Appendix Exhibits to "Why Do Wages Grow Faster for Educated Workers?"

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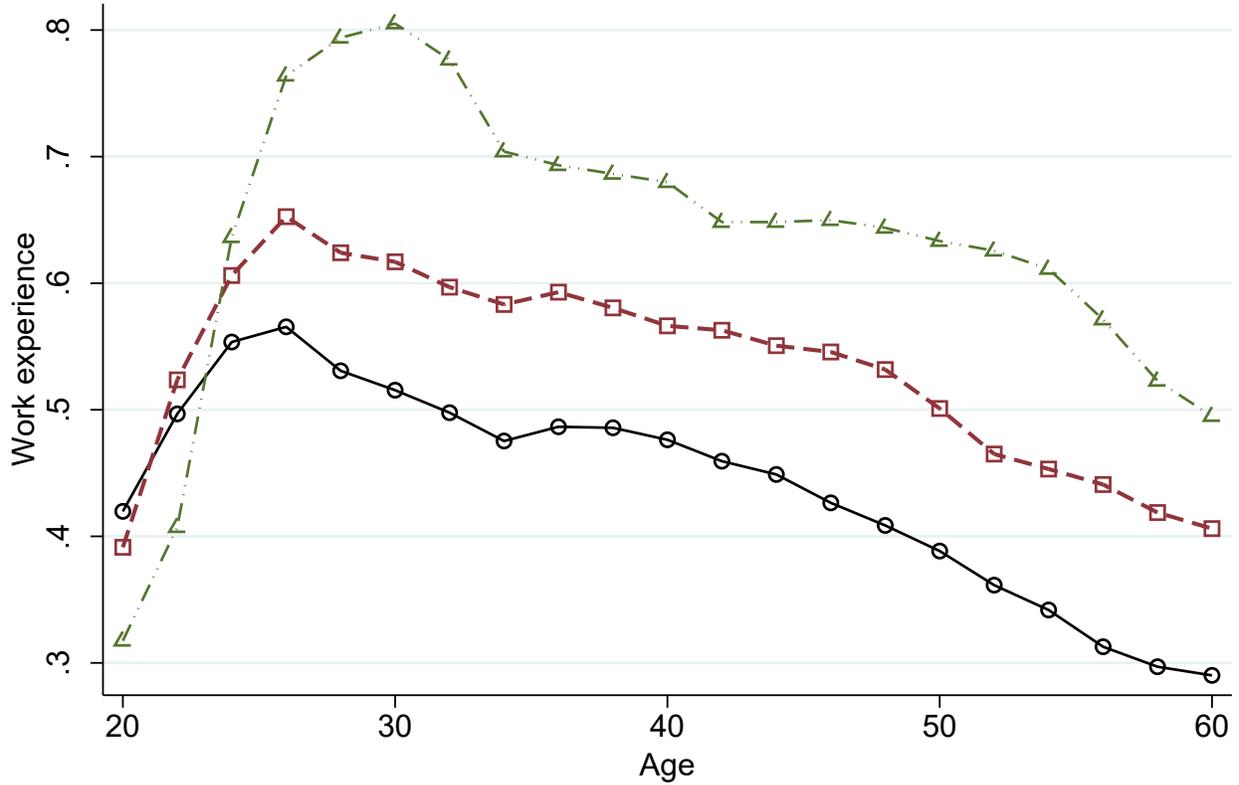
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FROM HERE FORWARD NOT FOR PUBLICATION

Figure A1

# Work Experience by Age and Education
in fractions of a year (40 hrs/wk, 52 wks)

Notes: Figure A1 presents a regression of hours worked on age by education group controlling for individual fixed effects. Experience is scaled to fractions of a year where one year is 2,080 hours. The data come from the NLSY79, ages 19-60.
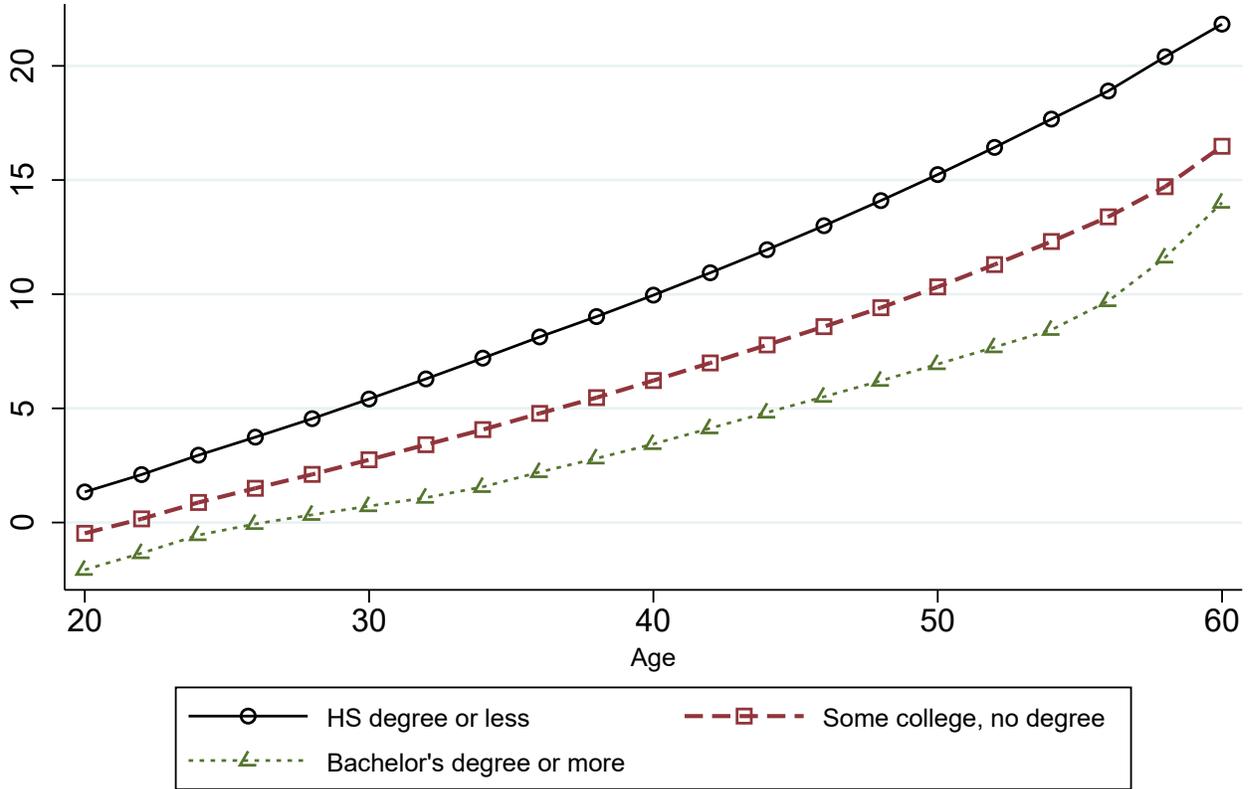
Figure A2

Increasing Wage Premium for Education and Cognitive Skill
NLSY97
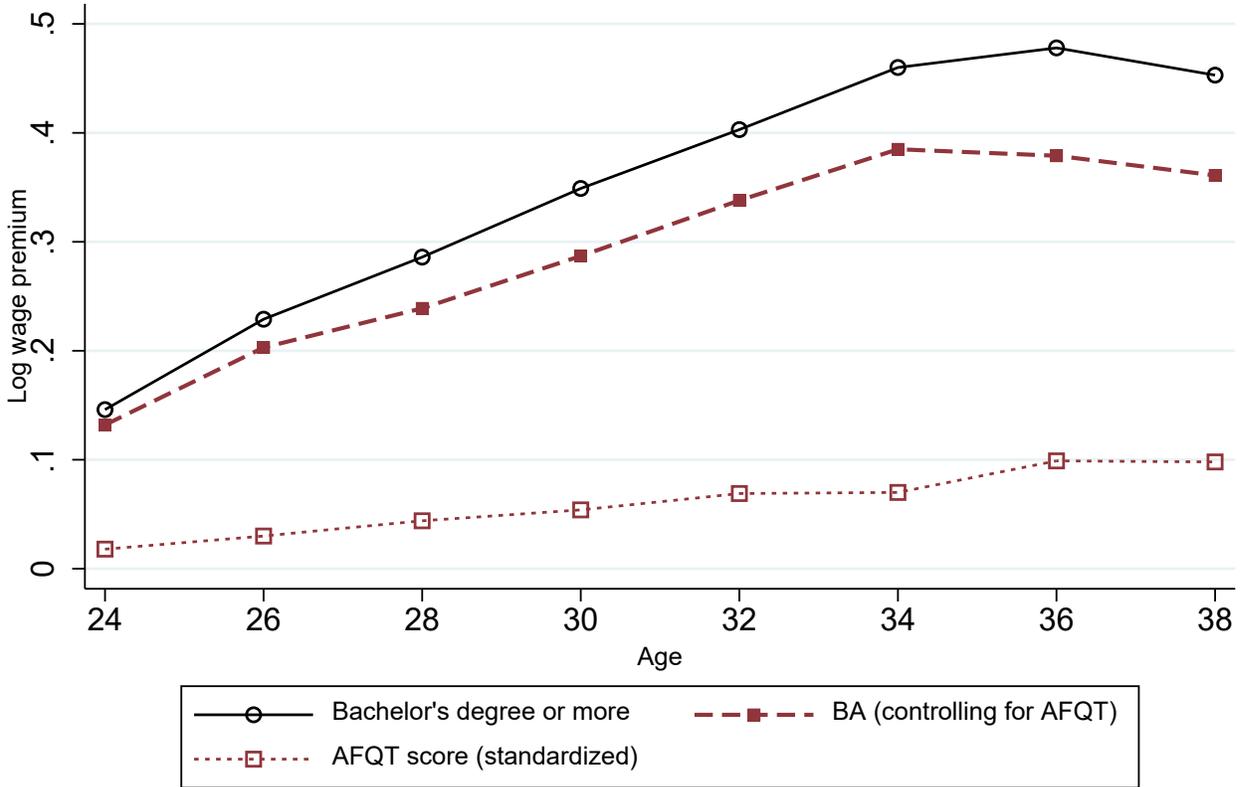
Notes: Figure A2 presents separate regressions of log hourly wages on two-year age bins and individual fixed effects. The solid line adds interactions of age with an indicator for having a bachelor's degree or more. The dashed line plots education by age interactions, also controlling for interactions between age and the respondent's Armed Forces Qualifying Test (AFQT) score (the dotted line), which is normalized to have mean zero and standard deviation one. The data come from the NLSY97, ages 22-38.

Bias in Potential Experience by Age and Education
Potential minus actual experience

Notes: Figure A3 computes potential experience (age minus years of education minus six) and actual work experience (one year = 2,080 hours) by age and plots the former minus the latter at each age. The data come from the NLSY79, ages 19-60.
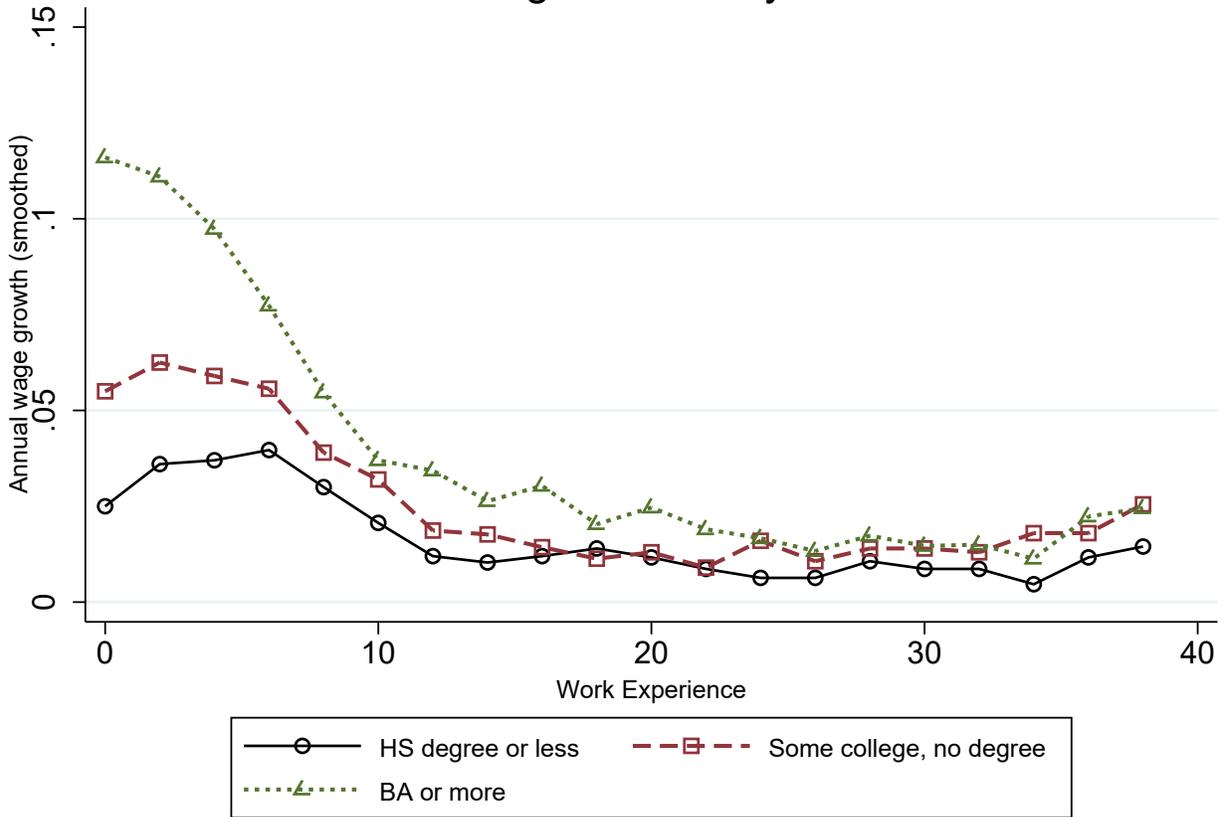
Figure A4

Mincer Model Understates Wage Growth for College Graduates
NLSY97

	Mincer return		Non-parametric
	Panel regression		BA*experience interaction
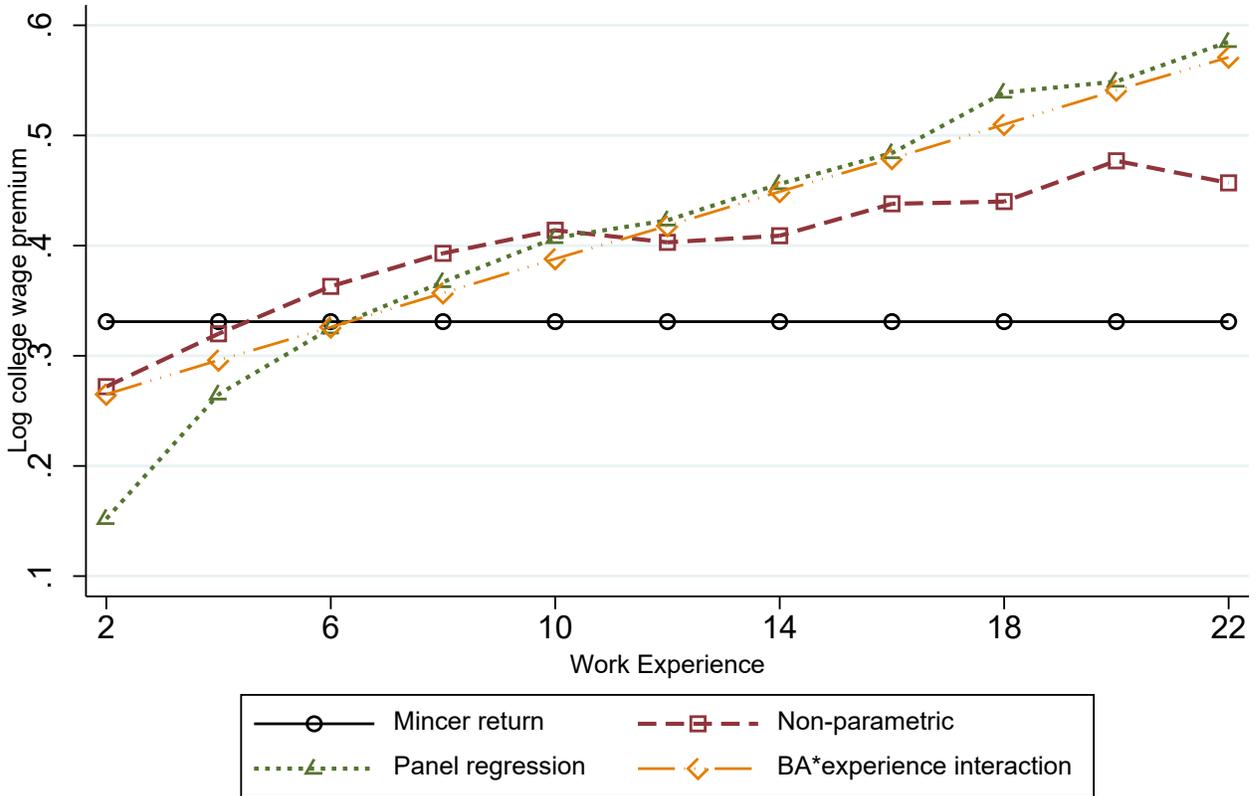
Notes: Figure A4 presents estimates of equations (2) and (3) in the paper, with log hourly wages regressed on education and actual experience (one year = 2,080 hours). The line labeled "Mincer return" is the (constant) coefficient on an indicator for having a bachelor's degree in a Mincerian earnings regression. The line labeled "Non-parametric" is the coefficients from an estimate of equation (2), with BA interacted with two-year work experience bins plus controls for race, gender, year, and age. The panel regression adds individual fixed effects. The line labeled "BA*Exp interaction" presents implied values from an estimate of equation (3), which modifies the Mincer model with a linear interaction between BA and work experience. The data come from the NLSY97, ages 22-38.

Annual Wage Growth by Education

Notes: Figure A5 presents separate regressions by education groups of hourly wages (in levels) on two-year bins of actual work experience (one year = 2,080 hours) and individual fixed effects. After obtaining results in levels, I calculate the annual percent change and then smooth the series using a five-year moving average. The data come from the NLSY79, ages 19-60 (starting at age 21 for the some college group and age 23 for the BA or more group).
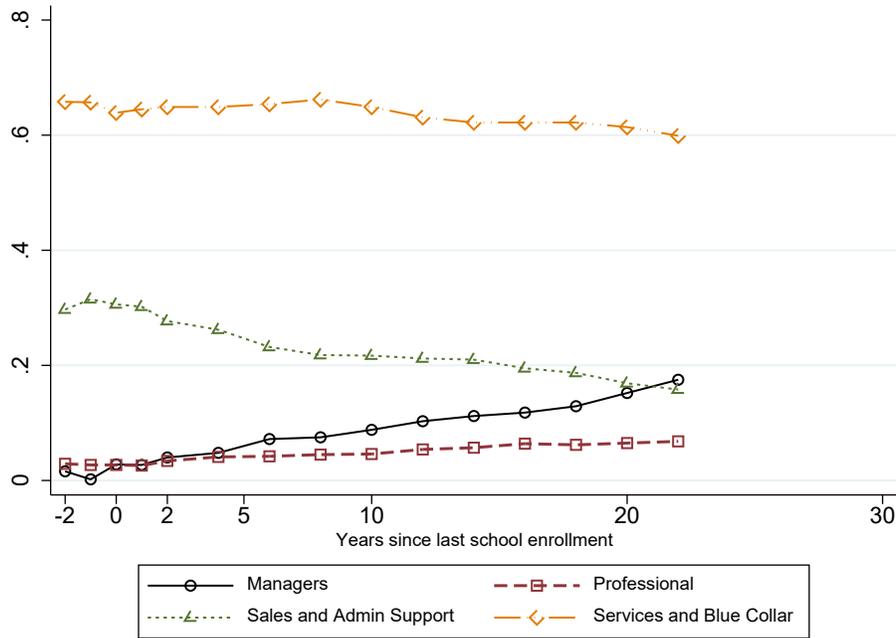
Figure A6

Wage Growth by Years of Completed Schooling, NLSY97
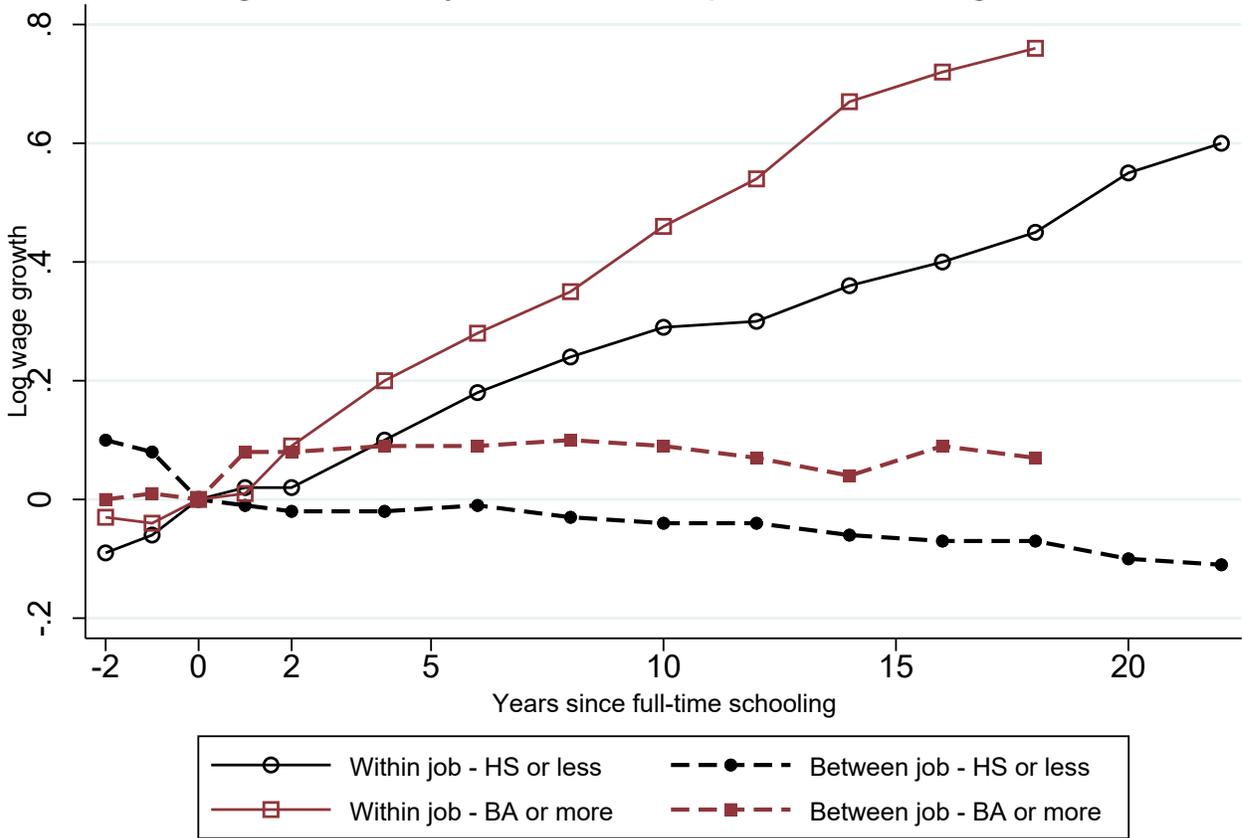
Notes: Figure A6 presents estimates of equation (5) in the paper, with log hourly wages regressed on indicators for years since the last survey wave in which a respondent is enrolled full-time in school (Panel A) or two-year bins of actual work experience (one year = 2,080 hours). The solid line includes individual-by-job fixed effects, and the dashed line subtracts the solid line from estimates with individual fixed effects. The regressions are estimated separately for workers with a high school degree or less (black lines, circle markers) and with a bachelor's degree or more (red lines, square markers). The data come from the NLSY97, ages 19-40.

Figure A7

Panel A – Occupations Held by Workers with a HS Degree or Less

Legend:
- Managers
- Professional
- Sales and Admin Support
- Services and Blue Collar

x-axis: Years since last school enrollment

Panel B – Occupations Held by Workers with BA Degree or more

Legend:
- Managers
- Professional
- Sales and Admin Support
- Services and Blue Collar

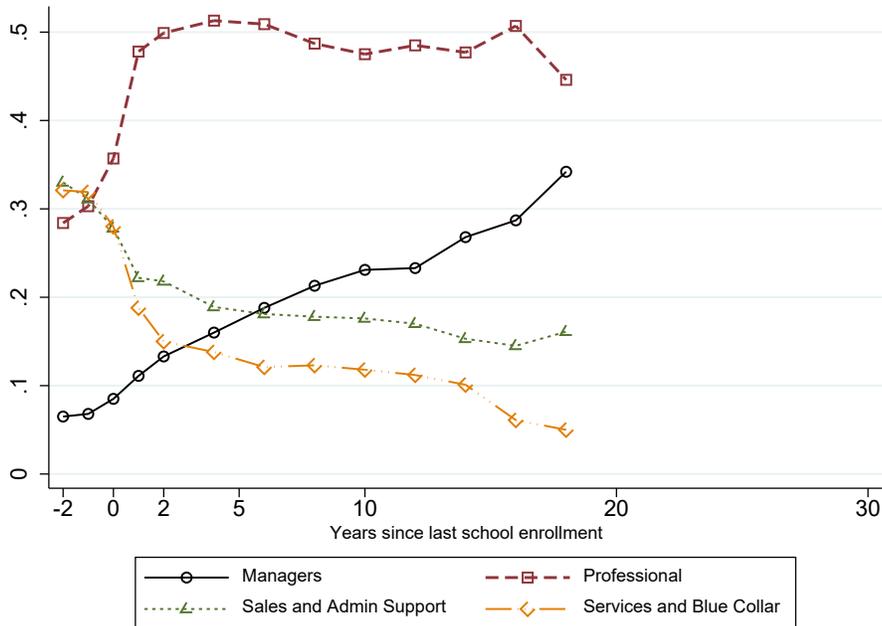x-axis: Years since last school enrollment

Notes: Figure A7 presents estimates of equation (4) in the paper, with occupation categories regressed on indicators for years since the last time a respondent is enrolled full-time in school and individual fixed effects. Professional, sales/admin support, and services/blue collar correspond to occ1990dd codes 23-235, 243-399, and 400 and above respectively. Mangement includes codes 4-22, and also a series of codes indicating supervisors of workers in the other categories. The data come from the NLSY97, ages 19-40.

Figure A8

Wage Growth with Tenure, by Education
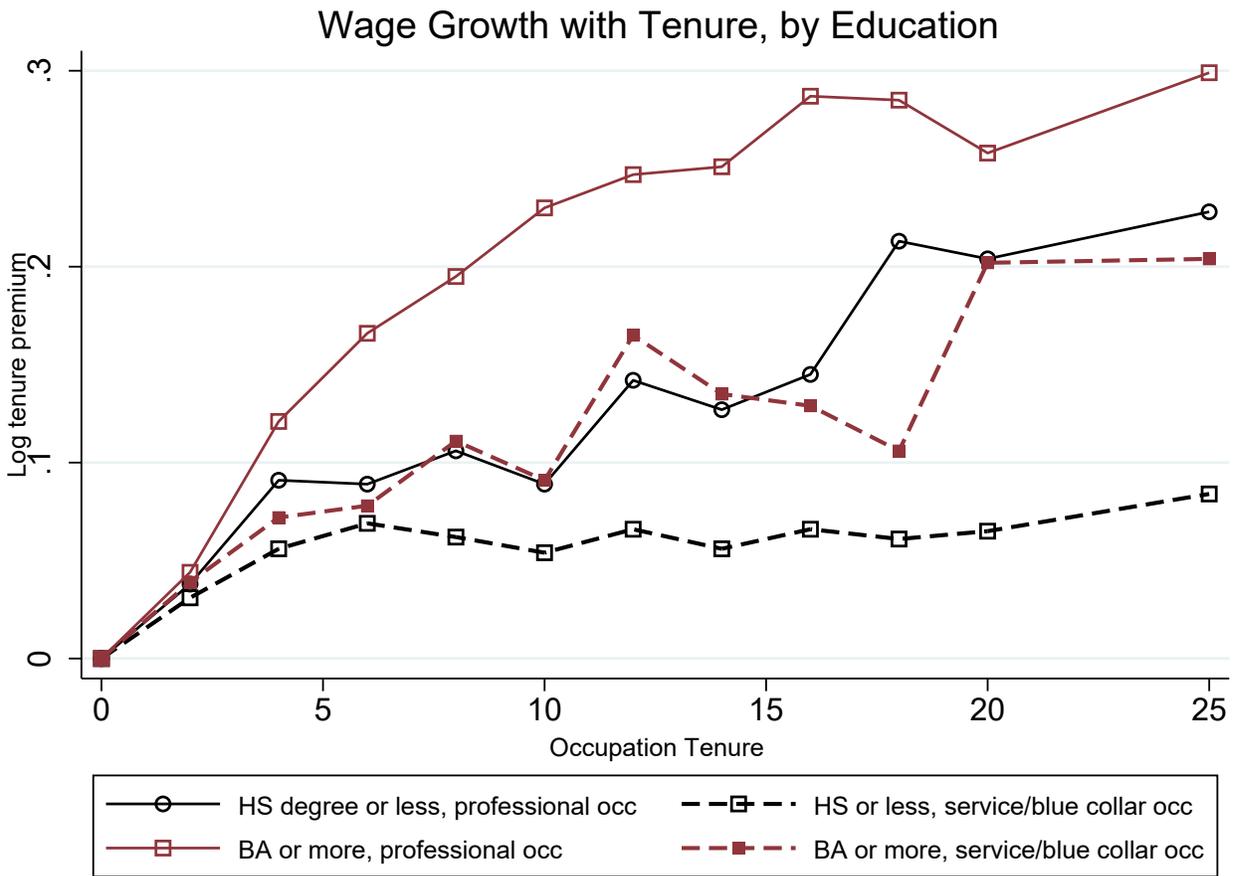
Notes: Figure A8 presents separate regressions by occupation category and education of equation (6) in the paper, with log wages regressed on indicators for 2-year bins of occupation tenure plus controls for work experience, age, education, AFQT score, race and gender, employer tenure, and occupation fixed effects (which removes level differences in wages and focuses only on the slope with tenure). Professional and services/blue collar correspond to occ1990dd codes 23-235 and 400 and above respectively. The data come from the NLSY79, ages 19-60 and from the NLSY97, ages 19-40.

Figure A9

How Does Occupational Sorting Affect the College Wage Premium
Including work experience interacted with AFQT

Notes: Figure A9 presents estimates of equation (2) in the paper, with hourly log wages regressed on indicators for having a bachelor's degree education interacted with two-year actual work experience bins (one year = 2,080 hours), AFQT score interacted with work experience, and controls for race, gender, year, and age. The dashed line present coefficients from the same models as above but adding occupation-by-tenure fixed effects. The data come from the NLSY79, ages 22-60.

Figure A10

Panel A

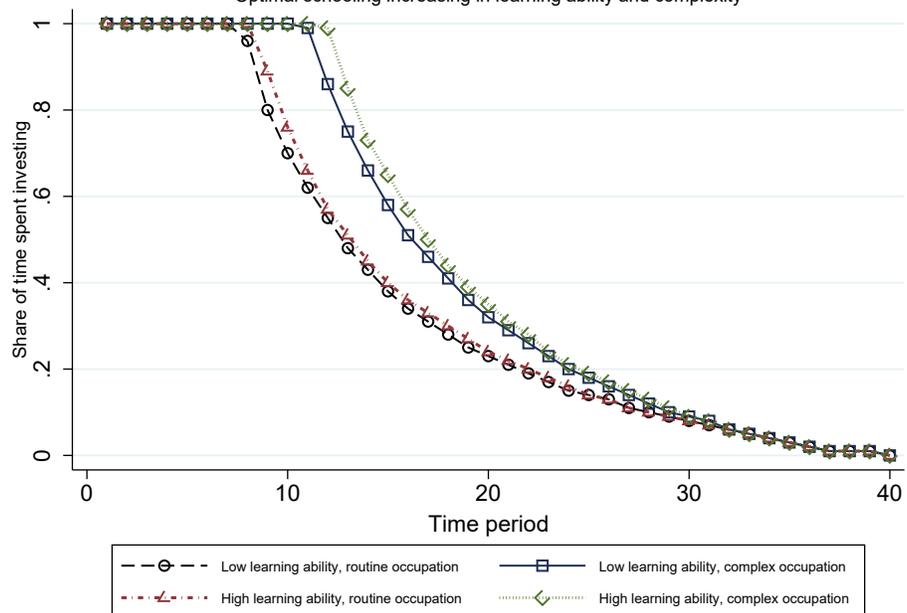### Simulation of Ben-Porath Model Parameters

Learning ability and occupation complexity are complements
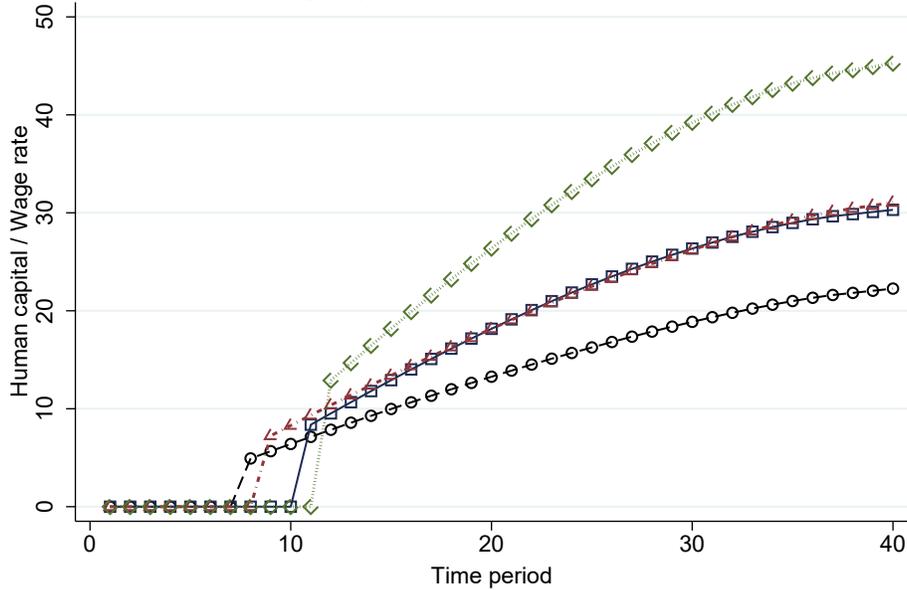
Panel B

Optimal schooling increasing in learning ability and complexity

- – ⊖ – – Low learning ability, routine occupation
- – ⊿ – – High learning ability, routine occupation
- ──□── Low learning ability, complex occupation
- ⋯⋯⟨⋯⋯ High learning ability, complex occupation

Notes: Figure A10 presents simulations of the optimal wage and schooling investment paths from the modified Ben-Porath model in Section 4, with different calibrations of model parameters. Low/high learning ability are $\alpha = 0.4/0.5$, and routine/complex occupation are $\theta = 0.4/0.5$. I assume the discount rate $\beta = 0.95$, $h_1 = 1$, $T = 40$, and $w(t) = h(t)$ in all calibrations. Wages set to zero when $s^* = 1$.

Table A1 - Employment Outcomes by Years Since the End of Full-Time Schooling, NLSY97

| Career year | *Number of Jobs Held* | | *Average Job Tenure* | | *Weekly Hours, Employed* | | *Real Wages* | |
| | HS or less | BA or more | HS or less | BA or more | HS or less | BA or more | HS or less | BA or more |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
-2	0.8	5.6	0.4	1.6	13.3	26.2	8.95	16.21
-1	1.4	6.1	0.5	1.8	14.2	25.3	9.54	16.39
0	2.2	6.6	0.6	2.1	17.2	27.1	10.63	18.47
1	3.0	7.3	0.7	1.9	23.4	31.5	11.22	21.56
2	3.7	7.7	1.0	2.2	29.4	38.7	12.67	22.91
4	4.6	8.3	1.3	2.8	31.9	40.5	14.38	25.93
6	5.6	8.8	1.7	3.7	33.8	40.8	15.90	28.31
8	6.4	9.2	2.2	4.5	34.7	40.2	16.50	30.84
10	7.1	9.6	2.7	5.3	34.6	40.1	17.23	35.08
12	7.6	10.0	3.4	6.0	35.1	40.0	17.20	37.69
14	8.0	10.4	4.0	6.8	37.0	40.1	17.92	40.57
16	8.4	10.7	4.5	7.7	38.3	39.8	18.78	44.40
18	8.8	11.0	5.0	8.6	37.8	40.1	19.58	45.70
20	9.1		5.5		37.6		21.27	
22	9.4		5.8		38.1		21.68	

Notes: Table A1 presents results from a regression of the outcomes in italics above on years since the last survey wave in which a respondent was enrolled full-time in schooling (which I define as career year zero) and individual fixed effects. The odd numbered columns restrict the sample to respondents with a high school degree or less, while the even numbered columns restrict the sample to respondents with a four-year college degree or more. Number of jobs held is the number of unique employers. Job tenure is measured in years. Weekly hours is the total hours worked in each year, divided by 52 weeks and conditional on working at all. Real wages are inflation-adjusted to 2016 dollars. The sample is the NLSY97, ages 18-40.