Chapter 2 Review
The Economic Way of Thinking

Readings  Mankiw, Chap. 2, all
You can also read or skim the Chapter 2 appendix, a review of graphing, if you feel a little weak when it comes to graphs.

Text and Study Guide Questions

I. The Scientific Method and Economics: theory and observation and theory and observation
   A. How to do economics
   B. Problems in testing economic data

II. Economic Models
    A. Simplifications of Reality
    B. Costs & benefits of this

III. The Circular Flow: Our 1st model
    A. Description
    B. So what?

IV. The Production Possibilities Frontier (PPF)
    A. Definition
    B. Points on, in and outside the curve
       1. points outside the curve
       2. points inside the curve
       3. points on the curve
    C. Assumptions behind the PPF
    D. Concave, Convex, or Linear?
    E. The PPF & Growth
    F. Problems

V. Doing Economics: Positive and Normative Analysis
   A. Positive Analysis
   B. Normative Analysis
   C. Which is better?

Text and Study Guide Questions

Questions for Review (from the text, p 36)
   all but #1

Problems and Applications (from the text, p 36-37)
   1, 2a & b, 3, 5 - 8.
Other Questions (Some of these are a flashback to chapter 1)

1. _______ Which of the following best defines economics?
   a. The study of money, purchasing & production and how it affects both individuals & society.
   b. The study of different classes of people and resources and how they interact to produce goods and services.
   c. The study of how people, faced with limited resources, use those resources to best satisfy their seemingly limitless wants.
   d. The study how different countries organize themselves economies and the results they produce.

2. Label the following statements as **N** for normative, **O** for Oviporous, **P** for Positive, or **Q** for Quadratic.

   Two economists, Hanuman and Sita, have estimated that a two year limit on the amount of time an individual can receive assistance (i.e. welfare) from the government would result in 150,000 new homeless individuals.

   Based on Hanuman and Sita’s exhaustive study, I conclude that the current welfare system should be reformed, but not in the way proposed by Congress.

   If we want America to remain the world’s industrial leader, we should balance the federal budget.

   The U.S. has never experienced inflation above 10% per year.
3. Place a check beside each indicating whether scarcity applies, or does not apply, to them.

<table>
<thead>
<tr>
<th>Scarcity applies</th>
<th>Scarcity does not apply</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Bill Gites, a single parent earning only $16,000 a year and worried about not being able to send his 2 kids to college.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bill Getes, a 40 year old making $40,000 a year and who basically loves his life.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bill Gates, with over $16 billion in assets, who could quit working &amp; still earn $1.2 billion (≈ 50,000 times as much as the average American earns) a year on interest alone.</td>
</tr>
</tbody>
</table>

4. ______ On Saturday, Matty went out to a movie. She spent $6.00 to see the movie and $4.00 for popcorn and soda. Which best describes her opportunity cost of seeing this movie?
   a. What else she would have bought with $10.00 & what else she would have done with her time.
   b. The answer depends on how much the movie was worth to her.
   c. $6.00 for the movie. She presumably would have eaten whether she saw the movie or not.
   d. $10.00.
   e. Opportunity cost is a concept only. It cannot be applied in a situation like this.

5. Indicate (✓) which of the following are examples of “capital” as defined by economists?
   a. a factory in Sweden producing cars
   b. an acre of farmland in Iowa that is being used
   c. the overhead projector in this classroom
   d. stock sold by an American company to finance it’s startup
   e. an acre of farmland in Alaska that is not being used

6. List two things that are assumed to be held constant when drawing a PPF.

7. List two specific examples of things that could cause the PPF to shift out

8. What happens to opportunity cost of any good as more of it is produced if the PPF is linear?
9. Given the PPF at right:
   a. At which point(s) are resources fully & efficiently used?
      __________________
   b. At which point(s) is there either unemployment of, or inefficient use of resources?
      __________________
   c. Which point(s) is currently unachievable? ______________

10. • Draw a PPF in the space below (left).
    • Show a situation in which an economy is producing some of both goods, but is in a severe recession (i.e. production is well below normal capacity) and label it A.
    • Now, show where the economy will move to if the government increases production of government goods. Label this point B. You can assume that capacity doesn’t change.

    • Draw another PPF in the space below (right).
    • Show a situation in which an economy is producing some of both goods and is at (normal) capacity. Label this point C.

    Now, show where the economy will move to if the government increases production of government goods. Label this point D. You can assume that capacity doesn’t change.

In which situation is increasing the size of government most likely to reduce private sector production? ________________________________ (recession, at capacity)
11. President Eisenhower once stated; “Every gun that is made, every bomb and missile, signifies a theft from those who are not fed.” Explain what he meant by this using the concepts we learned in this class. Use a Production Possibilities Frontier (or more than one if needed) to illustrate his point.

12. Bo and Luke Duke, budding economists, think they is on to something. They have plotted the data shown on the next page and is developing a theory to explain it. They hypothesize that high levels of sunspot activity cause poor crop yields. Further, agricultural products are critically important for the well being of our economy. "Without food", they state at one point, "we are dead." In a formal and precise and logically consistent model, Bo and Luke explain how low crop yields result in significantly lower production for the economy. The Duke boys are about to submit their work to the *Journal of Kool Economics* (*JOKE*). They first, however, gives it to you to review.

- Is there any important step (in the development of her theory) which the Dukes are leaving out?

13. Which of the following best defines *Ceteris Paribus*?
   
a. Causation is known only by the gods. Without controlled experiments, causation is hard to determine.
   
b. Buyer beware! Buyers need to take responsibility for their own actions (i.e. purchases).
   
c. Prosperity through greed. Sellers motivated by greed make buyers better off.
   
d. All else is constant. Only what is stated to change does change.
   
e. A static world. Nothing whatsoever is changing.
14 - 16. Below are excerpts of a paper from a prestigious economists at the Collidge Institute. Indicate whether the following statements are Lexigraphic, Monographic, Normative, Oviparous, or Positive.

14. George Bush’s plan to allow individuals to invest their social security dollars in private investments is estimated to widen the income gap between the richest 50% & the poorest 50% of the elderly by 2025.

15. George Bush's plan to allow individuals to invest their social security dollars in private investments is estimated to increase the average income of the elderly 22% by 2025.

16. The costs (income inequality) of George Bush's social security plan is not worth the benefit (higher average incomes). After careful analysis, I conclude that the U.S. should not adopt it.

17. Consider the following statement. "The costs (income inequality) of George Bush's social security plan is not worth the benefit (higher average incomes). After careful analysis, I conclude that the U.S. should not adopt it." Which of the following concepts does this statement best express?
   a. There is usually a tradeoff between efficiency and equity.
   b. The Invisible Hand (of market economic selection) tends to promote some at the expense of others.
   c. People often fail to correctly perceive small percentage risks.
   d. Resource markets are not directly linked to goods and services markets.
   e. Marginal decision making does not apply when 2 time periods (now vs future) are being considered.

18. As more wine is produced in Italy, the opportunity cost of an added unit of wine increases. Which of the following PPFs correctly illustrates this?

19. At a seminar on the flat tax (a single, relatively low marginal tax rate), a speaker states that; “Going to a flat tax will provide greatly increased incentives to work hard and produce especially among those who are currently in high tax brackets. American production and average income will therefore expand. However, a flat tax will greatly widen the gap in standards of living between rich and poor.” The speaker is, in effect stating that:
   a. private markets are superior to government.
   b. the Invisible hand giveth. The Invisible Hand taketh away.
   c. dollar costs can always be ignored when calculating opportunity costs.
   d. marginal analysis does not apply in this “big picture” situation.
   e. there is a tradeoff between efficiency and equity.
20. Fred Flintstone currently is paid 800 clams a week in his job in the quarry. He is thinking about quitting his job and buying/managing a bowling alley instead. He estimates that it will cost 600 clams per week to operate the bowling alley. A table off his estimated expenses is at right. He estimates his revenues (i.e. sales) will be 1300 clams per week. What is the value of Fred’s (estimated) opportunity cost of buying and running the bowling alley?

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages of Fred’s employees</td>
<td>200 clams</td>
</tr>
<tr>
<td>Principle &amp; interest to finance the bowling alley</td>
<td>100 clams</td>
</tr>
<tr>
<td>Maintenance</td>
<td>50 clams</td>
</tr>
<tr>
<td>floor wax</td>
<td>25 clams</td>
</tr>
<tr>
<td>utilities</td>
<td>75 clams</td>
</tr>
<tr>
<td>taxes</td>
<td>50 clams</td>
</tr>
<tr>
<td>misc cash expenses</td>
<td>100 clams</td>
</tr>
<tr>
<td>Total</td>
<td>600 clams</td>
</tr>
</tbody>
</table>

a. 2100 clams  
b. 800 clams  
c. 600 clams  
d. 500 clams  
e. none of the above

21. In the mid 1300’s the Bubonic plague decimated Europe, killing large numbers of people but leaving land and capital untouched.

**True (a) or False (b):** The bubonic plague shifted Europe’s PPF inward.

22. In the 1600’s religious wars decimated Germany. A large percentage of Germany’s population as well as its capital was destroyed.

**True (a) or False (b):** These religious wars shifted Germany’s PPF inward.

23. In 1929, the U.S. unemployment rate was 3.2%. In 1933, after the Great Depression rocked the nation, unemployment reached 25.2%. Production had fallen to 71% of its 1929 level.

**True (a) or False (b):** The U.S.’s PPF necessarily shifted inwards during the Great Depression inward.

24. You and your friend, Tracey Trekkie, are watching Star Trek one evening. Tracey states; “With all that technology they (the people living in Star Trek’s time) would be able to eliminate scarcity.” Tracey’s statement is:

a. an example of reverse causation  
b. probably false. Human wants tend to always exceed our ability to meet those wants.  
c. true only if she excludes those in the bottom (approximately) half of Star Trek society.  
d. probably false. Technological advance is inevitably associated with more income inequality.  
e. both c & d
25. Finally! You’ve graduated and gotten that dream job managing a coat hanger factory. You are trying to decide how many workers to hire. Currently the firm has 6 workers. The owner has asked you to use marginal analysis. Which data do you most need to make this decision?

a. data on how many hangers the factory currently produces, how much those hangers are sold for, and how much the firm pays for its six workers.
b. a formal model of the firm’s PPF (based on past production data)
c. data on the number of labor hours it takes to produce a hanger in competitors’ factories (absolute cost data)
d. data on other products your competitors could produce (comparative cost data)
e. an estimate on how much extra production a 7th worker will bring in, how much those extra hangers can be sold for, and how much the 7th worker will cost to hire.

26 - 27. Below are excerpts of a paper from a prestigious economist at the Collidge Institute. Indicate whether the following statements are Lexigraphic, Monographic, Normative, Oviparous, or Positive.

26. Extending Medicare to cover prescription drugs would cost the U.S. government $22 billion a year and bankrupt the Medicare Trust Fund in 2010, five years earlier than otherwise.

a. Lexigraphic  
b. Monographic  
c. Normative  
d. Oviparous  
e. Positive

27. Human life and happiness is precious and must be preserved. Extending Medicare to cover prescription drugs is well worth the costs. A prescription drug benefit should be added to Medicare.

a. Lexigraphic  
b. Monographic  
c. Normative  
d. Oviparous  
e. Positive

Answers to “Other Problems”

1. c

2. Positive, Normative, Normative, Positive (although false). Oviporous and Quadratic are “bogus” answers. They have nothing to do with what was discussed in class.

3. Scarcity applies in all three cases. Even if Bill Getes really loves his life, he still has to ration his limited resources (time, money, etc.) to meet his many wants. i.e. It is likely that Bill Getes cannot meet all his wants.

4. a

5. ✔ a factory in Sweden producing cars
   __ an acre of farmland in Iowa that is being used
   ✔ the overhead projector in this classroom
   __ stock sold by an American company to finance its startup
   __ an acre of farmland in Alaska that is not being used

Capital is physical, man-made thing, that is used in the production of other goods and services. Capital here does not mean “financial capital”; items such as money, bonds, and stocks. Financial capital is very important. However, in and of itself, it does not produce anything. It merely allows one to acquire capital.
6. • the level of available resources (the amount of land, labor, capital, & entrepreneurship)
   • the level of technology
   • institutional factors which affect production (ex. the number of hours in the standard work week, the level of support the government gives to those without a job, etc.)

7. Give two specific examples from the following:
   • an increase in available resources: (Ex. Vast oil reserves are discovered in the Gulf of Mexico. Geothermal hot spots near the surface are discovered in Alaska.)
   • an improvement in technology (Ex. Engines that use less gas to do the same amount of work. Cheap solar cells.)
   • improving institutional efficiency (Ex. New technology and government programs allow job seekers and potential employers to find each other easier. People looking for jobs spend less time unemployed and find jobs for which they are better suited.)

8. Concave PPFs mean increasing opportunity costs. As production of any good increases, the opportunity cost of an added unit of that good increases.
   (This increasing opportunity costs is caused by: 1) resources aren’t perfect substitutes. When little of a good is being produced, only those resources which are best suited to making that good (and poor at making other goods) are used to produce it. Expanding production of a good means having to use resources that are less well suited to produce that good (and better suited at producing other goods. 2) diminishing returns, something we will talk more about later.)

9. a. U, V, W
   b. X, Y, Z
   c. S, T
In which situation is increasing the size of government most likely to reduce private sector production?
- at capacity
- Intuition: Increasing the size of government requires giving more resources to the government. When an economy is in a recession, there are many idle resources, unemployed people etc., which the government can use without having to take them from the private sector.\(^1\) When the economy is at or near capacity, however, there are few unemployed resources. Increasing the size of government means that taking resources from the private sector therefore decreasing private sector production.

11. – 27. You are on your own here.

\(^1\) The main opportunity cost here would be that these people have less leisure time after they are hired by the government. In other words, the opportunity cost of the government hiring someone would be very low.