Graduate IO: Vertical Markets II

November 27, 2016

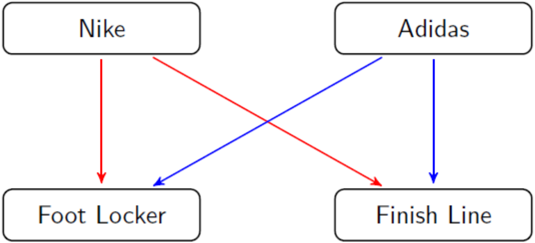
Agenda

- vertical restraints
  - Mortimer (2008)

Vertical Restraints

- resale price maintenance
- exclusive dealing
- exclusive territories
- full-line forcing

Example



Resale Price Maintenance (RPM)

- upstream firm dictates the final price, or imposes a floor/ceiling on the final price
  - Nike to Foot Locker: you can sell this pair of Nike shoes in your store only if you sell at a price we specify
- variant: minimum advertised price (MAP), contract specifies that downstream firms cannot advertise prices below some minimum
- antitrust concern: contracts perhaps intended to soften downstream price competition
- pro-competitive rationale: maintain retailers' incentives to provide services complementary to the product
- RPM used to be illegal (and still is in some states of US)

Exclusive Dealing

- upstream firm requires downstream firm to sell only the upstream firm's product
  - Nike to Foot Locker: you can sell our shoes only if you don't sell Adidas shoes in your store
- antitrust concern: foreclosure (Nike may try to prevent Adidas from getting access to retailers)
- pro-competitive rationale: maintain retailers' incentives to market the product
- legality: judged under rule of reason

Exclusive Territories

- upstream firm divides the downstream market among retailers, forbids them to compete in the same geographic market for the same market segment
  - Nike to Foot Locker and Finish Line: a condition of selling Nike shoes is that you not compete in the same market (e.g., Foot Locker gets West Madison and Finish Line gets East Madison)
- antitrust concern: softens downstream price competition
- pro-competitive rationale: maintain retailers' incentives to provide good service, etc
- legality: rule of reason, but generally deemed legal

Tying

- upstream firm requires the downstream firm to purchase product B if it wants to purchase product A
  - Nike to Foot Locker: if you want to sell our shoes, you have to also sell our apparel
- similar to bundling, but quantities not specified
- antitrust concerns: foreclosure, "leveraging" market power
- pro-competitive rationale: cost efficiencies
- legality: rule of reason (though courts used to treat as per se illegale)

Full-line Forcing

- upstream firm requires the downstream firm to purchase its entire product line
  - Nike to Foot Locker: if you want to sell any Nike shoes in your store, you must agree to sell our entire lineup of shoes
- similar to pure bundling
- antitrust concern: might foreclose competitors
- pro-competitive rationale: downstream incentives, possible cost efficiencies
- legality: rule of reason

Mortimer (2008)

- question: how do royalty contracts in the video rental industry affect firms' profits and consumer welfare?
- approach: estimate a structural model of retailers' choice of contract type (royalty vs. linear) and downstream competition then simulate a counterfactual in which all contracts are linear-price contracts

Contract Types

- linear-price: video store purchases move tape at price F
- royalty: video store purchases move tape at price u ($u \ll F$), but keeps only $y\%$ of the revenues (distributor gets the other $(1 - y)\%$)

Questions

- if royalty contracts increase profits for both distributors and retailers, why weren't they used before?
- why should royalty contracts affect profits?
- how do royalty contracts "align" the distributor's and retailer's incentives?

Differences Between Stores for the Same Title

*Revenue-sharing vs. linear-pricing contracts: A titles, differences between stores for the same title**

	Stores accepting revenue sharing	S.E.	Stores accepting linear pricing	S.E.	*T*-stat of diff.
No. people	24·28	0·21	23·81	0·21	1·53
% Suburban	10·14	0·21	10·96	0·21	−2·87
% Married with kids	24·19	0·07	23·54	0·04	9·38
Median income	43·32	0·41	42·57	0·26	2·14
No. Blockbusters	0·32	0·01	0·30	0·01	2·32
No. competitors	2·72	0·02	2·63	0·02	4·40
Monthly revenue	127·99	3·76	192·12	2·95	−14·56
Copies	26·56	1·48	13·63	0·97	8·17
Rentals (Q)	429·75	24·95	499·35	28·22	−3·65
Price (P)	2·81	0·02	2·87	0·01	−3·85
Retailer profit	363·93	31·02	559·56	38·60	−6·82
Distributor profit	806·11	46·41	859·89	58·09	−1·32
Observations	37		35		

*An observation in this table is a title. For each title, mean store characteristics are computed for the set of stores accepting each type of contract. The source of demographic data is 2000 U.S. Census data. Data on competing retailers is gathered from 1998, 1999, 2000, and 2001 phone book listings.

Regression Analysis

*Regression analysis, dependent variable is ln (retailer profit)**

Independent variable	1	2	3	4
A titles				
Revenue-sharing chosen	−0·367	−1·007	−0·971	−0·203
	(0·091)	(0·159)	(0·155)	(0·144)
RS*ln(inventory)	–	0·255	0·238	0·078
		(0·058)	(0·056)	(0·049)
$\partial\pi/dRS$	−0·367	−0·228	−0·243	0·037
R^2	0·020	0·415	0·418	0·534
B titles				
Revenue-sharing chosen	−0·605	−0·762	−0·777	−0·431
	(0·053)	(0·132)	(0·142)	(0·112)
RS*ln(inventory)	–	0·181	0·186	0·164
		(0·052)	(0·056)	(0·044)
$\partial\pi/dRS$	−0·605	−0·343	−0·347	−0·051
R^2	0·053	0·414	0·547	0·553
C titles				
Revenue-sharing chosen	−0·779	−1·308	−1·257	−0·717
	(0·048)	(0·105)	(0·108)	(0·090)
RS*ln(inventory)	–	0·214	0·217	0·227
		(0·046)	(0·046)	(0·038)
$\partial\pi/dRS$	−0·779	−0·997	−0·942	−0·388
R^2	0·069	0·370	0·496	0·506

Structural Model

- distributor offer contract terms (F_i, u_i, y_i)
- retailers choose inventories c_i and contract types ($R_i = 0$ or 1) to maximize profits
- demand for title i is $Q_i = V_i - \eta p_i$
- downstream competition modeled as Cournot game
  - primary strategic action is the decision of how many copies of a title to provide to the market

Data

- quantity and price of rentals
- contract terms (F, u, y)
- contract choice
- inventory
- quantity requirements
  - under revenue-sharing terms, distributors require retailers to adhere to minimum and maximum quantity requirements
- number of retailers in each market
- controls: market demographics and movie title characteristics

Structural Parameters

- slope of demand: η
- variance of demand intercept: σ_V
- variance of rental rate: σ_τ
- dependence of rental rate (τ) on contract type: λ
- coefficients on controls (demand shifters): β

Counterfactual Results

Counter-factual experiments

Variable	Actual	Current	Linear-price only	No inventory restriction	Revenue share only
Panel 1: A titles					
Average inventory	21·36	22·91	17·10	21·95	38·20
Average price	2·83	2·36	2·75	1·81	1·66
% Revenue sharing	53·60	64·52	0·00	67·02	100·00
Total retailer profit (million)	61·00	62·77	55·82	57·49	35·51
Total distributor profit (million)	93·44	57·43	51·98	50·86	62·43
% Change retailer profit			−11·07	−8·41	−43·43
% Change distributor profit			−9·50	−11·45	8·70
% Change consumer surplus			−2·10	8·02	15·45
Panel 2: B titles					
Average inventory	9·26	12·33	10·58	12·31	19·27
Average price	2·78	3·46	3·41	2·43	2·28
% Revenue sharing	40·03	64·28	0·00	63·39	100·00
Total retailer profit (million)	46·04	50·90	39·30	40·36	25·06
Total distributor profit (million)	61·48	46·25	31·84	30·17	39·25
% Change retailer profit			−22·79	−20·71	−50·77
% Change distributor profit			−31·16	−34·77	−15·14
% Change consumer surplus			−22·22	−7·08	−2·03
Panel 3: C titles					
Average inventory	4·31	4·56	3·70	4·17	9·62
Average price	2·72	3·34	3·44	2·59	2·38
% Revenue sharing	46·73	40·90	0·00	46·43	100·00
Total retailer profit (million)	30·61	30·96	28·80	29·06	17·34
Total distributor profit (million)	38·47	25·43	22·65	23·43	29·40
% Change retailer profit			−6·99	−6·17	−44·01
% Change distributor profit			−10·94	−7·89	15·60
% Change consumer surplus			−8·47	4·02	11·10