Production Possiblities Curve for Atlantis

Production Possiblities Curve for Xanadu

3. Assume that two countries, Atlantis and Xanadu, have equal amounts of resources. Atlantis can produce 30 cars or 10 tractors or any combination, as shown by the line MN in the figure above. Xanadu can produce 20 cars or 40 tractors or any combination, as shown by the line PQ in the figure above.

(a) Which country has an absolute advantage in the production of tractors? Explain how you determined your answer.

(b) Which country has a comparative advantage in the production of cars? Using the concept of opportunity cost, explain how you determined your answer.

(c) If the two countries specialize and trade with each other, which country will import cars? Explain why.

Grading Rubric:
>   Point allocations: (7 points: 2+ 2 + 2 +1)

a)   **2 points:** (1 for identification and 1 for explanation.)

>   1 point – Xanadu has an absolute advantage in tractors.

>   1 point – Xanadu can produce more (40) tractors than Atlantis (10).

b) **2 points:** (1 for identification and 1 for explanation.)

>   1 point – Atlantis has a comparative advantage in the production of cars.

>   1 point – Atlantis produces cars at lower opportunity cost than Xanadu. It cost
>   Atlantis 1/3 tractor for each car, but it costs Xanadu 2 tractors for each
>   car.

c)   **2 points:** (1 for identification and 1 for explanation.)

>   1 point – Xanadu will import cars.

>   1 point – Because Xanadu has higher opportunity cost of producing cars.

>   - Atlantis has lower opportunity cost in cars.
>   - Cheaper for Xanadu to import cars than to produce domestically.
>   - Cheaper for Xanadu to import cars than to produce cars.
>   - Xanadu has a comparative advantage in tractors.
>   - Atlantis has comparative advantage in cars.

d) **1 point** –   Any quantity traded on one-for-one basis will permit Atlantis to
>   consume beyond its PPF. Or, it becomes cheaper for Atlantis to
>   import trucks than to produce them domestically, or a correct
>   discussion of gains from trade using numbers.

2003 AP® MACROECONOMICS FREE-RESPONSE QUESTIONS (Form B)
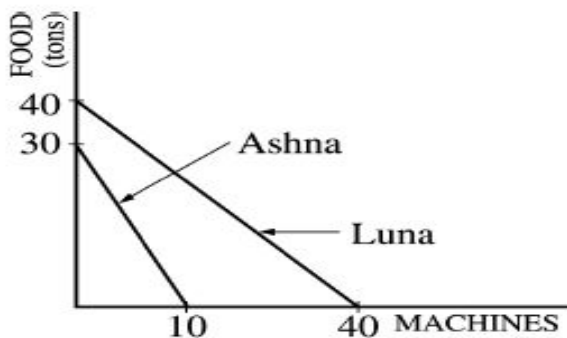
2. Using equal amounts of resources, the countries of Ashna and Luna can each produce any combination of food and machines described by their production possibilities curves above.

   (a) Which country has an absolute advantage in the production of machines? Explain.

   (b) Which country has an absolute advantage in the production of food? Explain.

   (c) Which country has a comparative advantage in the production of machines? Explain.

   (d) With trade between these two countries, which country will import food? Explain.

   (e) Give an example of terms of trade acceptable to both countries.

Question 2

Correct Answers:

(a) Luna had an absolute advantage in the production of machines because it can produce more machines using the same amount of resources. That is, with the same resources, it can produce 40 machines while Ashna can only produce 10.

(b) Luna had an absolute advantage in the production of food because it can produce more machines using the same amount of resources. That is, it can produce 40 units of food while Ashna can produce 30 using the same resources.

(c) Luna has a comparative advantage in producing machines because it can produce them at a lower opportunity cost than Ashna. Luna forgoes 1 unit of food for each machine, while Ashna forgoes 3 units of food for each machine.

(d) Luna should import food because it has a higher opportunity cost of producing food than Ashna. Ashna can produce food at a cost of 1/3 machine per unit of food, while it costs Luna 1 machine per unit of food. Thus, Ashna has a comparative advantage in producing food.

(e) If Luna paid ½ machine per unit of food, it would receive food for half the number of machines that it must pay without trade, and Ashna would receive ½ machine per unit of food rather than 1/3 of a machine per unit of food as it would receive without trade.

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AP Macro 2016 FRQ #3: Complete in class and grade

3. The following table shows the number of donuts or cupcakes that John and Erica can each produce in one day.

	Donuts	Cupcakes
John	200	100
Erica	150	50

(a) Who has the absolute advantage in producing donuts? Explain.

(b) Who has the comparative advantage in producing donuts? Explain.

(c) Assume that John and Erica decide to specialize according to their comparative advantages and that one cupcake is exchanged for four donuts.

   (i) Indicate whether or not specialization and trade are beneficial to John.

   (ii) Indicate whether or not specialization and trade are beneficial to Erica.

(d) Assume that Erica discovers a new cupcake production technique that will increase her daily production of cupcakes only. Using donuts on the horizontal axis, draw a correctly labeled production possibilities curve for Erica, before and after the technology change in cupcake production.

5 points (1+1+2+1)

(a) 1 point:
- One point is earned for stating that John has the absolute advantage in producing donuts and for explaining that John can produce more donuts than Erica in one day (200>150).

(b) 1 point:
- One point is earned for stating that Erica has a comparative advantage in producing donuts and for explaining that Erica's opportunity cost of producing one donut (1/3 of a cupcake) is less than John's opportunity cost of producing one donut (1/2 of a cupcake).

(c) 2 points:
- One point is earned for indicating that John will benefit from specialization and trade.
- One point is earned for indicating that Erica will not benefit from specialization and trade.
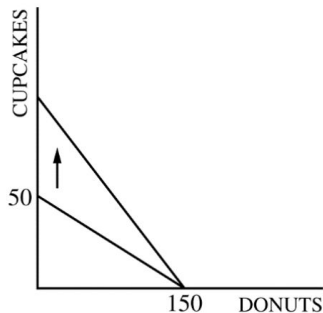
(d) 1 point:
- One point is earned for drawing a correctly labeled graph of Erica's production possibilities curve, before the technology change, and for rotating the production possibilities curve outward showing greater production of cupcakes after the technology change.

3. Country A and Country B produce the same two products, hammocks and looms. Country A can produce a maximum of 60 hammocks or 40 looms, while Country B can produce a maximum of 40 hammocks or 20 looms.

(a) What is the opportunity cost to produce a loom in terms of hammocks in Country A?

(b) Which country, if either, has a comparative advantage in producing looms? Explain.

(c) Internationally, if 1 loom is traded for 1.75 hammocks, who will benefit from trading: Country A only, Country B only, both countries, or neither country?

(d) Assume there is international trade.

   (i) Can a country produce beyond its production possibilities curve (PPC) ?

   (ii) Can a country consume beyond its PPC?

Macro 2013 ("Secured Documents Exam")

5 points (1+1+1+2)

(a) 1 point:
- One point is earned for calculating the opportunity cost:
$$1L = (60/40) = 1.5 \, H$$

(b) 1 point:
- One point is earned for stating that Country A has a comparative advantage in producing looms because it has a lower opportunity cost than Country B.

(c) 1 point:
- One point is earned for stating that both countries will benefit from trade

(d) 2 points:
- One point is earned for stating no.
- One point is earned for stating yes.