

# MICROECONOMICS AND POLICY ANALYSIS - U8213

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Class Notes - Spring 2001

## Controls versus Taxes and Peak-Load Pricing

Monday, April 9<sup>th</sup>

*Reading:* Buchanan and Tullock, Vickrey

### Buchanan and Tullock Article "Polluters' Profits and Political Response: Direct Controls versus Taxes"

Political Responses to types of regulation. This article takes a look at understanding what the impact of different forms of public policy have on different interest groups.

**Taxes vs. Standards:** Which is better? (Also, look at Pindyck for a discussion of how the possibilities of mismeasurement influence the decision)

The example:

A large number of identical firms are polluting in a competitive industry. The long run supply in a competitive industry is horizontal at the price level of minimum average costs (short-run  $P = MC$ ).

Theoretically, with complete information we should be indifferent between taxes and standards. In reality, taxation is usually opposed by industries.

**Why?**

Industry dynamics under the two alternatives:

**With a tax per unit:** In the short run there will be losses and in the long run firms will leave the market until a new equilibrium is reached, with a reduced quantity, and there is a normal return on investment. The price of the product to consumers will go up by the full amount of the penalty tax. Firms will not have any tax burden because in the long run the supply will be horizontal in a constant cost industry. ( $p = \min AC$ ). Given price and quantity firms will enter and exit until demand is satisfied.

**With Standards:** Initially the government will reduce the quantity and the same amount of firms will produce. This gives the industry market power (cartel power) which will lead to higher profits. The government will need to prohibit entry into the market.

The dimension along which a policy is implemented is different. For the government a tax is simple and firms will enter and exit the market. With a standard the government needs information with respect to the correct quantity and needs to regulate entry (greater burden).

The industry prefers standards because it grants current firms a government sanctioned market power and a positive profit.

Distributional Differences:

**Tax:** Industry makes zero profit but the government makes revenue

**Standard:** Firms make a positive profit and the government makes no revenue.

Firms have incentive to seek standards and prefer quantity to price regulations.

### **Peak Load Pricing – Vickrey Article**

Vickrey uses the example of pricing in urban and suburban transport.

**Peak Load Pricing** – charging different prices at different times for the same good.

1) Peak load pricing charges different prices at different times

2) Marginal cost varies across time

Price discrimination refers to the situation in which firms are charging different prices for the same good. In one sense, peak-load pricing is not price discrimination because the marginal cost will differ at different times. When the marginal cost differs you want to charge the marginal cost.

3) The network element

Example of networks – utilities, roadways (does not yet include the Internet)

Networks present the potential for congestion. This congestion is an externality. By being on the road, I increase the length of time of the commute for others on the road. One feature of peak times is that the congestion cost on others is very high at peak times. If everyone could pass through without impacting on others travelling there would be no transaction costs. One question to consider...whether difference in demand would lead to an argument for peak load pricing.

4) Congestion costs

At times of peak congestion people are willing to pay more at that time. Peak-load pricing takes advantage of people's willingness to pay

Other examples of capacity constraints (congestion) and an increased demand:

- Hotel rooms during a big event
- Umbrellas when it is raining (it would be considered peak load pricing if the capacity of the seller of umbrellas is constrained at the time it is raining and you are willing to pay more at that time)

Why do we not see peak load pricing in transportation or electricity?

Two answers

- No one has thought of it
- Technological limits - Vickrey speculates about different devices and means to charge different prices for transportation

Students thought of examples of tolls and subway prices that are based on peak load pricing.