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by Ingo Vogelsang

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ifo Institut für Wirtschaftsforschung
Poschingerstr. 5, 81679 München
Tel. +49-89-9224-0 www.ifo.de

Remarks on de Bijl and and Peitz "New Competition in Telecommunications Markets: Regulatory Pricing Principles"

By *Ingo Vogelsang*

De Bijl and Peitz have written a clear paper. It addresses three important subjects:

- The tradeoff between entry competition and welfare
- The tradeoff between price regulation and competition
- The effects of symmetric and asymmetric access price regulation

The analytical models and numerical simulations deal with competition between full coverage (integrated or local) network providers. The authors use a simple framework and get interesting results. In particular, asymmetric access price regulation, where the incumbent prices access at marginal costs while the entrant charges an extra markup, has beneficial effects on entry and the intensity of competition until the entrant has caught up with the incumbent. In contrast, price cap regulation on subscriptions, while benefiting consumers, can discourage entry. Thus, price cap regulation in this context, could become a risky tool. How sensible are the assumptions leading to those results? How sensitive are the results to specific assumptions?

Crucial assumptions on demand are:

- The perceived quality/reputation difference between incumbent and entrant depends on the passage of time only. This implies that consumer surplus per unit of sales by the entrant increases exogenously over time, so that at low interest rates the optimal policy would be to retard entry by a few years, until the quality difference has vanished. Experience dependent quality would be harder to model and would likely lead to penetration pricing.
- Consumer welfare is measured as consumer surplus. A problem of the quality/reputation assumption on welfare could be that the difference is only due to lack of information. Thus, actual subscribers of the entrant could experience the same surplus as subscribers of the incumbent.

While I see no practical way of finding out, this observation means that consumer surplus analysis is possibly biased against entry.

- Subscription utility is assumed to be independent of usage or the price of usage. This eliminates tradeoffs between subscription and usage prices.
- The assumption of 100% market penetration means that net welfare effects from entry and competition can only come from cost reductions, subscriber heterogeneity and increased usage. Also, truly cost-based subscription fees may vary between the extreme urban and rural areas by a ratio of 1:20 in Europe and 1:100 in the U.S. It is hard to believe that penetration would stay constant along price differences that would reflect such large cost differences.

The main ingredients of costs are: Fixed cost to run a network, customer-specific fixed cost, and variable costs consisting of costs for on-net calls, off-net calls and incoming calls.

Liberalization leads to a welfare tradeoff. The duplication of network-specific fixed costs and the initial quality disadvantage of the entrant are weighed against advantages from product differentiation and higher usage. Not captured are benefits from higher penetration.

The initial analytical model has fixed per minute prices, not covering variable costs. Firms compete for consumers via subscription fees only. Thus, this is essentially a flat rate model. The result that access charges have no effect on market shares (Remark 2) seems to come from the fact that the effect of access charge changes on subscription fees is the same for both networks. The assumptions on demands are obviously such that the direct and cross effects cancel each other (total demand stays put). Thus, although the access charge appears in the price formula for the subscription fees, it exactly cancels out in market shares. All other results in this model are related to this one. The question is if this is a general property or if it is depending on very specific model assumptions, such as the linearity of the demand curve.

The simulation model with access price regulation only has a downstream usage price P = MC as the equilibrium outcome. I wonder how general this result is and if it depends on the utility of subscription being independent of the usage fee. The authors then concentrate on subscription fees, which converge over time, due to reduction in quality difference. Under reciprocal, cost-based access prices, welfare first declines then increases. Consumer surplus increases monotonically. Under asymmetric access price regulation the entrant's market share increases early, due to a sort of reciprocal calling effect (via symmetric calling patterns) that provides access revenues in addition to revenues from end users. So, entrants can make themselves whole from access charge revenues even if they price end-users below costs. While consumer surplus and the entrant's profits are higher under asymmetric than under symmetric access regulation, the welfare differences are negligible.

In the last simulation model price cap regulation for the incumbent's subscription fee (but not on the usage fee) improves consumer welfare but reduces in-

centive for entry. This comes from the perceived quality difference, which implies that the entrant has to be cheaper than the incumbent, in order to gain market share (or, in this model, wait until the quality difference goes away). The authors consider myopic decisions only. In a strategic setting, the question would arise, can low price caps prevent predation (if they are a credible commitment) and therefore help entry?

What do we know about demand and cost functions? The paper uses a single set of cost parameters. Confidence in simulation results requires many runs with different parameter constellations to see if the results are robust. In particular, the current welfare results are extremely close. In my view, the interplay between the two types of fixed costs assumed by the authors would be interesting. Where do these two types of fixed costs appear in reality or in cost models? How do they change with the density of the network? For example, in a circular network there would be no fixed costs of connecting individual subscribers. In contrast, in a star network, there would be no common fixed costs.

In conclusion, the paper comes up with interesting, provocative results that are well worth further analysis of the underlying assumptions and parameter specifications.