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TEACHING ECONOMICS OF RELIGION: A MICROECONOMICS APPROACH

David Aske, University of Northern Colorado

ABSTRACT

The academic interest in religion is evident by the growing number of academic programs and courses designed around religious studies. While traditionally religious studies programs and course were found in anthropology and sociology, they have now found their way into the other social sciences. The Politics of Religion and Geography of Religion courses are becoming increasingly popular. Perhaps not as common, but definitely of growing interest is the Economics of Religion.

This paper is an overview of how the author developed and implemented an Economics of Religion course over the past two years. Admittedly influenced by an academic background in Industrial Organization, the perspective of teaching the economics and religion comes from a microeconomic approach. The areas that will be discussed include; producing religion from a theory of the firm perspective and consuming religion from a theory of the consumer perspective. Various course activities, for example, how to observe the production of religion, will also be discussed.

THE RETURNS TO EDUCATION: LESSONS FROM THE PAST FIVE DECADES

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ABSTRACT

The current and future state of education in the United States has been a topic of much debate. U.S. students often do not do well when compared to students from abroad, state funding for higher education has decreased, distance education has changed the educational landscape, and cumulative debt from students is in excess of $1 trillion. The question whether college is "worth it" has been raised repeatedly over time with differing answers. In this study, I use data from the March Supplement to the Current Population Survey (CPS) in order to estimate the rate of return to education over the past five decades. I find that there has been a slight increase in the rate of return to schooling from 1962 to 2012. However, the increase in the rate of return is likely insufficient to compensate for the increase in college tuition during that time period. Hence, individuals who attained their schooling at the beginning of the time period covered in this study have likely benefitted more from their education in financial terms than their peers later on. Given the often formally stated, sometimes implied preference of employers for applicants with a completed Bachelor's degree, it seems that further cuts to higher education funding should be avoided in order to keep a college education affordable, especially if one believes that there are benefits to society to having an educated population and labor force.

INTRODUCTION

There have been many discussions about the current state and the future of education recently. Students in the United States K-12 system do not perform well in international comparisons, state funding for higher education has been cut (in real and sometimes nominal terms), and student loan debt now exceeds $1 trillion (which is more than the U.S. population's total credit card debt). The question whether college is "worth it" (from both a private and social perspective) has been studied extensively over the last few decades. In 1976, for example, Richard Freeman argued that the so-called returns to education had been declining in the 1970s and that further investment in college education will, at most, yield small marginal benefits. In the following two to three decades, however, the exact opposite happened: The college wage premium increased to historical highs. Juhn, Murphy, and Pierce (1993) identified an increase in the return to skill other than education and experience from the early 1960s to the late 1980s. More recently, doubts have been raised about the long-held belief that a college degree is *the* approach for individuals to get a "good" job with its material and non-material rewards. In addition to challenges to the actual value added of a college education by publications such as Arum and Roksa (2010), much has been written about the increase in student debt which now exceeds $1 trillion. While the former has recently been called into question (e.g., by Roger,

2013), the latter is clearly a question of financial potential and stability of recent college graduates.

DATA AND ESTIMATION

In this study, I use historical data from the Annual Social and Economic Supplement (March) Supplement to the Current Population Survey (CPS) to examine the rate of return to education from 1962 to 2012. The five decades covered in this paper have seen substantial changes in labor force participation rates (LFPR) of several groups of individuals. Of particular importance for this project in which I compare the returns to education over (fairly long periods of) time is the increase in the LFPR of women. At the beginning of my data set, the LFPR of women aged 16 or older was around 40 percent. By the end of the time period covered by the data, that figure had increased to approximately 60 percent.[1] In order to make the results as comparable as possible over time, I restrict the data to male individuals. I further restrict the data set to individuals who are employed and range in age from age 16 to 64.

I use that data set to carry out the following Ordinary Least Squares (OLS) regression:

$$(\text{log hourly wage})_{it} = \alpha + \beta_1(\text{years of education})_{it} + \beta_2(\text{experience})_{it} + \beta_3(\text{experience squared})_{it} + \beta_4(\text{African-American})_{it} + \beta_5(\text{other non-white})_{it} + \beta_6(\text{occupation})_{it} + \varepsilon_{it}$$

The dependent variable is the log hourly wage which is constructed as follows: Annual income from wage and salary is divided by an individual's annual hours worked (which is the product of weeks worked and hours worked per week in the previous year). I then take the natural logarithm of the resulting variable in order to account for the long right tail in a typically right-skewed wage distribution. Doing so will also create a coefficient estimate in the regressions that is a percentage rather than a dollar amount. Hence, it can be interpreted as a rate of return to an additional year of education.

The "years of education" variable is an approximation that is constructed from the raw CPS data since educational achievement is not always reported by single year. For example, from 1992 on, if an individual indicated that his/her highest grade completed was either 7^{th} or 8^{th} grade, I assigned a value of 7.5 years of completed education to that individual. Similarly, an individual who indicated that he/she completed his/her education with a Bachelor's degree, I assign a value of 16 for the "years of education" variable (12 years of high school plus 4 years of college).

As control variables, I include (potential) job market experience (constructed as the minimum of an individual's age minus 16 and an individual's age minus years of schooling minus 6) and its square (since job market experience has often been found to increase earnings, but at a decreasing rate). I also include as regressors dummy variables for Africa-American and other non-white individuals. (Information on race is more detailed in later years of the CPS, but these three distinct categories are the most detailed breakdown by race that is available in all the years included in this study.) The regressions also include dummy variables to control for

individuals' occupations. The α is the constant term, the β's are coefficients to be estimated, ε_{it} is the usual i.i.d. error term, and *i* and *t* index individuals and years, respectively.

RESULTS

The following table shows the coefficient estimates for the "years of education" variable from the regression described above. The estimates represent the estimated rate of return of one additional year of formal education (primary, secondary, and post-secondary).

Table 1
COEFFICIENT ESTIMATES OF "YEARS OF EDUCATION" VARIABLE (1962 – 2012)[2]

Year	Coefficient estimate (as percentage)	Year	Coefficient estimate	Year	Coefficient estimate (as percentage)
1962	4.2	1979	5	1996	5.9
1963	See footnote 2	1980	4	1997	5.4
1964	4.6	1981	4	1998	6.0
1965	4.4	1982	5	1999	5.8
1966	5.3	1983	5	2000	5.2
1967	5.3	1984	5	2001	5.4
1968	4.9	1985	5	2002	5.8
1969	5.1	1986	6	2003	5.9
1970	4.7	1987	5	2004	5.3
1971	4.6	1988	5	2005	5.6
1972	4.6	1989	5	2006	5.4
1973	4.4	1990	5	2007	5,6
1974	4.7	1991	5	2008	5.8
1975	4.0	1992	5	2009	5.8
1976	5.3	1993	5	2010	6.0
1977	5.3	1994	See footnote 2	2011	5.3
1978	5.2	1995	5	2012	5.9

All the estimates are highly statistically significant which is no surprise given the sample size that ranges from 13,213 to 45,422. The R-squareds for the regressions described above range from 0.28 to 0.40 for the different years. As can be seen in the table, the estimates for the rate of return to one additional year of education do not vary widely over time with a minimum value of 4.0 (in 1975) and a maximum value of 6.0 (in 1986, 1998, and 2010).[3] At the same time, given that the estimates reflect the estimated rate of return to *one* additional year of schooling, a difference of a percentage point or two will result in a substantial cumulative effect and deserves some consideration. In addition to the ups and downs in the rate of return over time, there seems to be a slight increase over the time period covered. In order to investigate that issue further, I estimate a time trend by regressing the reported coefficient estimates on the years. I find that there is indeed a time trend present with an estimated increase in the rate of return of 0.024 percentage points from 1962 to 2012. The estimate is highly statistically significant, i.e., it can be concluded that the rate of return to education has indeed increased somewhat over the past fifty years.

The other control variables show the results that could be expected from previous research in this area. The estimates for the "experience" variable are in the range of approximately 3 to 4 percentage points per year, but there is a mitigating effect from the "experience squared" variable whose estimates are negative, i.e., job market experience, on average, does increase an individual's earnings, but at a decreasing rate. The coefficient estimates for the dummy variables that capture individuals' race (African-American and "other non-white") are negative in the regressions, which is also consistent with prior research (and deserving of further examination, but it is not the topic of this current study).

DISCUSSION OF RESULTS

The main result from the regressions above is that there has been a moderate increase in the rate of return to schooling from the early 1960s to 2012. However, it is important to keep in mind what happened to college tuition during that time period.[4] During the last three decades covered in this study, for example, tuition has outpaced the rate of inflation by 5.1 percent at public four-year institutions. The comparable figure for private institutions is 3.5 percent (Baum and Ma, 2011). Combining those results, one is led to conclude that cohorts of students at the beginning of the time period covered have benefitted more from their education in financial terms than their peers later on. Even nowadays, there are some very tangible benefits to higher education (including the often formally stated, sometimes implied preference of employers for applicants with a completed Bachelor's degree). However, if one believes that there are benefits to society such as a more informed electorate and a more productive labor force that are above and beyond the financial benefits reaped by the individual receiving the education, it seems that public funding for higher education should be expanded at this point rather than being reduced, which has happened in many states, sometimes in real, but also in some cases in nominal terms.

FOOTNOTES

[1] www.bls.gov/mlr/1999/12/art1full.pdf

[2] Results for 1963 and 1994 are omitted since the variables that indicate an individual's educational achievement (in 1963) and employment status (in 1994) are missing in the files, thus making it impossible to obtain the estimated return to education for those years .

[3] The way in which the number of years of education was measured changed somewhat with the 1992 survey, potentially making it problematic to compare the time period before that to the later years. However, there is no noticeable break in the estimated rate of returns to education at the time.

4 The issue of financing secondary education is more complex and data are not as readily available, hence the focus of this discussion is the comparison of the financial benefits of higher education. Post-secondary education is also at the heart of the discussion about student debt since much of primary and secondary education is financed through property taxes and offered at no financial cost to students.

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ECONOMIC FACTORS PREDICTING INFLATION IN THE US, ENGLAND, FRANCE, AND GERMANY

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ABSTRACT

In this study, the authors investigated the relationship between inflation and macro-economic factors (short and long term interest rates, unemployment, GDP, and percent debt) for France, Germany, England, and the United States. Time series and autoregressive analysis procedures were used to determine, for each country, the best predictive model over a 5 year period relating inflation as the dependent variable to macro-economic factors as the independent variables. Results showed that for England and the United States, GDP and year were determining factors for inflation. In France, the determining factors were growth rate and 10-year bond rate and in Germany the factors were 10-year bond rate and inter bank rate. The models were very good in predicting inflation for the US and England. Prediction for the EU countries, France and Germany, was not as satisfactory. Inflation was least predictive for Germany.

ONLINE COURSE: DO WE REALLY UNDERSTAND IT?

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ABSTRACT

This study advances knowledge by trying to understand online courses from the behavior of users. The findings provide a baseline for future studies. Our descriptive analysis suggests that student attention is largely discounted in an online learning environment as evidenced by the much-lower-than-expected log-on minutes. Students do not seem to treat online courses as equivalent to their traditional on-site counterparts. They tend to "review for assignments". Hence, it is doubtful that students would achieve the same level of learning outcome as in an on-site course.

INTRODUCTION

Online course delivery has been gaining popularity over the past 10 to 15 years. According to Allen and Seaman (2014), in 2002, less than one-half of all higher education institutions reported online education was critical to their long-term strategy. However, in 2013, that number was at an all-time high of close to seventy percent. In the same year, the proportion of higher education students taking at least one online course is at a historical high of 33.5 percent as well. Yet, according to the same study, less than one-third of academic leaders believe that there will no longer be concerns about the relative quality of online courses although over ninety percent of those leaders believe that a majority of all higher education students will be taking at least one online course in five years' time.

The most quoted reason for the preference over online instruction, either from faculty or students, is its flexibility. Without the requirement of presenting in a classroom, flexibility indeed is a very appealing feature of online courses. Taking courses becomes a very flexible task for the current generation of students comparing to previous ones. As for higher education institutions, online delivery allows them to expand the territory of recruitment.

While most of the stakeholders in the higher education sector seem to cheer for the concept of online delivery, there are some un-ignorable prices attached to it. For instances, in his 2014 book, Deresiewicz pointed out that online delivery promotes a range of practices and behaviors that higher education ought to fight against such as passive learning, diminished attention, the displacement of reading by watching, teaching as showmanship, and the professorial star system.

While online courses become a critical component in the managing strategy of higher education institutions and gain popularity among students, there seems to be a lack of a deeper understanding of this new delivery method. In particular, as will be discussed in the following section, all of the current academic discussions and evidence are from the institutional side rather than from the students. An understanding of how students behave in an online course can provide a great inside of the effectiveness of online delivery which is the task we embark upon in this study. We attempt the study by analyzing 15 online courses with a total enrollment of 106 students. This article is organized as following: Section 2 covers literature review. Section 3 introduces our data and empirical results. Section 4 concludes.

ARE M.S. IN ECONOMICS PROGRAMS IN UNIVERSITIES THAT ALSO HAVE A PH.D. PROGRAM IN ECONOMICS DIFFERENT FROM THEIR COUNTERPARTS?

Martin Milkman, Murray State University
Riza Marjadi, Murray State University
James McCoy, Murray State University

ABSTRACT

This is the first paper that compares terminal Masters Programs in Economics from universities that have a Ph.D. program in Economics with those that do not offer Ph.D. programs in Economics. We compare these differences based on surveys in 2002 and 2012. In this paper we examine differences in general program characteristics, department faculty, admission requirements, student characteristics, financial aid, and graduation and placement rates. We find statistically significant differences in all of these categories. We also find that some of the differences and similarities have changed over time.

WHICH PRICE MOVES FIRST, CORN OR SOYBEANS?

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ABSTRACT

Corn and soybeans are the two most valuable crops to the US farmers. Farmers are always concerned with the right choice in selecting the appropriate magnitude of planted and harvested acreage between corn and soybean production. Since the total revenue of farmers depends on the actual prices and the total production amount of their products, farmers always need to project those two factors in an appropriate manner. In particular, since agricultural prices are the main factors for farmers to determine the levels of production, we need to understand the statistical linkage in between the price movements of corn and soybeans. In that sense, this paper investigates domestic integration of the price movements in between corn and soybeans by using Cointegration test and Granger-Causality test. The empirical results show that the soybean market is to a certain extent exogenous in the system than the corn market.

Keywords: Cointegration, Vector Error Correction Model (VECM), Granger-Causality, Corn, Soybeans

INTRODUCTION

One of the most important decisions in farming industry would be farmers' crop allocation and rotation decision. In particular, the most prevalent example is rotation of corn and soybeans (Michael et al, 2008). As far as farmers are concerned with maximizing economic profits, they need to compare the comparative advantages in between raising more soybeans and raising more corn in the future revenue stream. In general, famers tend to compare potential returns on raising different crops based upon prices, yields and production costs (Schnitikey,2014). Among those factors that affect relative return between corn and soybeans, expected future price movement would be the most important factor for famers to determine the future rotation schedule (Michael et al. 2008).

Are corn and soybeans independent in the price movement or does one particular price movement make more effects on the price movement of the other product? If those two markets are integrated, any price signals in one market will be transferred to the other market. Since agricultural prices are the main factors for farmers to determine the levels of production, we need to understand the statistical linkage in between the price movements of corn and soybeans. In that sense, this paper attempts to find the statistical linkage in between the two variables, corn price and soybean price. In particular, the purpose in this study is to determine the equilibrium relationship and causality between the two price variables and to provide an empirical answer to: "Which price moves first, the corn or the soybeans?" In order to see any potential interdependencies between the two variables, this paper uses two simple time series econometric methods, Vector Error Correction Model (VECM) based upon cointegrating relationship, and Granger causality tests.

THE EMPIRICAL METHODS

The empirical tests are composed of two parts: i) testing Cointegration and estimating Vector Error Correction Model (VECM) in between the two time series processes of corn, soybeans, and ii) investigating the causality relations between the two price variables.

The first empirical test is to see any cointegrating relation between corn price and soybeans prices. In a simple context, a set of variables is defined as cointegrated if a linear combination of them is stationary. If there is cointegration, the two series are bound by some relationship in the long run. A cointegrating relationship may also be seen as a long-term equilibrium between the two time series processes, since the deviations from the stable long-term relationship is simply short-run phenomenon. One of the most popular cointegration test is Johansen maximum likelihood method of cointegration. The Johansen (1992) model of cointegration is a reparameterization of a VAR model that is turned into a vector error correction model (VECM).

$$\Delta Y_t = \sum_{t=1}^{k-1} \Gamma_i \Delta Y_{t-1} + \Pi Y_{t-k} + \mu_t \qquad (1)$$

Where Y denotes a vector of prices, Γ and Π denotes the matrices of the short-run and long-run parameters. The Johansen test for cointegration is calculated by looking at the rank of the marix Π, which is interpreted as the number of cointegrating relationship among the variables. In order to determine the rank of the marix Π, this study use the trace statistics formulated by Johansen. The trace statistics are as follows:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{k} \ln(1-\lambda_i) \qquad (2)$$

Where λ are ordered eigenvalues of Π, and r is the number of cointegrating vectors under the null hypothesis. Once cointegrating relationship between the variables is found, the VECM equation (1) can be rewritten in the following form by factorizing the long-run matrix Π.

$$\Delta Y_t = \sum_{t=1}^{k-1} \Gamma_i \Delta Y_{t-1} + \alpha\beta' Y_{t-k} + \mu_t \qquad (3)$$

Where α is the speed of adjustment factor and β is the long-run coefficients of the cointegrating vectors. The lag length in the model is determined by using the Schwarz information criterion (SIC).

The second empirical test is causality test between corn price and soybeans price. In order to test the relations between the two variables, this study makes use of the simple concept of Granger-causality (Granger, 1969).

STUDENT SATISFACTION AND LEARNING USING APLIA IN PRINCIPLES OF MICROECONOMICS

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ABSTRACT

Students learning outcomes and student satisfaction are popular topics for pedagogical research, especially regarding online learning. This paper examines student performance after the introduction of Aplia as a homework management tool. Data on student performance and sentiment regarding Aplia was gathered from principles of microeconomics. A survey regarding Aplia was administered to students, and the results were correlated to student performance. Overall, student sentiment regarding Aplia was high, and results suggest that student attitudes toward Aplia did affect student performance. Generally speaking, students holding favorable views toward Aplia performed better in the class than students with unfavorable views of Aplia.

MEASURING KNOWLEDGE IN PRINCIPLES OF ECONOMICS COURSES

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ABSTRACT

Students enter introductory economics courses carrying a set of preconceived notions about the economy. These beliefs can shape their worldview and learning environment. This paper examines student factual knowledge and biases regarding key economic indicators both before and after taking introductory economics. Results indicate that students' awareness of unemployment and inflation rates are upwardly biased, while their beliefs regarding income growth are downwardly biased. If left uncorrected, these biases may hamper a student's ability to understand economic theories and models. These results can provide direction for tailoring educational approaches to more effectively engage student demographic cohorts that underperform.

IS GOVERNMENT KILLING GOD? PUBLIC WELFARE AND RELIGIOUS UNAFFILIATION IN THE UNITED STATES

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ABSTRACT

The United States has experienced a significant increase in religious unaffiliation over the past two decades. This paper measures the impact of public welfare expenditures on unaffiliation using panel data for U.S. regions over the time period 1976-2012.Welfare expenditures are shown to be an important component of an expanded version of the insecurity theory of religious affiliation proposed by Norris and Inglehart (2004) whereby greater economic and existential insecurity increases the demand for religion. We show that a significant percentage of the variation in affiliation is explained by the amount of government-sponsored welfare spending. Because churches historically provided social welfare, increased government expenditures serve as a substitute for religious charity and thereby reduce affiliation among marginal religious consumers. Specifically, a 1% increase in per capita public welfare expenditures leads to a 0.78 to 1.6 percent increase in unaffiliation after controlling for variables encompassing alternative theories of religious affiliation. In the end, the paper provides more evidence for the insecurity theory of religious affiliation.

JEL: Z12
Keywords: Religion, Public Welfare, Cultural Economics