

Online Appendix
The Earnings Returns to Graduating with Honors
- Evidence from Law Graduates

Ronny Freier* Mathias Schumann† Thomas Siedler‡

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*DIW Berlin and Free University Berlin.

†Universität Hamburg.

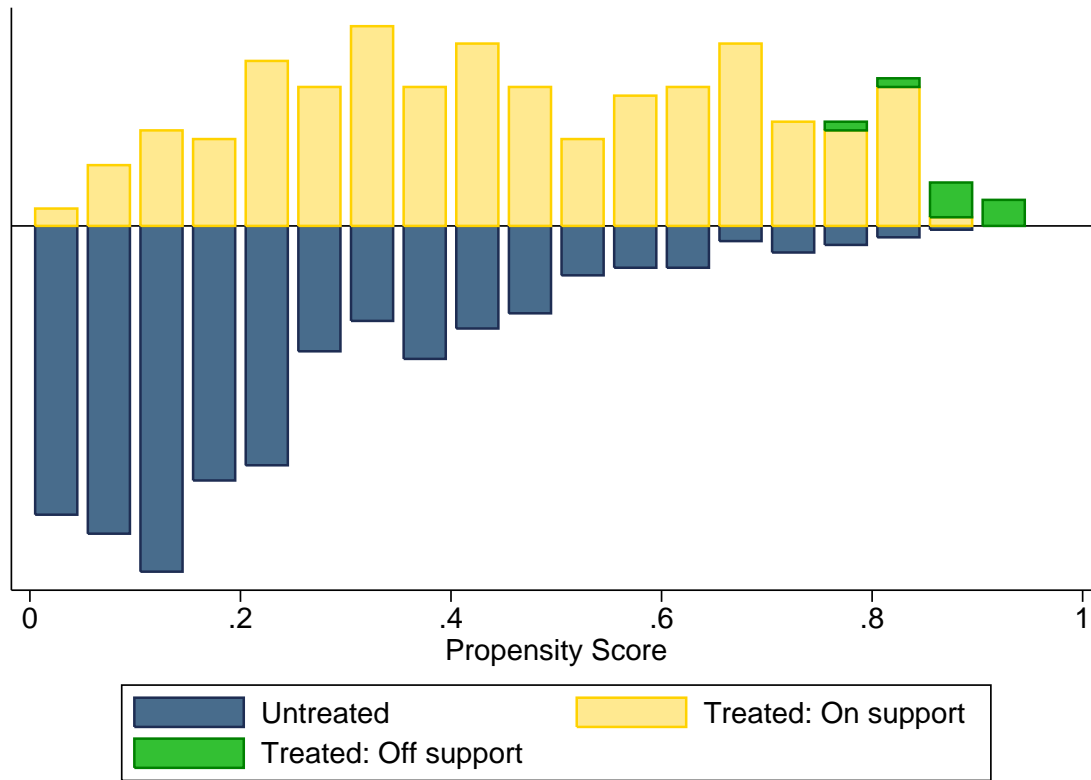
‡Universität Hamburg.

Figure A-1: DZHW panel survey of graduates

| Graduate cohort | Year | | | | | | | | | | | | | | | | | | |
|-----------------|------|---------|----|----|------|---------|----|----|------|---------|----|----|------|---------|----|----|----|----|---------|
| | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
| 1993 | Exam | 1. wave | | | | 2. wave | | | | | | | | | | | | | |
| 1997 | | | | | Exam | 1. wave | | | | 2. wave | | | | | | | | | |
| 2001 | | | | | | | | | Exam | 1. wave | | | | 2. wave | | | | | |
| 2005 | | | | | | | | | | | | | Exam | 1. wave | | | | | 2. wave |

Notes: The figure highlights the data structure of the DZHW panel survey of graduates. Graduates are interviewed about their studies and other topics one year after graduation. They are interviewed again five to six years after graduation about their labor market experience and several other topics. In the analysis, the graduate cohorts of the years 1993, 1997, 2001 and 2005 are used. Own illustration based on Briedis (2007).

Figure A-2: Matching quality - Common support



Notes: The figure displays the propensity score histogram of the propensity score matching specification as reported in Table 2, column 3. The histogram shows how many individuals are on and off the common support based on the estimated propensity score. The blue and yellow bars indicate how many observations in the treated and untreated groups could be successfully matched with each other. The green bars indicate how many observations could not be matched, i.e. how many observations are off the common support.

Table A-1: Difference-in-differences - omitting best medical and pharmacy graduates

| | The sample includes medical and pharmacy graduates with grades of | | | | | |
|--|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| | All | > 1.0 | > 1.1 | > 1.2 | > 1.3 | > 1.4 |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Panel 1: Difference-in-differences | | | | | | |
| Honors | -0.010 (0.029) | -0.042 (0.030) | -0.045 (0.030) | -0.043 (0.030) | -0.046 (0.031) | -0.046 (0.032) |
| Law | -0.233*** (0.028) | -0.232*** (0.028) | -0.232*** (0.028) | -0.231*** (0.028) | -0.232*** (0.028) | -0.233*** (0.028) |
| Honors*Law | 0.174*** (0.045) | 0.204*** (0.045) | 0.207*** (0.045) | 0.205*** (0.045) | 0.206*** (0.046) | 0.206*** (0.047) |
| Panel 2: Difference-in-differences and entropy balancing | | | | | | |
| Honors | 0.004 (0.030) | -0.023 (0.032) | -0.025 (0.032) | -0.023 (0.032) | -0.024 (0.033) | -0.024 (0.033) |
| Law | -0.189*** (0.045) | -0.183*** (0.044) | -0.183*** (0.043) | -0.180*** (0.042) | -0.190*** (0.041) | -0.193*** (0.043) |
| Honors*Law | 0.130** (0.054) | 0.162*** (0.054) | 0.166*** (0.054) | 0.158*** (0.054) | 0.162*** (0.054) | 0.148*** (0.057) |
| N | 2,199 | 2,144 | 2,142 | 2,135 | 2,122 | 2,105 |
| High school grade | Yes | Yes | Yes | Yes | Yes | Yes |
| Duration of studies | Yes | Yes | Yes | Yes | Yes | Yes |
| Motivation study choice | Yes | Yes | Yes | Yes | Yes | Yes |
| Parental background | Yes | Yes | Yes | Yes | Yes | Yes |
| Further controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Cohort fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: Robust standard and linearized errors are reported in parentheses. The table presents results from difference-in-differences specifications and difference-in-differences combined with entropy balancing specifications comparing law graduates to medicine and pharmacy graduates as control group omitting the best medical and pharmacy graduates respectively. Column 1 gives the result presented in Table 3, columns 2 and 4. The best medical and pharmacy graduates are omitted from the sample based on their final grade point average. For instance, medical and pharmacy graduates with a grade point average of 1.0 and 1.1 are excluded from the sample in column 3. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-2: Difference-in-differences - omitting best law, medical and pharmacy graduates

| | Sample includes law/medical & pharmacy graduates with scores/grades of | | | | | |
|--|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| | All | < 15.0/> 1.0 | < 14.0/> 1.1 | < 13.0/> 1.2 | < 12.0/> 1.3 | < 11.0/> 1.4 |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Panel 1: Difference-in-differences | | | | | | |
| Honors | -0.010 (0.029) | -0.043 (0.030) | -0.046 (0.030) | -0.043 (0.030) | -0.046 (0.031) | -0.047 (0.032) |
| Law | -0.233*** (0.028) | -0.233*** (0.028) | -0.233*** (0.028) | -0.230*** (0.028) | -0.230*** (0.028) | -0.230*** (0.028) |
| Honors*Law | 0.174*** (0.045) | 0.209*** (0.045) | 0.209*** (0.046) | 0.203*** (0.046) | 0.210*** (0.048) | 0.205*** (0.051) |
| Panel 2: Difference-in-differences and entropy balancing | | | | | | |
| Honors | 0.004 (0.030) | -0.023 (0.032) | -0.025 (0.032) | -0.023 (0.032) | -0.024 (0.033) | -0.024 (0.033) |
| Law | -0.189*** (0.045) | -0.183*** (0.044) | -0.183*** (0.043) | -0.180*** (0.042) | -0.190*** (0.041) | -0.193*** (0.043) |
| Honors*Law | 0.130** (0.054) | 0.162*** (0.054) | 0.166*** (0.054) | 0.158*** (0.054) | 0.162*** (0.054) | 0.148*** (0.057) |
| N | 2,199 | 2142 | 2,133 | 2,111 | 2,070 | 2,019 |
| High school grade | Yes | Yes | Yes | Yes | Yes | Yes |
| Duration of studies | Yes | Yes | Yes | Yes | Yes | Yes |
| Motivation study choice | Yes | Yes | Yes | Yes | Yes | Yes |
| Parental background | Yes | Yes | Yes | Yes | Yes | Yes |
| Further controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Cohort fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: Robust standard and linearized errors are reported in parentheses. The table presents results from difference-in-differences specifications and difference-in-differences combined with entropy balancing specifications comparing law graduates to medicine and pharmacy graduates as control group omitting the best law, medical and pharmacy graduates respectively. Column 1 gives the result presented in Table 3, columns 2 and 4. The best law (medical and pharmacy) graduates are omitted from the sample based on their score (final grade point average). For instance, law graduates with 14.0 points or above, and medical and pharmacy graduates with a grade point average of 1.0 and 1.1 are excluded from the sample in column 3. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-3: Sensitivity to omitted variable bias

| Description | Estimate (Std. error) |
|---|--------------------------|
| Baseline effect $\dot{\gamma}_3$ | 0.205 (0.046) |
| R-squared \dot{R} | 0.040 |
| Controlled effect $\tilde{\gamma}_3$ | 0.174 (0.045) |
| R-squared \tilde{R} | 0.162 |
| Bias-adjusted coefficient $\gamma_3^{*'} for \tilde{\delta} = 1$ | 0.125 |
| Identified set $[\gamma_3^{*'}(\min\{2.2\tilde{R}, 1\}, 1), \tilde{\gamma}_3]$ for $\tilde{\delta} = 1$ | [0.125, 0.174] |
| Confidence Interval $_{95, \tilde{\gamma}_3}$ | [0.091, 0.257] |
| Is zero excluded from identified set? ($\tilde{\delta} = 1$) | Yes |
| Is $\gamma_3^{*'}$ within 95-confidence interval? ($\tilde{\delta} = 1$) | Yes |

Notes: Based on an econometric method developed by Oster (2014).

Table A-4: Difference-in-differences & entropy balancing - alternative treatment coding in control group

| | Share of treated persons in control group | | | | | |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 0.18 | 0.23 | 0.25 | 0.27 | 0.30 | 0.32 |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Log of monthly gross earnings | | | | | |
| Honors | 0.020 (0.032) | 0.004 (0.030) | -0.002 (0.029) | 0.005 (0.028) | -0.016 (0.027) | -0.012 (0.027) |
| Law | -0.178*** (0.044) | -0.189*** (0.045) | -0.191*** (0.045) | -0.189*** (0.045) | -0.196*** (0.045) | -0.196*** (0.045) |
| Honors*Law | 0.114** (0.055) | 0.130** (0.054) | 0.136** (0.053) | 0.129** (0.053) | 0.150*** (0.052) | 0.146*** (0.052) |
| High school grade | Yes | Yes | Yes | Yes | Yes | Yes |
| Duration of studies | Yes | Yes | Yes | Yes | Yes | Yes |
| Motivation study choice | Yes | Yes | Yes | Yes | Yes | Yes |
| Parental background | Yes | Yes | Yes | Yes | Yes | Yes |
| Further controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Cohort fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: Robust standard errors are reported in parentheses. The table presents the difference-in-differences results comparing law graduates to medicine and pharmacy graduates as control group using alternative treatment codings for the control group. In each column a different cutoff based the relative distribution of the university graduation grade is used. Column 2 repeats the result presented in table 3, column 4. Each column shows the estimate of obtaining an honors degree in law or being among the best graduates in medicine or pharmacy respectively (Honors), being a law graduate (Law) and the interaction term of both (Honors*Law). Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-5: Difference-in-differences - omitting best law graduates

| | The sample includes law graduates with scores of | | | | | |
|--|--|----------------------|----------------------|----------------------|----------------------|----------------------|
| | All | < 15.0 | < 14.0 | < 13.0 | < 12.0 | < 11.0 |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Panel 1: Difference-in-differences | | | | | | |
| Honors | -0.010 (0.029) | -0.011 (0.029) | -0.011 (0.029) | -0.010 (0.029) | -0.010 (0.029) | -0.011 (0.029) |
| Law | -0.233*** (0.028) | -0.234*** (0.028) | -0.234*** (0.028) | -0.232*** (0.028) | -0.231*** (0.028) | -0.230*** (0.028) |
| Honors*Law | 0.174*** (0.045) | 0.178*** (0.045) | 0.176*** (0.045) | 0.173*** (0.045) | 0.178*** (0.047) | 0.174*** (0.049) |
| Panel 2: Difference-in-differences & entropy balancing | | | | | | |
| Honors | 0.004 (0.030) | 0.004 (0.030) | 0.004 (0.030) | 0.004 (0.030) | 0.004 (0.030) | 0.004 (0.030) |
| Law | -0.189*** (0.045) | -0.191*** (0.044) | -0.193*** (0.043) | -0.191*** (0.043) | -0.194*** (0.042) | -0.186*** (0.043) |
| Honors*Law | 0.130** (0.054) | 0.135** (0.053) | 0.137** (0.054) | 0.130** (0.053) | 0.134** (0.053) | 0.120** (0.056) |
| N | 2,199 | 2,197 | 2,190 | 2,175 | 2,147 | 2,113 |
| High school grade | Yes | Yes | Yes | Yes | Yes | Yes |
| Duration of studies | Yes | Yes | Yes | Yes | Yes | Yes |
| Motivation study choice | Yes | Yes | Yes | Yes | Yes | Yes |
| Parental background | Yes | Yes | Yes | Yes | Yes | Yes |
| Further controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Cohort fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |

Notes: Robust standard and linearized errors are reported in parentheses. The table presents results from difference-in-differences specifications and difference-in-differences combined with entropy balancing specifications comparing law graduates to medicine and pharmacy graduates as control group omitting the best law graduates respectively. Column 1 gives the result presented in Table 3, columns 2 and 4. The best law graduates are omitted from the sample based on their first bar exam score. For instance, law graduates with a score of 15 points or above are excluded from the sample in column 2. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-6: Difference-in-differences & entropy balancing - alternative control groups

| | Difference-in-differences & entropy balancing | | | | |
|--------------------------|---|---------------------|----------------------|----------------------|----------------------|
| | Med-Pharm | Teaching | Economics | M-P-T-E | All fields |
| | (1) | (2) | (3) | (4) | (5) |
| | Log of monthly gross earnings | | | | |
| Honors | 0.004 (0.030) | -0.039** (0.019) | 0.048** (0.021) | 0.007 (0.013) | 0.026*** (0.009) |
| Law | -0.189*** (0.045) | 0.102*** (0.036) | -0.252*** (0.038) | -0.277*** (0.042) | -0.189*** (0.040) |
| Honors*Law | 0.130** (0.054) | 0.173*** (0.048) | 0.086* (0.050) | 0.128*** (0.048) | 0.109** (0.047) |
| N | 2,199 | 2,663 | 3,006 | 6,211 | 13,493 |
| R ² | 0.154 | 0.162 | 0.155 | 0.264 | 0.276 |
| Further field indicators | No | No | No | Yes | Yes |
| High school grade | Yes | Yes | Yes | Yes | Yes |
| Duration of studies | Yes | Yes | Yes | Yes | Yes |
| Motivation study choice | Yes | Yes | Yes | Yes | Yes |
| Parental background | Yes | Yes | Yes | Yes | Yes |
| Further controls | Yes | Yes | Yes | Yes | Yes |
| Cohort fixed effects | Yes | Yes | Yes | Yes | Yes |

Notes: The table presents the results from difference-in-differences combined with entropy balancing estimators, comparing law graduates to alternative control groups. Each column displays the estimates of obtaining an honors degree in law or being among the best graduates in the respective field (Honors), being a law graduate (Law) and from the interaction term of both variables (Honors*Law). In column 1, the results of the main specification are repeated. In columns 2 and 3, teaching and economics graduates are used as control groups respectively. In column 4, medical, pharmacy, teaching and economics graduates are used as control groups simultaneously. In column 5, several other major fields of study are added as control groups namely anglistics, German philology, politics and social sciences, social affairs, engineering economics, computer science, physics/astronomy, chemistry, geography, machine/process engineering, electrical engineering, architecture/interior design, and constructional engineering. Further fields of study available in the data with small numbers of observations are not included because the entropy balancing algorithm does not converge for these fields. Linearized standard errors are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-7: Sample attrition

| Field of study | Honors degree | N | | Attrition in % |
|---------------------------|--------------------|--------|--------|----------------|
| | | Wave 1 | Wave 2 | |
| (1) | (2) | (3) | (4) | (5) |
| Law | No honors degree | 1,238 | 605 | 51.13 |
| | Honors degree | 462 | 261 | 43.51 |
| | Total | 1,700 | 866 | 49.06 |
| Medicine & pharmacy | No top performance | 1,919 | 1,086 | 43.41 |
| | Top performance | 512 | 316 | 38.28 |
| | Total | 2,431 | 1,402 | 42.33 |

Notes: The table shows how many individuals participated in the first survey waves after graduation, and the number of individuals who also participated in the second wave.

Table A-8: Sample attrition - likelihood to participate in the second survey wave

| | Dependent variable: likelihood to participate | | | | |
|-------------------|---|------------------|--------------------|------------------|----------------------|
| | Panel 1: Law | | Panel 2: Med-Pharm | | Panel 3: DiD |
| | LPM | Probit | LPM | Probit | LPM |
| | (1) | (2) | (3) | (4) | (5) |
| Honors | 0.035 (0.031) | 0.035 (0.030) | 0.031 (0.026) | 0.031 (0.026) | 0.024 (0.025) |
| Law | | | | | -0.070*** (0.022) |
| Honors*law | | | | | 0.015 (0.037) |
| Control variables | Yes | Yes | Yes | Yes | Yes |
| Cohort indicators | No | No | No | No | No |
| Observations | 1,700 | 1,700 | 2,431 | 2,431 | 4,131 |
| R ² | 0.028 | 0.021 | 0.015 | 0.011 | 0.025 |
| F (Chi2) | 1.670 | 48.690 | 1.130 | 37.470 | 2.900 |
| Prob > F (Chi2) | 0.009 | 0.049 | 0.281 | 0.313 | 0.000 |

Notes: The dependent variable is an indicator variable equal to one if respondents of the first wave participate in the second wave, and zero otherwise. For the probit models, average partial effects are reported. Standard errors are in parentheses. Robust standard errors are used in columns 1, 3 and 5. Column 5 includes law, medicine and pharmacy graduates. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-9: Difference-in-differences & alternative entropy balancing specifications

| | Log of monthly gross earnings | | | |
|-------------------------|-------------------------------|----------------------|----------------------|----------------------|
| | DiD & EB I | | DiD & EB II | |
| | (1) | (2) | (3) | (4) |
| Honors | 0.004 (0.034) | 0.004 (0.030) | 0.111** (0.054) | 0.051 (0.051) |
| Law | -0.127*** (0.042) | -0.189*** (0.045) | -0.226*** (0.027) | -0.246*** (0.033) |
| Honors*Law | 0.130** (0.058) | 0.130** (0.054) | 0.107* (0.064) | 0.104* (0.060) |
| R ² | 0.014 | 0.154 | 0.069 | 0.186 |
| Number of individuals | 2,199 | 2,199 | 2,199 | 2,199 |
| High school grade | No | Yes | No | Yes |
| Duration of studies | No | Yes | No | Yes |
| Motivation study choice | No | Yes | No | Yes |
| Parental background | No | Yes | No | Yes |
| Further controls | No | Yes | No | Yes |
| Cohort indicators | No | Yes | No | Yes |

Notes: Linearized standard errors in parentheses. The table presents the results from 4 separate difference-in-differences-entropy-balancing specifications comparing law graduates to medical and pharmacy graduates. Columns 1 and 2 repeat the main results from Table 3, columns 3 and 4 where law (medical and pharmacy) graduates without an honors degree were reweighted such that their group's covariate moments resemble those of law graduates (medical pharmacy graduates) with an honors degree. Columns 3 and 4 show the results of alternative difference-in-differences-entropy-balancing specifications where medical and pharmacy graduates with an honors degree were reweighted such that their group's covariate moments resemble those of law graduates with an honors degree. Medical and pharmacy graduates without an honors degree were reweighted with respect to law graduates without an honors degree accordingly. Note that in columns 3 and 4 the variables age at graduation, study length and motivation of study choice are excluded from the the weights calculation due to non-convergence in the group of graduates with an honors degree; they are however included in the regression step.

Table A-10: Baseline results - OLS with covariates

| | Log of monthly gross earnings | |
|-----------------------------------|-------------------------------|---------|
| | (1) | (2) |
| Honors degree | 0.125*** | (0.036) |
| Female | -0.128*** | (0.032) |
| <i>School education</i> | | |
| High school grade | -0.298* | (0.164) |
| Squared high school grade | 0.053 | (0.036) |
| High school: East Germany | 0.030 | (0.084) |
| High school: foreign | 0.572*** | (0.075) |
| <i>Studies</i> | | |
| Apprenticeship completed | 0.202*** | (0.047) |
| Age at graduation | -0.062 | (0.042) |
| Age at graduation squared | 0.001 | (0.001) |
| Duration of studies | -0.047 | (0.029) |
| Duration of studies squared | 0.002* | (0.001) |
| Motivation study choice | -0.015 | (0.012) |
| University: eastern Germany | -0.295*** | (0.086) |
| Children at graduation | -0.080 | (0.062) |
| <i>Father's school education</i> | | |
| University entrance degree | 0.009 | (0.065) |
| College entrance degree | -0.082 | (0.066) |
| Intermediate-track school degree | -0.021 | (0.050) |
| <i>Mother's school education</i> | | |
| University entrance degree | 0.083 | (0.063) |
| College entrance degree | 0.009 | (0.100) |
| Intermediate-track school degree | 0.061 | (0.040) |
| <i>Father's job qualification</i> | | |
| University | 0.042 | (0.066) |
| College | 0.014 | (0.055) |
| Fachschule (GDR) | 0.096 | (0.132) |
| Trade and technical school | 0.034 | (0.049) |
| <i>Mother's job qualification</i> | | |
| University | 0.072 | (0.067) |
| College | -0.069 | (0.081) |
| Fachschule (GDR) | -0.095 | (0.133) |
| Trade and technical school | 0.089 | (0.076) |
| <i>Father's job situation</i> | | |
| Self-employed | 0.046 | (0.061) |
| Employee | 0.072 | (0.056) |
| Civil servant | 0.021 | (0.059) |
| <i>Mother's job situation</i> | | |
| Self-employed | -0.054 | (0.063) |
| Employee | 0.007 | (0.038) |
| Civil servant | -0.035 | (0.061) |
| <i>Cohort indicators</i> | | |
| Cohort 2005 | -0.043 | (0.045) |
| Cohort 2001 | -0.064 | (0.045) |
| Cohort 1997 | -0.031 | (0.039) |
| Constant | 9.835*** | (0.680) |
| Observations | 828 | |

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| | Log of monthly gross earnings | |
|----------------|-------------------------------|-----|
| | (1) | (2) |
| R ² | 0.19 | |

Notes: The table reports all estimated coefficients (column 1) and robust standard errors (column 2) from the OLS regressions Table 2, column 2. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A-11: Entropy balancing moments - law graduates

| | Treatment group | | Control group | | | |
|--|-----------------|----------|------------------|----------|-----------------|----------|
| | Mean | Variance | Before balancing | | After balancing | |
| | | | Mean | Variance | Mean | Variance |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| <i>Demographics</i> | | | | | | |
| Female | 0.39 | 0.24 | 0.49 | 0.25 | 0.39 | 0.24 |
| Age at graduation | 25.42 | 2.52 | 26.00 | 6.27 | 25.42 | 2.52 |
| Children at graduation | 0.03 | 0.03 | 0.05 | 0.05 | 0.03 | 0.03 |
| Apprenticeship completed | 0.18 | 0.15 | 0.18 | 0.15 | 0.18 | 0.15 |
| University: western Germany | 0.89 | 0.10 | 0.86 | 0.12 | 0.89 | 0.10 |
| University: eastern Germany | 0.09 | 0.08 | 0.13 | 0.12 | 0.09 | 0.08 |
| Duration of studies (in semesters) | 9.86 | 1.81 | 10.64 | 4.50 | 9.86 | 1.81 |
| Motivation study choice | 3.36 | 1.41 | 3.29 | 1.49 | 3.36 | 1.41 |
| High school grade | 1.69 | 0.27 | 2.23 | 0.33 | 1.69 | 0.27 |
| High school: western Germany | 0.89 | 0.10 | 0.84 | 0.13 | 0.89 | 0.10 |
| High school: eastern Germany | 0.10 | 0.09 | 0.16 | 0.13 | 0.10 | 0.09 |
| <i>Father's highest general school degree</i> | | | | | | |
| University entrance degree | 0.53 | 0.25 | 0.47 | 0.25 | 0.53 | 0.25 |
| College entrance degree | 0.07 | 0.07 | 0.11 | 0.10 | 0.07 | 0.07 |
| Intermediate-track school degree | 0.17 | 0.14 | 0.18 | 0.15 | 0.17 | 0.14 |
| Low-track school degree | 0.22 | 0.17 | 0.21 | 0.17 | 0.22 | 0.17 |
| No school degree | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 |
| <i>Mother's highest general school degree</i> | | | | | | |
| University entrance degree | 0.37 | 0.23 | 0.29 | 0.20 | 0.37 | 0.23 |
| College entrance degree | 0.04 | 0.04 | 0.05 | 0.05 | 0.04 | 0.04 |
| Intermediate-track school degree | 0.34 | 0.22 | 0.37 | 0.23 | 0.34 | 0.22 |
| Low-track school degree | 0.25 | 0.19 | 0.27 | 0.20 | 0.25 | 0.19 |
| No school degree | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| <i>Father's job qualification/highest educational degree</i> | | | | | | |
| University | 0.50 | 0.25 | 0.40 | 0.24 | 0.50 | 0.25 |
| College | 0.13 | 0.11 | 0.18 | 0.15 | 0.13 | 0.11 |
| Fachschule (GDR) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Trade and technical school | 0.09 | 0.08 | 0.13 | 0.11 | 0.09 | 0.08 |
| Apprenticeship | 0.25 | 0.19 | 0.25 | 0.19 | 0.25 | 0.19 |
| No further degree | 0.01 | 0.01 | 0.03 | 0.03 | 0.01 | 0.01 |
| <i>Mother's job qualification/highest educational degree</i> | | | | | | |
| University | 0.28 | 0.20 | 0.23 | 0.18 | 0.28 | 0.20 |
| College | 0.07 | 0.06 | 0.06 | 0.06 | 0.07 | 0.06 |
| Fachschule (GDR) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Trade and technical school | 0.04 | 0.04 | 0.05 | 0.05 | 0.04 | 0.04 |
| Apprenticeship | 0.47 | 0.25 | 0.50 | 0.25 | 0.47 | 0.25 |
| No further degree | 0.12 | 0.11 | 0.12 | 0.10 | 0.12 | 0.11 |
| <i>Father's employment status</i> | | | | | | |
| Self-employed | 0.20 | 0.16 | 0.24 | 0.18 | 0.20 | 0.16 |
| Employee | 0.34 | 0.23 | 0.40 | 0.24 | 0.34 | 0.23 |
| Civil servant | 0.36 | 0.23 | 0.26 | 0.19 | 0.36 | 0.23 |
| Worker | 0.08 | 0.07 | 0.08 | 0.07 | 0.08 | 0.07 |
| <i>Mother's employment status</i> | | | | | | |
| Self-employed | 0.09 | 0.08 | 0.10 | 0.09 | 0.09 | 0.08 |
| Employee | 0.55 | 0.25 | 0.58 | 0.24 | 0.55 | 0.25 |

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| | Treatment group | | Control group | | | |
|--------------------------|-----------------|----------|------------------|----------|-----------------|----------|
| | Mean | Variance | Before balancing | | After balancing | |
| | | | Mean | Variance | Mean | Variance |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Civil servant | 0.07 | 0.06 | 0.08 | 0.07 | 0.07 | 0.06 |
| Worker | 0.12 | 0.11 | 0.13 | 0.11 | 0.12 | 0.11 |
| <i>Cohort indicators</i> | | | | | | |
| Cohort 2005 | 0.15 | 0.13 | 0.15 | 0.13 | 0.15 | 0.13 |
| Cohort 2001 | 0.21 | 0.16 | 0.17 | 0.14 | 0.21 | 0.16 |
| Cohort 1997 | 0.31 | 0.22 | 0.28 | 0.20 | 0.31 | 0.21 |

Notes: The table shows the control variables' means and variances for law graduates. The means and variances of the control variables are reported for graduates with an honors degree, for graduates without an honors degree before balancing, and for graduates without an honors degree after balancing. Law graduates without an honors degree are reweighted such that their group means, variances and skewness resemble the means, variances and skewness of the group of law graduates with an honors degree. The skewness of the control variable is not reported. The variables "University: abroad", "High school: abroad", "Father's employment status: economically inactive" and "Mother's employment status: economically inactive" are excluded from balancing because of collinearity.

Table A-12: Entropy balancing moments - medicine & pharmacy graduates

| | Treatment group | | Control group | | | |
|--|-----------------|----------|------------------|----------|-----------------|----------|
| | Mean | Variance | Before balancing | | After balancing | |
| | | | Mean | Variance | Mean | Variance |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| <i>Demographics</i> | | | | | | |
| Female | 0.69 | 0.22 | 0.63 | 0.23 | 0.69 | 0.22 |
| Age at graduation | 26.58 | 3.75 | 27.59 | 6.82 | 26.58 | 3.75 |
| Children at graduation | 0.07 | 0.07 | 0.13 | 0.11 | 0.07 | 0.07 |
| Apprenticeship completed | 0.15 | 0.13 | 0.22 | 0.17 | 0.15 | 0.13 |
| University: western Germany | 0.76 | 0.18 | 0.76 | 0.18 | 0.76 | 0.18 |
| Duration of studies (in semesters) | 12.35 | 4.27 | 12.86 | 5.09 | 12.35 | 4.27 |
| Motivation study choice | 3.89 | 1.31 | 3.96 | 1.42 | 3.89 | 1.31 |
| High school grade | 1.68 | 0.27 | 2.06 | 0.37 | 1.68 | 0.27 |
| High school: western Germany | 0.84 | 0.14 | 0.84 | 0.14 | 0.84 | 0.13 |
| High school: eastern Germany | 0.15 | 0.13 | 0.15 | 0.13 | 0.15 | 0.13 |
| <i>Father's highest general school degree</i> | | | | | | |
| University entrance degree | 0.59 | 0.24 | 0.51 | 0.25 | 0.59 | 0.24 |
| College entrance degree | 0.13 | 0.11 | 0.12 | 0.10 | 0.13 | 0.11 |
| Intermediate-track school degree | 0.12 | 0.11 | 0.14 | 0.12 | 0.12 | 0.11 |
| Low-track school degree | 0.16 | 0.14 | 0.21 | 0.17 | 0.16 | 0.13 |
| No school degree | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 |
| <i>Mother's highest general school degree</i> | | | | | | |
| University entrance degree | 0.45 | 0.25 | 0.35 | 0.23 | 0.45 | 0.25 |
| College entrance degree | 0.05 | 0.04 | 0.06 | 0.06 | 0.05 | 0.04 |
| Intermediate-track school degree | 0.32 | 0.22 | 0.31 | 0.21 | 0.32 | 0.22 |
| Low-track school degree | 0.19 | 0.15 | 0.26 | 0.19 | 0.19 | 0.15 |
| No school degree | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 |
| <i>Father's job qualification/highest educational degree</i> | | | | | | |
| University | 0.54 | 0.25 | 0.47 | 0.25 | 0.54 | 0.25 |
| College | 0.15 | 0.13 | 0.16 | 0.14 | 0.15 | 0.13 |
| Fachschule (GDR) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Trade and technical school | 0.08 | 0.07 | 0.13 | 0.11 | 0.08 | 0.07 |
| Apprenticeship | 0.20 | 0.16 | 0.20 | 0.16 | 0.20 | 0.16 |
| No degree | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 | 0.01 |
| <i>Mother's job qualification/highest educational degree</i> | | | | | | |
| University | 0.38 | 0.24 | 0.28 | 0.20 | 0.38 | 0.24 |
| College | 0.07 | 0.07 | 0.07 | 0.06 | 0.07 | 0.07 |
| Fachschule (GDR) | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Trade and technical school | 0.04 | 0.03 | 0.06 | 0.05 | 0.04 | 0.03 |
| Apprenticeship | 0.38 | 0.24 | 0.44 | 0.25 | 0.38 | 0.24 |
| No degree | 0.09 | 0.08 | 0.12 | 0.11 | 0.09 | 0.08 |
| <i>Father's employment status</i> | | | | | | |
| Self-employed | 0.25 | 0.19 | 0.29 | 0.21 | 0.25 | 0.19 |
| Employee | 0.40 | 0.24 | 0.37 | 0.23 | 0.40 | 0.24 |
| Civil servant | 0.28 | 0.20 | 0.24 | 0.18 | 0.28 | 0.20 |
| Worker | 0.06 | 0.06 | 0.08 | 0.07 | 0.06 | 0.06 |
| Economically inactive | 0.01 | 0.01 | 0.02 | 0.02 | 0.01 | 0.01 |
| <i>Mother's employment status</i> | | | | | | |
| Self-employed | 0.12 | 0.10 | 0.14 | 0.12 | 0.12 | 0.10 |
| Employee | 0.61 | 0.24 | 0.56 | 0.25 | 0.61 | 0.24 |

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| | Treatment group | | Control group | | | |
|--------------------------|-----------------|----------|------------------|----------|-----------------|----------|
| | Mean | Variance | Before balancing | | After balancing | |
| | | | Mean | Variance | Mean | Variance |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Civil servant | 0.15 | 0.13 | 0.11 | 0.10 | 0.15 | 0.13 |
| Worker | 0.05 | 0.05 | 0.07 | 0.07 | 0.05 | 0.05 |
| Economically inactive | 0.06 | 0.05 | 0.11 | 0.10 | 0.06 | 0.05 |
| <i>Cohort indicators</i> | | | | | | |
| Cohort 2005 | 0.35 | 0.23 | 0.29 | 0.21 | 0.35 | 0.23 |
| Cohort 2001 | 0.24 | 0.18 | 0.22 | 0.17 | 0.24 | 0.18 |
| Cohort 1997 | 0.27 | 0.20 | 0.24 | 0.18 | 0.27 | 0.20 |

Notes: The table shows the control variables' means and variances for medicine and pharmacy graduates. The means and variances of the control variables are reported for graduates with a pseudo honors degree (top performance), for graduates without a pseudo honors degree before balancing, and for graduates without a pseudo honors degree after balancing. Medicine and pharmacy graduates without a pseudo honors degree are reweighted such that their group means, variances and skewness resemble the means, variances and skewness of the group of medicine and pharmacy graduates with a pseudo honors degree. The skewness of the control variable is not reported. The variables "University: eastern Germany", "University: abroad" and "High school: abroad" are excluded from balancing because of collinearity.

Table A-13: Robustness of matching and entropy balancing results

| | Rad 0.05 | Rad 0.15 | NN-5 | Kernel | Mahal | Entropy-I | Entropy-II |
|--------|-------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | Log of monthly gross earnings | | | | | | |
| Honors | 0.144*** (0.051) | 0.150*** (0.049) | 0.145*** (0.052) | 0.150*** (0.049) | 0.146*** (0.049) | 0.138*** (0.042) | 0.146*** (0.040) |
| N | 791 | 822 | 819 | 823 | 828 | 828 | 828 |

Notes: Columns 1 and 2 show results for radius matching in which we have subtracted and added 0.005 to our baseline caliper of 0.01. In column 3, nearest-neighbor matching using up to 5 neighbors within a caliper of 0.01 is deployed. Results in column 4 use a kernel matching procedure with a bandwidth of 0.02 and a Epanechnikov kernel. In column 5 Mahalanobis distance matching is used. In columns 6 and 7, the results for entropy balancing are shown using the mean and variance only, and the mean only, respectively, when balancing covariate moments between the treatment and the control group. Standard errors for the matching estimators in columns 1 to 5 are bootstrapped with 1,000 replications; standard errors in columns 6 and 7 are linearized. Note that the number of observations varies because each specification differs in the common support. The control variables are measured one year after graduation and include the respondent's gender, high school grade, location of high school (eastern Germany, western Germany, abroad), completion of an apprenticeship before studying, location of university (eastern Germany, western Germany, abroad), age at graduation, child at graduation, duration of studies (in semesters), motivation study choice, and the highest general school degree, job qualifications and employment status of both parents. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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