

Competition, Regulation, and Broadband Access to the Internet

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- This paper analyzes the impact of regulation on both penetration and coverage of broadband access to the internet.
- Providing high-speed access to the internet to rural areas is a major goal of EU-policy.
- Simple Model.
 - Continuum of “cities” with different densities s . For a given s , the same linear demand function $s(a - p)$ for all cities.
 - Fixed cost of providing broadband access to a city and constant marginal cost of connecting consumers. (density economies).
 - Only one player of the supply side (if there are a market of internet providers is perfectly competitive).
 - Firstly, firms decide the coverage, and in a second stage decide the price and determines the demand.

- There is a trade-off between coverage and penetration;
 - High prices create incentives for investment, increasing coverage.
 - Low prices yield high demand in served areas and an increase in penetration even though coverage decreases.
- Unregulated Monopoly-highest prices and coverage.
- Price cap regulation leads to higher penetration (lower prices) but lower coverage.
- Calibration of the model with data from Germany, Price cap regulation does not improve much upon the unregulated benchmark in terms of welfare.

- Facilities-based competition. An entrant (cable company) can enter in every city by making a fixed investment.
- The cable company enters in the high density cities.
 - We have a duopoly for high s and monopoly for intermediate s .
- More differentiated products lead to a large coverage of the entrant.
 - The incumbent invest in the same coverage.
- Introducing a uniform pricing constraint improves welfare specially when goods are close substitutes.
 - Complex equilibrium.
- Finally, the paper shows that supply-side subsidies (more than demand-side ones) can increase welfare (an effective instrument to increase coverage).

- Very simple demand function, the same distribution of willingness to pay independently of s , important for simulations, specially for accounting for welfare gains.
- Are the results valid for new technologies such as Next Generation Networks.
 - We cannot duplicate investment.
 - It is key the market of services (access pricing).
 - Scale economies in total demand?
- Are the new technologies based on mobile phones reducing the relevance of the coverage problem (universal service).
- Fiscal issues regarding subsidies (what is the distributional effect of such subsidies?, what are the shadow cost of this public funds?,...)

Net present value auctions

- E. Engel, R. Fischer, A. Galetovic, “Least-present-value-of-revenue Auctions and Highway Franchising,” *Journal of Political Economy*, 109, 993–1020, 2001.
- This paper propose a new approach to procure infrastructures that can be useful for providing universal service, when there is uncertainty about the demand. The idea is that regulator set prices and firms bids the least present value of expected revenue wins the franchise. With this scheme the franchise length adjusts endogenously to demand realizations.
- This approach is specially suitable in frameworks, in which demand uncertainty is important, and the fixed cost of building the infrastructure is very important, compared with the marginal cost.

Public Private Partnerships

- O. Hart, "Incomplete contracts and public ownership: Remarks and an application to public private partnerships". The Economic Journal, 113, 69-76, 2003.
- Public Private Partnerships (PPPs) are contractual arrangements between the public sector and the private sector- for profit and not-for profit firms - typically to design, build, finance and operate an infrastructure for the provision of a public service. PPPs are now employed for example for schools, hospitals, prisons, roads, motorways, bridges, IT services, accommodation, leisure facilities, military training and waste management.
- PPP can be a good tool for providing universal service. The idea is the following, the private firm builds the infrastructure, and may or not to provide the service (the service can be also provided by the public sector), the public sector pay for the service according to a long contract, with fees that generally depend on performance measures. The advantage of PPP's are mainly smoothing the payments for financially constrained governments and more