Inter-Firm Contracts: Evidence and Implications for Antitrust

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Inter-Firm Contracts: Evidence

- Written for Handbook of Organizational Economics (Bob Gibbons and John Roberts eds.)
- Assess what we can learn from empirical studies that have focused on inter-firm contracts
- Two interrelated questions:
  - Reasons to enter into particular types of contractual relationships or choosing particular contract terms
  - What are the effects of contracting decisions on outcomes such as prices, quantities, firm survival, and so on

Inter-Firm Contracts: Evidence

- Two main goals beside taking stock:
  - Highlight areas for future work; along the way, show industries/data
  - Bring empirical literature on vertical restraints into org econ literature
- Here – also think about Antitrust Implications

Inter-Firm Contracts: Evidence

- Inter Firm: means basically procurement and distribution contracts
  - Not government procurement
  - Not with individuals
  - Not with banks/sources of finance
  - Not alliances
- Because inter firm, contracting parties are usually residual claimants => incentives are to max own profits
- Also, less role for risk preferences, and more perhaps for the “future”

Organization of this Talk

1. Types and terms of common contracts
2. Theoretical frameworks – super briefly
3. Methods – super briefly
4. Summary of results on some contracts/clauses
5. Conclusion

Introduction: Common Contracts/Clauses

- Pricing contracts (= fixed price contract if only one "product")
- Cost-plus (= Time and Materials); often for single projects
  - More flexible than fixed price, but agent has less incentives to keep costs low
- Share contracts – usually affine in revenues; found in franchising, tech licensing, retail leases, and so on

Introduction: Common Contracts/Clauses

- Vertical restraints: contract clauses that restrict the behavior of one party
  - Often imposed by upstream on the downstream party
  - Most studied: Resale price maintenance (RPM), Exclusive dealing (ED), Exclusive territories (ET), Tying
  - Can be viewed as clauses allocating decision rights
  - Also correspond to partial or contractual vertical integration
  - => Vertical integration/merger (VI) as benchmark

Introduction – Why study franchising?

- First, because of its economic importance
  - The U.S. Census reports franchise businesses accounted for 10.5 percent of businesses with paid employees in the 295 industries for which franchising data were collected in 2007
  - = 453,326 establishments either franchisee or franchisor-owned businesses
  - accounts for nearly $1.3 trillion of the $7.7 trillion in total sales for these industries and employs 7.9 million workers

Introduction – Why study franchising

- Second, franchising is an exemplar of long-term, contract-based, organizational forms that stand in between spot market interactions and complete vertical integration
  - Caves and Murphy (1976) : “The franchise relationship raises fundamental questions concerning the nature of the firm and the extent of its integration.”

Introduction – Why study franchising

- Third, one can get data on many aspects of contracts and organizational decisions:
  - Most chains have both franchised and company owned units;

  => Can ask what determines the mix or how they choose which outlets to franchise or not
  - Can get information on contract terms (because uniform offering at a point in time!)

  => Can ask what affects the choice of contract terms
  - When "lucky," can compare performance outcomes too (e.g. Lafontaine and Sivadasan, 2009, Kosova and Lafontaine, 2010)

But What is in a Franchise Contract?

- Udell (1972)
- *Input purchases:* Equipment, may or must, 66%; Supplies, may or must, 52%; Vendor approval, 50%
- *Monitoring:* Franchisor right (obligation) to inspect, 71% (13%); to audit books, 44%; periodic reports by franchisee, 76%; must use franchisor's bookkeeping system, 58%; specified penalties for violations, 20%
- *Vertical Restraints:* Franchisor controls price, 28% (Other source – 3 out of 4 have exclusive territory)

But What is in a Franchise Contract?

- Udell (1972)
- *Operations:*
  - Standards, 64%;
  - Cleanliness, 72%;
  - Operation manual part of contract, 43%;
  - Franchisors sets: days, 58%, hours, 57%, product line, 60%;
  - Franchisee must operate, full time, 13%
  - Franchisee cannot own competing business, 27.5%

But What is in a Franchise Contract?

- Udell (1972)
- *Sale/transfer rights:* Franchisor approval required, 74%; Franchisor right of first refusal, 32%; Right of inheritance, 33%
- *Duration/Termination:* Duration: 10-20 years; Option to renew, 54%; Conditions for termination, 98%; Conditions for immediate cancellation, 42%; Grace period, 69%; Non-compete years, 56%; Non-compete distance, 49%

But What is in a Franchise Contract?

- Arruñada, Garicano, Vázquez (2001)
- *Input purchases:* Manufacturer has right to set size and design of showroom, 100%; Machinery and tools, incl. workshop design, 100%
- *Monitoring:* fulfillment of sales targets, 100%; premises inspection, 100%; dealer must provide data, 87%; right to audit, 52%, to poll dealer clients, 74%
- *Vertical Restraints:* Manufacturer has right to set maximum prices, 100%; Dealer exclusive territory, 52%; non-linear pricing (sales discounts), 87%

But What is in a Franchise Contract?

- Arruñada, Garicano, Vázquez (2001) (Spain)
- *Operations:* Manufacturer sets:
  - sales targets, 100%
  - number of trial vehicles, 52%,
  - inventory levels, 100%
  - advertising requirements, 100%,
  - has right to set personnel, number and qualifications, 100%;
  - training, for salesforce, 65%, for after sales personnel, 100%;
  - manufacturer can specify stock of spare parts, 100%

But What is in a Franchise Contract?

- Arruñada, Garicano, Vázquez (2001) (Spain)
- *Sale/transfer rights:* Changes in ownership of dealership can lead to termination if not authorized, 100%
- *Duration/Termination:* Contract specifies conditions for termination, 100%

But What is in a Franchise Contract?

- If get impression that the contracts are long and detailed, I have done my job
  - In fact, in business-format franchising, contracts are often 20 to 30 pages of small typeset
  - And often include the operations manual by reference
- And other inter-firm contracts are also detailed and long (see Lafontaine and Slade, 2013, Table 3)

Theoretical Frameworks

- Agency Theory
  - Single-sided moral hazard (Stiglitz 1974)
  - Double-sided moral hazard (Reid, 1977)
  - Yields “share parameter” – effects on share can be tested directly (e.g. Lafontaine, 1992)
  - Also can be “reinterpreted” to explain the choice of share contract versus arms length and vertical integration (ordered “types” of contracts)

Theoretical Frameworks

- Transaction Cost Theory
  - can be traced back to Coase (1937)
  - developed further by Williamson (1971,1979, 1983), Klein et al (1978) and others
  - Empirical content provided in particular by Williamson: specific assets and contract incompleteness combine to yield potential issues of ex-post haggling and opportunism
  - The more severe these are, the more firms will rely on longer term contracts or integrate ultimately

Theoretical Frameworks

- Property Rights Theory
  - also can be traced back to Coase (1937)
  - more recent and formal than transaction-costs arguments, developed by Grossman and Hart(1986), Hart and Moore (1990), Hart (1995)
  - demonstrated how the allocation of property rights, which confer the authority to make decisions on the use of assets under unforeseen contingencies, affect *ex ante* investment incentives

Theoretical Frameworks

- Property Rights Theory (cont’d)
  - Empirically, was interpreted as more formal version of TCE
    - Whinston (2003) showed important differences
  - But Grossman and Hart (1986): as the importance of the manufacturer's investment (or effort) grows, manufacturer ownership becomes more likely
    - These predictions are consistent with those of double-sided moral hazard models in particular

Theoretical Frameworks

- Self-enforcement
  - Third-party enforcement may be unavailable, or prohibitive
  - For private enforcement, the breaching party must face some future loss
  - Loss may be of future benefit from given relationship (relational), or in a group setting, where other parties participate in sanctioning
  - Empirically, authors have looked for evidence of rent, and effect of past or future expectations

Theoretical Frameworks

- Market Power Arguments
  - Above are efficiency arguments for contracts and contract terms
  - Prior antitrust literature very wary of particular (vertical) restrictions
    - concerns – leveraging and foreclosure (and dealer cartels)

Theoretical Frameworks

- Market Power Arguments
  - but vertical restraints, like other contracting practices, also can be explained using incentive/efficiency arguments
    - E.g. can solve double margins problem, reduce free-riding, encourage service provision or dealer investments, …

Methods

- Incidence – when are clauses or particular types of contracts used
- Effects – what do these do to firm profits, survival, consumer prices, and so on
- Central empirical issue: IDENTIFICATION
  - Due to omitted factors and thus endogenous selection, or endogenous matching, and so on
  - Not as bad for incidence as for effects, but still
- Related issue - complementarities

Methods

- Currently acceptable (publishable) methods:
  - Panel analyses (fixed effects) with strong instruments
  - Event studies (but stock price data?)
  - Dif-in-dif with clear exogenous "treatments" – changes in laws that are not tied to the sector, or changes in taxes enacted for other reasons, or ??
  - Increasingly: structural demand estimation and simulations (also for vertical mergers: Yurukoglu)

Some Evidence

- Pricing contracts - Incidence
  - Large make-or-buy literature can be viewed as tests of incidence of pricing contracts versus VI
  - Shows that asset specificity increases the use of VI, but most studies do not consider explicitly the form of the pricing contract (form of the “buy” option)

Some Evidence

- Longer duration protects assets…
  - Joskow (1985, 1987) finds that contracts for plants that choose to locate next to coal mines are on average 12 to 16 years longer than those of other plants
  - Crocker and Masten (1987) also find that firms use longer-term contracts when they have fewer buyer, seller, or transportation options
- But can be constraining …
  - Crocker and Masten (1988) find that contract duration was reduced by an increase in uncertainty (due to the 1973 oil embargo)

Some Evidence

- Flexibility and Adjustment Clauses - Incidence
  - The sort of flexibility that can be built into contracts includes adjustment clauses for price or quantity and clauses that make breach easier
- Can take the form of a formula (redetermination) or a process (renegotiation)
  - Trade off flexibility, associated with renegotiation, and freedom from opportunism or "haggling costs," which favors redetermination
  - Crocker and Masten (1991) find that longer term contracts tend to include renegotiation clauses
  - Note : example where issue of complementarity

Some Evidence

- Flexibility and Adjustment Clauses – Effects
  - Large literature on the most favored nation (MFN) clause, which guarantees buyers (sellers) the lowest (highest) price offered to others in a market
  - Most authors model the use of MFN clauses as practices that facilitate oligopolistic coordination
  - Crocker and Lyon (1994): MFN provisions facilitate efficient price adjustment in long-term contracts
  - They use data from natural gas contracts to distinguish empirically between these explanations and find support for the price adjustment argument

Some Evidence

- Fixed Price v. Cost Plus – Incidence
  - Cost-plus contracts are more flexible : they adjust automatically to changed costs
  - Theory predicts they should prevail when

    i) projects are highly uncertain/not clearly defined

    ii) the technology is complex or untested

    iii) measuring costs is not problematic

    iv) quality is important but difficult to verify, and

    v) trading parties trust each other

Some Evidence

- Fixed Price v. Cost Plus – Incidence
  - Evidence supporting these predictions found in
    - Leffler and Rucker (1991): private timber harvesting contracts
    - Banerjee and Duflo (2000): contracts for Indian customized software
    - Kalnins and Mayer (2004) and Shi and Susarla (2008): contracts for the provision of IT services
    - Corts and Singh (2004): contracts between oil companies and independent drilling contractors
    - Bajari, McMillan and Tadelis (2008): private sector construction contracts

Some Evidence

- Share Contracts – Incidence
  - Found in inter-firm contracts in many different settings, including retail space leasing, movie distribution, as well as technology licensing and franchising and joint ventures (see Table 2)
  - Overall:

    i) sharing where incentives matter for more than one party

    ii) sharing as a pricing mechanism: when the value of the good is unknown to both parties at time of contracting, and depends on factors outside their control (Gil and Lafontaine, 2012)

    iii) not an insurance story

Some Evidence

- Share Contracts – Effects
  - Shelton (1967) – within firm design; finds same revenues, lower costs, under franchising
  - Krueger (1991) and Arrunada, Vasquez and Zanarone (2008) also finds lower labor costs under franchising
  - But latter due to union issue for company owned
  - When instrument for org form decision, using data on other decisions of the company in same market, Kosova, Lafontaine and Perrigot (2013) find no difference in revenues, occ rates, and RevPar
  - Need much more work in this area, across many outcomes incl. quality, as in Jin and Leslie (2008), and survival

Some Evidence

- Share Contracts – Effects
  - Also need studies outside of franchising
  - One such : Mortimer (2008) analyzes the move from linear pricing to revenue sharing in video rental stores
  - Using structural model of firms' contracting choices, quantifies the benefit for upstream and downstream firms
  - = 10% for popular, and more for less popular titles.
  - She also shows that small retailers benefit more from revenue sharing than larger retailers do, and consumers are better off too

Some Evidence

- Vertical Restraints – Effects
  - Cooper et al. (2005) and Lafontaine and Slade (2008) reviewed the empirical literature on these
  - Both concluded that VR imposed by manufacturers on their resellers seem to be associated with lower costs, greater consumption, higher stock returns, and better chances of upstream firm survival
  - => they are devices for aligning incentives, eliminating free riding, and controlling opportunistic behavior
  - little evidence of foreclosure or other anti-competitive effects
  - But – too few studies in too few industries!

Some Evidence

- Vertical Restraints – Effects
  - The evidence also suggests that mandated restraints, such as the exclusive territories that car manufacturers are required to provide to their dealers in most states, and the mandated separation of production and distribution in beer, lead to higher prices, higher costs, shorter hours of operation, lower consumption, and fewer points of sale
  - Thus when put in place in response to dealer pressure, have a negative effect on manufacturers and consumers

Some Evidence

- Control Rights Allocation: Lafontaine and Slade (2013), Table 3 describe many of the clauses that parties write in contracts
  - First shows much variety in clauses, as in contexts
  - Second, same issues are addressed repeatedly:
    - Contract sets prices and sometimes quantities
    - then limit the rights of the agent (licensee, franchisee, or supplier) explicitly to a time and place
    - give the principal the capacity to monitor the behavior of the agent and terminate the contract at will or under certain conditions

Some Evidence

- Control Rights Allocation (cont’d)
  - Spell out what happens after termination.
- Third, number or extent of restrictions on the agent increases with the value of the asset
- In other words:
  - principals provide an asset – a brand and business format, or technology, or desirable piece of business
  - Then contract sets out the limits within which the agent can use and profit from this asset
  - The limits, in turn, protect the principal's ongoing interest in the value of the asset

Some Evidence

- Complementarities
  - Formally, complementarities occur when the marginal profitability of one action (e.g., practice or contract clause) increases with the level of another
  - Noted early on: Goldberg and Erickson (1987) state that because many contractual provisions and organizational-form decisions are made simultaneously, they can interact, so empirical studies should strive to estimate decisions concerning the set of contractual provisions and organizational decisions together
  - Problem is that there are numerous contract terms to consider, so too many interaction terms, and data requirements are huge

Evidence – Incidence and Effects

- Complementarities (cont'd)
  - Standard technique of including other contract terms on the RHS is not satisfactory
    - Does not allow for interactions in linear models, and the form of interaction is very inflexible in non-linear models
  - We view analyses of contract types, that group characteristics together, as a more promising avenue
  - This is fundamentally the comparative institutions approach emphasized by Williamson (1991, 1996)
  - In some sense, rely on lawyers and their templates…

Evidence – Incidence and Effects

- Complementarities (cont'd)
  - Of course, not panacea – some issues require that we go more fine grained too
  - E.g. Ippolito finds that vertical restraints are used together (ED with ET) and Mathewson and Winter (1985) describe how combinations of VRs can achieve the vertically integrated outcome
  - =>Rules (or lack thereof) on VI and any VR affects decisions on use of other (complementary or substitute) VRs, and/or vertical integration decisions, in ways may not foresee/want, and affect effects as well

Conclusion

- There is renewed interest in vertical restraints broadly defined, especially in Europe
- Concerns about foreclosure due to exclusivity or tying, especially in “digital” markets
- But effect of preventing mutually agreed upon contracts – not clear, even if may be exclusionary
- See Jing and Mathewson (2013), on *Nielsen:*
  - contracts were struck down but nothing changed

Repeal of Rhode Island Fair Trade

1. The repeal of Rhode Island's fair-trade law did not lead to universal reductions in the retail prices of all products which had previously been fair traded. The prices of five of the nine product lines surveyed were virtually unaffected by the demise of the fair-trade law.

2. In three out of the four cases where retail prices did decline, the availability of that product to consumers was reduced significantly, usually by a decline in the average depth (inventory) and width (selection) of the product line carried by retailers, and in two instances there was a reduction in the number of retail outlets that carried the product.