AUSTRALIAN ENERGY REGULATOR

The rationale for monopoly regulation

Why do we regulate monopolies?

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Outline

- The conventional economic rationale for why we regulate natural monopolies is inadequate.
  - Many policy prescriptions which are soundly based in conventional economic theory are routinely rejected by regulators in practice.
  - Is this because regulators are economically illiterate? Or that they are not seeking to maximise economic welfare? Or is it that the conventional economic approach to monopoly somehow misses the key point?
- I propose an alternative explanation as to how natural monopoly regulation promotes economic welfare.
  - This alternative explanation is based on protecting the investment in sunk complementary assets on the part of users and consumers of the monopoly service.
  - In my view this alternative does a better job of explaining how regulators actually behave in practice (and how they should behave).

Why regulate monopolies?

- According to conventional, mainstream economic theory, found in virtually any textbook on regulation or competition policy, the primary economic harm arising from a monopoly is due to:
  - Prices above **marginal cost**…
  - … leading to **deadweight loss** …
- For example, at this conference last year at least two of the presenters put up slides reflecting this standard view:

Why regulate?

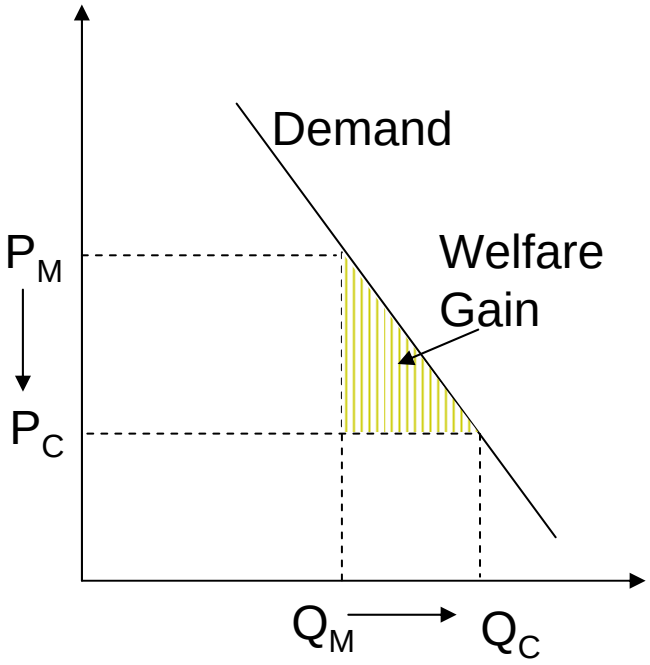
- Avoidance of deadweight loss (= unrealized gains from trade)
- But regulation itself has costs
  - It requires specialists (who may be particularly costly in developing countries)
  - There are probably economies of scale in regulation, so it is more worthwhile in larger markets
  - There may also be economies of scope => multi-sector regulation

2.1 Why regulate?

Why are industries such as energy, telecommunications, water, railways and airports regulated? The simplest textbook-style answer (at least in a world of full information) is that regulation prevents the firm from abusing its market power and thus eliminates a deadweight loss. By itself, though, this does not entail that there should be regulation. The costs of

Motivations for regulation

- Economic motivation:
  - improve allocative efficiency
- This creates extra welfare
  - because there is more trade, in this market
- But, there are offsetting costs
  - Direct costs of regulation
    - Mostly fixed, so scale matters
  - Indirect costs
    - May deter efficient investment



The deadweight loss hypothesis

- So, according to conventional economic theory, the primary economic rationale for natural regulation is the **elimination of the deadweight loss**.
  - Let's call this the "deadweight loss" hypothesis ("DWLH")…
- Does the deadweight loss hypothesis do a good job of explaining how regulators actually behave?

If the DWL hypothesis was correct…

- If the DWLH is correct, regulators should be enthusiastic about:
  - **marginal cost pricing**…

Bonbright (1988): "While most people in the public utility community are aware of and would probably acknowledge the validity of marginal cost pricing many would minimize it in actual ratemaking on grounds of either practicality or of a lack of singlemindedness to economic efficiency … It is no secret that ratemaking in the United States has historically deviated significantly from the first-best marginal cost ideal"

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  - ensuring **stable prices** over time?
  - … preventing **adverse movements** in prices?
  - … and **incremental cost** as a price floor?

Regulation is not about reducing DWL

- Conclusion: The "deadweight loss hypothesis" does a poor job of explaining the way regulators actually behave.
  - Why? Are regulators bad economists? Are the economists not shouting loud enough? Are regulators pursuing non-welfare maximising objectives?
  - Or is there something wrong with the economic theory?
- Is there a better explanation of why we regulate natural monopolies?
  - Do we regulate in order to encourage productive efficiency?
  - Do we regulate in order to eliminate the incentive to waste resources obtaining a monopoly?
  - Is regulation primarily about protecting and promoting sunk investment by the regulated firm?

Sunk investment by the regulated firm

- There is a strand of the economics literature which argues that a primary task of regulation is protecting the sunk investments of the regulated firm:
  - The story is: Natural monopolies must make substantial sunk investment
  - Once sunk, this investment is subject to the risk of "expropriation" or "hold-up" through attempts by the government to force lower prices.
  - Regulation is primarily about preventing this "opportunism" in order to promote sunk investment by the regulated firm. Spiller and Tommasi:

II. The Problem of Utilities

In this section we show that the overarching problem driving the regulation of utilities, whether public or private, and thus the issues politicians have to deal with, is how to limit governmental opportunism, understood as the incentives politicians have to expropriate – once the investments are made- the utilities' quasi rents, whether under private or public ownership, so as to garner political support. Thus, institutional environments that are

Sunk investment by customers

- I propose that regulation is best understood as **protecting the sunk investments of users and consumers**.
- The story is as follows:
  - Users/consumers of the monopoly service must make their own sunk investments in reliance on the monopoly service…
  - But this leaves them exposed to the risk that the monopolist will raise the price (a "hold-up" problem) so, in the absence of regulation, customers will fail to invest, which is inefficient…
  - Regulation plays the role of a long-term contract between the customers and the regulated firm which, by establishing a long-term stable price path, protects and thereby promotes investment in reliance on the monopoly service…

Sunk investment by customers

- What are these sunk investments made by users/consumers?
  - A shipping company deciding whether to locate close to an inter-state rail terminal, or to build a rail spur to its depot…
  - A paper producer deciding whether to locate next to a major gas transmission pipeline…
  - An irrigator deciding whether to plant an annual crop (which only requires one year's water) or to plant an orchard which would require irrigated water for many years in the future…
  - A factory deciding whether to invest in equipment which uses electricity or gas (or both) as a fuel…
  - A commuter deciding whether to locate close to a commuter rail station..

Sunk investment by customers

- It is efficient for the customers to make these investments
  - but the customer will be reluctant to make a substantial sunk investment if the monopolist can raise the price (or lower the quality, or threaten to cut off the service), in the future.
- This problem could be solved by long-term contracts…
  - This does occur in some industries (such as in the natural gas industry) but for many industries the number of customers is sufficiently large that the transactions costs of negotiating such contracts makes them infeasible.
  - The role of the regulator is to re-create that long-term contract which, by ensuring the customer a long-term stable path of prices facilitates sunk investment by the customer.
- Note that this is an *efficiency* argument rather than a fairness or distribution argument.

The sunk investment hypothesis

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  - Ensuring **stable prices**…
  - …and **preventing adverse movements** in prices
- And why regulators hate:
  - **Price discrimination** and **Ramsey pricing**
- …and why regulators have embraced **incremental cost** as the relevant price floor…

Conclusions

- The conventional economic theory of regulation does a poor job of explaining the way that regulators actually behave.
  - Regulators don't do the things that economists say they should do (such as marginal cost pricing) and do things that economists cannot explain (such as preventing price discrimination).
- The conventional economic theory of regulation (focused on deadweight loss) is at best a partial explanation for why we regulate natural monopolies.

Conclusions

- It appears that natural monopoly regulation is better viewed as a mechanism for protecting and thereby promoting the sunk investment of users and consumers.
- This hypothesis seems to do a much better job of explaining how regulators behave in practice.
  - In particular, it can explain the aversion to price discrimination, the focus on price stability, the asymmetric concerns of regulators, and the focus on incremental cost as the relevant price floor.
- Do economists need to re-think their rationale for natural monopoly regulation…?