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The happiness of economists: Estimating the causal effect of studying economics on subjective well-being

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The Happiness of Economists: Estimating the Causal Effect of Studying Economics on Subjective Well-Being*

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(forthcoming in: *International Review of Economics Education*)

Abstract

This is the first paper that studies the causal effect of studying economics on subjective well being. Based on a survey among 918 students of economics and other social sciences, we estimate the effects of studying in the different fields on individual life satisfaction. Controlling for personal characteristics we apply innovative instrumental variable methods developed in labor and conflict economics. We find a positive relationship between the study of economics and individual well-being. Additionally, we also find that income and future job chances are the most important drivers of happiness for participants of our survey.

JEL-Classification: A11, A13, I21, I31.

Keywords: Happiness, Life Satisfaction, Economists, Students, Economics Education.

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1 Introduction

Probably one of the more exciting changes in economic science, at least in recent times, has been the (re-)introduction of the notion of happiness into economics. While traditionally (neoclassical) economists have almost exclusively focused on wealth, consumption or other monetary aggregates to measure individuals' well-being, more and more economists now adopt the subjective notion of self-reported well-being to analyze how economic factors such as income, wealth, and employment as well as non-economic factors such as personality traits and socio-demographic factors affect individuals' self-reported life satisfaction or, to be plain, their utility. And even though Easterlin (1974) already examined correlations between economic growth and individual self-reported life satisfaction, it took more than 20 years of incubation time for the idea to take off. By now, there is a large and rapidly growing literature on the so-called economics of happiness that analyzes how various factors affect individual happiness (see, e.g., Frey and Stutzer, 2002; Easterlin, 2002; Bruni and Porta, 2005, 2007; Frey, 2008; Graham, 2010, 2011). In virtually all of this literature, self-reported life satisfaction is interpreted as one's happiness so that the terms "happiness" and "life satisfaction" are typically used interchangeably (see, e.g., Frey and Stutzer, 2002; Bruni and Porta, 2005, 2007; Frey, 2008; Graham, 2010, 2011). Even though many people would probably agree that happiness may (at least sometimes) not be the same as self-reported life satisfaction, we will stick to the by-now established linguistic standard among happiness researchers to infer individuals' happiness from their self-reported life satisfaction.¹

Without going into the details of the burgeoning literature on the economics of happiness (see, e.g., Graham, 2010, 2011), we find it rather surprising that, to the best of our knowledge, nobody has studied yet the happiness of economists. This is even more surprising once we consider that it can be regarded as a well established wisdom by now that economists are different from other individuals in many aspects such as their opinions, their value systems and also their behaviour in many situations (see, e.g., Kirchgässner, 2005). In fact, there is an extensive body of literature demonstrating that economists are different from other individuals in a variety of ways. Starting with Stigler's (1959) claim that studying economics makes people more conservative, the by now famous study of Marwell and Ames (1981) has shown that in their public goods experiment graduate economics students tended to free-ride more often than any other group of students. Similar results, namely that economists act more selfish or "rational" than other students, have been obtained in other experiments. Carter and Irons (1991) have shown that economics students offer less in ultimatum games, while

¹This established practice may be justified if self-reported life satisfaction and individual happiness are strongly correlated and one does not focus on particular individuals, but on average or typical effects.

Frank, Gilovich and Regan (1993, 1996) have found that economics students are less likely to cooperate in prisoners' dilemma games. Economists have also been shown to be more likely to defect in a solidarity game (Selten and Ockenfels, 1998), they are more likely to accept bribes (Frank and Schulze, 2000) and are more prone to tell lies (Lundquist et al., 2009). Apart from these laboratory experiments, Frey and Meier (2003) have also found that students of business economics contribute less to a charitable university fund in Zurich - a finding which has largely been replicated by Bauman and Rose (2011) for the University of Washington. Hence, the overwhelming majority of research on the behavior of economists or economics students shows that they act more selfish or more "rational" than other groups.

Apart from these laboratory and field experiments which show that economists behave differently than other people, there is also some research on economists' views and values. This research typically uses surveys to elicit economists and other individuals' views of the world. For example, Frey (1986) and Frey, Pommerehne, and Gygi (1993) have shown that economists tend to favor the price system as an allocation mechanism while many other individuals find it unfair. More recently, Haferkamp et al. (2009) have shown that economists have rather different views about what constitutes desirable labour market policies from other people, while Jacob, Christandl and Fetchenhauer (2011) have found similar value discrepancies between economists and others regarding trade and migration policies. More generally, Gandal et al. (2006) have found that economists hold different values from other individuals. More precisely, they find in their survey that "students of economics attribute more importance to power, achievement and hedonism values and less importance to universalism values than students from other fields."

In summary, there is a broad consensus and little disagreement that economists behave differently (i.e., more selfishly) and that they also hold different views and values than other people. Hence, the main question in this line of research is not so much whether economists are really different at all, but whether these differences are rather due to nature or to nurture (see, e.g., Carter and Irons, 1991; Frey and Meier, 2003; Haucap and Just, 2010; Bauman and Rose, 2011). Are economists already different when they start to study economics ("nature") or do they only become different over the course of their economics studies ("nurture"). A typical research approach is to compare differences in behavior, views and values between (i) new students before they have been exposed to economics and (ii) more advanced economics students and compare these differences to students of other subjects as they advance through their studies (differences-in-differences), controlling for other socio-economic factors such as the students' background, income, etc. The findings of these studies are generally mixed with some papers (such as Frey and Meier, 2003, 2004) supporting the nature hypothesis (i.e., differences are due to selection effects) and others (such as Scott and Rothman, 1975; Bauman and Rose, 2011) supporting the nurture hypothesis (i.e.,

differences are due to learning/indoctrination) while others again find both effects at work (e.g., Haucap and Just, 2010). Obviously the consequences for how to teach economics should be quite different. As Bauman and Rose (2011) conclude, to the extent that differences between economists and other people are "the result of nurture rather than nature, training students in ways that make them more self-interested makes them worse off." Similarly, Konow (2014) calls for a change in teaching economics, arguing that the ultimate goal should be "the establishment of pedagogical methods that motivate economists and economics students to act in accordance with shared moral standards in their personal and professional capacities." Interestingly, Konow and Early (2008) have found that selfish behavior (in a dictator game which they conducted) was also associated with lower psychological well-being and less overall happiness than selfless behavior. Given that studying economics appears to make students behave more selfishly, but that selfish behavior also appears to be associated with lower satisfaction and less happiness, one may be inclined to conclude that studying economics may make people less happy, potentially giving thereby a second reason why the way economics is taught should be changed. In this paper, we wish to tackle this question and ask whether studying economics impacts on students' happiness or life satisfaction. Hence, this paper basically combines the two streams of research described above and asks whether economics students are happier or less happy than other students. As we control for the endogeneity of study subject choice, our paper is a first attempt to answer the question whether studying economics is a good thing not from a societal perspective, but from an individual happiness perspective, or put differently, whether the study of economics affects individual happiness in any way?

The remainder of this paper is now organized as follows: Section 2 explains our empirical analysis, which is based on a survey conducted at the Ruhr-University of Bochum during the summer of 2005.² The third section discusses the results before section 4 summarizes our findings and concludes.

2 Empirical Analysis

2.1 Survey and Variables

During the 2005 summer term a survey among 918 students of economics (Wirtschaftswissenschaft) and other social sciences (Sozialwissenschaften) was carried out at the Ruhr-University of Bochum in Germany. The survey was conducted during the first week of the mandatory lecture "Introduction to Microeconomics". In the first week of class virtually all students attend the courses to obtain essential information on the course syllabus,

²Most happiness research in economics is based on large scale surveys in which individuals are asked how happy (or satisfied) they are with their lives.

reading materials, textbook, group exercise schedules, exam format, etc., which is typically provided in the first lecture. Furthermore, as the survey was conducted in the first week of class, students' statements cannot really be influenced by any positive or negative appreciation of the course.

The Ruhr-University of Bochum is a typical public university in Germany, it does not differ in any obvious way from other public universities in Germany. Also note that almost the entire university system in Germany is public and the variation in student characteristics or teaching quality is far smaller than in countries such the U.S. or the UK. There are also few private universities in Germany, but they do not play an important role in the German higher education system: About 95 percent of all students attend public universities. Also note that there are no elite universities such as Harvard, MIT, or Oxford in Germany, where students might differ significantly from students at other institutions. Hence, we would expect no significantly different results if the survey had been carried out at another university in Germany. Another important feature of our survey is the homogeneity of students' cultural background. The majority of students study close to their homes and many commute to the university from home on a daily basis. Hence, the students' regional background is rather similar. As a result, the risk of biases due to unobserved characteristics describing the cultural background of our students is rather low.

The number of economics students is much larger than the number of students of other social sciences in our sample. This is due to the fact, that the different departments' capacities are determined by the university's administration and the state ministry of education and science. However, students from economics and from other social sciences face very similar study conditions, as they study in large cohorts and have similarly sized lecture groups. They also face a very comparable ratio of students per teacher which differentiates them from most other disciplines such as natural sciences, engineering, or most humanities.

The main focus of the survey was on students' study behavior and attitudes, but students were also asked to report their life satisfaction in general (happiness). As already mentioned above, life satisfaction and happiness are not necessarily the same, but most empirical studies use the two term interchangeably. Hence, we do not deviate from this established convention, but follow the literature to connect our study to earlier empirical happiness studies. Apart from self-reported life satisfaction, the survey also contained questions on the following issues:

1. Socio-economic background (age, sex, siblings, income, religion, political attitudes),
2. future career perspectives, and
3. study specific questions (study behavior and attitudes).

Table 1 provides some descriptive statistics for the variables that we use in our regression analysis.³

Table 1: Descriptive Statistics

variable	obs	mean	std dev.	min	max
SATISFACTION	911	6.38	2.15	0	10
HAPPY	918	0.60	0.49	0	1
AGE	910	23.47	3.02	18	48
MALE	913	0.55	0.50	0	1
FAIRNESS	896	5.78	2.26	0	10
CATHOLIC	897	0.38	0.49	0	1
PROTESTANT	897	0.26	0.44	0	1
HIGH INCOME	918	0.12	0.33	0	1
ECON	918	0.70	0.46	0	1
SOSCI	918	0.31	0.46	0	1
POLITICSLEFT	918	0.22	0.42	0	1
POLITICSMIDDLE	918	0.60	0.49	0	1
POLITICSRIGHT	918	0.17	0.38	0	1
JOBEXPECT	918	0.37	0.48	0	1
CAREERFOCUS	918	0.83	0.38	0	1
LIVING ALONE	918	0.21	0.41	0	1
WORK ALONE	918	0.57	0.50	0	1
USE FORUM	918	0.096	0.30	0	1
GIVE NOTES	918	0.37	0.48	0	1

The first variable in Table 1, SATISFACTION, is our measure of self-reported life satisfaction. Students were asked to rate their overall satisfaction with their life, following the literature, on a 0 to 10 scale. HAPPY is now set to one if students rate their general life satisfaction to be at least 7. This is a common procedure in most happiness surveys (see, e.g., Frey and Stutzer, 2002), so that we stuck to established standards here. However, HAPPY is also used to estimate bivariate probit models as a robustness check. AGE reports the participants' age in years, where 90% of the students are between 18 and 28 years old. MALE is set to one for male students. FAIRNESS is based on a measure of students' appraisal of their fellow students' attitude towards cooperation from unfair (1) to fair (10). Again, the variable takes the value 1 if a student's score exceeds 7, otherwise CATHOLIC and PROTESTANT are dummy variables taking the value 1 if a student is of

³A brief description of the variables can be found in Table A1 in the Appendix.

catholic or protestant religion, respectively. HIGH INCOME is a dummy variable which is set to 1 if students self-report their income status as "very good" or "good".

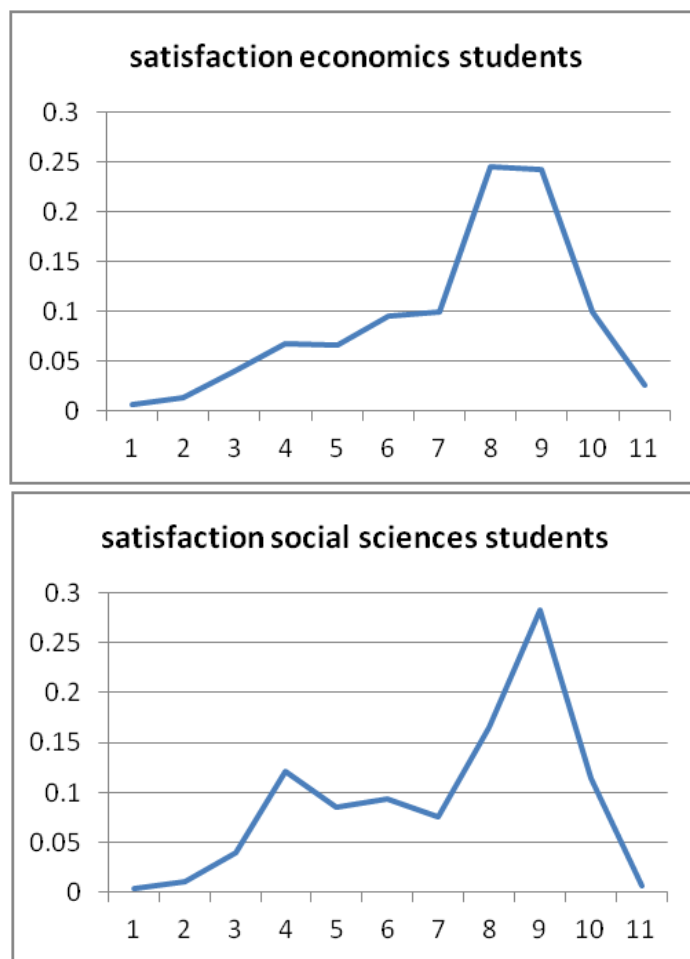
ECON and SOSCI are dummy variables for the relevant fields of study. It should be noted that at the Ruhr-University of Bochum students cannot choose between economics and business administration, as the two fields have been combined into one joint programme and corresponding degree ("*Diplom Ökonom*"). Furthermore, we followed other studies such as, e.g., Frey, Pommerehen and Gygi (1993) and asked students for their political attitudes and their expectations about future professional careers. Our variable POLITICS is a measure of the participant's political position from left (1) to right (10). From this variable we derive three dummy variables POLITICSLEFT (if self-reported political attitude score is between 0 and 3), POLITICSMIDDLE for 4 to 7, and POLITICSRIGHT for 8 to 10. These dummy variables allow us to control for different political attitudes of economics and social sciences students (also see Frey, Pommerehne and Gygi, 1993). JOBEXPECT measures how the surveyed students themselves perceive their chances of landing a good job after graduation. Possible answers range from "very good" to "very bad" on a five point scale. If students expect that their chances of being offered a good job are either "good" or "very good" JOBEXPECT is set to 1. CAREERFOCUS is a measure of how important students rate their future career success. It is set to 1 if students consider their professional career as "very important" and "important" and to 0 otherwise. LIVING ALONE is a dummy variable indicating whether a survey participant lives alone or not.

The final set of questions relates to students' cooperative behavior. WORK ALONE is a dummy variable taking the value 1 if students prefer to learn alone rather than in groups and 0 otherwise. USE FORUM is also a dummy variable taking the value 1 if students frequently use special Internet platforms to chat and discuss with fellow students about learning, exams, and general aspects of their studies. Additionally, we have asked students whether they have given lecture notes from classes or exercises to their fellow students in the past, e.g. if these had missed class. This is also contained in a dummy variable (GIVE NOTES: 1: yes, 0: no).

2.2 Some Descriptive Results

Let us first present some descriptive results on our students' life satisfaction for Economics and Social Sciences, as plotted in the following histograms, and Table 1.

Figure 1: Histogram of Life Satisfaction for Economics Students and Students of other Social Sciences



A large share of survey participants is "happy" following the standard definition used in large parts of the happiness literature, i.e., the students' self-reported life satisfaction is at least rates as 7. Following this definition, 60% of the students are happy or have a reasonably high level of life satisfaction (7-10). Splitting our sample into two different subgroups according to fields of study, there may not appear to be major differences at first glance. Table 2 shows the share of students, who report themselves as "happy", which means the variable happy equals unity.

Table 2: Students' Happiness

HAPPY	ECON	SOSCI	TOTAL
0	245	120	365
1	393	160	553
Share of 1	0.62	0.57	0.60

As can be seen the relative number of students who consider themselves as relatively happy differs between economics (62 %) and social sciences (57 %) students, which can also be seen from the broader peak of the histogram of the self reported happiness of economics students. The share of happy economics students is five percentage points higher than the share of social sciences students. Now let us try to shed some light on the sources of this difference: Are there, apart from their subject of study, observable differences between students (such as income, age, etc.) that makes them more or less happy, or is it the course of their study (or some unobservable characteristic that is highly correlated with the subject of study)? The following analysis tries to provide an answer to this question, at least partially.

2.3 Econometric Strategy

2.3.1 Model Choice

In order to estimate determinants of individual well-being one has to formalize subjective well-being. One possibility is the following function of subjective well-being which is regularly used in empirical studies (see, e.g., Blanchflower and Oswald, 2004) and takes the following form:

$$W = H [U (Y, t)] + \varepsilon.$$

Compared to well known utility functions⁴ the suggested function of self-reported well-being has several characteristics. W denotes the level of well-being reported by the participant. It depends on a cardinal scale from 0 to 10, where 0 stands for "extremely unhappy" and 10 is equivalent to "extremely happy". U represents the individual's utility or well-being and is only observable by the individual. The variable Y is an indicator for a set of variables determining subjective well-being, whereas t indicates time. The function $H [.]$ rises in steps as U increases. Furthermore, the error term ε captures hidden factors that affect the relationship between actual and reported well-being, because of the inability of participants to accurately estimate their well-being (Layard, 2007). In our empirical specification we only work with the reported level of well-being, controlling for the most important factors.

⁴See, e.g., Rubinstein (2006) for a discussion of standard properties of utility functions.

The main methodological problem in our study is the fact that we cannot treat studying social sciences and economics as independent from individual happiness. SATISFACTION, as our dependent variable, has ranges from 0 to 10. Estimating the effects of study choice on such a multinomial discrete variable would require ordered probit models. However, estimating instrumental variable models for ordered discrete outcomes, which would be necessary due to the endogeneity of the field of study, is by no means trivial and by far not standard in econometrics yet. Luckily though, it is also not necessary in our case. As Angrist (1991, 2001) has shown, it is sufficient to estimate instrumental variable regressions for discrete choice models using standard two stage least squares methods (2SLS) assuming a linear probability model as an appropriate choice. Angrist (1999, 2001) has also shown that these models estimate the so-called average treatment effect very well. Based on these considerations, we use 2SLS estimations as our basic regressions. We also estimate regressions with 2SLS using HAPPY as our dependent variable to show that our results still hold. Additionally, we include bivariate probit regressions as a different method of identification in the Appendix. These regressions show that the results remain qualitatively unchanged (see Wooldridge, 2010: 595-596).⁵

Instrumenting students' choice of study subject is not trivial. As discussed above, many empirical studies on the cooperative behavior of economists show that there are significant differences between economists' cooperative behavior and the cooperative behavior of other students. Our instrumental variables provide a good reflection of the participants' own cooperative behavior and the behavior of their fellow students. As a result, these instruments are promising variables to solve endogeneity problems. As one instrument for this choice we use students' attitudes towards their fellow students, incorporated in the GIVENOTES variable (i.e., whether students have passed on lecture notes to fellow students). Furthermore, we use WORK ALONE as an instrument, because it also measures students' cooperative behavior. Using individuals' personal attitudes as instrumental variables is not an ad hoc decision, but based on substantive research in labor and conflict economics where personal decisions (e.g., "committing a terrorist attack") regularly cause endogeneity problems.⁶

Furthermore, we use CAREERFOCUS and MALE as instrumental variables for our 2SLS regressions. Economics students tend to be more career focussed than fellow social sciences students. Furthermore, there are more male than female students and we also use MALE as an instrumental variable. Additionally, we use AGE as an instrument, as there tend to be some age differences between economics students and students of other social sciences, as

⁵See also Evans and Schwab (1995) and Altonji et al. (2005) for applications of bivariate probit models when facing discrete endogenous explanatory variables in discrete choice regressions.

⁶See Krueger (2007, chapter 2) for a detailed discussion of adequate instrumental variables under comparable circumstances.

economics students more often have some previous job experience within the German dual education system than students of other social sciences. However, the share of rather "old" economics students is smaller than the share of older students of other subjects, as economics is typically not the study of choice for so-called "senior students" who decide to attend university after retirement. In addition, we have checked that our instruments do not have direct effects on life satisfaction in order to ensure exogeneity. As a robustness check for our identification strategy, we repeat the estimations using HAPPY as the dependent variable using also 2SLS, which yield comparable results. Furthermore, we estimate a bivariate probit model with separate equations for HAPPY and ECON or SOSCI respectively, applying joint maximization techniques for the likelihood functions. Within the ECON and SOSCI equations we add the variables used as instruments in the linear models to include identifying restrictions into our model (see Wooldridge, 2010: 895-896). The results for the linear model using HAPPY as dependent variable as well as for the bivariate probit models can be found in the Appendix. The results are very much in line with the results presented in the text.

2.4 Estimation Results

Before we report our main results, let us briefly discuss the validity of our instruments. We report the F-test values for the instruments in the first stages of our regressions, which all exceed ten underlining the relevance of our instruments. This conclusion can also be obtained from the first stages of the regressions reported in table 3. The Sargan-tests of exogeneity also show that our instruments are exogenous and meet the second important condition for instrumental variables. The null hypothesis of exogeneity cannot be rejected in all cases. Furthermore, the variables excluded from the HAPPY equation in the bivariate probit models, which are our instruments in the remaining regressions, are generally statistically significant and underline the results of the 2SLS regressions. The 2SLS regressions and the bivariate probit models also confirm the results of our 2SLS regressions using SATISFACTION as dependent variable, which we discuss in the following sections.

In the following regressions we estimate the effects of economics and social science as fields of study on subjective well-being. The dependent variable SATISFACTION varies between 0 and 10, as is common practice in this literature. We control for further socio-economic aspects such as income, religion, expectations about the future, and behavior as a student. There is a growing literature on the effects of religion or religiosity on life satisfaction. Generally, the finding is that religious people are on average happier than atheists (see Deaton and Stone, 2013).⁷ Our results for the second stage of the instrumental variable estimations are reported in the following table, the first stage regressions are given in Tables A2 and A3 in the Appendix. We

⁷See Campanante and Yanagizawa-Drott (2013) who show that longer Ramadan fasting has positive effects on life satisfaction.

report results for regressions with ECON and SOSCI as alternative reference categories. One should note that our regressions explaining happiness do not control for age. We are aware of the finding in the literature that age can have significant impact on personal life satisfaction (see Frey and Stutzer, 2002: 61-62). However, this effect is usually given only for people older than our survey participants (i.e., typically aged 40 and older). The participants in our survey, however, are students and, therefore, all within a relatively small range of (young) age. Hence, we do not expect effects of age on life satisfaction.

Table 3: Estimation Results IV-Regressions

Method	2SLS	2SLS
dependent variable	SATISFACTION	SATISFACTION
ECON	1.271*** (0.416)	- -
SOSCI	- -	-1.271*** (0.416)
CATHOLIC	0.381** (0.171)	0.381** (0.171)
PROTESTANT	0.404** (0.183)	0.404** (0.183)
FAIRNESS	0.180*** (0.034)	0.180*** (0.034)
HIGH INCOME	0.838*** (0.224)	0.838*** (0.224)
JOBEXPECT	0.555*** (0.150)	0.555*** (0.150)
USE FORUM	-0.582** (0.242)	-0.582** (0.242)
CONSTANT	3.957*** (0.379)	5.228*** (0.262)
R^2	0.05	0.05
Obs.	869	869
F-Test 1. Stage	16.89 (0.00)	16.89 (0.00)
χ^2 -Test Overidentification	2.93 (0.94)	2.93 (0.94)

Heteroscedasticity consistent standard errors in parenthesis.

*, **, *** indicate 10%, 5% and 1% significance levels.

Obviously, there is a statistically positive relationship between being an ECON student and self-reported happiness, whereas students of other social

sciences (SOSCI) seem to be less happy. In fact, being a SOSCI student has significant negative effects on self-reported life satisfaction. Additionally and in line with neoclassical economics, we find that income is the main driver of individual happiness, as we estimate a statistically highly significant positive effect from high income on happiness. It should be noted again that our survey participants are students so that we compare rather low income levels. For these income levels we find a positive effect on happiness. Note though that absolute income is not necessarily the main driver of personal life satisfaction, but relative income appears to be even more important. This is confirmed by our regressions, which compare students reporting their financial situation as good to students who do not (see Clark, Frijters, and Shields, 2008, for an analysis of relative income and happiness). This finding is in line with other studies of happiness. Frijters, Haisken-DeNew and Shields (2004) show that money matters for life satisfaction in Germany as well. Furthermore, religion plays an important role for life satisfaction. CATHOLIC and PROTESTANT students are statistically significant happier than students reporting other religions in our sample.

A comparable finding is the strong relationship between student expectations regarding future job opportunities (JOBEXPECT) and happiness. Using Internet forums (USE FORUM) to communicate with fellow students has significantly negative effects on reported happiness. Maybe this finding is related to personal relations being weaker, as relying on Internet platforms to communicate with other people may signal a weaker social capital. Estimating linear probability models using HAPPY as dependent variable as well as bivariate probit models yield the same results (table A3-A6 in the Appendix). The standard tests for relevance and exogeneity confirm the validity of our instruments. As a result, our estimated coefficients on ECON and SOSCI can be interpreted as causal effects of different fields of study on happiness.

3 Conclusion

We have surveyed 918 German university students of economics and other social sciences with respect to their life satisfaction or happiness. As we have shown, studying economics positively affects self-reported life-satisfaction while studying other social sciences appears to have negative effects on individual life satisfaction when compared to economics. This should probably be rather good news for anybody involved in teaching economics, especially given the serious doubts that have recently been casted over the social and also private value of being taught economics. While, for example, Bauman and Rose (2011) and Konow (2014) have found that studying economics tends to make students behave more selfishly or rationally in laboratory experiments and Konow and Earley (2008) have shown that rational, selfish behavior tends to be associated with lower individual happiness levels, we find that

studying economics appears to positively affect students' life satisfaction.

Additionally, we have found a strong positive effect of income on subjective well-being. In spite of the findings of modern behavioral economics that well-being (obviously) depends on more than material wealth, income levels are still an important factor for individual life satisfaction, at least for low income levels. We have also found that happiness is positively affected by positive career perspectives, which may be interpreted as a proxy for future income. In addition, religion plays a role in self reported happiness, where christian students (both catholics and protestants) tend to be significantly happier than other students. To conclude, while income, religion, and future job perspectives are important drivers of individual life satisfaction for students in our sample, studying economics also increases students' self-reported well-being - at least some good news for all teachers of economics.

4 Appendix

Table A1: Variable Descriptions

variable	description
AGE	age of participants in years
SATISFACTION	life satisfaction on a 0 to 10 scale
CAREERFOCUS	students rate the importance of future career success as 0 (unimportant) and 1 (very important)
JOBEXPECT	1: students rate their future job chances as "very good" or "good", 0: else
CATHOLIC	1: catholic, 0: else
PROTESTANT	1: protestant, 0: else
ECON	1: economics, 0: else
FAIRNESS	assessment of fairness of fellow students between 0 (unfair) and 10 (fair)
MALE	1: male, 0: female
GIVE NOTES	1: has given study materials to fellow students, 0: else
HAPPY	1: reported well-being larger than 6, 0: else
HIGH INCOME	1: students rate their financial situation as "very good" or "good", 0: else
SOSCI	1: other social sciences, 0: else
LIVING ALONE	1: living alone, 0: else
USE FORUM	using students internet platform: 1 (unimportant) and 4 (very important)
POLITICS LEFT	1 if score is 1, 2, or 3; 0 else
PILITICS MIDDLE	1 if score is 4, 5, 6, or 7; 0 else
POLITICS RIGHT	1 if score is 8, 9, or 10; 0 else

Table A2: First Stage Regressions for ECON and SOSCI Students

	ECON	SOSCI
CATHOLIC	0.086 (0.035)***	-0.086 (0.035)***
PROTESTANT	0.034 (0.038)	-0.034 (0.038)
FAIRNESS	-0.011 (0.007)*	0.012 (0.007)*
HIGH INCOME	-0.040 (0.050)	0.040 (0.050)
JOBEXPECT	-0.002 (0.031)	0.002 (0.031)
USE FORUM	-0.174 (0.036)	0.174 (0.036)***
AGE	0.114 (0.026)***	-0.114 (0.026)***
AGESQUARE	-0.002 (0.0005)***	0.002 (0.0005)***
GIVE NOTES	-0.035 (0.030)	0.036 (0.030)
CAREERFOCUS	-0.214 (0.042)***	-0.214 (0.042)***
MALE	0.036 (0.030)	-0.036 (0.030)
LIVING ALONE	-0.175 (0.038)***	0.175 (0.038)***
WORK ALONE	0.065 (0.030)**	-0.065 (0.029)**
POLITICS LEFT	-	0.234 (0.050)***
POLITICS MIDDLE	0.253 (0.040)***	-0.019 (0.040)
POLITICS RIGHT	0.234 (0.050)***	-
CONSTANT	-1.167 (0.379)***	1.933 (0.381)***
R^2	0.18	0.18
Obs.	869	896

Heteroscedasticity consistent standard errors in parenthesis.

*, **, *** indicate 10%, 5% and 1% significance levels.

Table A3: Estimation Results Bivariate Probit-Regressions ECON

	HAPPY	ECON
ECON	0.481 (0.235)**	-
AGE	-	0.414 (0.120)***
AGESQUARE	-	-0.007 (0.002)***
GIVE NOTES	-	-0.138 (0.102)
CAREERFOCUS	-	-0.589 (0.126)***
MALE	-	0.106 (0.101)
LIVING ALONE	-	-0.540 (0.115)***
WORK ALONE	-	-0.214 (0.101)**
POLITICS MIDDLE	-	0.746 (0.118)***
POLITICS RIGHT	-	0.718 (0.160)***
CATHOLIC	0.200 (0.104)*	0.269 (0.115)**
PROTESTANT	0.334 (0.114)***	0.058 (0.129)
FAIRNESS	0.103 (0.021)***	-0.028 (0.023)
HIGH INCOME	0.572 (0.153)***	-0.041 (0.151)
CAREEREXP	0.276 (0.095)***	-0.002 (0.104)
USE FORUM	-0.285 (0.159)*	-0.614 (0.086)***
CONSTANT	-0.966 (0.208)***	-4.296 (1.638)***
Wald χ^2	242.37 (0.00)	
Obs.	871	

Heteroscedasticity consistent standard errors in parenthesis.

*, **, *** indicate 10%, 5% and 1% significance levels.

Table A4: Estimation Results Bivariate Probit-Regressions SOSCI

	HAPPY	SOSCI
SOSCI	-0.481 (0.268)***	-
AGE	-	-0.414 (0.120)***
AGESQUARE	-	0.007 (0.002)***
GIVE NOTES	-	0.138 (0.102)
CAREERFOCUS	-	-0.589 (0.126)***
MALE	-	-0.106 (0.101)
LIVING ALONE	-	0.540 (0.115)***
WORK ALONE	-	0.214 (0.101)***
POLITICS LEFT	-	0.718 (0.160)***
POLITICS MIDDLE	-	-0.027 (0.141)
CATHOLIC	0.200 (0.104)*	-0.269 (0.115)**
PROTESTANT	0.334 (0.114)***	-0.058 (0.129)
FAIRNESS	0.103 (0.021)***	0.028 (0.023)
HIGH INCOME	0.573 (0.153)***	0.041 (0.151)
JOBEXPECT	0.276 (0.100)***	0.002 (0.1054)
USE FORUM	-0.285 (0.159)*	0.614 (0.086)***
CONSTANT	-0.485 (0.159)***	3.577 (1.637)**
Wald χ^2	242.37 (0.00)	
Obs.	871	

Heteroscedasticity consistent standard errors in parenthesis.

*, **, *** indicate 10%, 5% and 1% significance levels.

Table A5: IV-regression using binary dependent variable HAPPY

Method	2SLS	2SLS
dependent variable	HAPPY	HAPPY
ECON	0.265*** (0.093)	- -
SOSCI	- -	-0.265*** (0.093)
CATHOLIC	0.068* (0.040)	0.068* (0.040)
PROTESTANT	0.116*** (0.042)	0.120*** (0.042)
FAIRNESS	0.040*** (0.008)	0.040*** (0.008)
HIGH INCOME	0.199*** (0.046)	0.199*** (0.046)
JOBEXPECT	0.097*** (0.034)	0.097*** (0.034)
USE FORUM	-0.118** (0.057)	-0.118*** (0.060)
CONSTANT	0.081 (0.080)	0.347*** (0.060)
R^2	0.04	0.04
Obs.	872	872
F-Test 1. Stage	17.06 (0.00)	17.06 (0.00)
χ^2 -Test Overidentification	3.64 (0.89)	3.64 (0.89)

Heteroscedasticity consistent standard errors in parenthesis.

*, **, *** indicate 10%, 5% and 1% significance levels.

Table A6: First stages of IV-regressions with binary dependent variable HAPPY

	ECON	SOSCI
CATHOLIC	0.083 (0.035)**	-0.083 (0.035)***
PROTESTANT	0.035 (0.038)	-0.035 (0.038)
FAIRNESS	-0.010 (0.040)	0.010 (0.007)
HIGH INCOME	-0.040 (0.050)	0.040 (0.047)
JOBEXPECT	-0.002 (0.031)	0.002 (0.031)
USE FORUM	0.174 (0.036)***	-0.174 (0.036)
AGE	0.115 (0.026)***	-0.115 (0.026)***
AGESQUARE	-0.002 (0.0005)***	0.002 (0.0005)***
GIVE NOTES	-0.034 (0.030)	0.034 (0.030)
CAREERFOCUS	-0.214 (0.042)***	-0.214 (0.042)***
MALE	0.033 (0.030)	-0.033 (0.030)
LIVING ALONE	-0.175 (0.038)***	0.175 (0.040)***
WORK ALONE	0.062 (0.030)**	0.062 (0.030)**
POLITICS LEFT	-	0.242 (0.050)***
POLITICS MIDDLE	0.256 (0.040)***	-0.013 (0.040)
POLITICS RIGHT	0.242 (0.050)***	-
CONSTANT	-1.181 (0.380)***	1.938 (0.381)***
R^2	0.18	0.18
Obs.	872	872

Heteroscedasticity consistent standard errors in parenthesis.

*, **, *** indicate 10%, 5% and 1% significance levels.

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