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Economics 202
Summer 2022

Homework #2 (due by 9:00pm on Friday, July 15)

Please submit your answers to this homework through the Assignment link at Blackboard. ***No credit will be given for answers submitted in class or emailed to the professor****, regardless of the excuse*. This includes unique excuses like my dog ate my homework or aliens showed up in my dorm and accidently deleted my homework, as well as more traditional excuses like "I lost my Internet". Please note that all submissions are final, again – regardless of the excuse (which includes "I accidentally hit the submit button"). When you go to Blackboard, you should see that you can save your answers, or "Save and Submit". Use the Save and Submit button to submit your answers. If you are unfamiliar with Blackboard, then it would be a good idea to visit the class page at Blackboard and check out the homework assignments as they are posted.

Please note that when Blackboard grades homework answers, more specifically when Blackboard grades answers to any fill-in-the-blank questions – your answer must match exactly with the answer that Blackboard is looking for. Below, you'll find some instructions on how to properly format these answers. Reading this section is strongly recommended.

Questions 4, 5, and 7

Note that on Question #4-5, you'll answer these questions using a file for the CPI. When you record your answers to each question, be sure to record your answer such that it looks exactly the same as what was provided in the tables. E.g., if you are looking up a value and asked to record that value as part of your answer, and the value in the table is 232.100, then record your answer as 232.100, rather than as 232.1 or 232.10.

In Question #7, you're asked to calculate a value for real income within a specific region of the country. Your answer should be expressed in terms of dollars and rounded to the nearest whole dollar. E.g., twenty dollars and 30 cents would be written as $20, rather than $20.30, 20.30 or 20.

If you have any questions on how to express an answer, then be sure to ask before you submit the homework for grading.

Homework #2 Questions

1. We'll be using data from the Energy Information Administration website on the monthly retail price and quantity sold of regular gasoline within the U.S.. That data is provided in the file "US regular retail gasoline prices and retail sales" within the **Homework #2 material** folder that's posted in Course Documents at Blackboard.

Assume that the demand and supply curves associated with this market have their "typical slope" (i.e. that the demand curve in this market has a negative slope, and the supply curve a positive slope). Assume also that the prices and quantities you observe in the tables represent the equilibrium price (P*) and equilibrium quantity (Q*) in this market.

In each problem below, you're provided with a pair of months. Your first task is to determine how the price and quantity changed between these two months. Under the assumption that the price is an equilibrium price and the quantity is an equilibrium quantity, you have information that tells you how the equilibrium changed between the two months. Given the changes that must have occurred, you must infer which shift(s) took place to give us that change in equilibrium.

Match the pair of dates (and implied change in P* and Q*) on the left to the appropriate shift(s) on the right. Note that the shift(s) must always explain the result you found (i.e. it can't be correct under certain circumstances, it must always be correct in a market where the curves have their regular slopes – as assumed above).

E.g., between Sept 2021 and Oct 2021, there was an increase in both the price and quantity sold of regular gasoline within the US. That means P* has increased and Q* has increased. If you believe that this change is best explained by and increase in both demand and supply, then your answer would be "E".

Change in P* and Q*:	**Shift in curve(s):**
a. Sept 2021 to Oct 2021	A. Increase in demand
b. Oct 2021 to Nov 2021	B. Decrease in demand
c. Nov 2021 to Dec 2021	C. Increase in supply
d. Jan 2022 to Feb 2022	D. Decrease in supply
e. Mar 2022 to Apr 2022	E. Increase in demand and increase in supply
	F. Decrease in demand and decrease in supply
	G. Increase in demand and decrease in supply
	H. Decrease in demand and increase in supply

2. Assume that Louisville (e.g. Jefferson County) has a market for used cars. Let's assume that the used car market does not include new cars, i.e. the used car market is a different market from the new car market. Of course, used cars sold outside of Louisville are also in a different market – e.g., used cars sold in southern Indiana, and in counties adjacent to Louisville, like Oldham County and Bullitt County. Lastly, assume that used cars are normal goods.

Let's analyze the **used car market in Louisville** (i.e. we will be trying to predict how this Louisville market is affected by various events). Below, you must determine how each of the five different events affect this market in terms of causing a shift or shifts in the demand and supply for used cars in Louisville. Match each event below with the appropriate shift(s). E.g., if you believe that the first event causes a decrease in the Supply within the Louisville used car market, then your answer would be "D".

Events:

a. Monthly lease payments (rent) are increased on many used car lots within Louisville

b. Recession begins to affect Louisville residents, leading to falling average consumer income

c. Changes in local zoning laws make it harder for used car companies to operate in Louisville, which leads to a decrease in the number of used car lots within Louisville

d. The Federal Government passes legislation which requires all suppliers to provide full health care benefits to employees, which raises the cost of supplying all goods, including used cars

e. Supply chain problems lead to an increase in the cost of producing new cars, a change which is reflected in the current price of new cars

Effect: Shift in Curve(s) within the Louisville cell phone market

A. Increase (shift right) in Demand for Louisville used cars

B. Decrease (shift left) in Demand for Louisville used cars

C. Increase (shift right) in Supply of Louisville used cars

D. Decrease (shift left) in Supply of Louisville used cars

E. Increase (shift right) in Demand for Louisville used cars and Increase (shift right) in Supply of Louisville used cars

F. Decrease (shift left) in Demand for Louisville used cars and Decrease (shift left) in Supply of Louisville used cars

G. Increase (shift right) in Demand for Louisville used cars and Decrease (shift left) in Supply of Louisville used cars

H. Decrease (shift left) in Demand for Louisville used cars and Increase (shift right) in Supply of Louisville used cars

3. Assume that we continue to operate within the Louisville used car market, and that all the conditions from Question 2 still applies here (i.e. this market only includes used cars, a normal good, sold within the city of Louisville). Predict how various events will most likely affect the current equilibrium price and quantity of used cars within Louisville. E.g., if you believe that the first event will ultimately lead to an increase in the current equilibrium price and quantity of retail gasoline within the current Louisville used car market, then your answer would be "A".

Events:

a. Kentucky lowers the minimum driving age from 16 years to 14 years

b. Greater competition in Oldham and Bullitt County with used cars leads to a decrease in the price of used cars sold within these counties

c. Improvements in the productivity associated with selling used cars in Louisville

d. Increases in the (KY) state minimum wage raise the cost of selling used cars

e. Kentucky government lowers its current (commodity) tax on the suppliers of used cars

Effect: ΔP^* and ΔQ^* in the Louisville gas market

A. Increase in equilibrium price and increase in equilibrium quantity

B. Decrease in equilibrium price and decrease in equilibrium quantity

C. Increase in equilibrium price and decrease in equilibrium quantity

D. Decrease in equilibrium price and increase in equilibrium quantity

4. To answer this question, you must access the *CPI – Table 1* file taken from data collected by the Bureau of Labor Statistics (BLS). This file is located in the **Homework #2 material** folder in Course Documents at Blackboard. This file shows different values for the Consumer Price Index for All Urban Consumers (CPI-U) in the South Region (which includes KY) of the United States by expenditure category.

In the first column of this table, you'll see the heading "Expenditure Category" at the top of the column. In column 2, you'll see the CPI for each expenditure category in May 2022.

Using the column under the heading "CPI, May 2022", answer the following question. Note that you are simply reporting the number you find in the table, and **you're not calculating anything**.

The value of the CPI in May 2022 for "**All items**" in the South Region is _____

note: *express the CPI value exactly as stated in the table (do not round it).*

5. To answer this question, you must access the *CPI – Table 1* file used to also answer question 4 above. This file is located in the **Homework #2 material** folder in Course Documents at Blackboard. To answer this question, you will need to use the CPI column (column 2).

Based on this CPI table, select every true statement below.

*Note, **multiple answers are possible** and since there is **no partial credit** on this question, your overall answer must be **completely correct**.*

a. relative to the base year, the average price of gasoline has more than tripled

b. relative to the base year, the average price of medical care has remained fairly constant

c. relative to the base year, the inflation rate of commodities is 222.542%

d. relative to the base year, the average price of apparel has decreased

e. relative to the base year, the average price of services has more than tripled

6. To answer this question, you must access the *CPI – Table 1* file used to also answer questions 4-5 above. This file is located in the **Homework #2 material** folder in Course Documents at Blackboard. To answer this question, you will need to use the column that says Percentage Change: May 2021 to May 2022 (i.e. column 3) which shows the inflation rate of various goods and services between May 2021 and May 2022. We will refer to this inflation rate as "the inflation rate" below.

Based on this CPI table, select every true statement below.

*Note, **multiple answers are possible** and since there is **no partial credit** on this question, your overall answer must be **completely correct**.*

a. the inflation rate associated with buying food at restaurants (Food away from Home) is significantly greater than the inflation rate associated with buying your own food (Food at Home)

b. of the 3 different types of gasoline, unleaded regular has the greatest inflation rate

c. the inflation rate associated with alcoholic beverages is much greater than the inflation rate associated with nonalcoholic beverages (i.e. nonalcoholic beverages and beverage materials)

d. the inflation rate associated with food and beverages is more than double the inflation rate associated with services like medical care, and tuition and school fees (i.e. tuition, other school fees, and child care)

e. the inflation rate associated with housing is greater than the inflation rate associated with household energy

7. To answer this question, you must access the *CPI – Tables 2-3* file. This file is located in the **Homework #2 material** folder in Course Documents at Blackboard. You'll be using Table 2 from this handout, a table that shows May 2022 CPI data associated with each of the four major regions of the U.S.

If a typical resident within the Midwest US region earns a nominal income of $10,000 during this period, then that individual would have a real income of _____

Note: *express your answer in terms of dollars, not dollars and cents, and* ***round to the nearest whole dollar****.*

8. To answer this question, you must access the *CPI – Tables 2-3* file used to also answer question 7 above. This file is located in the **Homework #2 material** folder in Course Documents at Blackboard. You'll be using Table 3 from this handout, a table that shows May 2022 CPI data for a number of different metropolitan areas within the U.S.

If you are an individual with $10,000 in nominal income during May 2022, then based upon the table above, in which major city area would you have the greatest amount of purchasing power?

(a) Denver-Aurora-Lakewood, CO
(b) Washington-Arlington-Alexandria, DC-VA-MA-WV
(c) Tampa-St. Petersburg-Clearwater, FL
(d) Honolulu-Urban Hawaii
(e) Chicago-Naperville-Elgin, IL-IN-WI
(f) Minneapolis-St.Paul-Bloomington, MN-WI
(g) Boston-Cambridge-Newton, Ma.-N.H
(h) New York-Newark-Jersey City, NY-NJ-PA
(i) Houston-The Woodlands-Sugar Land, TX

9. The table below provides you with information about Presidential (nominal) salaries in specific years and the CPI for each of those years. We use salary here instead of income, largely because of how Presidents are paid. I.e., the President receives a salary, but also has an expense account. Expense accounts are similar to income, which leads us to ask - should we consider the President's expense account as income? Rather than wrestle with that question, we'll use the term salary here, but you can interpret salary in this example as the income we discuss in class.

Use the information in the table below to answer the question that follows.

US Presidents and their (nominal) salaries			
Year	**President**	**Nominal Salary**	**CPI**
1789	Washington	$25,000	8.8
1835	Jackson	$25,000	8.6
1864	Lincoln	$25,000	15.7
1875	Grant	$50,000	11.0
1905	T. Roosevelt	$50,000	8.8
1910	Taft	$75,000	9.5
1935	F.D. Roosevelt	$75,000	13.7
1950	Truman	$100,000	24.1
1960	Kennedy	$100,000	29.6
1980	Carter	$200,000	82.4
1988	Reagan	$200,000	118.3
2022	Biden	$400,000	292.3

Based on the table above, which President had the lowest real salary?
(again, note: real salary is the same as real income)

a. Washington
b. Jackson
c. Lincoln
d. Grant
e. T. Roosevelt
f. Taft
g. F.D. Roosevelt
h. Truman
i. Kennedy
j. Carter
k. Reagan
l. Biden