Lecture 7
Ideals and Second-best Solutions

Learning Objectives

- Introduce context for ideal and second-best decision making
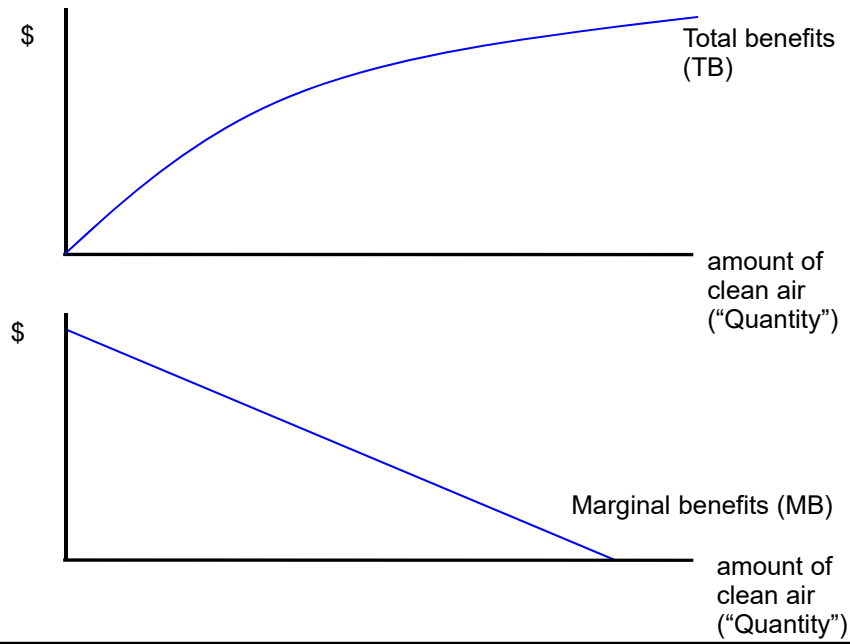
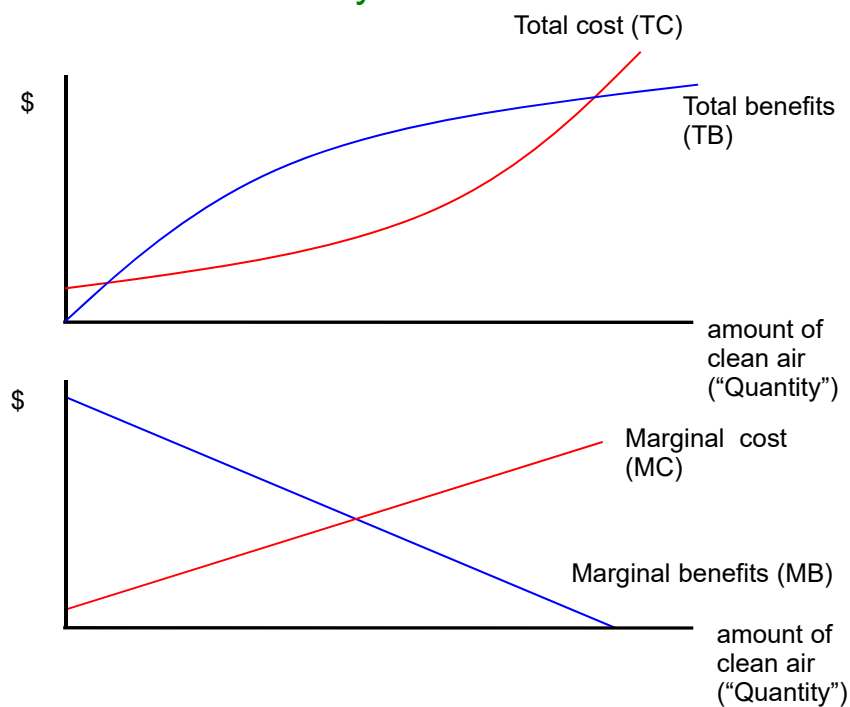# Ideals and Second-best Solutions

5

Pittsburgh, USA in the 1940s

Cost – Benefit Analysis

$

Total benefits (TB)

amount of clean air ("Quantity")

$

Marginal benefits (MB)

amount of clean air ("Quantity")

Cost – Benefit Analysis

Total cost (TC)

$

Total benefits (TB)

amount of clean air ("Quantity")

$

Marginal cost (MC)

Marginal benefits (MB)
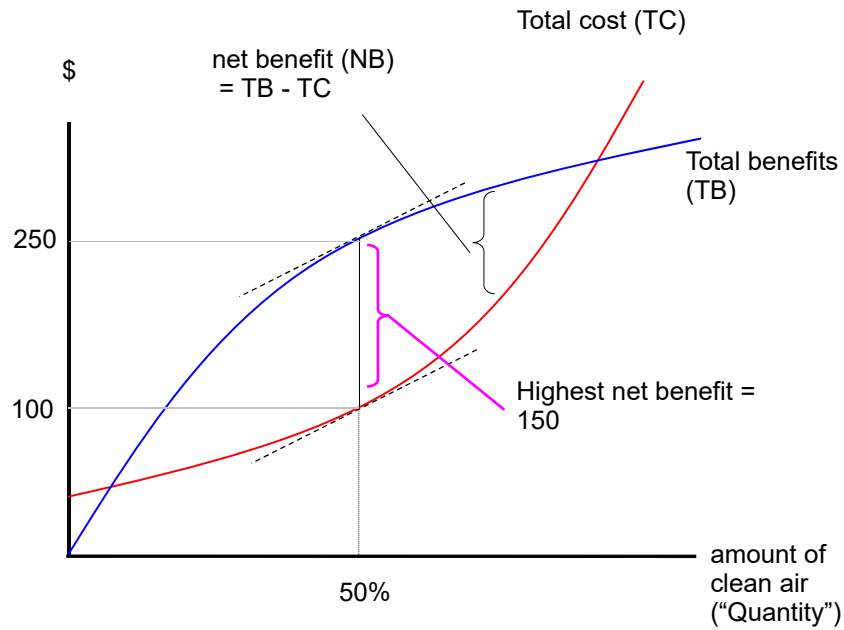
amount of clean air ("Quantity")

Broader analysis: Ideal and second-bests

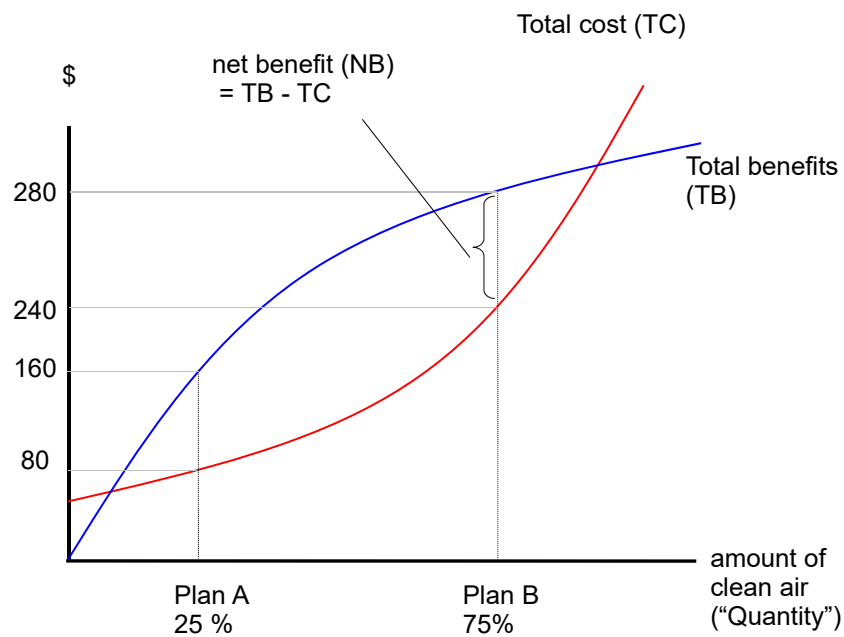1. Ideally: Maximize discounted net benefits $\sum_n \dfrac{TB_n - TC_n}{(1+r)^n}$

Broader analysis: Ideal and Second bests

1. Ideally: Maximize discounted net benefits $\sum_n \dfrac{TB_n - TC_n}{(1+r)^n}$

2. Second best approach: Examine several options, and choose the best among the set

- The analysis techniques we are learning are all possible ways to do this.

- Let's examine Net Present Worth (Net Present Value) in this context: Which of the options has the highest discounted net benefits?

Cost – Benefit Analysis

Total cost (TC)

$

net benefit (NB)
= TB - TC

Total benefits
(TB)

250

100

Highest net benefit =
150

50%

amount of
clean air
("Quantity")

Second-best options: Net Present Worth (Net Present Value)

Total cost (TC)

$

net benefit (NB)
= TB - TC

Total benefits
(TB)

280

240

160

80

Plan A
25 %

Plan B
75%

amount of
clean air
("Quantity")

New Analysis Method: Benefit-Cost Ratio

1. Ideally: Maximize discounted net benefits $\quad \sum_n \dfrac{TB_n - TC_n}{(1+r)^n}$

2. Second best approach: Examine several options, and choose the best among the set

- The analysis techniques we are learning are all possible ways to do this.

- Another possible technique is the Benefit-Cost Ratio, which we'll introduce soon.