

The (Public) Economics of Valuing Public Interest



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INTRODUCTION

- The purpose of this talk is to convey some of the central ideas of public economics
- And to link them with the public interest defence for cartels
- Public economics analyses why policy intervention is necessary and the form policy should take
- It combines positive economics (“what is”) with normative economics (“what should be”)
- The talk begins by exploring efficiency then proceeds to justifications for policy intervention



EFFICIENCY

- Efficiency is frequently used in economic discussion but not always correctly
- The formal economic concept *Pareto efficiency* is which was introduced by the Italian economist Pareto at the beginning of the twentieth century
- The key characteristic is that it allows the comparison of economic states without requiring the need to make value judgements
- The avoidance of value judgements is both its strength and its main weakness



EFFICIENCY

- Consider first what makes one state better than another
- A move from state s_1 to state s_2 is a *Pareto improvement* if
 - (i) At least one person strictly prefers s_1
 - (ii) Everyone finds s_1 at least as good as s_2
- If a Pareto improvement is made by moving from s_1 to state s_2 then s_2 is *Pareto-preferred* to s_1
- A state is *Pareto-efficient* if there exists no other state that is Pareto-preferred to it



EFFICIENCY

- The important point is that this is a definition of efficiency *without* reference to a particular model or situation
- It applies to allocation problems in general
- Efficiency in this sense does not have any implications about how firms should behave or how prices should be set
- Implications only follow when the concept is applied to a *particular* economic structure



EFFICIENCY

- If applied to a market economy the standard observation applies that profit maximisation, utility maximisation, and competition lead to a Pareto efficient equilibrium
- How does this relate to public interest?
- Public interest implies some special features of the economic situation such as *public goods* or *externalities*
- Efficiency must be defined to taking them into account
- Public goods and externalities lead to market failure so the unregulated market is *not* efficient



EFFICIENCY

- It should be stressed that stating the conditions that an efficient allocation satisfies does *not*:
 - *Describe* how efficiency is achieved
 - *Ensure* that the distribution is equitable
- The former takes the discussion into policy design: what can be achieved given information and revenue constraints
- The latter leads into the theory of welfare assessments



VALUE JUDGEMENTS

- Pareto efficiency cannot be used to judge between states if there are only gainers or only losers as the move is made between the states
- If some consumers gain and some lose then the criterion is of little value
- Gains and losses are invariably a feature of policy choices and much of policy analysis consists of making value judgement
- In this respect the Pareto criterion is *inadequate* as a basis for policy choice



EVALUATING PUBLIC INTEREST

- “Public interest” can be interpreted as a form of social preference
- Economists represent social preferences using a *social welfare function*
- Social welfare depends on the individual well-being (utility) of the members of society
- The social welfare function describes social preferences and provides an evaluation of outcomes



EVALUATING PUBLIC INTEREST

- Social welfare can have the general Bergson-Samuelson form

$$W = W(U^1, U^2, U^3, \dots)$$

- Or a more specific form

$$W = \text{Profit} + \text{Consumer surplus} + \text{Gov. revenue}$$

- Three alternative interpretations of the social welfare function can be given
- *First*: the social welfare function captures the views of some central authority or dictator
- The individual utilities can be the dictator's perception or the actual utilities of the consumers



EVALUATING PUBLIC INTEREST

- *Second*: the social welfare function captures the ethical objectives of society
 - The *utilitarian* philosophy of achieving the greatest good implies social welfare is the sum of individual utilities
 - The *Rawlsian* philosophy of caring only for the worst-off member of society implies social welfare is given by the minimum utility
- This approach is internally consistent but requires comparability of individual utilities
 - The utilitarian approach requires summation
 - The Rawlsian function compares levels



EVALUATING PUBLIC INTEREST

- *Third*: the social welfare function aggregates the preferences of the individual consumers
- The aggregation process must obey certain rules and the social welfare function emerges as a consequence of the rules
- If the aggregation rules are satisfactory then society should accept the social welfare function
- Example: If the rules of majority voting are chosen the minority must accept what the majority chooses



EVALUATING PUBLIC INTEREST

- By choosing a policy to maximise social welfare the society balances efficiency and equity
- Some observations:
 1. If the welfare function is individualistic it will be maximised at a Pareto efficient allocation
 2. The social welfare function can take account of the well-being of future generations (this raises the question of discounting)
 3. The social welfare concept is very general, and individual well-being can encompass a range of factors



EVALUATING PUBLIC INTEREST

- The public interest in cartel defence raises questions
- If, for example, the public interest is animal welfare:
 1. Is it the welfare of the animals that enters social welfare or the reaction of people?
 2. How can we accommodate variation in population size?
- Example: In national hunt racing, horses sometimes fall and are put down. Should national hunt racing be banned?



MARKET FAILURES

- A market failure arises when competition does not secure efficiency
- This gives a *motive* for considering policy intervention
- The causes of market failure are:
 1. Monopoly power
 2. Public goods
 3. Externalities
 4. Asymmetric information
- Monopoly and externalities are now reviewed as cases where public interest can arise



PUBLIC GOODS

- A pure public good has two properties:

- *Nonexcludability*

If the public good is supplied, no consumer can be excluded from consuming it

- *Nonrivalry*

Consumption of the public good by one consumer does not reduce the quantity available for consumption by any other

- A private good is excludable at no cost and is perfectly rivalrous



PUBLIC GOODS

- Goods can possess different combinations of rivalry and excludability
- *Club goods* are non-rivalrous but excludable
- *Common property resources* are rivalrous but not excludable
- These are both examples of *impure public goods*

	Rivalrous	Non-rivalrous
Excludable	Private good	Club good
Non-Excludable	Common property resource	Public good

Typology of goods



PUBLIC GOODS

- The characteristics of a public good lead to the wrong incentives for consumers
- Each consumer has an incentive to rely on others to provide the public good
- The reliance on others is called *free-riding*
- This leads to inefficiency since too little public good is provided
- All consumers will benefit if all provide more public good



PUBLIC GOODS

- An extra unit of *private good* can be consumed by person *A* or person *B*
- The allocation is efficient when *A* and *B* have the same marginal benefit, and this is equal to the marginal cost

$$MB^A = MB^B = MC$$

- An extra unit of *public good* benefits both *A* and *B*
- Efficiency is achieved when the sum of marginal benefits is equal to marginal cost

$$MB^A + MB^B = MC$$



PUBLIC GOODS

- With private goods consumption is adjusted to equate marginal valuation with market price
- With public goods it is not possible for consumers to adjust consumption
- This suggests adjusting prices to match the valuations of the fixed quantity
- This is the basis of *personalized pricing*

	Private good	Public good
Price	Same	Different
Quantity	Different	Same

Prices and quantities



PUBLIC GOODS

- With personalized pricing each consumer pays for their specific valuation of the public good
- The *Lindahl mechanism* asks each consumer to announce their demand for the public good as a function of their share of cost
- The shares are adjusted until all consumers demand the same quantity
- If the demands honestly reflect preferences the equilibrium is efficient
- The Lindahl mechanism is not *incentive compatible*: the consumers have no incentive to announce their true demand functions



PUBLIC GOODS

- Public goods can be provided by the government using tax revenue
- But there are two issues;
 1. Obtaining the information to know what quantity should be provided
 2. Taxes are distortionary so another inefficiency is introduced
- Voting can be used to determine the quantity but this is not a perfect mechanism



EXTERNALITIES

- An externality is a link between economic agents that lies outside the price system
 - Pollution from a factory
 - Envy of a neighbour
- Externalities are not under the control of the affected agent
- The standard efficiency theorems do not apply and the competitive equilibrium unlikely to be efficient
- Externalities are of practical importance
 - Possibility of global warming
 - Damage to the ozone layer

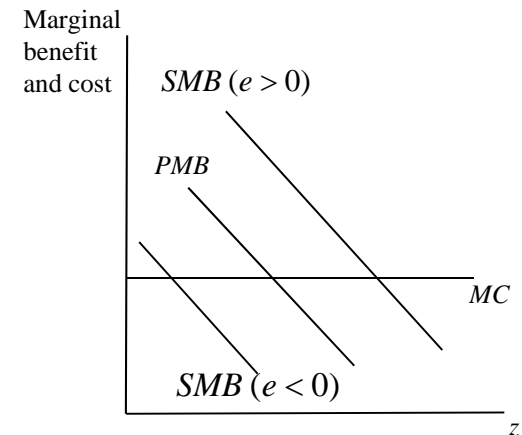


EXTERNALITIES

- In the figure the market outcome has private marginal benefit (PMB) equal to marginal cost (MC)
- The optimum allocation has social marginal benefit (SMB) equal to MC
- Location of SMB relative to PMB depends on the sign of the external effect
- The general efficiency condition is

$$PMB + EMB = PMC + EMC$$

$$(SMB = SMC)$$



Divergence of private from social benefits



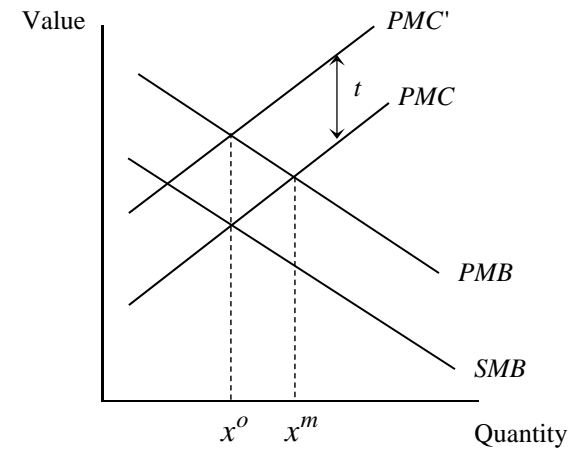
EXTERNALITIES

- Externalities cause inefficiency because of the divergence between social and private benefits (or costs)
- A tax can be used to raise the private marginal cost
- This assists efficiency with a negative externality
- A subsidy (a negative tax) can be used to reduce the private marginal cost
- This assists efficiency with a positive externality
- Taxes that are used to combat externalities are called *Pigouvian taxes*



EXTERNALITIES

- The use of a tax to correct for a negative externality is shown in the figure
- Social marginal benefit (*SMB*) is below Private marginal benefit (*PMB*)
- The tax, t , shifts Private marginal cost from *PMC* to *PMC'*
- The quantity consumed falls from x^m to x^o
- x^o is efficient with $SMB = PMC$



Pigouvian taxation



EXTERNALITIES

- The *Coase Theorem* proposes that economic agents will solve externality problems without intervention
 - “In a competitive economy with complete information and zero transaction costs, the allocation of resources will be efficient and invariant with respect to legal rules of entitlement.”
- Legal rules of entitlement (or *property rights*) determine ownership in the economy
- The theorem implies that policy should do no more than establish and enforce property rights



EXTERNALITIES

- Coase viewed externalities as arising through the absence of property rights
- For example, pollution occurs when there is no right to clean air or clean water
- If there is a property right a price can be determined and the right traded
- The externality then becomes a market good
- The limitation of this argument is the cost of operating “thin” markets



VALUATION OF PUBLIC INTEREST

- A social welfare function is a conceptual exercise
- To reach a judgement in a public interest case a *value* must be calculated
- Public goods and externalities can have values associated to them
 - The Lindahl equilibrium leads to personalized prices for a public good
 - The Coase theorem reinforces the idea that externalities have prices
- The valuation of public interest is central to method of cost-benefit analysis



VALUATION OF PUBLIC INTEREST

- Methods of valuation exist to price public goods:
 1. Revealed preference (observe market behaviour)
 2. Stated preference (apply questionnaires)
 3. Hedonic analysis (infer from market prices)
- These methods can value anything: life, endangered species, environmental quality
- And are detailed in manuals of cost-benefit analysis
- The valuations can be used to measure public interest and contrast to the cost of non-competitive pricing



VALUATION OF PUBLIC INTEREST

- There are drawbacks to the valuation methods
- Theoretically:
 - The stated preference approach faces incentive issues
 - Hedonic analysis is imperfect
 - Revealed preference may be based on “anomalies”
- Practically:
 - Data is limited
 - Analysis is costly
- The principles of valuation are sound but the practice has limitations



SECOND-BEST THEORY

- Second-best theory addresses how to respond if some of the efficiency conditions cannot be achieved
- Should we engage in piecemeal policy to achieve efficiency where possible?
- The answer is clearly no and policy must be a coherent package
- If one efficiency condition is not achieved then there should, in general, be offsetting deviations from efficiency elsewhere



SECOND-BEST THEORY

- Inadequate provision of public goods means one efficiency condition is not achieved
- Allowing a cartel implies that a second is not achieved
- Second-best theory shows this *may* be an improvement over no cartel
- Even if it is, it may not be the best possible outcome
- (There may be another outcome closer to the first-best)



SUSTAINABILITY

- Economists frequently have difficulties with the concept of sustainability
- Perhaps this is because it is so ill-defined and is used in a variety of ways
- Or the implications are not thought through when it is used
 - The only sustainable use of a depletable resource is not to use it at all
- If it is to be part of a public interest defence it must be given a clear meaning



CONCLUSIONS

- Economics provides the tools needed to evaluate a public interest defence
- In principle such a defence can have economic merit
- To be sustained the public interest benefits of the cartel must be evaluated
- And set against the costs of non-competitive pricing
- It should also be established that there is no better policy

