

Quiz 1

(5 points)

Time: 10 September 2021 at 15:00-15:30 (30 minutes)

There are 2 questions. You need to answer all questions. Please **submit** your answers in a PDF file with a file name “**Quiz1_StudentID_Name**” via BE Moodle class before **15:40**.

Question 1 (3 points)

Case A: The production of a plastic factory ‘K Chemical’ is located nearby a house village ‘Dreamland’. If the production of the plastic factory reaches a certain level at Q_m , it will release air pollutions to the level that destroy clean air around the Dreamland village. However, if the production of the plastic factory does not exceed Q_m , it will create no significant impact for people living in the Dreamland village.

Case B: In Thailand, the CO₂ emissions from oil consumption in transport sector increased from 51 million tons of CO₂ in 2008 to about 63 million tons of CO₂ in 2018.

Please answer the following questions for both Case A and Case B above

- i. Does an externality exist? If so, classify the externality type (e.g., positive vs. negative, costs vs. benefits) and explain how inefficiency problems could arise in this case.
- ii. If an externality exists, could the Coase Theorem be applied to solve market inefficiencies in this case? Please explain your answer (Hint: is it possible to use property right rules and solve the problem?)
- iii. If the Coase Theorem does not apply, what the government could do to solve the problem?

Question 2 (2 points)

Suppose an investor is considering a wind farm project to produce electricity. The wind farm will create noises that affect people living in a house village Dreamland.

- i. How could you estimate the compensation amount for people living in the Dreamland to approve the wind-farm construction? (Hint: Choose WTP vs. WTA question, methods to estimate WTP and WTA).
- ii. What should be considered in the cost-benefit analysis to decide if the wind farm project should be built or not?

Question 1

i) CASE A : externality exists from air pollution which is the social costs or negative impacts.

The inefficiency problems can arise when the plastic factory has overproduction to maximize their benefits but the market price excludes the external social impacts.

CASE B : externality exists from CO₂ emissions which is negative impact to social.

The inefficiency problems can arise since oil consumption in transport sector is like public goods.

ii) The Coase theorem can be applied to solve market inefficiencies for CASE A

by specifying the property right to the plastic factory or house village and the one with no property right has to bear the compensation. For CASE B, I don't think the theorem can be applied.

iii) I think the gov't can set policies like putting a cap to restrict the production that causes CO₂ and fines the violators.

Question 2

i) if wind farm has the right $\rightarrow$ WTA for $\downarrow$ good

no right $\rightarrow$ WTP for $\uparrow$ good

Use WTA to measure what compensation people will accept to give up something.

ii) All relevant benefits and costs should be considered by using

monetary units to calculate for NPV if $NPV > 0$, then accept the project.