



608: Economics of Regulation

Lecture 8: Competition for Market, Franchise Bidding and Cable TV regulation

Sugata Bag

Delhi School of Economics



Outline

- Why regulate utilities?
- Franchise Bidding
- Franchising benefits
- Contractual problems
- CATV (community-antenna television)
- Regulation, de-regulation, re-regulation
- Other examples of franchising



Why Regulate Utilities?

In an unregulated environment with a natural monopoly

- There can be too high a price and/or
- Excessive entry (with avg cost higher than one firm case)

Review of the regulator's problem:

- Delivery of a service is a natural monopoly activity.
 - – Competition in the market is not welfare-maximising.
- Asymmetric information means the regulator cannot get to first best welfare maximising outcomes.
- The regulator can design incentive mechanisms to get closer to welfare maximisation.
 - – Limited by asymmetric information and need to make trade-offs between different aspects of welfare.



What's the question we want to look at?

- Can the regulator do better by having competition upfront for the right to be the legal monopoly provider of the service?
 - – Question posed by Harold Demsetz in 1968 (borrowing on ideas from Edwin Chadwick in 1859).
 - Why can't there be competition for the field even though only one firm actually produces the good or service?
 - – Tender right to be monopoly provider/create franchise to be monopoly provider.
 - – May be instead of incentive regulation or as well as.
- **Classic example** is in defence industry where only one design of tank or plane is adopted. Does that mean Dept. of Defence pays monopoly prices?



What is involved with Franchising?

Commercial Franchising

- It is a form of marketing or distribution in which one party, the franchiser, allows another, the franchisee, to exploit a trade name, trademark, process, or other recourse in return for a fee.
- **Franchise agreement:** exploitation manner, period of time, location
- **Objective:** maximisation of profits (both parties)

Governmental Franchising

- Resemble commercial franchising closely but can be distinguished by its “public” purpose.
- Objective of franchiser: deliver to consumers an efficiently produced and competitively priced utility service

*It provides a means of using competition **for** a market as a substitute for competition **within** the market (where this is not possible)*



Government Franchising

- Companies bid into an auction (tender) to become the monopoly provider of a service.
- The bid is a proposal on what price will be charged to consumers and often a set of outputs or quality of service standards that will be met.
- The right to be the monopoly provider is awarded to the lowest cost bidder, subject to meeting quality requirements.



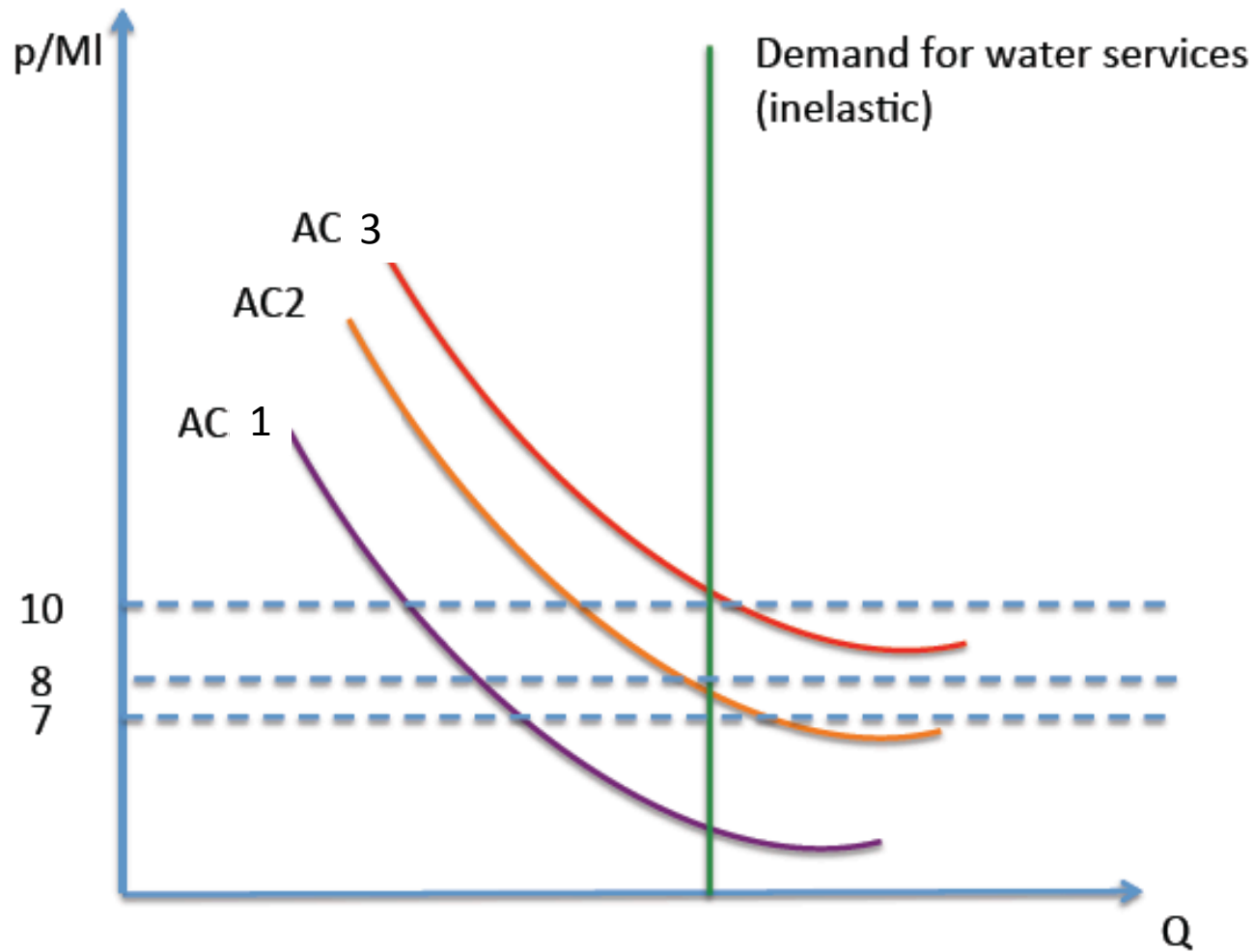
Dutch Auction with 'Linear Prices'

- Auctioneer announces price that monopoly service is to be offered at.
 - e.g. provide water service at 10p/MI
- If more than one active bidder at that price, auctioneer announces a lower price.
 - e.g. provide water service at 8p/MI
- Auctioneer continues to reduce price until left with only one bidder.
 - e.g. provide water service at 7p/ml
- Franchise awarded to last remaining bidder.
 - Final bid is the price that the franchise winner provides service at.

Catch: if there is sufficient competition at the bidding stage, then price should be bid down to AC of a firm; and the winner would earn normal profit. Govt. role is to act as an Auctioneer than a regulator.



Who will win?



Assuming firms do not collude, at least one firm will win



Modes of Franchise Allocation

- **Bidding on Price per unit**

Bidding is introduced on price per unit so that franchise is awarded to the competitor willing to supply the service to the public at the lowest prices

Assumptions:

- Info. asymmetries play no part in determining the spread of bids
- Bidders will bid their avg. costs at each stipulated output level
- Bidders have the knowledge of market demand and their respective cost functions

Results: price per unit auctions identify the firm with the lowest average cost

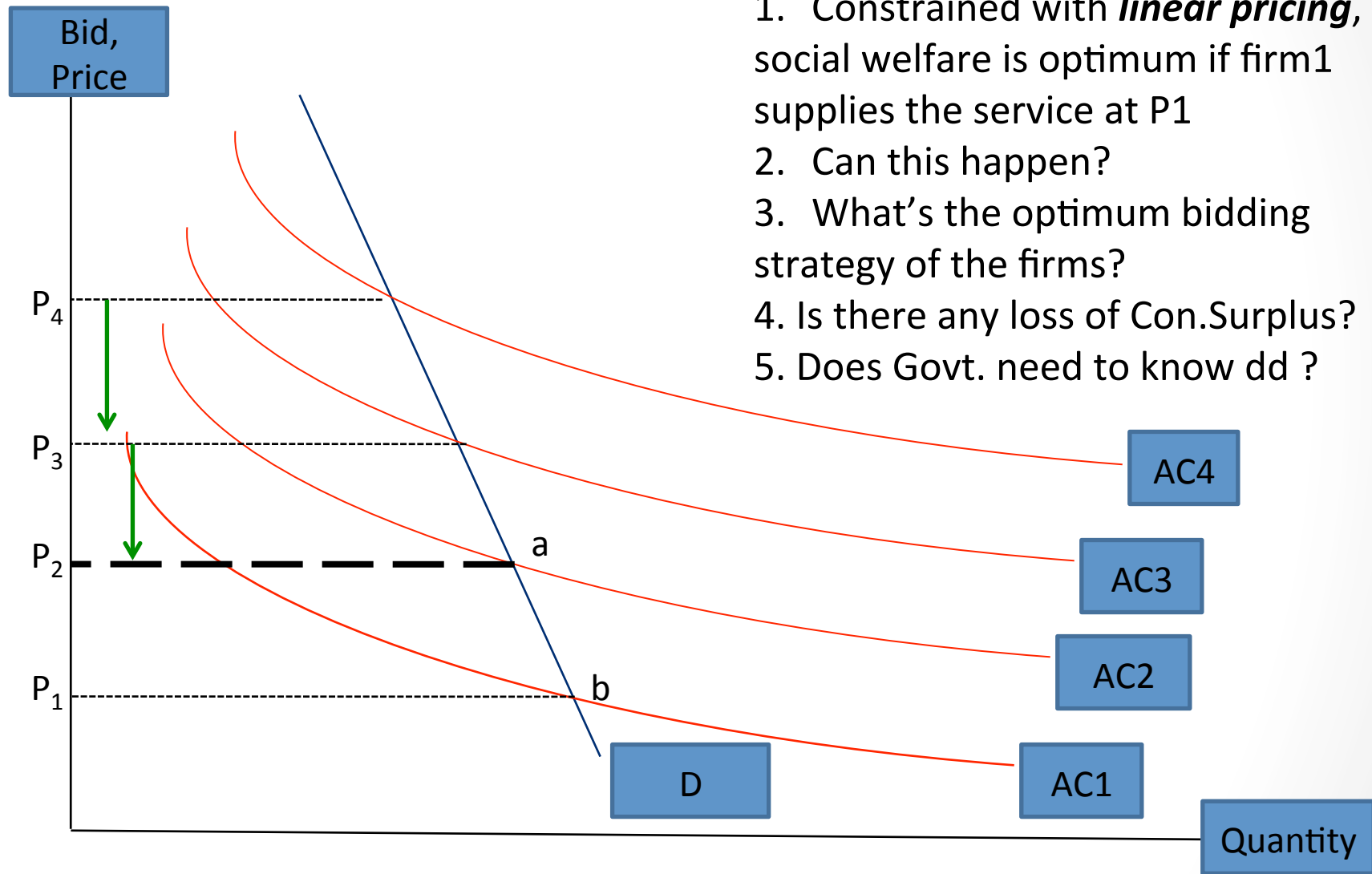


Process with linear prices

- Auctioneer announces price at which monopoly service will be offered.
- Determine how many active bidders are around at that price.
- If number is >1 , announce a lower price.
- Keep going until only 1 bidder is left and the last price is the price at which the service will be offered to the public.
- Suppose, There are four bidders with AC_1, \dots, AC_4 average cost curves as shown in the figure next.
- This difference in costs comes from different prodn technics and also a result of apatents and trade secrets.
- Assuming they do not collude what will be the price paid by the public? Is it socially optimal?
 - Depends, if there exists enough competition at the bottom.



Competition at the bidding stage



Lowest Price bidding auctioning scheme

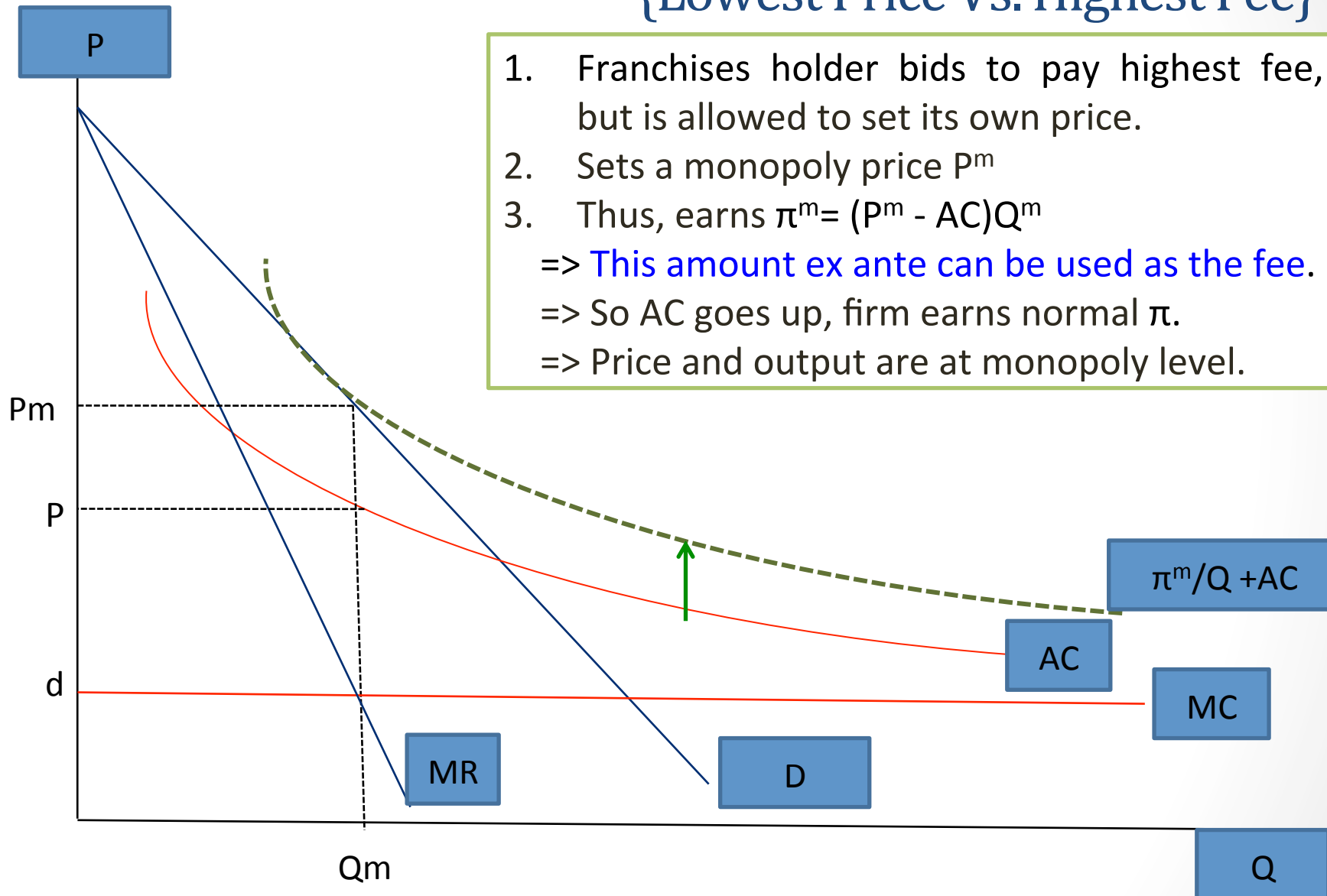
1. Constrained with **linear pricing**, social welfare is optimum if firm1 supplies the service at P_1
2. Can this happen?
3. What's the optimum bidding strategy of the firms?
4. Is there any loss of Con.Surplus?
5. Does Govt. need to know dd ?



Bidding over the Franchise 'Fee'

{Lowest Price Vs. Highest Fee}

1. Franchises holder bids to pay highest fee, but is allowed to set its own price.
2. Sets a monopoly price P^m
3. Thus, earns $\pi^m = (P^m - AC)Q^m$
=> This amount ex ante can be used as the fee.
=> So AC goes up, firm earns normal π .
=> Price and output are at monopoly level.





Benefits of Governmental Franchising ...1

- Regulator does not need information on costs. It reduces the dangers of regulatory capture by minimizing agency discretions
- Least cost firm wins.
 - With sufficient competition price bid down close to AC.
 - No monopoly rent!!!
- By allocating franchises according to a bidding mechanism, it induces monopolists to behave as if subject to competitive pressures.
- Firms have incentive to reduce costs and beat franchise price.
 - If the franchise ***tenure is long enough***, firm has incentive to innovate and invest.



Benefits of Governmental Franchising ...2

- It provides the franchiser with information about the competitiveness of potential suppliers and the costs of servicing the market.
- It offers an effective sanction of poor performance:
 - threat of franchise termination, suspension or non-renewal
- Low entry costs for potential bidders – don't have to commit resources to operating unless win.
- Inefficiency of rate-of-return regulation (A-J effect, which we will see later) is avoided.



Costs of Franchising

- Price is above least cost if competition is lacking. A price equal to average cost does not result in a welfare optimizing level of pricing or output
 - Extent to which it is above depends on effectiveness of competition in auction.
 - If existence of auction encourages firms to enter with costs close to AC_1 then have competition around min AC price.
- If franchise winner reduces cost below agreed franchise price, that have period of allocative inefficiency (length of franchise).
- Does not result in MC pricing either.
- If contract or bidding only relates to price/cost then franchise winner may not provide quality or outputs.
- If a variety of services is to be provided, it becomes much more difficult to judge which bidder is offering the best deal.



Further, Costs of Franchising

- A price rigidity implied by a price per unit franchise, firm may become inefficient as demands and technologies change over time
- **Linear pricing is not optimal**, two-part tariff or Ramsey Pricing if multi-product may be more efficient.
- The government/regulator incurs (significant) costs to set-up and run a franchise tender.
 - Inefficient lobbying costs as bidders attempt to influence design of franchise agreement and tender process.
- Still need to carry on with regulation and its associated burden.

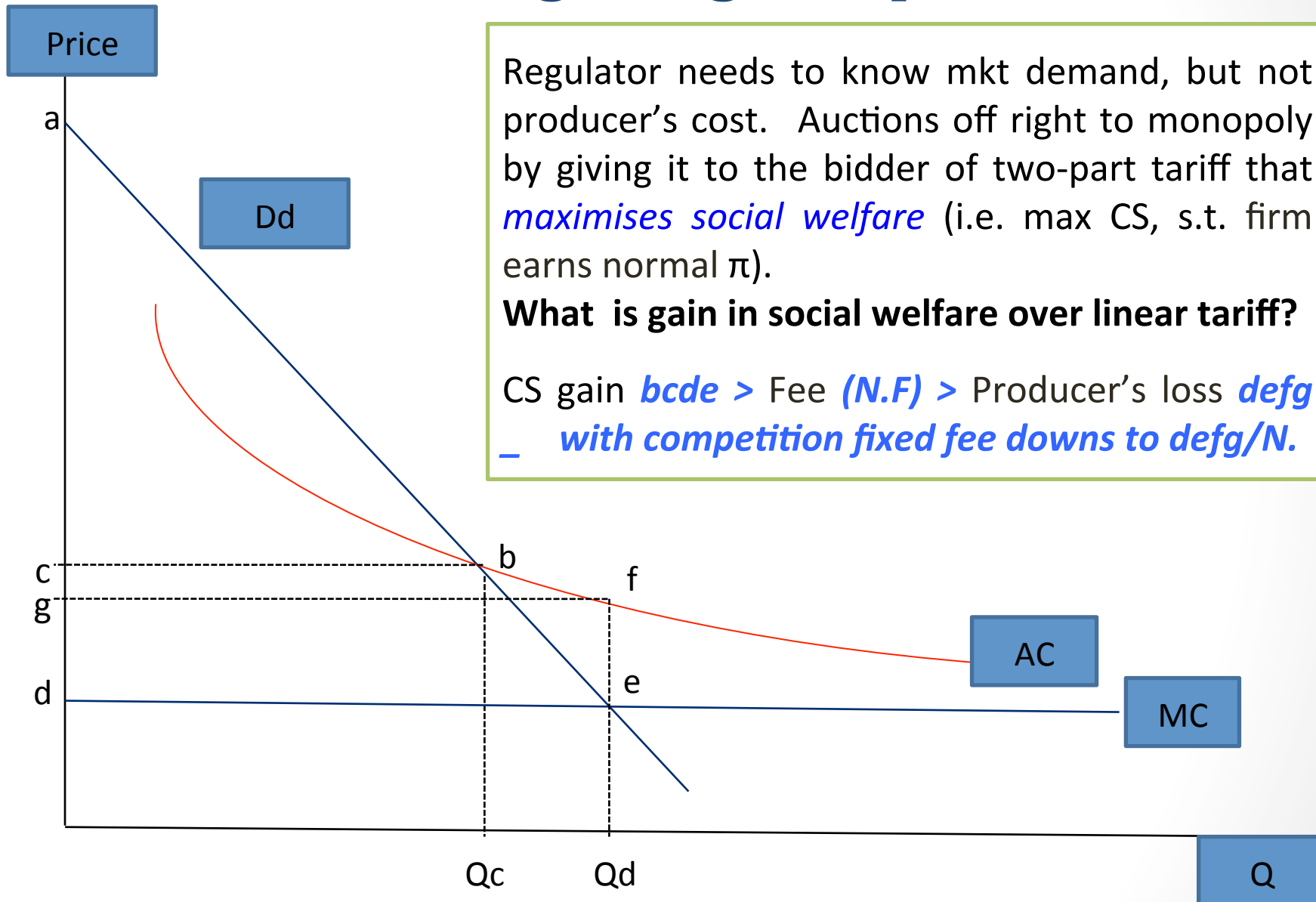


Many of the costs can be dealt with through terms of franchise and design of auction

- For example, the terms of the franchise can include: – quality standards and penalties for breaching – process for revising prices at regular periods
- For example, the auction could be designed so that bids related to two-part tariffs rather than linear price (a la Loeb-Magat).



Franchise bidding using two-part tariffs





Modes of Franchise Allocation

- **Quality is a concern?**
 - Not a problem if product is homogeneous, however it rarely is.
 - This is a problem if cost and quality are positively related.
 - Government will need to specify and enforce quality standards.

- **Solution - Menu Auctions**

The franchiser may choose to allow competitors to specify their bids in terms of price and quality of service

Advantages

Allowing multiple bidding on a mix of quality of service and price can provide useful information to the regulator which can be used if renegotiation becomes necessary once the franchisee begins operations



Additional Complications

- Disadvantages

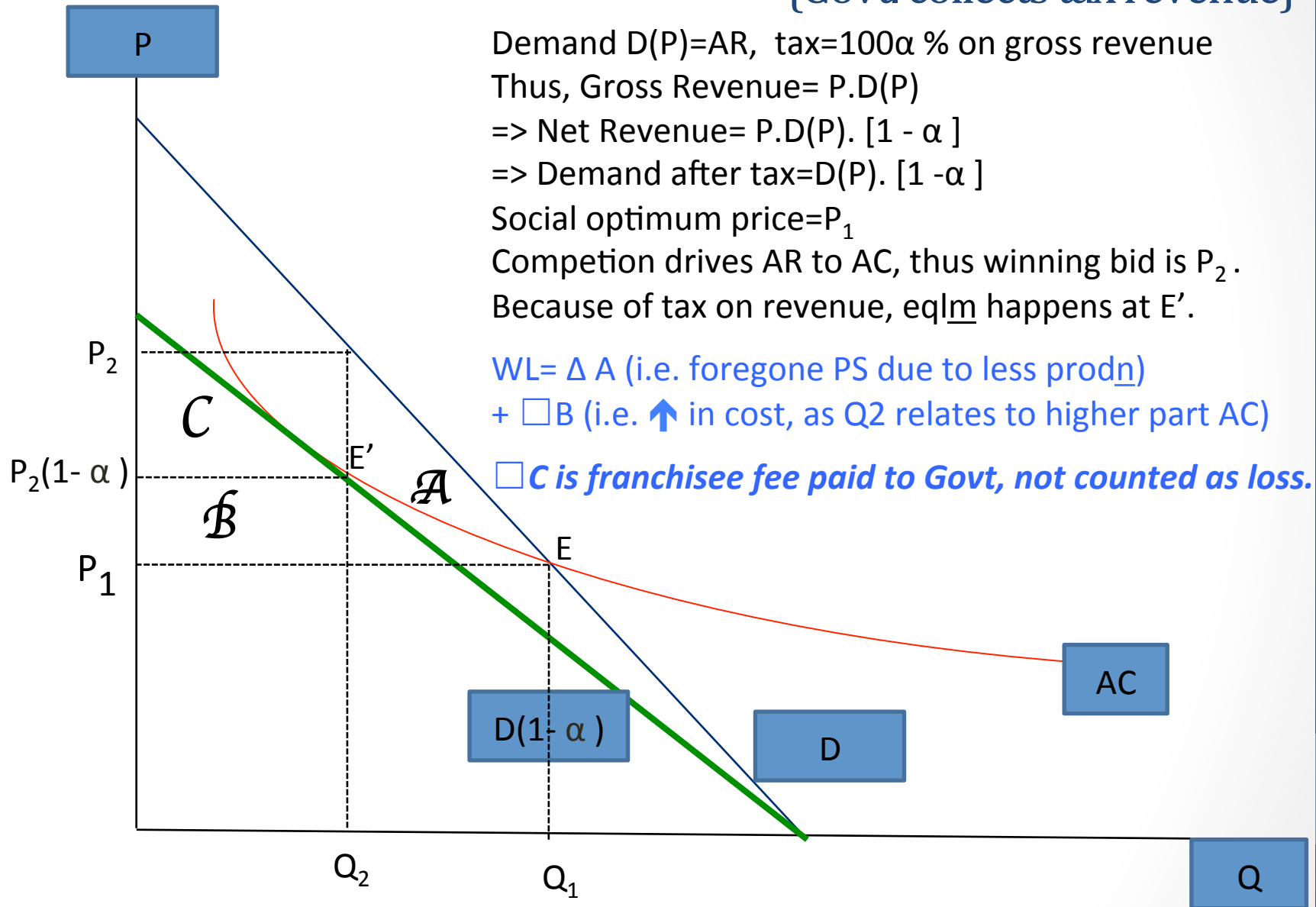
- It proves more difficult for the franchiser to identify the winning bid than in other auctions. The auctioning process may as a result lack transparency
- Franchisee to have info on consumers' valuation of quality so that it can cater to that.
- Enforcing quality is more difficult than price

- **Rent seeking behaviour**

- Multi-dimensional bidding means that it is difficult for auctioneer to work out best bid (e.g. with spectrum actions).
 - In this case bidders may choose combinations which most interest regulators and do not maximise social welfare – this is rent seeking.



FB under a proportional franchise fee (e.g. Indian DTH) {Govt. collects tax revenue}





- As with everything in regulation, franchising can be a credible alternative or complement to incentive regulation IF the benefits outweigh the cost.

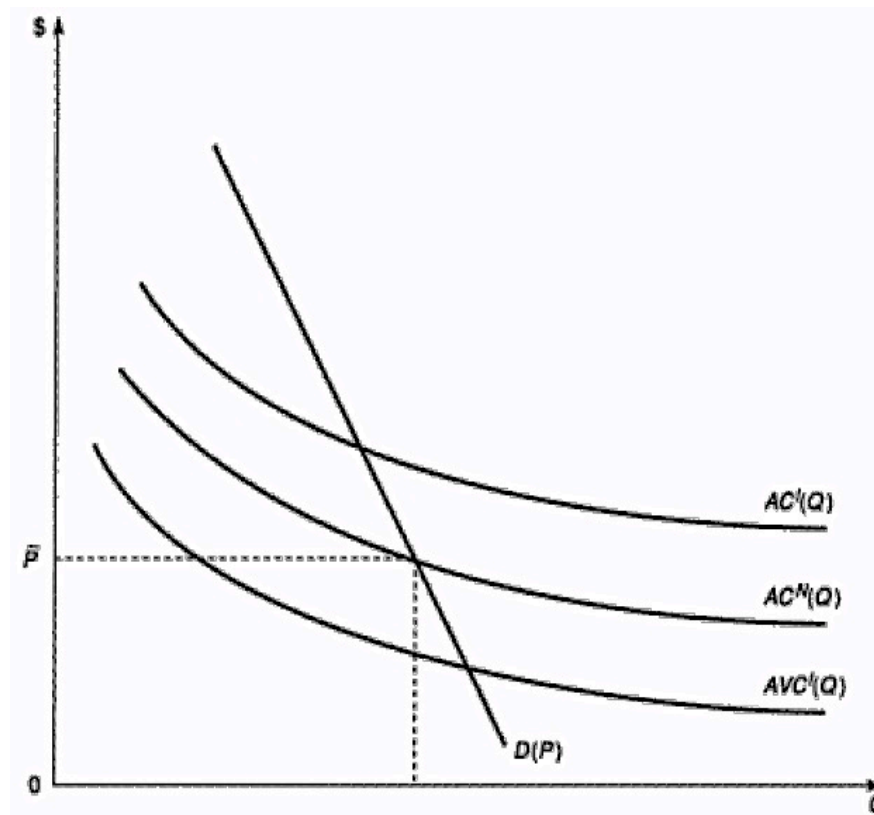


Additional Complications

- Contractual Arrangements (Williamson, 1975, 76):
 - What happens when technology or demand changes radically over time? Or costs unexpectedly rise (e.g. due to security costs)? Bounded Rationality restricts the ability to write complete contracts.
 - Bidding Parity? Recurrent contracts increasingly give advantage to incumbent who can bid $P=AVC$ (and not ATC) to exclude more efficient entrants.
 - Longer Incomp. contracts (15-20 years) can be used but are hard to monitor and impose costs of uncertainty on the franchisee.
 - Opportunism will always be there (by both regulator and franchisee) as contracting process is costly, incomplete and embarrassing for government to reopen.
 - Elaborating these issues below...

Bidding Parity at renewal?

- New firm is more efficient than the old incumbent firm
i.e. $AC^N(Q) < AC^I(Q)$ but $AC^N(Q) > AVC^I(Q)$
- Old firm may bid according to its $AVC^I(Q)$ (instead of ATC) and outbid the new firm and price would be set at P^{bar} .





Contractual Arrangements for the Post bidding Stage

Recurrent, Short-term Contracts

Periodically, the franchise is to be put up for auction, at that time a new award is made and a new contract is issued. Thus, cost and demand changes are handled through re-contracting

Is there bidding parity at renewal time?

Current franchise owner has already invested in plant and equipment and thus has an advantage over the new bidder: the incumbent firm would be willing to bid down to average variable cost, a new firm would not bid below its average total cost

Solution: compulsory transfer of assets in a fair and efficient manner (Difficult!). Thus there is a hold-up problem where incumbent can over-price assets passed to rival (this represents an entry barrier).

Bargaining problem arises between current and new franchise firm regarding the valuation of assets and human capital

Government agency is apt to favor the incumbent firm at renewal time as long as it has performed reasonably well; why?

Status quo easily maintenance



Contractual Arrangements for the Post bidding Stage

Long-Term (Incomplete) Contracts

Usually of 15-20 years

Advantages

Gives franchise owner the proper incentives to invest in long-lived assets, inasmuch as it is assured of being around to receive the returns from this investment

Disadvantages

Long term contract is difficult to write. It must allow for price to be changed in the future in response to changes in cost/demand conditions.

Monitoring quality will be essential and the contract will have to provide for penalties if quality is not kept up to the specified level



Ex Post Opportunistic behaviour

By The franchise firm owner

The advantages of the current franchise firm (capital investment, better knowledge about the technology through learning by doing, better information on market demand, familiarity with the franchising process) may provide it with the ability to hold up the government **opportunistically** by forcing it to make favorable changes in its contract

eg. a firm at the bidding stage may offer a low price and then, if the franchise is won, petition for a price increase on the basis that average cost was underestimated or demand was overestimated

Punishments

- Being relieved of its franchise at renewal time
- Penalty clauses built into the franchise contract
 - (Bad) Reputation for opportunistic hold-up may harm chances of winning franchises in other markets
- Public ownership threat



Ex Post Opportunistic behaviour

By The government

A government agency may take advantage of its position by forcing the firm to *price at **average variable cost*** even though the firm would not have made the original investment if it anticipated a price below average cost

A government agency may implement such a policy by requiring that the franchise owner ***keep price fixed over time in an inflationary environment***

However, if prospective firms believe that price will not be adjusted over time for inflation, this belief will affect their initial bidding behavior: not bid down to average cost



How a tender is designed and run will influence extent to which benefits are realised

- The design of the franchise influences the outcome
 - – Length of tender
 - – Terms and process of renegotiation
 - – Pricing and output constraints
 - – Other incentives
- Many different options for running a tender
 - – Sealed-bid or open?



How a tender is designed and run will influence extent to which benefits are realised

- The design of the tender process influences the outcome
 - – Who can bid?
 - – What is in the bid?
 - – What information is provided to bidders?
 - – The role of reserve prices
- Outcomes may also be different if the tender is a one-off or if there are repeated tenders.
 - – This could be repeating tender for the same franchise at a later date, at end of contact period.
 - – Alternatively it could be multiple tenders run simultaneously for franchises in different regions for example.



Designing the Franchising Agreement:

What firm has to do and what it gets

- Service area being served
 - – National monopoly or regional
 - – If regional, restrictions on bidding for more than one franchise
- Length of franchise and risk allocation
 - – How long does company hold monopoly franchise rights for?
 - – How are risk shared between franchisee, other parties in supply chain and consumers?
- Price allowed to charge
 - – Comes from auction
 - – May have ongoing regulation as well.
- Outputs and quality of service to be delivered
 - – Pre-qualification condition for bidders
 - – Multi-dimensional bidding difficult to evaluate
- Terms of contract renegotiation
 - – What triggers renegotiation?
 - – What will the process be for renegotiation?



Designing the Franchising

- The details of a franchise agreement look very much like a regulatory contract.
- Not surprising as franchise agreement is attempting to replicate upfront the constraints of an incentive framework like price controls.
- Designers of franchise agreements have the same objectives and face the same challenges as those designing price controls.



Franchising: problems to overcome

- **Service Specification**

Problems of specification diminish in so far as variations in the quality of service are absent or are deemed to be immaterial

Eg., Independent Local Radio services, London Transport bus service

However, specification is problematic if there is a minimum quality of service to be stipulated, eg., UK Independent Television Commission franchises regional Channel 3

Need to lay down a precise description of the service to be provided **vs.** need to allow for flexibility and scope for innovation and responsiveness to consumer demands after the award of the franchise

In sectors where there is the prospect of a technical innovation that will demand, within the franchise period, substantial adaptations by franchisees, this may call for a service specification that allows for some flexibility , eg. arrival of digital audio broadcasting in the UK, mid-1990s

Thus,

Franchising works best for products involving low sunk costs

In circumstances of any complexity (eg. rapid technological change), franchising does not do away with the need for regulation



Franchising: problems to overcome

- **Competition for franchises**

The number of competitors in a franchising is affected by:

- 1) Imposition of a pre-qualification requirement
- 2) Increased uncertainties
- 3) Cost of bidding

- **Enforcement Requirements (on the part of franchiser)**

- Collection of information by the franchiser
- Franchiser routinely monitor service quality rather than simply trust the data supplied by the franchisee
- Non-renewal as a control
- Adaptation of contractual conditions to changed circumstances
- Interdependency: enforcing franchise promises becomes more difficult in so far as the franchisee is not responsible for all aspects of service provision



Case Study: Is Cable market a natural monopoly?

- **Required technology:**
 - Head-end: antenna which receives signals from microwave relay stations or satellite and processes them.
 - Distribution plant: uses coaxial cables laid in street to distribute the signals to homes. Subscriber interface: set top box.
 - If wires are laid (rather than hanged) MC's of connection are low.
- **Economies of scale split into economies of density and distance:**
 - Economies of density are significant: if penetration increasing from 40% to 80% average cost goes down from \$14 to \$8.
 - Economies of distance are low: 10% increase in the number of homes covered, constant penetration reduces AC by only 0.2%.
- **Yes natural monopoly, within local geographic area, not over wide area.**
 - Better to have local monopolies with no overlapping service.
 - But cost disadvantage of multiple non-overlapping systems not great.
- There may be additional advantages to multiple systems: more potential bidders, more capital market competition and improved monitoring by example (benchmarking).



Franchise bidding process- US CATV

- Municipality announces it will award franchise -
 - Proposals submitted
 - Municipality may negotiate (and impose significant costs)
 - Municipality notifies select group to submit bids
 - Cable companies submit bids
 - Municipality selects company (for 15 years) / calls for new bids.
- Process takes 2-10 years (up to 20 years!).
- Issues:
 - No. of channels, prices, type of financing, free links to schools, local studios and government channels.
 - Competitiveness of bidding. Average no. of bidders 5 but declining.
 - Franchise agreements often re-negotiated ex post.
 - Very few franchisees loose franchise (7 / 3516): good or bad ?



Competition at the Bidding Stage

Number of bidders

- Not large; may generate an adequate level of competition though.
- In Massachusetts over 1973-1981 the number of bidders per case range from 1 to 17 with an average of 5.2
- The average number of bidders in various mkts increased from 2.6 in 1973-1978 to 5.7 over 1979-1981
- After 1982, the average number of bidders is 2.7
- Many of the same bidders compete for franchise in different geographic areas; As of 1990, the 5 largest cable companies controlled nearly 50% of the US cable market
- Risk of collusion among bidders



Price and quality competition

Major Franchise Awards, 1980-1982

Company/City	Cost of basic cable	Channel capacity	Households in franchise area ('000)
ATC Indianapolis	\$6.50	42	140
Cablevision Boston	\$2.00-8.00	108	250
COX Tucson	\$6.92-13.95	108	135
New Orleans	\$7.95-11.95	108	220
Omaha	\$0.00-10.95	108	125
Dallas	\$2.95-0.95	108	400
Pittsburgh	\$5.35-9.45	80	181



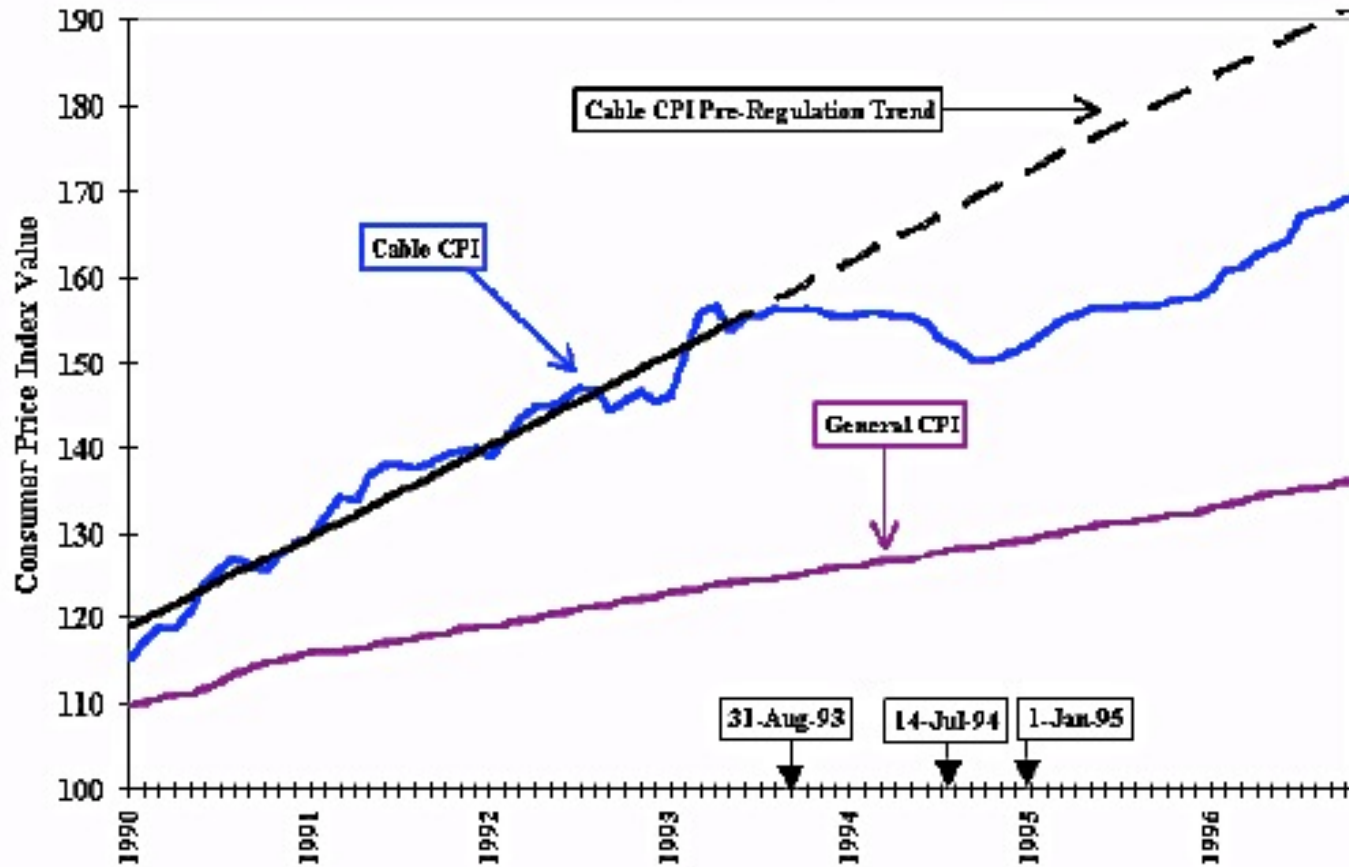
1986 Deregulation experiment

- 1986 Cable Communication Policy Act.
 - Regulation of rates prohibited.
 - Franchising continues, no additional entry allowed and renewal easier.
- 1986-91 prices rise sharply
 - However, number of channels goes up 30%.
 - DoJ estimates quality adjusted price goes up 18-23%.
 - Is this the right way to do this analysis?
- 1992 regulation re-introduced via Cable Television Consumer Protection Act.
 - FCC requires 10-17% reduction in rates.



Cable Prices and Regulation

Comparing Cable CPI and General CPI: Jan. 1990 - Nov. 1996



Source: 1996 Report on Cable Industry Prices (FCC 96-499) at <http://www.fcc.gov/mb/csruptg.html> (FCC, 1997)



The current situation

- 1996 Telecommunications Act retains regulation of basic cable programming and equipment until cable operators face ‘effective competition’.
- Effective competition prevails if -
 - (1) <30% of households take cable or
 - (2) two cable companies serve 50% or more of households and 15% of those take service from the smaller company or
 - (3) a municipal company offers service to at least 50% of households or
 - (4) a telco offers a video-programming service (IPTV).
- Basic service regulation based on (Premium channels not regulated):
 - Inflation, number of channels, programming cost and copyright fees, franchise costs, non-license required upgrades.



Franchise fees and nonprice concessions

The local franchising authority typically demands a payment of a fixed fee/percentage of gross revenues. However, competition in terms of financial payments to local governments is limited by federal regulation (3%-5%)

Politically Imposed Costs of Franchise Monopoly (per month per subscriber)

	Uneconomic Investment	Delay	Lobbying	Franchise Fees	Total Costs
Low Level Estimate	\$4.81	\$0.97	\$0.71	\$1.29	\$7.78
Midpoint Estimate	\$5.41	\$1.84	\$1.21	\$1.58	\$10.04
High Level Estimate	\$6.00	\$2.72	\$1.71	\$1.88	\$12.31



Performance after the Initial Award

- **Opportunistic holdup is not a serious problem**

Quality levels were generally consistent with the accepted proposal.

Cable operators waited a considerable length of time before requesting a rate increase.

- **Reputational effects deterring opportunistic holdup**

Multiple system operators were found to be less (more) likely than single system operators to have construction delays (provide voluntary improvements in the cable system)

- **Competition at the renewal stage**

Of 3,516 refranchising decisions , only 7 resulted in the local government's moving the current franchise owner



Competition in Cable

Comparison between Competitive Strata and the Noncompetitive Group

<u>Date</u>	<u>Wireline Overbuild</u>	<u>DBS Overbuild</u>	<u>LEC</u>	<u>Low Penetration</u>	<u>Municipal</u>	<u>Non- Competitive</u>
Average Monthly Rate						
July 1, 2001	\$34.03*	\$37.13	\$35.03*	\$34.30*	\$24.35*	\$37.13
July 1, 2000	\$31.45*	\$34.25	\$32.55*	\$32.57	\$23.40*	\$34.54
Number of Channels						
July 1, 2001	56.0	53.3	65.3*	52.9	51.4	59.3
July 1, 2000	52.7	46.5	62.4*	49.5	50.8	56.2
Average Rate per Channel (Programming Only)						
July 1, 2001	\$0.587	\$0.727	\$0.489*	\$0.663	\$0.447*	\$0.603
July 1, 2000	\$0.578	\$0.761	\$0.483*	\$0.674	\$0.437*	\$0.594

*An asterisk denotes a statistically significant differential when compared with the noncompetitive group.

Source: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-107A1.doc (FCC, 2002)

6% of cable households in competitive sector.

Wireline overbuild = overlapping cable networks.

DBS = direct satellite network overlaps with cable network.

LEC = Telco competitor.



Other examples of franchise bidding

- TV licensing (ten year regional ITV franchises for terrestrial television licenses in UK).
- Railway (inc London Underground?) and Spectrum franchises.
- Private Finance Projects often involving a franchising process to award a contract to supply a good or service which is wholly paid for by the government:
 - Refuse collection in local government.
 - IT management of records.
 - Toll roads and bridges.
 - Hospitals.
 - Prisons.



Conclusions

- Franchise bidding has been a qualified success in introducing some competition into the provision of monopoly services.
- However difficult to argue that it reduces the regulatory burden. For CATV franchising led to normal rate regulation (with guaranteed renewal) and deregulation.
- Technology (via competing networks) is reducing natural monopoly.
- Competition seems effective in keeping prices down.



Suggested Readings

- Baldwin and Cave, 1999, Understanding Regulation: Theory, Strategy and Practice, ch , 19, 20
- Armstrong, Cowan and Vickers, 1994, Regulatory Reform: Economic Analysis and British Experience, 4.3.1
- Viscusi, Vernon and Harrington (4rd Edition, 2004), Economics of Regulation and Antitrust, ch 13*