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Economics 202-30
Summer 2015

Homework #2 (due by 9:00pm on Wednesday, 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 me. Note that you
should be able to save your answers while completing the homework, but must hit the "Save
and Submit" link to submit your answers. All submissions are final. Once your homework is
submitted, you cannot go back and change anything, and you may not have your submission
undone so that you can resubmit the homework.

Please note the instructions for the various problems in this section. Due to how Blackboard
grades some homework answers, correct formatting ensures that your submitted answers are
graded properly. The information below tells you how to format certain answers, where
formatting would be an issue.

Questions 1 and 4-7
Note that on Question #1 and Questions #4-7, you'll be referred to an online file that has data
or information which you will use to answer those questions. Each of these files can be
found in the **Homework #2 material** folder in "Course Documents" at Blackboard.

In Question #4, be sure to record your answer exactly as given in the table.

In Question #6, you're asked to calculate a value for real income and then a change in real
income between two different areas of the country. Your answer in both parts 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.

In Question #6, when expressing a change in real income, a positive change (increase) can be
left "as is", whereas you need to include a negative sign with any negative change (decrease).
E.g., an increase in real income of $25 should simply be written as "$25", but a decrease in
real income of $25 would be expressed as "-$25".

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 (*http://www.eia.doe.gov*) on the monthly price and quantity of electricity sold to residential consumers in the United States. Assume that the prices and quantities you observe in the tables represent the equilibrium price (P*) and equilibrium quantity (Q*) in this market. Implicit within this analysis is the assumption that the demand and supply curves in this market are not horizontal or vertical (i.e. that these curves have their "typical slope").

Two sets of data are provided below. There is a link, as well as a reminder that the data is also provided in the Homework #2 material folder in Course Documents at Blackboard. This data provides information for residential consumers, commercial consumers, etc. You need to use the data for Residential consumers (first column) and then, from that data, determine how the equilibrium price and quantity changed between a given pair of months, in order to then explain that change in terms of a shift (below).

Retail (Residential) price of Electricity:
> *http://www.eia.gov/electricity/monthly/xls/table_5_03.xlsx*
- ***note, you'll be using the data in the <u>first column</u> (Residential)***

Retail (Residential) sales (Quantity sold) of Electricity:
> *http://www.eia.gov/electricity/monthly/xls/table_5_01.xlsx*
- ***note, use the data in the <u>first column</u> (Residential)***

Given these observed changes in P* and Q*, your job is to explain how the demand and/or supply curve for residential electricity must have shifted by matching each item in the "Change in P* and Q*" column on the left to the appropriate response(s) in the "Shift in curve(s)" column on the right. Your choice for each shift should be that which best explains the observed change in P* and Q*.

Change in P* and Q*:	**Shift in curve(s):**
a. December 2013 to January 2014	A. Increase in demand
b. January 2014 to February 2014	B. Decrease in demand
c. May 2014 to June 2014	C. Increase in supply
d. September 2014 to October 2014	D. Decrease in supply
	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. Consider the market for Retail Gasoline in central Louisville (e.g. downtown). Assume there are other markets in the greater Louisville area that are based on geography as well (e.g. the western Louisville market, eastern Louisville market, and southern Louisville market.

Below, you have 5 different events which we can assume will affect the central Louisville market for retail gasoline, and your "job" is to predict each effect using the demand and supply model for this market. Match each event (listed under "Events" below) on the left to the appropriate effect ("Effect: Shift in Curve(s)") on the right. E.g., if an increase in consumer income causes a decrease in Supply, then you'd match this event with "D" from the "Effect: Shift in Curve(s)" list below.

Events:

a. Increase in consumer income

b. Increase in gasoline taxes (on suppliers)

c. Increased productivity at Louisville gas stations

d. Government raises the legal driving age to 18

e. Significant decrease in the price of retail gasoline in the southern Louisville area

Effect: Shift in Curve(s) for central Louisville gasoline market

A. Increase (shift right) in Demand for central Louisville gasoline

B. Decrease (shift left) in Demand for central Louisville gasoline

C. Increase (shift right) in Supply of central Louisville gasoline

D. Decrease (shift left) in Supply of central Louisville gasoline

E. Increase (shift right) in Demand for central Louisville gas and Increase (shift right) in Supply of central Louisville gas

F. Decrease (shift left) in Demand for central Louisville gas and Decrease (shift left) in Supply of central Louisville gas

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

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

3. Similar to what we did in question #2, it is also possible to predict how an event will most likely affect the equilibrium price and quantity within a market. Consider the market used in question #2, the central Louisville market for retail gasoline. For each of the 5 events on the left below, match the event to the change in equilibrium price and quantity that would be predicted by the demand and supply model for the central Louisville gasoline market.

Events:

a. There is an approaching holiday weekend

b. Significant increase in the cost of crude oil

c. Improved technology with gas pumps

d. Local government regulations raise the cost of operating at all gas stations in Louisville

e. Kroger joins with all gas stations in eastern Louisville to provide cheaper gasoline at those stations for all Kroger card holders

Effect: ΔP^* and ΔQ^* in the central 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 a file that was downloaded from the website of the Bureau of Labor Statistics (BLS). Note that this file is available in the Homework #2 material folder in Course Documents at Blackboard. When you access the file, find "**Table 1**. Consumer Price Index for All Urban Consumers (CPI-U)" on page 5 of the document.

In Table 1, the (unadjusted index) CPI for All Items in November, 2014 is _____

note: express the CPI value exactly as it's stated in the table (do not round it), and <u>do not report the CPI value that says "1967=100"</u>

5. To answer this question, you must access a file that was downloaded from the website of the Bureau of Labor Statistics (BLS). Note that this file is available in the Homework #2 material folder in Course Documents at Blackboard. When you access the file, find "**Table 1**. Consumer Price Index for All Urban Consumers (CPI-U)" on page 5 of the document.

Using **Table 1** in this Report, the second column gives you the "Relative Importance, December 2013" – i.e., the "weights" for each expenditure category in the CPI. Use this column to rank the following seven expenditure categories below, where each category is given as a specific row. The top ranked category (largest weight) should be ranked "1", second largest ranked "2", and so forth – all the way to the seventh largest (i.e. smallest) category being ranked as "7".

Question 5 – continued
Note that there is no partial credit on this question, <u>your answer must be completely correct or it will be considered incorrect.</u>

_____ *Food & Beverages*

_____ *Housing*

_____ *Apparel*

_____ *Transportation*

_____ *Medical Care*

_____ *Recreation*

_____ *Education & Communication*

6. To answer this question, you must access a file that was downloaded from the website of the Bureau of Labor Statistics (BLS). Note that this file is available in the Homework #2 material folder in Course Documents at Blackboard. When you access the file, find "**Table 10**. Consumer Price Index for All Urban Consumers (CPI-U): Selected areas, all items index" toward the bottom of page 41. At the bottom end of the table, look at the city-group listings under the sub-heading "selected local areas". E.g., the first city-group should be Chicago-Gary-Kenosha, IL-IN-WI. To answer this question, you need to work with the values in the CPI column for October 2014 (e.g. in Chicago, that value is 228.987).

Using the October 2014 CPI (All Items) from the San Francisco-Oakland-San Jose, CA area, the real income for a typical San Francisco resident with $60,000 in nominal income is

_____

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

Use the October 2014 CPI (All Items) from the Atlanta, GA, area to calculate the real income of a typical Atlanta resident with $60,000 in nominal income. Assume this person moves from San Francisco to Atlanta. This move would **change** the purchasing power of that individual by

_____

Note: express your answer in dollars, and round to the nearest whole dollar. If your answer is negative (i.e. decrease), then be sure to include a negative sign in front of your answer (e.g. a decrease of $5 would be written as -$5). If the answer is positive (i.e. increase), no positive/plus sign is necessary (e.g. an increase of $5 would be written as $5).

7. Utilize the same table from Question #6 (above), **Table 10**. Consumer Price Index for All Urban Consumers (CPI-U): Selected areas, all items index. You will again use the city-group listings under the sub-heading "selected local areas" that you worked with in Question #6.

Assume that you have an individual with a nominal income of $100,000. Based upon the October 2014 CPI (All Items) reported in the table for these selected local areas, in which area would the real income of this individual be highest?

    a. Chicago-Gary-Kenosha, IL-IN-WI

    b. Los Angeles-Riverside-Orange County, CA

    c. New York-Northern N.J.-Long Island, NY-NJ-CT-PA

    d. Atlanta, GA

    e. Detroit-Ann Arbor-Flint, MI

    f. Houston-Galveston-Brazoria, TX

    g. Miami-Ft Lauderdale, FL

    h. Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD

    i. San Francisco-Oakland-San Jose, CA

    j. Seattle-Tacoma-Bremerton, WA

8. The chart below provides you with information about Presidential salaries in specific years and the CPI for each of those years. Use this information to answer the question that follows the table.

US Presidents and their (nominal) salaries			
Year	**President**	**Nominal Salary**	**CPI (2010=100)**
1789	Washington	$25,000	7.8
1873	Grant	$50,000	5.5
1909	Taft	$75,000	4.1
1949	Truman	$100,000	10.9
1969	Nixon	$200,000	16.8
2001	Bush	$400,000	81.0
2011	Obama	$400,000	100.0

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

    a. Washington
    b. Grant
    c. Taft
    d. Truman
    e. Nixon
    f. Bush
    g. Obama