How did the gender pay gap change over the last fifty years? Evidence from within and across birth cohorts.

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Why Can't We Close the Gender Pay Gap? - ISER policy event

Our Project

- Uses birth cohort data to explore the gender wage gap across cohorts and over the life-course

- Examines GWG across individuals' lives, up to the age of 60+ in the case of the 1958 cohort, and across generations

- The UCL team:
    * Alex Bryson (PI)
    * Heather Joshi (co-investigator)
    * David Wilkinson (co-investigator)
    * Francesca Foliano (Research Fellow)
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- All information on the project can be found here: `https://www.ucl.ac.uk/ioe/departments-and-centres/departments/social-science/gender-wage-gap-evidence-cohort-studies`

Why cohort data?

- Different cohorts are exposed to different labour market and policy conditions during their lifetimes.

- For instance, the 1958 (NCDS) cohort left school when the Equal Pay Act was first being implemented whereas the Act had been in place for a decade when the 1970 cohort (BCS) left compulsory education.

- The education gap between men and women has disappeared and even reversed, such that we would expect the pay gap due to educational differences to narrow or even reverse in more recent cohorts.

- Attitudes to women's labour market participation and men's household production have shifted. These changes in social norms, together with attendant changes in public policy, have created opportunities for men and women to combine paid and unpaid work and leisure in ways not hitherto possible, with uncertain consequences for the life choices and earnings patterns of men and women across the life-course.

Research questions for today

- What does the GWG look like across the life-course in NCDS (1958 cohort) and BCS (1970 cohort)? How much smaller is the regression-adjusted gap compared with the raw gap? Does accounting for selection and attrition matter?

- What does the GWG look like among young people and how has this changed over time?

Gender wage gap in the UK

Figure 1: Log gender wage gaps in selected UK studies adjusting for human capital
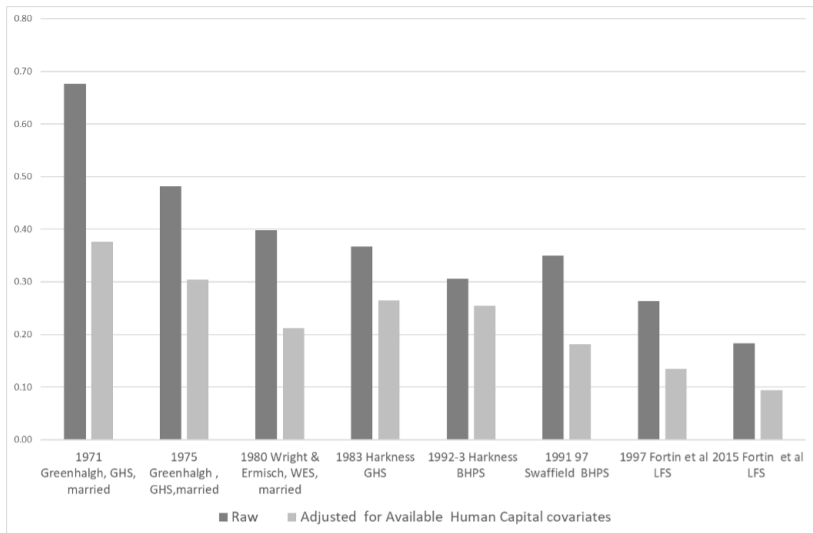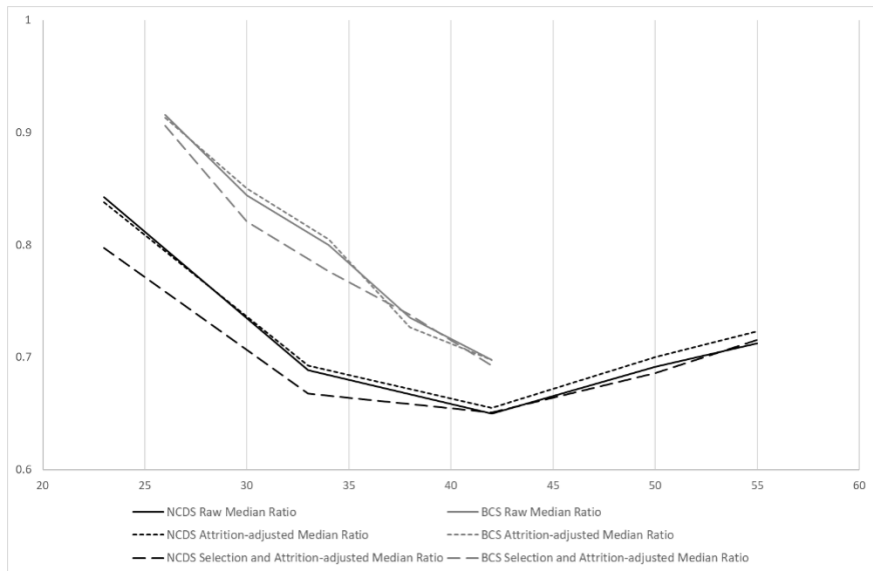
Research question 1, method and data

- What does the GWG look like across the life-course in cohorts born in 1958 (NCDS) and 1970 (BCS)? How much smaller is the regression-adjusted gap compared with the raw gap? Does accounting for selection and attrition matter?

- Method: inverse probability weights for attrition; imputation of potential wages to adjust for non-random selection.

- Data: Individuals born in 1958 (NCDS) and observed at age 23, 33, 42, 46, 50 and 55; individuals born in 1970 (BCS) and observed at age 26, 30, 34, 38 and 42.

Raw gap

Figure 2: Female-to-male ratios of median observed and potential pay, by survey

NCDS Raw Median Ratio — BCS Raw Median Ratio
NCDS Attrition-adjusted Median Ratio ----- BCS Attrition-adjusted Median Ratio
— — NCDS Selection and Attrition-adjusted Median Ratio — — BCS Selection and Attrition-adjusted Median Ratio
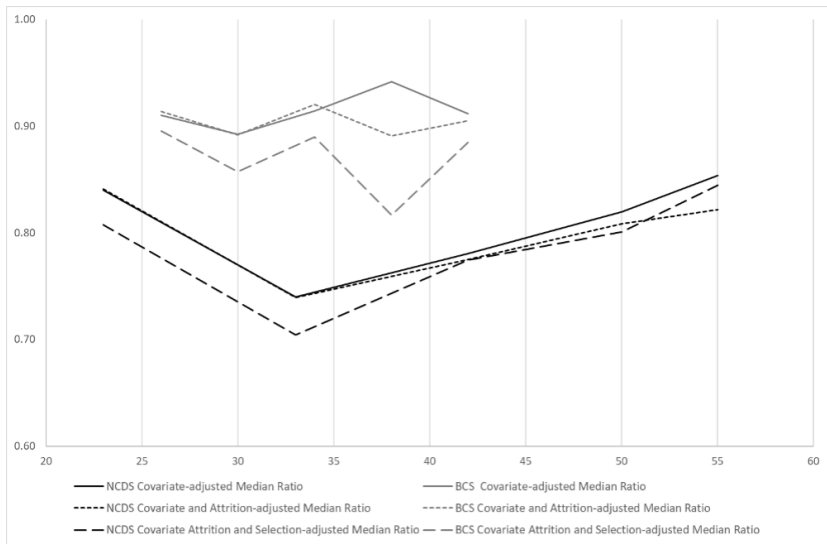
Raw gap (findings)

- The GWG grows until mid-age then falls

- The GWG is smaller across the life-cycle in BCS vs NCDS

- Attrition adjustment closes the GWG a little later in life in NCDS

- Adjusting for selection into employment increases the size of the GWG in early life in both NCDS and BCS

Covariate-adjusted gap (human capital)

Figure 3: Female-to-male ratios of median observed and potential pay, by survey

NCDS Covariate-adjusted Median Ratio — BCS Covariate-adjusted Median Ratio

NCDS Covariate and Attrition-adjusted Median Ratio ---- BCS Covariate and Attrition-adjusted Median Ratio

NCDS Covariate Attrition and Selection-adjusted Median Ratio — — BCS Covariate Attrition and Selection-adjusted Median Ratio

Covariate-adjusted gap (human capital) - Findings

- NCDS
  - * Life-course pattern of GWG similar to that for raw gap, but gap begins to close in 30s not 40s
  - * Gap is less pronounced than raw gap due to human capital differences in 30s and 40s
  - * Accounting for attrition gap is larger later in life Selection-adjustment means gap is larger until 40s

- BCS
  - * GWG much flatter between 20s and 40s when covariate adjust due to human capital differences
  - * GWG always smaller than in case of NCDS
  - * GWG wider with selection-adjustment

Research question 2, method and data

- What does the GWG look like among young people and how has this changed over time?

- Method: inverse probability weights for attrition; imputation of potential wages to adjust for non-random selection; decomposition across the distribution of wages.

- Data: individuals who are age 23 in 1981 (NCDS), age 26 in 1996 (BCS) and age 25 in 2015 (Next Steps).
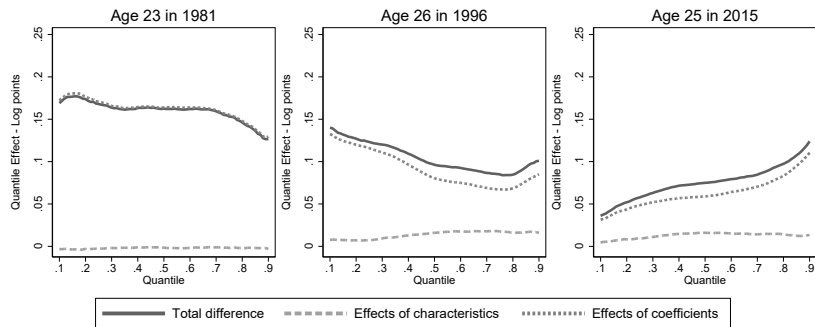
Gender wage gap among young adults across cohorts

**Figure 4:** Female mean log wages-male mean log wages: full sample, graduates and non-graduates
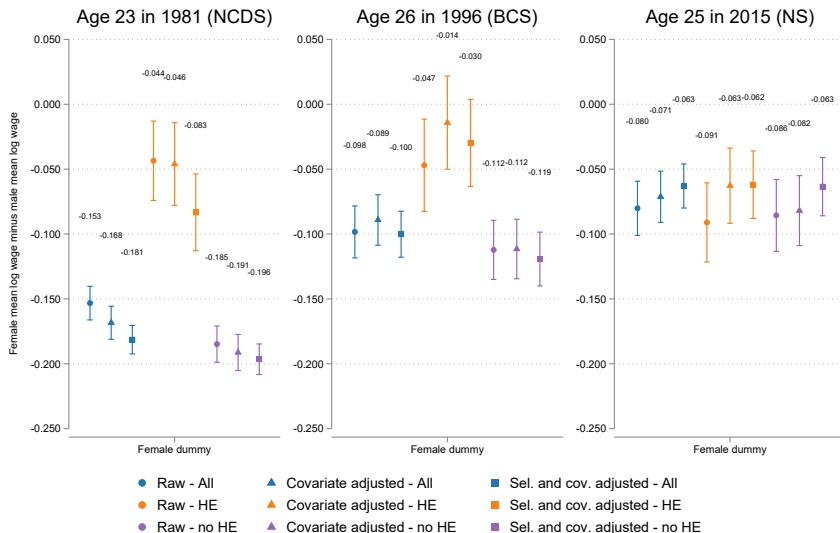
Decomposition of the gender wage gap across the distribution of wages I

Figure 5: Chernozhukov, Fernández-Val, and Melly (2013) decomposition on sample without selection adjustment
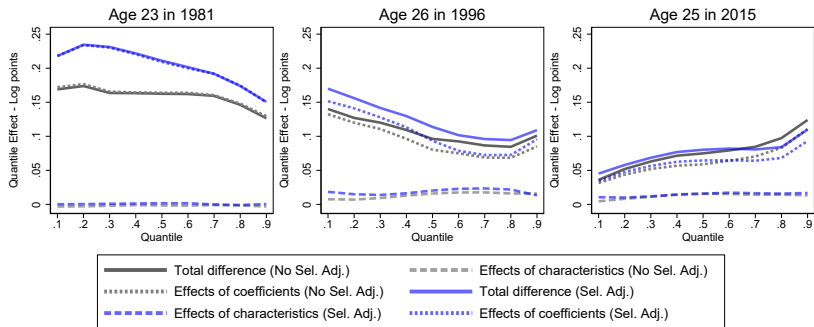
Decomposition of the gender wage gap across the distribution of wages II

Figure 6: Chernozhukov, Fernández-Val, and Melly (2013) decomposition on sample with selection adjustment
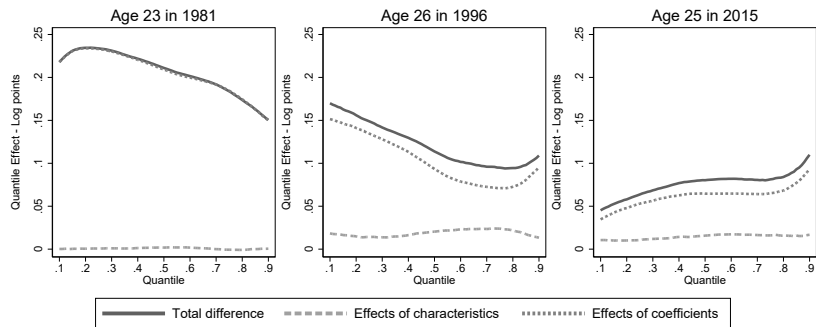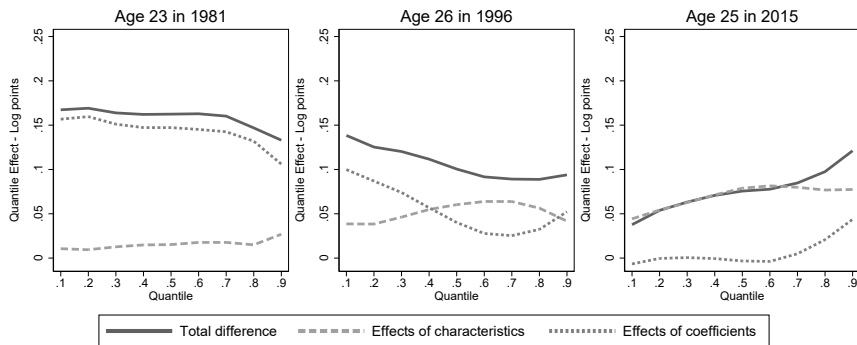
Decomposition of the gender wage gap across the distribution of wages III

Figure 7: Chernozhukov, Fernández-Val, and Melly (2013) decomposition: comparison

The role of occupational characteristics

Figure 8: Chernozhukov, Fernández-Val, and Melly (2013) decomposition on sample without selection adjustment

Occupational characteristics included: indicators for major groups of occupations, proportion of female in the occupation.

Summary of findings

- The GWG falls by more than half among non-graduates between 1981 and 2015, however it does not change among young graduates.

- Adjusting for positive selection into employment increases the size of the GWG in the earliest cohort.

- Differences in early life factors, human capital and parental status do not explain no or a marginal component of the GWG.

- Occupational segregation explain an increasing component of the GWG over time.

Policy implications

- Child penalty

  * In the short run: policies that encourage fathers to take more parental leave may mitigate the negative consequences of mothers' career interruptions.

  * In the long run: policies that shift gender norms and culture (Kleven et al. 2019).

- Occupational segregation

  * In the long run: policies that shift gender norms and culture. Examples: exposing more women to traditionally male subjects early on in school, encouraging the hiring of women in male-dominated professions, as well as incentives and policies to retain women in these fields (Cortes and Pan, 2017).