

## **Student-Devised Cost of Living Comparisons**

### **Course:**

Economics 201: Macroeconomic Principles (2 sections, 25 students each), Winter 2007

Macroeconomic examines how the economy-wide average price level and the economy-wide output level are determined as well as what, if any, relationship exists between the two. We identify and analyze the forces which influence the overall stability of the economy. Specifically, we look at the causes of inflation, cyclical swings in total production, and economic growth. The goal of characterizing macroeconomic theory is to apply that understanding to policy decisions for the purposes of stabilizing the growth of an economy.

This course satisfies the social science requirement in the University Core and is required of all undergraduate business students through the business core. As such, this course is taken by a wide range of students, most of which are classified as sophomores.

Microeconomic Principles is a prerequisite for this course, thus students have prior knowledge of economic thinking.

### **Course Component:**

In this course, I added a component to guide students toward creating their own cost-of-living index for familiar geographical areas. The average price level in the economy is measured by the Consumer Price Index (CPI) which compares the cost of a specific basket of goods in two different time periods. The CPI is often used to measure the average cost of living for the area from where prices are collected. The project has two main objectives:

- I. To develop an appreciation for the tremendous undertaking of the Bureau of Labor Statistics when calculating and reporting the CPI each month.

*The CPI samples hundreds of thousands of prices on over 80,000 products, compiles the data, and produces a single number, the Consumer Price Index for that month. The percent change in this piece of data is precisely what CNN, MSNBC, the Wall Street Journal, etc. report as inflation in the U.S. economy. This project asks the students to gather prices on only 38 products and for only two locations per student, yet it required almost a full semester to complete.*

- II. To help students develop an awareness of their surrounding communities and the costs of living in those communities.

*The entire project was student defined, as will be explained below. Students selected the communities from which they would gather their prices. The only restriction placed on their selection was that the communities had an ex ante perceived difference in affluence. The purpose of this restriction was to allow the data collected to either support or*

*reject the perceived differences. Either result proved to stimulate conversation about the various neighborhoods. In addition, students are asked to reflect on their experiences with the project.*

**Sub-Components:**

In order to complete the project and ensure that students did not procrastinate, I partitioned the project into successive stages through the semester. These sub-components are outlined below.

**Sub-Component 1:** Generate a list of commonly purchased products.

Students were required, on an individual basis, to submit a list of 5-7 products that they believed the average person consumed. This could be frequently-consumed items such as apples or bath soap, or less frequently consumed such as a car. Excluded items were 'obvious' choices such as bread, milk, and eggs. As a class, we discussed the entire list of submitted products and reduced it to a final list of 38 products. These products can be found in Table 1. Ultimately, students will gather prices for this listing of products which, in their minds, are representative of products that consumers typically purchase.

**Sub-Component 2:** Select neighborhoods from which prices will be gathered.

In self-formed groups of 1-4, students will choose at least two neighborhoods from which they will sample prices. There are two restrictions on their selection. First, the neighborhood must be accessible to at least one group member. Second, students are asked to select neighborhoods with at least a perception of different costs-of-living. The data collection stage was scheduled over Easter Break to facilitate a student collecting prices from neighborhoods other than Cincinnati. Examples of cities chosen can be found in Table 2. In addition, students were required to submit a short essay justifying the differences in perceived affluence.

**Sub-Component 3:** Identify retail locations where the products are sold.

For this component, each group was required to identify two locations in each of their neighborhoods from which they would eventually gather prices on the list of products that was developed. Groups submitted a spreadsheet containing the name, address, and phone number for each retail location in each neighborhood for each product on the product list. Selected retail locations are listed in Table 3.

**Sub-Component 4:** Collect and record price information.

For a two-week period over Easter Break, students visited the locations selected in Sub-Component 3 and recorded the retail price for each product as well as the date that the price was recorded. Students were instructed that if the product was unavailable, to find the next closest product and provide an explanation of what substitution was made.

**Sub-Component 5:** Analyze collected data.

When all the data was submitted, I compiled and presented it from various cross-sectional perspectives. Almost an entire class session was devoted to looking at the

collected data across products, across neighborhoods, etc. We found various data collection errors such as a \$1.98 per night hotel room and a 3-pack of men's undershirts for \$59. We discussed weaknesses and strengths of the process vis-à-vis the Bureau of Labor Statistics' measurement of the CPI. In addition, we discussed differences in costs-of-living in Chicago, New York, and Cincinnati, as well as Norwood, Hyde Park, and other surrounding Cincinnati communities. Tables 4 and 5 present average prices by state and around Cincinnati, respectively.

**Sub-Component 6:** Reflection on project.

The final aspect of this project required students to submit, individually, a reflection paper on the semester project. I asked them to reflect on what they learned from the project, what surprised them, and what didn't.

Many of the reflection papers comment on how students did not foresee the benefit of this project at the beginning of the semester. They perceived the project would be a time-consuming load of work that would not be at all interesting. By the end of the semester, they found the project to be quite worthwhile and fun. They enjoyed actually visiting stores to collect prices. Many commented on their interactions with customers and store personnel who inquired about their activity. Most of the learning from this project was achieved through Objective I. However, I knew at the outset that this was an acceptable risk. Students do not have data from other semesters for comparison. In addition, the identification of differences in cost-of-living is dependent upon the data collected. We identified enough errors in the data to help with Objective I, but too many to trust any conclusions with respect to Objective II. However, some students did comment on price variability (hence cost-of-living variability), especially in and around Cincinnati.

**Table 1. Final Product Listing**

Quantity	Product Name
Loaf	Wonder Bread, Big
Dozen	Large Eggs
Pound	Ground Chuck
Pound	Skinless chicken breast
5 pounds	Gold Medal All Purpose Flour
Pound	Land O' Lakes Butter
10.75 oz. can	Campbell's Tomato Soup
Head	Iceberg lettuce
6 oz. can	Starkist Chunk Light Tuna
7.25 oz. box	Kraft Macaroni and Cheese
18oz. Jar	Jif Reduced Fat Creamy Peanut Butter
14.5 oz. box	Honey Comb Cereal
9.8 oz.	Totino's Frozen Cheese Pizza
13.5 oz. bag	Dorito's Tortilla Chips
6.4 oz.	Colgate Tartar Control Toothpaste
8 fl. oz.	Caress Body Wash
4-pack	Venus Razors
7.5 fl. Oz.	SoftSoap Antibacterial Hand Soap
12-ct.	Cottonelle Single Roll Toilet Paper
150-ct.	College Rule Lined Paper, Letter Size
20 lb. bag	Iams Minichunk Dog Food
4 pack	60 watt light bulbs
Single	Men's Haircut
30 pack	Solo Pastic Cups
40 use	Tide Powder Detergent, Original Scent
4 pack	Duracell AA Batteries
Pack	Marlboro Light Cigarettes
Gallon	87 Octane Unleaded Fuel
Gallon	Diesel Fuel
One	Saturday Night Hotel Room, Double Bed
12 pack	Pepsi-Cola, 12-oz. cans
64 oz.	Tropicana Orange Juice
Gallon	2% Milk, Store Brand
24 pack	Dasani Drinking Water (16.9 oz)
12 pack	Bud Light Bottles (12 oz.)
16 oz.	Cup of Coffee (house)
Pair	Women's dress shoes
5 pack	Hanes White Crew T-Shirts (L)

**Table 2. Final Neighborhood Listing**

<u>Ohio</u>	<u>Kentucky</u>	<u>Other</u>
Akron	Erlanger	Boca Raton, FL
Beavercreek	Florence	Chicago, IL
Blue Ash	Louisville	Indianapolis, IN
Columbus	Shively	Irvington, IN
Cincinnati	Grantley Ridge	Richmond, IN
Delhi Township	Covington	Syracuse, IN
Dent		Warren, MI
Eastgate		Fenton, MO
Greenville		St. Louis, MO
Hyde Park		New York City, NY
Kenwood		Wellsville, NY
Maderia		McLean, VA
Mason		
New Bremen		
Norwood		
Springdale		
West Chester		
Western Hills		
Wilmington		

**Table 3. Selected List of Locations**

ALCO	Lance's New Market
Allen Edmonds	Macy's
Ameristop	Marsh Supermarkets
Atioria Coffee Company	McDonald's
Bigg's	Meijer
BP Fuel	Nordstrom
Broadway Joe's	Pamida
Brooke Pointe Inn	Panera Bread
Burger King	Payless Shoes
Citgo	Quality Hotel
Courtyard by Marriott	QuikTrip
CVS	779 Produce Corporation
Dierbergs	Shell Oil
Dillards	Shop n Save
Dollar General	Speedway
Dominick's	Starbucks
El Porvenir	Super 7 Food Stores
Fantastic Sam's	System Seven Hair Styling
Food Expo	Target
Goodwill Thrift Store	Trader Joe's
Great Clips	United Dairy Farmers
Holiday Inn	Wagner's IGA
Howell's IGA	Wal-Mart
Jewel-Osco	Walgreens
K-Mart	Wilby's
Kroger	

**Table 4. Pricing Data By State**

Quantity	Product	Ohio	Kentucky	Indiana	Other
Loaf	Wonder Bread, Big	\$1.98	\$1.73	\$1.96	\$2.19
Dozen	Large Eggs	\$1.59	\$1.03	\$1.33	\$1.98
Pound	Ground Chuck	\$2.45	\$2.51	\$2.35	\$2.57
Pound	Skinless chicken breast	\$3.53	\$3.92	\$4.57	\$4.08
5 pounds	Gold Medal All Purpose Flour	\$2.38	\$2.21	\$1.98	\$2.23
Pound	Land O' Lakes Butter	\$3.16	\$2.03	\$3.35	\$3.32
10.75 oz. can	Campbell's Tomato Soup	\$0.97	\$0.71	\$0.95	\$0.96
Head	Iceberg lettuce	\$1.20	\$1.05	\$1.17	\$1.58
6 oz. can	Starkist Chunk Light Tuna	\$0.94	\$1.00	\$0.90	\$0.97
7.25 oz. box	Kraft Macaroni and Cheese	\$0.96	\$1.04	\$1.16	\$1.00
18oz. Jar	Jif Reduced Fat Creamy PB	\$2.34	\$2.20	\$2.29	\$2.63
14.5 oz. box	Honey Comb Cereal	\$2.81	\$2.86	\$2.35	\$3.70
9.8 oz.	Totino's Frozen Cheese Pizza	\$1.40	\$1.28	\$1.19	\$1.95
13.5 oz. bag	Dorito's Tortilla Chips	\$2.76	\$2.98	\$3.15	\$3.22
6.4 oz.	Colgate Tartar Control Toothpaste	\$2.40	\$2.09	\$2.10	\$2.91
8 fl. oz.	Caress Body Wash	\$3.68	\$3.51	\$3.73	\$3.27
4-pack	Venus Razors	\$7.67	\$7.44	\$8.12	\$8.99
7.5 fl. Oz.	SoftSoap Antibacterial Hand Soap	\$1.73	\$1.24	\$1.64	\$1.93
12-ct.	Cottonelle Single Roll Toilet Paper	\$6.81	\$6.62	\$6.25	\$5.70
Quantity	Product	Ohio	Kentucky	Indiana	Other
150-ct.	College Rule Lined Paper, Letter	\$1.47	\$1.02	\$1.88	\$1.37
20 lb. bag	Iams Minichunk Dog Food	\$16.07	\$14.51	\$18.40	\$18.59
4 pack	60 watt light bulbs	\$2.32	\$2.59	\$1.84	\$3.26
Single	Men's Haircut	\$13.69	\$12.28	\$16.50	\$14.22
30 pack	Solo Pastic Cups	\$2.72	\$2.38	\$2.88	\$2.79
40 use	Tide Powder Detergent, Original	\$7.84	\$7.38	\$8.10	\$8.02
4 pack	Duracell AA Batteries	\$3.88	\$4.05	\$3.27	\$4.18
Pack	Marlboro Light Cigarettes	\$4.17	\$3.03	\$3.40	\$4.59
Gallon	87 Octane Unleaded Fuel	\$2.75	\$2.81	\$2.82	\$2.78
Gallon	Diesel Fuel	\$2.87	\$2.77	\$2.96	\$2.96
One	Saturday Night Hotel Room	\$93.65	\$97.55	\$107.83	\$116.45
12 pack	Pepsi-Cola, 12-oz. cans	\$4.01	\$3.64	\$4.13	\$3.79
64 oz.	Tropicana Orange Juice	\$3.33	\$3.22	\$2.89	\$3.62
Gallon	2% Milk, Store Brand	\$2.53	\$2.72	\$2.39	\$2.86
24 pack	Dasani Drinking Water (16.9 oz)	\$6.27	\$5.49	\$6.22	\$5.84
12 pack	Bud Light Bottles (12 oz.)	\$9.28	\$9.26	\$8.70	\$9.26
16 oz.	Cup of Coffee (house)	\$2.09	\$1.44	\$1.60	\$1.83
Pair	Women's dress shoes	\$31.52	\$27.75	\$39.82	\$57.40
5 pack	Hanes White Crew T-Shirts (L)	\$11.04	\$9.75	\$7.99	\$9.76

**Table 5. Pricing Data for Cincinnati**

Quantity	Product	Hyde Park	Norwood	Other
Loaf	Wonder Bread, Big	\$2.10	\$2.01	\$1.98
Dozen	Large Eggs	\$1.61	\$1.43	\$1.73
Pound	Ground Chuck	\$2.49	\$2.23	\$2.50
Pound	Skinless chicken breast	\$2.79	\$4.26	\$3.76
5 pounds	Gold Medal All Purpose Flour	\$2.69	\$2.69	\$2.29
Pound	Land O' Lakes Butter	\$3.10	\$3.03	\$3.20
10.75 oz. can	Campbell's Tomato Soup	\$0.83	\$1.63	\$0.94
Head	Iceberg lettuce	\$1.15	\$1.16	\$1.12
6 oz. can	Starkist Chunk Light Tuna	\$0.93	\$0.82	\$1.11
7.25 oz. box	Kraft Macaroni and Cheese	\$0.78	\$0.99	\$1.00
18oz. Jar	Jif Reduced Fat Creamy PB	\$2.31	\$2.15	\$2.46
14.5 oz. box	Honey Comb Cereal	\$2.74	\$3.14	\$2.85
9.8 oz.	Totino's Frozen Cheese Pizza	\$1.04	\$1.38	\$1.63
13.5 oz. bag	Dorito's Tortilla Chips	\$2.75	\$2.83	\$2.69
6.4 oz.	Colgate Tartar Control Toothpaste	\$2.51	\$2.07	\$2.58
8 fl. oz.	Caress Body Wash	\$3.60	\$4.69	\$3.51
4-pack	Venus Razors	\$7.74	\$9.07	\$6.80
7.5 fl. Oz.	SoftSoap Antibacterial Hand Soap	\$1.70	\$1.65	\$1.90
12-ct.	Cottonelle Single Roll Toilet Paper	\$6.85	\$7.91	\$6.84
Quantity	Product	Hyde Park	Norwood	Other
150-ct.	College Rule Lined Paper, Letter	\$2.20	\$1.50	\$1.41
20 lb. bag	Iams Minichunk Dog Food	\$15.33	\$15.49	\$16.07
4 pack	60 watt light bulbs	\$1.77	\$2.37	\$3.03
Single	Men's Haircut	\$14.75	\$12.60	\$14.92
30 pack	Solo Pastic Cups	\$2.73	\$3.00	\$2.71
40 use	Tide Powder Detergent, Original	\$7.35	\$9.51	\$7.88
4 pack	Duracell AA Batteries	\$3.63	\$3.64	\$4.11
Pack	Marlboro Light Cigarettes	\$4.12	\$3.68	\$4.14
Gallon	87 Octane Unleaded Fuel	\$2.79	\$2.76	\$2.77
Gallon	Diesel Fuel	\$2.83	\$2.90	\$2.89
One	Saturday Night Hotel Room	\$95.62	\$71.32	\$107.99
12 pack	Pepsi-Cola, 12-oz. cans	\$4.08	\$4.45	\$3.97
64 oz.	Tropicana Orange Juice	\$3.40	\$3.21	\$3.28
Gallon	2% Milk, Store Brand	\$2.37	\$2.42	\$2.41
24 pack	Dasani Drinking Water (16.9 oz)	\$7.12	\$6.52	\$6.06
12 pack	Bud Light Bottles (12 oz.)	\$8.35	\$9.21	\$9.28
16 oz.	Cup of Coffee (house)	\$3.73	\$1.89	\$2.05
Pair	Women's dress shoes	\$49.68	\$20.24	\$34.64
5 pack	Hanes White Crew T-Shirts (L)	\$7.49	\$9.24	\$14.67