

ON-LINE APPENDIX

Appendix A. Amsterdam survey

This is a survey related to your decision to choose economics as your field of study. Your answers will be treated anonymously, and will only be used in academic research. It will take between 5 and 10 minutes to answer.

1. Do you have the Dutch nationality?

Yes

No

2. Do you study Economics or Business Economics at the University of Amsterdam?

Economics

Business Economics

A. We first would like to ask you something about yourself and your background.

3. What is your gender?

Male

Female

4. What is your year of birth?

5. The country where you went to secondary school:

6. What is the type of city you went to secondary school?

Rural town

Low density urban area

High density urban area

7. The year that you first entered the University of Amsterdam:

8. What is the highest educational level of your father?

Primary school

High School

College/University

9. What is the highest educational level of your mother?

Primary school

High school

College/University

10. Where does your parental annual family income approximately locate in your country's income distribution?

Lowest 20%

Between 20-40%

Median 20%

60-80%

Highest 20%

11. What type of grading system was used for your final exams?

A-F

1-10

1-6

Other,

12. What was your average grade at secondary school for your final exams?

13. If you had no mathematics in your final exam from secondary education: What was your last grade for math?

Grade: ..

Non-applicable

14. If you did have mathematics in your final exam from secondary education: What was your exam grade for math?

Grade:..

Non-applicable

B. You have chosen to study Economics. / B. You have chosen to study Business economics. (depending on what the respondent answered before)

15. What do you think is the probability to graduate with a Bachelor degree in three years time for an average person who started economics?

15a. What do you think is the probability to graduate with a Bachelor degree in three years time for an average person who started business economics?

16. Where would you look for a job after graduation?

The Netherlands

Your home country:...

Elsewhere, namely:..

17. What do you think is the median gross annual income for an economist with a Master degree, or, formerly a drs title, around age 45? Please, refer to the country where you would look for a job. (Remember: the median income is the income with 50% of the people earning more and 50% earning less than that amount.)

Euro:..

If not in euro, which currency:..

If not in euro, what amount:..

17a. What do you think is the median gross annual income for a business economist with a Master degree, or, formerly a drs title, around age 45? Please, refer to the country where you would look for a job.

(Remember: the median income is the income with 50% of the people earning more and 50% earning less than that amount.)

Euro:..

If not in euro, which currency:..

If not in euro, what amount:..

18. Of course, not everyone will earn the median income.

What fraction of those economists do you think would earn less than $\frac{3}{4}$ of that amount?

18a. Of course, not everyone will earn the median income.

What fraction of those business economists do you think would earn less than $\frac{3}{4}$ of that amount?

19. What fraction of those economists do you think would earn more than $\frac{1}{4}$ above that amount?

19a. What fraction of those business economists do you think would earn more than $\frac{1}{4}$ above that amount?

20. How do you rate your own probability to graduate with a Bachelor degree in three years time?

21. And how do you rate your own probability to graduate with a Master in economics in 5 years time?

[If the Master is followed elsewhere: the probability to graduate in nominal (formal) program time]

21a. And how do you rate your own probability to graduate with a Master in business economics in 5 years time?

[If the Master is followed elsewhere: the probability to graduate in nominal (formal) program time]

22. Let's assume that you will continue for a Master degree in economics. Right after graduating with that master, what do you think you will earn? As we assume that you will not know for sure what you might earn, we ask you for the median: at the median, there is 50% probability that you would earn less, and 50% probability that you would earn more. Please refer to the country where you will look for a job.

My median gross annual salary would be:

Euro:..

If not in euro, which currency:..

If not in euro, what amount:..

22a. Let's assume that you will continue for a Master degree in business economics. Right after graduating with that master, what do you think you will earn? As we assume that you will not know for sure what you might earn, we ask you for the median: at the median, there is 50% probability that you would earn less, and 50% probability that you would earn more. Please refer to the country where you will look for a job.

My median gross annual salary would be:

Euro:..

If not in euro, which currency:..

If not in euro, what amount:..

23. What do you think is the probability that you would earn *less* than $\frac{3}{4}$ of the salary you just indicated in the last question?

24. What do you think is the probability that you would earn *more* than $\frac{1}{4}$ above this salary?

C. Now suppose you had not chosen economics/ business economics. Imagine you had chosen

Medicine

Biology

Mathematics

Psychology

Sociology

History

Law

European Studies

(Dutch) Language and Literature

Art History

(survey chooses randomly one of the above)

25. Have you actually considered this study as an option?

Yes

No

26. How would you rate your own probability to graduate in three years with a Bachelor from that (rejected) study?

27. How would you rate your own probability to graduate in five years time with a Master of that same study?

28. Let's suppose you had graduated with a Master from that study. Right after graduation from that study with a Master degree, what do think your median gross annual salary would be? As before, please refer to the country where you would look for a job.

Euro:..

If not in euro, which currency:..

If not in euro, what amount:..

29. What do you think is the probability that you would earn *less* than $\frac{3}{4}$ of the salary you just indicated?

30. What do you think is the probability that you would earn *more* than $\frac{1}{4}$ above this salary?

D. Now suppose you had not started a university education at all, but had gone to work right after graduating from secondary school.

31. Right after graduation from secondary education, what do think your median gross annual salary would have been?

Euro:..

If not in euro, which currency:..

If not in euro, what amount:..

32. What do you think is the probability that you would earn less than 3/4 of this salary you just indicated?

33. What do you think is the probability that you would earn more than 1/4 above this salary?

34. We now ask you to rank yourself relative to other persons of your age who have graduated from secondary education. We ask for your percentile position on four abilities:

mathematical ability,

verbal ability (ability to express yourself articulately in your own language, ability to learn foreign languages),

social ability (feel yourself at home with other people, in groups, make contact, make friends)

commercial ability (the ability to convince other people to “buy something from you”, whether a product, a conviction, a political stand, etc).

	<i>Mathematical ability</i>	<i>Verbal ability</i>	<i>Social ability</i>	<i>Commercial ability</i>
<i>Top 5%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Top 10%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Top 25%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Top-Half</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Right in the middle</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lower 25 - 50%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lowest 25%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lowest 10%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lowest 5%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

35. How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks? Please tick a box on the scale.

<i>Risk preparedness: 1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
<i>Unwilling</i>									<i>Fully prepared</i>
<i>To take any risk</i>									<i>to take risks</i>

36. Among 10 persons, a lottery is organized where one person can win 100 euro. It's a fair lottery and each person has 10% probability to win the prize. How much would you be willing to pay at most for a ticket in this lottery?

37. You have chosen to study economics. A choice like that can be based on several arguments. Please specify the weight that each argument below had in your decision to study economics. Please make sure that your weights add up to 100.

	<i>I like the type of work</i>	<i>It fits my abilities</i>	<i>Earnings</i>	<i>Other</i>	<i>Total</i>
<i>Weight</i>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

37a. You have chosen to study business economics. A choice like that can be based on several arguments. Please specify the weight that each argument below had in your decision to study economics. Please make sure that your weights add up to 100.

	<i>I like the type of work</i>	<i>It fits my abilities</i>	<i>Earnings</i>	<i>Other</i>	<i>Total</i>
<i>Weight</i>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

38. For our academic research it will be interesting to relate your answers to your exam results. We repeat: analysis of data will be anonymous and only serve the purpose of pure academic research. Do you give permission to link your UvA study records to this survey? If so: please state your student number:

Thank you very much for your cooperation

APPENDIX B. Sample compositions

A: the Faculty of Economics and Business (FEB), University of Amsterdam

In Amsterdam, surveys were administered in class, at different points in the academic year 2013-2014 among three groups of students:

ECS3 : Course Econometrics, third year BSc Economics and Business. Students of the specialisations “Economics” and “Business” participated. This bachelor is taught in English and non-Dutch students participated.

ECTR1: Course Introductory Econometrics, first year BSc, Econometrics and Actuarial Science, Dutch students. It’s a population with better quantitative skills.

ECS1 : Research Project, first year BSc Economics and Business, Dutch and international students

Sample size and composition *Amsterdam (A)*

	Class size	Response	Response rate (%)	Foreign
ECS3	350	232	66.2	55
ECTR1	100	81	81.0	0
ECS1	600	89	14.8	22
TOTAL		402	38.2	

“Foreign” means that the student had secondary education outside The Netherlands. The University of Amsterdam makes a deliberate effort to attract foreign students, and most courses are also offered in English.

B: University of the Balearic Island, Faculty of Economics and Business

The UIB data are collected at the University of the Balearic Island, Faculty of Economics and Business and the degrees studied are “Degree in Economics” and “Degree in Business Administration”. The survey is done in the first week of the course Analysis of Economic Data and answering the survey is mandatory to later participate in an individual assignment which yields 15% of the assessment of the course.

The survey was administered in February 2013 among 431 first year students from the Economic program, and the Business and Administration program. The survey was done in the computer lab during class hours; as answering the survey was mandatory to participate in an assignment, non-response is not an issue.

P: Peking University, School of Economics and Guanghua School of Management,

The PKU survey is conducted in Peking University, School of Economics and Guanghua School of Management. The degrees studied include “Economics”, “Public Finance”, “Finance”, “International Trade”, “Management Science and Engineering”, “Business Administration”, “Public Management”. The survey is administered in the last four weeks of the second semester in 2013. Students complete online surveys by replying on electronic invitations to their email account. PKU is considered a top university in China, with highly selective admission, based on scores in a national university admission exam (with some provincial variations).

234 students participated, 161 in their first year and 72 in their fourth year. Participation was voluntary, with a lottery for a small reward (a phone card worth 7 Euros), won by 15% of the participants. The response was 28.8% of the invitations¹.

Sample composition Peking (P)

Major	Numbers
Economics	107
Business Administration	59
Law	35
Science	24
Humanities	8

We also ask a couple of questions about students' career choices after graduation and their preferences for financial aid packages during graduate study. We added some questions about students' performance in college entrance examination tests and standardized English Proficiency Tests administrated by the Ministry of Education, in order to verify student's self-reported ability in mathematical and verbal ability.

R: Faculty of Economics and Business, Rovira i Virgili University, Reus

The URV survey has been carried out in the Rovira i Virgili University, Faculty of Economics and Business. The Faculty is located in Reus, a middle sized city with about 120,000 inhabitants, located 100 km to the south of Barcelona. The degrees studied are "Economics", "Business Administration" and "Accounting and Finance". The survey is done two weeks before the end of the first quarter of the academic year, August 2013, and the students fill in the questionnaires in the class of Statistics I and II, with all students present participating. We have 445 responses, divided over four study years: 1 (179), 2 (190), 3 (47) and 4 (17) (for 12 students, study year is not known). The students work for three different degrees:

¹ We repeated the on-line version of the same survey as a paper-and-pencil version in another 6 universities at different selectivity levels, and retrieve 1986 questionnaires. Since these universities are not as selective as Peking University, we analyze in the present paper only students from Peking University. The other data will be analysed in a separate paper.

Sample composition Reus (R)

Degree	Spaniards	Foreign	Total
Economics	28	8	37
Management	248	29	280
Finance	108	19	128
Total	385	56	445

NB: Numbers do not add up because of missing information

In Amsterdam, an alternative study was randomly assigned, from a list we had drawn up (see the Amsterdam list in the survey, Appendix A). In Peking, students were asked to choose their preferred alternative major from the list of 44 majors offered at PKU; the list was restricted to studies offered at the same university, to maintain admission to the same highly selective university². In Spain, when students want to choose a study in a public university they are asked to list 8 studies ranked by preference. The grades of the university admission test averaged with the overall high school grades is used by the Spanish government to rank students in order to give priority to the best students to their first choice. In many cases, students that performed poorly may end up in the study they ranked in fourth or fifth position. In Reus and Baleares, the alternative study is a random draw from the 7 remaining options.

In URV the random assignment of alternative studies was done according to the first letter of the student's surname. We assigned the alternative studies to the different letters in a way that each study had the same probability to be randomly assigned. The list of alternative studies is the following:

<u>Surname first letter</u>	<u>Study</u>
A - B	Medicine
C - D	Biology
E - F	Law
G - L	Psychology
M	Sociology
N - Q	History
R	Mathematics
S	Philology
T - Z	Art

² Two students choose their present major, instead of an alternative one.

Appendix C. Seemingly unrelated regression

Equation	Obs	Parms	RMSE	"R-sq"	chi2	P
lnemeaninc	1,124	44	.7362808	0.1360	176.92	0.0000
dispersion	1,124	44	.8285355	0.0303	35.12	0.8282
prob_grad	1,124	44	23.85772	0.2817	440.76	0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
lnemeaninc					
female	-.1876674	.046106	-4.07	0.000	-.2780335 -.0973012
lowurban	.0655569	.0615211	1.07	0.287	-.0550222 .186136
highurban	.0435487	.0571189	0.76	0.446	-.0684022 .1554996
fathsec	.0146435	.0693355	0.21	0.833	-.1212514 .1505385
fathhigh	.0573944	.0774522	0.74	0.459	-.0944092 .2091981
famincse2	-.0613733	.0886979	-0.69	0.489	-.235218 .1124713
faminc34	-.0268349	.0644762	-0.42	0.677	-.1532059 .099536
faminc78	-.0306542	.0656222	-0.47	0.640	-.1592713 .0979629
famincge9	.0989454	.0992077	1.00	0.319	-.0954982 .2933889
gradehs	.0651183	.0259361	2.51	0.012	.0142846 .1159521
gr_math_hs	.0233382	.0490267	0.48	0.634	-.0727525 .1194288
ab_math	.0058352	.0169757	0.34	0.731	-.0274366 .039107
ab_verb	.001318	.0195181	0.07	0.946	-.0369367 .0395727
ab_soc	-.0028925	.0189958	-0.15	0.879	-.0401236 .0343386
ab_com	.0355796	.0173389	2.05	0.040	.0015959 .0695632
will_risk	.0007724	.0133842	0.06	0.954	-.0254601 .0270049
likejob	.0017053	.0016141	1.06	0.291	-.0014583 .0048689
fitjob	.0036636	.0016286	2.25	0.024	.0004716 .0068555
wagejob	.0019666	.0016793	1.17	0.242	-.0013247 .005258
gr_math_hs_high	.2609774	.1042	2.50	0.012	.056749 .4652057
gr_math_hs_no	.4315086	.2833207	1.52	0.128	-.1237898 .9868071
age	.0238456	.0073533	3.24	0.001	.0094334 .0382579
foreign	-.1244113	.1142955	-1.09	0.276	-.3484263 .0996038
gradehs_un	.2301209	.224834	1.02	0.306	-.2105456 .6707874
ab_math_un	-.774116	.5668211	-1.37	0.172	-1.885065 .3368329
ab_soc_un	0	(omitted)			
age_un	-.0820237	.1381596	-0.59	0.553	-.3528115 .1887641
will_risk_un	1.005413	.589635	1.71	0.088	-.1502506 2.161076
likejob_un	.0471586	.3133877	0.15	0.880	-.56707 .6613872
socsience	.0742668	.1496991	0.50	0.620	-.2191381 .3676716
technics	.085319	.1794543	0.48	0.634	-.2664049 .437043
noHS	-.1281012	.210418	-0.61	0.543	-.5405129 .2843106
repeat	-.0273212	.1361173	-0.20	0.841	-.2941061 .2394637
control_a1	-.003345	.1289272	-0.03	0.979	-.2560376 .2493477
control_a2_2	-.1893626	.1551811	-1.22	0.222	-.4935119 .1147866
control_a2_3	-.2346513	.1659402	-1.41	0.157	-.5598881 .0905855
control_a2a_2	-.0694579	.0918992	-0.76	0.450	-.2495769 .1106612
control_a2a_3	-.0015682	.1413145	-0.01	0.991	-.2785396 .2754031
control_a2a_4	-.2713088	.2358251	-1.15	0.250	-.7335175 .1908999
control_tipob_3	.0796265	.151972	0.52	0.600	-.2182332 .3774862
control_tipob_4	-.0258155	.1929869	-0.13	0.894	-.4040629 .3524319
control_tipob_5	-.0949681	.1876281	-0.51	0.613	-.4627124 .2727763
beijing	-.3093886	.1562895	-1.98	0.048	-.6157103 -.0030669
balears	-.4442331	.2328775	-1.91	0.056	-.9006646 .0121985
catalunya	-.1444596	.3166595	-0.46	0.648	-.7651007 .4761816
_cons	9.045355	.278734	32.45	0.000	8.499046 9.591663

dispersion							
female	.003043	.051883	0.06	0.953	-.0986459	.1047319	
lowurban	-.0319554	.0692296	-0.46	0.644	-.1676429	.1037321	
highurban	-.0478463	.0642758	-0.74	0.457	-.1738244	.0781319	
fathsec	.0307118	.0780231	0.39	0.694	-.1222106	.1836342	
fathhigh	-.0455054	.0871569	-0.52	0.602	-.2163298	.1253189	
famincse2	-.054401	.0998116	-0.55	0.586	-.2500281	.1412261	
faminc34	.1025746	.0725549	1.41	0.157	-.0396304	.2447796	
faminc78	.0892757	.0738445	1.21	0.227	-.055457	.2340083	
famincge9	.0645445	.1116383	0.58	0.563	-.1542625	.2833515	
gradehs	-.0327888	.0291858	-1.12	0.261	-.0899919	.0244144	
gr_math_hs	-.0101526	.0551697	-0.18	0.854	-.1182832	.0979781	
ab_math	-.0288478	.0191027	-1.51	0.131	-.0662885	.0085929	
ab_verb	.0441307	.0219637	2.01	0.045	.0010827	.0871787	
ab_soc	.0247279	.0213759	1.16	0.247	-.0171682	.066624	
ab_com	-.0236365	.0195115	-1.21	0.226	-.0618782	.0146053	
will_risk	.0342694	.0150612	2.28	0.023	.0047501	.0637888	
likejob	-.0002072	.0018163	-0.11	0.909	-.0037672	.0033528	
fitjob	.0011764	.0018326	0.64	0.521	-.0024155	.0047683	
wagejob	.0013245	.0018897	0.70	0.483	-.0023792	.0050283	
gr_math_hs_high	.0913318	.1172561	0.78	0.436	-.138486	.3211496	
gr_math_hs_no	.0096771	.3188203	0.03	0.976	-.6151993	.6345535	
age	-.0057307	.0082747	-0.69	0.489	-.0219487	.0104874	
foreign	.1594401	.1286165	1.24	0.215	-.0926436	.4115239	
gradehs_un	.1380917	.2530053	0.55	0.585	-.3577895	.633973	
ab_math_un	.2764457	.6378428	0.43	0.665	-.9737032	1.526595	
ab_soc_un	0	(omitted)					
age_un	-.0194512	.1554707	-0.13	0.900	-.3241683	.2852658	
will_risk_un	.2005192	.6635152	0.30	0.762	-1.099947	1.500985	
likejob_un	.1858099	.3526546	0.53	0.598	-.5053805	.8770003	
socscience	.1550806	.1684561	0.92	0.357	-.1750874	.4852485	
technics	.0188179	.2019396	0.09	0.926	-.3769764	.4146123	
noHS	-.1359247	.236783	-0.57	0.566	-.6000109	.3281615	
repeat	-.0555517	.1531725	-0.36	0.717	-.3557643	.244661	
control_a1	-.0104308	.1450815	-0.07	0.943	-.2947854	.2739237	
control_a2_2	.0667381	.174625	0.38	0.702	-.2755205	.4089968	
control_a2_3	.0619534	.1867322	0.33	0.740	-.3040351	.4279418	
control_a2a_2	-.0102156	.103414	-0.10	0.921	-.2129033	.192472	
control_a2a_3	-.0133102	.159021	-0.08	0.933	-.3249856	.2983652	
control_a2a_4	-.0470817	.2653736	-0.18	0.859	-.5672043	.473041	
control_tipob_3	-.0285491	.1710139	-0.17	0.867	-.3637301	.3066319	
control_tipob_4	-.0000768	.2171678	-0.00	1.000	-.4257179	.4255644	
control_tipob_5	-.021612	.2111376	-0.10	0.918	-.435434	.3922101	
beijing	.0691049	.1758723	0.39	0.694	-.2755984	.4138082	
baleares	.1862525	.2620567	0.71	0.477	-.3273691	.6998742	
catalunya	.3662559	.3563363	1.03	0.304	-.3321505	1.064662	
_cons	-.3466944	.3136588	-1.11	0.269	-.9614545	.2680656	

prob_grad						
female	1.193113	1.493974	0.80	0.425	-1.735023	4.121248
lowurban	1.707801	1.993469	0.86	0.392	-2.199327	5.614928
highurban	.8325791	1.850823	0.45	0.653	-2.794968	4.460126
fathsec	-.0344288	2.246678	-0.02	0.988	-4.437836	4.368979
fathhigh	.6835699	2.509686	0.27	0.785	-4.235325	5.602465
famincse2	-4.030022	2.874079	-1.40	0.161	-9.663113	1.603069
faminc34	-1.699849	2.089222	-0.81	0.416	-5.79465	2.394951
faminc78	-.5745131	2.126357	-0.27	0.787	-4.742096	3.59307
famincge9	-1.553576	3.214629	-0.48	0.629	-7.854133	4.746981
gradehs	4.55305	.8404068	5.42	0.000	2.905883	6.200217
gr_math_hs	1.083764	1.588614	0.68	0.495	-2.029862	4.197391
ab_math	2.002377	.5500645	3.64	0.000	.9242708	3.080484
ab_verb	.3888826	.6324444	0.61	0.539	-.8506856	1.628451
ab_soc	.0922945	.6155214	0.15	0.881	-1.114105	1.298694

ab_com	-.4414642	.5618333	-0.79	0.432	-1.542637	.6597088
will_risk	.9492078	.4336871	2.19	0.029	.0991968	1.799219
likejob	.0101742	.0523018	0.19	0.846	-.0923355	.1126839
fitjob	.0070473	.0527708	0.13	0.894	-.0963815	.1104761
wagejob	-.0181185	.0544141	-0.33	0.739	-.1247682	.0885311
gr_math_hs_high	.3760894	3.376395	0.11	0.911	-6.241524	6.993703
gr_math_hs_no	15.01498	9.180446	1.64	0.102	-2.978368	33.00832
age	-1.127573	.2382696	-4.73	0.000	-1.594573	-.6605734
foreign	6.180815	3.703518	1.67	0.095	-1.077947	13.43958
gradehs_un	14.89807	7.285299	2.04	0.041	.619142	29.17699
ab_math_un	-2.509089	18.36671	-0.14	0.891	-38.50718	33.489
ab_soc_un	0	(omitted)				
age_un	-15.97895	4.476786	-3.57	0.000	-24.75329	-7.204611
will_risk_un	16.3127	19.10595	0.85	0.393	-21.13428	53.75967
likejob_un	-15.74644	10.15471	-1.55	0.121	-35.6493	4.156419
socscience	3.995897	4.850702	0.82	0.410	-5.511304	13.5031
technics	15.36757	5.81486	2.64	0.008	3.970654	26.76449
noHS	3.103985	6.818178	0.46	0.649	-10.2594	16.46737
repeat	-25.13959	4.41061	-5.70	0.000	-33.78423	-16.49496
control_a1	8.139588	4.177629	1.95	0.051	-.0484148	16.32759
control_a2_2	.9215403	5.028334	0.18	0.855	-8.933813	10.77689
control_a2_3	-2.42039	5.376963	-0.45	0.653	-12.95904	8.118263
control_a2a_2	4.295304	2.97781	1.44	0.149	-1.541097	10.1317
control_a2a_3	-4.024959	4.579016	-0.88	0.379	-12.99967	4.949749
control_a2a_4	-22.73639	7.641444	-2.98	0.003	-37.71335	-7.759438
control_tipob_3	9.776565	4.924352	1.99	0.047	.125013	19.42812
control_tipob_4	13.43683	6.253358	2.15	0.032	1.180474	25.69319
control_tipob_5	13.15064	6.079717	2.16	0.031	1.234617	25.06667
beijing	40.1775	5.06425	7.93	0.000	30.25175	50.10324
baleares	-47.66905	7.545934	-6.32	0.000	-62.45881	-32.87929
catalunya	-36.62188	10.26072	-3.57	0.000	-56.73252	-16.51123
_cons	78.00828	9.031821	8.64	0.000	60.30623	95.71032

Correlation matrix of residuals:

	lnemeaninc	dispersion	prob_grad
lnemeaninc	1.0000		
dispersion	0.0025	1.0000	
prob_grad	0.0463	-0.0470	1.0000

Breusch-Pagan test of independence: chi2(3) = 4.898, Pr = 0.1795

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.      sureg (lnemeaninc female lowurban highurban fathsec fathhigh
>      famincse2 faminc34 faminc78 famincge9 gradehs gr_math_hs
>      ab_math ab_verb ab_soc ab_com will_risk likejob fitjob wagejob
>      gr_math_hs_high gr_math_hs_no age foreign gradehs_un ab_math_un ab_soc_un
>      age_un will_risk_un likejob_un
>      socscience technics noHS repeat
>      control_a1 control_a2_2 control_a2_3 control_a2a_2 control_a2a_3 control_a2a_4
>      control_tipob_3 control_tipob_4 control_tipob_5
>      beijing baleares catalunya)
>      (dispersion female lowurban highurban fathsec fathhigh
>      famincse2 faminc34 faminc78 famincge9 gradehs gr_math_hs
>      ab_math ab_verb ab_soc ab_com will_risk likejob fitjob wagejob
>      gr_math_hs_high gr_math_hs_no age foreign gradehs_un ab_math_un ab_soc_un
>      age_un will_risk_un likejob_un
>      socscience technics noHS repeat
>      control_a1 control_a2_2 control_a2_3 control_a2a_2 control_a2a_3 control_a2a_4
>      control_tipob_3 control_tipob_4 control_tipob_5
>      beijing baleares catalunya)
>      (prob_grad female lowurban highurban fathsec fathhigh
>      famincse2 faminc34 faminc78 famincge9 gradehs gr_math_hs

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> ab_math ab_verb ab_soc ab_com will_risk likejob fitjob wagejob
> gr_math_hs_high gr_math_hs_no age foreign gradehs_un ab_math_un ab_soc_un
> age_un will_risk_un likejob_un
> socscience technics noHS repeat
> control_a1 control_a2_2 control_a2_3 control_a2a_2 control_a2a_3 control_a2a_4
> control_tipob_3 control_tipob_4 control_tipob_5
> beijing baleares catalunya)
> if (year == 2014), corr;

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Seemingly unrelated regression

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Equation          Obs   Parns      RMSE    "R-sq"    chi2      P
-----
lnemeaninc       1,330    45    .5274028    0.3607    750.47    0.0000
dispersion       1,330    45    1.092514    0.0315     43.20    0.5486
prob_grad        1,330    45    22.77572    0.4024    895.44    0.0000
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|          Coef.  Std. Err.    z    P>|z|    [95% Conf. Interval]
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lnemeaninc
  female | -.0917305   .0311559   -2.94  0.003   -.1527949   -.030666
  lowurban | -.0012986   .0398844   -0.03  0.974   -.0794706   .0768733
  highurban | .0237265   .0383886    0.62  0.537   -.0515137   .0989667
  fathsec | .0338561   .0481101    0.70  0.482   -.0604381   .1281502
  fathhigh | .0213835   .0522647    0.41  0.682   -.0810535   .1238204
  famincse2 | -.0239914   .0493016   -0.49  0.627   -.1206208    .072638
  faminc34 | -.0359968   .0419616   -0.86  0.391   -.11824    .0462464
  faminc78 | .0546108   .0466148    1.17  0.241   -.0367525   .1459741
  famincge9 | .0911886   .0716673    1.27  0.203   -.0492767   .2316538
  gradehs | .0150177   .0262691    0.57  0.568   -.0364688   .0665041
  gr_math_hs | -.0055573   .0262857   -0.21  0.833   -.0570763   .0459617
  ab_math | .0091606   .0190188    0.48  0.630   -.0281155   .0464367
  ab_verb | .023793    .0206984    1.15  0.250   -.0167751   .0643612
  ab_soc | .0205727   .0196943    1.04  0.296   -.0180273   .0591728
  ab_com | .0383233   .0198996    1.93  0.054   -.0006792   .0773259
  will_risk | .0167032   .0079763    2.09  0.036    .00107   .0323364
  likejob | -.0012105   .0009428   -1.28  0.199   -.0030584   .0006374
  fitjob | -.0000491   .0011404   -0.04  0.966   -.0022842    .002186
  wagejob | .0029865   .0012525    2.38  0.017    .0005317   .0054413
  gr_math_hs_high | -.0043331   .0878278   -0.05  0.961   -.1764724   .1678062
  gr_math_hs_no | .0140097   .1359712    0.10  0.918   -.2524889   .2805084
  age | .01449    .0086151    1.68  0.093   -.0023953   .0313753
  foreign | -.0609885   .0720377   -0.85  0.397   -.2021799   .0802028
  gradehs_un | .1125883   .2052661    0.55  0.583   -.2897258   .5149024
  ab_math_un | .5927868   .5904496    1.00  0.315   -.5644732   1.750047
  ab_soc_un | .5693531    .418106    1.36  0.173   -.2501196   1.388826
  age_un | .6344364   .2742262    2.31  0.021    .0969629   1.17191
  will_risk_un | .5009311   .4467057    1.12  0.262   -.374596    1.376458
  likejob_un | -.5828712   .3105946   -1.88  0.061   -1.191625   .0258829
  socscience | -.1458208   .1341106   -1.09  0.277   -.4086728   .1170311
  technics | -.1472885   .1551475   -0.95  0.342   -.4513721   .1567951
  noHS | -.2092142   .1648479   -1.27  0.204   -.5323102   .1138817
  repeat | -.0006507   .1073598   -0.01  0.995   -.211072    .2097705
  control_a1 | .0232197   .1336696    0.17  0.862   -.2387678   .2852073
  control_a2_2 | -.1781574   .1120778   -1.59  0.112   -.3978258    .041511
  control_a2_3 | -.1569352   .1294361   -1.21  0.225   -.4106253   .0967549
  control_a2a_2 | -.0094856   .0808789   -0.12  0.907   -.1680053   .1490342
  control_a2a_3 | -.0707209   .120331    -0.59  0.557   -.3065653   .1651235
  control_a2a_4 | -.2041229   .106684    -1.91  0.056   -.4132196   .0049739
  control_tipob_3 | .0260872   .1293605    0.20  0.840   -.2274548   .2796292
  control_tipob_4 | -.0234758   .1662316   -0.14  0.888   -.3492837   .3023322
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control_tipob_5		-.0836912	.1556725	-0.54	0.591	-.3888036	.2214213
beijing		-.669925	.3008192	-2.23	0.026	-1.25952	-.0803302
baleares		.3674506	.2511241	1.46	0.143	-.1247436	.8596447
catalunya		.2260212	.2638819	0.86	0.392	-.2911777	.7432202
_cons		9.241465	.2970182	31.11	0.000	8.65932	9.823609

dispersion

female		-.0968714	.0645394	-1.50	0.133	-.2233663	.0296236
lowurban		.0475866	.0826204	0.58	0.565	-.1143464	.2095197
highurban		.0857075	.0795218	1.08	0.281	-.0701525	.2415674
fathsec		.037673	.0996601	0.38	0.705	-.1576572	.2330031
fathhigh		.0864662	.1082663	0.80	0.424	-.1257318	.2986642
famincse2		.1834456	.1021283	1.80	0.072	-.0167221	.3836133
faminc34		.0999384	.0869234	1.15	0.250	-.0704283	.2703051
faminc78		.0010991	.0965625	0.01	0.991	-.1881599	.190358
famincge9		-.0247998	.1484586	-0.17	0.867	-.3157733	.2661737
gradehs		.0631173	.0544163	1.16	0.246	-.0435367	.1697714
gr_math_hs		-.0239603	.0544508	-0.44	0.660	-.1306818	.0827612
ab_math		.0035783	.0393974	0.09	0.928	-.0736391	.0807957
ab_verb		-.0561278	.0428767	-1.31	0.191	-.1401647	.027909
ab_soc		.0060574	.0407966	0.15	0.882	-.0739025	.0860174
ab_com		-.0644678	.041222	-1.56	0.118	-.1452615	.0163259
will_risk		.0222763	.0165228	1.35	0.178	-.0101078	.0546604
likejob		.0013211	.0019531	0.68	0.499	-.0025068	.0051491
fitjob		.0058584	.0023623	2.48	0.013	.0012284	.0104885
wagejob		.0034747	.0025945	1.34	0.180	-.0016105	.0085598
gr_math_hs_high		-.3132311	.1819352	-1.72	0.085	-.6698174	.0433553
gr_math_hs_no		-.3733187	.2816641	-1.33	0.185	-.9253701	.1787328
age		.002286	.0178462	0.13	0.898	-.0326919	.0372639
foreign		-.017454	.149226	-0.12	0.907	-.3099316	.2750237
gradehs_un		.3089827	.4252083	0.73	0.467	-.5244103	1.142376
ab_math_un		1.521874	1.223115	1.24	0.213	-.8753879	3.919136
ab_soc_un		-1.018037	.8661059	-1.18	0.240	-2.715573	.6794992
age_un		.9915734	.5680592	1.75	0.081	-.1218022	2.104949
will_risk_un		-.4538495	.9253501	-0.49	0.624	-2.267502	1.359803
likejob_un		-.1101003	.6433961	-0.17	0.864	-1.371133	1.150933
socsience		.1723282	.2778099	0.62	0.535	-.3721692	.7168255
technics		.081983	.3213879	0.26	0.799	-.5479257	.7118916
noHS		.0330257	.3414822	0.10	0.923	-.6362671	.7023184
repeat		-.0709552	.2223955	-0.32	0.750	-.5068424	.3649321
control_a1		-.2272247	.2768963	-0.82	0.412	-.7699314	.315482
control_a2_2		-.2449727	.2321689	-1.06	0.291	-.7000153	.21007
control_a2_3		-.350044	.2681267	-1.31	0.192	-.8755626	.1754747
control_a2a_2		-.2007092	.1675405	-1.20	0.231	-.5290826	.1276642
control_a2a_3		-.1887348	.2492655	-0.76	0.449	-.6772861	.2998165
control_a2a_4		-.2863181	.2209957	-1.30	0.195	-.7194617	.1468255
control_tipob_3		.1394463	.2679701	0.52	0.603	-.3857655	.664658
control_tipob_4		-.0437654	.3443485	-0.13	0.899	-.718676	.6311452
control_tipob_5		-.0661832	.3224753	-0.21	0.837	-.6982231	.5658567
beijing		-1.819719	.6231465	-2.92	0.003	-3.041063	-.5983742
baleares		-.9373897	.5202031	-1.80	0.072	-1.956969	.0821897
catalunya		-.6043446	.5466308	-1.11	0.269	-1.675721	.4670321
_cons		.3208949	.6152727	0.52	0.602	-.8850174	1.526807

prob_grad

female		2.431583	1.345458	1.81	0.071	-.2054666	5.068633
lowurban		-.8000121	1.722394	-0.46	0.642	-4.175843	2.575819
highurban		-1.498138	1.657798	-0.90	0.366	-4.747362	1.751086
fathsec		-3.189769	2.077621	-1.54	0.125	-7.261832	.8822936
fathhigh		-1.492209	2.257035	-0.66	0.509	-5.915917	2.931499
famincse2		.0260076	2.129076	0.01	0.990	-4.146905	4.19892
faminc34		-1.527039	1.812099	-0.84	0.399	-5.078687	2.024609
faminc78		.4788009	2.013045	0.24	0.812	-3.466696	4.424298

famincge9	-4.467804	3.094928	-1.44	0.149	-10.53375	1.598144
gradehs	4.720539	1.134421	4.16	0.000	2.497114	6.943964
gr_math_hs	-2.327144	1.135139	-2.05	0.040	-4.551976	-1.1023116
ab_math	5.161055	.8213198	6.28	0.000	3.551298	6.770812
ab_verb	.5017949	.8938548	0.56	0.575	-1.250128	2.253718
ab_soc	.2113764	.8504908	0.25	0.804	-1.455555	1.878308
ab_com	1.817116	.859359	2.11	0.034	.1328038	3.501429
will_risk	.1675495	.3444522	0.49	0.627	-.5075645	.8426634
likejob	.1001379	.040716	2.46	0.014	.020336	.1799397
fitjob	.126068	.0492475	2.56	0.010	.0295447	.2225913
wagejob	.0868274	.0540878	1.61	0.108	-.0191827	.1928374
gr_math_hs_high	-5.018648	3.792816	-1.32	0.186	-12.45243	2.415135
gr_math_hs_no	-9.076985	5.871873	-1.55	0.122	-20.58564	2.431675
age	-.5633856	.3720407	-1.51	0.130	-1.292572	.1658008
foreign	-.020379	3.110927	-0.01	0.995	-6.117684	6.076926
gradehs_un	39.04479	8.864351	4.40	0.000	21.67098	56.4186
ab_math_un	66.46927	25.49838	2.61	0.009	16.49336	116.4452
ab_soc_un	5.372995	18.05578	0.30	0.766	-30.01568	40.76167
age_un	-13.05468	11.84237	-1.10	0.270	-36.26531	10.15594
will_risk_un	9.657175	19.29085	0.50	0.617	-28.15219	47.46654
likejob_un	-20.66601	13.41293	-1.54	0.123	-46.95486	5.622853
socscience	8.899434	5.791524	1.54	0.124	-2.451745	20.25061
technics	11.69577	6.699999	1.75	0.081	-1.435987	24.82753
noHS	2.005946	7.118906	0.28	0.778	-11.94685	15.95874
repeat	-22.5034	4.636297	-4.85	0.000	-31.59038	-13.41643
control_a1	4.052485	5.772478	0.70	0.483	-7.261365	15.36633
control_a2_2	-.0550193	4.840043	-0.01	0.991	-9.541329	9.431291
control_a2_3	-7.995728	5.589658	-1.43	0.153	-18.95126	2.9598
control_a2a_2	-11.87427	3.49273	-3.40	0.001	-18.7199	-5.028646
control_a2a_3	-16.35677	5.196457	-3.15	0.002	-26.54164	-6.171904
control_a2a_4	-.9276199	4.607115	-0.20	0.840	-9.957399	8.102159
control_tipob_3	7.783109	5.586394	1.39	0.164	-3.166022	18.73224
control_tipob_4	6.11565	7.17866	0.85	0.394	-7.954265	20.18557
control_tipob_5	5.667229	6.722667	0.84	0.399	-7.508957	18.84342
beijing	93.70583	12.99078	7.21	0.000	68.24436	119.1673
baleares	47.25757	10.84472	4.36	0.000	26.00231	68.51282
catalunya	62.44181	11.39566	5.48	0.000	40.10674	84.77689
_cons	4.237286	12.82664	0.33	0.741	-20.90246	29.37704

Correlation matrix of residuals:

	lnemeaninc	dispersion	prob_grad
lnemeaninc	1.0000		
dispersion	0.0639	1.0000	
prob_grad	-0.0182	-0.0555	1.0000

Breusch-Pagan test of independence: $\chi^2(3) = 9.967$, Pr = 0.0189