Higher School of Economics
Center for Institutional Studies

Lecture. Contract Theories: Applications to the State

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Douglass North

in "Structure and Change in Economic History" (1981)

“The existence of the state is essential for economic growth; the state, however, is the source of man-made decline.”

Different Approaches to the State

What is the state? What are the reasons for state appearance? Why do states offer public goods?

- Contract theories
  - North's Theory of the State
- Exploitation theories
  - Stationary Bandits by Mancur Olson

How does bureaucracy look like inside?

- Institutional Analysis of Bureaucracy

How do state can supply public goods?

- Transaction Cost Economics
- Theory of Incomplete Contracts

Institutional Analysis of Bureaucracy

The New Economics of Organization

Terry M. Moe

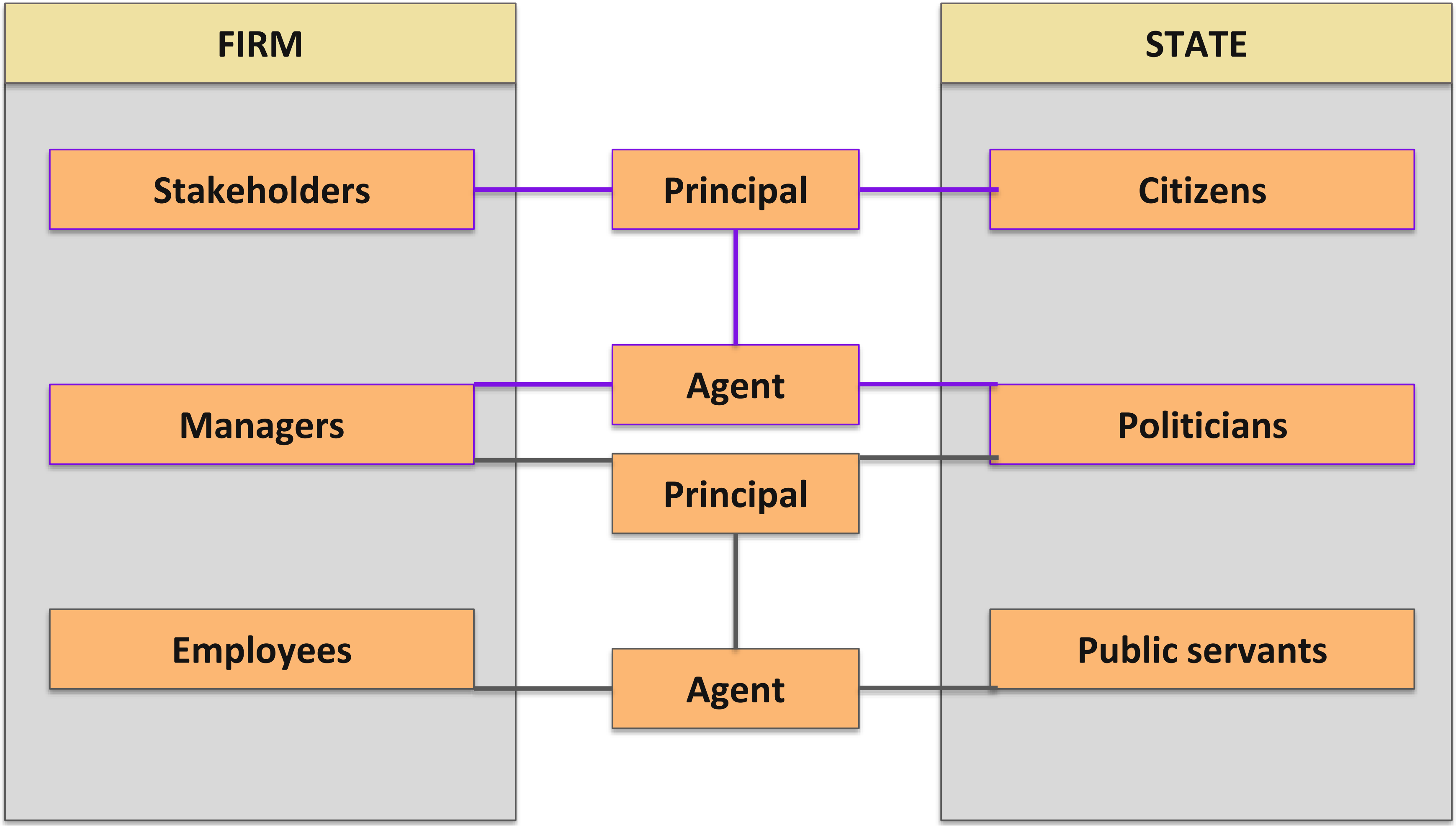
American Journal of Political Science , Vol. 28, No. 4 (Nov., 1984), pp. 739-777

Article Stable URL: http://www.jstor.org/stable/2110997

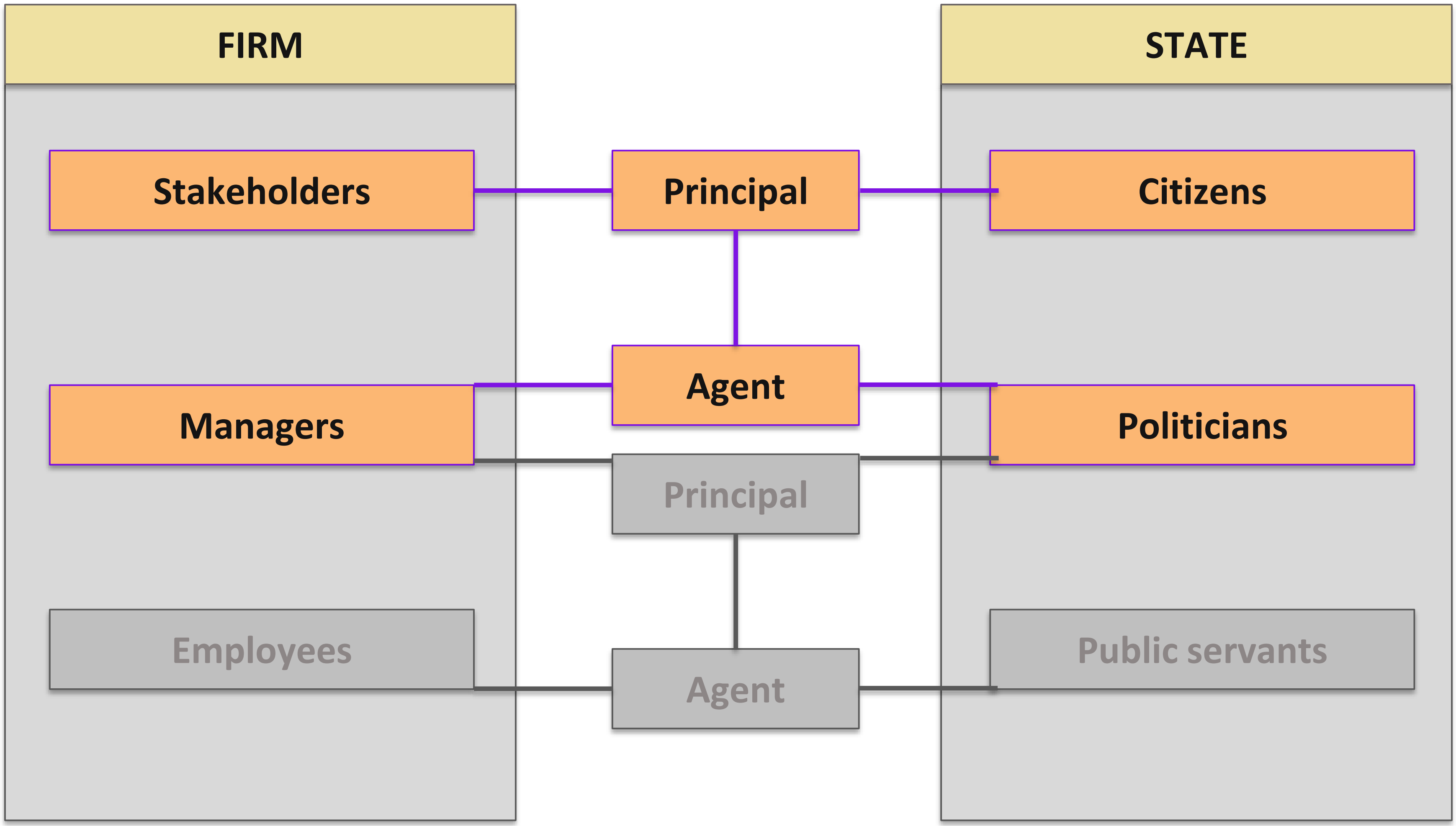
Application of agency theory

- Principal – Agent
  - Citizens – Politicians
  - Politicians – Bureaucrats

Agency theory approach



Stakeholders VS Citizens



Stakeholders VS Citizens

Heterogeneous goals and values of citizens

- Different preferences on what to control
- High TrC

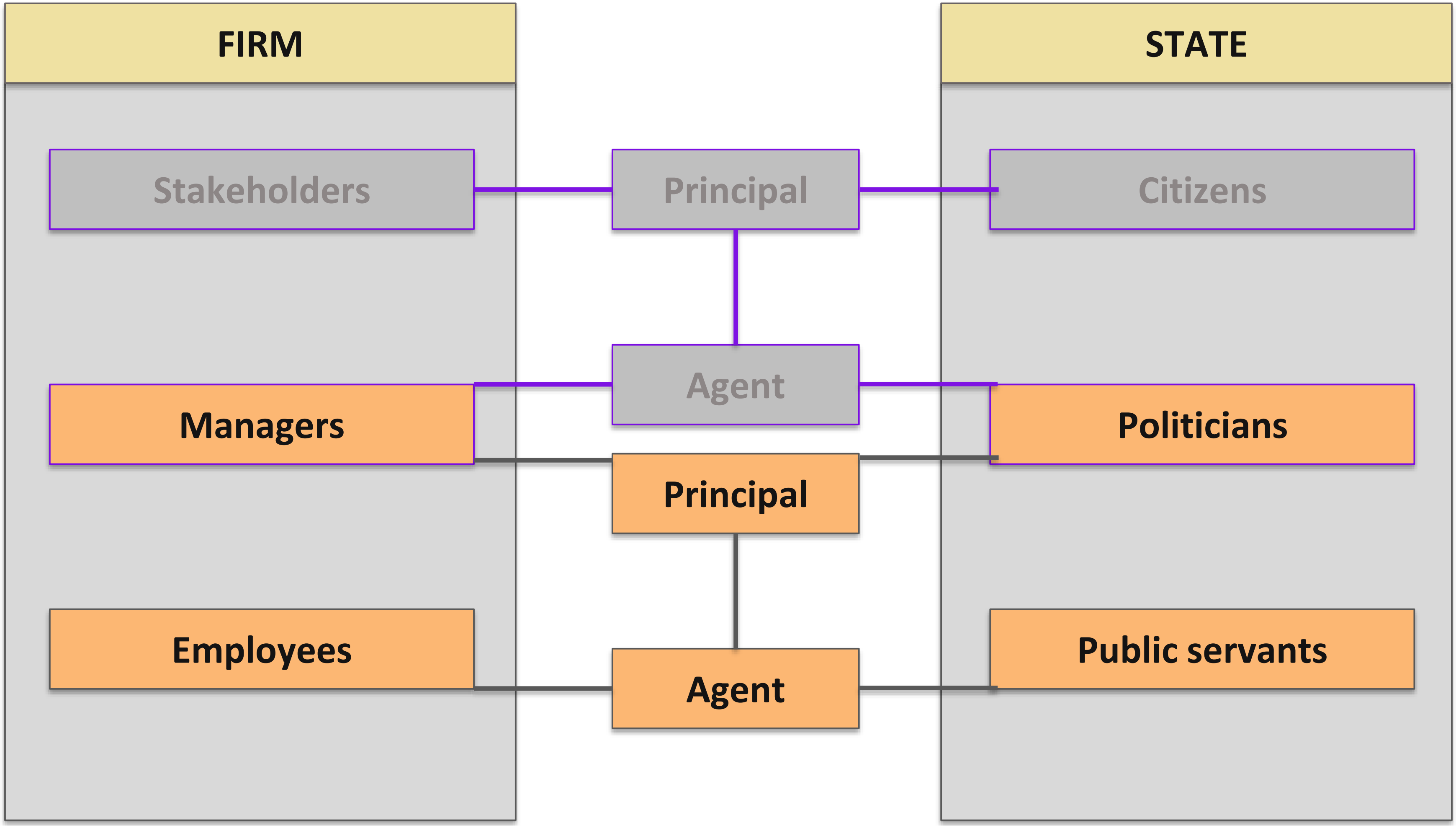
No benchmark

- Market incentives do not work

Exit of citizens is restricted

Politicians (Agent) can impose rules of the game on citizens (Principal)

Managers VS Politicians



Managers VS Politicians

Low monitoring incentives

- Politicians' payoffs may not depend on the actions of public servants

No external control mechanisms, lack of internal control mechanisms

Numerous goals

Multiple principals

Control and Incentives

Who owns residual rights in public sector?

Incentives

- Politicians have lower incentives to control compare with shareholders
- Politicians and citizens face shaper free-riding problem

Monitoring and motivation

- External mechanisms are mostly unavailable
- Internal mechanisms are limited

Motivation in Public Sector

Incentives schemes – pay for performance

Intrinsic motivation

Monitoring – by bureaucrats with higher position, by citizens

Rotation in positions

Efficiency wage

Trial period

Career concerns

Rules (regulation)

- Stable environment
- Example with hospital and epidemic
- Game theoretic approach

Disclosures

Motivation in Public Sector

Incentives schemes – pay for performance
Intrinsic motivation
Monitoring – by bureaucrats with higher position, by citizens
Rotation in positions
Efficiency wage
Trial period
Career concerns
Rules (precise regulation)

- Stable environment
- Example with hospital and epidemic
- Game theoretic approach

Disclosures

Different ways to provide public services

- In-house production,
- Public procurement,
- Public private partnership,
- Privatization.

- How do government choose?

Incomplete Contract Theory: Application to State

The Proper Scope of Government: Theory and an Application to Prisons

Author(s): Oliver Hart, Andrei Shleifer, Robert W. Vishny

Source: The Quarterly Journal of Economics, Vol. 112, No. 4 (Nov., 1997), pp. 1127-1161

Stable URL: http://www.jstor.org/stable/2951268

When should a government provide a service in-house, and when should it contract out provision?

Assumptions

G – single bureaucrat or politician, it represents the interest of society

Private and public property run by a manager *(M)*.

G and *M* are risk neutral.

Basic long term contract specifies P_0 and B_0.

M can devote effort to two types of innovation

- A cost innovation *(e)*
  - Low costs
  - Low quality
- A quality innovation *(i)*
  - Social benefits

Assumptions

$$B = B_0 - \theta b(e) + \tau\beta(i)$$
$$C = C_0 - \varphi c(e) \ + e + i$$

$$b(0) = 0, b' \geq 0, b'' \geq 0$$
$$c(0) = 0, c'(0) = \infty, c' > 0, c'' < 0, c'(\infty) = 0$$
$$\beta(0) = 0, \beta'(0) = \infty, \beta' > 0, \beta'' < 0, \beta'(\infty) = 0$$
$$c' - b' \geq 0 \text{ и } \beta' > 0$$

The quality reduction from cost innovation does not offset the cost reduction and the cost increase from quality innovation does not offset the quality increase

A Time-line of the Game

Date 0	Date 1/2	Date 1
M and G write contract and choose ownership structure.	M chooses i and e.	If no renegotiation, basic good supplied. However, renegotiation will occur.

Social optimum

$$\max_{e,i}[-\theta b(e) + \varphi c(e) + \tau\beta(i) - e - i]$$

$$-\theta b(e^*) + \varphi c'(e^*) = 1$$
$$\tau\beta'(i^*) = 1$$

Private Property

The renegotiation takes place over the quality innovation. The gains are split 50:50.

$$U_G = B_0 - P_0 + \frac{1}{2}\tau\beta(i) - \theta b(e)$$

$$U_M = P_0 - C_0 + \frac{1}{2}\tau\beta(i) + \varphi c(e) - e - i$$

$$\max_{e,i}[\frac{1}{2}\tau\beta(i) + \varphi c(e) - e - i]$$

$$\varphi c'(e_M) = 1$$

$$\frac{1}{2}\tau\beta'(i_M) = 1$$

State property

λ measures the weakness of the incentives of government employee.

Renegotiation takes place over the fraction λ of both the cost and the quality innovations that G cannot appropriate. Gains are split 50:50.

$$U_G = B_0 - P_0 + \left(1 - \frac{\lambda}{2}\right)[\varphi c(e) + \tau\beta(i) - \theta b(e)]$$

$$U_M = P_0 - C_0 + \frac{\lambda}{2}[\varphi c(e) + \tau\beta(i) - \theta b(e)] - e - i$$

$$\max_{e,i}[\frac{\lambda}{2}[\varphi c(e) + \tau\beta(i) - \theta b(e)] - e - i]$$

$$\frac{\lambda}{2}[\varphi c'(e_G) - \theta b'(e_G)] = 1$$

$$\frac{\lambda}{2}\tau\beta'(i_G) = 1$$

Propositions

$e_G < e^*$, $i_G \leq i_M < i^*$ ($i_G < i_M$ *unless* $\lambda = 1$)

Private ownership is superior to public if

- θ sufficiently small;
- θ and ϕ sufficiently small and λ < 1.

Suppose $b(e) \equiv c(e) - \sigma d(e)$. Then public ownership is superior to private ownership, if

- σ and τ sufficiently small;
- σ sufficiently small and λ sufficiently close to 1.

Costs $C_0 - \varphi c(e_M)$ are always lower under private ownership. Quality $B_0 - \vartheta b(e) + \tau \beta(i)$ may be higher or lower under private ownership.

Conclusions

The case for *in-house provision* is generally stronger when

- Non-contractible costs reductions have large deleterious effects on quality
- Quality innovations are unimportant
- Corruption in public procurement is a severe problem

Examples: foreign policy, maintenance of police, armed forces

The case for *privatization* is generally stronger when

- Quality reducing costs reductions can be controlled through contract or competition
- Quality innovations are important
- Patronage and powerful unions are a severe problem inside the government

Examples: garbage collection, weapons production

Private Prisons

USA (1984)

- Corrections Corporation of America (CCA)

France (1990)

UK (1991)

- Wolds Prison, Ashfield Prison

Brazil (1999) – 4 big companies in 2010

Israel (2004-2005-2009)

Japan (2007)

Comparative Analysis of Prisons

Country	United States	Brazil	France
Beginning of private participation	1983	1999	1990
Number of facilities under private operation and/or management	270	14	40
% of inmates in privately operated facilities	7.4 %	1.5%	36%
Mode of participation	Privatization	Services Outsourcing	Services Outsourcing
Type of Contract	Bundled and Unbundled	Unbundled	Unbundled
Activities kept with the government	None	Warden and external vigilance.	Warden, External and internal security, administrative controls, judicial assistance and health care
Private companies decision rights level	High	Medium	Low
Costs effects	Decreasing (-)	Decreasing (-)	Increasing (+)
Quality effects	Decreasing (-)	Increasing (+)	Increasing (+)

Cabral and Saussier (2012) Organizing Prisons through Public-Private Partnerships: a Cross-Country Investigation

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