Homework 3 (28 Points)

Problem 1 (4 Points)

Which of the following statements represent positive analysis and which represent normative analysis?

1. A 50-cent-per-pack tax on cigarettes will lead to a 12 percent reduction in smoking by teenagers.
2. The government should spend more on AI research.
3. Rising paper prices will increase textbook prices.
4. The price of housing in China is too high.

Problem 2 (8 Points)

Consider the market for coffee in the area surrounding XMU. For each of the events listed here, draw a diagram to show how supply and/or demand changes and its effect on equilibrium price and quantity[1].

1. The government imposes a new tariff on imported coffee beans
2. College students return to campus
3. There is an unexpected increase in tea leaf production
4. Improvements in the XM job market have raised per capita income

[1] When you draw diagrams, make sure you properly label all lines and axes.

Problem 3 (4 Points)

Read the article "The Rich vs Poor Debate: Are Kids Normal or Inferior Goods?" Summarize the author's arguments. Do you agree with his analysis? Why or why not?

Problem 4 (6 Points)

Economists have been using economic models to recommend the best policy to deal with climate change. For example, the Dynamic Integrated Climate-Economy (DICE) model built by William Nordhaus computes the optimal carbon emission level by calculating the marginal benefit and marginal cost of carbon emission. The model then recommends the optimal carbon tax that would result in the optimal level of carbon emission.

1. What are carbon emission's marginal benefit and marginal cost to the society? (2 Points)

2. Explain why determining optimal carbon emission and carbon tax is a normative exercise, not a positive one. In particular, note that normative statements contain value judgement that cannot be judged using data alone. What value judgement or moral choice is involved in computing optimal carbon emission and carbon tax? (4 Points)

Problem 5 (6 Points)

Figure 1 shows crude oil prices from 2002 to 2017. Read the following articles and use supply and demand analysis to explain the oil price movements over this period of time. In particular, what explains the rise in oil price from 2002 to July of 2008? What explains its collapse from July of 2008 to Feburary of 2009 and its subsequent rebound? What explains the fall in oil price from July 2014 to Feburary 2016?

- Hamilton, J., "What's up with oil prices?" Econbrowser, 2005/06/04.
- Hamilton, J., "The China Syndrome," Econbrowser, 2010/06/29.
- Hamilton, J., "Trends in oil supply and demand," Econbrowser, 2016/05/29.
- Russell, K., "How Oil Prices Are Falling Again," New York Times, 2016/07/29

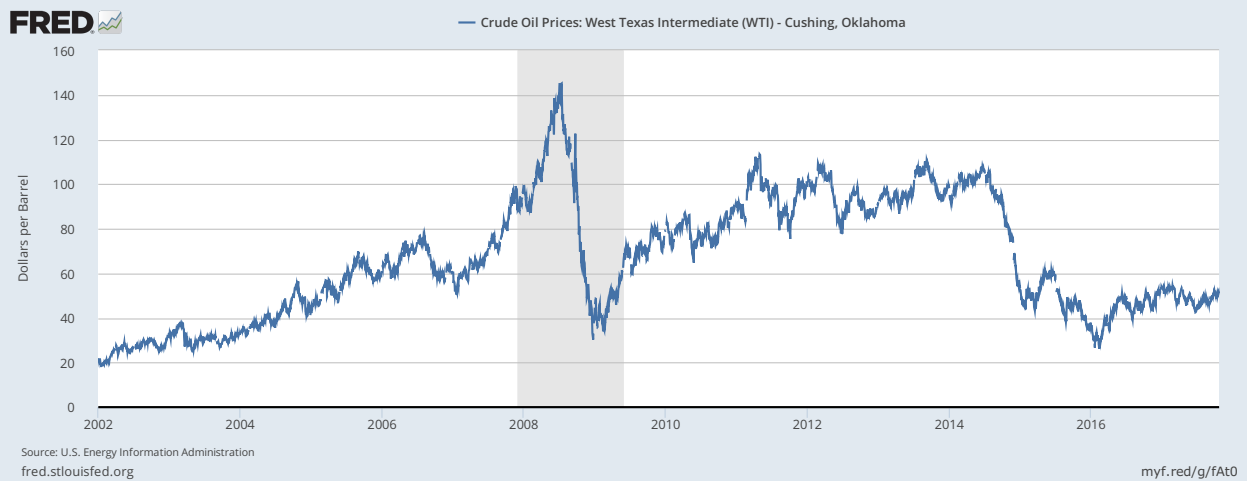

Figure 1: Crude Oil Price