

Question 1: Define Pareto efficiency, and explain how it provided the conceptual basis for cost-benefit analysis.

Answer 1: An allocation of goods is Pareto efficient if no alternative allocation can make at least one person better off without making anyone else worse off. In Cost-Benefit Analysis, if a policy or project has a positive net benefit, it is possible to find Pareto efficiency. CBA provides a way to measure efficiency and to make direct comparisons among alternative policies.

Question 2: Assume two people are playing the following game: They can split \$200 any way they want if they find an agreement, but if they do not reach an agreement each one gets \$50. Is the following split: \$100 to person 1, \$75 to person 2 a Pareto improvement compared to the status quo? Is it Pareto efficient? Explain your answers.

Answer 2: If person 1 gets \$100 and person 2 gets \$75, this is a Pareto improvement over the status quo, where each of them would only receive \$50. This is a Pareto improvement because each of them receives more benefits than they would at status quo and this does not make anyone worse off. This situation would not be Pareto efficient as there would still be situations in which at least one person can receive more benefits without taking away from the other. An example of this would be if person 1 received \$100 and person 2 also received \$100.

Question 3: Assume two people are playing the following game: They can split \$200 any way they want if they find an agreement, but if they do not reach an agreement each one gets \$50. Is the following split: \$165 to person 1, \$35 to person 2 a Pareto improvement compared to the status quo? Is it Pareto efficient? Explain your answers.

Answer 3: If \$165 is given to person 1 and \$35 is given to person 2, this is not a Pareto improvement over the status quo. Even though person 1 benefits by receiving more than the status quo of \$50, person 2 is now worse off, receiving less than status quo. This would also not be Pareto efficient for the same reason, as that situation makes person 2 worse off, as person 1 benefits.

Question 4: What are the technical limitations of CBA?

Answer 4: Limitations in theory, data, or analysis resources, make it impossible to measure and value all impacts of a policy as commensurate costs and benefits. It can be impossible to quantify and then monetize all relevant impacts of costs and benefits.