

Economics, markets, and organizations

Tutorial 13



Continuous exam 1

- 1. Explain the domestic market failure argument in favour of tariff for a small country when there are marginal social benefits in production. What would be your conclusion regarding the tariff if instead there would have been marginal social benefits in consumption?





Continuous exam 2

- 2. Define the notion of Pareto efficiency and explain why a reformed CAP with no import tariffs and only income subsidies to farmers could bring a Pareto-efficient welfare improvement.





Key objectives

- Understanding and being able to apply the concepts related to public goods and public choice (public good, common resources, tragedy of the commons, merit goods, de-merit goods)
- Externalities





Q1. Figure 10.2 in the book of Mankiw and Taylor illustrates the calculus that the government makes when deciding upon the quantity of a public good that it wants to provide.

- (a) What is the criterion for the optimal provision of a public good?





Answer

- $MSB=MC$

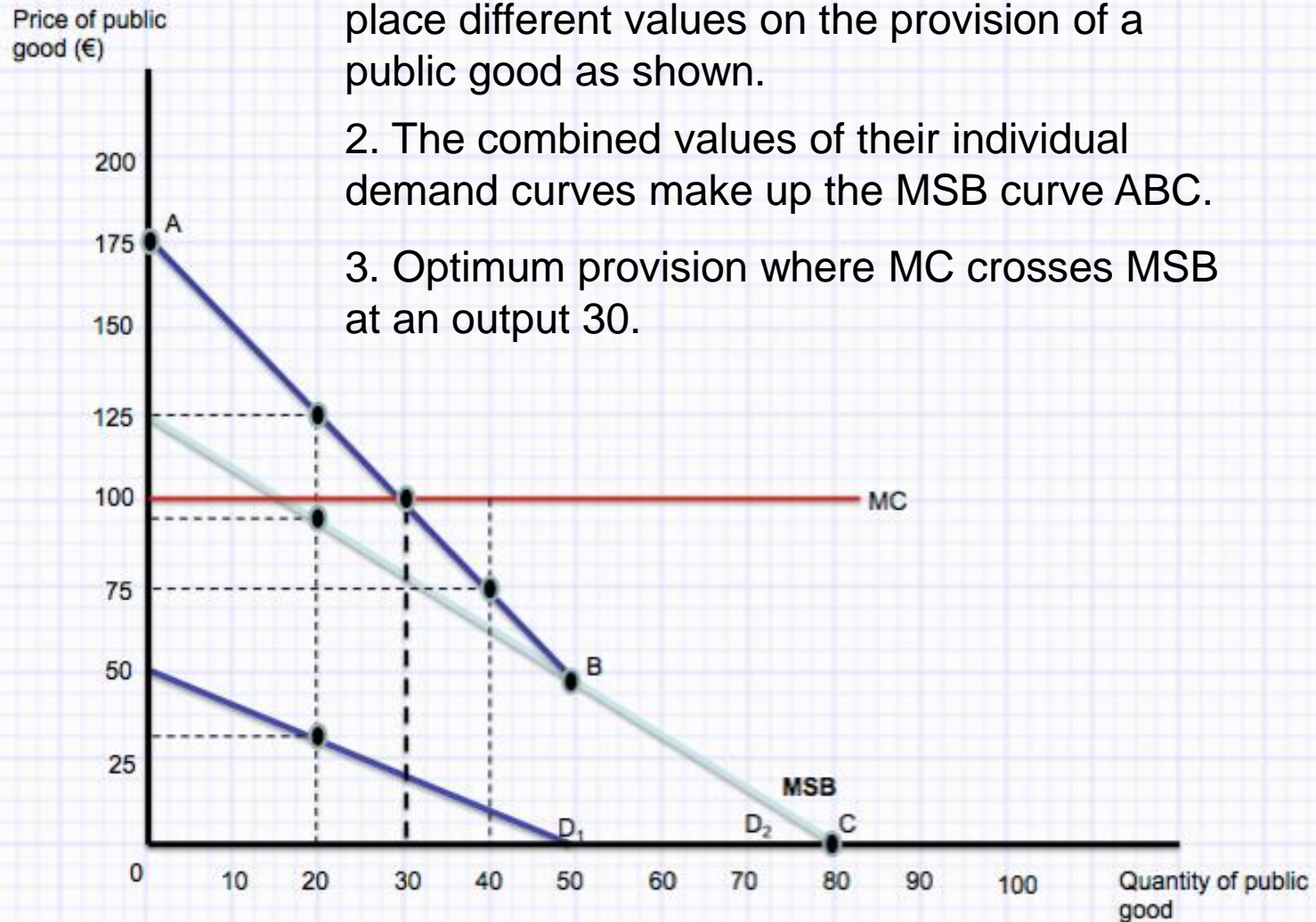




You have to calculate the optimal provision of the public good in Figure 10.2. From the text, we know that consumer 1 values the public good at 50 if the provision were 0 and would value it at 31.25 if the quantity were 20. We also know that consumer 2 values the public good at 125 if the provision were at 0 and at 93.75 if the provision were at 20. You also know that the marginal cost (MC) in providing the good is at 100.

(b) Derive the optimal provision of the public good. Hint: use the above information to derive the demand functions of each of the two consumers and use these to construct the marginal social benefit line (MSB).

Figure 2. Optimal Provision for a Public Good



1. Assume there are only two consumers who place different values on the provision of a public good as shown.

2. The combined values of their individual demand curves make up the MSB curve ABC.

3. Optimum provision where MC crosses MSB at an output 30.



A careful evaluation of the environmental effects that are associated with the production of the public good reveals the presence of large negative externalities that amount to 100 per unit.

- (c) What will the optimal provision be when assuming that the valuation of the good by consumers 1 and 2 has not changed?



Answer

- MC increases to 200 hence the good should not be provided.





2. An article in the *Economist* of 19 March 1994 stated: “In the past decade, most of the rich world’s fisheries have been exploited to the point of near-exhaustion.” The article continued with an analysis of the problem and a discussion of possible private and governmental solutions.





(a) You are given the following quote from that article: “Do not blame fishermen for overfishing. They are behaving rationally, as they have always done.” In what sense can “overfishing” be rational for fishermen?





Answer

- Overfishing is rational for fishermen, from a private point of view, since they are using a common resource. They do not bear the costs of reducing the number of fish available to others as well as to future generations, so it is rational for them to overfish. The free-market quantity of fishing obviously exceeds the socially efficient amount.



(b) The article also wrote: “A community, held together by ties of obligation and mutual self-interest, can manage a common resource on its own.” Explain how such management can work in principle, and what obstacles it faces in the real world.





Answer

- If fishermen would perceive the loss of others as their own loss (as within family or small groups), or if they were aware of the consequences of overfishing on their own future welfare, they would possibly fish less.



(c) You are required to examine the following quote from the article: “Until 1976 most world fish stocks were open to all comers, making conservation almost impossible. Then an international agreement extended some aspects of [national] jurisdiction from 12 to 200 miles offshore.” Discuss how and why this agreement reduced the scope of the problem.





Answer

- By expanding national jurisdiction over larger areas of the sea, basically an owner was assigned to the common resource. Countries will not allow other nation's fishing boats to fish on their seas, and will also be aware that if they allow overfishing, their fishing industry will disappear in the long-run.

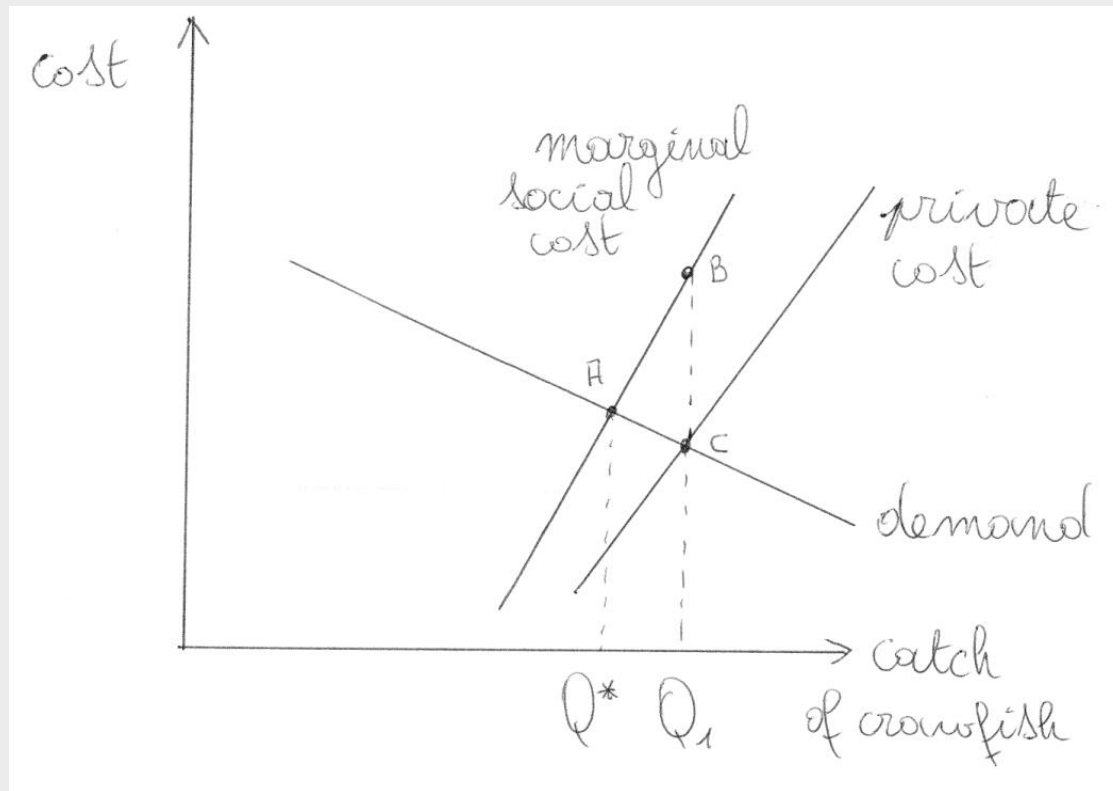


Useful links for the “tragedy of the commons”

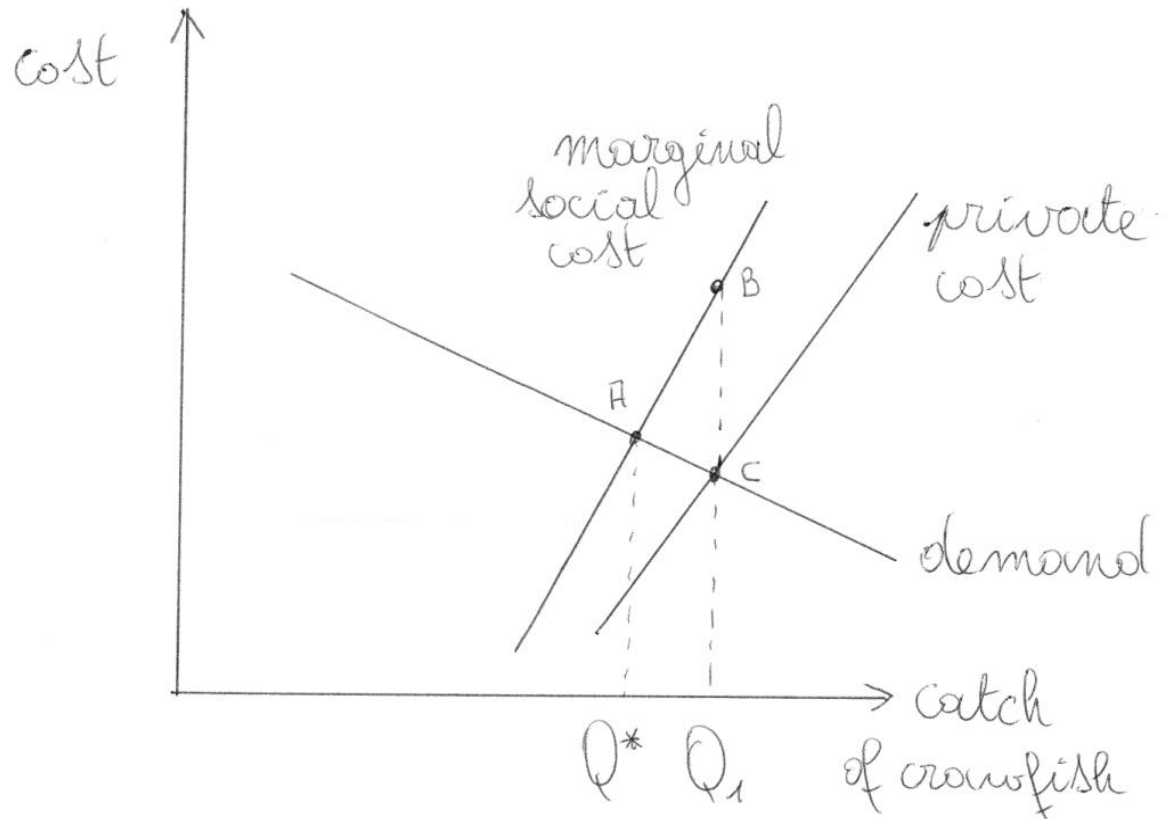
- https://en.wikipedia.org/wiki/Tragedy_of_the_commons
- <https://www.youtube.com/watch?v=0b2TI0x-niw>



In the case of common (property) resources, we have the risk of overproduction that is undesirable from a societal point of view. This will be examined for a large lake to which fishermen have free access and where they catch crawfish. The below figure illustrates the problem at hand.



The vertical axis represents the “cost” and the “catch of crawfish”, i.e. the quantity, is depicted along the horizontal axis. The private marginal cost and marginal social cost are upward-sloping lines and the demand line for crawfish is given by a downward-sloping line.





- (a) Are there externalities connected with the catch of crawfish? Are they positive or negative? Give some examples of what these externalities could be related to.
- (b) Give a coherent intuitive argument as to why demand line is decreasing in the amount of crawfish that is caught.
- (c) Give a coherent intuitive argument as to why the private marginal cost is upward-sloping in the amount of crawfish that is caught.
- (d) What is denoted by the quantities Q_1 and Q^* ? What is the meaning of the triangle ABC ?



Answer

- a) Yes, negative externalities (at Q_1 quantity, the marginal social costs are B while the marginal private costs are C). Explanation: depletion of resources, disturbance of the ecological balance, threat to biodiversity.
- b) Decreasing marginal utility from consuming crawfish.
- c) Because as more and more crawfish is caught, it will be more difficult and costly to increase fishing. Q_1 privately optimal and Q^* societally optimal quantities of fish.
- d) ABC is the social costs of free access to the common resource.