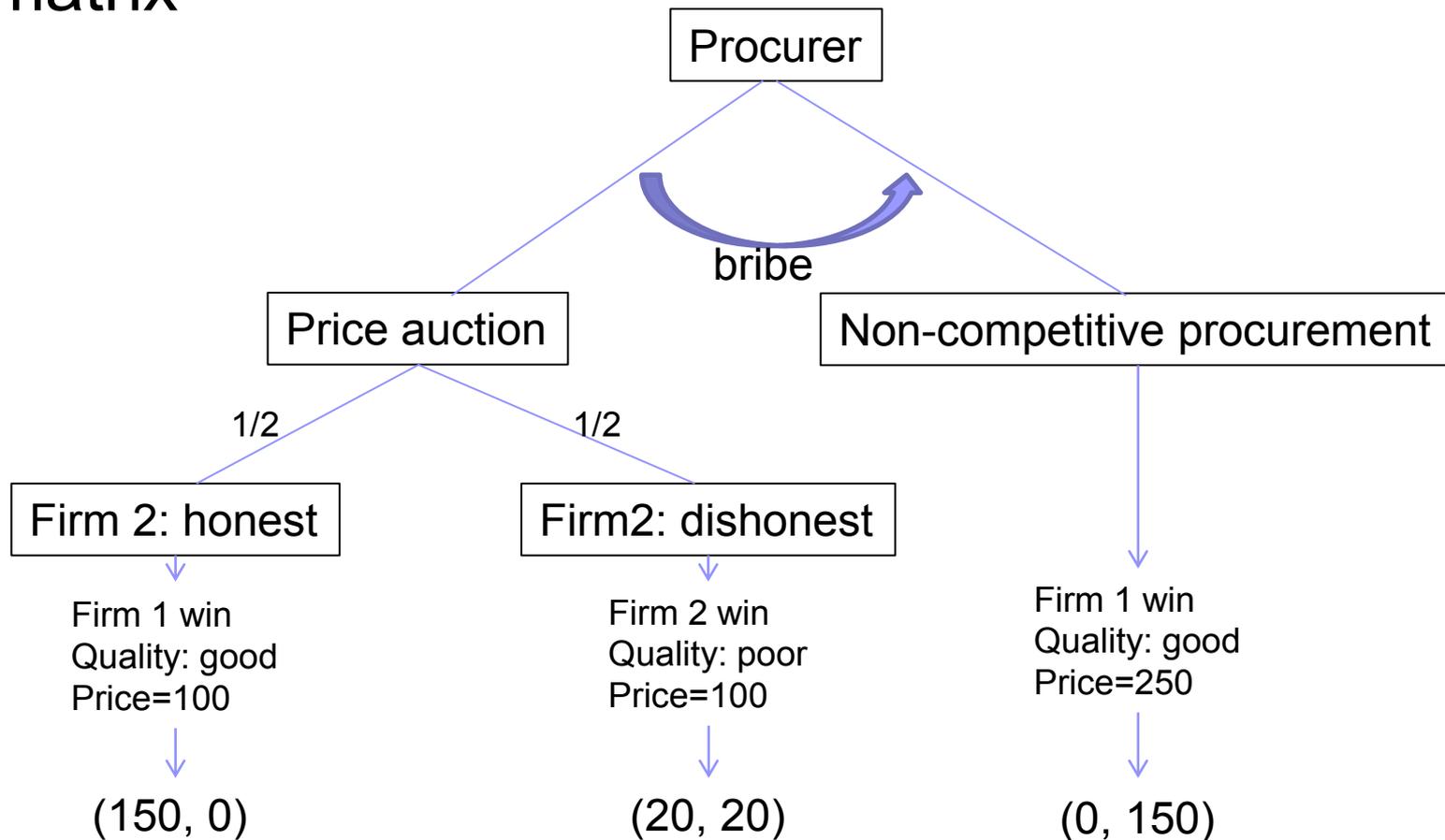
→ It is assumed that the official is normally required to adopt the former but can choose the latter in exchange for a bribe from a favored firm.

-- Second stage: the auction is conducted.

- Notice that due to the nature of experience goods, if firm 2 is a dishonest supplier it can win the auction by saying that its product will meet the prescribed quality level.
- On the other hand, when the non-competitive procurement is selected, the contract will be awarded to firm 1 (in exchange for a bribe).

3. The Unsuccessful Procurement of “Experience goods”

matrix



3. The Unsuccessful Procurement of “Experience goods”

-- the result of a price auction at the second stage.

* When firm 2 is honest, firm 1 can win the auction by setting its bidding price to 100.

→ Official's benefit: $150 (= 250 - 100)$ / The profit of firm 1: 0.

* If a dishonest firm 2 participates in the auction, it can win by setting its bid to $100 - \epsilon$.

→ Firm 2's profit: 20 / The official's benefit: 20 ($= 120 - 100$).

the expected net benefit of adopting a price auction is 85.

-- the result of a non-competitive procurement

* firm 1 can raise his bid to the maximum (250).

→ Official's benefit: 0 / The profit of firm 1: 150 ($= 250 - 100$).



Since the joint profit from conducting a non-competitive auction is larger than 85, collusion between the government official and firm 1 may be supported.

3. The Unsuccessful Procurement of “Experience goods”

- Implications of the numerical analysis:

- The risk of unsuccessful completion of a project creates an incentive for collusion.

- * Note that this risk is created by two elements:

- i) The procured goods are experience goods.

- ii) The asymmetry of information on quality of goods among official and suppliers—while each firm can predict the quality of procured goods it will supply, the official does not know.

- * We should note that firm 1 has a monopolistic position in the numerical example.

- ➔ To support corruption, it is necessary for the favored firm to obtain high profit, which suggests that collusion among suppliers or market imperfection may be a prerequisite for corruption.

3. The Unsuccessful Procurement of “Experience goods”



- A recent case regarding bidding for snow-melting equipment for the Hokuriku Shinkansen bullet train operated by JR TT.
 - JFTC issued cease-and-desist orders and surcharge payment orders to the 11 companies that had participated in bidding for snow-melting equipment ordered by JR TT.
 - ➔ The total amount of the surcharge was approximately 1.03 billion yen (US\$12million).
 - 11 companies had substantially restrained competition in the field of snow-melting equipment works for Hokuriku Shinkansen by designating successful bidders and managing to have those bidders win the bidding.

3. The Unsuccessful Procurement of “Experience goods”

-- It is apparent that the official of JR TT must have been leaked the confidential information (reserve price) to potential contractors to achieve the collusive outcome.

-- More importantly, JR TT strongly wanted to avoid unsuccessful procurement (unsmooth progress on the bidding process) so that it could complete the construction projects in time for the opening of the Nagano–Kanazawa route.

→ If no bidder had won a contract for a given project, this would have led to delays in the JR TT projects.

4. Conclusion

- This presentation has suggested that the risk of unsuccessful procurement resulting from the “experience goods” nature of procured goods in public works projects may facilitate *kansei-dango*.
- Inability to confirm the quality of goods ex ante causes this type of *kansei-dango*.
 - ➔ It is necessary to take measures to overcome this disability.
 - ➔ One approach may be stricter inspection of the quality of goods by a third party.

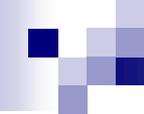
4. Conclusion

- If this problem cannot be overcome by strict inspection, we should reconsider auction types that correspond to the nature of the procured goods.
- On the other hand, it should be remembered that *kansei-dango* is supported by collusion among suppliers or market imperfection.
- This suggests that in order to eliminate government-assisted bid-rigging, it is also important to create competitive business environment.
 - Importance of Enforcement by Competition Authorities

4. Future agenda

- Although we have clarified the role of the risk of unsuccessful procurement on corruption between a public procurer and a supplier,

the precise nature of the complex interrelation among *kansei-dango*, collusion among suppliers, and the nature of the procured goods are not fully explored yet.



Thank you very much for
your time and attention!