

VETICALLY SEPARATED MARKETS

Manufacturers rarely supply final consumers directly (as we've typically modeled them in the first part of the course). Instead, most industries are vertically separated. We often refer to firms in these markets as upstream and downstream firms. In these settings, downstream firms are the customers of the upstream firms, and many of the issues that we covered in the first part of the course still apply. For example, the upstream firm may want to price discriminate across the downstream firms.

However, things can also get more complicated in vertical relationships between firms. In particular, downstream firms often do not simply consume the good, but typically make further decisions regarding the product.

Examples of activities of downstream firms:

- 1) determination of final price
- 2) promotional effort
- 3) placement of product on store shelves
- 4) promotion and placement of competing products
- 5) technological inputs

By the way, why don't manufacturers simply engage in direct marketing to consumers? Some reasons:

- increasing returns to distribution due to shopping needs or travel costs for consumers,
- choice of variety, demand for service,
- different geographical markets, ...

Unlike the consumption activities of final consumers, the activities of the downstream firms may affect the profits of the upstream firm. This is why upstream firms care about the activities of the downstream firms, and why we study vertical control/restraints between firms in these settings. We focus on the incentives for vertical control when the market for the intermediate good is imperfectly competitive.

THEORY OF THE FIRM/VERTICAL CONTRACTING

Here we examine vertical aspects of firm behavior.

Vertical issues may be divided into two sub-categories,

- vertical relations, and
- vertical integration/contracting and theory of the firm.

We'll first discuss vertical relations and then vertical integration.

We'll look also at empirical papers concerning:

- vertical relations (Villas-Boas, 2003)
- vertical integration and contracts :
 - video rental (Mortimer 2003)
 - coal markets (Joskow 1987 and 1990)

Hopefully, these lectures will provide motivation for future papers on vertical contracts in agricultural and resource markets.

VERTICAL RELATIONS

Our main interest here is what problems arise when a monopoly manufacturer is supplying a good to a downstream monopoly retailer. Assume the retailer pays the wholesale price of w for unit of the good from the manufacturer. And assume the retailer has no other costs aside from the wholesale price for a unit. The retailer then sells the good at a price of p .

The final demand by consumers is given by the usual linear inverse demand function: $p = A - B q$

The profit function of the retailer (or downstream firm) in this case is $\pi_d = (p - w)q_d = (A - Bq_d - w)q_d$

The FOC is the usual for a monopolist:

$$d\pi_d / dq_d = 0 = A - 2Bq_d - w$$

Which can be rearranged to give

$$q_d = (A - w)/2B \quad (1)$$

The resulting price that the consumers end up paying is therefore

$$p = A - Bq_d = A - B(A - w)/2B = (A + w)/2.$$

Equation (1) tells us the number of units the downstream firm will sell to consumers given the wholesale price w . In other words, the equation (1) is the derived demand curve that faces the upstream manufacturer.

Hence the inverse demand curve facing the manufacturer is given by

$$w = A - 2Bq_u.$$

Assume the manufacturer has a marginal cost of c . The profit function for the manufacturer is then

$$\pi_u = (w - c)q_u = (A - 2Bq_u - c)q_u$$

The FOC is

$$d\pi_u / dq_u = 0 = A - 4Bq_u - c$$

which implies $q_u = (A - c)/4B$ and therefore $w = (A + c)/2$.

The profits for each firm in equilibrium are then

$$\pi_d = (A - c)^2/16B \quad \text{and} \quad \pi_u = (A - c)^2/8B.$$

To see why this is a problem, we imagine what would happen if the firms vertically integrated into a single firm. In so doing this will internalize any externalities which are having a harmful effect on firms' profits.

If the firms merge, there is a single firm producing the good at marginal cost c and then selling it to consumers directly.

The profit function for this merged firm is

$$\pi_i = (p - c)q = (A - Bq - c)q$$

The FOC is $d\pi_i/dq = 0 = A - 2Bq - c$ which implies that $q = (A - c)/2B$, $p = (A + c)/2$ and the vertically integrated firm's profits are $\pi_i = (A - c)^2/4B$.

1. You can verify easily that $\pi_i > \pi_d + \pi_u$.
2. Not to mention, that the price consumers pay is lower when there is a single integrated firm than when there are two vertically separated firms.

If there is one thing worse than a monopolist, it is two successive monopolists. The problem is that, when the firms are vertically separated, the upstream monopolist will set a price with a markup above marginal cost, and then the downstream monopolist will add a further markup above that of the upstream firm. We have markups on top of markups.

This problem is referred to as “**double marginalization**” or “successive monopoly”.

The interesting thing is, not only is this bad for consumers, but actually the firms themselves end up with lower profits in this case. Vertical integration is very appealing from the firms' point of view, as well as from consumers. But as we will discuss later, there may also be significant costs associated with merging.

We have just looked at the case where there was a monopoly in the downstream market. But in fact, the problem still exists if there is a downstream oligopoly (say a Cournot oligopoly). All that is needed is that the downstream firms have some market power, for this to be a problem.

The need for control is because of externalities between downstream and upstream firms, or among downstream firms themselves.

Instead of vertically integrating, an alternative is to use a different pricing mechanism (this is referred to a contractual remedy).

If the manufacturer instead used a two-part tariff to transact with the retailer, the problem could be solved.

With a two-part tariff, the manufacturer sets a fixed fee (f) that the retailer must pay before they receive the first unit from the manufacturer. Then, in addition, the retailer pays a price of w for each unit they obtain.

Hence the total amount the retailer pays to the manufacturer is $f + wq$

It is actually quite intuitive that in this case, the monopolist will set $w = c$ and then set f to take all the profits of the retailer.

The use of a two-part tariff in this way will give rise to exactly the same solution as vertical integration.

One note: problem is that the retailer is facing all the risks since he is the residual claimant. If demand is stochastic, may be optimal to lower the fee f and set $w > c$.

One second note is due: There are also other problems that arise in these context of vertically separated markets, and sometimes we might even create a successive monopoly problem in order to solve other incentive problems in the vertical channel.

Empirical paper 1: Villas-Boas (2003) Technical Efficiency

The question: *Does the contracting between manufacturers and retailers in the supermarket industry follow the double marginalization model or something more efficient.*

Why do we care: As we just saw, vertical contracts may promote efficiency in the vertical supply chain. This efficiency is a result from the departure from the simple uniform pricing scheme that results in double marginalization. The problem of double

marginalization arises when the only contractual instrument used is the wholesale price. As a consequence, the sum of profits for the manufacturer and retailer may be less than if they could have coordinated their decisions. Additionally, the final retail price ends up being higher than the price that would result from maximizing the profits of the channel as a whole, or in other words, the price ends up being higher than the price that would result if there was vertical coordination. There is therefore an efficiency gain (a smaller Deadweight Loss) that results from the departure from the simple uniform pricing scheme that results in Double Marginalization.

Approach: Test different models of vertical contracting between manufacturers and retailers in the supermarket industry.

There **are three steps:**

1. First estimate demand at retail level, $Q=f(\text{retail } p)$ in the market.
2. Use the estimates to compute price-cost margins for retailers (d) and manufacturers (u) under different supply models without observing wholesale prices. The expressions for the price-cost margins for retailers and manufacturers are derived from the first order conditions from profit maximizing behavior of retailers and manufacturers assuming models of vertical and horizontal competition at the retail and manufacturer level.

$$P-w = g_d(\text{demand, elasticities, retail behavior}),$$

$$w-c = g_u(\text{demand, elasticities, retail and manufacturer behavior}).$$

Since we don't know w , hard to get data on the wholesale prices:

$$p-w+w-c = p-c = g_d(\text{dem, elast, ret. behav}) + g_u(\text{d, el, m+r behav}).$$

3. Test which set of margins seems to be compatible with the margins obtained from direct estimates of cost and select the best among the non-nested competing models.

Some detail:

The models considered are:

- (1) double marginalization pricing model;
 - (2) a vertically integrated model;
- and (3) a variety of alternative (strategic) supply scenarios, allowing for collusion, non-linear pricing and strategic behavior with respect to private label products.

Data: yogurt sold at several stores in a large urban area of the United States.

Conclusions: For the particular market, the paper empirically analyzes whether Double Marginalization is occurring or if other types of contracts seem to be in place. In these alternative contracting-solutions the vertical coordination problem has been solved in some degree.

The paper finds that wholesale prices are close to marginal cost and that retailers have pricing power in the vertical chain. This is consistent with non-linear pricing by the manufacturers or with high bargaining power of the retailers.

Should we worry about the Deadweight Loss? Do we have any idea if it is significant in this market?

Preliminary calculations show that, in terms of efficiency gains, the market that I study, the magnitude of the deadweight loss associated with the double marginalization model in comparison with the “best” model is roughly one thousand and six hundred dollars a week, which represents four percent of the sum of the three retailers’ revenues. Extrapolating to an United-States/yearly basis (given the US consumption patterns of half a serving a week, total US population and the average price of a yogurt serving being forty-five cents) then national yogurt retail revenues are about two billion dollars, and four percent of that is about ninety million dollars, which is a considerably big number.

Empirical Paper 2: Mortimer (2003) Revenue Sharing: in the market for home-video rentals.

- Prior to 1998, a video store would pay roughly \$75 for a single copy of a movie to put on their shelf, and then the video store would keep 100% of all rental revenue.
- Beginning in 1998 “revenue-sharing-contracts” were introduced on a widespread basis for the first time. Under revenue-sharing, the video store pays about \$5 to put a copy of a title on the shelf, but then gives about 50% of rental revenue back to the video distributor.
- This has led stores to put many more titles on the shelf, and is why we have the “guaranteed to be there” advertising campaign by Blockbuster.
- Currently most video stores (all Blockbuster, all Hollywood and most independents) have signed to using revenue sharing contracts.

Questions: It is interesting to wonder in this case:

- What has happened to video-store profits?
- What has happened to distributor profits?
- What is the effect on consumer welfare?

4

Results: Total industry profits are about 7% higher because of these contracts being used & consumers are substantially better off.

Further (empirical) references: Other issues addressed in the empirical literature on the determinants of contractual form include issues concerning moral hazard (for example, Shepard (1993), Slade (1996), Lafontaine (1992) and Corts (1999)), and the effects of transactions costs and the role of risk (for example, Allen and Leuck (1993, 1992)). For a good summary of the empirical literature on contractual relations between manufacturers and retailers, see Lafontaine and Slade (1997).

Vertical Relations (cont.)

The common benchmark for what firms can achieve through vertical control is the “vertically integrated profit”. This is the maximum industry or aggregate (manufacturer plus retailer) profit. If firms use vertical restraints efficiently, they should achieve the vertically integrated profit.

Besides two part tariffs (franchise fee) there are five types of vertical restraints used in vertically separated markets:

- 1) Exclusive Territories: a dealer/ distributor/retailer is assigned a (usually geographic) territory by the manufacturer/ upstream firm and given monopoly rights to sell in that area.
- 2) Exclusive Dealing: a dealer/ distributor/retailer is not allowed to carry the brands of a competing upstream firm.
- 3) “Full-line forcing”: a dealer is committed to sell all the varieties of the manufacturer's products rather than a limited selection. (i.e., the upstream firm ties all its products when selling to the downstream firm).
- 4) Resale Price Maintenance: a dealer commits to a retail price or a range of retail prices for the product. This can take the form of either minimum resale price maintenance or maximum resale price maintenance. When manufacturer imposes in the contract a maximum price that the retailer is able to sell the product at, this is called “maximum resale price maintenance”. It is somewhat ambiguous whether this is legal under antitrust law. (Though in our simple model here, consumers would benefit from such clauses.) Don't confuse this with “minimum resale price maintenance” which is definitely illegal under antitrust law.

5) Contractual arrangements: upstream and downstream firms write contracts to provide greater flexibility in the transfer of the product. Profit sharing and revenue sharing are the most common, also, quantity forcing and quantity rationing and franchise fees.

Resale Price Maintenance:

Requires retailers to maintain a minimum price, a maximum price, or a fixed price. Examples: Windows 98, Windows XP, books, many retail products.

Two goals:

- 1) Partially solve the double marginalization problem
- 2) Can induce dealers or retailers to allocate resources for promoting the product, or exerting other forms of effort in distributing the product.

Simple model:

Consider the example of promotions or advertising A . Assume (inverse) demand is given by $p = \text{Square_root}(A) - Q$. The manufacturer sells to two dealers who compete in price. Denote the wholesale costs as d and advertising expenditures as A_1 and A_2 , where $A = A_1 + A_2$.

1. The first result is that for any given d , no dealer will engage in advertising and demand would shrink to zero, with no sales. Why? Firms compete in price, and they sell a homogeneous product. What does p equal in this case?

2. What can Resale Price Maintenance do?

Minimum Resale Price Maintenance: $p = p^f \geq d$

Demand is $Q = \text{sqrt}(A_1 + A_2) - p^f$. Assume that quantity demanded is split evenly between the two retailers. The only strategic variable for the retailers is A . Thus, writing profits as a function of A yields: $\pi_i = 0.5(\text{sqrt}(A_i + A_j) - p^f)(p^f - d) - A_i$

and from the F.O.C. we get :

$$0 = d\pi_i/dA_i = (p^f - d) / (4\text{sqrt}(A_i + A_j)) - 1 = 0.$$

Note that we can only identify the sum of $A_1 + A_2$ and not A_1 and A_2 individually. But the idea is that retailers will compete on promotion now. As long as $p^f > d$ then at least one retailer has an

incentive to advertise, and the total dollars spent on ads increases with the markup.

Note that one problem in the last example was that competition between the retailers initially resulted in too much competition downstream, so that firms could not afford to advertise as a vertically-integrated firm would choose to do. One way around that:

Exclusive Territories or Territorial Dealerships:

Manufacturer must choose whether to grant dealerships to several or one dealer(s).

A similar literature looks at these decisions in the context of licensing for inventors. (i.e., when I invent a new product, do I want to sell it myself, license it exclusively to a retailer/distributor, or license it to many competing retailers?)

As a result, if the dealer fixed costs F are low we can choose to set up two dealerships at the edges of a large linear town. If the sunk costs of establishing a dealership are high, we will only set up one. Now in a small town, it is too hard to commit to not undercutting price, since the consumers on the other side of town don't have far to go to get to your dealership. In this case, we almost always chose a single dealership. One contractual way to get around this problem is to set up exclusive territories so that 2 dealerships are simply not allowed to compete with each other. (i.e., we contract around the problem of intra-brand competition)

In the previous example, each dealer i becomes a monopolist on his half of the linear market, since he is contractually prohibited from stealing consumers from dealer j .

Franchising

Franchisor, e.g. McDonalds, franchisee, owner of outlet.

Most are business-format franchises (with total system of doing business) where the franchisor provides:

- Training

- Advice on price and location choice
- Advertising, accounting

Franchisor monitors the franchisee's performance.

Incentive alignment: Franchise fee + 0-10% royalty (% sales), when bilateral effort needed, such that franchisee's income depends on the total sales. This way franchisee wants to maximize total sales.

When difficult to monitor, franchisor may own outlet or locate closer to headquarters.

Profit-sharing or revenue-sharing contracts:

These contracts are similar to a two-part tariff. Instead of charging linear prices, the manufacturer requires a lump-sum transfer as well as a per-unit charge. (as in empirical study, Mortimer (2003))

Quantity Forcing/Quantity Rationing:

Instead of setting prices, require that downstream firms purchase a minimum or a maximum quantity of the product.

- 1) This may be used in place of price controls in the case when the upstream firm is a monopolist.
- 2) It is potentially used in vertical settings where the upstream firm is competing with other manufacturers. (inter-brand versus intra – brand competition).

Legal Issues

There are a lot of ambiguities in legal treatment of vertical contracts.

- Until 1970s, RPM and E. Territories were per se illegal under Sherman Act. But many states passed fair trade laws (e.g McGuire in RPM) that were interpreted to cover some of these cases.

Thus, although price fixing remains per se illegal, it's not always applied in vertical settings b/c it conflicts with free-trade notions between manufacturers and their distributors.

- Non-price issues have been generally accepted to be ok by the courts.
 - Exclusive territories,
 - Refusal to deal.
- Vertical restraints to raise rivals' costs, deter entry.
- Courts are concerned with Foreclosure
- And if vertical restraints can be used to increase market power.
- And with price discrimination – but not clear welfare effects.
- Vertical restraints that we saw gave incentives to provide services and to compete for customers with non-price strategies, for example RPM.

VERTICAL INTEGRATION

What determines the boundaries of a firm?

For example, if you own a firm that sells a new kind of soda, you will need to decide:

- Do you make your own bottles/cans or do you buy them from some other firm?
- Do you grow any of the ingredients or do you buy them from some other firm?
- Do you own the trucks that distribute the product or do you rent them from another firm?
- etc, etc, etc

MAKE OR BUY?

Put simply, firms must decide what items they actually make or produce themselves, and what items they buy from other firms as inputs to creating the final product.

Integration refers to a situation when two firms become one.

We may distinguish between horizontal and vertical integration, and you have discussed horizontal integration in previous lectures.

Vertical integration refers to the case when two firms, one of which supplies a product to the other, merge into a single firm. By definition, these two firms were not previously competitors.

We want to understand what are the incentives for firms to vertically integrate. And we want to understand the potential implications of such mergers: what does it mean for social surplus?

“Upstream” refers to firms that are further away from the consumer or higher up the supply chain.

“Downstream” refers to firms that are closer to the consumer or lower down the supply chain.

- Trade between firms is market based exchange: this is the coordination of productive activity directed by market prices
- Trade within firms is non-market based: this is the coordination of productivity activity directed by the managers of the firm.

In deciding the make or buy decision, there is a trade-off between the costs and benefits of vertical integration:

Costs of Integration

1. Loss of efficiency from supplying own inputs rather than buying in a competitive market
2. Higher managerial burden (monitoring costs)

Benefits of Integration

1. Assure supply: on time delivery can be very valuable.
2. Avoid government intervention (such as price controls).
3. To increase monopoly profit: "double-marginalization".
4. Agency theory: incentive alignment when actions of downstream firms are hard to monitor. The effort expended by subcontracted firms is costly to monitor directly than within firm?
Example: in the trucking industry, it is difficult for shippers or carriers to assess the driving behavior of their drivers — speed, accident prevention, treatment of the truck, and so forth — but also other decisions such as choice of route, timing and length of breaks, and care expended in minimizing cargo damage or loss. At

the same time, truck drivers, whether employees (vertically integrated) or owner operators (vertically separated), might reasonably be presumed to be more risk averse than shippers or carriers, for whom any given shipment is likely to be a small item in a large portfolio. Trucking transactions thus appear to pose the standard risk-incentive tradeoff of agency theory, and one might therefore expect asset ownership and compensation/sharing rules between truck drivers and carriers to vary with the relative importance of risk and moral hazard across transactions.

5. Facilitates price discrimination between downstream markets.

6. Reduced transaction costs

Transaction cost theory: when transaction costs are high, there is the possibility of “opportunistic behavior”

One case where opportunistic behavior might arise is where there is a need for specific assets.

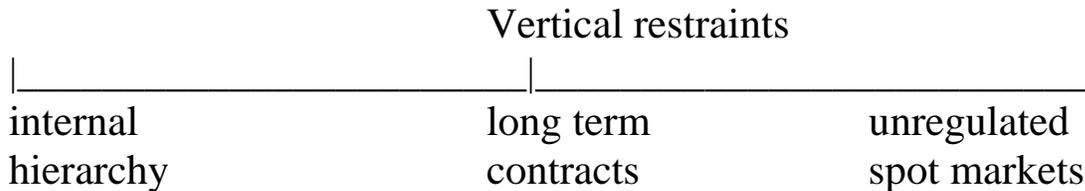
What are **specific assets**? For example: some physical assets, human assets, or site-specific assets.

Upstream firm may invest in assets that are valuable in relationship with downstream firm. These specialized assets are otherwise useless. The upstream firm is now at the mercy of downstream firm. But this is known in advance by the upstream firm. So they would not make such investments. Suggests that firms will engage in productive activity themselves (i.e. vertically integrate) where purchasing in the market place makes them vulnerable to opportunistic behavior.

More generally it has been shown that increasing the degree of asset specificity leads to longer-term contracts: with very low asset specificity the spot market is optimal, with very high asset specificity vertical integration optimal. We'll see an empirical paper Joskow (1987) about these issues next.

The main issue in contractual agreements:

2 extremes:



What causes substitution for internal organization for market exchange?

Model:

Buyer: $U(x, I, \theta)$

where x is a vector of actions, I investments and θ the state of nature.

Seller: $c(x, I, \theta)$.

Efficiency: choose x and I to

Max $E_{\theta}[U(x, I, \theta) - c(x, I, \theta)]$.

Given θ we get $x^*(\theta)$ and $I^*(\theta)$ ex-post efficiency.

Question:

Can we write a contract that sustains $x^*(\theta)$ and $I^*(\theta)$?

If yes, then there is no reason to substitute vertical integration for market exchange. $x^*(\theta)$ and $I^*(\theta)$ will be chosen, how the “pie” is divided is a bargaining game...

Ex-ante efficiency: before knowing θ .

Reasons why contracts fail:

1. Asymmetric information
2. Incomplete contracts
3. Opportunistic behavior

1. Asymmetric information

- one sided versus two sided asymmetric information
- Suppose u is private information and c is not (is common information, can be an expected value but both agree on probability). Then the buyer should own the production process and trade will occur if $u > c$, which is efficient outcome.
- If u is not private information but c is, then the seller should get paid u and transaction occurs if $u > c$, which is efficient.
 - We are accomplishing efficiency through allocation of ownership rights, residual claims.
 - Note that when two-sided asymmetric information, both u and c are private information, then it does not work, we get inefficiency.

Question: Would vertical integration solve the contracting problem? It might. The buyer-seller incentives to give mis-information will disappear but then internally, within the firm, arise other problems, like internal bureaucracy issues.

2. Inability to write a complete contract about $x^*(\theta)$ and $I^*(\theta)$

- (i) bounded rationality
- (ii) contractability quality/effort

3. Opportunistic behavior

This is a problem because of incomplete contracts.

Can't rely on the market.

Specific assets can create monopoly/monopsony circumstances if small number of bargaining parties.

Case 1: Empirical paper: Joskow (AER, 1987) – see next page.

East Coast: homogeneous, spot market, a lot of mines

West Coast: market power, not homogeneous, long term contracts

THEORY OF THE FIRM/VERTICAL CONTRACTING

- Protection of Relation-Specific Investments (Williamson, 1983)
- Moral Hazard – provision of marginal incentives (agency theory)

Transaction-cost economics (Williamson, 1979, 1983 ;Klein, Crawford and Alchian, 1978) and **agency theory** have been used to analyze organization and contracting practices in a wide range of industries.

The focal question: does the existence of relationship-specific investments or the need to have incentive alignment provide explanations for the range of organizational arrangements observed in the industry.

We'll focus here on the first issue of the existence of relationship-specific investments.

In 201b, Mechanism Design, you addressed the second issue of moral hazard. For a very good reference see the book Laffont and Martimor, "Theory of Incentives".

Case 1: Empirical paper: Joskow (AER, 1987)

Research question: *Are relation-specific investments determinants of the contract length (duration) between coal suppliers and electric utilities?*

Assumption: Risk aversion is not an important determinant of structure of vertical relationships in this industry.

Data: 277 coal contracts in coal markets between utilities and suppliers of coal. Cross-sectional variation, for 1979, in contract duration and structure of vertical relationships (Joskow, 1985):

- 15% integrated suppliers and utilities
- 15% spot market transactions
- 70% contracts with length 1-5 years.

Variables of interest :

- Definition according to Williamson(1983):
 1. *site-specificity*: once sited the assets are very immobile.
 2. *physical asset specificity*: when parties make investments in machinery or equipment that are specific to a certain transaction and these have lower values in alternative uses.
 3. *dedicated assets*: general investment by a supplier or buyer that would otherwise not be made but for the prospect of transacting a specific (large) amount of coal with a particular partner. If the contract is prematurely terminated, the supplier (who invested) would be with excess capacity/ the buyer would be with unexpected excess demand.
 4. *human asset specificity*: workers acquired skills, know-how and information that is more valuable inside a particular transaction than outside it.
- Measures of asset specificity:
- Contract duration:

The length of time that the parties agree *ex-ante* to abide by the terms of the contract.
- Contract terms:
 1. a formula for determining price for coal delivered at each point in time (usually monthly)
 2. quantities to be delivered and purchased at each point in time

3. quality and source of coal
4. other provisions that are very standard across contracts.

Existence of appropriable quasi-rents associated with site specificity in transactions between coal mines and mine-mouth power plants.

Approach: discussed by empirical paper presentation during section.

Results:

Buyers and sellers make longer ex-ante commitments (longer contracts) when relation-specific investments are more important and rely less on repeated spot negotiations over time:

- East Coast: homogeneous, spot market, a lot of mines
- West Coast: market power, not homogeneous, long term contracts

End of case 1 ...

Case 2: MOTION PICTURE INDUSTRY

Reference:(Chisholm, 1996)

Why did the governance structure in the motion picture industry change from long-term contracts to market exchange?

In the early period there was a lot of demand for relationship-specific investments. That is, investment that was only useful for a specific studio-star pair.

But then, after 1948, there were some changes which reduced the demand for such relationship-specific investments.

Golden Age of the Studio 1929 - 1948.

Industry concentration based on seven key studios.

Studios were highly vertically integrated: owned production, distribution, and exhibition.

During this period most people working on films, including actors, were long-term employees of the studios.

Actors were paid a salary (very little profit sharing as happens now).

- In 1920s a trend toward long term contracts. Why?

At that time films were mostly serials. Thus both actor and studio had incentive for long term contract.

Resulted in typecasting of actors (this is relationship-specific investment on behalf of star).

Studios were genre-specific (this made investment in promoting star even more relationship-specific)

So there were substantial relationship-specific investments at that time

- For example: Tarzan series at Metro Goldwin Meyer (MGM) starring Johnny Weissmuller

1. Weissmuller who incurred sunk cost and relation-specific investment (foregone revenue as a versatile actor):

2. ...''if the jungle lord materialized in any form other than his unique one, he would compromise his mystery''

3. They paid Johnny not to act in other films.

4. MGM incurred a sunk cost and relation-specific investment (promoting Weissmuller as Tarzan) advertising wouldn't transfer to other stars.

- Other examples:

Gable : "Dangerous Man"

Exception: Cooper: too versatile (probably on shorter term contract)

- So, in order to incur these sunk costs studios and stars needed to know they were in long-term relationship.

What changed?

1948 Supreme Court decision : Paramount Case.

Paramount found in violation of Sherman Act (anti-trust case).

- Separation of exhibition from production mandated.

Now studios no longer had guarantee that film would be exhibited.

- Incentive for studios to promote stars diminished.

- Other changes around the same time:

- Increased competition.
- Television becoming more popular implied a need for Studios to become differentiated, led to cut back in serial films (TV had advantage in serials).
- All this led to decrease in specific investments and thus to shortening of contracts between studios and stars, now largely on film by film basis.

End of case 2.

Case 3 : FREIGHT TRANSACTIONS – TRUCKING INDUSTRY

Empirically, a number of authors have analyzed the governance of freight transactions in transaction cost (e.g, Palay, 1984; Pirrong, 1993; Nickerson and Silverman, 1999; and Hubbard, 2001) or agency (Baker and Hubbard, 2000, 2001), complexity of heterogeneous transactions (Lafontaine and Masten, 2003).

Two key questions:

1. Importance of asset specificity in trucking industry?
2. Does agency theory explain vertical integration/contracting schemes?

Findings: arrangements for determining driver compensation are related to the heterogeneity of haul attributes: (i) hauls carried by flatbed, refrigerated, and tanker trucks exhibit greater variance in attributes affecting drivers' costs than do hauls carried in standard dry vans, and (ii) drivers of flatbed, refrigerated, and tanker vehicles are more likely, relative to dry van drivers, to be paid a percentage of the carrier's revenue than on the basis of mileage, (iii) no significant difference in vehicle ownership associated with the types of trailers drivers pull, suggesting that differences in asset characteristics are not an important determinant of asset ownership in this industry, (iv) Driver ownership of trucks does, however, appear to be a function of driver wealth and experience, which is consistent with findings in the literature on self employment. (v) Baker and Hubbard (2000) note that the introduction of on-board computers and GPS tracking systems may be reducing the cost of monitoring at least some aspects of drivers' behavior.

Rents and quasi-rents (numerical example, Besanko et al(2000))