

Implicit Contracts and Flexibility in Public Procurement

- Elisabetta Iossa (Brunel U.; U. of Rome Tor Vergata, CMPO, CEDI, EIEF)
- Salvatore Piccolo (U. of Naples, CSEF)
- Giancarlo Spagnolo (U. of Rome Tor Vergata, Stockholm School of Econ., EIEF, CEPR)

Toulouse 14,15 January 2010

BACKGROUND

PPP contracts:

- complex services (DBFO model)
- long-term contracts (25-30 years)
- output based contracts

⇒ High transaction/contracting costs

⇒ High likelihood of changes in user needs during contract life

⇒ High need for flexibility to implement adaptation

EVIDENCE ON CONTRACTING IN PPP

- Yescombe (2007): transaction costs, 5% of contract value
- NAO (2007): contracting period: 34 months average
- NAO (2007): changes for 33% of UK PPP in 2004 - 2006; average 17% of contract value
- Guasch (2004): 8% LAC concessions 1985–2000 renegotiated by govt
- Changes in:
 - use or functionality (conversion of non-teaching to teaching areas)
 - capacity (more classrooms, additional operating theatres)
 - output specifications (schools catering, construction standards, recycling targets).

Various contracting modes used to deal with changes:

Ex: London Underground (NAO 2008)

- Contingent clauses: "specified rights"- (Heathrow Terminal 5)
- "Rigid clauses": LU has the right to request minor (below £20,000) and intermediate works (£20,000 and £5m) not described
- Spot contracts ("Change-Mechanism clause")

Also:

- Implicit agreements: UK HM Treasury (2006): "A spirit of partnership espoused between the contracting parties is key for successful performance...", "...informal agreements have often been developed by contract managers to make the management of changes easier..."

THIS PAPER

- Model of public procurement that endogenizes contacting mode
- Explores interaction btw explicit contracting and implicit agreements to achieve flexibility
- Costs of writing contracts are sizable
- Public procurement:
 - No discretionary transfers
 - Finite game

RELATED LITERATURE

♠ On the interaction between implicit and explicit contracts

Baker, Gibbons and Murphy (1994,2006); Schmidt and Schnitzer (1995), Klein (1996, 2000); Aghion, Dewatripont and Rey (2002)...

♠ On costly contracting and endogenous contract incompleteness

Dye (1985); Anderlini and Felli (1999); Battigalli and Maggi (2002); Bajari and Tadelis (2001)...

♠ On the interaction between implicit and explicit contracts and endogenous contract incompleteness

Bernheim and Whinston (1998), Battigalli and Maggi (2008), Corts (2009), Kvaløy and Olsen (2009a,b), Iossa and Spagnolo (2009)

BUILDING BLOCK

Time 0 : G and F sign contract; q_0 a basic service at cost $c_0 = 0$

Time 1 : State of the world $h = 1, 2, \dots, H$ with prob p_h realizes

Value of adaptation q is v_q if $q = h$ and zero otherwise.

c_q : cost of adaptation

k_q : cost of writing contingent clause

$(1 - \gamma)k_q$: cost of writing spot clause

z : haggling cost of renegotiation

G max surplus net of transfers and writing costs; F max profit

Different discounting: $\delta < 1$ for F .

SPOT CONTRACTING

If h non-contracted, F and G can bargain ex post to implement adaptation

F obtains:

$$\alpha\Pi_q = \alpha[v_q - c_q - z - (1 - \gamma)k_q]$$

G obtains:

$$\tilde{w}_q^S = [1 - \alpha(1 - \delta)]\Pi_q$$

CONTINGENT CONTRACT

$$\tilde{w}_q^C = v_q - \delta c_q - k_q$$

Trade off btw cost of lock in and writing cost of describing states of world.

IMPLICIT CONTRACTING: RIGID CONTRACTS AS PROBABILISTIC THREATS

With no discretionary transfers: standard implicit agreements unfeasible. But can use rigid clause on q_R to sustain cooperation: F implements q for free and G waives q_R provision

- G will not deviate iff

$$z \geq c_{q_R}$$

- F will not deviate if

$$-c_q \geq -c_{q_R}$$

and if

$$-c_q \geq -c_{q_R} + \alpha \Pi_q$$

Rigid clauses can help to ensure flexibility, saving on writing costs

RIGID CLAUSES AS DISCIPLINE DEVICE ON SPOT CONTRACTING

When $z \geq c_{q_R}$, by a similar logic can be used to reduce the bargaining power of F in non-contracted states

G exchanges the non-implementation of the rigid clause on $q_R = h$ for lower price for adaptation $q = h$.

This saves G the amount $(1 - \alpha)c_q$ ex post and thus $(1 - \alpha)(1 - \delta)c_q$ ex ante.

Rigid clauses can help to reduce cost of lock-in

OPTIMAL CONTRACTING MODE

Let $c_{q'} = c$ and only one rigid clause

Let $\pi_R \equiv v_q - c - (1 - \gamma)k_q$

- One rigid clause and all adaptations regulated with implicit agreement if

$$z \geq \max_q \pi_R$$

- No implicit agreement if

$$z < \min_q \pi_R$$

- If

$$\min_q \pi_R < z < \max_q \pi_R$$

subset of adaptations $z \geq \max_q \pi_R$ with implicit contracting. Rigid clause on

$$q_R = \arg \max_q (\tilde{w}_q^R - \max\{\tilde{w}_q^S, \tilde{w}_q^C\}),$$

PREDICTIONS

Implicit contracts help to save on the costs of writing contracts (as in BM) and should be used when:

Value of adaptation, v_q low

Cost of contractually specifying output $(1 - \gamma)k_q$ high

Haggling cost z is high

Cost of adaptation, c_q low

Zheng, Roehrich and Lewis (2008): "*every time something changed we [public and private partner] did not necessarily want to go running off to our various lawyers and spend a lot of time and money if there was just a minor change to the operational relationship [...]*".

PREDICTIONS

As in BM, contingent clauses used when (i) implicit agreement is not feasible (ii) saving in costs specifying the state γk_q is low compared to the expected transaction costs of spot contracts $p_q(z + k_q)$

But here also contingent clauses used when **lock-in** too costly:

ex-post bargaining power α of F high

value of adaptation for G , v_q , high or the surplus $v_q - c_q$ high

haggling cost z low

cost of ex-post rent $1 - \delta$ high

PREDICTIONS

- Core services (high $C_q, V_q; V_q - C_q$): contingent clauses/spot contracting
- Ancillary services (low $C_q, V_q, V_q - C_q$) implicit agreements/spot contracting
- standardized outputs (α is low): spot contracting/implicit
- specific services (α is high): contingent clauses/implicit
- High likelihood of changes in user needs (high p_q):
- Low likelihood of changes in user needs (low p_q): spot
- High transaction costs (high z and $k_q, (1 - \gamma)$): implicit contracting
- Low transaction costs (high z and $k_q(1 - \gamma)$): contingent contracts/spot contracts
- Cost of rents (δ small): sustainability of implicit agreements unaffected but less spot contracting.

NEXT

- General case
- Test implications; examine sample of "Partnership agreements and interviews
- Unforeseen events