

◆法と経済学会・第17回全国大会 講演報告◆

□シンポジウム 企画3

『Changing Japanese Contracting Practices Meet Theories of Relational Incentive Contracts

(日本的取引慣行の変化と関係的インセンティブ契約の理論)』

日時：2019年7月14日（日）15:00～16:40

場所：駒澤大学 深沢キャンパス
(120周年アカデミーホール)

チェア 伊藤 秀史（早稲田大学）

パネリスト 矢戸 善一（一橋大学）

Trond E. Olsen（NHH）

Changing Japanese Contracting Practices
Meet Theories of Relational Incentive
Contracts

A Selective (Hopefully Unbiased)
Review of Recent Empirical Evidence

Hideshi Itoh

July 14, 2019

Annual Meeting of Japan Law and Economics Association

Content

- (a) Changing (or unchanging) assembler-parts supplier relationships (*vertical keiretsu*) in the auto industry in Japan
- (b) Relationships outside Japan
- (c) Effects on formal contracts

2 / 6

Takeaways: (a) Relationships in Japan

1. On average, automakers in Japan buy less from their respective group-affiliated (keiretsu) suppliers after 1999 than before
2. The previous result is due to Nissan & Mazda's sharp decline in their procurement ratios from the keiretsu suppliers, but the ratios are stable for the other automakers
3. Nissan's restructuring (NRP, N180) appears to have destroyed the trust relationship mainly because of the *failure of their shared understanding*

3 / 6

Takeaways: (a) Relationships in Japan

4. Even Toyota did restructuring (CCC21) since 2000 to reduce purchasing costs by making purchasing more open and global, but the relationships are still based on trust
5. After 1999 Toyota's keiretsu suppliers increased their supply to non-keiretsu automakers, but Toyota's procurement from other automakers' keiretsu suppliers is limited
6. Keiretsu suppliers seem to have diverged to two types due to the difference in their *relational skills* (concept originally developed by Asanuma)

3 / 6

Takeaways: (b) Relationships outside Japan

1. Toyota & Honda have managed to replicate in North America the same kind of supplier relationships they built in Japan by *building "tough love" (toughest but trustworthy) reputation*
2. They have succeeded because they provided a *coherent set of elements* (understanding suppliers, turn supplier rivalry into opportunity, develop suppliers' capabilities, share information, conduct joint improvement activities) *together from the start*

4 / 6

Takeaways: (b) Relationships outside Japan

3. Their contracts are ambiguous, consisting of general statements and nonbinding targets *because they believe “spelling out specifics would encourage partners to do only what they were instructed to, and nothing more”*

4 / 6

Takeaways: (c) Formal Contracts in Relationships

1. One empirical research focuses on the roles of formal contracts for contingency planning rather than safeguarding, and shows that *Contractual contingency planning* is positively and significantly correlated with *Competence trust*
 - *Contractual contingency planning*: the extent to which contracts detail activities and issues expected to arise in future
 - *Competence trust*: the extent to which suppliers bring valuable knowledge that helps enhancing supply chain performance

5 / 6

Takeaways: (c) Formal Contracts in Relationships

2. Another empirical research studies how outsourcing contracts by Japanese firms differ between their relationships in Japan and those in host country (the Netherlands), and shows that there is no difference in *Contract complexity*
 - *Contract complexity*: the extent to which respondents agree with the 4 statements: *The contract (1) is detailed (2) specifies issues & events that may occur in the future (3) specifies provisions & clauses that facilitate coordination & planning (4) specifies provisions that allow enforcement of agreements & obligations*

6 / 6

Takeaways: (c) Formal Contracts in Relationships

3. On the other hand, *Contract flexibility* is significantly lower for those in host country, in particular, when firms have limited host country experiences
 - *Contract flexibility*: the extent to which respondents agree with “*The contract that we wrote is open ended*”
4. However, the same study shows that *Contracting costs* are greater in host country outsourcing contracts
 - *Contract cost*: the extent to which respondents agree with “*Negotiating & writing the contract was a costly process*”

6 / 6

References

- Aoki, K. and Lennerfors, T. T. (2013a), "The New, Improved Keiretsu. Harvard Business Review, Vol. 91, Iss. 9, pp. 109-113," *Harvard Business Review*. 91: 109-113.
- Aoki, K. and Lennerfors, T. T. (2013b), "Whither Japanese *keiretsu*? The transformation of vertical *keiretsu* in Toyota, Nissan and Honda 1991-2011," *Asia Pacific Business Review*. 19:70-84.
- Dekker, H. C., Kawai, T., and Sakaguchi, J. (2018), "Contracting Abroad: A Comparative Analysis of Contract Design in Host and Home Country Outsourcing Relations," *Management Accounting Research*. 40:47-61.
- Dekker, H. C., Sakaguchi, J., and Kawai, T. (2103), "Beyond the Contract: Managing Risk in Supply Chain Relations," *Management Accounting Research*. 24: 122-139.
- Liker, J. and Choi, T. Y. (2004), "Building Deep Supplier Relationships," *Harvard Business Review*. 12:104-113.
- Stevens, M., MacDuffie, J. P., and Helper, S. (2015), "Reorienting and Recalibrating Inter-organizational Relationships: Strategies for Achieving Optimal Trust," *Organization Studies*. 36:1237-1264.
- Takeishi, A. and Noro, Y. (2017), "Keiretsu Divergence in the Japanese Automotive Industry: Why Have Some, But Not All, Gone?," CEAJFP Discussion Paper Series #11.

Japanese Contracting Practices: Realities and Changes

Law and Economics Association in
Japan 2019.7.14.

Zenichi Shishido

1

Overview

2

The Classic Japanese Contracting Practice

- The transacting parties pledge their commitment based on long-term relational contracts between mostly fixed parties (deal structures).
- They involve largely unspecified ex ante formal contracting and leave controversial issues to future negotiations (contractual provisions).

3

Overview of the Project

- Hypothesis: Japanese contracting practices between makers and suppliers have changed since around 1990 because of the modularization of product architecture: deal structure have changed to be less relational and contractual provisions have changed to be more specific.
- Semi-structured interviews of three industries' experts:
 - Electronics (highly modularized)
 - 4 makers / 3 suppliers
 - Automobile (moderately modularized)
 - 2 makers / 6 suppliers
 - System integration (in between)
 - 2 makers / 0 suppliers

4

Results of the Interviews

- Deal structures have changed a lot.
 - The degree of change differs between automobile industry and electronics industry.
- Contractual provisions did not change so much.
 - The degree of specificity differs between English and Japanese boiler plates.

5

Deal Structures

6

Classic Deal Structures: Long-term Relational Contracts

- The “non-switching practice” model continues
- Price is renegotiated every 6 months
- Ranking system
- Changing governance system depends on the developing stage of a supplier
- Close cooperation across firms based on integral architecture of manufacturing

7

Logic of Continuity: The Significance of Relation Specific Investment Affects Deal Structures

- Quasi-rents occur when a counterparty makes a relation-specific investment that would lose value if the firm changes its operating strategy (Johnson et al.).
- Quasi-rents create a hold-up problem.
- How do you commit to not change?
 - Equity holding
 - Exchanging personnel
 - Supplier association

8

Why Not Vertical Integration?

- The hold-up problem can be solved by vertical integrations less costly than contracts (Williamson).
- In Japan, vertical integration have never been selected although they have been existing as an alternative.
- Even in the United States, vertical disintegrations have occurred since 1980s.
 - Makers recognized that it is impossible for them to develop new technologies for all the parts on their own.
 - Vertical integration is not necessarily the only way to solve the hold-up problem; contractual governance and the Japanese contracting practice could be better alternatives (Gilson et al.).

9

Logic of Our Hypo: Modularization Changed Deal Structures

- The shift of product design from integral architecture toward modular architecture since 1990s made relation specific investment less important.
- Deal structures should have changed from long term relational contracts toward spot contracts based on competing bids.

10

Realities (Electronics Industry)

- Makers purchase fewer customized parts and more commodity parts because of rapid modularization and severe global competition.
 - Most makers abolished their supplier associations.
- However, spot transactions are rare and de facto long-term relational contracts continue.

11

Realities (Automobile Industry)

- In the automobile industry, makers move towards modularization and purchase more commodity parts, but not as much as in electronics industry.
- Importance of relation specific investments has not decreased as much and close cooperation across firms is kept.
 - Most makers keep their supplier associations, even abolishing equity relationship.

12

Contractual Provisions

13

Classic Contractual Provisions: Simple and Unspecified ex ante Formal Contracting

- During the bargaining preceding a contract, parties do not try to reach precise agreement on conflicting issues, but leave them to informal contracts, such as minutes and tacit agreements.
- As a result, formal contracts are less precise than Anglo-American contracts.
- In the bargaining following a contract, results of renegotiation are seldom reflected in the formal contract, but rather in the “I owe you, you owe me” relationship.
- Rights that are specified in the formal contract are seldom exercised literally.
- Parties are very reluctant to sue and do not consider lawsuits as a measure of enforcing contracts.

14

Logic of Our Hypo: Modularization Changed Contractual Provisions

- Modularization diversified deal structure, including the diversification of suppliers.
- The diversification of deal structure requires deal transparency.
- Contractual provisions should have changed to more formalized and specific.

15

Realities

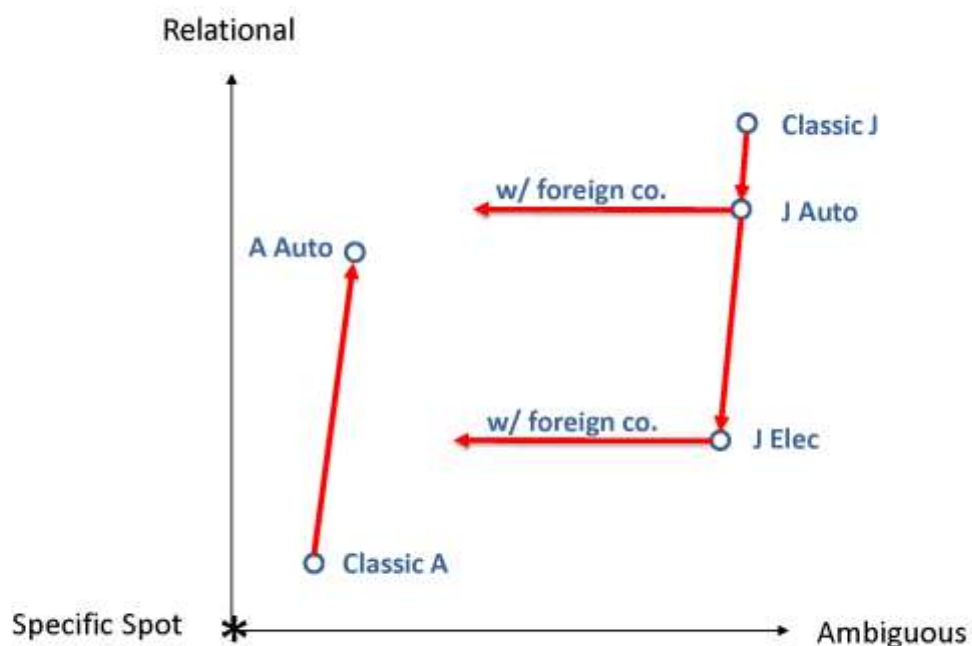
- Contractual provisions have generally not changed since around 1990.
- Most Japanese boiler plates have a future renegotiation clause and do not specify who will have the right to make final decisions regarding predictable disputes, such as how to share the responsibility of product liabilities.
 - Two exceptions: product warranty; contract termination
- Most English boiler plates with foreign suppliers have an “entire agreement” clause and contain more specific clauses.
- Battles of boiler plates are not rare.
- The practice of renegotiating via the “I owe you, you owe me” relationship is likely not to continue mainly because of strengthened compliance.

16

Possible Reasons for Stickiness of Contractual Provisions

- When the contracting parties are homogeneously communitarian, they can expect their counter parties will not sue and rather renegotiate in good faith.
- In that case, the contracting parties do not necessarily pay the cost of increasing the specificity of contractual provisions and could leave the sensitive issues for future negotiation.
- Cf. Depends on verification technology (Kvaloy & Olsen, p.2203)
 - Common law courts v. civil law courts

17



18

Questions to Prof. Olsen

- Equilibrium q = realized q = contracted q (p.2201)?
 - In J Auto, realized $q >$ contracted q .
- If the K is the costs associated with writing explicit contracts specifying the quality of the good, is $K(v)$ the cost only to achieve verifiability level v by the court (p. 2196)?
 - Although, in both J Auto and J Elec, both parties do not expect enforcement by the court, the battle of boilerplate is not rare.

Comments based on (selective) theories of relational contracts

Trond E. Olsen

NHH Norwegian School of Economics

Relational contracts

- «Agreements for which the on-going relationship between the parties plays an essential role in determining what happens” (Malcomson 2012)
- “The literature on relational contracts is concerned with the impact of the on-going nature of the relationship on
 - trade between the parties,
 - on their payoffs,
 - on the nature of any legally enforceable contract that is used to supplement the relational contract,
 - and on the design of organizations”

Relational contract

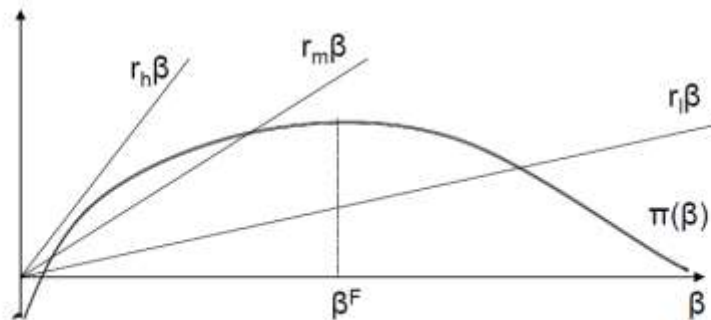
- Not enforced by courts (external enforcement), but by self-enforcement (internal)
- Enables parties to sustain informal contracts on non-verifiable elements (e.g quality aspects)
- Sustained by repeated interaction in long-term relation:
 - Short-term temptations to deviate from agreement balanced by long-term gains from sustained relation
- But limitations on what can be achieved; dependent on a.o. «importance of the future»
 - Discount factor $\delta = 1/(1+r)$, also considered proxy for trust

Simple example

- Quality of a good can be High or Low, non-verifiable
- Probability of High realization given by agent's effort (e)
- Contract: each period
 - fixed payment (α) plus discretionary bonus (β) if High quality
 - Value for agent: $\alpha + \beta e - C(e)$
- Agent chooses effort $e = e^*(\beta)$, increasing in β , provided:
 - trusts principal, and obtains at least outside value (w_a)
- Principal's profit:
 - $\pi(\beta) = eV_H - C(e) - w_a, \quad e = e^*(\beta)$
 - Maximal for some β^F that yields first-best effort

Simple example cont'd

- Enforcement constraint: pay bonus only if long-term relation has higher value than break-up:
 - $V_H - \beta + \pi(\beta) \frac{1}{r} \geq V_H + 0$ i.e. $\pi(\beta) \geq r\beta$
- Value that can be sustained depends a.o. on interest rate (r)

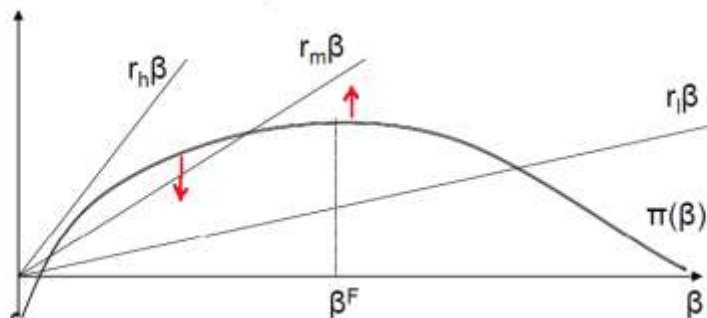


Observations

- Lower surplus makes it harder to sustain a good relational contract
 - Higher costs, lower revenues
 - Better outside options
- Lower discount factor (weight on the future) makes it harder also
 - Higher interest rate
 - Exogenous probability of termination each period
 - Less trust

Specific investments

- Specific investments (I) may affect principal's value, agent's costs and outside options ($eV_H(I) - C(e, I) - w_a(I)$)
- Hence affects profit $\pi(\beta, I)$, but possibly differently at various effort levels
- Relational contract may become easier or harder to sustain



Several agents

Optimal relational contract between a principal and several agents is a «modified tournament» (Levin 2002):

- Only one agent -- the agent with the best performance -- is rewarded; but only if this performance exceeds a certain minimal level.
- This scheme yields strongest incentives for performance within the limits imposed by self-enforcement
- May have relevance for «two-vendor policy»: tournament to become single supplier for a part during the life of a model

Relational vs formal contracts

- Relational: self-enforced. Formal: externally enforced by legal system; must have verifiable provisions.
- Complements or substitutes? Will better legal enforcement increase or reduce the value from relational contracting?
- First: in a given environment it is beneficial to supplement the relational contract with a formal contract (on verifiable elements)
- But, may better formal contracts «crowd out» relational contracts?
 - Depends a.o. on types of improvements, institutional factors and extent to which the parties are able and/ or willing to renegotiate
(e.g. Baker et al 94,02; Schmidt-Schnitzer 95, Kvaløy-Olsen 09, Miller et al 18)

Endogenous verifiability (Kvaløy-Olsen AER 2009)

- Assumptions:
 - Courts can verify relevant quality aspect with some probability (v).
 - This probability is endogenous; determined by investments in contract specifications.
 - $K(v)$ = cost to achieve verification probability v
- Breach remedies (institutional):
 - reliance (RD) or expectation (ED) damages
- Results: depending on a.o. properties of cost function $K(v)$;
 - higher trust (δ) may reduce or increase quality,
 - better verification technology may reduce or increase equilibrium v ,
 - better verification technology may reduce or increase surplus.

Endogenous verifiability: model

- Contract: Principal to pay agent s if agent delivers agreed upon quality q . Producing q costs $C(q)$ for agent.
- If breach ($q' < q$ or $s' < s$), harmed party can go to court; which verifies quality with probability v .
- Breach remedies: expectation damages (ED) or reliance damages (RD)
 - ED: breaching party must comply with its part of contract (s, q)
 - RD: victim paid preparation costs in reliance on contract performance
- Spot contracts
 - ED: always breach and court, principal obtains $v(q - C(q)) - K(v) > 0$
 - RD: zero-sum game, no spot contract can yield positive surplus

Relational contract and endogenous verifiability

- Relational contract feasible if $s \geq C(q)$ and

$$\frac{1}{1-\delta}(q - s - K(v)) \geq q - K(v) - vd + \frac{\delta}{1-\delta}u_s$$

where $d = s$ and $u_s > 0$ if ED, and $d = C(q)$ and $u_s = 0$ if RD.

- Assumption: spot contracting forever if breach of relational contract
 - Larger scope for relational contract under RD than under ED
- Alternative assumption: permanent separation if breach ($u_s = 0$ always)
- Principal chooses q, s, v to maximize profits $q - s - K(v)$ subject to constraints

Trust and quality

- *Model shows that realized quality q can vary negatively with discount factor δ*
- Gains from higher δ can be realized by e.g. higher q and/or lower v . Lower v tends to reduce q .
- Intuition: More trust allows for 'less stringent' (and thus less costly) contracts. This reduces level of 'specific investment' to improve q .
- Precise condition: this occurs iff marginal contract cost $K'(v)$ is inelastic

Verification technology

- *Improved verification technology may yield lower verification probability v in equilibrium.*
 - Gains from better VT realized partly through reduced contract specification costs.
- Effect on verifiability determined by two opposing effects
 - Lower marginal cost $K'(v)$ yields higher v
 - Lower cost level (e.g. fixed cost element of $K(v)$) can yield lower v
 - Either effect may dominate
- Implication for stickiness of contractual provisions:
 - if developments associated with modular architecture yield lower contract specification costs, the equilibrium contract specification level may increase or decrease (or not change much)

Common law vs. civil law

- Improved verification technology through a reduction in *marginal* verification costs will *increase* verifiability level.
- Implication: expect higher equilibrium v and thus more detailed contracts in countries with low marginal verification costs.
- Marginal verification costs can be considered lower in common law than in civil law:
 - Common law system considered more willing to enforce specific contract terms than civil law, which to a larger extent set party-designed contract terms aside if conflict with civil codes.
- Implication: expect higher equilibrium v and thus more detailed contract specifications in common law countries than in civil law countries

Foreign vs domestic contracting

- Implication from model: expect more detailed contract specifications under common law than under civil law
- Here possibly consistent with observation that contracts with foreign companies (under common law, as in USA?) are more specific than contracts with Japanese parties.
- Also consistent with empirical evidence of no difference in contract complexity between contracting within Japan and contracting with Dutch firms (both civil law countries)

Relational contracts and negotiations

- Macaulay (1963): contractual relationships between U.S. firms often structured with loosely specified legal terms that persist over time
- Suggests importance of self-enforcement as well as expectations that parties will negotiate to work things out if disagreements arise
- Incorporate negotiations (and long-term formal contracts on verifiable elements) in relational contracting (Miller et al, 2018)
- Implications:
 - The parties write formal contracts that are not intended to be implemented (terms are renegotiated in equilibrium)
 - Formal contracts can exhibit strategic flexibility (ambiguity)
 - Complementarity between relational and formal contracts

Model

In every period:

1. Negotiation phase: negotiate relational agreement (self-enforced) as well as long-term contract (externally enforced). Nash bargaining with transfers.
 2. Action phase: Productive actions in game defined by external contract in force.
- If disagreement in negotiations: external contract inherited from previous period is in force (and no transfers)
 - Implies: disagreement points in negotiations endogenous and determined as part of the contractual equilibrium

Relational contracts, negotiations and external enforcement

- External contract renegotiated every period in equilibrium
 - Parties agree on a long-term stationary external contract for future periods
 - Also agree on «special terms» for the current period
- Example:
 - Agree on external contract with strict (and costly) monitoring of agent in future periods
 - But also agree on less strict monitoring in current period (to save costs)
 - Idea: strict monitoring is fallback if disagreement
 - Supports large span of future continuation values to reward or punish the agent

Strategic ambiguity

- Model shows that external contract may exhibit strategic flexibility (ambiguity). (See also Bernheim-Winston 98)
 - Verifiable elements (e.g. quantity) could be specified in contract, but are rather left flexible.
 - Example: external contract with cost reimbursement for delivered quantity of standard quality.
Unverifiable improvements in quality beyond the standard level incentivized by relational contract.
- Consistent with contracts that are ambiguous:
 - «spelling out specifics would encourage partners to do only what they were instructed to, and nothing more»

References Cited by Olsen

Baker, G., Gibbons, R., and Murphy, K. J. (1994), "Subjective Performance Measures in Optimal Incentive Contracts," *Quarterly Journal of Economics*. 109(2): 1125–1156.

Baker, G., Gibbons, R., and Murphy, K. J. (2002), "Relational Contracts and the Theory of the Firm," *Quarterly Journal of Economics*. 117:39–84.

Bernheim, B. D. and Whinston, M. D. (1998), "Incomplete Contracts and Strategic Ambiguity," *American Economic Review*. 88:902–932.

Kvaløy, O. and Olsen, T. E. (2009), "Endogenous Verifiability and Relational Contracting," *American Economic Review*. 99:2193–2208.

Levin, J. (2002), "Multilateral Contracting and the Employment Relationship," *Quarterly Journal of Economics*. 117:1075–1103.

Macaulay, S. (1963), "Non-Contractual Relations in Business: A Preliminary Study," *American Sociological Review*. 28:55–67.

Malcomson, J. M. (2013), "Relational Incentive Contracts," In R. Gibbons and J. Roberts (eds.), *Handbook of Organizational Economics*. Princeton University Press. ch. 25, pp. 1014–1065.

Miller, D. A., Olsen, T. E., and Watson, J. (2018), "Relational Contracting, Negotiation, and External Enforcement," NHH Dept. of Business and Management Science Discussion Paper No. 2018/8.

Schmidt, K. M. and Schnitzer, M. (1995), "The Interaction of Explicit and Implicit Contracts," *Economics Letters*. 48:193–199.