College enrollment by race based on macroeconomic changes

Afif Mazhar[a*],

[a]UT Austin, Economics, 2022

1   Context and motivation

Institutions of higher education require the understanding of US college enrollment trends in relationship to macroeconomic activity. Institutions are now able to effectively manage their enrollment processes accordingly (Hossler 1996). Current literature cites the relationship of the college enrollment response with such activity, particularly with each individual factor (economic growth, inflation, the unemployment rate, etc.) In fact, various elements are utilized to affect an individual's decision to attend college, including costs, income, and quality (Long 2004). Ewing, Beckert, and Ewing (2009) conducted a time series analysis where a vector autoregression was used to interpret the effects of college enrollment by gender based on unanticipated changes in economic growth and inflation; this paper will extend that general premise, but instead focus on three differences. First, an additional variable, unemployment rate, will be factored into the vector autoregression and utilized as a third macroeconomic indicator. Second, the former analysis was based on the effects on gender and college enrollment; instead, the focus will be attributed towards race, specifically White and Minority (an aggregation of other races in the US, more descriptions in the "Dataset description" section). Third, the timeframe used to produce the analysis was from 1963 to 2004. To incorporate more modern data, data will be utilized up to 2019. The goal of this paper is to identify the racial trends in US college enrollment according to the unanticipated macroeconomic activity.

2   Dataset description

The data used for college enrollment rates was collected from the US Department of Education, National Center for Education Statistics, Digest of Education Statistics, 1995 t0 2020. The data was collected over a series of 10 different tables and aggregated into a single data frame with the years of 1976, 1980, 1984, 1988, and 1990-2019. WHITE denotes the total fall enrollment in degree-granting institutions of individuals that select "White" as their race category. MINORITY denotes the total fall enrollment in degree-granting institutions of individuals that select "Black", "Hispanic", "Asian/Pacific Islander", "American Indian/Alaska Native", or "Two or more races" in their selected race category. Economic growth is measured by the industrial production (IP) index as economic output. Consumer price index (CPI) measures the inflation rate for all consumers and will be used as the inflation variable. The unemployment rate will be used as the third macroeconomic variable as UNRATE in the data frame. All three variables were taken from the Federal Reserve Bank of St. Louis Economic Database (FRED).

3   References

Ewing, Kris M, Kim A Beckert, and Bradley T Ewing. "The Response of US College Enrollment to Unexpected Changes in Macroeconomic Activity." *Education Economics* 18.4 (2010): 423–434. Web.

Long, B.T. 2004. How have college decisions changed over time? An application of the conditional logistic choice model. *Journal of Econometrics* 121, nos. 1–2: 271–96.

Sapkota, Pratikshya, and Umesh Bastola. "On the Relationship Between Business Cycle and College Enrollment in the U.S.: a Time Series Approach." *Economics and Business Letters* 4.1 (2015): 7–16. Print.