ECONOMICS 101: Applied Microeconomics

ASSIGNMENT 1

Answers to this assignment are due back by Wednesday, September 16, 2015. Please feel free to work on the answers in groups of not more than three, and to hand in joint work.

1. Production Possibilities

Here is the production possibility frontier (PPF) for Czechoslovakia in 1990.

a. Show what happened to the PPF when Czechoslovakia split into two parts – the Czech Republic, and Slovakia. Assume that 60% of the productive capacity was in the Czech part of Czechoslovakia.
b. In the first years after it split away from Czechoslovakia there was an increase in unemployment in Slovakia. What effect, if any, did this have on its PPF? Explain.
c. On the original PPF for Czechoslovakia, what is the opportunity cost, in terms of investment goods, of raising consumption from 85 to 95?
d. If consumer goods production is 85, will economic growth be (potentially) higher or lower than when consumer goods production is 95? Why?
e. What is the most difficult trade-off that you face currently? How do you resolve the dilemma?

2. Demand and Supply

This question develops a demand and supply diagram for wine. Suppose that the demand schedule is as follows:

<table>
<thead>
<tr>
<th>Price ($/liter)</th>
<th>21</th>
<th>18</th>
<th>15</th>
<th>12</th>
<th>9</th>
<th>6</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wine demanded (liters/month)</td>
<td>70</td>
<td>140</td>
<td>210</td>
<td>280</td>
<td>350</td>
<td>420</td>
<td>490</td>
</tr>
<tr>
<td>Wine supplied (liters/month)</td>
<td>370</td>
<td>350</td>
<td>320</td>
<td>280</td>
<td>240</td>
<td>200</td>
<td>160</td>
</tr>
</tbody>
</table>

a. Graph the demand and supply curves, labeling the axes and curves carefully.
b. What is the equilibrium price of wine? The equilibrium number of liters demanded and supplied?
c. The government wants to discourage drinking, so it decrees that the minimum price of a liter of wine should be $18. At this price how much wine will be supplied? Demanded?
d. Does the revenue of wine sellers rise or fall under this new rule? [Hint: Calculate the revenue they get – i.e. price times quantity – before the price floor is put in place, and then again afterwards.]
e. What will the government have to do to keep the price at $18 per liter?
f. A new tennis club is set up in the town, and demand for wine increases by 55 liters per month (i.e. demand shifts out by 55 for any given price level). Graph the new demand curve and compute the new equilibrium price of wine (approximately). Assume that public pressure has, by now, led to the repeal of the price floor legislation.
g. A serious disease (phylloxera) hits the vineyards, reducing the supply of grapes. Show and explain what effect this would have on the market for wine.
   [Historical note: This is not merely hypothetical. Grape phylloxera are aphid-like insects that attack the roots of grape vines. In the 1870s, wine production in France fell by three quarters as a result of phylloxera infestation. US grapes are resistant to phylloxera, and are now used as root stock; the European wine varieties are grafted onto this stock.]

3. Graphing

The file e101f15ps1data.xlsx contains data for 1970-2014 on the U.S. consumption of gasoline (in gallons per capita per year) and the price of unleaded gasoline (in dollars per gallon, in the prices of 2014).
   a. Graph a scatterplot of these two series, with the price on the vertical axis and the quantity on the horizontal axis.
   b. Is there any pattern in the graph? Explain. [Add a trendline.]
   c. If you were trying to explain the amount of gasoline consumed per household per year, what other factors are likely to be relevant (in addition to the price of gasoline)? Explain.

4. Fracking

Read the article on fracking on page 46 of the textbook. Fracking is widely done in the U.S., but is banned in most countries of Western Europe. Based on what you read here, and on at least one article found online, explain why you think fracking in the U.S. should, or should not, be restrained. [Give a clear citation for the article you read.]