Vertical Integration, Appropriable Rents, and the Competitive Contracting Process

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The Main Points 1/3

- Builds on Coase's insight that
  1. transaction costs,
  2. coordinating costs, and
  3. contracting costs

  must be used to explain the degree of vertical integration. (Intrafirm transaction v.s. interfirm transaction.)
- If transaction costs are high, the firm will vertically integrate.

The Main Points 2/3

- It is the first contribution to emphasize the importance of **asset specificity.**
- It extends Coase's insight by looking at "the possibility of **post-contractual opportunistic behavior**: breach of contract."
  - Post-contractual opportunistic behavior $\Rightarrow$ Hold-up problem $\Rightarrow$ Inefficiency.
- **Hold-up problem**: an investment is specific to a relationship and difficult to contract, so that its return is ex post not fully appropriable by the investor.
  - Specific investment $\Rightarrow$ Thin market.
  - Noncontractability $\Rightarrow$ Its return subject to negotiation.

The Main Points 3/3

- This paper assumes that
  - as assets become more specific and more appropriable quasi rents are created, the costs of contracting will generally increase more than the costs of vertical integration, and
  - market power is pervasive.
- When the costs of such post-contractual opportunistic behavior are high, vertical integration will supercede market systems.

Appropriable Quasi Rents of Specialized Assets 1/5

Assume an asset is owned by one individual and rented to another individual.

- $$\begin{aligned} \text{The quasi rent} &= \text{its value} - \text{its salvage value} \\ &= (\text{operating revenue} - \text{economic cost}) \\ &\quad - \text{its salvage value.} \end{aligned}$$
- The appropriable quasi rent = the quasi rent − its value to the second highest-valuing user.

Appropriable Quasi Rents of Specialized Assets 2/5

- The appropriable quasi rent $\neq$ the monopoly rent.
  - An appropriable quasi rent can occur with no market closure or restrictions placed on rival assets.
  - An asset may be costlessly transferable to some other user at no reduction in value, but entry of similar assets is restricted.

Appropriable Quasi Rents of Specialized Assets 3/5

Example:

1. Publisher B buys printing services from Printer A for $\$5,500$ a day. After getting a signed contract the printer goes and purchases the special press for which he would have little use. It costs the printer $\$1,500$ a day to run the press, and there is no salvage value. Thus, the quasi rent is $\$4,000$. Once the press is purchased, the publisher may now cut the payments from $\$5,500$ to $\$1,500$ and thus capture all the “quasi-rents” from the printer.

Example Continued:

2. If there is a second publisher C is willing to offer at most $\$3,500$ for daily service, then the appropriable quasi rent is $\$2,000$ now.
3. On the other hand, the press owner may have bargaining power due to the large losses that he can easily impose on the publisher, the press owner might suddenly seek to get a higher rental price than $\$5,500$ to capture some newly perceived increase in the publisher's profits.
4. Hence, if an asset has a substantial portion of quasi rent which is strongly dependent upon some other particular asset, both assets will tend to be owned by one party.

Appropriable Quasi Rents of Specialized Assets 5/5

- The alternative solutions to reduce the post-contractual opportunistic behavior:
    1. Vertical integration (structure of asset ownership, Grossman and Hart (1986) and Hart and Moore (1990)).
    2. Contracting.
    3. Government regulation. (Goldberg, 1976)

Contractual Solution 1/6

- **Vertical integration** v.s. **economically enforceable long-term contract**.
  - The authors assume the opportunistic behavior can occur only with long-term contract.
- Long-term contracts used as alternatives to vertical integration can be assumed to take two forms:
  - **Explicit contract**: transaction costs.
  - **Implicit contract**: the market mechanism.

Contractual Solution 2/6

- The difficulty of explicit contracting: (Klein et al., 1978 and Tirole, 1999)
    1. Unforeseen contingencies.
    2. Cost of writing contracts.
    3. Cost of enforcing contracts.

Contractual Solution 3/6

- The use of implicit contracting:
  1. Offering a future **premium** to the potential cheater such that his IC condition holds, i.e., the present-discounted value of this future premium stream must be greater than any increase in wealth that could be obtained by him if he, in fact, cheated and were terminated.
  2. The **larger** the potential one-time **cheating benefit** or **appropriable quasi rent** and the **shorter** the expected continuing business **relationship**, the **higher** this **premium** will be in equilibrium.

Contractual Solution 4/6

- The use of implicit contracting continued:
  3. In equilibrium, the premium stream is then merely a normal rate of return on the **reputation**, or **brand-name** capital created by the firm by these initial expenditures.
  4. A stochastic element may let opportunistic behavior appear.

Contractual Solution 5/6

- The contracting cost is **positively related** to the level of appropriable quasi rents,
- but any internal coordination or other ownership costs are **not systematically related** to the extent of the appropriable specialized quasi rent of the physical asset owned.

Contractual Solution 6/6

- The empirical implications:
  1. The **lower** the appropriable specialized quasi rents, the more **likely** that transactors will rely on a contractual relationship.
  2. The **higher** the appropriable specialized quasi rents of the assets involved, integration by common or joint ownership is more **likely**.

Example of Appropriable Quasi Rent 1/7

- This paper provides five examples to show the appropriable specialized quasi rents serve as an important determinant of economic organization.

Example of Appropriable Quasi Rent 2/7

Example A: Automobile Manufacturing.

1. Ford v.s. die owner:
    - The manufacture of dies for stamping parts in accordance with a specifications gives a value to these dies specialized to Ford.
    - No comparable demanders $\Rightarrow$ the incentive for Ford to opportunistically renegotiate a lower price.
    - A large cost from the production delay $\Rightarrow$ the independent die owner demands a revised higher price for the parts.
    - Joint ownership of designs and dies removes this incentive to attempt appropriation.

Example of Appropriable Quasi Rent 3/7

Example A: Automobile Manufacturing Continued.

2. GM v.s. Fisher Body:
    - Individually constructed open, largely wooden, bodies $\Rightarrow$ Largely metal closed body by 1919.
    - In 1919 GM entered a ten-year contract with Fisher Body for the supply of closed auto bodies.
        - GM buys substantially all its closed bodies form Fisher.
        - Fisher could charge a **reasonable** price for the bodies supplied to GM.
    - Demand of the closed body styles $\uparrow$ and refusing to locate their body plants adjacent to GM assembly plants.
    - In 1926, GM mergers Fisher Body.

Example of Appropriable Quasi Rent 4/7

Example B: Petroleum Industry.

- Several oil wells and a cluster of independently owned refineries v.s. an independent pipeline owner.
  - The latter would purchase all its oil at the lowest well-head price from oil-field owners, and
  - could raise the price of crude oil at least to the price of alternative sources of supply to each refinery.
- Therefore oil-field owners and refinery owners would, through shared ownership in the pipeline.
- Rockefeller's example: the dominant oil-refining position

$$\Rightarrow \begin{cases} \text{a price reduction on oil he shipped by rail, and} \\ \text{rebates from the railroads on oil shipped by its rivals.} \end{cases}$$

Example of Appropriable Quasi Rent 5/7

Example C: Specific Human Capital.

- Employees appropriate the quasi rent of the firm's asset.
  - A peach orchard owner v.s. the laborers (the union).
  - To reduce this risk of appropriation

$$\Rightarrow \begin{cases} \text{the collateral,} \\ \text{the premium payment for the union's reputation, or} \\ \text{explicit contracts.} \end{cases}$$

- The firm appropriate the quasi rent of the firm-specific human capital of employees.
  - Implicit or explicit contracting, and monitoring by a union.
- The existence of a union increases the cheating costs.

Example of Appropriable Quasi Rent 6/7

Example D: Leasing Inputs and Ownership by the Firm.

- Assets with specialized quasi rents could be appropriated by the lessee or lessor $\Rightarrow$ less leasing.
  - Don't leasing: elevators or the glass of windows in an office building.
  - Leasing: the planes, trucks, or cars used by a firm.
- No general rule: for instance, agricultural lands.
- Franchisors v.s. franchisee: leasing or integration?

Example of Appropriable Quasi Rent 7/7

Example E: Social Institutions.

- The specific assets involved are intangible personal assets $\Rightarrow$ the problems of contract enforcement become severe.
- The number of individuals involved (or the extent of the specific capital) becomes very large $\Rightarrow$ ownership arrangements often become extremely complex.
  - Golf country clubs: mutual ownership.
  - Marriage: mutual ownership.
  - Money-supply industry: an extremely high premium payment and costly vertical integration $\Rightarrow$ government intervention or nationalization.

Conclusions

- When dealing with specialized assets the post-contractual opportunistic behavior problem is more **severe** so there will be a **greater** degree of vertical integration.
- In fact, business relationships are often structured in highly complex ways **not** represented by either a simple rental contract or by simple vertical integration.
- The pertinent economic question is:
  What kinds of contracts are used for what kinds of activities, and why?