The Long-Term Effects of Economics Coursework on College Graduates' Behaviors and Outcomes in the Labor Market[*]

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Abstract

Using survey data from over 2,000 students who attended one of four large public universities in 1976, 1986, or 1996, we investigate the relationship between taking more coursework in economics, or choosing economics as an undergraduate major, and a wide range of labor market outcomes. If taking economics courses or majoring in economics are treated as exogenous, we find significant positive effects on several outcomes – including earnings, hours worked, self-employment – and significant negative effects on completing advanced degrees. However, treating the decisions to take economics courses or to major in economics as endogenous, we conclude that these differences are not caused by studying economics, but due to underlying differences between students who chose to take more economics courses or major in economics and other students.

I. Introduction

Black, Sanders, and Taylor (2003) found that economics majors earn almost 20 percent more than graduates in other social science majors, and about 10 percent more than those who major in business administration. In fields with large numbers of graduates, they find that only engineering majors earn more than economics majors. Although there are obviously many factors involved in this outcome, it raises one obvious question: Why would a college graduate trained in economics earn more than most college graduates who were not trained in economics? Since Keynes, economists have been fond of describing economics as, fundamentally, a way of thinking and addressing questions and problems. So it is plausible that the training provided in an economics major makes people more productive and valuable to employers. Of course it might also be the case that people who choose to study economics are generally smarter, more motivated, or have other characteristics that lead them to earn more money than graduates from most other majors.

There is very little previous research on how economics training affects people's adult decisions as consumers, workers, voters (for a review, see Watts 2006). Christiansen, Joensen, and Rangvid (2005) find that people trained in economics are more likely to invest in stocks, and invest more when they have more training. Bernheim and Garrett (1996 and 2003) find that financial education programs offered by employers increase employee's rates of saving and participation in savings plans. Bernheim, Garrett, and Maki (1997) found that students who attended high schools in states with mandated coursework on economic and financial education received more education in these areas than students in other states, and reported saving more and higher levels of net worth after graduation. But some evidence is mixed. For example, unlike Black, Sanders, and Taylor (2003), Hamermesh and Donald (2004) found that the choice

of a college major has only a small effect on earnings. None of the earlier studies have attempted to determine whether observed differences are attributable to selection bias arising from individuals' choices to take more or less economic or financial training, or if they develop because of what is learned in the training.

In this paper we investigate the relationships between taking college coursework in economics or majoring in economics with labor market behaviors and outcomes that occur after graduation. The specific labor market outcomes we consider are: hours worked per week, working for commission, history of layoffs, annual salary, self-employment, and highest degree obtained (a training decision that clearly affects later labor market outcomes and experiences). Although most of the earlier research on labor market outcomes has focused on differences in earnings, there are clear reasons to believe that training in economics could also affect the other labor market outcomes we consider. For example, if economics training makes people more productive as employees, they may be less likely to face layoffs. Hamermesh and Donald (2004) find that higher earnings by economics majors are partially attributable to working more hours than other majors. Successful self-employment requires a general set of skills, including the ability to solve problems. Therefore, if economics provides a useful framework and training to solve practical problems, people with more training in economics may be more likely to start and run their own business.[1] Another reason that has been offered for taking an undergraduate economics degree is that it provides excellent preparation for graduate school. Black, Sanders, and Taylor (2003) find that students who complete a bachelors degree in economics are more likely to pursue a higher degree, and Nieswiadomy (1998 and 2006) reports that economics majors do especially well, compared to other majors, on the LSAT entrance exam for law school.

[1] On the other hand, if people with more training in economics earn higher wages and salaries, the opportunity cost of self-employment is higher, too. Therefore, the net effect of economics training on self-employment is ambiguous.

We investigate the relationship between studying economics and this wide range of labor market outcomes and behaviors from two perspectives. First, do the labor market outcomes of those who study, or major in, economics differ from the labor market outcomes of those who do not? Second, when there are differences between these groups, do those differences develop as a result of what the students who study economics learn in that coursework, or because of preexisting differences between those who choose to study economics and those who do not? The first question is relatively simply to answer given the proper data. We use standard regression techniques to identify the effect of taking economics courses, or majoring in economics, holding other factors constant. Determining causation is, of course, a far more difficult task. To identify causal effects we use instrumental variables methods and treat the decision to take economics courses, or the decision to major in economics, as endogenous.

We compiled a unique data set to address these two questions. We mailed long, detailed surveys to over 25,000 alumni who attended four public universities – Florida Atlantic, Nebraska-Lincoln, North Carolina, and Purdue – in 1976, 1986, or 1996.[2] Our sample design features three groups from each of the three time cohorts: economics majors, business majors, and a random sample of all other majors. Our response rate was higher than expected, but still only nine percent, for a final sample of almost 2,200 respondents. We also collected detailed transcript data for virtually all of the survey respondents and for the large majority of those who were mailed surveys, even if they did not return the survey.

The first question we investigated is whether or not those who study economics, and those who major in economics, have different labor market outcomes from those who did not take economics at all, or who did not major in economics. We model these outcomes using

[2] Hamermesh and Donald (2004) point out that most efforts to investigate the link between major choice and earnings use data collected only a few years after graduation from college. Some of the people in our sample graduated from college more than 20 years before completing our survey.

probit regressions, controlling for when the person was in school, what school they attended, gender, race, family status, and their cumulative college grade point average (GPA). Of course, non-response bias can be a serious problem when analyzing survey data (e.g., see Hamermesh and Donald 2004). We addressed the potential bias in two ways. First we correct for non-random non-response using propensity score methods (Rosenbaum and Rubin 1983). We implement the approach via weighted least squares, using as weights the inverse of the propensity score (the probability of survey response) (Horvitz and Thompson 1952, Little and Rubin 1987, Woolridge 2002). Second, we use a control function approach, which features a selectivity bias correction term (Heckman and Robb 1985), approximated as a polynomial in the estimated propensity score (Newey et al 1990, Vella 1998). With both of these procedures our results are unchanged.

These results and procedures are described in greater detail in later sections, but to provide a brief overview and highlights, we find that taking economics courses is positively related to the likelihood that an individual works over 50 hours a week, earns more than $100,000 a year,[3] works for commission, and runs their own business. Replacing the variable for number of economics courses completed with a dummy variable to indicate choosing economics as an undergraduate major, we find those who majored in economics were about 8 percent more likely to earn more than $100,000 a year. The economics major were also more likely to run their own business or work for commission. In short, studying economics or majoring in economics is correlated with several important labor market outcomes, and these findings are robust to our corrections for potential survey response bias.

Black, Sanders, and Taylor (2003) note that self selection might be one explanation for the correlation between majoring in economics and higher earnings, but do not believe it would

[3] Positive significant effects were also found using other earnings thresholds.

explain all of their results. Hamermesh and Donald (2004) admit that they ignore the potential endogeneity of economics training, and focus instead on survey non-response bias. We directly address the issue of self-selection by modeling the decision to take economics courses, or the decision to major in economics, using instrumental variables (IV) methods. We use a variety of instruments, all of which are designed to reflect relative performance in a student's first economics course. Our results are not sensitive to different specifications of the relative performance measure.

The IV estimates show that taking economics courses or majoring in economics does not have a statistically significant effect on any of the labor market outcomes we investigate. In other words, to the extent that our instruments are effective, the differences in labor market outcomes we find for those who take economics coursework or major in economics are not caused by studying economics, but because of some underlying trait or traits that make students who chose to take economics courses or major in economics different from other students

II. The Data and Descriptive Statistics

Our primary source of data is responses to a survey mailed to former students from the four public universities named earlier, who attended the schools in 1976, 1986 or 1996. For each of the annual cohorts, the sample included up to 1,000 students from each of three different groups at each of the four schools. The three groups were based on students' final major, which we classified as economics, business, or general (meaning anything other than economics and business majors). Business majors include all students with majors except economics originating in business schools. Whenever a group of majors at a school for a given year was larger than 1,000 students, a random sample of 1,000 students was drawn. That was usually the case for the

general majors, and often the case for business majors. For all of the economics cohorts at all four universities the number of majors was less than 1,000, so surveys were mailed to all of the economics majors.[4]

From the 25,292 surveys mailed, 1,313 were returned because of invalid addresses. We received 2,165 completed surveys, for an overall response rate of 9.0% (excluding surveys returned because of bad addresses). The response rate by school ranged from 5.8% to 11.4%; the response rate for economics majors was 13.1%, but about 8.5% for business and general majors. The response rate for the 1996 cohort was 10.0%, for the 1986 cohort 8.3%, and for the 1976 cohort 8.8%.

The survey included questions on graduates' impressions about their coursework in economics and other fields, general questions about their background, and many specific questions about their labor market experiences, financial decisions, and voting behavior and other political activities after leaving school.

In addition to the survey data, transcript data were obtained from the registrars offices at the four universities. That provided basic demographic information including gender and race, as well as information on students' overall GPA, semester GPAs, economics courses taken, and grades in economics courses. The transcript information was relatively easy to obtain for the vast majority of survey recipients at all four universities for the 1986 and 1996 cohorts. For the 1976 cohort, however, transcript information was only available in electronic formats at two institutions. At the other two schools we attempted to collect transcript information from copies of printed records for every business and general major who returned a survey and 100 additional transcripts, chosen at random, from non-respondents. We were successful in obtaining transcript

[4] For more information on the survey see Allgood et al. (2004).

information for all economics majors. For the overall sample, transcript information was available for 23,127 former students, including all but six of the survey respondents.

Unfortunately, the four schools record somewhat different data on transcripts. For example, not all schools provide scores on college entrance exams, such as the SAT, and the schools that do not provide entrance exam scores on transcripts also provide very little data for students prior to matriculation (such as high school GPA). Consequently, our pooled data analysis could not use information for any period predating a student's enrollment at these four universities.

Table 1 lists and describes all of the variables used in our estimations. Five variables were used as dependent variables in our regression analysis, dealing with labor supply, salary, form of compensation (commission), self-employment, and educational attainment. The explanatory variables include binary variables used to indicate schools, yearly cohorts, and the three groups of majors. NetEconCourses is the number of economics courses on a student's transcript, not counting repeated courses but counting courses regardless of how well or poorly the student performed in the class. In the variables indicating race/ethnicity and family status, some data were missing data. To avoid deleting these observations, missing values were replaced with a value of zero, and then an indicator variable was added for each independent variable with missing values, to show when the independent variable was missing. For brevity, the coefficients of the indicator variables are not listed in our tables.

Finally, relative measures of a student's success in their first economics courses at the four universities are included, and then used to help predict the choice of economics as a major, as explained in the following section. Relgrade1 is the ratio of a student's grade in his or her first economics course taken at the home institution (or the average GPA in economics courses,

if more than one economics courses were taken in that semester) to their cumulative GPA at the end of that semester. In other words, this variable measures how well students performed in their initial economics courses relative to the grades they had received in all other subjects. Relgrade2 is the ratio of the student's grade in their first economics course at the home institution to the average grade received in that course by all of students in our database from the same yearly cohort group and university. Relgrade3 is the same as Relgrade2, but restricts the grades in economics courses to principles courses, by eliminating pre-principles courses or the rare cases in which some other economics course was taken before or without taking a principles course.

Table 2 provides descriptive statistics for our full sample and two subsamples. Sample I includes all individuals to whom we sent surveys and for whom we obtained transcript data. Sample II includes only those who returned a survey. Sample III deletes from Sample II those who took no economic courses. This sample, which only includes respondents who received a grade in at least one economics course, is used in our IV analysis. Missing grade values result in the loss of 10 observations in constructing Sample II, and one additional student in Sample III.

In Sample I, 22 percent of the former students were enrolled in 1976, while 39 percent were enrolled in 1986 and also in 1996. Business and general majors each constituted 45 percent of the sample, with the remaining 10 percent majoring in economics. The alumni were 45 percent female and 6 percent Black. On average, students took 2.6 economics courses and had a cumulative GPA of 2.97 (on a 4.0 scale).

If non-response and the decision to enroll in at least one economics course were random, we would expect response rates and descriptive statistics for the three samples to be essentially the same. For some variables, however, Sample I results differ from Samples II and III. Specifically, survey respondents were slightly more likely to be economics majors, White, and

have slightly higher GPAs. Response rates were higher among 1976 cohort members, lower for the 1986 cohort, and lower among FAU and UNL alumni. Sample III, which includes only survey respondents with transcripts that show positive values for NetEconCourses (N=1,637) is also slightly different from Sample II, which includes survey respondents with zero economics courses (N=2,159). Not surprisingly, Sample III includes a higher proportion of economics majors and a higher average number of economics courses taken (more than 4) than Sample II. There are also fewer females (39 percent in Sample III, versus 45 percent in Sample II).

To analyze the response behavior and impact of sample selection more formally, we estimated probit models that are reported in the appendix (Table A-1). These estimates reflect the differences just discussed, in terms of response differences across universities, annual cohorts, gender, race, and GPA. We address the potential for sample selection bias due to non-random non-response in a later section. First, however, we discuss Sample III in more detail, because most of the estimates we report use this sample. We also do some sensitivity analyses to compare Sample III and Sample II.

All three annual cohorts are well represented in Sample III, although the 1996 cohort has the highest representation. UNL and Purdue alumni each represent about one-fourth of Sample III, FAU about 9 percent, with UNC graduates comprising the remaining and largest group. Half of the students in Sample III are business majors, with about 30 percent general majors and 16 percent economics majors. For this sample of students who took at least one economics course, the average number of economics courses taken was about four, largely reflecting degree requirements for economics and business majors. Females comprise about 40 percent of the sample, with about 7 percent from minority groups. Almost three-fourths of the sample were married or living with somebody by the time they completed our survey, and reported having one

child, on average. The respondents' cumulative GPA for these students, at the end of the last term shown on their transcripts, averaged 3.09.

The lower panel of Table 2 presents descriptive statistics for the six labor market outcome variables for Samples II and III. Because the number of survey responses for each of these variables differs, regressions using these dependent variables have the number of observations that are shown here. Almost 45 percent of Sample III works more than 50 hours a week; about two in five are paid at least in part on commission; and about a fourth reports earning an annual salary of more than $100,000. More than one-quarter of the sample reported at least some current self-employment activity. About 40 percent of the sample earned more than a bachelors degree.

III. Regression Results

Before assessing the importance of sample selectivity, we first report estimates of models relating the different labor market outcomes to economics training, which assume the included controls adequately deal with possible selection issues. Table 3 presents probit regressions for our six labor market outcomes, with NetEconCourses as one of the explanatory variables. Table 4 presents the same set of regressions but replaces NetEconCourses with the dummy variable Economics, indicating students who majored in economics. To repeat, in these estimations both of these variables are, for now, treated as exogenous explanatory variables. In these equations we also control for when the person was in school, what school they attended, gender, race, family status, and their cumulative college GPA. The tables show the marginal effects at the variable means, with the standard errors below.

Treating NetEconCourses as exogenous, it has a positive and statistically different effect on the probability of working more than 50 hours, receiving a commission, earning more than $100,000, and being Self-Employed. It does not have a significant effect on the likelihood of having ever been laid off, and has a negative effect on post-graduate education. The marginal effects of taking economics courses on these labor market outcomes are not large, but neither are they trivial. The average student in Sample III, who had taken at least one course in economics, on average completed about 4 economics courses. Such a student is about 7 percent more likely to work more than 50 hours a week and 3 percent more likely to be self employed (full or part time). The same student has about a 6 percent higher chance of earning more than $100,000 a year, and a 12 percent higher chance of working for commission. The student is 5 percent less likely to hold more than a bachelors degree.

In Table 4 NetEconCourses is replaced with the binary variable indicating economics majors (Economics). Treating Economics as an exogenous variable, it has a positive and statistically significant effect on Salary>$100,000, working for commission, and self-employment, but the effects on the other outcomes are not significant. Once again the size effects are neither large nor trivial: Economics majors have an 8 percent higher chance of earning a salary greater than $100,000, a 6 percent higher chance of self employment, and are 7 percent more likely to have worked for commission.

But as noted earlier, these estimated may be the result of non-ignorable non-response bias.[5] Although differences between the respondents included and excluded from our sample are to some extent captured by the difference in observed characteristics, their inclusion as linear controls in the regression may not adequately capture their impact on these outcomes, if the

[5] Hamermesh and Donald (2004) address the problem using an instrumental variable approach with a measure of "affinity" (alumni association membership) serving as instrumental variable. We explored a similar approach but were unable to obtain the necessary data.

linear controls are too restrictive. Moreover, individuals in the different groups in our sample may also differ in terms of unobserved traits. Therefore, we now analyze the sensitivity of our estimates using two different approaches to control for possible non-response bias.[6] First we explored correcting for non-random non-response using propensity score methods (Rosenbaum and Rubin 1983). Specifically, we used the parameter estimates in Table A-1 to estimate for each individual the probability of being included in the sample (the propensity score). The propensity score estimates were then used to form weights in weighted least squares regressions (Horvitz and Thompson 1952, Little and Rubin 1987, Woolridge 2002). The weights are defined as P(I=1)/P(I=1|X), where P(I=1) represents the proportion of students in Sample I who were included in our analysis sample of survey respondents, while P(I=1|X) is the propensity score for an individual with observed characteristics X, where the latter is estimated using the probit model estimates in Table A-1.

Under certain conditions, the use of these weights corrects the distribution of other variables so that the distributions of all variables become representative of the population of all alumni. In particular, the approach relies on a conditional independence assumption in which, conditional on a set of variables, being in the sample of respondents can be treated as random (independent of the values of all other variables). Estimates of the weighted least squares version of the specifications in Tables 3 and 4 were very similar and not significantly different from the unweighted linear probability model estimates.

Our second method for correcting for sample selection bias is a control function approach. This involves the inclusion in the regression of a selectivity bias correction term (Heckman and Robb 1985), approximated by a polynomial in the estimated propensity score

[6] The sensitivity analysis we report is based on linear probability model specification, rather than non-linear probit models that we also estimated, which yielded estimates that were virtually identical to those reported in Tables 3 and 4. The probit estimates are available from the authors on request.

(Newey et al. 1990, Vella 1998). Adding a linear, quadratic, or cubic polynomial in the propensity score did not quantitatively or qualitatively alter the estimates. Therefore, in the next and final section of results, our estimations use models that ignore non-randomness due to selection bias in survey response patterns. [7]

IV. Instrumental Variable Estimates

As discussed in section II, two of our key explanatory variables – majoring in economics and the number of economics courses taken – are likely to be endogenous with respect to the labor market outcomes we are investigating. Earlier studies on the effects of studying economics on earnings or other labor market outcomes have ignored the issue of endogeneity (see Christiansen, Joensen, and Rangvid 2005; Black, Sanders, and Tayor 2003; Hamermesh and Donald 2004). We use instrumental variable methods to address the potential endogeneity of the variables NetEconCourses and Economics. [8]

Our identification strategy requires a variable that is correlated with the number of economics courses taken and with the choice of economics as major, but is not directly related to the labor market outcomes we use. An important determinant in the decision to major in economics or to take additional economics courses is the student's relative performance in the first economics course taken. From the perspective of the student, this variable contains a significant random component beyond the stochastic element in the student's test/grade performance in the course, because it depends on the quality of the instructor and several other course characteristics, including course enrollment and class size, or the use and quality of

[7] Estimates obtained with both sample selection correction methods are available on request from the authors.
[8] To estimate the model relating labor market outcomes to the number of economics courses, we used the Stata routine IVProbit, while the model relating outcomes to economics major was estimated as bivariate probit (biprobit).

teaching assistants. These factors are likely to vary over time and across universities, and across course sections at the same university in the same semester or quarter.

We exploit this random component while directly controlling for students' overall performance (ability) as measured by the cumulative GPA, using the three measures of an individual student's relative performance in their first economics course that were discussed earlier and are listed in Table 1 as Relgrade1, Relgrade2, and Relgrade3. Because our results are not sensitive to the specific instrument choice, we report first-step estimates in the appendix (Tables A-2 and A-3) using only Relgrade1. First-step estimates are provided in the appendix (Tables A-2 and A-3).

As reported in Tables 5 and 6, when economics major and number of economics courses are treated as endogenous, neither variable has a statistically significant effect on labor market outcomes. Our instruments may not be strong enough for precisely estimating the true causal effect of, but the standard errors in our NetEconCourses regressions give us more confidence in these estimates. In general, then, our results suggest that differences in some unmeasured characteristic(s) of individuals who choose to study economics and those who do not lead to the observed effects on labor market outcomes.

There are, however, several possible reasons for why our IV estimates may not be comparable to our estimates for the models that treat economic background as exogenous. First, our IV estimates are based on sample III, which excludes all individuals who took no economics courses at all. Once again treating economics coursework and majors as exogenous, estimates for NetEconCourses and Economics obtained using Sample II instead of Sample III are shown in Table 7, with the marginal effects of the other control variables omitted for brevity. For convenience, estimates of these marginal effects from Tables 4 and 5 are reproduced in Table 7.

This shows that, while the use of the larger sample leads to smaller standard errors and larger z-scores, both samples produce very similar coefficient estimates. Consequently, we do not find evidence that our IV estimates are sensitive to restricting the sample to students who took at least one economics course. [9]

Second, it is possible that the effect of NetEconCourses on labor market outcomes is nonlinear. Table 8 provides estimates of our exogenous model with a quadratic term included. Here again the marginal effects for the control variables are omitted, and the marginal effect of NetEconCourses from Table 4 is reproduced for convenience. For working on commission, the coefficients suggest a maximum effect at about 8 courses, representing a 33 percent increase in the likelihood of working for commissions. For having ever been laid off, taking 5 courses increases the likelihood to 5%, but then decreases. For the effects on schooling beyond a bachelors degree, the minimum probability is at 6 courses, which makes a graduate 9 percent less likely to have earned an advanced degree.

For regressions with Economics as an explanatory variable, the excluded group combines business majors with all other majors. Business majors typically take several economics courses, so our results in Tables 4 and 6 may simply be an artifact of comparing economics majors to other students who have taken several economic courses. If we estimate our model by including a dummy variable for both Economics and Business, the omitted group is the General major. Table 9 presents the probit results for these regressions, with other explanatory variables not reported, for brevity. The marginal effect of being an Economics major on the likelihood of Salary>$100,000 is 8.6 percent when the comparison group is Business and General. If we re-estimate the regression and include the variables Economics *and* Business, the marginal effect of

[9] This is consistent with our earlier finding that sample selectivity due to survey non-reponse patterns across Samples II and III did not affect our estimates. .

Economics (compared to General majors) is twice as large – with a 17 percent higher probability of earnings more than $100,000. By comparison, the effect for the Business major is an 11 percent increase in the likelihood of earning more than $100,000. With this specification, Economics is now statistically different from zero for all outcomes except the likelihood of layoff or pursuing an advanced degree, and the effects are several times larger than in the previous estimates.

The problem, of course, is that decisions to major in either Business or Economics are endogenous, and we need an instrument for estimating the decision to major in business. We have not yet identified a variable that allows us to instrument the choice of a business major, so we do not know if these variables would still be significant after IV estimates. Combining Business and General majors as a single omitted group does, however, clearly affect the appropriate interpretation of the estimated effects.

Our regressions contain a number of other interesting variables, and in general the values of these variables do not change greatly across our specifications. Not surprisingly, a higher GPA increases the likelihood of a higher salary and the likelihood of pursing more education, but decreases the likelihood of having been laid off. A higher GPA is associated with a lower probability of being self-employed, which may simply reflect the fact that those with higher GPAs have a higher opportunity cost of running their own business due to better job offers and higher salaries. GPA is not statistically related to working more than 50 hours a week.

As we would expect, the student's school and the cohort had impacts on labor market outcomes. The University of North Carolina is the omitted category for our school dummy variables, and the 1996 cohort is the omitted category for the cohort dummies. The 1976 and the 1986 cohorts are more likely than the 1996 cohort to earn more than $100,000, to have been laid

off, and to have run their own business. These effects almost certainly reflect the longer work experience of the older cohorts. The annual cohort has no effect on hours worked. Alumni from UNL are 14 percent less likely to work more than 50 hours, and alumni from UNL and Purdue are less likely to earn more than $100,000, which may be related to geographic differences in incomes, housing prices, and other cost of living issues. There is no significant school effect on the likelihood of working for commission. Alumni from FAU are more likely to have been laid off, but also more likely to engage in some self employment. Former students from UNC are most likely to have earned more than a bachelor's degree.

There are strong gender effects, which is typical when looking at labor market outcomes. Females are 25 to 30% percent less likely to work more than 50 hours.[10] They are also less likely to earn a higher salary, work for commission, and to have been laid off. The results do not indicate a clear trend for whether woman or more or less likely to have run their own business or earned an advanced degree. Ethnicity effects are not as large; and interestingly, race is positively correlated with earning more than $100,000.

The last set of variables reflects cohabitation status and the number of children. Those married or living with somebody are more likely to earn a higher salary and less likely to have been laid off, which is a common finding in labor market studies. Some would argue this is an outcome variable. Similarly, those with more children earn more, are more likely to work for commission, and less likely to have been laid off. Having more children is also associated with a greater likelihood of self-employment.

[10] Our data contain only 7 individuals who work zero hours.

V. Conclusions

Our results generally support past research on the correlation between studying economics and labor market outcomes. Specifically, we find that those taking more economics courses in college are more likely to work in excess of 50 hours a week and more likely to earn in excess of $100,000 per year. We offer several new results, too, including findings that more economics training is positively related to self-employment and working for commission. The effect of majoring in economics on labor market outcomes is sensitive to how the comparison group is defined. If the comparison group includes business majors, majoring in economics has only a small marginal effect on earnings and the chance of being laid off. If the comparison group excludes business majors the marginal effects are larger, and significant across more labor market outcomes.

When we control for the endogeneity of majoring in economics, however, the marginal effect of studying economics are not statistically different from zero. While our attempts to model the decision of taking economics courses or majoring in economics has its limitations, we find evidence that the observed relationships between studying economics and labor market outcomes reflects selection bias. Our major conclusion is that unobserved traits of individuals who choose to take economics or not are responsible for the correlations found in the data.

While we believe this work is an important step towards understanding the labor market effects of students' choice of major or coursework, particularly in economics, we certainly recognize that there is room for improvement in these estimations. Our efforts to instrument the choice of how many economics courses to take requires us to exclude students who take no economics courses at all, and obviously we would like to investigate the separate impacts of majoring in economics and business.

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Table 1
Description of Variables

Dependent Variables	
Hours>50	Indicator variable for fulltime hours, 1 if response to "How many hours a week do you usually work for pay?" was 50 or greater, 0 otherwise
Commission	Indicator variable, 1 if response to "What percentage of your annual income is paid as a commission or bonus based on how much you produce or sell?" was greater than zero. 0 if response to question was zero.
SalaryGreaterThan7	Indicator variable, 1 if response to "What was your individual (not family) wage or salary income in 2001, before paying taxes? Please check one of the following:" indicated an income of $100,001 or greater.
Laidoff	Indicator variable, 1 if response to "Since leaving college, have you ever been laid off or fired at a job?" was yes, 0 if no.
Runbus	Indicator variable, 1 if response to "Are you currently running your own business, or have you ever run your own business after leaving college?" was yes, 0 if no.
MoreThanBachelors	Indicator variable, 1 if individual has more than a bachelors degree, 0 otherwise

Independent Variables	
Cohort76 / Cohort86	Indicator variable for cohort of respondent. (1 if in cohort, 0 otherwise.) Cohort76 is for 1976, Cohort86 is for 1986.
FAU / Purdue / UNL	Indicator variables for respondent's school.
Business / General/ Economics	Indicator variables for respondent's category of major.
NetEconCourses	Number of economics courses found on student's transcript, removing repeated courses.
Female	Indicator variable for gender of respondent. Reported by school in most cases. In some cases, educated guesses were made based on name. Androgynous names were left male.
Black	Indicator variable for race of student being black. Missing was coded as zero.
Other	Indicator variable for race of student not being black or Caucasian. Missing was coded as zero.
Livetogether	Indicator variable coded 1 if the answer to question "What is your current family status?" indicated they were living with partner (married or unmarried). 0 otherwise or missing.
CumGPA	This is the cumulative GPA at the end of the respondent's academic career.

Instruments	
Relgrade1	= GPA in first home economics courses / Cumulative GPA, performance in economics courses taken at home institution (ie not-transferred) during first semester such a course was taken, relative to cumulative GPA obtained since entering school until end of that semester
Relgrade2	grade in first economics course taken at home institution (ie not-transferred), relative to average course grade in that course during decade in that institution
Relgrade3	same as Relgrade2 but now for first principles type/intro economics course only.

Table 2
Descriptive Statistics

	Sample I		Sample II		Sample III	
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Cohort76	0.222	0.415	0.306	0.461	0.289	0.453
Cohort86	0.393	0.488	0.321	0.467	0.334	0.472
Cohort96	0.385	0.487	0.373	0.484	0.378	0.485
UNL	0.185	0.388	0.231	0.422	0.238	0.426
FAU	0.265	0.441	0.146	0.354	0.090	0.287
Purdue	0.202	0.402	0.235	0.424	0.247	0.432
UNC	0.348	0.476	0.388	0.487	0.425	0.494
Economics	0.099	0.299	0.126	0.332	0.162	0.368
General	0.451	0.498	0.446	0.497	0.299	0.458
Business	0.450	0.498	0.428	0.495	0.539	0.499
NetEconCourses	2.600	2.777	3.144	3.030	4.146	2.820
Female	0.455	0.498	0.451	0.498	0.389	0.488
Black	0.055	0.229	0.031	0.173	0.031	0.172
Other	0.054	0.227	0.041	0.198	0.036	0.186
Livetogether			0.704	0.456	0.717	0.451
Children			1.127	1.268	1.135	1.281
CumGPA	2.968	0.530	3.087	0.538	3.086	0.493
N	22,426		2,159		1,637	

	Mean	**N**	**Mean**	**N**
Hours>50	0.399	1954	0.445	1495
Commission	0.341	1899	0.389	1457
Salary>$100,000	0.219	2083	0.248	1585
Laidoff	0.206	2126	0.214	1621
Self-Employment	0.273	2108	0.278	1604
MoreThanBachelors	0.423	2145	0.397	1632

Sample I: Transcript data for student available.
Sample II: Survey returned and transcript data for student available.
Sample III: Survey returned, and transcript data for student available, and student has taken at least on economics

Table 3
Probit Estimates with Exogenous NetEconCourses*

	Hours>50	Commission	Laid off	Salary> $100,000	Entrepreneur	More Than Bachelors
NetEconCourses	**0.0180**[a]	**0.0315**[a]	**0.0001**	**0.0159**[a]	**0.0088**[a]	**-0.0136**[a]
	0.0042	0.0041	0.0032	0.0029	0.0036	0.0042
Cohort76	**0.0267**	**0.0188**	**0.1990**[a]	**0.3711**[a]	**0.2302**[a]	**0.3632**[a]
	0.0363	0.0352	0.0318	0.0356	0.0333	0.0330
Cohort86	**0.0253**	**0.0020**	**0.1446**[a]	**0.2960**[a]	**0.1264**[a]	**0.3478**[a]
	0.0308	0.0297	0.0267	0.0309	0.0285	0.0288
UNL	**-0.1353**[b]	**-0.1118**[b]	**-0.0028**	**-0.1183**[a]	**-0.0259**	**-0.2714**[a]
	0.0577	0.0558	0.0462	0.0298	0.0510	0.0501
FAU	**-0.1017**[a]	**0.0330**	**0.0906**[a]	**-0.0542**[b]	**0.0795**[b]	**-0.1944**[a]
	0.0362	0.0379	0.0335	0.0228	0.0351	0.0312
Purdue	**-0.0510**	**-0.0335**	**0.0326**	**-0.0608**[b]	**0.0015**	**-0.2221**[a]
	0.0352	0.0342	0.0299	0.0232	0.0319	0.0315
Female	**-0.2595**[a]	**-0.1172**[a]	**-0.0467**[b]	**-0.1656**[a]	**-0.0155**	**-0.0550**[b]
	0.0228	0.0233	0.0182	0.0167	0.0208	0.0239
Black	**-0.0006**	**0.0528**	**0.0226**	**0.1042**[c]	**0.0941**	**0.0780**
	0.0701	0.0689	0.0532	0.0676	0.0626	0.0668
Other	**-0.0152**	**0.0143**	**0.0181**[c]	**0.1344**[b]	**-0.0946**[c]	**0.1166**[c]
	0.0588	0.0589	0.0474	0.0628	0.0451	0.0607
LiveTogether	**-0.0116**	**0.0252**	**-0.0493**[b]	**0.0629**[a]	**0.0124**	**0.0009**
	0.0283	0.0272	0.0228	0.0195	0.0245	0.0279
Children	**0.0069**	**0.0213**[c]	**-0.0333**[a]	**0.0165**[b]	**0.0227**[b]	**-0.0326**[a]
	0.0116	0.0112	0.0085	0.0075	0.0091	0.0110
CumGPA	**0.0283**	**-0.0481**[b]	**-0.1073**[a]	**0.1050**[a]	**-0.0877**[a]	**0.3051**[a]
	0.0237	0.0230	0.0178	0.0171	0.0200	0.0244

*Marginal effects with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Table 4
Probit Estimates with Exogenous Economics*

	Hours>50	Commission	Laid off	Salary> $100,000	Entrepreneur	More Than Bachelors
Economics	**0.0505**	**0.0730**[b]	**-0.0428**	**0.0862**[a]	**0.0581**[c]	**0.0024**
	0.0353	0.0349	0.0252	0.0299	0.0330	0.0358
Cohort76	**0.0250**	**0.0141**	**0.1950**[a]	**0.3716**[a]	**0.2321**[a]	**0.3653**[a]
	0.0363	0.0349	0.0318	0.0356	0.0334	0.0329
Cohort86	**0.0202**	**-0.0055**	**0.1451**[a]	**0.2893**[a]	**0.1239**[a]	**0.3483**[a]
	0.0306	0.0295	0.0267	0.0307	0.0285	0.0287
UNL	**-0.1197**[b]	**-0.0879**	**-0.0122**	**-0.1048**[a]	**-0.0121**	**-0.2737**[a]
	0.0587	0.0574	0.0457	0.0320	0.0522	0.0501
FAU	**-0.1438**[a]	**-0.0510**	**0.0820**[a]	**-0.0833**[a]	**0.0616**[c]	**-0.1605**[a]
	0.0330	0.0334	0.0316	0.0192	0.0330	0.0312
Purdue	**-0.0674**[c]	**-0.0655**[c]	**0.0230**	**-0.0688**[a]	**0.0006**	**-0.2044**[a]
	0.0349	0.0333	0.0296	0.0231	0.0321	0.0321
Female	**-0.2799**[a]	**-0.1574**[a]	**-0.0520**[a]	**-0.1814**[a]	**-0.0229**	**-0.0332**
	0.0220	0.0223	0.0178	0.0164	0.0203	0.0233
Black	**-0.0006**	**0.0479**	**0.0223**	**0.0989**[c]	**0.0926**	**0.0811**
	0.0698	0.0682	0.0532	0.0673	0.0625	0.0665
Other	**-0.0096**	**0.0255**	**0.0195**	**0.1374**[b]	**-0.0931**[c]	**0.1124**[c]
	0.0587	0.0594	0.0476	0.0637	0.0453	0.0606
LiveTogether	**-0.0096**	**0.0287**	**-0.0484**[b]	**0.0646**[a]	**0.0130**	**-0.0015**
	0.0282	0.0271	0.0228	0.0195	0.0244	0.0279
Children	**0.0081**	**0.0225**[b]	**-0.0333**[a]	**0.0174**[b]	**0.0232**[b]	**-0.0334**[a]
	0.0116	0.0111	0.0085	0.0075	0.0091	0.0110
CumGPA	**0.0269**	**-0.0478**[b]	**-0.1077**[a]	**0.1050**[a]	**-0.0882**[a]	**0.3045**[a]
	0.0236	0.0229	0.0178	0.0171	0.0200	0.0243

*Marginal effects with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Table 5
Probit Estimates with Endogenous NetEconCourses*

	Hours>50	Commission	Laid off	Salary> $100,000	Entrepreneur	More Than Bachelors
NetEconCourses	**-0.0208**	**-0.0393**	**-0.0130**	**0.0077**	**-0.0004**	**-0.0147**
	0.0421	0.0403	0.0349	0.0353	0.0371	0.0465
Cohort76	**0.0327**	**0.0799[c]**	**0.1952[a]**	**0.4045[a]**	**0.1941[a]**	**0.3270[a]**
	0.0428	0.0418	0.0380	0.0431	0.0390	0.0410
Cohort86	**0.0319**	**-0.0005**	**0.1516[a]**	**0.3217[a]**	**0.1301[a]**	**0.3449[a]**
	0.0362	0.0340	0.0316	0.0370	0.0345	0.0375
UNL	**-0.1478[c]**	**-0.0887**	**0.0111**	**-0.1146[a]**	**0.0161**	**-0.2436[a]**
	0.0785	0.0785	0.0606	0.0441	0.0675	0.0629
FAU	**-0.1948**	**-0.1595**	**0.0455**	**-0.0489**	**0.1032**	**-0.2003**
	0.1255	0.1245	0.1411	0.1088	0.1521	0.1283
Purdue	**-0.1015**	**-0.1369[b]**	**0.0151**	**-0.0734**	**0.0110**	**-0.2417[a]**
	0.0710	0.0611	0.0670	0.0581	0.0700	0.0648
Female	**-0.2988[a]**	**-0.1788[a]**	**-0.0526**	**-0.1869[a]**	**-0.0364**	**-0.0683**
	0.0392	0.0404	0.0449	0.0410	0.0476	0.0586
Black	**0.0168**	**0.0415**	**0.0136**	**0.1015**	**0.0000**	**0.0737**
	0.0824	0.0825	0.0627	0.0835	0.0687	0.0817
Other	**-0.0001**	**0.0745**	**0.0418**	**0.1642[b]**	**-0.1036[c]**	**0.1077**
	0.0791	0.0737	0.0646	0.0818	0.0546	0.0799
LiveTogether	**-0.0074**	**0.0407**	**-0.0350**	**0.0680[a]**	**-0.0090**	**0.0043**
	0.0353	0.0316	0.0277	0.0262	0.0308	0.0327
Children	**0.0136**	**0.0191**	**-0.0311[a]**	**0.0215[b]**	**0.0337[a]**	**-0.0294[b]**
	0.0133	0.0129	0.0101	0.0094	0.0109	0.0128
CumGPA	**0.0345**	**-0.0538[c]**	**-0.1135[a]**	**0.1338[a]**	**-0.1102[a]**	**0.3348[a]**
	0.0289	0.0275	0.0209	0.0223	0.0243	0.0312

*Marginal effects with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Table 6
Probit Estimates with Endogenous Economics*

	Hours>50	Commission	Laid off	Salary> $100,000	Entrepreneur	More Than Bachelors
Economics	**-0.3454**	**-0.7749**	**0.5197**	**-0.3920**	**1.1079**	**-0.0719**
	0.6441	1.0504	0.5239	0.8005	1.0161	1.2107
Cohort76	**0.0455**	**0.1271**	**0.6518**[a]	**1.1962**[a]	**0.6144**[a]	**0.8433**[a]
	0.1278	0.1807	0.1157	0.2517	0.1076	0.1703
Cohort86	**0.0906**	**0.0198**	**0.4968**[a]	**1.0281**[a]	**0.3546**[a]	**0.9108**[a]
	0.0897	0.0887	0.0998	0.1487	0.1061	0.0949
UNL	**-0.5053**[b]	**-0.5064**	**0.0997**	**-0.5814**[b]	**0.2551**	**-0.7390**[b]
	0.2346	0.3111	0.2119	0.2942	0.2421	0.3139
FAU	**-0.4098**[a]	**-0.2382**	**0.3923**[a]	**-0.3741**[c]	**0.4756**[a]	**-0.4608**[c]
	0.1589	0.2363	0.1343	0.1924	0.1703	0.2372
Purdue	**-0.2662**	**-0.4248**	**0.2252**	**-0.4590**[c]	**0.2671**	**-0.6498**[b]
	0.1855	0.2874	0.1401	0.2572	0.2066	0.2964
Female	**-0.7767**[a]	**-0.4576**[a]	**-0.0902**	**-0.8330**[a]	**0.0073**	**-0.1445**
	0.0887	0.1109	0.0883	0.1085	0.1263	0.1591
Black	**0.0659**	**0.1640**	**0.0606**	**0.3152**	**0.0044**	**0.2020**
	0.2054	0.2062	0.2113	0.2340	0.2026	0.2015
Other	**-0.0191**	**0.1766**	**0.0816**	**0.5473**[a]	**-0.4055**[b]	**0.2527**
	0.1879	0.1971	0.1842	0.2085	0.1898	0.1943
LiveTogether	**-0.0258**	**0.0997**	**-0.1360**	**0.2719**[a]	**-0.0420**	**0.0058**
	0.0867	0.0835	0.0905	0.1034	0.0901	0.0861
Children	**0.0347**	**0.0512**	**-0.1119**[a]	**0.0781**[b]	**0.0948**[a]	**-0.0790**[b]
	0.0340	0.0344	0.0359	0.0353	0.0345	0.0332
CumGPA	**0.0844**	**-0.1539**[b]	**-0.3829**[a]	**0.4775**[a]	**-0.2976**[a]	**0.8818**[a]
	0.0739	0.0716	0.0802	0.0967	0.0922	0.0866

*Coefficients with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Table 7
Probit Estimates with Exogenous NetEconCourses or Economics: Sample III*

	Hours >50	Commission	Laid off	Salary> $100,000	Entre-preneur	More Than Bachelors
NetEconCourses[d]	**0.0180**[a]	**0.0315**[a]	**0.0001**	**0.0159**[a]	**0.0088**[a]	**-0.0136**[a]
	0.0042	0.0041	0.0032	0.0029	0.0036	0.0042
NetEconCourses	**0.0124**[b]	**0.0247**[a]	**-0.0049**	**0.0168**[a]	**0.0096**[b]	**-0.0031**
	0.0051	0.0421	0.0040	0.0039	0.0043	0.0050
Economics[e]	**0.0505**	**0.0730**[b]	**-0.0428**	**0.0862**[a]	**0.0581**[c]	**0.0024**
	0.0353	0.0349	0.0252	0.0299	0.0330	0.0358
Economics	**0.0214**	**0.0493**	**-0.0542**[c]	**0.0827**[a]	**0.0650**[b]	**0.0282**
	0.0371	0.0367	0.0248	0.0326	0.0344	0.0368

[d]From Table 3. [e]From Table 4.

Table 8
Probit Estimates with Quadratic Term (Exogenous)*

	Hours>50	Commission	Laid off	Salary> $100,000	Entrepreneur	More Than Bachelors
NetEconCourses[d]	**0.0180**[a]	**0.0315**[a]	**0.0001**	**0.0159**[a]	**0.0088**[a]	**-0.0136**[a]
	0.0042	0.0041	0.0032	0.0029	0.0036	0.0042
NetEconCourses	**0.0321**[c]	**0.0888**[a]	**0.0247**[c]	**0.0330**[b]	**0.0112**	**-0.0309**[c]
	0.0183	0.0182	0.0140	0.0139	0.0155	0.0176
NetEconCourses Squared	**-.0018**	**-0.0058**[a]	**-0.0028**[b]	**-0.0015**	**-0.0001**	**0.0026**[c]
	.0016	0.0016	0.0013	0.0012	0.0013	0.0016

[d]From table 3.

For Tables 7 and 8:
*Marginal effects with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Table 9
Probit Estimates with Exogenous Business and Economics*

	Hours>50	Commission	Laid off	Salary> $100,000	Entrepreneur	More Than Bachelors
Economics[e]	**0.0505**	**0.0730**[b]	**-0.0428**	**0.0862**[a]	**0.0581**[c]	**0.0024**
	0.0353	0.0349	0.0252	0.0299	0.0330	0.0358
Economics	**0.0946**[b]	**0.1932**[a]	**-0.0345**	**0.1710**[a]	**0.0753**[b]	**-0.0529**
	0.0426	0.0430	0.0312	0.0419	0.0391	0.0395
Business	**0.1126**[a]	**0.2089**[a]	**0.0339**	**0.1099**[a]	**0.0151**	**-0.1280**[a]
	0.0314	0.0302	0.0230	0.0241	0.0263	0.0296

[e]From table 4.

*Marginal effects with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Appendix

Table A-1
Sample Selection Probit Regressions
(Marginal Effects)

	Selection into Sample II	Selection into Sample III
Cohort76	**0.0327**[a]	**0.0204**[a]
	0.0063	0.0053
Cohort86	**-0.0091**[b]	**-0.0060**
	0.0043	0.0037
UNL	**-0.0861**[a]	**-0.0598**[a]
	0.0069	0.0058
FAU	**-0.0578**[a]	**-0.0636**[a]
	0.0041	0.0031
Purdue	**-0.0182**[a]	**-0.0146**[a]
	0.0053	0.0043
Female	**0.0021**	**-0.0140**[a]
	0.0039	0.0033
Black	**-0.0211**[b]	**-0.0149**[c]
	0.0083	0.0071
Other	**0.0037**	**0.0023**
	0.0095	0.0084
CumGPA	**0.0453**[a]	**0.0313**[a]
	0.0038	0.0031
χ^2	**618.04**	**543.21**
	0.00	0.00
Pseudo R^2	0.0469	0.0545
N	22426	22426

*Marginal effects with standard errors below.
a 1% level of significance
b 5% level of significance
c 10% level of significance

Table A-2
First Stage Probit Estimates for NetEconCourses
(Coefficients with Standard Errors below)

	Hours>50	Commission	Laidoff	Salary> $100,000	MoreThan Bachelors	Entrepreneur
Cohort76	**0.0320**	**0.0029**	**0.0414**	**0.0595**	**0.0429**	**0.0385**
	0.2233	0.2266	0.2147	0.2170	0.2149	0.2128
Cohort86	**-0.1459**	**-0.1423**	**-0.1761**	**-0.1602**	**-0.1887**	**-0.1647**
	0.1752	0.1787	0.1686	0.1710	0.1701	0.1686
UNL	**0.6905**	**0.6988**	**0.6285**	**0.6032**	**0.6315**	**0.5936**
	0.3483	0.3545	0.3330	0.3377	0.3329	0.3316
FAU	**-3.4427**	**-3.4690**	**-3.4809**	**-3.4472**	**-3.4507**	**-3.4643**
	0.1742	0.1765	0.1661	0.1684	0.1677	0.1655
Purdue	**-1.4930**	**-1.4792**	**-1.5277**	**-1.5284**	**-1.4982**	**-1.5253**
	0.1899	0.1919	0.1800	0.1822	0.1806	0.1793
Female	**-1.1033**	**-1.1103**	**-1.1136**	**-1.1431**	**-1.0713**	**-1.0983**
	0.1390	0.1407	0.1309	0.1322	0.1313	0.1306
Black	**-0.1111**	**-0.1315**	**-0.1393**	**-0.1308**	**-0.1331**	**-0.1385**
	0.4236	0.4398	0.4015	0.4023	0.4013	0.3940
Other	**0.7352**	**0.7132**	**0.8007**	**0.7662**	**0.8033**	**0.7899**
	0.3834	0.4032	0.3682	0.3775	0.3680	0.3675
LiveTogether	**0.2315**	**0.2327**	**0.1838**	**0.1585**	**0.1650**	**0.1412**
	0.1621	0.1650	0.1563	0.1575	0.1575	0.1560
Children	**0.0374**	**0.0210**	**0.0351**	**0.0313**	**0.0566**	**0.0495**
	0.0658	0.0670	0.0617	0.0631	0.0620	0.0617
CumGPA	**-0.1668**	**-0.1416**	**-0.1522**	**-0.1441**	**-0.1745**	**-0.1493**
	0.1570	0.1603	0.1510	0.1529	0.1520	0.1511
Relative Grade 1	**1.2036**	**1.1601**	**1.1284**	**1.1548**	**1.1254**	**1.1381**
	0.2753	0.2781	0.2667	0.2711	0.2668	0.2658
Constant	**4.4012**	**4.3900**	**4.4928**	**4.4517**	**4.5185**	**4.4755**
	0.5550	0.5663	0.5370	0.5474	0.5393	0.5374

Table A-3
First-Stage Bivariate Probit Estimates for Economics
(Coefficients with Standard Errors below)

	Hours>50	Commission	Laid off	Salary> $100,000	MoreThan Bachelors	Entrepreneur
Relgrade1	**0.9013**	**0.8935**	**0.8240**	**0.8498**	**0.7803**	**0.8479**
	0.1645	0.1844	0.1656	0.1868	0.2144	0.1785
Cohort76	**-0.4818**	**-0.4413**	**-0.4741**	**-0.4362**	**-0.4105**	**-0.4842**
	0.1416	0.1502	0.1350	0.1353	0.1486	0.1383
Cohort86	**-0.0126**	**0.0147**	**-0.0107**	**0.0227**	**-0.0157**	**-0.0166**
	0.1092	0.1163	0.1044	0.1104	0.1068	0.1097
UNL	**-0.8607**	**-0.7424**	**-0.8566**	**-0.8575**	**-0.8160**	**-0.8505**
	0.2882	0.3185	0.2856	0.2840	0.2839	0.2922
FAU	**-0.7373**	**-0.6911**	**-0.7642**	**-0.7288**	**-0.7657**	**-0.7772**
	0.1598	0.1757	0.1522	0.1547	0.1503	0.1549
Purdue	**-1.0734**	**-1.0486**	**-1.0992**	**-1.0791**	**-1.0796**	**-1.0867**
	0.1442	0.1481	0.1404	0.1401	0.1392	0.1409
Female	**-0.4846**	**-0.4469**	**-0.5349**	**-0.5495**	**-0.5134**	**-0.5316**
	0.0950	0.0959	0.0917	0.0915	0.0950	0.0902
Black	**0.2759**	**0.2859**	**0.2898**	**0.2328**	**0.2270**	**0.2393**
	0.2543	0.2518	0.2411	0.2495	0.2628	0.2448
Other	**0.2810**	**0.3414**	**0.3371**	**0.3460**	**0.3391**	**0.3371**
	0.2200	0.2156	0.2094	0.2095	0.2049	0.2100
LiveTogether	**0.0743**	**0.0815**	**0.0889**	**0.0928**	**0.0703**	**0.0715**
	0.1049	0.1033	0.1000	0.1005	0.1036	0.1116
Children	**0.0251**	**0.0030**	**0.0256**	**-0.0044**	**0.0310**	**0.0236**
	0.0482	0.0583	0.0422	0.0453	0.0400	0.0417
CumGPA	**-0.0963**	**-0.0933**	**-0.0744**	**-0.0844**	**-0.1151**	**-0.0793**
	0.0900	0.0890	0.0872	0.0884	0.0934	0.0906
Constant	**-1.0046**	**-1.0372**	**-0.9985**	**-0.9988**	**-0.8429**	**-0.9956**
	0.3470	0.3500	0.3401	0.3686	0.4077	0.4049