

Fig. 8-3: An Effluent Tax. After the tax is passed, the private cost (including the tax) increases to the social cost.

(TO BE USED WITH SECTION 1 OF UNIT VIII TAPES)

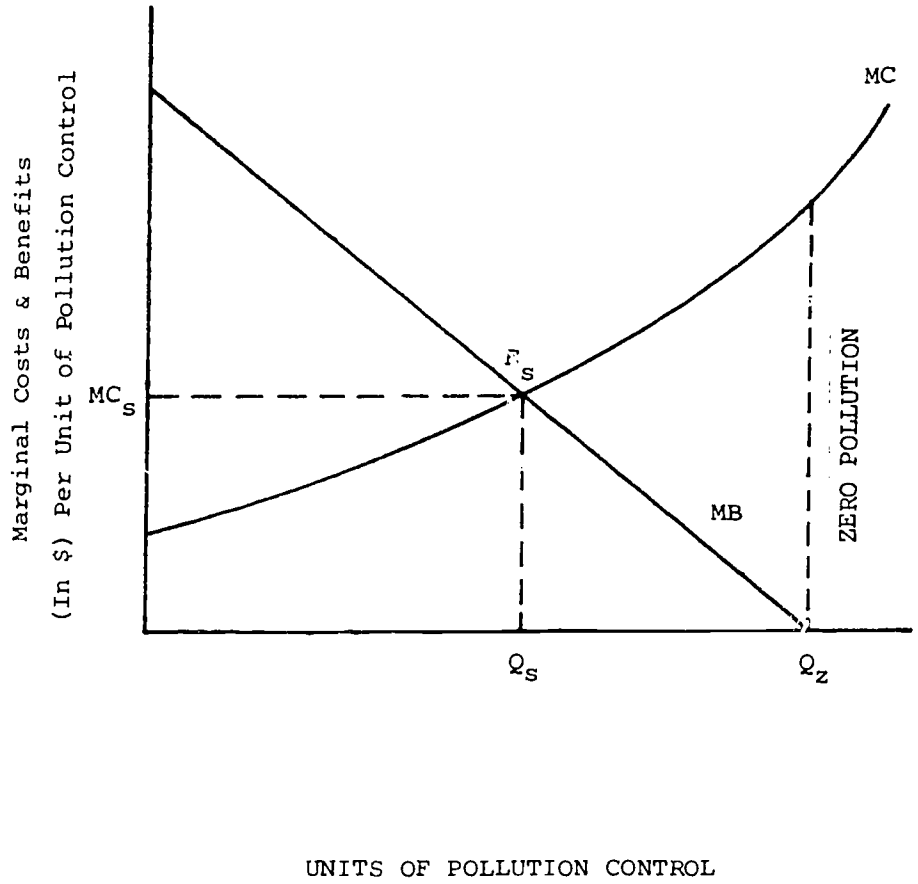


Fig. 8-4: Pollution Control

(TO BE USED WITH SECTION 1 OF UNIT VIII TAPES)

A. The Population Growth Rate = (Crude Birth Rate - Crude Death Rate)/10

B. Examples:

Crude Birth Rate	Crude Death Rate	Population Growth Rate
50	10	4% *
40	20	2%
30	30	0%
20	40	-2%

* $(50-10)/10 = 40/10 = 4$. Since we know the population growth rate is in percent, this is 4%. More explicitly, if 50 people are born per 1000 people, 5 are born per 100. If 10 die per 1000 people, 1 dies per 100. Thus 4 new people came into existence (in a net sense) for each 100 people and the population grows at 4% per year.

Example 8-1. Population Growth

(TO BE USED WITH SECTION^{1 2} OF UNIT VIII TAPES)

TABLE 8-1

ZERO POPULATION GROWTH--THE
CASE FOR AND AGAINST

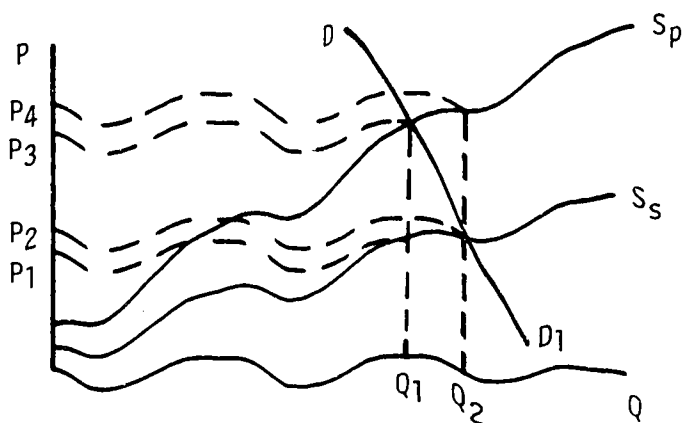
The Case Against	The Case For
1. An increase in the average age of our population	1. Resources would be depleted at a slower rate
2. Difficulty for the young to find good jobs	2. The possibility of a new and perpetual prosperity
3. A possibility of continued or recurring recession	3. A reduction in crowding
4. This same doom-mongering has arisen periodically since Malthus	4. Malthusian population economics has never been proven wrong

(TO BE USED WITH SECTION 2 OF UNIT VIII TAPES)

AFTER STUDYING THE RELEVANT TEXTBOOK AND STUDY GUIDE MATERIAL FOR EACH OBJECTIVE, TAKE THE SELF-DIAGNOSTIC TEST FORM B. CHECK YOUR ANSWERS AGAINST THE ANSWER KEY FOR THE SELF-DIAGNOSTIC TEST FORM B FOR ANY ITEMS ANSWERED INCORRECTLY. CONSULT THE STUDY DIRECTORY FOR SPECIFIC PAGES OF THE TEXT AND/OR STUDY GUIDE WHICH ARE RELEVANT TO THE OBJECTIVES ASSESSED BY THOSE TEST ITEMS. DO NOT ATTEMPT THE FORMAL END-OF-UNIT TEST UNTIL YOU ARE ABLE TO ANSWER ALL ITEMS ON THE SELF-DIAGNOSTIC TEST CORRECTLY.

SELF-DIAGNOSTIC TEST FORM B

ANSWER QUESTIONS 1-3 ON THE BASIS OF THE INFORMATION BELOW. ASSUME THE DEMAND CURVE REPRESENTS THE VALUE (OR BENEFITS) YIELDED BY THE PRODUCT.



1. In this industry the free market solution would be
 - a. P_1Q_1
 - b. P_3Q_1
 - c. P_2Q_1
 - d. P_4Q_2
 - e. None of the above

2. In this industry, the socially optimal solution would be
 - a. P_1Q_1
 - b. P_3Q_1
 - c. P_2Q_1
 - d. P_4Q_2
 - e. None of the above

3. The output of the product in question should be:
 - a. Reduced to force producers and/or consumers to pay for the negative spillovers they cause
 - b. Reduced to punish polluters
 - c. Increased to reward those who produce or consume the product for the positive spillovers the product causes
 - d. Increased so more negative spillovers can be produced
 - e. None of the above

4. The quantity of motoring demanded is greater than the socially optimal quantity because:
 - a. Automobiles are too fast
 - b. There are too many automobiles
 - c. Drivers like to drive so much they would drive regardless of the costs involved
 - d. Drivers pay only the private costs of motoring instead of the full social costs
 - e. None of the above

5. Businesses tend to locate in urban areas because
 - a. Land costs more in these areas
 - b. Population density is higher there
 - c. Traffic congestion is generally concentrated in peak hours
 - d. Both (a) and (b)
 - e. None of the above

6. To think of children as an investment good
 - a. Is a morally deficient idea invented by the Ford administration
 - b. Makes some sense in an agricultural society where land is plentiful
 - c. Does not make much sense for the U.S. today with its urban lifestyle and social security laws
 - d. All of the above
 - e. Only (b) and (c)

7. The "free rider problem" refers to
 - a. Children who sneak on the merry-go-round without paying
 - b. The increasing tendency for government to pay for more and more goods and services--soon all people will get a "free ride"
 - c. The desire of some people to pay for everything
 - d. The desire of some people to avoid paying their share of the costs of collective goods that they use
 - e. The increased incidence of crimes committed by hitchhikers in urban areas

8. Overfishing in the ocean has probably resulted because
 - a. Fishermen have a tendency to take more than they need
 - b. Ocean waters and the fish therein have been common property
 - c. Fishermen have a tendency to use too many nets
 - d. Ocean waters and the fish therein have been private property
 - e. Both (a) and (c)

9. The main reason the typical population S curve does not seem to be holding for humans is that
 - a. Humans possess the ability to alter their environment
 - b. Human morals are so deficient--only humans are sexually unfaithful to their mates
 - c. Humans are much more fertile than other species
 - d. Malthus predicted it would happen
 - e. None of the above

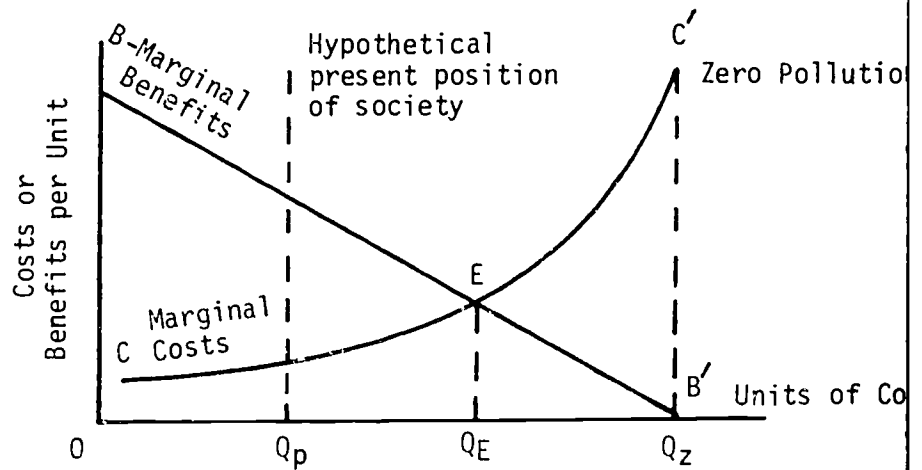
10. From an economic perspective, pollution is
 - a. Always undesirable
 - b. Sometimes desirable
 - c. Always an inefficient use of resources
 - d. Sometimes an inefficient use of resources
 - e. Both (b) and (d)

11. The net reproduction rate is equal to one when:
 - a. One daughter and one son are born per female on average
 - b. one daughter is born for each female on average
 - c. Every mother is sterilized after having two children
 - d. Every mother has two sons and a daughter
 - e. None of the above
12. A basic component of the ZEG argument is the fact that:
 - a. Most businessmen are megalmaniacs
 - b. Economic growth causes pollution to increase
 - c. The earth is a finite space and therefore simply cannot accommodate perpetual economic growth
 - d. All of the above
 - e. Only (b) and (c)
13. When negative external costs (i.e., negative spill-overs) exist
 - a. The free market produces too much of the product
 - b. The social costs of the activity in question are lower than the private costs
 - c. The output of the product in question should always be zero
 - d. Common property is identical with private property
 - e. None of the above
14. The pollution control method that most closely corresponds to our present E.P.A. approach is the:
 - a. Regulation approach
 - b. Effluent fee approach
 - c. Bribery approach
 - d. Subsidy approach
 - e. Kneese-Friedman approach

15. Given a production possibilities curve between present goods and future goods:
- a. There is no trade-off between the two
 - b. It is obvious that we should opt for more future goods
 - c. It is obvious that we should opt for more present goods
 - d. We are normally outside the frontier
 - e. None of the above
16. Which of the following countries has the lowest crude death rate?
- a. U.S.
 - b. Israel
 - c. Iceland
 - d. Costa Rica
 - e. U.S.S.R.
17. Which of the following nations has the highest rate of population increase?
- a. U.S.
 - b. Denmark
 - c. France
 - d. Sweden
 - e. East Germany
18. The basic economic significance of the activities of "The Fox" is that:
- a. Pollution of the Fox River was halted
 - b. "The Fox" was eventually arrested and punished
 - c. "The Fox" got away with his activities, unapprehended
 - d. His activities demonstrated that there were direct methods of drawing attention to pollution
 - e. Numerous government lawsuits eventually closed the steel mills of Aurora, Illinois

19. According to economists like Barkley and Seckler,
- The problem of environmental decay goes much beyond the traditional pollution problem
 - The world will come to an end by the year 2000 unless we make some drastic changes
 - Economic growth will eventually solve all of man's problems
 - Both (a) and (c)
 - None of the above
20. According to recent empirical studies, which of the following has contributed most to the growth in per capita income which has occurred in the U.S.
- Population growth
 - Growth in the capital stock
 - Technological advance and education
 - Discoveries of new sources of raw materials
 - Improvements in our understanding of economics
21. The Club of Rome/M.I.T. study
- Presents a frightening picture of what might occur in the future
 - Contains a sufficient number of economic errors which makes its validity suspect
 - Makes predictions similar to those which have been made in the past but which have never held true for Western nations
 - All of the above
 - None of the above
22. The direct regulation approach to pollution control is criticized on an economic basis because it is unlikely to:
- Control pollution at all
 - Be economically efficient
 - Be equitable
 - All of the above
 - Only (b) and (c)

ANSWER QUESTIONS 23 AND 24 ON THE BASIS OF THE INFORMATION BELOW:



23. If society is presently purchasing Q_p units of pollution control, economically, the socially optimal pollution control point would be:
- To remain at Q_p --if it were not optimal we would not be there
 - Q_E --this is the efficient point
 - Q_Z --pollution must be eliminated
 - It is impossible to answer the question with only the information given
 - None of the above
24. If the information given is accurate, the income distribution is fair, all the assumptions underlying the model are fulfilled, and when all noneconomic factors are also considered, society would wish to:
- Stay at the economically optimal point
 - Move beyond the economically optimal pollution control point
 - Reduce control below the economically optimal pollution control level
 - There is insufficient information to answer this question
 - None of the above

25. According to many traditional economists, Malthus's prediction has proved wrong to date for Western Society because
- a. He ignored technological advance
 - b. Man's sex drive has decreased
 - c. He was not a very good mathematician
 - d. Promiscuity has vanished from our society
 - e. Malthus never existed but was a fictional character invented by George Orwell

CHECK YOUR ANSWERS BY TURNING TO ANSWER KEY FOR FORM B OF
THE SELF-DIAGNOSTIC TEST

SELF-DIAGNOSTIC TEST FORM B

1. b
2. c
3. c
4. d
5. b
6. e
7. d
8. b
9. a
10. e
11. b
12. e
13. a
14. a
15. e
16. d
17. a
18. d
19. a
20. c
21. d
22. e
23. b
24. a
25. a

DO NOT REQUEST END-OF-UNIT TEST UNTIL YOU CAN ANSWER ALL
ITEMS ON BOTH FORMS OF THE SELF-DIAGNOSTIC TEST WITHOUT
ANY DIFFICULTY