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

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Motivations

- Recent research on gender inequality in wages has focused on the child penalty (Andresen and Nix, 2022; Angelov et al., 2016; Kleven et al., 2019).
- In the UK gender inequalities in wages appear early in one's working life and gradually widen over time (Benny et al., 2021; Bryson et al., 2020; Costa Dias et al., 2020; Manning and Swaffield, 2008).
- For most workers early adulthood precedes the acquisition of family responsibilities. By studying the GWG among young adults we could uncover some of the mechanisms through which the earning inequalities first appear and creates path dependence over time.
- Comparison across cohorts can help understand the role of changing selection into employment, socio-demographic, legislation and structural changes in the labour market in determining gender inequality in earnings.

This paper

- *What we do*
  - In this paper we examine the GWG among graduate and non graduate young adults across four British cohorts, born between 1946 and 1990 (and interviewed between 1972 and 2015).
  - We consider the role of changing non-random selection into employment over time.
  - We study the determinants of the gender wage gap and how they change over time.

- *Results*
  - The GWG declines sharply over the period 1972-1996. The overall convergence is driven by non-graduates.
  - Accounting for changing non-random selection into employment increases the gender wage gap in the earliest cohort.
  - Gender inequalities are greater for those with the lowest wages in the first three cohorts.
  - While the unexplained component of the gap declines overtime, occupational segregation explains a greater component of the gap among young adults.

Literature

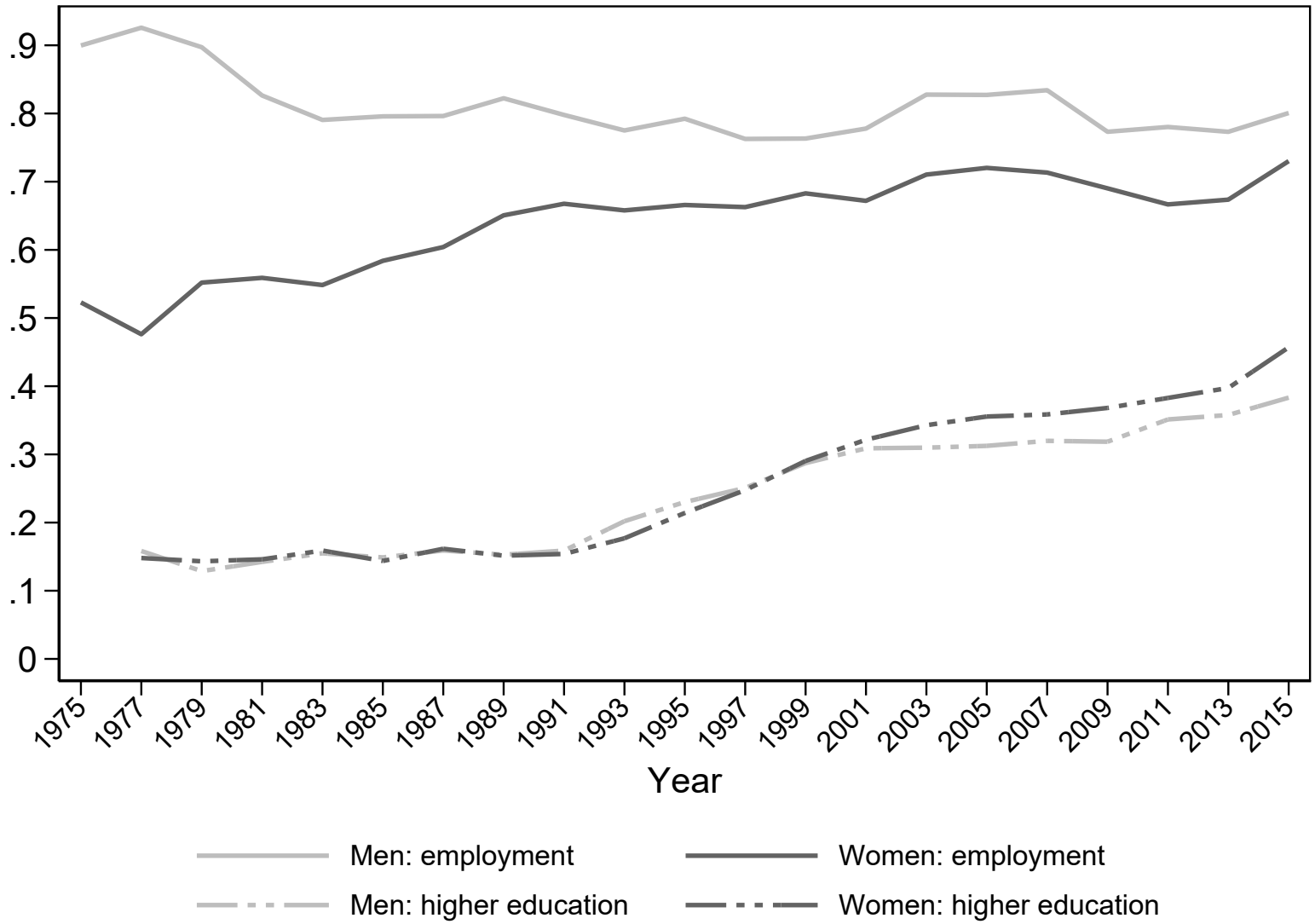
- Gender wage gap among young adults using nationally representative samples (Combet and Oesch, 2019; Fortin, 2008; Manning and Swaffield, 2008; Neuburger, 2010; Neuburger et al., 2011).
- Homogeneous samples of high-skilled young adults (Azmat and Ferrer, 2017; Bertrand et al., 2010; Bütikofer et al., 2018; Chevalier, 2007; Dolton et al., 1996; Francesconi and Parey, 2018; Goldin and Katz, 2008).
- Cross-country inequalities and trend over time while controlling for non-random selection into employment (Blundell et al., 2007; Olivetti and Petrongolo, 2008).
- Differences in job characteristics to explain the gender wage gap (Bayard et al., 2003; Blau and Kahn, 2017; Cortes and Pan, 2018; Groshen, 1991).

Contribution

- We extend earlier studies examining the gender wage gap among young adults using nationally representative birth cohort studies by including a cohort of individuals born as early as 1946 and a much more recent birth cohort - born in 1989/90 - to examine trends over 43 years.
- We study gender inequalities in earnings across cohorts by accounting for differential selection into employment over time.
- We assess and compare the trends in the gender wage gap among graduates and non-graduates in the population at large.
- Finally we explore the role of occupational segregation in explaining the gender wage gap.

Britain: employment and higher education

Figure 1: LFS, 23-26 years old sample



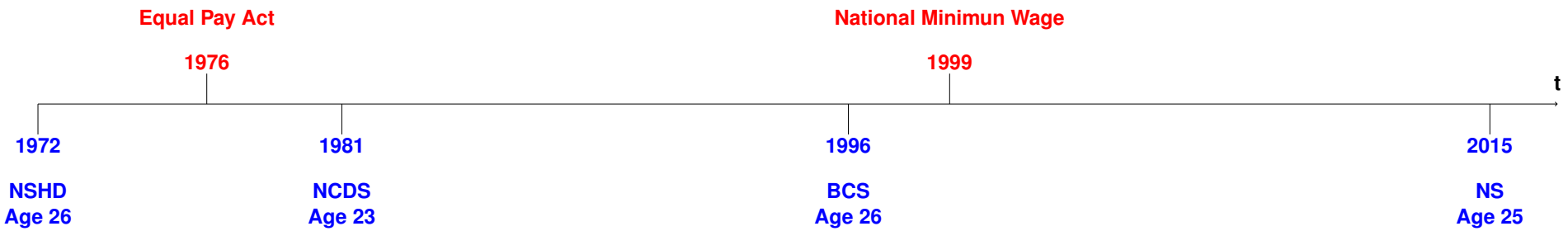
Data

- 4 British cohort studies
  - National Survey of Health and Development (NHSD) The cohort members were interviewed in 1972 at the age of 26 (N=3,752).
  - National Child Development Study (NCDS). The cohort members were interviewed in 1981 at the age of 23 (N=12,537).
  - British Cohort Study (BCS). The cohort members were interviewed in 1996 at the age of 26 (N=9,003).
  - Next Steps (NS). The cohort members were interviewed in 2015 at the age of 25 (N=7,707).

Variables

- Real gross hourly wages
- Early life: parental education, father social class.
- Family formation: whether any child, whether more than one child, whether married/cohabiting.
- Human capital: highest qualification achieved, subject studied in HE, cognitive test scores (reading and maths), months of FT/PT experience, no. of different spells of work.
- Job characteristics: hours worked, occupation indicators, proportion of females in detailed occupation at national level (this last variable is obtained from LFS from same year).

Data: timeline



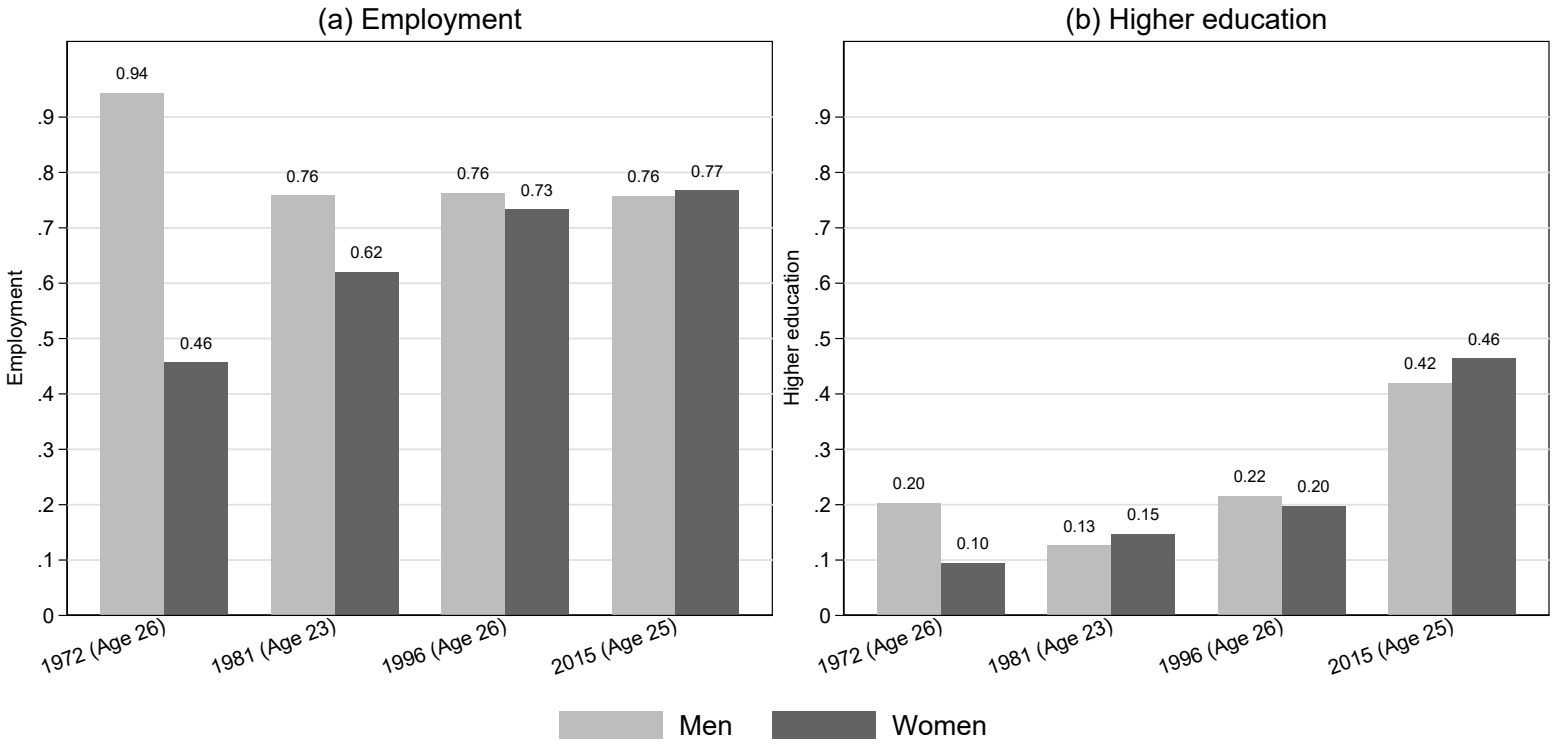
Method

- 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 by gender for each individual for each cohort study

- Decomposing the gap:
  - Kitagawa-Oaxaca-Blinder decomposition: standard two-fold decomposition run on pooled data with female dummy variable as recommended by Jann (2008).
  - Chernozhukov, Fernández-Val, and Melly (2013) method to decompose the gap across the distribution of wages.

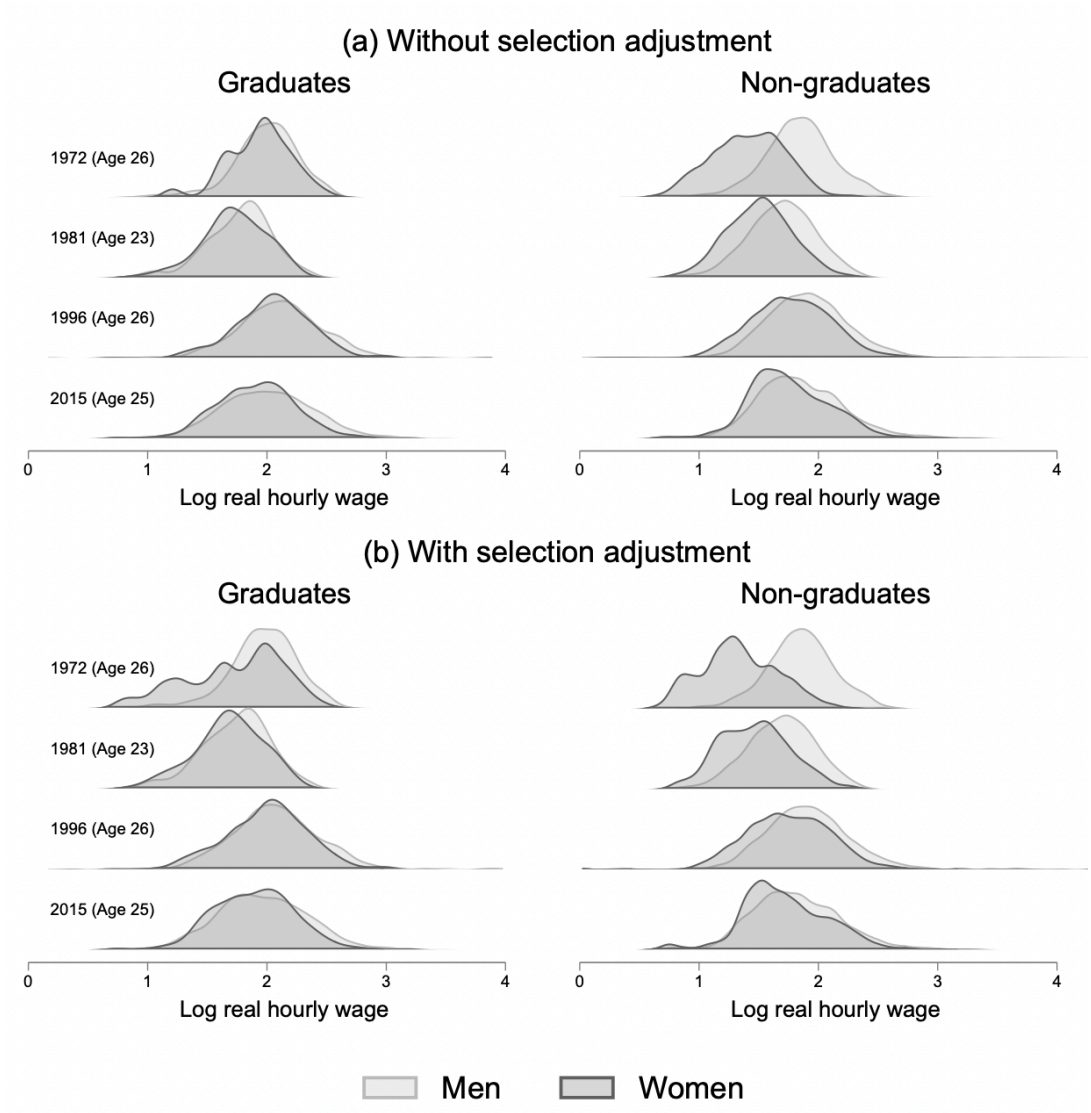
Employment and higher education in the British cohort studies

Figure 2: Employment and higher education rates in the four British cohorts



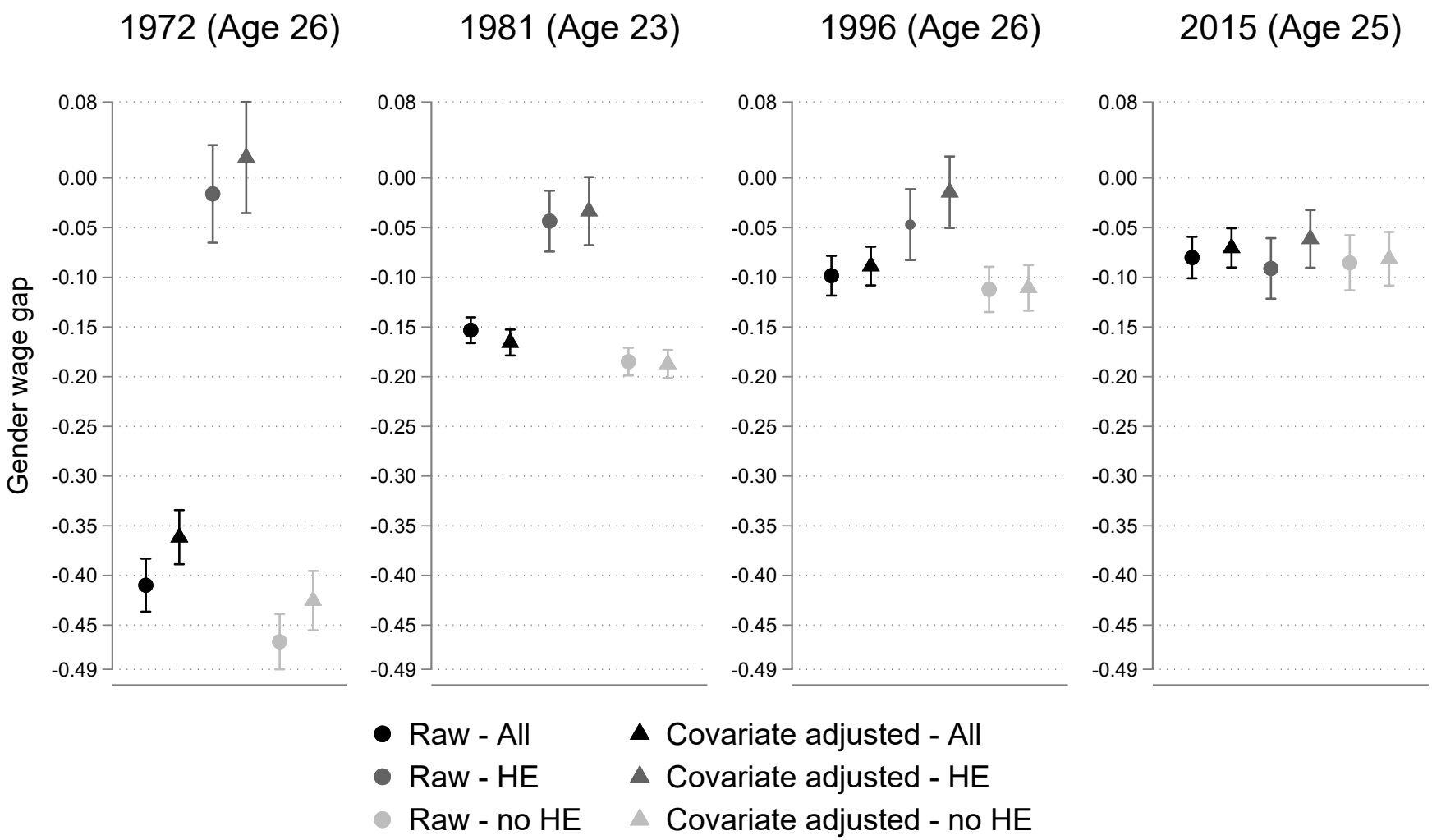
Selection adjustment and wages

Figure 3: Distribution of log hourly wages for graduates and non-graduates by cohort



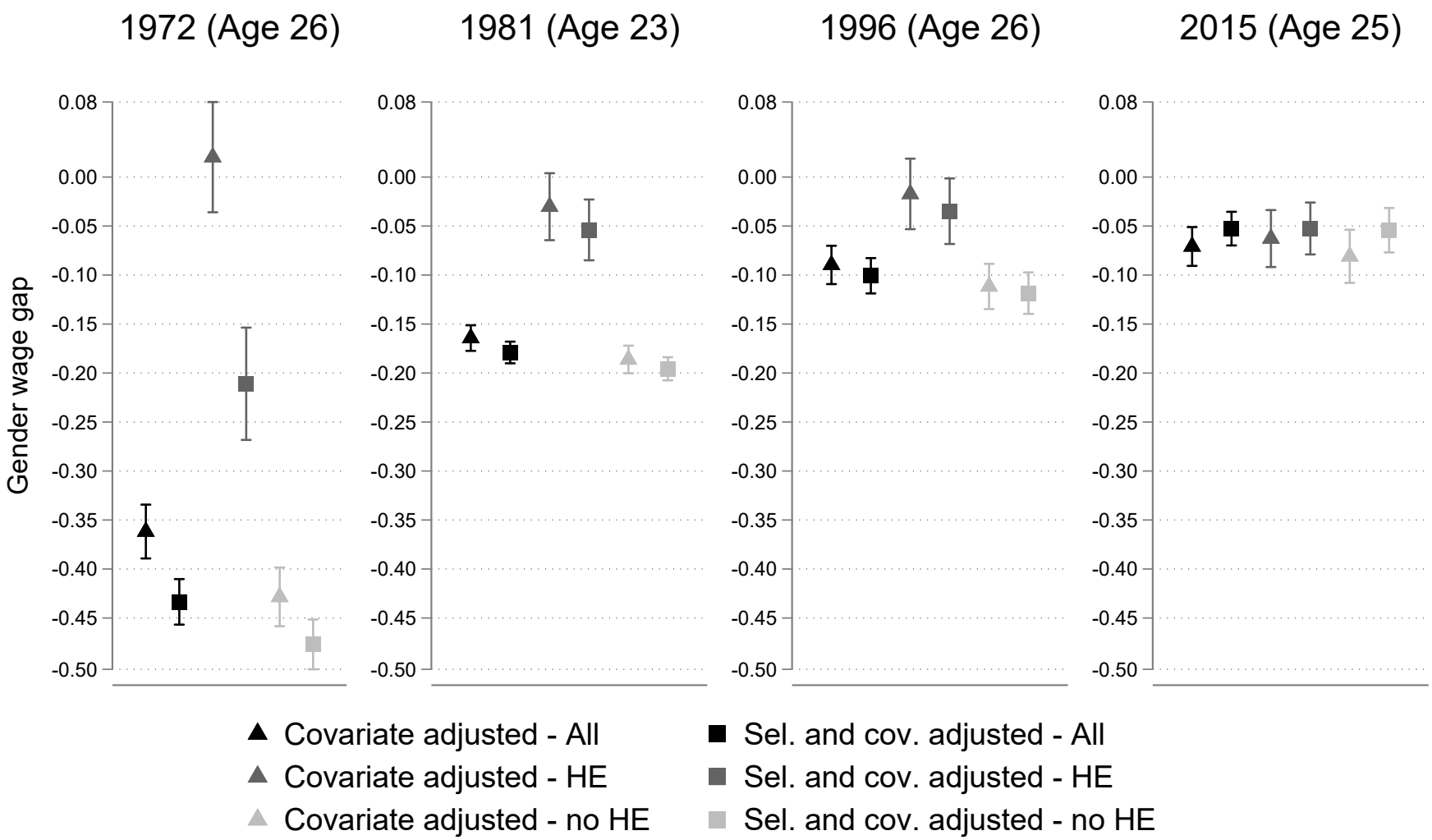
Raw and covariate adjusted gap

Figure 4: Estimates of the GWG for the full sample, graduates and non graduates, by cohort



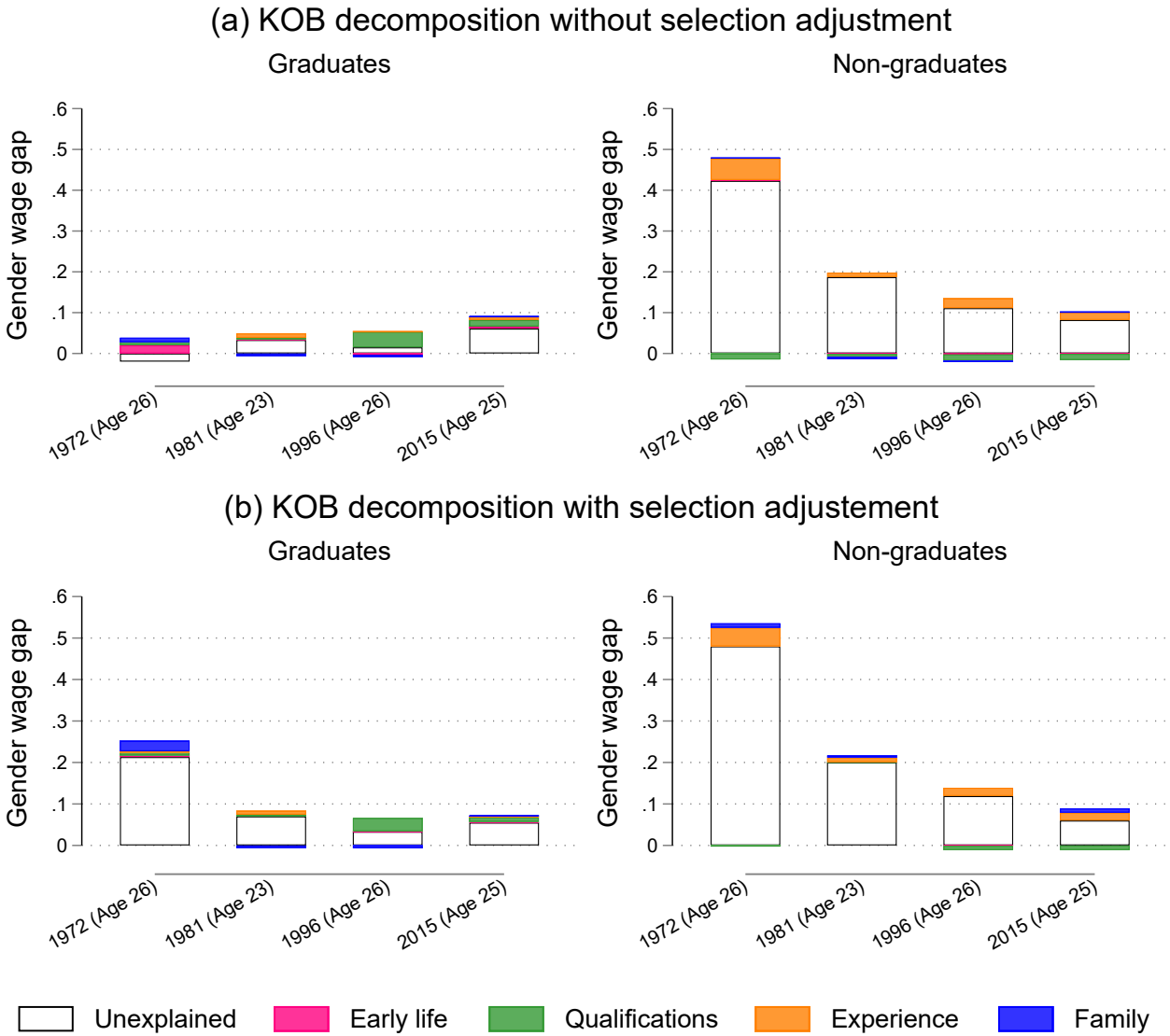
Covariate and covariates+selection adjusted gap

Figure 5: Estimates of the GWG for the full sample, graduates and non graduates, by cohort



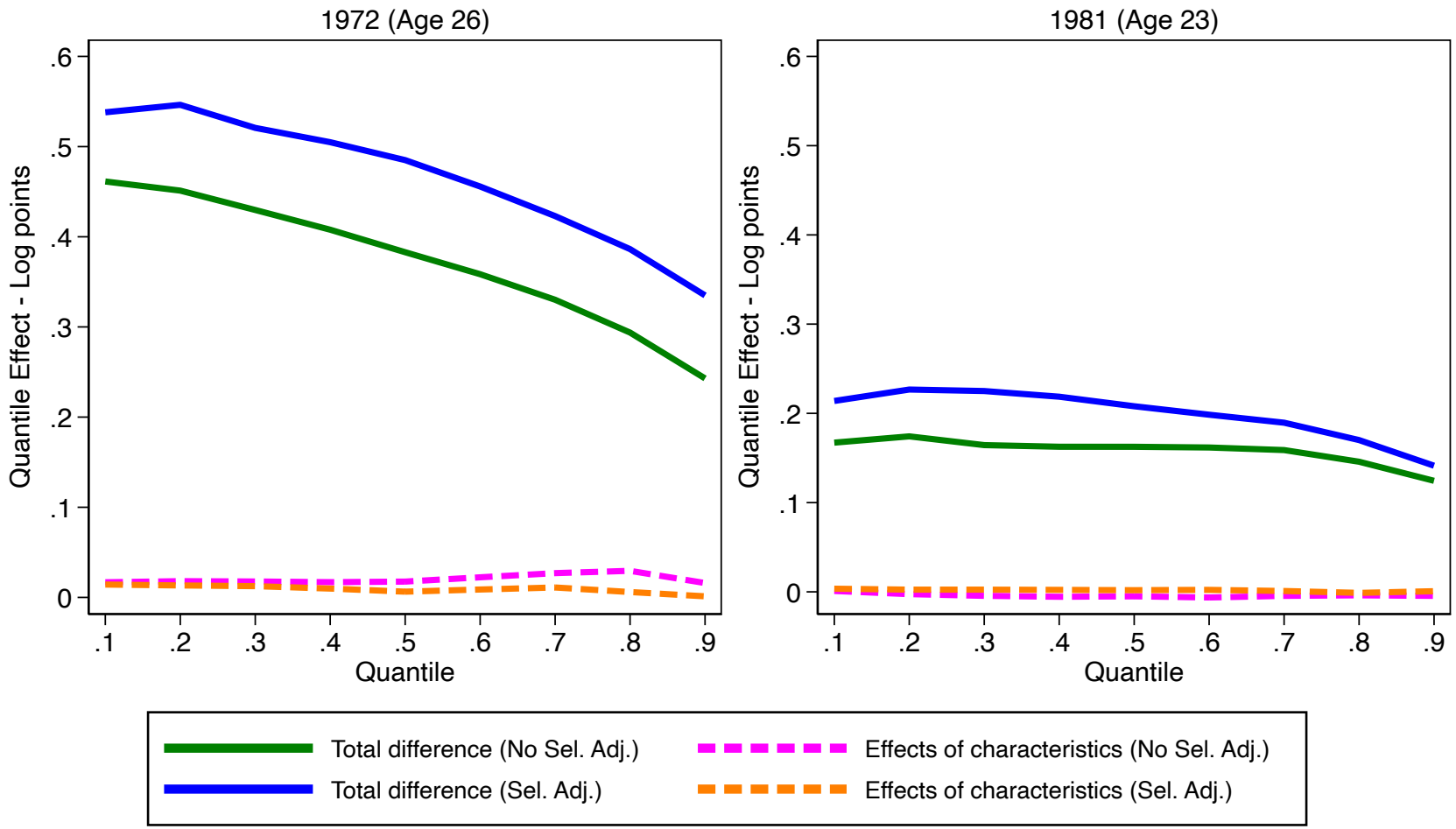
KOB decomposition

Figure 6: Decomposition of the GWG for graduates and non-graduates by cohort - without and with selection adjustment



Gender gap across the wage distribution

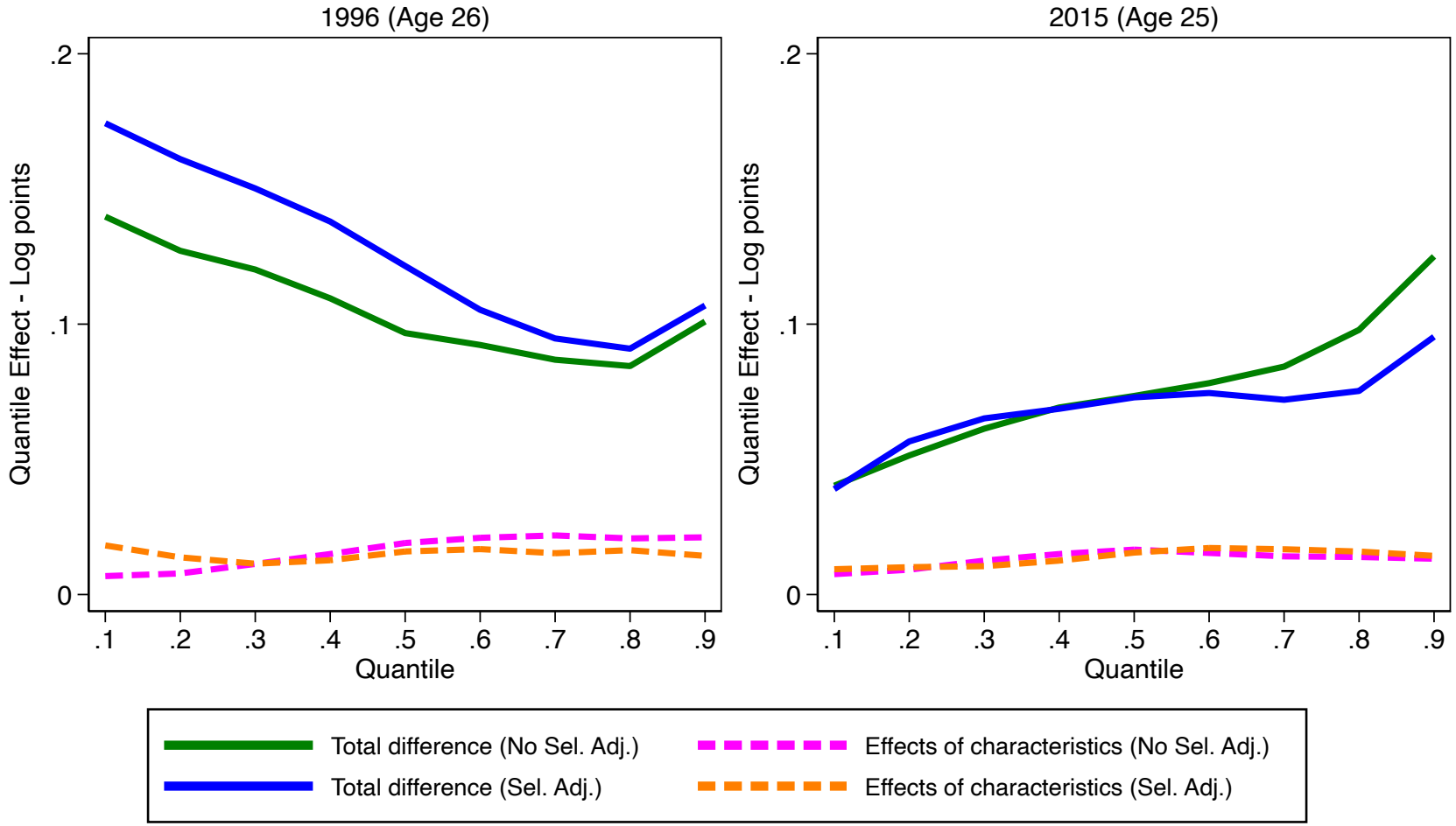
Figure 7: Decomposition on sample without and with selection adjustment - 1972 and 1981



Confidence intervals

Gender gap across the wage distribution

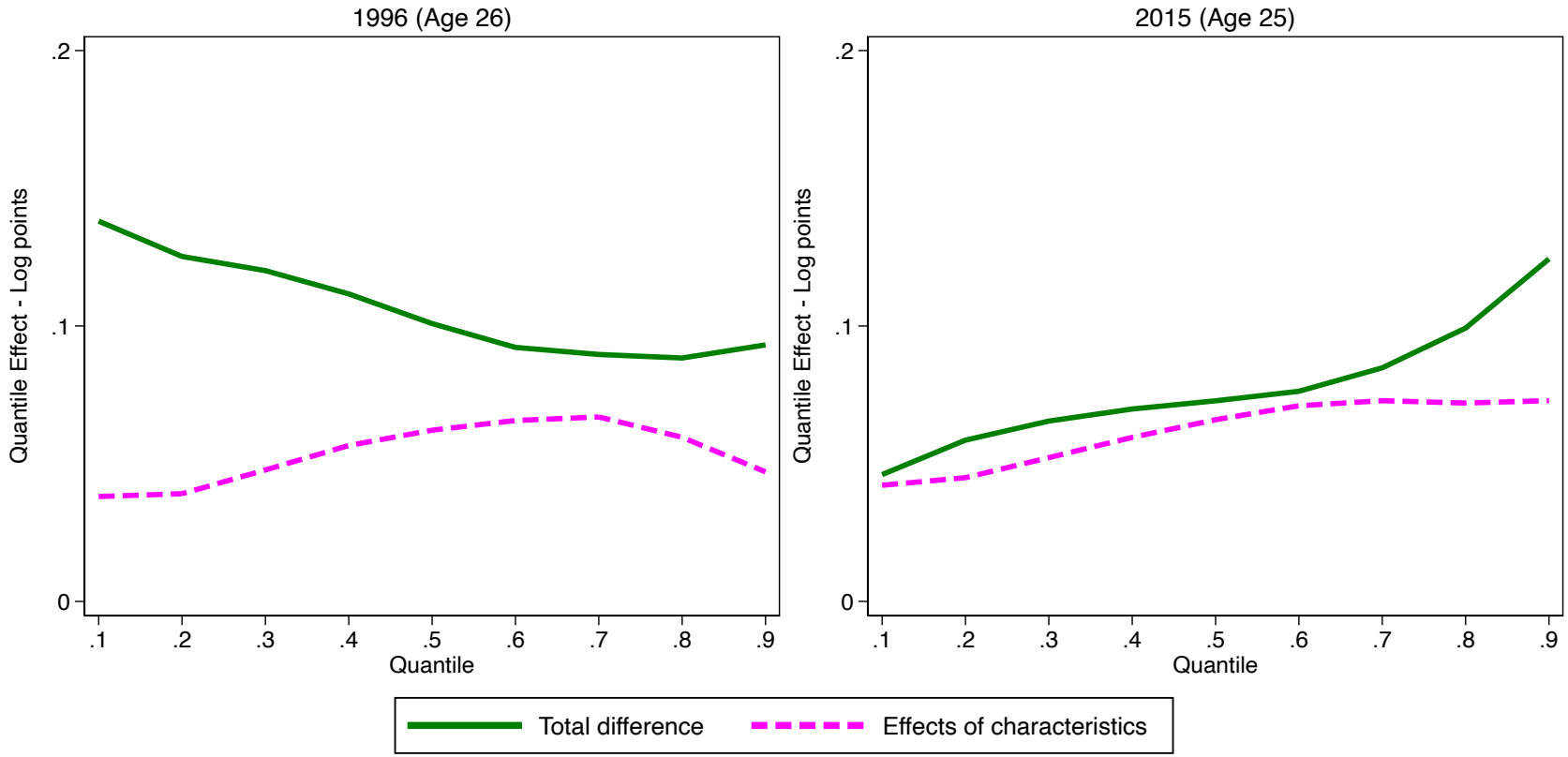
Figure 8: Decomposition on sample without and with selection adjustment - 1996 and 2015



Confidence intervals

Gender wage gap across the distribution of wages - 1 digit SOC code + proportion of women in the occupation

Figure 9: Decomposition on sample without selection adjustment



Confidence intervals

Conclusions I

- The overall raw and covariate adjusted gap narrows over time. What was not well known for Britain is that this shift is driven by convergence in non-graduate men's and women's wages.
- Non-random selection into the labour market affects relatively more graduate women than men in the earliest cohort, where they were least numerous.
- Gender inequalities are greater for those with the lowest wages in the first three cohorts. The opposite happens in the latest cohort where differences in wages are smallest among the lowest paid while the gap widens for higher wages.
- While the unexplained component of the gap declines across cohorts, occupational segregation explains a greater component of the gap among young adults.

Conclusions II

- Cautionary tale on changing non-random selection: it is important to consider it when studying the convergence of men's and women's wages over time.

- *Policy implications*: In the long run: incentives and policies to hire and retain women in less female-segregated occupations (Batut et al., 2021; Cortes and Pan, 2018; Folke and Rickne, 2022); policies that shift gender norms and culture affecting pre-market preferences (Chevalier, 2007; Wiswall and Zafar, 2018)

Thank you very much!

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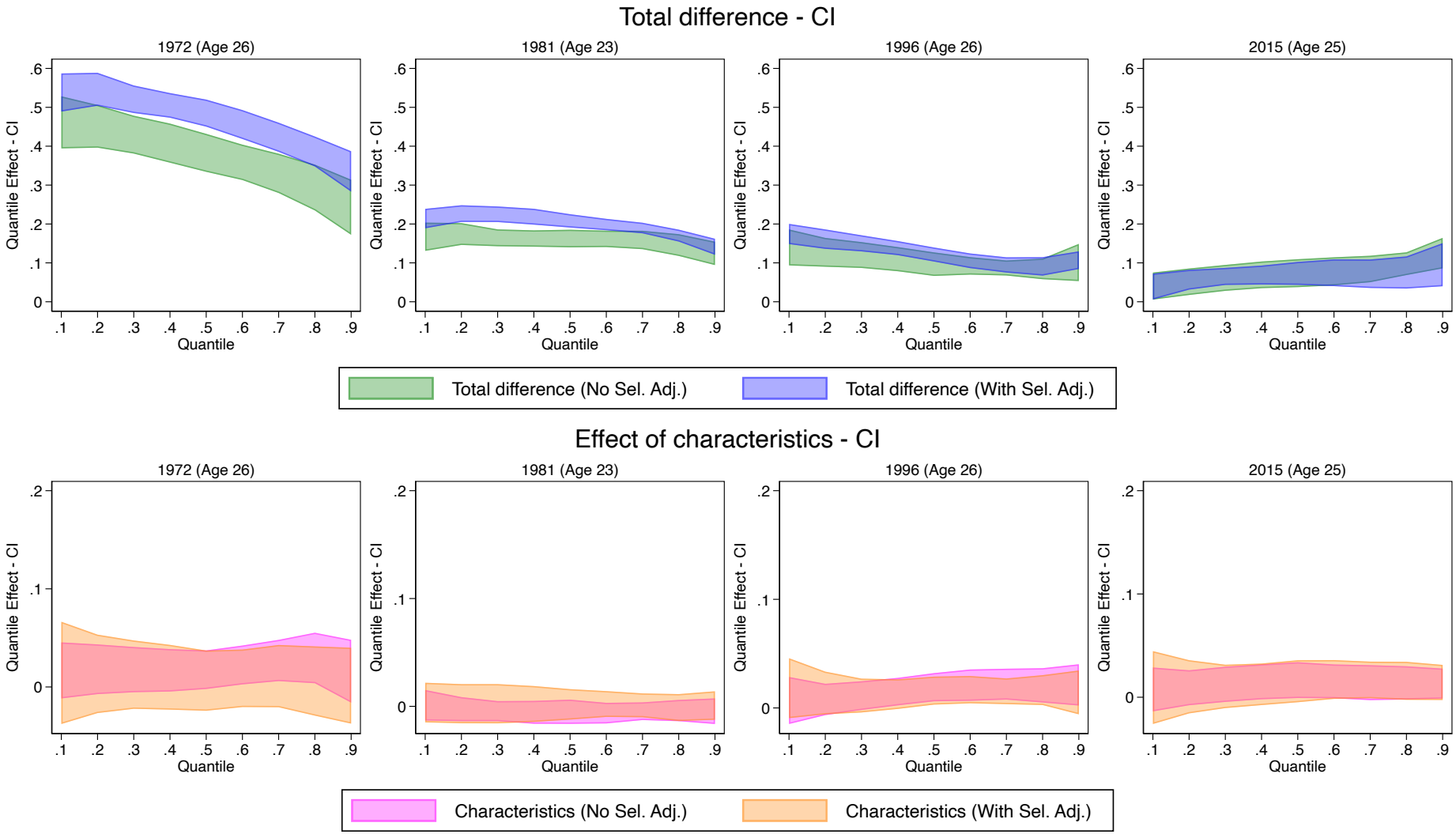
Confidence intervals I

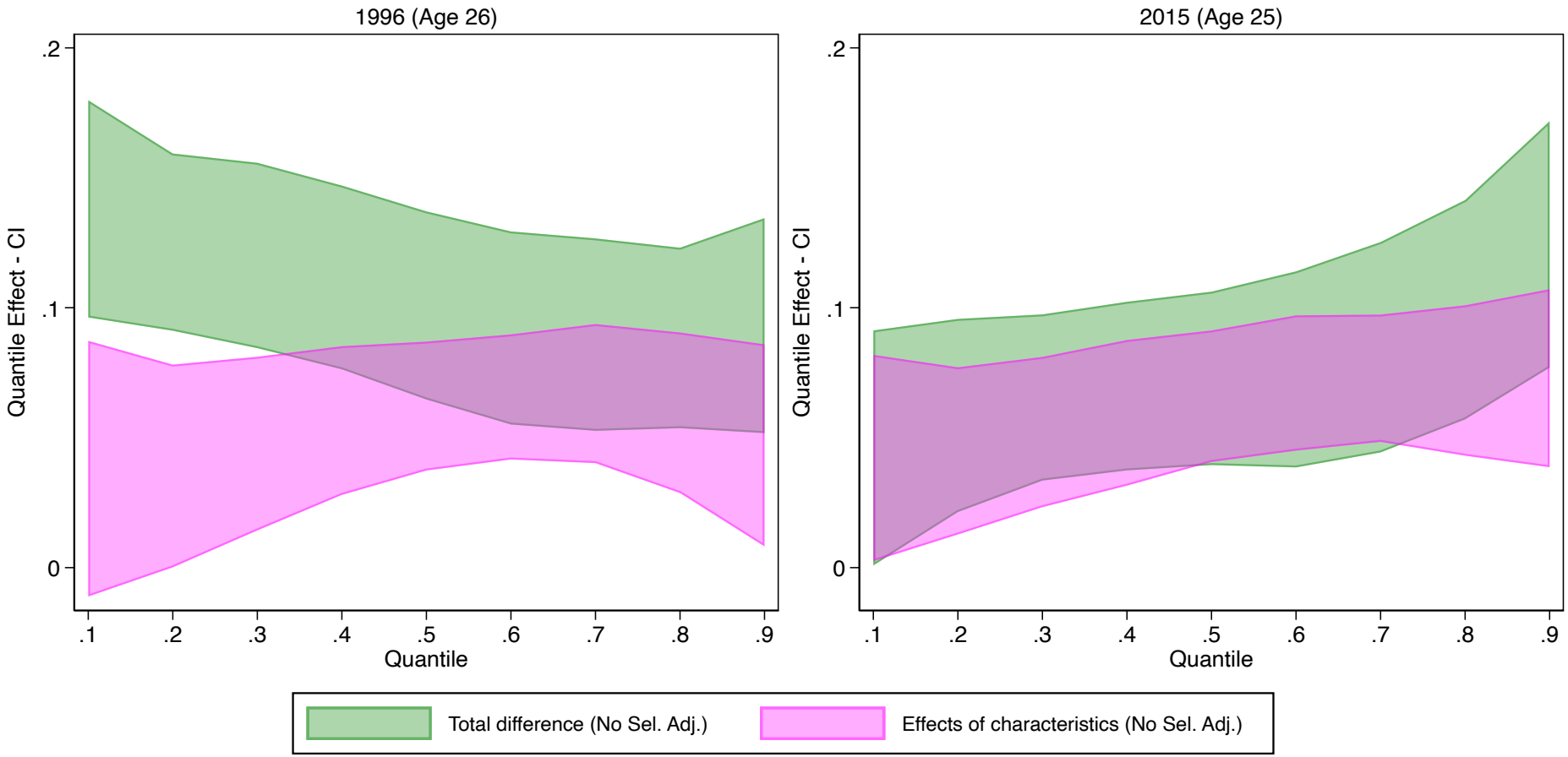
Figure 10: Confidence intervals of total differences and effect of characteristics across the wage distribution



Back to decomposition across the wage distribution

Confidence intervals II

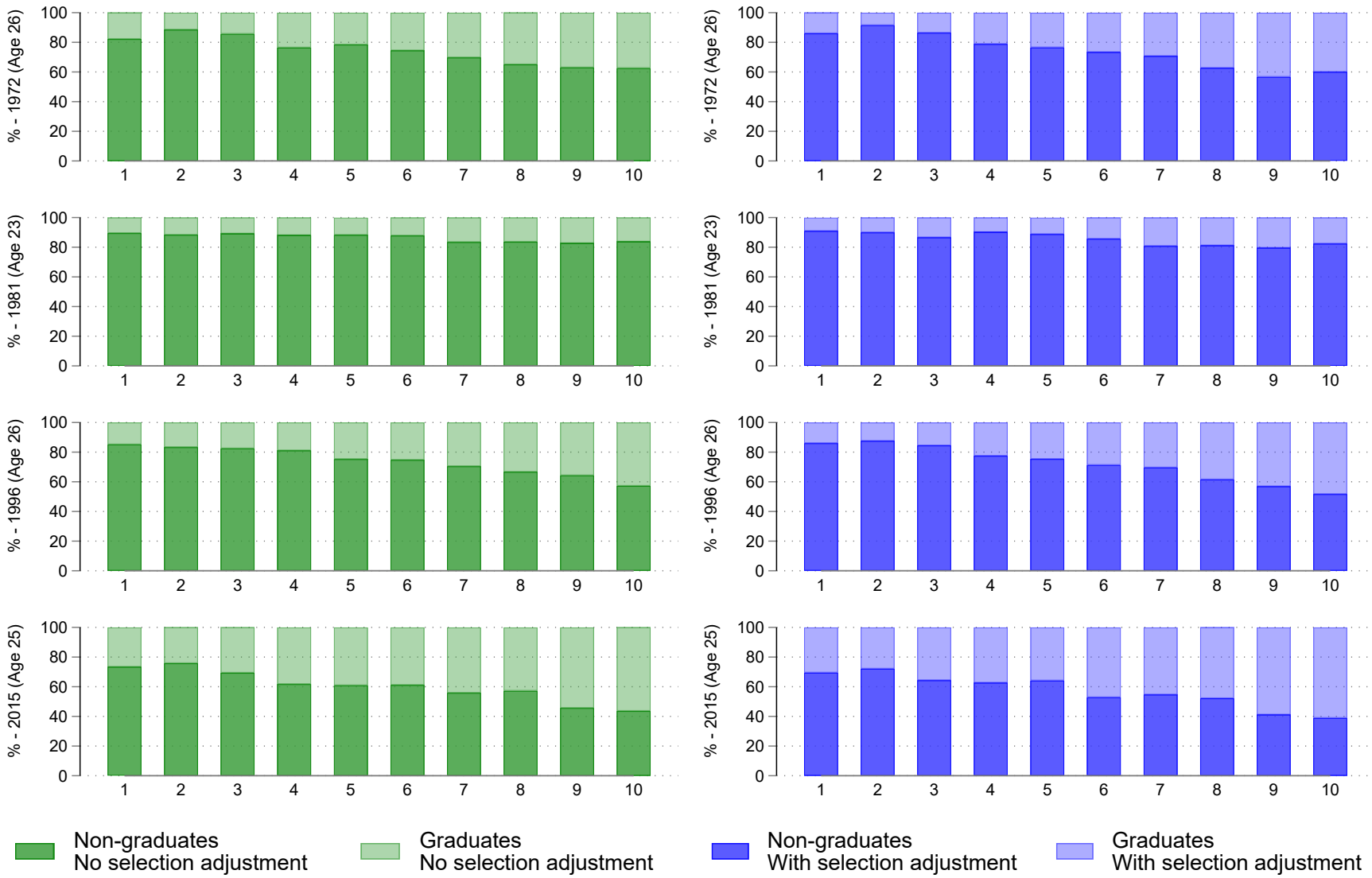
Figure 11: Confidence intervals of total differences and effect of characteristics across the wage distribution - job characteristics



Back to decomposition across the wage distribution with job characteristics

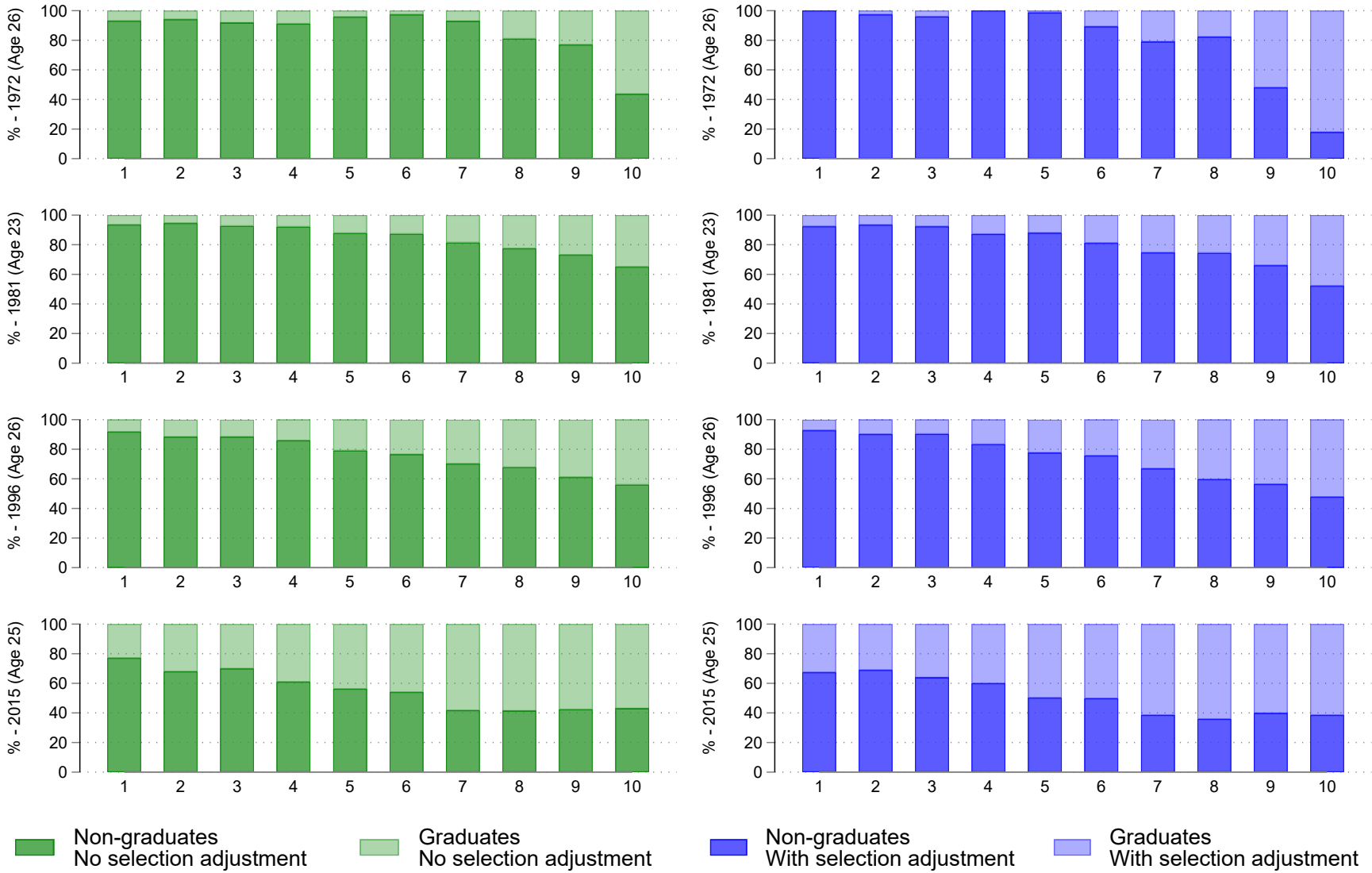
Graduates and wages - Men

Figure 12: Percentage of graduates by decile of wages - Men



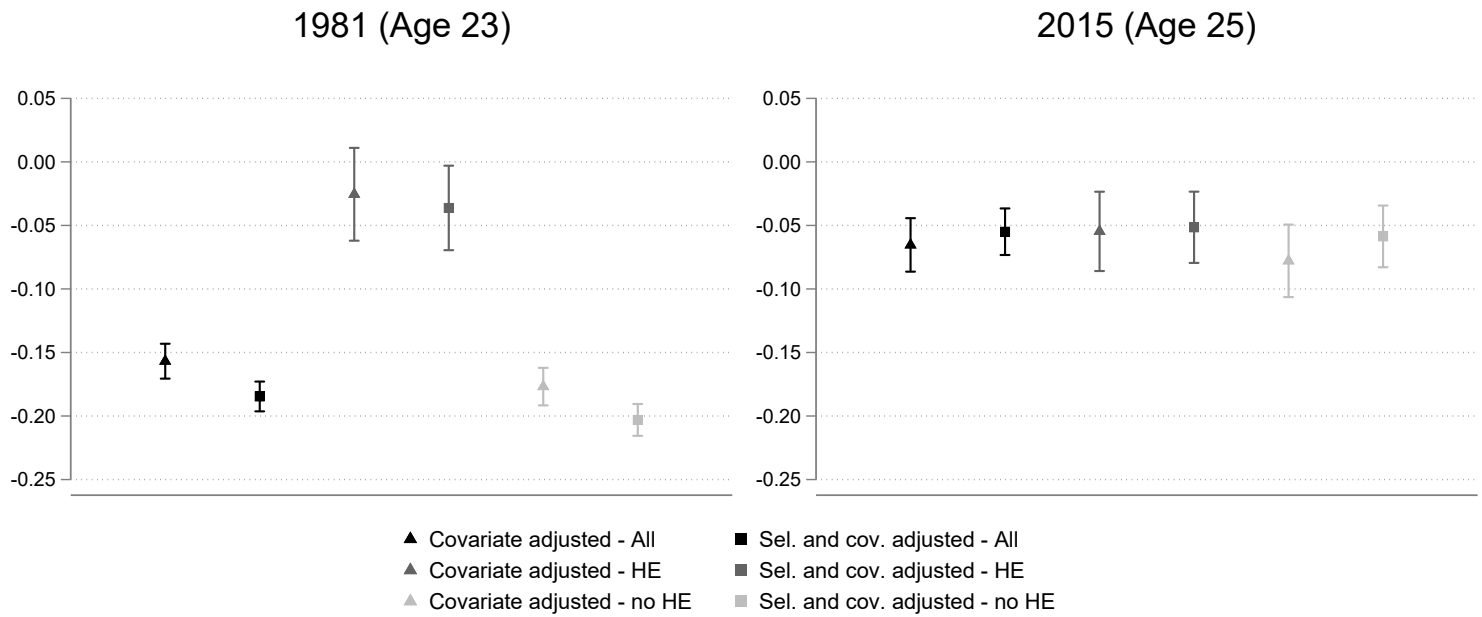
Graduates and wages - Women

Figure 13: Percentage of graduates by decile of wages - Women



Non-cognitive traits

Figure 14: Covariate adjusted and covariate and selection adjusted gender wage gap for the years 1981 (age 23) and 2015 (age 25)



Note: Estimates of the propensity score used for wage imputation are obtained by adding three measures of non-cognitive traits and job preferences - money score, people score and self-esteem score - to the probits for the propensity for waged employment