

Econ 243

September 19, 2018

FC industries

basic diagram. what happens if we allow a 2nd firm in?

If so then FC \rightarrow 4*FC (two firms so FC \uparrow 2x due to duplication, but also each firm then serves only half the market, so that adds another \uparrow 2x to per-unit FC).

so we shouldn't want 2 firms to have the infrastructure in place to provide competition for delivering water to your residence!

Examples of FC industries???

- water (sewage)

- *note not made in class: if you're within the service area, in general it's illegal to drill your own well or install your own septic system*

- electric power distribution

- twisted copper (and fiber optic) telecommunications

- cell phones? – *I don't really know – how big are fixed costs for cell phone towers? but on the margin the cost of one user making an additional call is very, very close to zero.*

- airlines? – *We know that on many routes there are multiple airlines, but if the main fixed cost is the equipment, then **if** capacity is near 100% **then** the FC argument isn't relevant as the number of aircraft needed wouldn't be lower with fewer firms.*

basic diagram, FC + constant MC

- in real world MC often nearly constant at 90% normal capacity utilization.

= base load electric power is very close to MC = cQ as you need 10% more fuel to generate 10% more electricity. that's not true for peak power, while at night you may have significant excess capacity.

lemma: having a lot of electric cars that charge at night could lower average electric prices because (i) it never pushes against peak load and (ii) spreads fixed costs over a greater number of customers. having them use fast-charging stations at work or along a highway works in the opposite direction: raising peak demand. furthermore, rapid charging can push against the capacity of local infrastructure - even if the system has enough power, the transmission lines and transformers for your place of work may not have been designed to handle the load.

- **if** MC constant, **then** AC **always** above MC. (*graph as per class*). huge profits. minimum sustainable price of p = intersection of D and AC way above private monopoly price.

pricing, efficiency?

\rightarrow regulation

rate-of-return regulation

so how game system?

add capital!

a hunting lodge, necessary for executive retreats

corporate jet, car & driver. driver can be paid very handsomely to provide all sorts of additional services...

private bathroom with each office

personal assistant, whose job description may be expansive

excess capacity everywhere - if every neighborhood has two transmission lines coming from opposite directions, power outages become very rare.

Averch-Johnson effect: rate-of-return regulation leads to higher FC. regulators also must argue over what is the minimum acceptable rate of return, eg through comparison with the yields on long-term corporate bonds.

Japan example:

A. the heads of Japan's 7 big utility companies are all retired government officials. there weren't many gains to be had from improving operational efficiency. in contrast, a rate increase fed through straight to the bottom line (and to fewer questions about munificent perks for execs).

1. gaming the system meant that the oldest nuclear power plant in Japan was in Fukushima. it was overdue for being closed down. so (i) don't sink any money into adding modern safety features but (ii) if you could convince regulators to extend plant life another 5 years, you didn't have to build a new power plant and hike the price of electricity to pay for it.

2. so after 3/11, when the Prime Minister called the head of Tokyo Electric Power, the person who answered the phone was an expert in lobbying his former government ministry (METI, the Ministry of Economy, Trade and Industry 経済産業省), as were those around him. they had absolutely no knowledge of the operational side of the utility. the same was true of the regulator METI. bureaucrats were rotated in and out of the posts related to electric power, the skill set they needed was negotiating with retired bureaucrats. an American political scientist interviewed METI for a book on comparative regulation (he spoke/read Japanese and French fluently, and maybe German). he was flabbergasted that the senior bureaucrat didn't even know the basic jargon of electric power grids.

3. the bottom line: staggering losses, including (i) the whole country forced to ration electricity use ("Cool Biz" meant no neckties, because of no air conditioning where the climate is equivalent to the US south), (ii) a nuclear meltdown that could have been avoided and (iii) attendant cleanup costs.

QUERY: from a post-class discussion: how many cell phone providers are there in Germany? in Japan? in China? in Brazil?

- is this a fixed-cost industry?

= how big a part of the cost structure are cell phone towers and related infrastructure?

= or is software the big cost, and once developed, there's little need for subsequent investment?

- **is it** regulated, **should it be** regulated?