

One consumer economy – monotone, strictly convex preferences.

Nonconvex production possibility set  $Y$  – fixed cost and diminishing marginal product of labor.

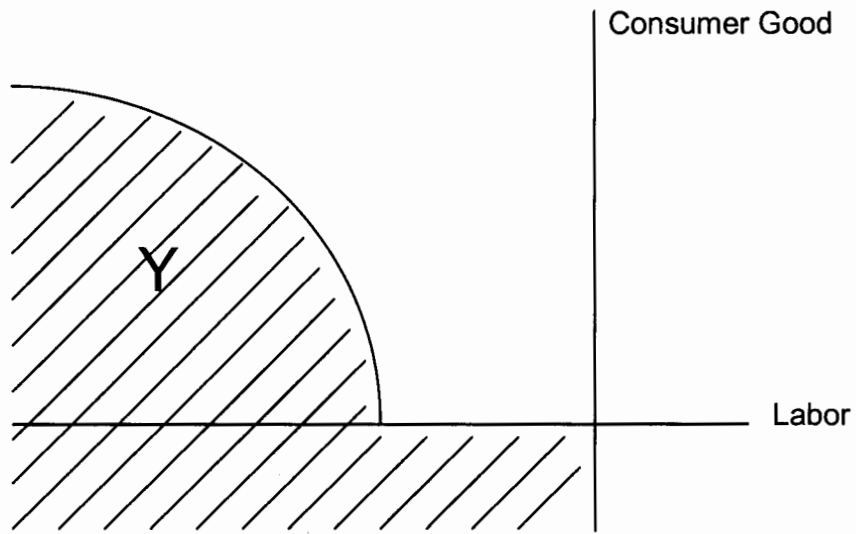


Figure 1

Two candidates for Pareto optimum:  $O, A$

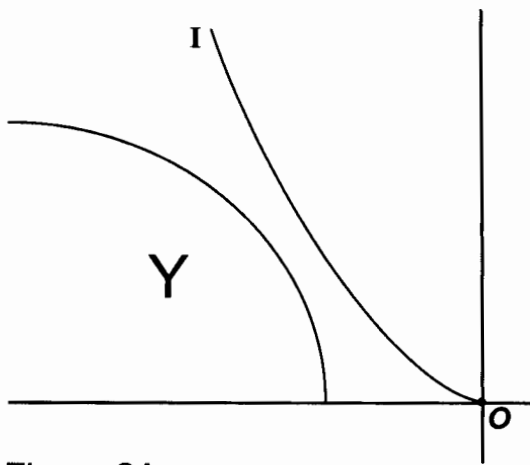


Figure 2A

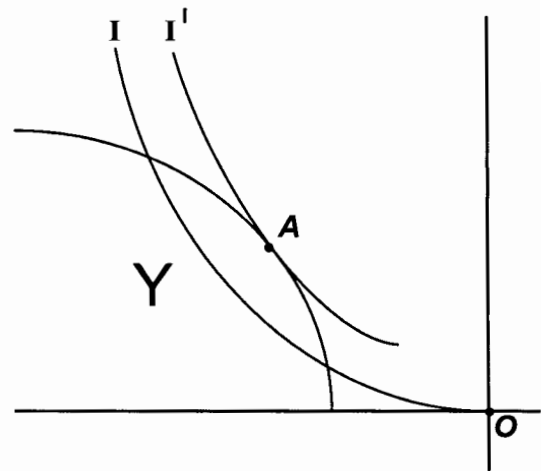


Figure 2B

If  $O$  is Pareto optimal, it may or may not be sustainable as a competitive equilibrium.

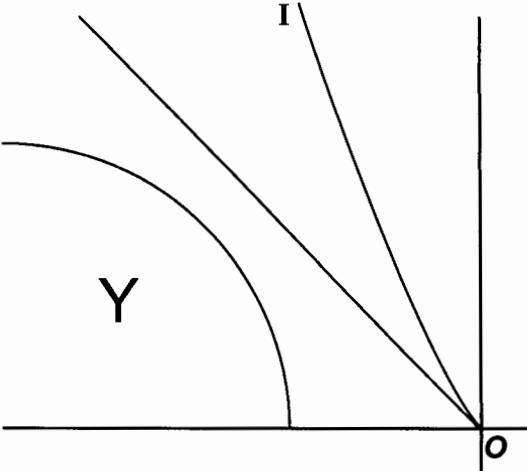


Figure 3A

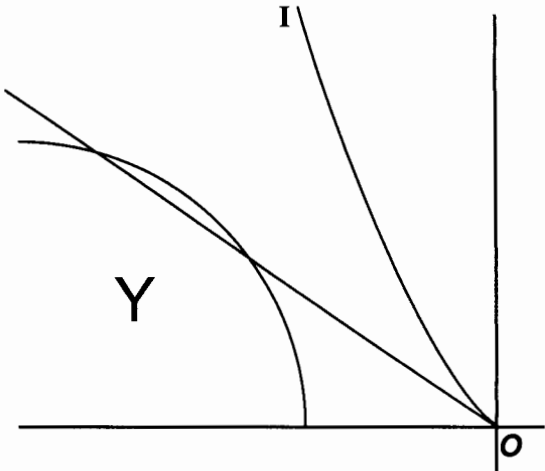


Figure 3B

If  $A$  is Pareto optimal, it may or may not be sustainable as a competitive equilibrium.

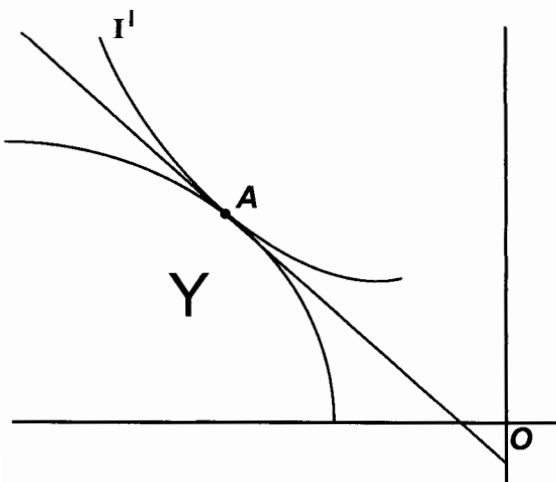


Figure 4A

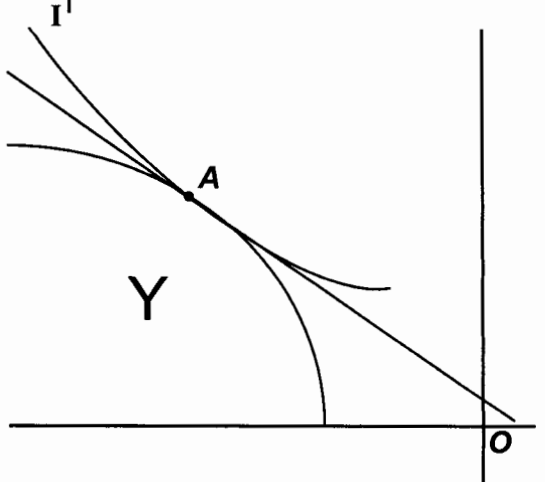


Figure 4B

Assume the firm must, at least, break even and chooses the best break even point. This might be **B** or might be the origin, depending on whether the offer curve intersects the production possibility set with positive production.

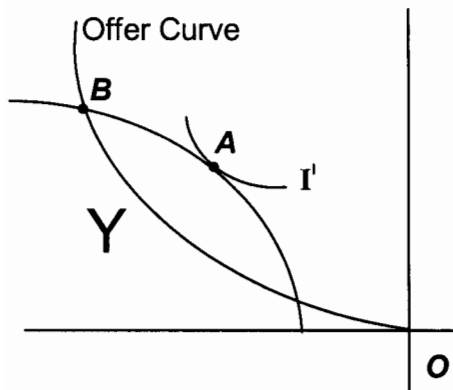


Figure 5A

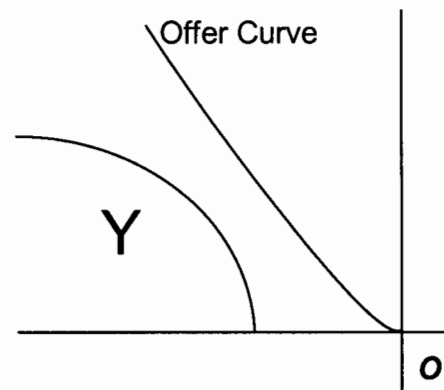


Figure 5B

If there exists an intersection like **B**, then  $A \succ B \succ O$  unless **A** and **B** happen to coincide, implying  $A \sim B \succ O$ .

At **B**, the indifference curve is tangent to the line **OB**.

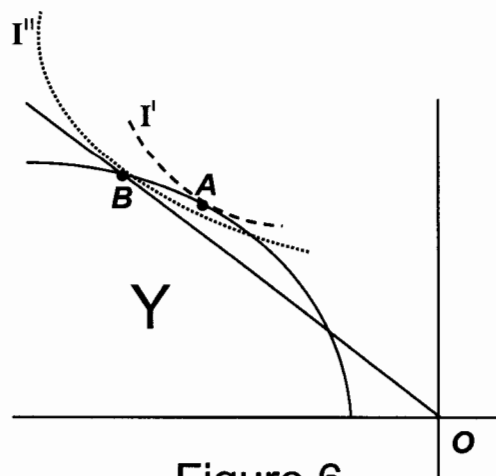


Figure 6

If there does not exist an intersection like **B**, then we can have either  $A \succ O$  or  $O \succ A$ .

If  $O \succ A$  there does not exist an intersection like **B**.

If  $A \succ O$ , there may or may not exist an intersection like **B**.