

Ben - Joe Consumer Price Index

Benjamin E. Chaback, Joseph Sauerbrun

Abstract

This study creates a price index for a cross section of students at ERAU-DB campus. Using the methodology of the creation of a basket of goods students consume, which helps in creating a base price, this study determines the cost of living for students at the DB campus. The method used consists of surveying a diverse population of students about their preferred consumption bundles and then using these bundles to create an average basket for a typical student consumer. The result of this project is to create a bi-monthly cost index to be useful as a benchmark for the university. However, the scope of this study is to deliver the methodology and observations recorded from consumer surveys of students on campus. The benchmark so created can provide useful insights such as average price changes to make an informed decision by the university administration for purposes such as tuition, student wage, price of cafeteria food, etc.

Methodology

Because it is important to gauge the overall well being of students on the campus, it is therefore pertinent to create a reliable measure of what students pay on campus for typical goods and services. Thus, level of prices can track expenses paid for by students and measure the level of inflation targeted to the students. Several studies have supported the use of differentiated price indices. Even the Bureau of Labor Statistics (BLS) that publishes consumer price index (CPI), does that for urban consumers, wage earners and the elderly. Additionally the Bureau of Economic Analysis publishes the GDP price index for deflating GDP. A price index developed specifically for Daytona Beach campus can have impact on the economic development of resources at the campus. Several items are surveyed from students that are both considered as essential consumption items as well as non-essential but important for development. Sizeable fluctuations create shock in consumption patterns and thereby have psychological and socioeconomic impacts. Data collected need to be from standardized sources and some idiosyncratic sources that may be used by students are not included in these calculations. The method used for creation of this index is survey based, which determines the consumption pattern of students and therefore budget share, which then helps create a cost of basket. When a new item is added or old item deleted, then the budget shares are scaled up or down to equalize the cost of basket for the point in time when the change was introduced. This enables continuity in the basket. Some limitations of this study are that just like CPI, this index cannot measure quality changes, wealth effects and substitution effects.

The cost of the basket at time 't' is $C_t = \sum_{i=1}^n w_i p_i$ where w_i is the budget share (weight) of good 'i' in typical consumer's budget and p_i is the price of the item.

Consumer price index for the year 't' is defined as $CPI_t = \frac{C_t}{C_B}$ where C_t is the cost of the basket in year 't' and C_B is the cost of the basket in the base year.

Inflation is the rate of change of CPI defined as $\pi_t = \frac{CPI_t - CPI_{t-1}}{CPI_{t-1}}$ where CPI_t is the current period CPI and CPI_{t-1} is the CPI for the previous period.

Monthly Basket Costs

March Basket Cost: \$10,153.30

April Basket Cost: \$10,147.35

Monthly CPI Values

March CPI Value: 100 (Base)

April CPI Value: 99.9414

Contributing Factors

Overall, the prices of many goods stayed the same between the two months, although a couple did experience changes. The cause for this is likely in part due to the ongoing outbreak of CORVID-19. While conducting the research for April, it was observed that many items were out of stock, as such a shopper would need to purchase a different item thus changing the price of the basket. Additionally, certain services are not currently available, such as professional hair styling, which would also have an impact on the price of the basket and how many of each goods and services are being used. Lastly, our basket is derived from prices primarily from the Walmart in Daytona Beach, FL as such this basket is not an all inclusive situation for every student on campus, but it does help to serve us to gain a more accurate idea of how much students on the Daytona Beach campus are spending while attending the university.

Results

From the research currently conducted, we have achieved the very early on creation of a consumer price index for the Daytona Beach campus. We have been able to find the cost of a basket for both March and April and are able to better determine the cost of attendance, and living, at or near the Daytona Beach campus. Further, we have created a way to be able to measure the change in the cost of attendance by using the market basket and we can also measure the inflation of the Daytona Beach area by using this consumer price index as well.

References

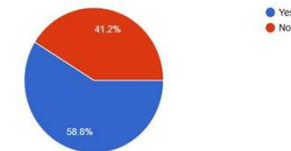
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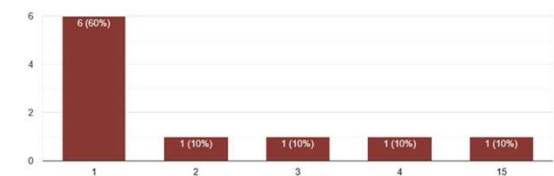
Theory

A Consumer Price Index or CPI measures the change in prices of goods and services from month to month. This information is a way to measure the inflation or deflation rate of an economy. The United States CPI is calculated by the Bureau of Labor Statistics. They take the price of approximately 80,000 consumer items each month from many different retail and service companies and create a general basket of goods. The prices are obtained from businesses that are frequent by a sample of families surveyed by the BLS, which is also how the items and services in the basket are determined. This index's basket of goods was determined by surveying a sample of ERAU-DB students across different colleges. Each product or service that students purchase gets assigned a weight based of the number of consumers and the amount purchased. Prices for each good or service are found each month through online retailer websites or reported in person by visiting locations. With month to month price data, we can determine a local inflation rate. Much like the U.S. Government uses CPI data to determine economic policy, students and faculty can use a localized CPI to help them make decisions regarding spending and borrowing.

Have you purchased Eggs in the past month?
17 responses



If yes, how many dozen egg cartons have you purchased?
10 responses



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