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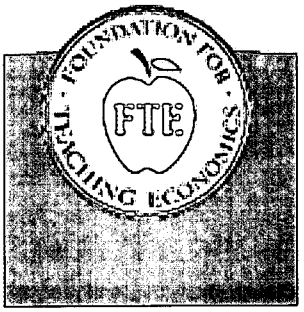
ABSTRACT

This lesson plan gives students a hands-on understanding of a price index, how it is composed, what it is used for, and some of its limitations. Students then can make the connection to some of the popular price indices such as the Consumer Price Index and the Producer Price Index. The lesson states a purpose; cites learning objectives; suggests timing; and outlines step-by-step procedures. Attached is a sample Student Price Index. (BT)

Foundation for Teaching Economics

Creating a Student Price Index
Lesson Plan

By Roland Lewin



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Creating a Student Price Index

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Purpose: The purpose of this activity is to give students a hands-on understanding of a price index, how it is composed, what it is used for and some of its limitations. They can then make the connection to some of the popular price indices such as the Consumer Price Index and the Producer Price Index.

Objectives: Students will:

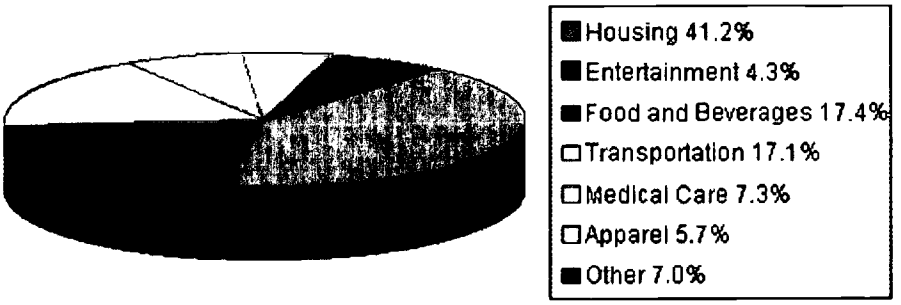
1. Create a local "Student Price Index" (SPI) for goods and services that high school seniors are inclined to buy or have bought (by parents) for them.
2. Select the type and quantity goods and services that are to go in to this "basket of goods" and the categories that these items fit under.
3. Use the index to calculate the rate inflation.
4. Determine limitations of the SPI.

Timing: It may take 1-2 days (periods) to decide on the categories and contents of the basket, depending on the size of your "base" class. There will be debates. Once this is established, however: 1 period.

Procedures:

1. Introduce students to the Consumer Price Index (CPI):
    - price index: a number that compares prices in one year with some earlier base year.
    - Consumer Price Index: a number used to calculate changes in the average level of prices for about 400 items typically bought by urban families. Items chosen by Bureau of Labor Statistics.
    - These 400 items can be thought of a "basket of goods".
    - The influence that each item has on the CPI is found by a weighting process. This process is based on the importance of each item to families as determined by the fraction of their total spending that goes for that item. (i.e. families "typically" spend about 17% of their income on "food and beverages". So, food and beverages make up about 17% of final CPI index.

Consumer Spending: Percentage of Income (1995)



These percentages will change over time as the pattern of consumption changes. Will basket of goods change accordingly?

rate of inflation = More recent year's price index - earlier year's price index

earlier year's price index

- Limitations of CPI:
  1. "Basket" matched to data of urban spending, therefore may not be true indicator of change in price level for those not living in non-urban areas.
  2. Does not factor in change in taxes or government services
  3. Does not account for changes in quality of goods and services (i.e. price increase may reflect increase in quality and not inflation.)

2. Entice students with coming up with a "basket of goods" that high school seniors at your school typically spend money on so that inflation can be more "accurately" tracked for them.
3. Have students write down the types (and quantity per year) of goods and services that they typically spend money on, and then categorize these items.
4. Now the hard part: Have the students decide on a final "basket of goods" and quantities. Tell them this comes with a lot of responsibility as their accurate decisions today will serve to give accurate information on rates of inflation. (see resource page for basket that my students came up with in spring, 1998)
5. Create form so that they can go out and price these items and keep data organized.
6. Give the assignment to each student to price each item in the "basket". (A week should be plenty of time.)
7. Now for the number crunching: The process should be explained and modeled to class, and it even could be done in groups, but this would require making multiple sets of the data. I recommend assigning one or two students (this is usually a good "extra credit" opportunity and/or

chance to earn extra classroom currency if you are running "Money Simulation") to do it all.

a. finding the average price for each item
b. multiply the average price by the quantity
c. sum up all these (price x quantities) in each category so you can track inflation by category also.
d. then sum up all totals to get a base value for "all items"
e. these value will be considered your base year from now on.

8. Determining index value:
    a. the value you calculated for the base year will always go in the denominator. **(i.e. $2324)**
    b. the value for the "current" year will go in the numerator
    c. in the base year the value will be 1, because the base year and current year are the same. The ratio will be 1. Multiply the ratio by 100 to get 1 x 100 = 100. **($2324/$2324 x 100 = 100)**
    d. in the next year, assuming prices increase the numerator will be higher. **(i.e. $2440)** The ratio will be 1.05. Always multiply the ratio by 100 to get the index value. (1.05 x 100 = 105 reflecting 5% inflation.) **2440/2324 x 100 = 105**
    e. this process can be followed to track inflation for each category and overall.
    f. to determine inflation between years, not including the base year, see above ("rate of inflation").
9. If you do this each semester, you will adjust rate of inflation to reflect how much time elapsed since last value taken. (i.e. if six months, then cut rate in half, since it represents one-half year.
10. Determine with your students any limitations or weaknesses that your basket may contain relative to the "true" rate of inflation. The students who perform the calculations may be the best ones to determine this. Ask them to make an oral report to the class to report their findings as to the rate of inflation. Have them point out which item(s) contributed the most to inflation. Limitations or weaknesses may come out in the process. (i.e. excess weight given to items mostly purchased by females or vice versa, etc.)

STUDENT PRICE INDEX
"Basket of Goods"
Spring '98 (base year)

Good or Service	Quantity (per year)	Price
School Supplies		
pens: Bic	1 pack of 10	
calculator: TI-83	1	
backpack: Jansport	1	
lined notebook paper	4 packs of 250 sheets	
Binders	2	
ASB (Associated Student Body) card	1	
Graduation "stuff"		
senior packet	1	
Yearbook	1	
prom tickets (per couple)	1	
cap and gown	1	
tuxedo rental	1	
prom dress	1	
"after prom" tickets (per couple)	1	
Entertainment		
C.D.'s	10	
movie tickets	12	
football tickets (high school)	5	
concert tickets	2	
"nightclub" tickets	24	
magazine subscriptions	2	
Food		
pizza: large, 1-topping	15	
burritos: taco bell	20	
hamburgers: McDonald's big mac	20	
Jack in the box-jumbo jack	20	

Burger King-whopper	20
smoothies: Blenders in the grass	52
ice cream cone	24
slurpee: 7-11	24

Transportation

gasoline: gallon of unleaded	365

Clothes

Jeans	5
Shirts	25
Sweatshirts	3
bathing suit	2
"school" shoes	3

Other

Deodorant	12
Haircuts	8
Toothbrush	3
Chapstick	15

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