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Joshua S. Roston

University of Maryland at College Park, josh.roston@gmail.com

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Abstract

This paper presents the results of a survey conducted in the spring semester of 2017 of University of Maryland students. The results illustrate how University of Maryland students weigh the decision to attend college in terms of their perceived current economic situation and future expectations as well as predicted return on investment. A body of economic literature on the perception of return on investment from attending college exists already and this study hopes to add to the discussion as its results are unexpected. The results imply that the current generation of college students feels uncertain over the worthwhileness of higher education.

Keywords

College investment, tuition, University of Maryland, UMD, students, College, expectation, investment, political expectation, economics

Cover Page Footnote

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Joshua Roston

10 May 2017

*The Perceived Return on College Investment in Relation to Economic Expectations of Students at
the University of Maryland*

Introduction:

The recent contentious election cycle may have many Americans concerned for the state of our economy. A widespread concern over the health of the economy drastically impacts consumption. University of Sheffield economics professor Sarah Brown's article in *Fiscal Studies* uncovers how financial expectations play a role in people's financial habits. She states, "Human capital investment, for example, is largely determined by expected increases in future income, whilst life-cycle models exploring intertemporal consumption and saving behavior are also driven by expectations of future income" (Brown 314). Rational expectation theory suggests that when there is a pessimistic forecast for our economy, people tend to do one of two things: If pessimism is over the expectation of higher interest rates, people will spend money now. However, if pessimism exists about the economy overall, rational behavior says we consume less and save more (Sargent). Decreasing consumption and increase of savings applies not only to tangible goods but also intangible goods such as a college education. This research article focuses primarily on the latter reason.

Layered on top of this relation between economic expectation and the costs of college attendance is that over the past decade college tuition has skyrocketed while median household income remained constant. Michael Mumper's article in *The Annals of the American Academy of Political and Social Science* analyzed the rise of college tuition. Mumper presents "Between the

1981-1982 and 2001-2002 academic years, constant dollar tuition increased by 166 percent at a public four- year college and by 112 percent at public universities” (Mumper 101). Tuition increases are still occurring today. The Department of Education reported in the ten-year span from 2002 to 2012 annual college tuition rose 32 percent from \$17,708 to \$23,872. Mumper suggests partial blame may lay with the Federal government for cutting States’ funding of higher education.

In the same period the U.S. Census Bureau reported the median annual household income fell 5.7 percent from \$55,872 to \$52,666. With spikes in the cost of tuition along with depressed middle-class incomes, households struggle to pay for college. Concurrently, State and Federal budget cuts reduce the number of government based scholarships and grants. Because of the lack of support students take out loans and the debt load increases. For some, it is a minor setback of money. However, for a large segment of the population the accumulation of debt can be crippling.

Previous research has shown that present and future economic expectations are a variable in the average American’s choice to attend and invest in higher education. An article written by Kathy Stafford in the *Journal of Higher Education* suggests that students considering higher education often subconsciously take a “human capital point of view,” in which they consider “...life choices available... and their potential costs and benefits and the societal investment of resources in higher education based on the perception of social returns on the investment” (Stafford 593). In economic terms, individuals weigh the cost of acquiring human capital through the investment in college. Stafford states that there are direct costs, such as money spent on tuition, books and housing, and financial opportunity costs such as wages forgone while in school. The sum of these direct costs and the opportunity costs are the total cost a person would

consider when assessing alternatives. University of Toronto professor Oreopoulos compliments this idea and takes it a step further in an article in *The Future of Children* in which he argues that if the net benefits, the difference between the benefits and the costs, is greater than “the present value of a prospective student’s lifetime earnings without attending college” (Oreopolous 42) then the student should make the decision to attend.

People often assess the prospective economy by analyzing political events surrounding the President and his office. Economics researcher Douglas Hibbs published an article on policy preferences associated with political parties’ left or right orientation, analyzing unemployment and inflation outcomes from party decisions in the governments of 12 Western democracies. Hibbs states that there are “...objective economic interests and subjective preferences of lower income, blue-collar groups differ markedly vis-a-vis the unemployment/inflation trade-off from those of higher income, white-collar groups” (Hibbs 1470). There are explicit differences in economic policy preference between low-income and higher-income groups. Hibbs concludes left leaning administrations generally prefer low unemployment and high inflation while their counterpart prefers the inverse. Hibbs notes often an economy with low-unemployment and high-inflation is better suited for lower-income groups, while higher-income groups prefer the opposite, high-unemployment and low-inflation. Therefore, one could expect economic expectations will change, based upon whether the political party in office suits one’s economic preferences.

Stafford’s article was published in 1984. Additionally, Oreopolous’ article while indirectly expanding from Stafford’s research, strictly assesses the theories and models behind the decision using previous research and data. While economic theories develop to explain their ideas most likely hold true today – individual assessment of economics behind attending higher

education has most likely changed, as this study's results suggest. Two very important measurements are the unemployment rate and the GDP growth rate. The unemployment rate measures the number of people unemployed as a fraction of the whole labor force. An economy operating at its full potential experiences full employment, thus the further away from full employment the economy is, the higher the unemployment rate and the worse the economy becomes. An economy that has a marginally growing or positive rate of GDP growth is better off than an economy in which the GDP growth rate is marginally diminishing, or negative.

Bureau of Labor Statistics reports the half-decade leading up to the 1984 election was characterized by a relatively high unemployment rate, peaking in 1982 and 1983 at 9.7 and 9.6 percent respectively. In 2011 the unemployment rate was relatively high at 8.9 percent, however has persistently fallen since. The Bureau of Economic Analysis reports the average GDP growth rate change from 1979-1983 leading up to the 1984 election was 4.24 percent, whereas from 2011 to 2015 the average growth rate change was 2.1 percent. The growth rate leading up to the 2016 election increased at half the rate it was in the years preceding the 1984 election.

The economic situation today is not the same as in the 1980s. Few studies have examined current generations' perception of return on investment in attending college. The steady rise in tuition combined with overlapping perception of the political situation warrants a new examination of this market.

Methods:

An online survey was distributed using University of Maryland's Qualtrics platform to assess this generation's college students' perception of the economy in relation to their beliefs on

expected return on investment of their college degree. The survey was live for 15 days and was distributed amongst University of Maryland undergraduate students of various majors.

A sample size was calculated using Slovin's formula and confidence intervals. To have a sample size with 95 percent accuracy with a margin of error of 0.05, Slovin's formula was used to calculate a sample size necessary to measure. An article by Jeffry J. Tejada in *The Philippine Statistician* explains the proper use of Slovin's formula. Tejada explains that Slovin's formula is "...applicable only when estimating a population proportion and when the confidence coefficient is 95 percent. Moreover, it is optimal only when the unknown population proportion is believed to be close to 0.5" (Tejada 1). University of Maryland's last published census states the 2015 undergraduate population (N) was 27,443 undergraduate students. The margin of error I wish to have with my 95 percent confidence level is 5 percent. After putting these numbers into the formula I found that I needed at least 400 responses to be within my desired level.

<p><i>Slovin's Formula</i></p> $\frac{N}{1 + Ne^2}$

My survey included seven questions. To broadly assess the audience that responded, my first question asked whether they attended a Four-Year University, a Community College, a Trade School, or Other/Not a Student. A great thing about the Qualtrics platform is that a researcher can identify the location where the respondent filled out the response. With that I could monitor responses of students in and around the University of Maryland-College Park area. The second question asked the respondent to classify their perception of where we (the United States) are economically – depression, recession, expansion, or peak. The objective of this question is to assess my subjects' knowledge and awareness of our general economy. A person's expectations for the economy drastically changes his or hers consumption and investment. Therefore, it is important to assess the perceived economic climate of my peers. Consumption

includes everything from every day purchases like food or gasoline and extends to investments like spending money on college tuition or loans. Naturally, the following question asks them if college tuition is worth the price of the investment. My final question presented a hypothetical situation in which the respondent is prompted to input financial patterns in saving and spending when there is an increase in their disposable income.

The hypothesis tested was those who believe our economy is doing well generally feel the cost of tuition is a worthwhile investment while those who believe there exists poor economic conditions will not perceive the cost as worthwhile and would rather save their money. Additionally, those who invested in acquiring human capital will save more of their disposable income than those who chose not to invest in the acquisition. In order to reach out to my peers I distributed the survey among the University of Maryland Class of 2018, University of Maryland Class of 2019, and University of Maryland Class of 2020 Facebook groups. The total members of these groups equal 24,691. I received a total of 414 responses.

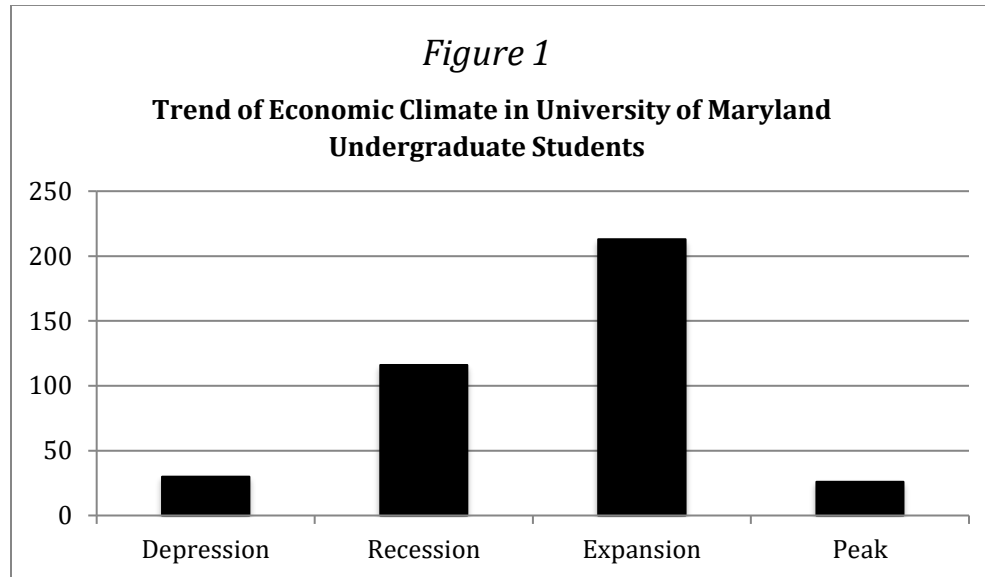
Discussion:

After analyzing the data through the Qualtrics platform, there seems to be a significant trend of optimism in the University of Maryland undergraduate population in both the current economic status and their current investment in the acquisition of human capital. A majority of respondents believe current economic conditions are good, and a majority of those who believe we are currently under economic distress also believe that we are closing the recessionary gap.

As previously described, one of the purposes of my survey was to assess the economic climate in the undergraduate student body at the University of Maryland. Figure 1 displays a breakdown of where on the economic business cycle (from depression to peak) the sample of students believes the United States is currently situated. Much like opinions on the state of our

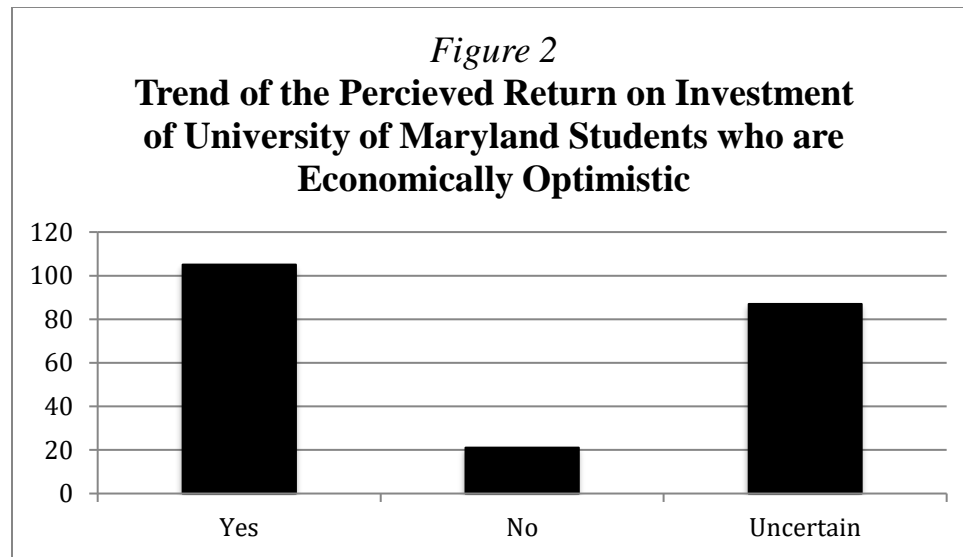
government, opinions on the current economic impressions are complex and vary drastically from person to person. However, a person can be either optimistic about our economy or pessimistic about it, with a grey area in between for those undecided.

Analysis:



The Economically Optimistic:

As shown in Figure 1, 56 percent of students surveyed believe that we are currently in the expansion phase of the business cycle. For the purposes of this study I am labeling this group “economically optimistic.” According to the economic definition of expansion, this economically optimistic majority believes that our economy is in good condition, and that our economic resources and GDP are increasing. There were 239 students who answered that our economy is either in expansion or at its peak. These responses indicate that they believe that the economy is growing. However, despite this group’s optimism not all of these students are confident in the return on the investment of obtaining their college degree. In fact, a large majority of this group is rather uncertain about the investment.



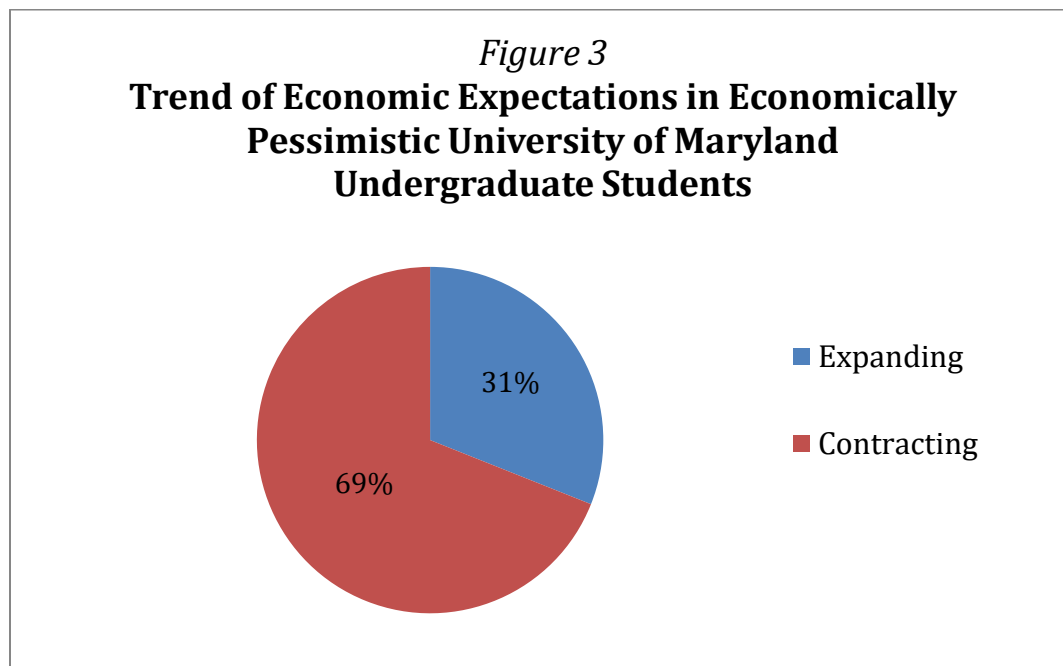
According to Figure 2, while 49.3 percent of the economically optimistic group believe that their investment will be worthwhile, a surprisingly large 40.85 percent of this group are uncertain and only 9.86 percent do not believe their investment will be worthwhile. With the assumptions of rational behavior and investments, a rational person would like to be as certain as possible of an adequate return for investing. While uncertainty may not be inherently bad, it is generally not positive that a significant percentage of students are not certain that their hard work will be met with adequate returns. This decreased expectation of future income may very well be met with a decrease in productivity in school. Under this assumption, the economically optimistic group is split nearly 50-50 on whether their investment in obtaining a college degree is worth the investment.

The Economically Pessimistic:

Referring back to Figure 1, while a majority of students are optimistic about our current economy, 29.74 percent of students surveyed believe that we are currently in a recession and 6.92 percent believe we have hit our peak and can only go downward. For the purposes of this

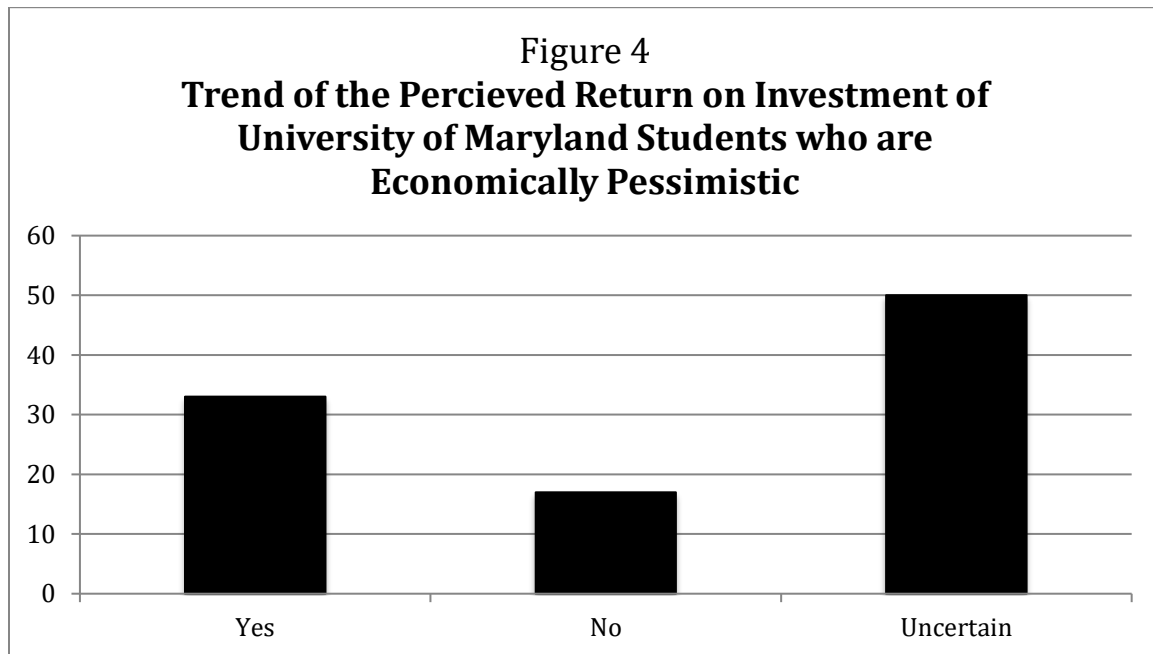
study I am going to label this 36.66 percent of respondents the “economically pessimistic.” These students do not feel that our current economic situation is ideal. They believe that we either are in a state of declining output, or have hit a wall and our rate of output is about to start declining.

As shown in *Figure 3*, of the 29 percent of surveyed students who believe that the economy is currently in a recession, a large majority of them also believe that our economy is contracting, or getting worse. It is apparent that within this subgroup of student there is a significant trend of pessimism. Following this theme, one could rationally assume that this pessimistic group would feel negatively towards the expected return of the price of attending college. However, interestingly, this group of students is not entirely pessimistic about the return.



Additionally, according to *Figure 4*, 50 percent of economically pessimistic students at the University of Maryland are uncertain whether the price they pay for the acquisition of human capital is really worth the return. Further, a combined 67 percent of the economically pessimistic

are either uncertain or do not have high expectations on the return of obtaining their college degree.

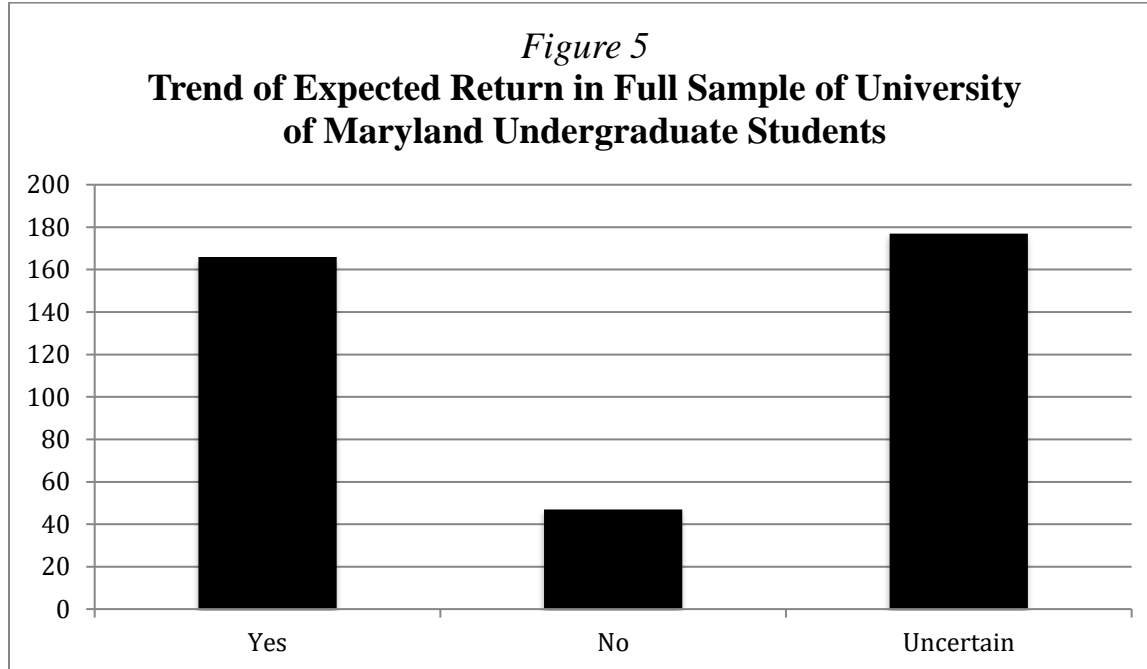


Limitations:

There are certain limitations that restrict the true answers to this evaluation. While surveys are great for collecting data, selection bias inherently comes from the fact that I distributed my survey among three different Facebook groups, all of which have several thousand members. Self-selection bias, also called voluntary bias, occurs due to the fact that the people who take the survey self-select themselves into the sample population, often those who have strong opinions regarding the topic.

Additionally, the survey asks respondents to assess our current economy. However, I did not send this survey to only economics students and did not control for college major. Therefore, I cannot conclude with certainty that everyone who responded knew the consequences or import of their responses.

Conclusion:



Despite a majority of the sample believing the United States is in good shape economically, a large number within this group cannot say for certain that their pursuit of higher education will leave them with more benefits than costs. Further, *Figure 5* depicts the total responses categorized by the respondents' opinion on whether they think their college degree will be worth the investment. Between the entire sample as a whole, 57.44 percent of respondents either don't believe their college degree will be worth the investment or are uncertain. The power of incentives draws out productivity, and if the incentive is stripped away the productivity naturally diminishes. Ultimately, this raises the question – what kind of policy can be implemented to raise the incentives in college investment?

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