

Quantitative Methods for Public Policy

MACALESTER COLLEGE

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WEIGHING THE COSTS AND BENEFITS OF PUBLIC POLICY CHOICES

Assignment #5

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Complete the assignment by following the instructions below. Your answers should go in the yellow spaces.

Exercise1: What is the minimum wage?

The minimum wage has occasionally been adjusted upward. Many people believe an important question is whether the adjustments have kept pace with the cost of living. This exercise in creating rates will help you analyze that question.

Accessing the data

Go the U.S. Department of Labor - Bureau of Labor Statistics website: <http://www.bls.gov>

Under "Inflation and Consumer Spending" click on "Consumer Price Index." Once there, click on "Get Detailed CPI Statistics."

Click on "All Urban Consumers (current series)." Then find the price index for "U.S. All Items (1982-84 = 100).

The CPI you have found gives you data on changes in the price of a representative bundle of goods for an urban consumer in the United States. The notation 1982-84 = 100 means that using this CPI will allow you to convert nominal (actual) prices into 1982-84 prices (called "real" prices).

The formula for converting a nominal wage into a real wage is:

$$100 * (\text{nominal wage} / \text{CPI}).$$

Using the annual data from the specified CPI, fill in the chart below. The real wage will be automatically calculated for you and both the nominal and real wages from 1967 to 2003 will be plotted on the worksheet labeled "Minimum wage graph."

Year	Nominal minimum wage	CPI	Real minimum wage
1938	\$0.25		#DIV/0!
1939	\$0.30		#DIV/0!
1945	\$0.40		#DIV/0!
1950	\$0.75		#DIV/0!
1956	\$1.00		#DIV/0!
1961	\$1.25		#DIV/0!
1967	\$1.40		#DIV/0!
1968	\$1.62		#DIV/0!
1974	\$2.00		#DIV/0!
1976	\$2.30		#DIV/0!
1978	\$2.65		#DIV/0!
1979	\$2.90		#DIV/0!
1981	\$3.35		#DIV/0!
1990	\$3.50		#DIV/0!
1991	\$4.25		#DIV/0!
1996	\$4.75		#DIV/0!

1997
2003

\$5.15
\$5.15

#DIV/0!
#DIV/0!

Examine the changes in nominal and real minimum wage. Does it appear that the minimum wage has kept up with the cost of living?

Estimating the growth rate of the minimum wage.

On the minimum wage graph there is a place for you to type in estimated growth rates for both nominal and real minimum wage. When you enter an annual rate of growth, the minimum wage predicted by your growth rate is automatically plotted on the graph. You can change the growth rate until you find one that seems to fit the actual data.

What is your best estimate of the annual rate of growth of the nominal minimum wage?

What is your best estimate of the annual rate of growth of the real minimum wage?

What should the minimum wage have been in 2003 if we had wanted it to match the real buying power of the 1968 minimum wage?

Exercise 2: Cleaning up pollution

The city of Minneapolis has asked you to conduct a benefit-cost analysis of a project that would clean up asbestos from the soil in a neighborhood north of downtown. The clean-up project is estimated to last ten years. The discount rate used by the city is 4%, and annual rate of inflation is projected to be 2%. A consulting firm has already estimated the benefits (in nominal terms), and the costs (in real terms). Benefits consist exclusively of the dollars saved from avoided hospital visits, and costs include dollars spent on labor and capital used for the clean-up.

In the space below, calculate the present value of benefits and the present value of costs.

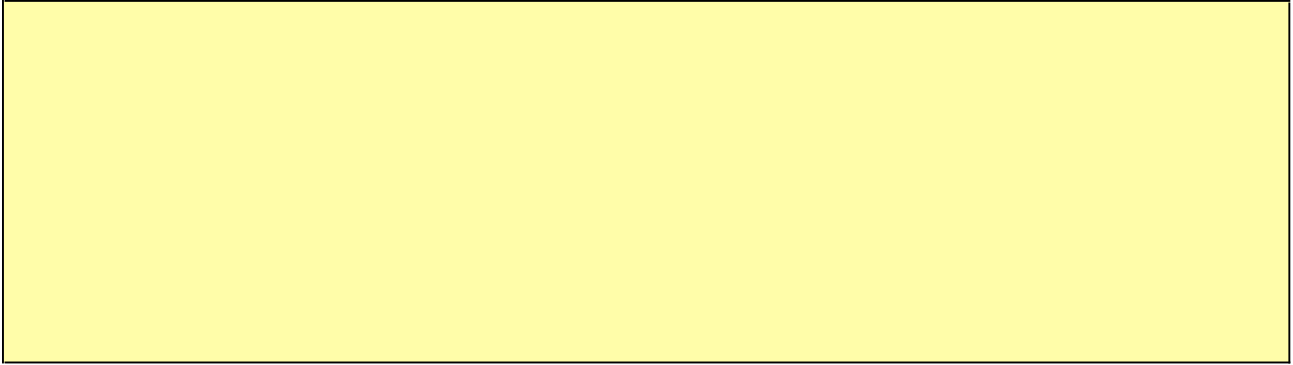
Hint: See the attached worksheet titled "Adjusting for time."

Year	<i>Benefits (nominal thousands \$)</i>	<i>Present value of benefits</i>	<i>Costs (thousands year 2004 \$)</i>	<i>Present value of costs</i>
2004	2,064		6,050	
2005	3,492		6,050	
2006	4,521		6,050	
2007	5,274		6,050	
2008	6,127		6,050	
2009	7,187		6,050	
2010	8,968		6,050	
2011	10,295		6,050	
2012	14,464		6,050	
2013	15,136		6,050	
	Total present value of benefits		Total present value of costs	

What is the benefit- cost ratio for this project?

What is the value of the net gain to society of the project?

What might a benefit-cost analysis based only on the numbers in the table above be ignoring? That is, are there other potential costs or benefits that should be included in the analysis?

A large, empty rectangular box with a yellow background and a thin black border, intended for the user to provide an answer to the question above.

Exercise 3: Are immigrants a drain on society?

Accessing the relevant article

Go to the attached worksheet, labeled "Fennelly article," and read the piece taken from the October 2, 2004 Minneapolis Star Tribune.

Identify the items discussed in the article that constitute costs of immigration.

Identify the items discussed in the article that constitute benefits of immigration.

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What costs of immigration are missing?

What benefits of immigration are missing?

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In the second paragraph, Ms. Fennelly states that one benefit of immigrants is that "enrollment of immigrants' children is the only thing that keeps many Minnesota schools from significant losses in revenues... ." **Would you include this as a benefit? If so, a benefit to whom?**

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At the end of the article, Ms. Fennelly states, "I don't accept the notion that my value can be entirely -- or even primarily -- tallied on a cash register." **Go back to your lists of the costs and benefits of immigration. Put a "\$" next to the items that can be measured in dollars and a "+" next to the items that cannot.**

How might you compare the "\$" items with the "+" items?

