

## Homework 3 (30 Points)

### Problem 1 (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<sup>1</sup>.

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

### Problem 2 (2 Points)

Suppose that in the year 2015 the number of births is temporarily high. How does this baby boom affect the price of babysitting services in 2020 and 2030? (Hint: 5-year-olds need babysitters, whereas 15-year-olds can be babysitters.)

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<sup>1</sup>When you draw diagrams, make sure you properly label all lines and axes.

### Problem 3 (2 Points)

Bagels and cream cheese are often consumed together. Bagels are made of flour and cream cheese is produced using milk. We observe that both the equilibrium price of cream cheese and the equilibrium quantity of bagels have risen. What could be responsible for this pattern—a fall in the price of flour or a fall in the price of milk? Draw a diagram to illustrate and explain your answer.

### Problem 4 (4 Points)

Market research reveals the following information about the market for chocolate bars: The demand schedule can be represented by the equation  $Q_D = 9000 - 300P$ , where  $Q_D$  is the quantity demanded and  $P$  is the price. The supply schedule can be represented by the equation  $Q_S = 1000 + 700P$ , where  $Q_S$  is the quantity supplied.

1. Graph the demand and supply curves and calculate the equilibrium price and quantity. (2 Points)
2. If the government establishes a price floor of \$20 per chocolate bar, how many chocolate bars will be sold? What do you expect might happen as a result? (2 Points)

### Problem 5 (6 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? (5 Points)

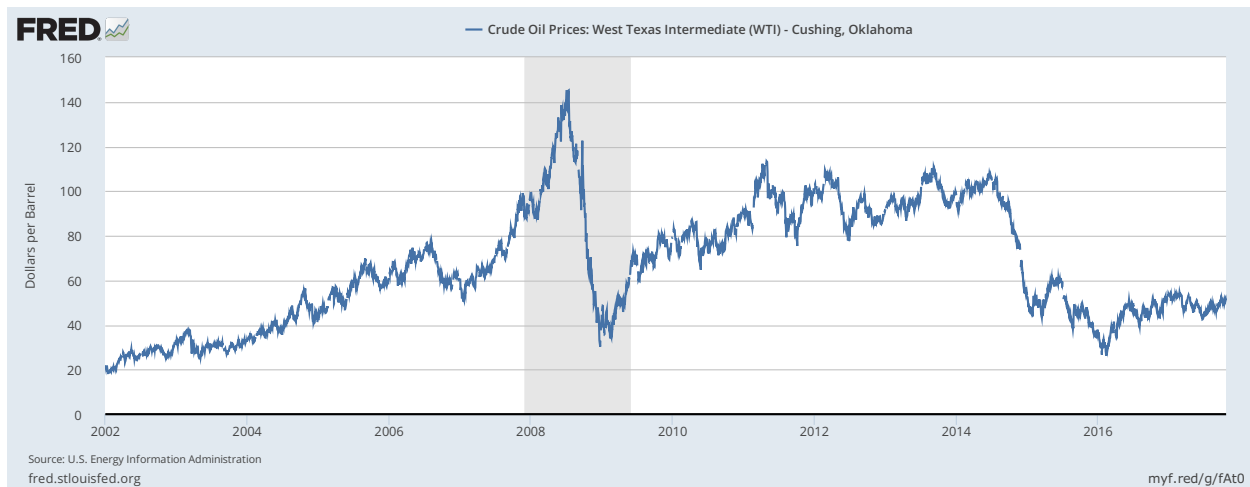


Figure 1: Crude Oil Price

## Problem 6 (8 Points)

1. 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 February of 2009 and its subsequent rebound? What explains the fall in oil price from July 2014 to February 2016? (10 Points)

- 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