Gender wage gap among young adults: a comparison across British cohorts

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Motivation

- Previous research has shown that gender inequalities in earnings appear early in life (Costas et al., 2020; Bryson et al., 2020; Manning and Swaffield, 2008)

- A sizeable part of the GWG among young adults is unexplained (Bryson et al., 2020 OXREP; Manning and Swaffield, 2008, Combet and Oesch, 2019)

- Might expect change in GWG among young adults due to:

    * increasing % with higher education
    * women better educated than men
    * changes in fertility (delays, N kids)
    * legislation
    * the labour market (slower entry to 'career jobs' especially for women - Blundell et al 2020)

Contribution

- Establish changes in the size of the GWG and contributors to it across 3 birth cohorts (1958, 1970, 1989/90)

- Incorporate often omitted variables with potential to explain GWG, notably tastes and preferences (Fortin 2008; Grove et al., 2010; Chevalier, 2007, Sterling ei al., 2020)

- Account for differential selection into employment over time - potentially important in light of shift in educational attainment and fertility (Bryson et al., 2020)

- Investigate role played by job characteristics (occupation at 1 digit, gender segregation and graduate concentration at 4 digits, hours). Substantial part of explained gap in previous literature (Blau and Khan, 2017)

Questions

- How does selection into the labour market affect the gender wage gap among young adults over time?

- What explains the gender wage gap among young adults over time? Does usually unobserved gender heterogeneity in preferences and non-cogn traits explain any part of the gap?

- Do job characteristics explain any additional component of the gap?

Findings

- The overall raw GWG falls by 2/5: It doubles for those with HE and it halves among those without HE.

- Similarly the covariate adjusted gap falls for all, but quadruples among those with HE and halves among those without HE.

- The selection and covariate adjusted gap rises (by a half) among those with HE and falls (by more than a half) among those without HE

- Whereas selection adjustment increases the size of the GWG in NCDS and BCS it is not significant in NS.

- Incorporation of non-cognitive skills only accounts for a small proportion of the GWG

- But the nature of jobs (occupation, gender segregation) accounts for a sizeable part of the explained and unexplained GWG

Data

- 3 British cohort studies

  * National Child Development Study (NCDS). The cohort members were interviewed in 1981 at the age of 23.

  * British Cohort Study (BCS). The cohort members were interviewed in 1996 at the age of 26.

  * Next Steps (NS). The cohort members were interviewed in 2015 at the age of 25.

Variables (consistent across 3 cohort studies)

- Real gross hourly wages

- *Personal characteristics*: whether any child, whether more than one child, whether married/cohabiting, London/South East dummy

- *Education*: highest qualification achieved, whether STEM subject in highest qual. achieved, cognitive test scores (reading and maths)

- *Experience*: months of FT/PT experience, no. of different spells of work,

- *Non-cognitive traits (NCDS and NS)*: attitude towards work/money and people/family; self-esteem.

- *Job characteristics*: occupation indicators, hours worked, proportion of females in occupation; proportion of graduates in occupations (these last two variables are obtained from LFS).

Non-cognitive traits

- We construct composite measures for three non-cognitive traits for two cohorts (NCDS and NS) using a subset of questions asked by age 16 (before the wages were recorded). The measure composite measure is calculated as standardised mean of the sum of the items included:

  * Money/work
    NCDS: Job choice-important factors: earning money/being promoted/being in charge of others; what are the three most important factor for job choice: earning money/being promoted/being in charge of others
    Next Steps: How much this matters in deciding on a job: a job which pays well/ have a job where I can get promoted; having a job or a career is important; having a job that lead somewhere is important

  * People
    NCDS: Job choice-important factors: helping others; what are the most important factor for job choice: helping others; have done voluntary work
    Next Steps: agreement raising a family is important, job choice-important factors: helping others

  * Self-esteem
    NCDS: how good you are (7 items)
    Next Steps: How useful has felt recently, how much has been losing confidence in themselves recently, thinking of themselves as a worthless person

Method

- Adjusting for selection into the labour market:

  * Men's and women's wages are adjusted to account for non-random selection into employment by imputing a wage for individuals with no wage in the samples

  * Imputed wages come from nearest neighbour wage 'donors' defined as those, among the same cohort and the same gender, who are nearest in their propensity for waged employment to the non-waged individual.

  * The nearest neighbours are identified through propensity score matching where the propensity for waged employment is estimated for each individual for each cohort study

- Decomposing the gap

  * Oaxaca-Blinder decomposition: standard two-fold decomposition run on pooled data with female dummy variable as recommended by Jann (2008)

Descriptive statistics: comparison across cohorts

	NCDS, age 23-1981 age 23-1981		BCS, age26-1996 age26-1996		Next Steps age25-2015	
	Men	Women	Men	Women	Men	Women
	Sample adjusted for selection					
Log real hourly wage	1.69	1.50	1.94	1.81	1.90	1.81
HiEd	0.14	0.16	0.26	0.23	0.40	0.44
Stem+economics	0.13	0.04	0.12	0.06	0.28	0.22
Child	0.16	0.31	0.18	0.28	0.11	0.24
FT exp. (months)	56.18	48.32	82.05	70.90	47.17	38.19
PT exp. (months)	8.54	8.70	1.83	7.61	7.90	12.77
N	4465	4558	3,788	4,528	3332	4139
	Sample not adjusted for selection					
Log real hourly wage	1.71	1.56	1.96	1.86	1.92	1.83
HiEd	0.15	0.21	0.28	0.26	0.42	0.48
Stem+economics	0.13	0.05	0.13	0.08	0.31	0.25
Child	0.16	0.08	0.17	0.16	0.12	0.17
FT exp. (months)	60.32	53.77	85.15	77.53	52.22	43.82
PT exp. (months)	7.87	8.29	1.54	6.93	8.19	13.62
N	3,178	2,714	2,722	3,143	2,260	2,787

Descriptive statistics: non-cognitive traits

	NCDS		NS	
	Females	Males	Females	Males
Money score	-0.057	0.058	-0.045	0.051
Self-esteem score	-0.079	0.080	-0.129	0.142
People/family score	0.012	-0.338	0.093	-0.129

Results I: Selection adjusted gap

NCDS

BCS

Next Steps

Raw gap — Covariate adj. gap — Selection adj. gap
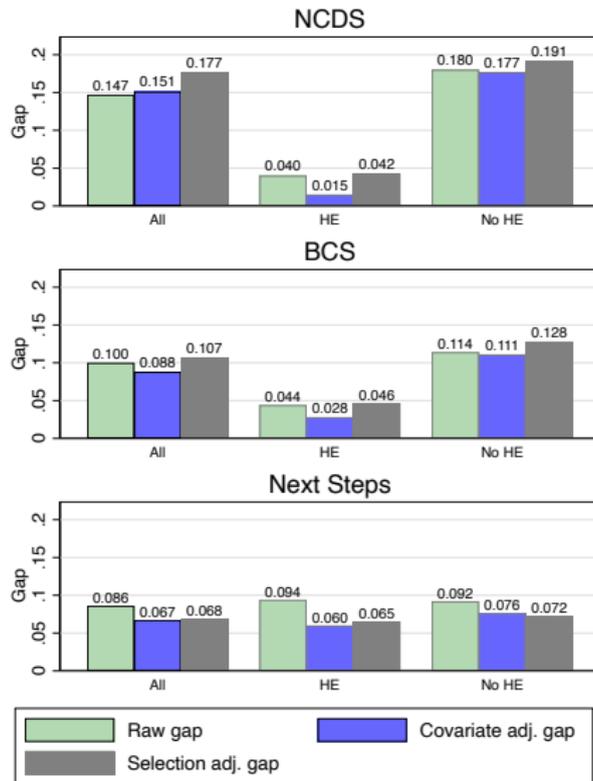
Results II: Decomposition of the gap accounting for selection into the labour market

	All		HE		No HE	
	Explained	Unexplained	Explained	Unexplained	Explained	Unexplained
NCDS						
HC	-0.001	0.011	0.014***	-0.022	0.001	0.020
Exp	0.011***	0.072***	0.007	0.100**	0.012***	0.045*
Personal ch.	0.008***	-0.056***	-0.002	-0.076	0.008***	-0.042***
Non cogn	0.009***	0.009***	0.004	-0.001	0.011***	0.009***
Total	0.026***	0.172***	0.024**	0.042**	0.033***	0.191***
BCS						
HC	0.004	0.008	0.018***	-0.004	-0.009***	0.035
Exp	0.014***	0.077**	-0.001	0.035	0.020***	0.075*
Personal ch.	0.001	-0.054***	-0.006*	-0.252**	0.002	-0.034**
Total	0.019***	0.107***	0.012	0.046***	0.014***	0.128***
Next Steps						
HC	-0.006**	0.005	0.009***	-0.000	-0.008***	0.002
Exp	0.013***	0.052	-0.001	0.079	0.019***	0.036
Personal ch.	0.007***	-0.009	0.005*	0.091*	0.009***	-0.001
Non cogn.	0.008***	0.003*	0.008*	0.004	0.008**	0.002
Total	0.022***	0.068***	0.028***	0.065***	0.027***	0.072***

Results III: The role of occupations in NCDS

	All		HE		No HE	
	Explained	Unexplained	Explained	Unexplained	Explained	Unexplained
HC	-0.011***	-0.008	0.015***	-0.039*	-0.007***	0.014
Exp	0.007***	0.160***	0.020***	0.154***	0.006***	0.140***
Personal	-0.009**	-0.099***	-0.003	-0.214*	-0.010***	-0.061***
Non-cogn	0.007**	0.010***	0.001	0.005	0.010***	0.009**
Proportion of graduates in occupation	-0.021***	-0.029**	-0.013	0.029	-0.010***	-0.024**
Proportion of females in occupation	0.104***	0.016	0.024	-0.140**	0.125***	0.029
Hours	-0.038***	-0.015	-0.058***	0.094	-0.034***	-0.099**
Occ. Dummies (1 digit)	-0.034***	-0.031***	0.002	-0.128***	-0.063***	-0.018*
Total	0.005	0.141***	-0.011	0.076**	0.017*	0.159***

Results III: The role of occupations in BCS

	All		HE		No HE	
	Explained	Unexplained	Explained	Unexplained	Explained	Unexplained
HC	0.002	0.011	0.020***	0.014	-0.009***	0.045
Exp	0.018***	0.044	0.002	-0.024	0.025***	0.072
Personal	-0.004**	-0.038*	-0.003	-0.219	-0.005*	-0.019
Proportion of females in occupation	0.069***	0.021	0.049***	0.044	0.062***	0.034
Proportion of graduates in occupation	-0.011***	0.032	-0.009*	-0.113	-0.015***	0.070***
Hours	-0.056***	0.081	-0.034***	0.220**	-0.063***	0.025
Occ. Dummies (1 digit)	-0.009*	-0.162***	0.001	-0.469*	-0.011	-0.162***
Total	0.008	0.091***	0.026**	0.018	-0.014	0.128***

Results III: The role of occupations in Next Steps

	All		HE		No HE	
	Explained	Unexplained	Explained	Unexplained	Explained	Unexplained
HC	-0.004**	0.004	0.007***	0.000	-0.010***	-0.003
Exp	0.018***	0.038	0.008*	-0.196	0.024***	0.133
Personal ch.	-0.003	-0.023	0.000	0.039	-0.003	0.003
Non cogn.	0.010***	0.001	0.009**	-0.001	0.011***	0.001
Proportion of females in occupation	0.082***	-0.051*	0.062***	-0.035	0.098***	-0.056
Proportion of graduates in occupation	-0.023***	-0.044	-0.012**	-0.138	-0.025***	-0.007
Hours	-0.026***	0.036	-0.015***	0.120	-0.035***	-0.034
Occ. Dummies (1 digit)	-0.003	0.063	0.012***	0.144	-0.013	0.053
Total	0.052***	0.034***	0.072***	0.024	0.047***	0.044***

Results IV: Decomposition across the distribution
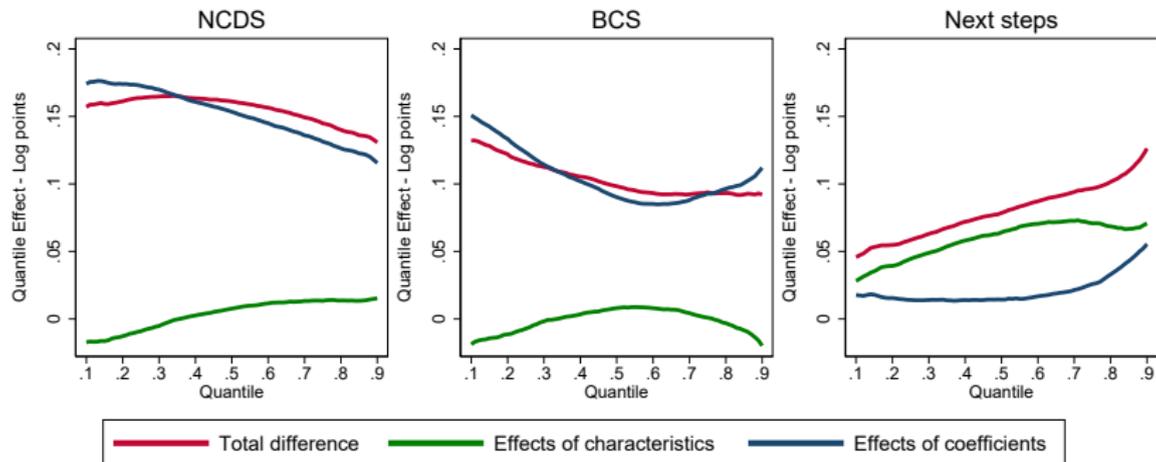
Conclusions

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Thank you very much!

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