Gender segregation: analysis across sectoral dominance in the UK labour market

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Abstract

This paper aims to evaluate how changing patterns of sectoral gender segregation play a role in accounting for women's employment contracts and wages in the UK between 2005 and 2020. We then study wage differentials in gender-specific dominated sectors. We found that the propensity of women to be distributed differently across sectors is a major factor contributing to explaining the differences in wages and contract opportunities. Hence, the disproportion of women in female-dominated sectors implies contractual features and lower wages typical of that sector, on average, for all workers. This difference is primarily explained by "persistent discriminatory constraints", while human capital-related characteristics play a minor role. However, wage differentials would shrink if workers had the same potential and residual wages as men in male-dominated sectors. Moreover, this does not happen at the top of the wage distribution, where wage differentials among women working in female-dominated sectors are always more pronounced than those among men.

1 Introduction

Gender segregation across industrial sectors persists as a prevailing characteristic of the United Kingdom (UK)'s labour market (Government Equalities Office 2019; Irvine 2022), with the Covid-19 pandemic exacerbating this trend (Open Society Foundations

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2020; Johnston 2021). Between 2005 and 2020, the share of women in total employment in the UK exceeded 70% in sectors such as education, health and households as employers,[1] while it was below 30% in sectors like agriculture, mining and quarrying, manufacturing, construction and transport (Table 1). To support equal treatment of workers in the workplace and improve gender diversity across industries, the UK government has implemented several reforms in the past decade, including the Equality Act 2010 (EA2010), which sets out several measures prohibiting, among others, gender discrimination in employment and pay.[2] Despite these initiatives leading to a more balanced participation rate (Office for National Statistics 2022), the overrepresentation of women in certain industrial sectors is responsible for the sorting of women across occupations and disparities in both employment opportunities and wages (Olsen et al. 2018; Razzu and Singleton 2018).[3]

This paper uses the UK Labour Force Survey (LFS) quarterly data to investigate gender sectoral segregation in the UK between 2005 and 2020 by addressing two questions: (1) how gender sectoral segregation relates to the type of employment contracts (i.e. part-time, permanent, remote work, number of weekly working hours) and hourly wages; and (2) to what extent gender wage differentials differ in terms of observable and unobservable factors in female- and male-dominated sectors.

The first question is addressed through propensity score matching (PSM) by estimating the average differences in labour market outcomes between workers in female- and male-dominated sectors with similar observed socio-demographic and working characteristics.

To answer the second question, we first use the threefold Kitagawa (1955)-Blinder (1973)-Oaxaca (1973) (KBO) decomposition to explore differences in wages due to human capital and productivity, or unexplained factors, or their simultaneous effect. We then estimate Mincer wage regression to explore the contribution of human capital and other observable skills. However, since there might be unobservable factors—e.g. behavioural traits such as self-esteem, ambition, competitiveness and willingness to make risky career choices (Gneezy et al. 2003; Gneezy and Rustichini 2004; Booth 2009; Bertrand 2011; Saccardo et al. 2018)—that may contribute to driving wage differentials, we retrieve predicted and residual wages from Mincer regression. We also conducted a counterfactual analysis to study how predicted and residual wages differ if workers (women in male- and female-dominated sectors and men in female-dominated sectors) had the same characteristics as men in male-dominated sectors.

Our main findings can be summarised in three points. First, gender-based sectoral segregation matters in the disparity of contractual opportunities, even controlling for

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[1] The sector of *Households as Employers* includes the activities of domestic personnel (e.g. maids, cooks, waiters, gardeners, chauffeurs, caretakers, babysitters, etc.) whose product is consumed by the employing household (ONS: http://www.siccodesupport.co.uk/sic-division.php?division=97).

[2] According to the EA2010 and its related extensions (e.g. Regulations 2011 - Specific Duties and Public Authorities), a woman must not be discriminated against with respect to a man in a similar situation or due to a particular policy or working practice. For an updated map of the key policies regarding equality for and between women, see the UK Parliament website https://www.parliament.uk/globalassets/documents/commons/scrutiny/gender_equality_policy_map_april_2020.pdf.

[3] Tables A1 and A2 in the Appendix show that occupations in traditionally female-dominated sectors (e.g. education) are mainly over-represented by women, even in those occupations that are usually considered male-dominated (e.g. manager, director and senior officials, or skilled trades).

Table 1 Share of women, by sector and year

Sectors	Women's share (%)				
	2005	2010	2015	2020	2005–2020
A—Agriculture, forestry and fishing	30.8	25.4	32.7	31.9	29.9
B—Mining and quarrying	15.3	13.8	15.2	23.4	18.0
C—Manufacturing	25.6	24.6	25.7	28.8	25.9
D—Electricity, gas and air con supply	24.6	25.1	27.1	26.7	27.6
E—Water supply, sewerage and waste	21.3	18.8	21.7	23.2	20.3
F—Construction	14.6	16.8	18.4	21.1	16.8
G—Distribution	53.4	51.5	51.2	49.3	51.7
H—Transport and storage	26.4	23.0	25.1	24.8	24.5
I—Accommodation and food services	58.6	57.9	56.0	57.9	57.5
J—Information and communication	27.8	30.9	29.5	32.6	30.4
K—Financial and insurance services	54.2	51.0	50.1	48.3	50.9
L—Real estate services	56.2	63.2	55.3	58.3	57.8
M—Professional, scientific and technical activities	49.8	47.7	48.2	46.8	48.0
N—Admin and support services	24.5	46.9	49.7	48.8	44.6
P—Education	74.3	75.6	74.8	76.1	75.3
Q—Health and social work	80.5	80.6	80.3	79.1	80.4
R—Arts, entertainment and recreation	50.0	52.4	51.3	50.7	50.3
S—Other service activities	66.1	61.7	61.8	60.6	62.4
T—Households as employers	68.6	78.4	79.6	77.1	74.8

Sectors labelled as "O—Public admin and defence" and "U—Extra territorial" are removed from the sample because their contracts and wages highly differ from other sectors. The share is calculated over total employment, whereas gender sectoral dominance is calculated with the Sectoral Segregation Index in Eq. (2)

occupational composition. Workers in female-dominated sectors are more likely to be segregated into atypical contracts (part-time), to work fewer hours and less from home and to earn less than their counterparts in male-dominated sectors. The penalty for men working in those sectors is even larger than for women. Second, human capital and background characteristics play a minor role in explaining gender wage differentials. Instead, most of the difference is driven by persistent "discriminatory constraints" (Altonji and Blank 1999), such as barriers in the labour market for women due to the effects of discrimination (i.e. unequal pay for equally qualified workers) and unobserved differences in productivity and tastes. Third, wage differentials in female- and male-dominated sectors would shrink if workers had the same potential and residual wages as men in male-dominated sectors. However, women in female-dominated sectors would always earn less than men in high-paid jobs due to the negative selection in the labour market.

While most of the literature focuses on the role of gender segregation in explaining the gender wage gap by looking at occupational and job dimensions (Blackburn et al. 1993; Watts 1992, 1995, 1998; Petrongolo 2004; Cortés and Pan 2018; Folke and

Rickne 2022; Scarborough et al. 2021),[4] our work is closely related to the scant literature on the role of gender segregation across sectors (Moir and Smith 1979; Kreimer 2004; Campos-Soria and Ropero-García 2016; Kamerāde and Richardson 2018; Scarborough et al. 2021). These papers highlight how gender division of labour is still embedded in sectors (Carvalho et al. 2019), which is considered a structural factor shaping the differential effects on labour markets caused by economic recessions (Rubery 2010; Rubery and Rafferty 2013; Kamerāde and Richardson 2018) and the business cycle (Hoynes et al. 2012; Périvier 2014; Doepke and Tertilt 2016; Razzu et al. 2020; Piłatowska and Witkowska 2022). For instance, Olivetti and Petrongolo (2014) emphasise the interplay between gender trends and the evolution of the industry structure. Therefore, an understanding of the sectoral composition of the workforce is necessary to assess the trajectory of male and female employment and wages (Moir and Smith 1979).[5] Our contribution focuses on three main points. First, an innovative feature of this study is that it goes beyond the standard segregation index to identify female- and male-dominated sectors by further classifying sectors into high- and low-segregated. This index allows us to measure the degree of imbalance and the intensity of differences in gender distribution of a sector over time. Second, our analysis is not limited to the KBO results that show which effect drives wage differentials. Instead, we disentangle the effect of differences in average characteristics of male and female employees and the effect of selection into different sectors of women and men on the gender wage differentials. Third, since unobserved confounders may enter the decision to choose a specific (female or male) sector, we address this potential selection bias by calculating the predicted and residual wages from the Mincer regression. This approach is similar to the method used in the literature on migration to calculate individual potential earnings (Parey et al. 2017) and capture the part of earnings that is uncorrelated to observed skills (Gould and Moav 2016; Borjas et al. 2019).[6]

Finally, we extend the findings of the 1980s literature on the issue of "comparable worth"[7] (Treiman and Hartmann 1981; Maahs et al. 1985; Bielby and Baron 1986; Aaron and Lougy 1987). This literature found that the disproportion of women in

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[4] These studies found a threefold explanation for gender differences: (i) women's preferences for more flexible and family-oriented contracts (Petrongolo 2004; Bertrand 2011; Goldin 2014; Bertrand 2020; Morchio and Moser 2021) and less competitive and risky environments (Gneezy et al. 2003; Saccardo et al. 2018); (ii) comparative advantage in terms of human capital and productivity (Petrongolo 2004; Pető and Reizer 2021); (iii) discrimination (Petrongolo 2004) and sexual harassment (Folke and Rickne 2022).

[5] The gendered division of labour across sectors, mainly due to persistent social norms and stereotypes, influences how women self-select into different jobs and careers and bargain their contracts (Card et al. 2016), and is likely to distort preferences, labour market trajectories and future wages (Mumford and Smith 2008; Reuben et al. 2017; Cortés and Pan 2020; Jewell et al. 2020; Card et al. 2021).

[6] This literature highlights that immigrants could be positively/negatively selected based on both observed (e.g. higher levels of education) and unobserved determinants of labour market success (e.g. motivation, ambition and ability) that can enter into the decision to self-select into migration (Chiswick 1978, 1986, 1999; Borjas 1987; Bertoli et al. 2016).

[7] Comparable worth, or "the women's issue of 1980", was a wage-setting policy on a firm-by-firm basis proposed to reduce the gender gap in earnings. Accordingly, jobs within a firm with comparable worth should receive equal compensation (Ehrenberg and Smith 1987). This was based on job evaluation scores to compare jobs in different occupations (Madden 1987). However, this implementation was not without disagreements (e.g. United States Commission on Civil Rights 1984; Gleason 1985; Ferber 1986; Aaron and Lougy 1987; Gerhart 1991).

female-dominated occupations is associated with lower pay in that occupation, on average, for all employees—men and women (Treiman and Hartmann 1981; Killingsworth 1987). However, the negative effect on the wage of being in such jobs is more significant for men than women (Roos 1981), even after controlling for relevant worker and job characteristics, including industry effects (Johnson and Solon 1984). We find that these negative results—i.e. worst job characteristics and wages for both men and women in female-dominated environments—are confirmed even when looking at industrial sectors. However, we found a more pronounced wage differential among women than men in female-dominated sectors at the top of the wage distribution.

The rest of the paper is structured as follows. Section 2 discusses the measures of gender sectoral dominance and segregation. Section 3 describes the data and reports some descriptive analysis. Section 4 presents the empirical strategy. Section 5 reports the estimated results. Section 6 concludes.

2 Conceptual framework

2.1 Gender sectoral segregation index

Gender sectoral segregation arises when a disproportionate share of men or women exists in a sector of the economy, independent of the nature of the job allocation (Watts 1998). In this section, we introduce the notion and measures of gender segregation in industrial sectors.

A sector is *female-dominated (fml-dom)* if the share of women employed in that sector is higher than the share of men in the same sector; it is *male-dominated (ml-dom)* if the share of men is higher than the share of women in the same sector. In formulae, the classification criterion for gender sectoral dominance is as follows:

$$\text{Sectoral Dominance} = \begin{cases} \text{Female} & \text{if } \frac{W_{jt}}{W_t} > \frac{M_{jt}}{M_t} \\ \text{Male} & \text{otherwise} \end{cases} \tag{1}$$

where W_{jt} and M_{jt} are, respectively, the total number of women and men employed in sector j (SIC 1-digit) at time t; W_t and M_t are, respectively, the total number of female and male workers at time t.

The classification criterion defined in (1) uses the "majority voting" rule—i.e. the group with the largest number of members (either male or female) represents the sector.[8]

Based on classification criterion (1), we define the Sectoral Segregation Index (SSI_t^s) as a measure of the degree of disproportion in the distributions of men and women in female- and male-dominated sectors at each time period. The index is based on the well-

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[8] The denominators in (1) are not total employment (i.e. male plus female employees) but total employment by gender group, providing the overall share of women (or men) in a sector. The advantage of the criterion consists in avoiding the use of conservative thresholds of more than 60% (Killingsworth 1987) to classify a sector as female-dominated.

known Index of Dissimilarity,[9] which is used in labour (Watts 1998) and education economics (Zoloth 1976; James and Taeuber 1985) to study group composition and quantify the segregation among two groups (Cortese et al. 1976).

SSI_t^s is calculated for the two gender-dominated sectors ($\text{SSI}^{\text{fml-dom}}$ and $\text{SSI}^{\text{ml-dom}}$) as follows:

$$\text{SSI}_t^s = \frac{1}{2} \sum_{j \in J_s} \left| \frac{W_{jt}}{W_t} - \frac{M_{jt}}{M_t} \right| \quad \text{for all } t \text{ and } s = \{\text{ml-dom, fml-dom}\} \qquad (2)$$

where J_s is the set of sectors in a male-dominated or female-dominated group. The index informs on time-varying group imbalance within gender-dominated sectors and ranges between 0 and 1. Large values of $\text{SSI}^{\text{fml-dom}}$ (or $\text{SSI}^{\text{ml-dom}}$) flag large gender imbalance towards women (or men) and indicate the proportion of women (or men) that would have to either leave or enter each sector to avoid gender sectoral segregation. The value of the index remains unchanged when transferring workers between sectors within each gender group.[10]

Because the difference in the share of female and male employees can be extremely low in some sectors or high in others, we define an additional index that allows us to distinguish between high- and low-segregated sectors. Specifically, on average, sectors that display low (or high) segregation are classified as low (or highly) segregated sectors by ranking them from the least to the most segregated, based on SSI_t^s.

Our analysis follows the UK Standard Industrial Classification (SIC) at one digit, which is used for business establishments by type of economic activity. We consider the 19 sectors listed in Table 2 as female- or male-dominated sectors and by the degree of segregation (high and low).[11]

Figure 1 shows the evolution of SSI_t^s over 2005–2020 in the UK economy (upper graph), in low-segregated (bottom left graph) and high-segregated sectors (bottom right graph). The index follows a downward trajectory in male-dominated sectors (from 0.182 in 2005 to 0.158 in 2020), meaning that sectoral segregation has decreased. Instead, the segregation remains stable at around 0.17 over time in female-dominated sectors. In low-segregated sectors, gender segregation is larger in female-dominated than male-dominated sectors (with mean values of 0.021 and 0.011, respectively). Instead, in high-segregated sectors, gender segregation is higher in male-dominated sectors. However, it decreased over time (from 0.35 in 2005 to 0.30 in 2020) and dropped below the level of segregation in female-dominated sectors after 2015.

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[9] The Index of Dissimilarity measures the degree of the disproportion in the distributions of two groups. It provides information on the proportion of the minority group that would have to be transferred to reach no segregation (Cortese et al. 1976; Zoloth 1976; Watts 1998). Duncan and Duncan (1955)'s seminal article provides the first systematic review of segregation indices. A more comprehensive approach to segregation measurement has been available since the 1980 s (Reardon and Firebaugh 2002).

[10] A similar interpretation is provided by Zoloth (1976) to describe the racial composition of schools within and across districts. In her setting, the Dissimilarity Index (D) remains unaffected by transferring students between schools within each group (minority and non-minority students). D changes only by transferring students across the two groups.

[11] For years before 2008, we used the correspondence between SIC 2003 and SIC 2007 sections. Sectors labelled as *O—Public administration and defence* and *U—Extra territorial* are removed from the sample due to the different nature of contracts and wages in their related jobs.

Table 2 List of high- and low-segregated sectors

High segregated sectors	Low segregated sectors
Female-dominated sectors	
I—Accommodation and food services	G—Distribution
P—Education	L—Real estate services
Q—Health and social work	S—Other service activities
	T—Households as employers
Male-dominated sectors	
B—Mining and quarrying	A—Agriculture, forestry and fishing
C—Manufacturing	K—Financial and insurance services
D—Electricity, gas and air con supply	R—Arts, entertainment and recreation
E—Water supply, sewerage and waste	
F—Construction	
H—Transport and Storage	
J—Information and communication	
M—Professional, scientific and technical activities	
N—Admin and support services	

Sectors labelled as "O—Public admin and defence" and "U—Extra territorial" are removed from the sample because their contracts and wages highly differ from other sectors

3 Data and descriptive statistics

3.1 Data source and characteristics of the sample

Our analysis is based on the Labour Force Survey (LFS) quarterly data from the UK Office for National Statistics (ONS). LFS is the most extensive household study in the UK, providing a comprehensive source of data on workers and the labour market. The analysis spans from fiscal years between 2005 and 2020. This period covers widespread enforcement of equality legislation, the 2007–2008 financial and economic crisis, and the recent changes caused by the COVID-19 outbreak.[12]

We focus on working-age (16–64) employees, i.e. people who are in employment and paid a wage by an employer for their work.[13] Our final sample consists of 334,055 female workers and 307,245 male workers. The dataset includes variables on a wide range of (i) demographic characteristics (gender, age, country of birth, nationality, ethnicity, religion); (ii) socio-economic factors (presence of dependent children, marital status, education, experience, full/part-time job, remote work, public sector, training

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[12] Most of the literature shows that the 2007–2008 crisis had a severe impact on male-dominated sectors, such as on construction and manufacturing (Hoynes et al. 2012; Périvier 2014; Doepke and Tertilt 2016). In contrast, the COVID-19 crisis has hit counter-cyclical sectors (e.g. in-person services) sharply (Piłatowska and Witkowska 2022).

[13] We excluded self-employed workers (i.e. people who, in their main employment, work on their account whether or not they have employees) from the analysis because the earnings questions are not addressed to respondents who are self-employed in the UK LFS. This practice is standard in this type of analysis (see, e.g. Dustmann et al. 2010; Dustmann and Frattini 2014).
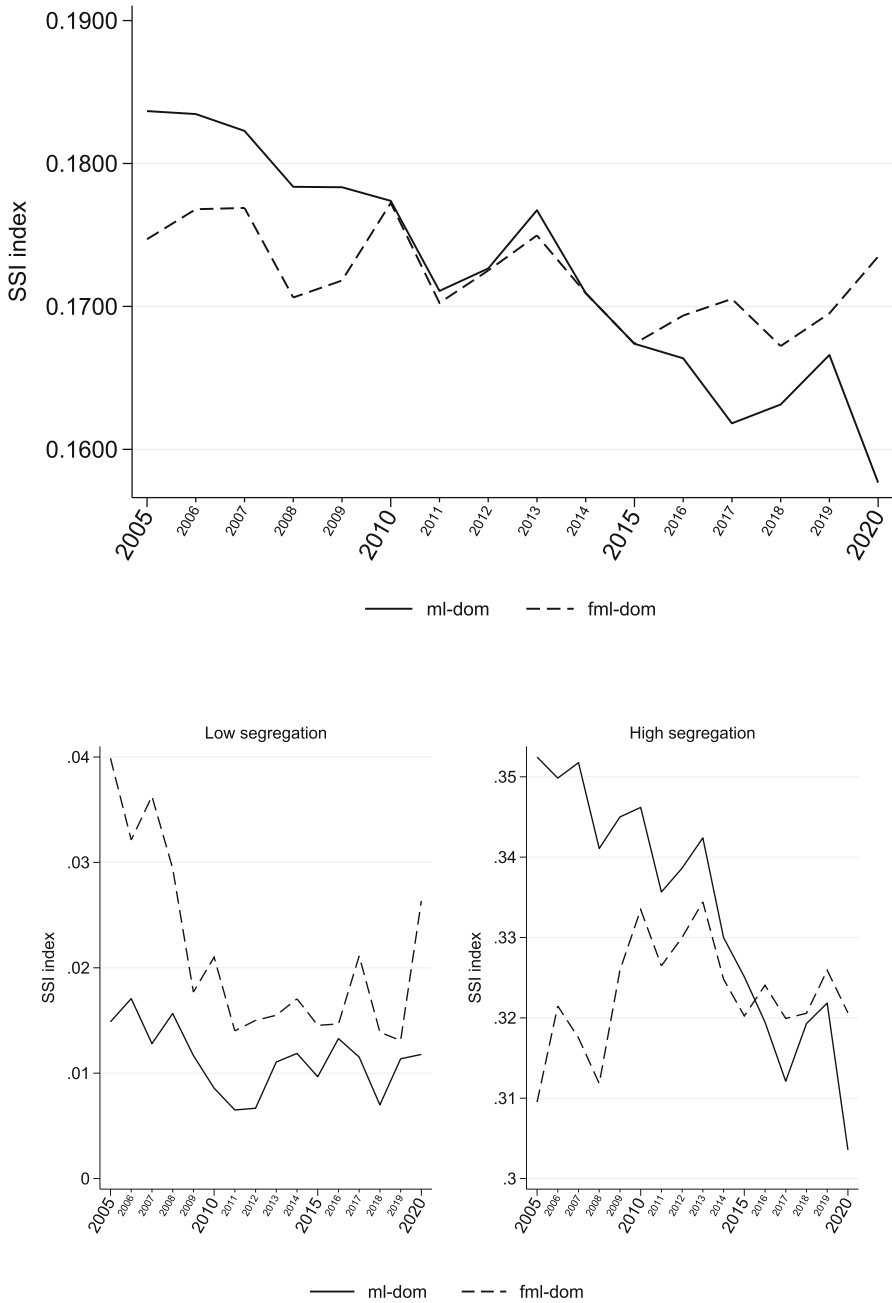
Fig. 1 Evolution of SSI index over fiscal year

opportunities, sectors and occupations); (iii) geographical information on residence and working region. Information on wages in the LFS is the self-reported gross weekly pay for the reference week.[14] The number of hours is the total usual hours worked in the main job per week, including usual hours of paid overtime when applicable.

Table 3 reports the summary statistics of the main variables by gender. Regarding demographic characteristics, there is a substantial prevalence of UK natives in both male and female samples (87%), followed by non-European Economic Area (non-EEA) immigrants and EEA citizens. The average age is similar for men and women (around 40 years). On average, women in the sample are as educated as men (13 years of education) and have slightly less experience (22.99 years of experience against 23.46). More than half of the women and men are either married or cohabiting. In addition, 46% of women and 42% of men have dependent children under 18 years.

Segregation variables show that 69% of women are employed in female-dominated sectors compared to 35% of men. Around 26% of both women and men work in low-segregated sectors, while the rest work in highly segregated sectors.

Focusing on the outcomes of interest, both female and male employees have the same share of permanent jobs (around 94%). Women's wages (in logarithm) are, on average, lower than men's (2.41 percentage points against 2.59 for men). A small share of employees work from home (5% of the women against 8% of the men). On average, women work 31 hours per week and 42% part-time, while men work 40 hours per week and 10% part-time. A more detailed investigation of the reasons for working part-time in Table 4 highlights that the share of women who *did not want* a full-time job is much larger than those who *could not find* it (78% against 10%). In contrast, 39% of men *did not want* a full-time job and 26% *could not find* one. Family duties and domestic commitments are among the main reasons for not wanting a full-time job (48% and 28%, respectively). Instead, men do not want a full-time job mainly because *they are financially secure and work because they want* (24%) or for other reasons (34%).

3.2 Shift-share decomposition of employment

This section provides a descriptive picture of gender trends in employment in male-and-female-dominated sectors. We adopt a revised version of Olivetti and Petrongolo's (2016) shift-share decomposition.[15]

In our analysis, the growth of female employment share is decomposed into (i) the change in the total *employment share* of the sector (*between component*) and (ii) the

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[14] We calculate the real wage based on hourly wages in 2015 prices as real wage = hour pay/(CPI2015/100).

[15] Unlike the original paper that uses the number of worked hours, we use the employment shares. Razzu et al. (2020) present an extension of Olivetti and Petrongolo's (2016) decomposition considering the role of changing types of employment within industry sectors according to education from 1971 to 2016 in the UK.

Table 3 Summary statistics for employed workers

Variable	Women		Men		Full sample	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Demographic characteristics						
Natives	0.87	0.33	0.87	0.34	0.87	0.33
EEA	0.05	0.22	0.05	0.22	0.05	0.22
Non-EEA	0.07	0.26	0.08	0.27	0.08	0.27
Age	40.58	11.99	41.15	12.37	40.85	12.18
Black	0.02	0.14	0.02	0.13	0.02	0.14
Asian	0.03	0.17	0.04	0.20	0.04	0.18
Other ethnicity	0.03	0.16	0.03	0.16	0.03	0.16
Muslim	0.01	0.12	0.03	0.16	0.02	0.14
Christian	0.61	0.49	0.54	0.50	0.57	0.50
Other religions	0.14	0.35	0.14	0.34	0.14	0.35
Socio-economic factors						
In couple	0.55	0.50	0.58	0.49	0.57	0.50
With dependent children (<18yrs)	0.46	0.50	0.42	0.49	0.44	0.50
Years of education	13.77	3.07	13.58	2.91	13.68	2.99
Experience	22.99	12.44	23.46	12.83	23.21	12.63
Training	0.34	0.47	0.33	0.47	0.34	0.47
Log wages	2.41	0.50	2.59	0.56	2.50	0.54
Part-time work	0.42	0.49	0.10	0.29	0.26	0.44
Public sector	0.34	0.47	0.14	0.35	0.24	0.43
Permanent job	0.94	0.23	0.95	0.21	0.95	0.22
Weekly hours	30.77	12.87	40.19	12.53	35.28	13.55
Log weekly hours	3.32	0.51	3.64	0.37	3.47	0.48
Remote work	0.05	0.21	0.08	0.26	0.06	0.24
Benefit	0.40	0.49	0.11	0.31	0.26	0.44
Female dominance	0.69	0.46	0.35	0.48	0.53	0.50
Low segregation	0.27	0.44	0.26	0.44	0.26	0.44

The descriptive statistics in the table are for the sample of employed workers (self-employed are excluded from the sample). Total number of female workers is 334,055. Total number of male workers is 307,245. Total number of workers in the sample is 641,300

change in *gender composition* within the sector (*within component*):

$$\Delta e_{st}^g = \underbrace{\sum_{j=1}^{J_s} \alpha_{jt}^g \Delta e_{jt}}_{\text{Between-sector}} + \underbrace{\sum_{j=1}^{J_s} \alpha_{jt} \Delta e_{jt}^g}_{\text{Within-sector}} \quad \text{for } s = \{\text{fml-dom, ml-dom}\}, g = \{\text{fml, ml}\} \tag{3}$$

Table 4 Reasons for part-time work

	Women (%)	Men (%)	Full sample (%)
Reasons for part-time work			
Student or at school	9.69	30.57	13.33
Ill or disabled	2.15	4.65	2.59
Could not find full-time job	9.95	25.88	12.74
Did not want full-time job	78.21	38.91	71.34
Total	100	100	100
Reasons for not wanting full-time job			
Financially secure—work because want	7.22	24.26	8.74
Earn enough part-time	7.64	17.41	8.52
Want to spend more time with family	40.35	12.30	37.85
Domestic commitments prevent full-time	28.20	10.70	26.64
Insufficient child-care facilities	3.49	0.96	3.26
Another reason	13.09	34.37	14.99
Total	100	100	100

Percentages (%) are over group total

where $\Delta e_{st}^g = \frac{E_{st}^g}{E_{st}} - \frac{E_{t_0}^g}{E_{t_0}}$ is the difference in the share of female/male employment between the base period t_0 and the current period t; $\Delta e_{jt} = \frac{E_{jt}}{E_t} - \frac{E_{jt_0}}{E_{t_0}}$ is the difference in the share of total employment in sector j between t_0 and t; $\Delta e_{jt}^g = \frac{E_{jt}^g}{E_{jt}} - \frac{E_{jt_0}^g}{E_{jt_0}}$ is the difference in the share of female/male employment in sector j; $\alpha_{jt}^g = \frac{\left(e_{jt_0}^g + e_{jt}^g\right)}{2}$ and $\alpha_{jt} = \frac{\left(e_{jt_0} + e_{jt}\right)}{2}$ are decomposition weights (i.e. the average share of female employment in sector j and the average share of sector j, respectively). The reference year is the first available year in the dataset ($t_0 = 2005$); s stands for sectors classified as female-/male-dominated according to Eq. (1).

Figure 2 displays the shift-share decomposition of female and male employment (left and right graphs, respectively). The graphs show the difference in employment with respect to the base year (2005) and its decomposition into *between* and *within* components (respectively, dashed and dotted lines) in female- and male-dominated sectors (crosses and circles).

The 2007–2008 financial and economic crisis harshly hit male employment. In particular, male employment share (*between* component) and male composition (*within* component) in male-dominated sectors suddenly decreased. Conversely, the crisis stimulated female employment, not only in the total employment share (both *between* components of female- and male-dominated sectors) but also in the composition of women in female-dominated sectors (*within* component). The COVID-19 outbreak arrested the overall female employment in both male and female-dominated sectors (*between* components). As expected, this led to a reduction in the composition of
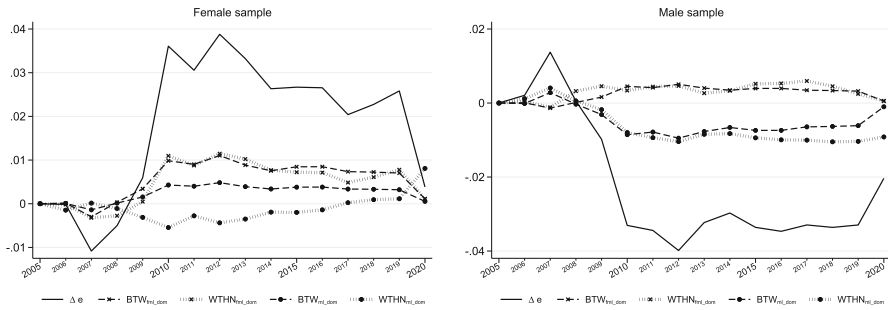
Fig. 2 Shift-share decomposition, by gender. *Note*: The graph shows the difference in employment in the comparison year with respect to the base year (i.e. the fiscal year 2005). The overall change in employment is shown in solid line and its decomposition into the 'between' and 'within' components, respectively, with dashed and dotted lines. The cross marks the components for female-dominated sectors and the circle the components for male sectors. The 'between' component (BTW) captures the change due to changes in the sectoral structure of the economy; the 'within' component (WTHN) reflects changes in female composition within sectors

women in female-dominated sectors (*within* component) but to a sharp increase in the composition of women in male-dominated sectors.[16]

Overall, female composition (*within* component) increased gradually in male-dominated sectors after 2010. It seems that EA2010 stimulated female employment from the demand side. This may suggest that a higher proportion of women were employed *within* each male-dominated sector at the expense of decreasing male employment.

4 Empirical strategy

4.1 Estimating gender sectoral segregation on employment contracts and wages

In this section, we outline the methodology employed to compare the average difference in labour market outcomes (permanent jobs, part-time jobs, working hours, remote work and hourly wages) in male- and female-dominated sectors among workers with similar observable skills and socio-demographic characteristics. We employ the propensity score matching (PSM) method for this purpose. This approach constructs a counterfactual group by matching workers in female-dominated sectors with those working in male-dominated sectors based on the same *propensity score* (i.e. the estimated probability of being employed in a female-dominated sector conditional on the observed characteristics). The estimand of interest is the Average Treatment

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[16] These results are in line with the literature assessing that during the recession period of the 2007–2008 crisis, female employment was generally affected less than male employees, while during the recovery phase, male employment recovered faster than female employment (Hoynes et al. 2012; Doepke and Tertilt 2016; Ellieroth et al. 2019; Albanesi and Kim 2021). For instance, Ellieroth et al. (2019) finds that married women are more stuck in employment during recessions. Therefore, their labour supply decisions account for the higher risk of job loss experienced by their husband. However, Razzu et al. (2020) emphasises how gender segregation across industrial sectors and occupations in the UK exacerbates women's employment and pay gap during the business cycle.

effect on the Treated (ATT) which is computed as the average of the difference between the *observed* outcomes (Y_1) and the *imputed* outcomes (Y_0) for each worker in female-dominated sectors, $\mathbb{E}\{Y_{1i} - Y_{0i}|\text{Working in fml-dom sector}\}$. The imputed outcomes for each worker in female-dominated sectors are calculated by using the average observed outcomes of similar individuals working in male-dominated sectors. The underlying assumption is that those who choose to work in female- and male-dominated sectors only differ in the endowment of their observed skills and human capital accumulation.

In Sect. 5.1, we compare the average conditional outcomes *between* gender sectoral dominance for the full sample (male and female workers together), male sample and female sample. We estimate the propensity scores via a Probit regression. For the selection of the covariates to calculate the propensity scores, we consider all factors associated with *working in female-dominated sector* (including interactions and squares), and then we use an automatic selection procedure—i.e. Least Absolute Shrinkage and Selection Operator (LASSO). Table A3 in the Appendix reports the selected covariates from the penalised regressions. Then, we conduct the sensitivity analysis to test whether the balancing property of the covariates before and after the match holds. The covariates are balanced if the standardised bias after matching is within ±5% (Rosenbaum and Rubin 1985). The matching method successfully builds a meaningful *comparison* group if the condition is satisfied.

4.2 Estimating wages in gender-specific dominated sectors

We now focus on the gendered differences in hourly wages in male- and female-dominated sectors based on observable and unobservable characteristics. For this purpose, we first perform the counterfactual Kitagawa–Blinder–Oaxaca (KBO) decomposition (Kitagawa 1955; Blinder 1973; Oaxaca 1973), which is an established method in the literature on discrimination (e.g. Mueller and Plug 2006; Blau and Kahn 2017) to study the difference in wages between women and men. We then run Mincer wage regression to explore the role of the average characteristics of male and female employees in female- and male-dominated sectors and to obtain the predicted and residual wages.

4.2.1 Decomposing the gender wage differentials

In this analysis, we use the threefold version of the KBO decomposition (Jann 2008), which decomposes the average difference of hourly wages (in logarithm) between men and women working in female- and male-dominated sectors into three components as follows[17]:

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[17] We also implemented a standard twofold KBO decomposition, which decomposes the wage differentials into a part that is explained by differences in human capital and productivity and an unexplained part usually interpreted as discrimination (Blau and Kahn 2017). We obtained the same results for the explained and the unexplained components. However, because the unexplained component is the algebraic sum of the coefficient and the interaction effects of the threefold decomposition, the twofold is less informative (see also Meara et al. 2020).

$$\underbrace{\mathbb{E}(y_{ml}^s) - \mathbb{E}(y_{fml}^s)}_{\text{overall difference}} = \underbrace{\left[\mathbb{E}(\mathbf{X}_{ml}^s) - \mathbb{E}(\mathbf{X}_{fml}^s)\right]' \boldsymbol{\beta}_{fml}^s}_{\text{endowment effect}}$$

$$+ \underbrace{\mathbb{E}\left(\mathbf{X}_{fml}^s\right)' (\boldsymbol{\beta}_{ml}^s - \boldsymbol{\beta}_{fml}^s)}_{\text{coefficients effect}}$$

$$+ \underbrace{\left[\mathbb{E}(\mathbf{X}_{ml}^s) - \mathbb{E}(\mathbf{X}_{fml}^s)\right]' \left(\boldsymbol{\beta}_{ml}^s - \boldsymbol{\beta}_{fml}^s\right)}_{\text{interaction effect}} \qquad (4)$$

where $\mathbf{X}$ is a vector containing the covariates, such as socio-demographic variables, human capital variables and work-related variables; and $\boldsymbol{\beta}$ is a vector of slope parameters and the intercept; fml stands for women and ml for men, and $s = \{\text{fml-dom, ml-dom}\}$.

The *first component* explains observable group differences in the predictors, such as background and human capital characteristics of workers (*endowment effect*). This effect quantifies the expected change in women's wages if they had men's characteristics. A negative *endowment effect* shows that female workers possess better predictors than their male counterparts.

The *second term* explains differences in the coefficients, including the intercept, that arise from discrimination—i.e. unequal pay for equally qualified workers (Blau and Kahn 2017)—or cannot be explained by differences in the observed factors (*coefficient effect*). Specifically, the *coefficient effect* measures the expected change in the average wage of women if they had the coefficients of men. The intercept included in the effect captures the contribution of unobservable characteristics (Cotton 1988)—e.g. behavioural traits, such as self-esteem, ambition, competitiveness and the willingness to take risky career choices (Gneezy et al. 2003; Gneezy and Rustichini 2004; Bertrand 2011; Saccardo et al. 2018). A negative intercept term is interpreted as "ongoing discriminatory constraints", such as barriers in the labour market for the minority group due to the effects of discrimination and unobserved differences in productivity and tastes (Altonji and Blank 1999). When the overall *coefficient effect* is positive, women would have higher average wages if paid like men.

The *third component* explains the coexistence of differences in the endowments and coefficients between the two groups (*interaction effect*). If the *interaction effect* is positive, women have a "double disadvantage" because they have smaller coefficients than men when they have worse predictors; if it is negative, differences in coefficients and covariate levels offset each other (Jann 2018).

After assessing which effect drives the wage differences, in the following paragraphs, we investigate the contribution of each observable factor and unobservable characteristics that contribute to explaining the differences in wages between women and men in female- and male-dominated sectors.

4.2.2 The role of human capital

We use the Mincer regression to analyse the association of workers' human capital and observable skills with wage differentials between sectors and genders. The estimating

equation is as follows:

$$\mathbf{y} = \mathbf{X}\boldsymbol{\beta} + \delta_t + \boldsymbol{\epsilon} \tag{5}$$

where $\mathbf{y}$ is hourly wages in logarithm; $\mathbf{X}$ is $N \times k$ matrix of control variables (i.e. socio-demographic, human capital and work-related variables); and δ_t are the time fixed effects. Equation (5) is estimated using OLS.

The set of controls includes three groups of variables as follows. *Socio-demographic variables* include age and its square, nationality, ethnicity, religion, being in a stable relationship, having dependent children and the interaction of the last two. *Human capital variables* are education (low, intermediate and higher education), experience and its square, years in education and its square and training offered by the current employer.[18] *Work-related variables* include a dummy for female-dominated sectors, a dummy for low gender sector segregation, a dummy for working in the public sector and the type of occupation. Working region dummies are included.[19]

Mincer regression is based on observable characteristics so as to "hold constant" individual factors that affect wages. However, this specification may not capture the selection of workers into sectors based on some relevant unobservable characteristics (e.g. self-esteem, ambition, competitiveness, risk aversion) that may influence wage differentials. In the next section, we address the possible bias that arises from omitting these unobservable factors.

4.2.3 Predicted and residual wages

We use the estimates of Mincer regression from Sect. 4.2.2 to measure how the selection on observable and unobservable characteristics shapes the difference in wages for men and women in female- and male-dominated sectors. First, we calculate the estimated returns to construct predicted wages, which measure the individual wage potential based on observable factors (Parey et al. 2017). Second, we follow Borjas et al. (2019) to shed light on the role of unobservable characteristics in the selection process by calculating residual wages, which capture the part of wages uncorrelated with workers' skills.

We consider four sub-groups from our sample of workers: men in male-dominated sectors (ml, ml-dom), women in male-dominated sectors (fml, ml-dom), men in female-dominated sectors (ml, fml-dom) and women in female-dominated sectors (fml, fml-dom). In addition, we conduct a counterfactual exercise to examine the trajectory of wage potentials and residuals for each sub-group if workers had the same estimated coefficients of men working in male-dominated sectors. In formulae,

$$\hat{\mathbf{y}}_{g,\text{gdom}}^{c} = \mathbf{X}_{g,\text{gdom}} \hat{\boldsymbol{\beta}}_{g,\text{gdom}} \tag{6}$$

$$\hat{\mathbf{u}}_{g,\text{gdom}}^{c} = \mathbf{y}_{g,\text{gdom}} - \hat{\mathbf{y}}_{g,\text{gdom}}^{c} \tag{7}$$

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[18] We included both the categorical variable for the education band (low, intermediate and high) and the continuous variable for years of education. The OLS assumption of the absence of perfect multicollinearity is not violated because years of education capture the intensity of the returns of education within each band.

[19] Usual worked hours are not included in the specification because of possible endogeneity issues due to reverse causality. The estimates would be downward biased because hours would appear on both sides of the equation as wages are calculated based on usual worked hours per week (Borjas 1980).

where $g = \{ml, fml\}$ is the gender of the worker, and gdom $= \{ml\text{-}dom, fml\text{-}dom\}$ is the sector with a large share of the specified gender. This analysis allows us to compare how predicted and residual wages would differ if workers (women in female- and male-dominated sectors and men in female-dominated sectors) had the same characteristics as the most advantaged group, i.e. men in male-dominated sectors.

Predicted and residual wages are sorted and used to construct the cumulative distribution functions (CDFs) by gender in female- and male-dominated sectors. Then, we compare the CDFs of men and women *between* and *within* gender sectoral dominance. The equality of the distributions of the (actual and counterfactual) predicted and residual wages among the four sub-groups is tested by using the nonparametric Kolmogorov–Smirnov (K–S) test.

5 Estimation results

5.1 Estimation results for the PSM on contracts and wages

In this section, we present the main results of the PSM by looking at three different samples (i.e. all workers, men and women). Working in a female-dominated sector is the treatment variable. Table 5 reports the ATT for each labour market outcome of interest—i.e. having a temporary job, part-time work, number of hours (in logarithm), remote work and wage (in logarithm).[20]

The first result of the analysis is that contractual features usually associated with female workers are more common in female-dominated sectors, even among men. That is, workers in female-dominated sectors compared to their peers in male-dominated sectors have, on average, fewer permanent positions (respectively, 0.947 against 0.956), work more part-time (0.35 against 0.267), fewer hours (3.404 against 3.475) and less from home (0.037 against 0.90). This result remains valid even when looking at male and female workers separately. Specifically, if men and women in a female-dominated sector were hired in a male-dominated sector, they would have more permanent positions (0.9 p.p. and 0.7 p.p., respectively), would work more hours (7.7 and 6.3 p.p.), less part-time (8.4 and 7.5 p.p.) and more from home (4.3 and 5.9 p.p.). All ATT estimates are significantly different from zero at a 1% significance level.

The second main result is that there is a higher penalty for men than women working in female-dominated sectors, given their larger magnitudes of ATT (all significant at 1% level). This result is also confirmed when looking at wage differentials between female- and male-dominated sectors. Men in female-dominated sectors earn, on average, 15.4 p.p. less than their male peers in male-dominated sectors. Instead, women in female-dominated sectors earn, on average, 12.6 p.p. less than their female counterparts in male-dominated sectors. Overall, any worker in female-dominated sectors

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[20] The propensity scores for matching workers employed in female-dominated sectors (fml-dom) with similar workers in male-dominated sectors (ml-dom) come from estimates reported in Table A4 in the Appendix. The table shows the likelihood of a worker being employed in a female-dominated sector based on socio-demographic characteristics and working environment. Being a woman in a stable relationship without dependent children decreases the probability of working in a female-dominated sector. Having dependent children, being non-European and working in operative jobs, technical and secretarial occupations reduces the likelihood of being in female-dominated sectors.

Table 5 Propensity score matching

Variable	Working in:		Difference	S.E	T-stat	Units on support:	
	fml-dom	ml-dom	(ATT)			ml-dom	fml-dom
Sample: Full							
Permanent	0.947	0.956	− 0.009	0.001	− 10.44	295,963	321,014
Part-time work	0.350	0.267	0.082	0.002	51.98	295,994	321,056
ln(hours)	3.404	3.475	− 0.071	0.002	− 43.64	296,025	321,094
Remote work	0.037	0.090	− 0.053	0.001	− 46.70	296,025	321,094
ln(wage)	2.419	2.555	− 0.136	0.002	− 59.81	296,025	321,094
Sample: Men							
Permanent	0.949	0.958	− 0.009	0.001	− 9.51	195,607	100,778
Part-time work	0.144	0.060	0.084	0.001	63.27	195,627	100,791
ln(hours)	3.597	3.674	− 0.077	0.002	− 50.52	195,650	100,802
Remote work	0.049	0.092	− 0.043	0.001	− 33.90	195,650	100,802
ln(wage)	2.502	2.656	− 0.154	0.003	− 58.40	195,650	100,802
Sample: Women							
Permanent	0.947	0.954	− 0.007	0.001	− 6.44	100,356	220,214
Part-time work	0.444	0.369	0.075	0.003	28.27	100,367	220,243
ln(hours)	3.315	3.378	− 0.063	0.003	− 24.51	100,375	220,270
Remote work	0.031	0.090	− 0.059	0.002	− 39.18	100,375	220,270
ln(wage)	2.380	2.506	− 0.126	0.003	− 42.40	100,375	220,270

S.E. does not take into account that the propensity score is estimated. The matching method is single nearest-neighbour; five neighbours are used to calculate the matched outcome. The matching algorithm imposes common support. The propensity scores obtained from Probit regression in Table A4 are used to match workers employed in female-dominated sectors (fml-dom) with similar workers in male-dominatesd sectors (ml-dom). The estimates are significantly different from zero at a 1% significance level

would be paid 13.6 p.p. more if employed in male-dominated sectors. These results are consistent with the findings of "comparable worth" literature, that is, jobs dominated by women pay, on average, less all employees (Treiman and Hartmann 1981; Killingsworth 1987), and the effect on wages in such jobs is more negative for men than women (Roos 1981; Johnson and Solon 1984).

The sensitivity analysis (Fig. B1 in the Appendix) confirms that the balancing property is satisfied for all samples since all covariates are well balanced. Therefore, the matching method effectively built a valid control group.

Overall, our analysis suggests that gender sectoral segregation is a relevant factor in explaining observed differences in employment contracts (i.e. part-time, permanent, remote work, number of weekly working hours) and wage differentials.
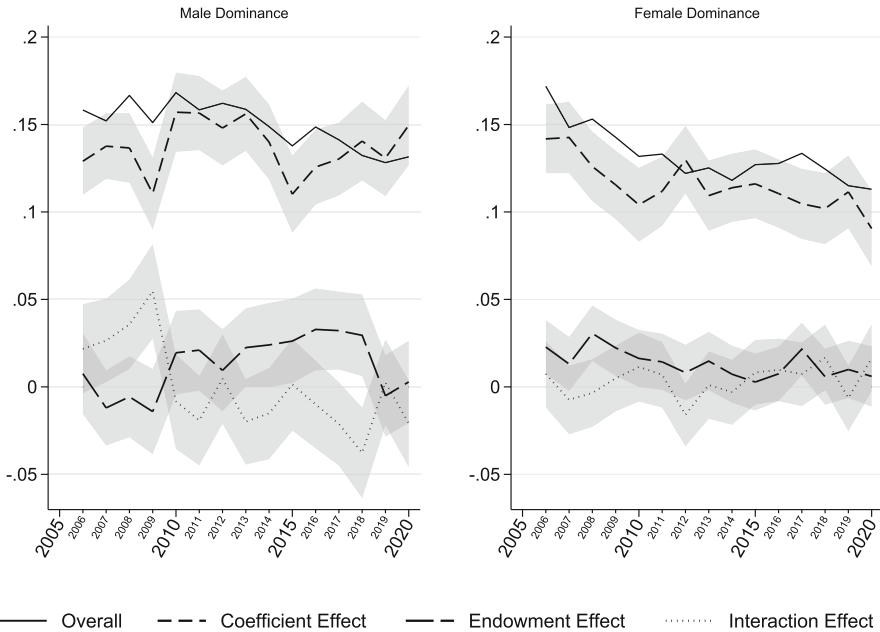
Fig. 3 KBO decomposition, by gender sectoral dominance. ESTIMATION NOTE: Both models for women and men are estimated using the Mincerian regression equation (with OLS). The degree of gender segregation is not included because it is highly correlated with the grouping variable of gender sectoral dominance. The shaded areas are the 95% confidence intervals

5.2 Estimation results for wages

5.2.1 Results for the KBO

The evolution of the three components of the KBO decomposition and their sum over time is shown in Fig. 3. Women are contrasted to men within the same gender-dominated sector. The dashed line represents the *coefficient effect*, the long-dashed line the *endowment effect* and the dotted line the part of the *interaction* component. The solid line is the sum of the three effects and reveals their overall contribution (for the contribution of each characteristics, see Tables A5, A6 in the Appendix).

The first result from the decomposition is that the difference in wages between men and women in both types of sectors is not so much explained by differences in human capital and productivity (*endowment effect*). The dynamics of the *endowment effect* shows that the gap in terms of observable characteristics has narrowed over time (the effect is close to zero), reflecting women's increased human capital levels relative to men's (as also observed by, for example, Goldin 2014; Blau and Kahn 2017). While men and women employed in female-dominated sectors are, on average, more similar in terms of human capital over time, the *endowment effect* is positive between 2010 and 2018 in male-dominated sectors, meaning that women have worse observed characteristics than men in those years.

Instead, the most relevant result is that the difference is mostly due to "ongoing discriminatory constraints" in the labour market towards women (*coefficient effect*) stemming from substantial unexplained constraints in labour market returns. (The intercept is negative from Tables A5, A6 in the Appendix.) The *coefficient effect* is positive in both gender-dominated sectors, suggesting that women should be paid more than men to prevent any sort of discrimination for reasons other than human capital characteristics and productivity.[21]

The *interaction effect* explains little of the gender wage differential in both female- and male-dominated sectors, although we observe a "double disadvantage" for women (positive *interaction effect*) in male-dominated sectors only before 2010.

5.2.2 Results based on human capital factors

As the KBO showed that human capital characteristics play a minor role in explaining wage differentials, the analysis in this section shows the contribution of each observable factor on wages. Table 6 reports the estimated coefficients of the Mincer wage regression by gender for all sectors (Columns 1–2) and gender-dominated sectors (Columns 3–6).

The estimates of the Mincer regression for segregation variables confirm the main result of the PSM. Specifically, working in female-dominated sectors is significantly negatively correlated with hourly wages for both men and women (− 0.163 and − 0.158, respectively). In addition, working in sectors with low gender sectoral segregation is significantly positively associated with higher wages for male workers in the full sample (0.027) but negatively correlated with wages for women in both female- and male-dominated sectors (− 0.012 and − 0.102, respectively). The interaction term between female-dominated sectors and low gender segregation is positive and significant for women only.

Focusing on human capital characteristics, workers with higher educational attainment earn, as expected, more than those with low education. More years of education are positively associated with wages but with a diminishing effect (the square is negative). Our calculations show that the optimal number of years in education that maximises wages is approximately 15.7 years for men as opposed to 19.5 years for women in the full sample.[22] Therefore, women are expected to stay in education for more years than men, who need only a degree to earn their optimal wage. We obtained a similar number of years of education in female-dominated sectors (18 for women and 15.9 years for men), while the difference is less pronounced in male-dominated sectors (16.5 for women and 15.6 for men). Potential working experience has significant diminishing returns, and receiving training is significantly associated with an increase in the hourly wage, especially in male-dominated sectors.

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[21] However, it is worth mentioning that the *coefficient effect* may over-estimate the extent of discrimination if variables associated with human capital and individual preferences, which are negatively correlated with wages, are excluded from the regression equation (Cotton 1988; Altonji and Blank 1999; Blau and Kahn 2017).

[22] The figures come from the following calculations: $0.157/(2 \times 0.005) = 15.7$ for men, and $0.117/(2 \times 0.003) = 19.5$ for women.

Table 6 Mincerian regression results, years 2005–2020

	Dep. var.: Log(Wage)					
	All sectors		Male-dominated sectors		Female-dominated sectors	
	Man	Women	Man	Women	Man	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Human capital variables						
Intermediate education	0.022***	0.020***	0.022***	0.025***	0.019***	0.017***
	(0.003)	(0.002)	(0.004)	(0.005)	(0.004)	(0.003)
High education	0.099***	0.100***	0.100***	0.103***	0.090***	0.099***
	(0.006)	(0.005)	(0.007)	(0.010)	(0.009)	(0.006)
Years of education	0.157***	0.117***	0.156***	0.132***	0.127***	0.108***
	(0.003)	(0.003)	(0.004)	(0.006)	(0.006)	(0.003)
Years of education^2	$-$ 0.005***	$-$ 0.003***	$-$ 0.005***	$-$ 0.004***	$-$ 0.004***	$-$ 0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Experience	0.015***	0.013***	0.017***	0.016***	0.013***	0.012***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Experience^2	$-$ 0.000***	$-$ 0.000***	$-$ 0.000***	$-$ 0.000***	$-$ 0.000***	$-$ 0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Training	0.067***	0.049***	0.068***	0.063***	0.047***	0.032***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)
Socio-demographic variables						
Age	0.008***	0.004**	0.008***	0.011***	0.005*	$-$ 0.003*
	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)	(0.001)
Age^2	0.000***	0.000***	0.000*	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EEA	$-$ 0.055***	$-$ 0.043***	$-$ 0.057***	$-$ 0.062***	$-$ 0.031***	$-$ 0.020***
	(0.004)	(0.004)	(0.005)	(0.006)	(0.007)	(0.004)
Non-EEA	$-$ 0.031***	$-$ 0.017***	$-$ 0.008	$-$ 0.005	$-$ 0.058***	$-$ 0.031***
	(0.004)	(0.004)	(0.006)	(0.007)	(0.007)	(0.005)
In couple	0.062***	0.015***	0.058***	0.015***	0.058***	0.011***
	(0.003)	(0.002)	(0.003)	(0.004)	(0.004)	(0.003)
With dependent children (yrs<18)	0.026***	$-$ 0.032***	0.023***	$-$ 0.035***	0.025***	$-$ 0.032***
	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.003)
In couple with dep. children	0.011**	0.021***	0.014**	0.041***	0.008	0.012**
	(0.004)	(0.003)	(0.005)	(0.006)	(0.007)	(0.004)
Workplace characteristics						
Part-time	$-$ 0.097***	$-$ 0.037***	$-$ 0.083***	$-$ 0.034***	$-$ 0.095***	$-$ 0.036***
	(0.003)	(0.002)	(0.005)	(0.003)	(0.004)	(0.002)

Table 6 continued

	Dep. var.: Log(Wage)					
	All sectors		Male-dominated sectors		Female-dominated sectors	
	Man	Women	Man	Women	Man	Women
	(1)	(2)	(3)	(4)	(5)	(6)
Public sector	0.031***	0.059***	0.003	0.005	0.059***	0.088***
	(0.003)	(0.002)	(0.005)	(0.006)	(0.005)	(0.003)
Low gender segregation	0.027***	− 0.005	− 0.141***	− 0.102***	− 0.006	− 0.012***
	(0.003)	(0.003)	(0.009)	(0.013)	(0.006)	(0.003)
Female dominance	− 0.163***	− 0.158***				
	(0.003)	(0.002)				
Female Dominance × Low gender segregation	0.006	0.016***				
	(0.005)	(0.004)				
Working region controls	Yes	Yes	Yes	Yes	Yes	Yes
Other socio-demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
SOC dummies	Yes	Yes	Yes	Yes	Yes	Yes
SIC dummies	No	No	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	219,027	219,297	147,953	76,699	71,074	142,598

Data from UK Labour Force Survey (LFS). Models (1)–(4) are estimated using OLS. Robust errors are in parenthesis. Significance levels: $p < 0.01$ ***, $p < 0.05$ **, $p < 0.1$ *

For socio-demographic and job characteristics, being non-UK natives is significantly associated with lower wages. However, the reduction is, on average, larger in absolute terms for EEA than non-EEA, except for female-dominated sectors. The presence of dependent children penalises women's wages but not men's, independently of the sector. Further, working in the public rather than in the private sector is associated with higher wages for women than men. However, the coefficients are non-significant in male-dominated sectors. This suggests that the private sector pays more in male-dominated sectors while the public sector offers better remuneration in female-dominated sectors.

5.2.3 Results based on predicted and residual wages

This section discusses empirical evidence on the differences in the selection of workers in male- and female-dominated sectors in terms of observable (predicted wages) and unobservable (residual wages) characteristics. Figures 4 and 5, respectively, display the CDFs of potential and residual wages for the four subgroups: men in male-dominated sectors (*ml*, *ml-dom*), women in male-dominated sectors (*fml*, *ml-dom*), men in female-dominated sectors (*ml*, *fml-dom*) and women in female-dominated sec-
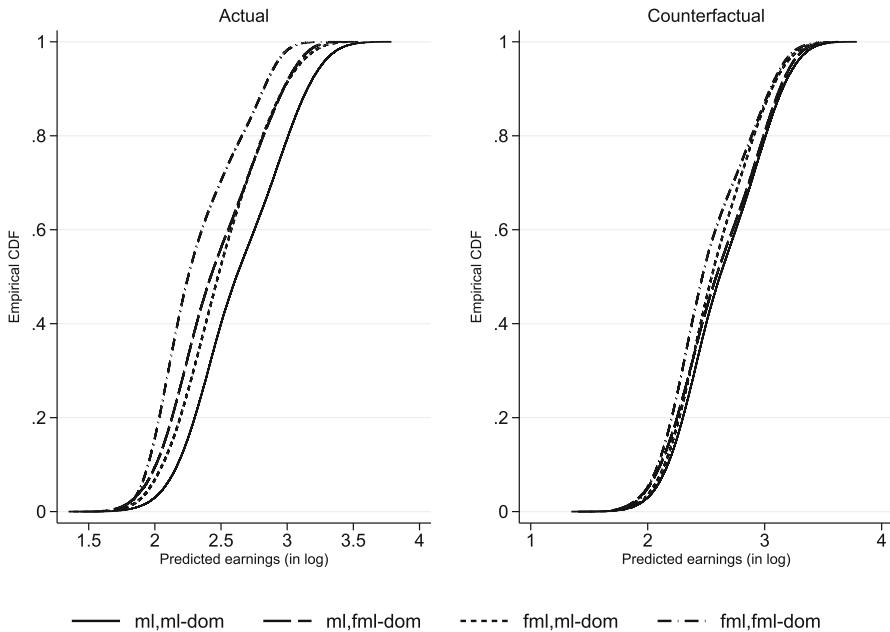
Fig. 4 CDFs of predicted wages, by gender and sectoral dominance. *Note*: The solid line is for men working in male-dominated sectors, the short-dashed line is for women employed in male-dominated sectors, the long-dash line is for men in female-dominated sectors, and the dash-dot line is for women in female-dominated sectors. Left: Predicted wages are calculated after estimating the coefficients of the Mincerian wage regression, reported in Table 6. Right: predicted wages are calculates using the estimated coefficients from the Mincerian regression of men working in male-dominated sectors. Predicted wages in the counterfactual exercise are precise measure of individual earnings potential (Gould and Moav, 2016; Borjas et al., 2019)

tors (*fml*, *fml-dom*). The graphs on the left show actual values, calculated using the estimated coefficients for each subgroup from Table 6. The graphs on the right display counterfactual values calculated with the estimated coefficients of men working in male-dominated sectors.

The key result from the left graph in Fig. 4 is that there is a penalty in potential wages associated with working in a female-dominated sector. In fact, women in female-dominated sectors always have lower predicted wages than all other workers (CDFs always lying on the left). For low levels of potential wages, men employed in female-dominated sectors earn much less than women in male-dominated sectors.

If workers had the potential wages of men in male-dominated sectors, wage differentials of men and women across female- and male-dominated sectors would be smaller (Fig. 4 on the right). However, women in female-dominated sectors would always be paid less than all other workers. Men in female-dominated sectors would still be penalised compared to workers in male-dominated sectors, but only in low-paid jobs. But moving to the top of the distribution, the gap in terms of potential counterfactual wages between women and men increases, meaning that women would always
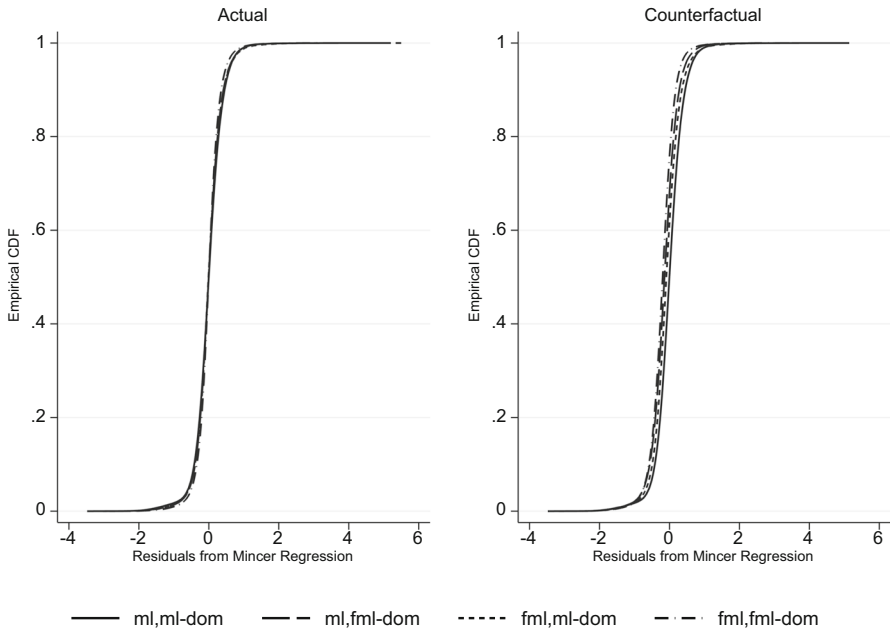
Fig. 5 CDFs of residual wages, by gender and sectoral dominance. *Note*: The solid line is for men working in male-dominated sectors, the short-dashed line is for women employed in male-dominated sectors, the long-dash line is for men in female-dominated sectors, and the dash-dot line is for women in female-dominated sectors. Left: Residual wages are calculated after estimating the coefficients of the Mincerian wage regression, reported in Table 6. Right: Residual wages are calculates using the estimated coefficients from the Mincerian regression of men working in male-dominated sectors. Residuals from a Mincerian regression calculated in this way capture the part of earnings that is uncorrelated to observed skills (Parey et al., 2017)

earn less than men. These findings contrast Roos (1981) and Johnson and Solon (1984), who always find a more pronounced wage differential for men than women in female-dominated environments.

When we look at the residual wages in Fig. 5, the results highlight that differences in wages in high-paid jobs cannot be attributed to acquired skills or accumulated human capital only. Specifically, the CDF of women in female-dominated sectors (left graph) lies to the right of the other curves for low residual wages (positive selection at the bottom of the distribution) and to their left for high values (negative selection at the top). This means that these women earn more in low-paid jobs but much less in high-paid jobs than the other workers for reasons other than their skills and human capital.

In the counterfactual exercise (right graph), all curves would shift to the left of the CDF of male workers in male-dominated sectors, meaning that all workers would be negatively selected with respect to the former. At the bottom of the distribution, both women and men in female-dominated sectors would be penalised in terms of residual wages due to unobserved characteristics (the two CDFs overlap and lie to the left of

the other two). However, as we move up to the distribution, the CDFs diverge, and women in female-dominated sectors are more negatively selected (laying more to the left) than their male counterparts and other subgroups.

The non-parametric K–S test always rejects the null hypothesis of equality of distributions among the four sub-groups (see Table A7 in the Appendix), confirming that the distributions of (actual and counterfactual) predicted and residual wages of men and women across sectors differ.

6 Conclusion

This paper studied how gender sectoral segregation relates to employment contracts (i.e. permanent jobs, part-time jobs, working hours, remote work) and hourly wages in the UK between 2005 and 2020. We further analysed the extent to which wages differ in female- and male-dominated sectors by looking at both observable and unobservable characteristics. Our empirical analysis suggested that the persistent imbalance in the shares of men or women in some sectors contributes to explaining the differences in employment contracts and wages.

We first found that female-dominated sectors reflect contractual characteristics typical of women. In other words, working in female-dominated sectors is associated with a greater reliance on part-time contracts, fewer hours and less working from home, even controlling for the occupational composition. In addition, female-dominated sectors seem to pay, in general, less for any worker regardless of their gender. The penalty for men working in female-dominated sectors is even larger than for women.

Second, women working in female- and male-dominated sectors are paid less not because of differences in human capital and productivity but rather because of the existence of persistent "discriminatory constraints", such as barriers in the labour market for women due to the effects of discrimination and unobserved differences in productivity and tastes. This means that women have observable attributes similar to men regarding accumulated human capital, and without these discriminatory barriers, wage differentials between women and men within male- and female-dominated sectors would be lower.

Third, female-dominated sectors are not as rewarding as male-dominated sectors in terms of predicted and residual wages. While women in female-dominated sectors are always worse off than all other workers, men in female-dominated sectors are disadvantaged in low-paid jobs only. In addition, actual and counterfactual results for residual wages have documented the negative selection of women in female-dominated sectors with respect to all other workers, especially at the top of the wage distribution. The use of predicted and residual wages allows us to control the issue of selection based on unobservables that arises from the use of the PSM and Mincer regression, where the former matches workers with similar observed characteristics and the latter holds constant observed individual factors associated with wages.

This analysis has policy implications. Gender segregation in the labour market may be responsible for causing more challenges for women than their male counterparts regarding labour participation, access to jobs and career opportunities. This gap

could potentially widen post-pandemic. Our findings can provide policy-makers with empirical evidence supporting appropriate reforms favouring vulnerable categories of workers (i.e. women, mothers and immigrants) and policies designed to sustain long-run economic growth, especially as the UK is facing new challenges (i.e. pandemic and Brexit). Future avenues of research could focus on gender segregation into sectors that have seen a rise in the use of atypical work arrangements, e.g. zero-hour contracts and casual work.

Appendix A

See Tables A1, A2, A3, A4, A5, A6 and A7.

Table A1 Share of workers by sector and occupation, male sample

Occupations	1	2	3	4	5	6	7	8	9	Total
Sectors										
A—Agriculture, forestry and fishing	0.14	0.03	0.03	0.02	0.28	0.01	0.01	0.10	0.37	0.99
B—Mining and quarrying	0.13	0.17	0.11	0.02	0.13	0.00	0.01	0.21	0.02	0.81
C—Manufacturing	3.03	2.42	2.13	0.53	4.74	0.02	0.28	4.25	1.61	19.01
D—Electricity, gas and air con supply	0.14	0.24	0.15	0.04	0.27	0.00	0.09	0.08	0.03	1.04
E—Water supply, sewerage and waste	0.17	0.14	0.14	0.04	0.11	0.01	0.03	0.44	0.37	1.45
F—Construction	1.59	1.25	0.64	0.18	3.96	0.02	0.07	1.15	0.95	9.82
G—Distribution	2.87	0.54	1.15	0.65	1.94	0.02	3.90	1.69	2.40	15.17
H—Transport	0.78	0.29	0.63	0.43	0.42	0.23	0.16	3.20	1.71	7.85
I—Accommodation and food services	0.70	0.04	0.09	0.13	1.24	0.07	0.20	0.18	2.05	4.70
J—Information, communication	0.83	2.08	0.83	0.14	0.36	0.00	0.21	0.13	0.45	5.04
K—Financial and insurance services	1.26	0.92	1.47	0.68	0.04	0.00	0.28	0.02	0.06	4.74
L—Real estate services	0.32	0.13	0.25	0.08	0.11	0.05	0.05	0.02	0.05	1.06
M—Professional, scientific and technical activities	1.33	2.63	1.46	0.49	0.33	0.04	0.14	0.19	0.50	7.11
N—Admin and support services	0.75	0.60	0.61	0.21	0.48	0.16	0.28	0.25	1.10	4.42
P—Education	0.29	3.96	0.75	0.20	0.17	0.59	0.02	0.07	0.21	6.26
Q—Health and social work	0.66	1.85	1.08	0.35	0.24	1.49	0.06	0.15	0.44	6.32
R—Arts, entertainment and recreation	0.45	0.19	0.59	0.18	0.35	0.28	0.08	0.05	0.34	2.51
S—Other service activities	0.22	0.43	0.21	0.11	0.19	0.21	0.03	0.08	0.14	1.62
T—Households as employers	0.01	0.00	0.00	0.00	0.04	0.02	0.00	0.00	0.01	0.08
Total	15.68	17.90	12.33	4.48	15.42	3.22	5.89	12.25	12.83	100.00

The percentages are calculated on total male employed workers (self-employed are excluded). Labels for occupations: 1—Managers, Directors And Senior Official; 2—Professional Occ.; 3—Associate Professional And Technical Occ.; 4—Administrative And Secretarial Occ.; 5—Skilled Trades Occ.; 6—Caring, Leisure And Other Service Occ.; 7—Sales And Customer Service Occ.; 8—Process, Plant And Machine Operatives; 9—Elementary Occ

Table A2 Share of workers by sector and occupation, female sample

Occupations	1	2	3	4	5	6	7	8	9	Total
Sectors										
A—Agriculture, forestry and fishing	0.04	0.02	0.02	0.09	0.04	0.05	0.02	0.02	0.11	0.41
B—Mining and quarrying	0.03	0.03	0.04	0.06	0.00	0.00	0.00	0.00	0.00	0.17
C—Manufacturing	0.79	0.52	0.98	1.61	0.27	0.04	0.34	1.17	0.66	6.38
D—Electricity, gas and air con supply	0.04	0.05	0.07	0.10	0.00	0.00	0.11	0.00	0.01	0.38
E—Water supply, sewerage and waste	0.04	0.04	0.06	0.12	0.00	0.00	0.04	0.01	0.03	0.35
F—Construction	0.27	0.19	0.26	0.98	0.04	0.01	0.09	0.01	0.06	1.91
G—Distribution	1.51	0.34	1.05	2.00	0.25	0.07	8.71	0.25	1.41	15.59
H—Transport	0.25	0.09	0.21	0.67	0.01	0.41	0.20	0.17	0.43	2.44
I—Accommodation and food services	0.58	0.03	0.16	0.41	0.49	0.27	0.40	0.03	3.70	6.09
J—Information, communication	0.31	0.50	0.47	0.40	0.02	0.01	0.27	0.01	0.12	2.11
K—Financial and insurance services	0.70	0.44	1.05	1.95	0.00	0.01	0.51	0.01	0.05	4.72
L—Real estate services	0.26	0.07	0.40	0.45	0.01	0.05	0.11	0.00	0.04	1.39
M—Professional, scientific and technical activities	0.78	1.38	1.29	2.02	0.03	0.18	0.22	0.04	0.35	6.28
N—Admin and support services	0.36	0.21	0.47	0.67	0.03	0.35	0.35	0.03	0.95	3.41
P—Education	0.39	8.30	1.14	1.71	0.20	4.69	0.06	0.01	1.76	18.27
Q—Health and social work	1.60	5.86	4.17	3.16	0.20	8.65	0.20	0.04	1.00	24.87
R—Arts, entertainment and recreation	0.31	0.21	0.44	0.61	0.04	0.28	0.15	0.01	0.39	2.43
S—Other service activities	0.20	0.25	0.25	0.44	0.03	1.07	0.09	0.02	0.22	2.58
T—Households as employers	0.00	0.00	0.00	0.01	0.00	0.17	0.00	0.00	0.04	0.22
Total	8.46	18.51	12.54	17.46	1.68	16.31	11.86	1.85	11.34	100.00

The percentages are calculated on total female employed workers (self-employed are excluded). Labels for occupations: 1—Managers, Directors And Senior Official; 2—Professional Occ.; 3—Associate Professional And Technical Occ.; 4—Administrative And Secretarial Occ.; 5—Skilled Trades Occ.; 6—Caring, Leisure And Other Service Occ.; 7—Sales And Customer Service Occ.; 8—Process, Plant And Machine Operatives; 9—Elementary Occ

Table A3 Post-estimation OLS coefficients of variables selected by LASSO

	Log(wage) (1)	Permanent job (2)	Part-time job (3)	Log(hours) (4)	Remote work (5)	Female-dom. sector (6)
Female	− 0.006		0.048	− 0.081		0.095
In couple		0.008			0.0112	
With dep. Children (yrs<18)	0.004				0.001	
Female x In couple						
0 1	0.075	0.003	− 0.009	0.025	0.000	− 0.027
1 1			0.143	− 0.122		0.019
1 0		0.003				
Female x Dep. Children						
0 1	0.035		0.045	0.013		
1 0	− 0.049				− 0.013	0.027
1 1		0.002		− 0.096		
In couple x Dep. Children						
0 1			0.003	− 0.033	0.001	0.024
1 0	− 0.011					0.001
1 1	0.017					
Age	0.012	0.004	− 0.030	0.039	− 0.009	− 0.022
Age Sq		− 0.000	0.000	− 0.000	0.000	0.000
EEA	− 0.026	− 0.022	− 0.077	0.093	− 0.002	0.007
non-EEA	− 0.035	− 0.020	− 0.014	0.024		0.034
Black	− 0.059	− 0.019	− 0.037	0.031	− 0.012	0.025
Asian	− 0.066	− 0.005	− 0.025	0.001	− 0.014	0.004
Other ethnicity	− 0.066	− 0.013	− 0.004	− 0.005	− 0.012	0.047
Muslim	− 0.097	0.010	0.124	− 0.122	− 0.000	0.099
Christian	− 0.049	0.001	0.002	− 0.000	− 0.005	0.002
Other religion		− 0.004	− 0.005	0.018	− 0.006	0.007
Intermediate Education	0.033	− 0.000	0.011	− 0.015	0.006	− 0.011
Higher Education	0.109		0.029	− 0.039	0.013	− 0.048
Years of Education	0.168	− 0.016	− 0.014	0.008	0.0164	− 0.021
Years of Education Sq	− 0.005	0.000	0.000	0.000	− 0.000	0.001
Experience	0.013	0.004	0.005	− 0.008	0.0060	0.001
Experience Sq	− 0.000	− 0.000	− 0.000	0.000	− 0.000	− 0.000
Training Opportunity	0.002	0.020	− 0.051	0.0534	− 0.012	− 0.012
Public Sector	− 0.021	− 0.029	0.037	− 0.062	− 0.062	0.379
SOC	Yes	Yes	Yes	Yes	Yes	Yes
Female x SOC	Yes	Yes	Yes	Yes	Yes	Yes
Working Regions	Yes	Yes	Yes	Yes	Yes	Yes
$\lambda(BIC)$	120.7	36.5	46.9	42.6	23.3	63.4

The table reports the post-estimation OLS coefficients of the variables selected by Lasso. The estimated models correspond to those with minimum BIC. The STATA command used to obtain the estimates is `lasso2`

Table A4 Probit for female-dominated sectors

	Full sample	Male sample	Female sample
Dep. var: Female-dominated sectors			
Woman	1.063***		
	(0.007)		
Woman not in couple	− 0.218***		
	(0.007)		
Woman w/t dep. children	− 0.059***		
	(0.010)		
In couple	− 0.108***	− 0.060***	0.086***
	(0.006)	(0.007)	(0.007)
Dep. children	0.120***	0.028**	0.252***
	(0.007)	(0.009)	(0.008)
In couple w/dep. children	− 0.043***	0.007	− 0.075***
	(0.012)	(0.017)	(0.016)
EEA	− 0.044***	0.115***	− 0.189***
	(0.008)	(0.012)	(0.011)
Non-EEA	0.074***	0.158***	− 0.035**
	(0.009)	(0.012)	(0.012)
Age	− 0.033***	− 0.041***	− 0.036***
	(0.001)	(0.002)	(0.002)
Age squared	0.000***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Higher educ	0.004	0.057***	− 0.045***
	(0.005)	(0.007)	(0.007)
Years of educ	0.041***	0.060***	0.061***
	(0.007)	(0.009)	(0.009)
Years of educ. sqr	− 0.001**	− 0.002***	− 0.001
	(0.000)	(0.000)	(0.000)
Black	0.175***	0.169***	0.192***
	(0.014)	(0.020)	(0.020)

Table A4 continued

	Full sample	Male sample	Female sample
Asian	0.007	0.070***	− 0.058***
	(0.012)	(0.017)	(0.017)
Other ethnicity	0.171***	0.255***	0.091***
	(0.013)	(0.017)	(0.017)
Muslim	0.326***	0.279***	0.219***
	(0.016)	(0.019)	(0.025)
Christian	0.021***	− 0.019**	0.059***
	(0.004)	(0.006)	(0.006)
Other religion	0.036***	0.023*	0.040***
	(0.007)	(0.009)	(0.010)
Region Controls	Yes	Yes	Yes
SOC	Yes	Yes	Yes
Male x SOC	Yes	Yes	Yes
Observations	617,119	296,465	320,654

The estimates are used to calculate propensity scores for the PSM. Robust standard errors. Significance levels: p value < 0.01 ***, p value < 0.05 **, p value < 0.1 *

Table A5 Contribution of individual components of KBO decomposition, female-dominated sectors

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Endowment effect															
Low gender sect. segregation	0.01***	0.01**	0.01***	0.02***	0.01**	0.01***	0.02***	0.02***	0.01***	0.01***	0.00	0.01***	0.01***	0.01***	0.03***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.005)
Log(hours)	− 0.06***	− 0.02	− 0.08***	− 0.05***	− 0.05***	− 0.03**	− 0.04***	− 0.03**	− 0.04***	− 0.03**	− 0.06***	− 0.03**	− 0.04***	− 0.04**	− 0.04**
	(0.014)	(0.014)	(0.015)	(0.013)	(0.013)	(0.013)	(0.014)	(0.013)	(0.013)	(0.015)	(0.014)	(0.013)	(0.015)	(0.017)	(0.015)
Log(hours)^2	0.06***	0.01	0.08***	0.05***	0.05***	0.03*	0.04**	0.03**	0.04***	0.03*	0.06***	0.03*	0.04**	0.03*	0.03*
	(0.016)	(0.015)	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.015)	(0.015)	(0.017)	(0.018)	(0.017)
EEA	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Non-EEA	− 0.00*	− 0.00*	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00***	− 0.00***	− 0.00**	− 0.00	− 0.00	− 0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Age	− 0.00	0.00	0.00	− 0.01**	− 0.00	− 0.00	− 0.01*	0.01	0.00	0.00	0.01	0.00	− 0.00	0.01	− 0.02**
	(0.002)	(0.001)	(0.005)	(0.006)	(0.005)	(0.005)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.007)	(0.006)	(0.008)
Age^2	0.00	0.00	0.00	0.03***	− 0.00	− 0.01*	0.00	− 0.02**	− 0.01**	− 0.01*	− 0.01**	− 0.01	− 0.01	− 0.01**	0.00
	(0.003)	(0.004)	(0.008)	(0.009)	(0.004)	(0.005)	(0.005)	(0.007)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)	(0.006)
Experience	− 0.00	− 0.00	0.00	0.01**	− 0.01**	− 0.00	− 0.00	− 0.01***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.00
	(0.002)	(0.003)	(0.003)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.004)
Experience^2	− 0.00	− 0.01***	− 0.02***	− 0.03***	0.01**	0.02***	0.01***	0.02***	0.02***	0.02***	0.03***	0.02***	0.02***	0.02***	0.01**
	(0.004)	(0.004)	(0.005)	(0.007)	(0.004)	(0.006)	(0.004)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)

Table A5 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intermediate educ	− 0.00	− 0.00**	− 0.00**	− 0.00**	− 0.00*	0.00*	− 0.00	− 0.00	− 0.00	− 0.00*	0.00	− 0.00	0.00	− 0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
High educ	0.00**	0.00***	0.01***	0.00***	0.00***	0.00*	0.00***	0.00**	0.00**	0.00***	0.00*	0.00***	0.00	0.00*	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Years educ	0.00	− 0.01	− 0.01*	− 0.01**	− 0.00	− 0.00	− 0.02**	− 0.01**	− 0.02**	− 0.02***	− 0.01**	− 0.03***	− 0.02***	− 0.02***	− 0.03***
	(0.004)	(0.004)	(0.006)	(0.006)	(0.005)	(0.006)	(0.007)	(0.007)	(0.006)	(0.005)	(0.006)	(0.007)	(0.008)	(0.006)	(0.008)
Years educ^2	0.00	0.01**	0.01***	0.01***	0.01	0.01	0.02***	0.02***	0.02***	0.02***	0.01**	0.03***	0.02***	0.02***	0.03***
	(0.003)	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.007)	(0.006)	(0.008)
Training	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00*	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
In couple	0.00	− 0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00	0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
With dep. children	0.00***	0.01***	0.01***	0.01***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00**	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
In couple with dep. children	− 0.00	− 0.00	− 0.00	− 0.00*	− 0.00	0.00	− 0.00	0.00	− 0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Public sector	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.02***	− 0.01***	− 0.01***	− 0.01***	− 0.01***	− 0.01***	− 0.01***	− 0.01***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)

Table A5 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Coefficient effect															
Low gender sect. segregation	0.02**	0.03***	0.03***	0.01	0.04***	0.02*	0.02**	0.02**	0.02***	0.03***	0.03***	0.01	0.02**	0.03***	0.00
	(0.009)	(0.009)	(0.009)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)	(0.010)
Log(hours)	0.73**	− 0.36	1.05***	1.78***	− 0.26	1.47***	1.00***	1.16***	− 0.39	0.53	1.28***	1.38***	1.05***	1.23***	1.51***
	(0.326)	(0.339)	(0.320)	(0.337)	(0.279)	(0.310)	(0.304)	(0.364)	(0.290)	(0.323)	(0.396)	(0.386)	(0.399)	(0.394)	(0.467)
Log(hours)^2	− 0.44***	0.10	− 0.59***	− 1.00***	0.06	− 0.73***	− 0.57***	− 0.59***	0.19	− 0.24	− 0.65***	− 0.71***	− 0.51**	− 0.68***	− 0.75***
	(0.169)	(0.179)	(0.172)	(0.181)	(0.153)	(0.166)	(0.164)	(0.191)	(0.157)	(0.173)	(0.208)	(0.202)	(0.209)	(0.211)	(0.252)
EEA	0.00	0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00*	− 0.00**	− 0.00	0.00	0.00	0.00	− 0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Non-EEA	0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00**	− 0.00*	0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.01**	− 0.00	0.00
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Age	0.02	0.76*	0.53	0.70*	0.45	0.70	0.02	1.30***	0.58	0.03	0.10	0.66	− 0.47	0.40	− 0.38
	(0.415)	(0.402)	(0.415)	(0.412)	(0.467)	(0.437)	(0.423)	(0.454)	(0.435)	(0.459)	(0.422)	(0.455)	(0.451)	(0.487)	(0.577)
Age^2	− 0.45**	− 0.37*	− 0.19	− 0.18	0.06	− 0.68***	0.07	− 0.76***	− 0.32	0.12	− 0.01	− 0.06	0.20	0.01	0.21
	(0.198)	(0.197)	(0.196)	(0.198)	(0.229)	(0.216)	(0.218)	(0.225)	(0.222)	(0.236)	(0.222)	(0.231)	(0.239)	(0.254)	(0.298)
Experience	0.47***	− 0.03	− 0.02	− 0.16	− 0.02	0.22	0.19	− 0.13	0.02	0.06	− 0.00	− 0.24	0.18	− 0.09	0.23
	(0.163)	(0.153)	(0.161)	(0.159)	(0.184)	(0.169)	(0.160)	(0.168)	(0.159)	(0.170)	(0.146)	(0.162)	(0.154)	(0.163)	(0.206)
Experience^2	0.03	0.04	− 0.03	− 0.00	− 0.17**	0.09	− 0.14*	0.15*	0.00	− 0.10	− 0.02	− 0.02	− 0.06	− 0.07	− 0.16
	(0.068)	(0.067)	(0.067)	(0.067)	(0.080)	(0.075)	(0.075)	(0.077)	(0.077)	(0.080)	(0.075)	(0.078)	(0.080)	(0.085)	(0.103)

Table A5 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intermediate educ	0.02***	0.00	0.00	– 0.01	0.00	0.02***	– 0.01	0.00	0.00	0.00	– 0.00	– 0.00	0.01	– 0.01	– 0.01
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.008)	(0.008)	(0.008)	(0.010)
High educ	0.03***	0.00	– 0.01	– 0.01	– 0.01	0.01	– 0.01	0.00	– 0.00	– 0.01	– 0.00	– 0.01	0.01	– 0.02	– 0.01
	(0.007)	(0.008)	(0.008)	(0.009)	(0.010)	(0.009)	(0.010)	(0.010)	(0.010)	(0.011)	(0.011)	(0.011)	(0.012)	(0.012)	(0.016)
Years educ	0.43	0.45	0.23	0.39	0.19	0.02	0.10	– 0.26	0.31	0.39	0.62	0.56	– 0.03	0.46	– 0.14
	(0.299)	(0.313)	(0.321)	(0.325)	(0.360)	(0.345)	(0.360)	(0.365)	(0.362)	(0.386)	(0.384)	(0.396)	(0.401)	(0.440)	(0.490)
Years educ^2	– 0.22	– 0.23	– 0.15	– 0.21	– 0.11	– 0.03	– 0.04	0.13	– 0.14	– 0.20	– 0.30*	– 0.28	0.02	– 0.22	0.10
	(0.137)	(0.144)	(0.149)	(0.151)	(0.168)	(0.161)	(0.170)	(0.173)	(0.171)	(0.184)	(0.183)	(0.190)	(0.192)	(0.212)	(0.238)
Training	0.02***	0.00	0.01	0.03***	0.00	– 0.00	0.00	0.00	0.01	– 0.00	0.01*	0.00	0.00	0.00	0.01*
	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
In couple	0.04***	0.02**	0.04***	0.02	0.02	0.00	0.03***	0.03***	0.04***	0.06***	0.05***	0.03***	0.01	0.02*	0.04***
	(0.012)	(0.012)	(0.011)	(0.011)	(0.013)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.012)
With dep. children	0.01	0.04***	0.03***	0.03*	0.04***	0.04***	0.04***	0.02*	0.04***	0.03***	0.04***	0.04***	0.04***	0.04***	0.00
	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)	(0.012)	(0.012)	(0.012)	(0.010)
In couple with dep. children	0.01	0.00	0.00	0.01	– 0.00	– 0.00	– 0.01	0.01	– 0.01	– 0.01	– 0.02*	– 0.01	– 0.00	– 0.01	0.01
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.008)
Public sector	– 0.01	– 0.02**	– 0.01	– 0.02*	– 0.01	0.01	– 0.03***	– 0.02*	– 0.01	0.01	– 0.01	0.00	– 0.00	– 0.02*	– 0.01
	(0.008)	(0.009)	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.012)
Constant	– 0.51*	– 0.25	– 0.80***	– 1.21***	– 0.14	– 0.98***	– 0.61***	– 1.01***	– 0.23	– 0.59**	– 1.05***	– 1.27***	– 0.42	– 1.01***	– 0.59
	(0.277)	(0.278)	(0.278)	(0.283)	(0.286)	(0.282)	(0.283)	(0.307)	(0.283)	(0.300)	(0.315)	(0.325)	(0.322)	(0.345)	(0.393)

Table A5 continued

Interaction effect

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Low gender sect. segregation	0.01**	0.02***	0.02***	0.01	0.03***	0.01*	0.01**	0.01**	0.01***	0.02***	0.02***	0.01	0.01**	0.02***	0.00
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)
Log(hours)	0.08**	− 0.04	0.11***	0.17***	− 0.03	0.15***	0.10***	0.12***	− 0.04	0.05	0.11***	0.12***	0.09***	0.10***	0.11***
	(0.038)	(0.037)	(0.034)	(0.033)	(0.028)	(0.032)	(0.030)	(0.037)	(0.026)	(0.029)	(0.035)	(0.035)	(0.035)	(0.032)	(0.034)
Log(hours)²	− 0.10***	0.02	− 0.12***	− 0.19***	0.01	− 0.15***	− 0.11***	− 0.11***	0.03	− 0.04	− 0.11***	− 0.12***	− 0.09**	− 0.11***	− 0.10***
	(0.038)	(0.038)	(0.035)	(0.034)	(0.030)	(0.033)	(0.031)	(0.037)	(0.028)	(0.030)	(0.036)	(0.035)	(0.036)	(0.033)	(0.035)
EEA	0.00	0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Non-EEA	0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00**	− 0.00*	0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00*	− 0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
Age	− 0.00	0.00	0.01	0.01	− 0.01	− 0.01	− 0.00	− 0.03**	− 0.01	− 0.00	− 0.00	− 0.01	0.01	− 0.01	0.01
	(0.002)	(0.004)	(0.009)	(0.009)	(0.010)	(0.009)	(0.010)	(0.012)	(0.011)	(0.010)	(0.010)	(0.009)	(0.012)	(0.011)	(0.011)
Age²	− 0.01	− 0.01	− 0.01	− 0.01	− 0.00	0.02*	− 0.00	0.03*	0.01	− 0.00	0.00	0.00	− 0.01	− 0.00	− 0.01
	(0.005)	(0.007)	(0.013)	(0.012)	(0.006)	(0.008)	(0.008)	(0.011)	(0.009)	(0.008)	(0.009)	(0.007)	(0.011)	(0.010)	(0.010)
Experience	− 0.01*	0.00	− 0.00	− 0.00	0.00	− 0.01	− 0.01	0.01	− 0.00	− 0.00	0.00	0.01	− 0.01	0.00	− 0.01
	(0.006)	(0.001)	(0.003)	(0.004)	(0.009)	(0.008)	(0.009)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Experience²	0.00	0.00	− 0.00	− 0.00	0.01*	− 0.00	0.01*	− 0.01*	− 0.00	0.01	0.00	0.00	0.00	0.01	0.01
	(0.001)	(0.004)	(0.007)	(0.007)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)

Table A5 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intermediate educ	− 0.00**	− 0.00	− 0.00	0.00	− 0.00	− 0.00**	0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
High educ	0.01***	0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Years educ	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.01	− 0.01	− 0.01	0.00	− 0.01	0.00
	(0.002)	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)	(0.003)	(0.003)	(0.004)	(0.006)	(0.004)	(0.007)	(0.005)	(0.007)	(0.009)
Years educ²	0.00	0.00	0.00	0.00	0.00	0.00	0.00	− 0.00	0.00	0.01	0.01	0.01	− 0.00	0.01	− 0.00
	(0.002)	(0.003)	(0.004)	(0.004)	(0.002)	(0.002)	(0.004)	(0.004)	(0.004)	(0.006)	(0.004)	(0.007)	(0.006)	(0.007)	(0.009)
Training	− 0.00**	− 0.00	− 0.00	− 0.00***	− 0.00	0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
In couple	− 0.00**	− 0.00*	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)
With dep. children	− 0.00	− 0.01***	− 0.01***	− 0.01**	− 0.01***	− 0.00***	− 0.00***	− 0.00*	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00**	− 0.00
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
In couple with dep. children	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Public sector	0.00	0.01**	0.01	0.01*	0.00	− 0.00	0.01***	0.01*	0.01	− 0.00	0.01	− 0.00	0.00	0.01*	0.00
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Observations	15,020	15,308	14,911	14,172	13,246	13,737	13,336	13,313	13,433	12,879	12,468	12,945	12,151	11,563	10,383

Contribution of main socio-demographic characteristics, human capital attributes and sectoral indicators. Occupations (SOC) are omitted for layout reasons. Significance levels: p value < 0.01 ***, p value < 0.05 **, p value < 0.1 *

Table A6 Contribution of individual components of KBO decomposition, male-dominated sectors

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Endowment effect															
Low gender sect. segregation	0.05***	0.04***	0.05***	0.06***	0.05***	0.04***	0.05***	0.04***	0.03***	0.03***	0.02**	0.02***	0.03***	0.04***	0.05***
	(0.011)	(0.009)	(0.010)	(0.013)	(0.012)	(0.014)	(0.011)	(0.011)	(0.009)	(0.009)	(0.011)	(0.009)	(0.010)	(0.009)	(0.010)
Log(hours)	− 0.18***	− 0.19***	− 0.21***	− 0.19***	− 0.23***	− 0.25***	− 0.19***	− 0.12***	− 0.23***	− 0.28***	− 0.20***	− 0.27***	− 0.21***	− 0.11***	− 0.12***
	(0.020)	(0.020)	(0.019)	(0.022)	(0.025)	(0.022)	(0.021)	(0.024)	(0.027)	(0.021)	(0.024)	(0.026)	(0.024)	(0.022)	(0.025)
Log(hours)^2	0.18***	0.19***	0.22***	0.18***	0.23***	0.25***	0.19***	0.12***	0.23***	0.28***	0.20***	0.27***	0.22***	0.10***	0.12***
	(0.022)	(0.022)	(0.022)	(0.024)	(0.028)	(0.025)	(0.024)	(0.027)	(0.030)	(0.023)	(0.027)	(0.028)	(0.026)	(0.024)	(0.028)
EEA	− 0.00	0.00	− 0.00	− 0.00	0.00	0.00	0.00*	0.00**	0.00	0.00***	0.00	0.00***	0.00**	0.00**	0.00**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Non-EEA	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.01	0.12***	0.08**	0.08***	0.02	− 0.00	0.05**	0.03	0.03*	0.05***	0.05***	− 0.01	0.03*	0.05***	0.05**
	(0.032)	(0.031)	(0.032)	(0.030)	(0.023)	(0.018)	(0.022)	(0.022)	(0.020)	(0.019)	(0.018)	(0.015)	(0.015)	(0.018)	(0.024)
Age^2	0.01	− 0.06**	− 0.00	− 0.04	0.01	0.02	− 0.02	− 0.02	− 0.03	− 0.02	− 0.04**	0.01	− 0.02	− 0.04**	− 0.02
	(0.033)	(0.032)	(0.033)	(0.031)	(0.023)	(0.017)	(0.022)	(0.022)	(0.020)	(0.018)	(0.018)	(0.015)	(0.015)	(0.018)	(0.023)
Experience	0.07***	0.00	0.03	0.01	0.03*	0.05***	0.02	0.04***	0.03**	0.01	0.02	0.05***	0.02*	0.02*	0.01
	(0.022)	(0.021)	(0.022)	(0.020)	(0.016)	(0.014)	(0.016)	(0.015)	(0.015)	(0.013)	(0.012)	(0.013)	(0.011)	(0.012)	(0.016)
Experience^2	− 0.09***	− 0.06***	− 0.10***	− 0.05***	− 0.06***	− 0.05***	− 0.05***	− 0.04***	− 0.04***	− 0.04***	− 0.02*	− 0.04***	− 0.02**	− 0.02**	− 0.04***
	(0.019)	(0.018)	(0.019)	(0.017)	(0.014)	(0.011)	(0.012)	(0.013)	(0.011)	(0.011)	(0.010)	(0.010)	(0.009)	(0.010)	(0.014)

Table A6 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intermediate educ	− 0.00***	− 0.00*	− 0.00	− 0.00	− 0.00**	− 0.00	− 0.00	− 0.01***	− 0.00	− 0.00	− 0.00	− 0.00**	− 0.00***	− 0.00*	− 0.00
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
High educ	0.00	− 0.00*	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00*	− 0.00**	− 0.00	− 0.00*	− 0.01***	− 0.01***	− 0.01***	− 0.00*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Years educ	0.03***	0.02**	0.02**	0.00	0.02**	0.02***	0.01*	− 0.00	0.01	− 0.00	0.00	− 0.00	− 0.01	− 0.02**	− 0.01**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.006)	(0.008)	(0.006)	(0.007)	(0.006)	(0.005)	(0.007)	(0.008)	(0.007)
Years educ^2	− 0.02***	− 0.02**	− 0.01*	− 0.00	− 0.01**	− 0.02**	− 0.01*	0.00	− 0.01	0.00	− 0.00	0.00	0.01	0.02**	0.01*
	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)	(0.005)	(0.007)	(0.005)	(0.006)	(0.005)	(0.004)	(0.006)	(0.008)	(0.006)
Training	0.00**	0.00*	0.00**	0.00***	0.00**	0.00	− 0.00	0.00	0.00	0.00	0.00	0.00	− 0.00	− 0.00	− 0.00*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
In couple	− 0.00	− 0.00	− 0.00**	− 0.00*	0.00	0.00	− 0.00	0.00	− 0.00	0.00	0.00*	0.00**	0.00	0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
With dep. children	0.00**	0.00	0.00	0.00**	0.00	0.00	0.00	0.00*	0.00	0.00	0.00	0.00	0.00	0.00	− 0.00
	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
In couple with dep. children	0.00**	0.00*	0.00	0.00	0.00	0.00	0.00*	0.00*	0.01***	0.00	0.00	0.00	0.00	0.00	0.00
	(0.001)	(0.001)		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Public sector	0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	0.00	0.00	0.00	0.00	0.00**	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table A6 continued

Coefficient effect

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Low gender sect. segregation	0.01	0.00	0.01	0.00	0.03	− 0.02	0.02	− 0.02	− 0.03	− 0.03	− 0.04	− 0.03	0.00	0.02	0.06**
	(0.023)	(0.020)	(0.022)	(0.026)	(0.028)	(0.029)	(0.024)	(0.023)	(0.022)	(0.023)	(0.028)	(0.023)	(0.025)	(0.024)	(0.028)
Log(hours)	2.98***	2.83***	3.10***	3.71***	1.95***	1.93***	1.67***	1.25***	1.84***	4.47***	2.33***	3.00***	2.46***	2.91***	1.16**
	(0.395)	(0.361)	(0.368)	(0.392)	(0.427)	(0.342)	(0.402)	(0.388)	(0.435)	(0.458)	(0.396)	(0.427)	(0.476)	(0.463)	(0.545)
Log(hours)²	− 1.72***	− 1.68***	− 1.86***	− 2.02***	− 1.32***	− 1.35***	− 1.18***	− 0.98***	− 1.22***	− 2.55***	− 1.48***	− 1.85***	− 1.62***	− 1.65***	− 1.03***
	(0.204)	(0.193)	(0.198)	(0.210)	(0.226)	(0.187)	(0.215)	(0.211)	(0.233)	(0.237)	(0.215)	(0.230)	(0.251)	(0.245)	(0.299)
EEA	− 0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	0.00	0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	− 0.00	0.00
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Non-EEA	0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00**	− 0.00	− 0.00	0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	0.00
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Age	0.06	− 0.56	− 0.58	− 0.04	0.21	0.40	− 0.47	0.12	− 0.46	− 0.77	− 0.80	0.85	− 0.47	− 0.74	0.17
	(0.517)	(0.462)	(0.492)	(0.543)	(0.579)	(0.541)	(0.561)	(0.569)	(0.583)	(0.562)	(0.546)	(0.549)	(0.560)	(0.561)	(0.671)
Age²	− 0.08	0.18	0.08	− 0.04	− 0.17	− 0.19	0.17	0.03	0.29	0.22	0.61**	− 0.26	0.35	0.57*	− 0.16
	(0.250)	(0.225)	(0.238)	(0.266)	(0.289)	(0.266)	(0.275)	(0.281)	(0.288)	(0.283)	(0.277)	(0.279)	(0.290)	(0.291)	(0.346)
Experience	− 0.04	0.18	0.18	0.03	− 0.05	− 0.04	0.17	− 0.09	0.10	0.30	0.10	− 0.29	0.11	0.02	0.11
	(0.187)	(0.164)	(0.177)	(0.196)	(0.217)	(0.199)	(0.205)	(0.199)	(0.212)	(0.193)	(0.185)	(0.185)	(0.187)	(0.187)	(0.226)
Experience²	0.08	0.01	0.06	0.06	0.10	0.05	− 0.03	0.02	− 0.06	− 0.03	− 0.15*	0.07	− 0.13	− 0.09	0.00
	(0.080)	(0.071)	(0.075)	(0.083)	(0.096)	(0.086)	(0.088)	(0.089)	(0.092)	(0.090)	(0.088)	(0.087)	(0.092)	(0.092)	(0.109)

Table A6 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intermediate educ	0.00	− 0.00	0.01	0.00	− 0.00	0.01	− 0.00	− 0.01	0.00	0.01	− 0.01	− 0.02*	− 0.02**	− 0.01	− 0.01
	(0.007)	(0.007)	(0.008)	(0.008)	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.011)
High educ	0.00	0.01	0.01	0.00	0.00	0.00	− 0.01	− 0.02	0.00	0.01	− 0.02	− 0.04**	− 0.03*	− 0.03	− 0.02
	(0.009)	(0.009)	(0.010)	(0.011)	(0.012)	(0.012)	(0.013)	(0.013)	(0.015)	(0.014)	(0.015)	(0.015)	(0.016)	(0.017)	(0.021)
Years educ	− 0.02	− 0.09	0.13	0.17	0.21	0.59	0.84**	0.33	1.03**	0.66	0.88**	1.13***	0.60	0.66	1.27**
	(0.318)	(0.316)	(0.332)	(0.358)	(0.394)	(0.381)	(0.402)	(0.415)	(0.429)	(0.429)	(0.435)	(0.436)	(0.459)	(0.477)	(0.539)
Years educ^2	0.01	0.05	− 0.03	− 0.03	− 0.06	− 0.21	− 0.38**	− 0.13	− 0.46**	− 0.25	− 0.36*	− 0.47**	− 0.19	− 0.25	− 0.55***
	(0.141)	(0.142)	(0.150)	(0.163)	(0.179)	(0.174)	(0.186)	(0.193)	(0.199)	(0.200)	(0.204)	(0.205)	(0.217)	(0.228)	(0.259)
Training	− 0.01	− 0.00	0.01	0.00	0.00	− 0.00	0.00	0.00	0.00	− 0.00	0.00	0.00	0.00	0.00	− 0.00
	(0.008)	(0.007)	(0.008)	(0.008)	(0.008)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
In couple	0.03***	0.02**	0.05***	0.04***	0.01	0.02*	0.05***	0.02	0.04***	0.03***	0.02	0.02	0.04***	0.02*	0.03**
	(0.010)	(0.010)	(0.010)	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)	(0.012)	(0.012)
With dep. children	0.04***	0.03***	0.03***	0.04***	0.04***	0.02**	0.04***	0.03**	0.05***	0.01	0.03**	0.01	0.02*	0.03**	0.02
	(0.010)	(0.009)	(0.010)	(0.011)	(0.011)	(0.010)	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.010)
In couple with dep. children	− 0.00	0.00	− 0.00	0.00	− 0.00	0.00	− 0.03***	− 0.00	− 0.03***	− 0.01	− 0.00	0.00	− 0.01	− 0.01	− 0.01
	(0.009)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)	(0.009)
Public sector	− 0.00	0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.01**	− 0.00	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Constant	− 1.27***	− 0.87***	− 1.08***	− 1.79***	− 0.88***	− 0.89***	− 0.81***	− 0.39	− 0.94***	− 1.91***	− 0.84***	− 1.95***	− 1.03***	− 1.50***	− 1.10**
	(0.345)	(0.314)	(0.327)	(0.352)	(0.384)	(0.353)	(0.364)	(0.367)	(0.392)	(0.392)	(0.386)	(0.381)	(0.401)	(0.407)	(0.456)

Table A6 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Interaction effect															
Low gender sect. segregation	− 0.01	− 0.00	− 0.00	− 0.00	− 0.01	0.01	− 0.01	0.01	0.01	0.02	0.02	0.01	− 0.00	− 0.01	− 0.02**
	(0.012)	(0.010)	(0.011)	(0.014)	(0.013)	(0.015)	(0.012)	(0.012)	(0.010)	(0.010)	(0.012)	(0.010)	(0.011)	(0.011)	(0.012)
Log(hours)	0.27***	0.24***	0.26***	0.32***	0.19***	0.18***	0.14***	0.11***	0.16***	0.39***	0.20***	0.26***	0.21***	0.23***	0.08**
	(0.036)	(0.031)	(0.032)	(0.035)	(0.041)	(0.033)	(0.035)	(0.034)	(0.039)	(0.041)	(0.035)	(0.037)	(0.040)	(0.037)	(0.036)
Log(hours)^2	− 0.30***	− 0.27***	− 0.30***	− 0.34***	− 0.24***	− 0.25***	− 0.20***	− 0.16***	− 0.21***	− 0.42***	− 0.25***	− 0.30***	− 0.26***	− 0.25***	− 0.13***
	(0.036)	(0.032)	(0.033)	(0.036)	(0.042)	(0.034)	(0.036)	(0.036)	(0.040)	(0.040)	(0.036)	(0.039)	(0.041)	(0.038)	(0.038)
EEA	0.00	0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	− 0.00	0.00	0.00	− 0.00
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Non-EEA	− 0.00	0.00	− 0.00	0.00	0.00	− 0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	0.00	0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Age	0.00	− 0.04	− 0.05	− 0.00	0.01	0.02	− 0.02	0.01	− 0.02	− 0.03	− 0.03	0.03	− 0.01	− 0.03	0.01
	(0.037)	(0.036)	(0.038)	(0.034)	(0.027)	(0.022)	(0.027)	(0.026)	(0.024)	(0.023)	(0.022)	(0.019)	(0.018)	(0.021)	(0.029)
Age^2	− 0.01	0.03	0.01	− 0.00	− 0.02	− 0.01	0.02	0.00	0.02	0.02	0.05**	− 0.02	0.02	0.04*	− 0.01
	(0.037)	(0.037)	(0.038)	(0.036)	(0.027)	(0.021)	(0.026)	(0.026)	(0.023)	(0.022)	(0.022)	(0.019)	(0.018)	(0.022)	(0.029)
Experience	− 0.01	0.03	0.03	0.00	− 0.00	− 0.00	0.02	− 0.01	0.01	0.02	0.01	− 0.02	0.01	0.00	0.01
	(0.026)	(0.026)	(0.027)	(0.024)	(0.020)	(0.015)	(0.020)	(0.019)	(0.018)	(0.016)	(0.016)	(0.015)	(0.014)	(0.016)	(0.021)
Experience^2	0.02	0.00	0.02	0.01	0.01	0.01	− 0.00	0.00	− 0.01	− 0.00	− 0.02*	0.01	− 0.01	− 0.01	0.00
	(0.020)	(0.021)	(0.021)	(0.020)	(0.014)	(0.010)	(0.014)	(0.014)	(0.013)	(0.012)	(0.012)	(0.010)	(0.010)	(0.012)	(0.016)

Table A6 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intermediate educ	− 0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	0.00	0.00	0.00**	0.00	0.00
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
High educ	0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	0.00	0.01**	0.00	0.00	0.00
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Years educ	− 0.00	− 0.00	0.00	0.00	0.00	0.01	0.01	− 0.00	0.01	− 0.00	0.00	− 0.00	− 0.00	− 0.01	− 0.01*
	(0.006)	(0.003)	(0.003)	(0.001)	(0.005)	(0.005)	(0.005)	(0.001)	(0.005)	(0.003)	(0.004)	(0.004)	(0.004)	(0.006)	(0.008)
Years educ^2	0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.01	− 0.01	0.00	− 0.00	0.00	− 0.00	0.00	0.00	0.01	0.01
	(0.005)	(0.003)	(0.002)	(0.000)	(0.004)	(0.005)	(0.004)	(0.001)	(0.004)	(0.002)	(0.003)	(0.004)	(0.003)	(0.005)	(0.007)
Training	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00	− 0.00	0.00	0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
In couple	0.00***	0.00**	0.01***	0.00***	0.00	0.00*	0.01***	0.00	0.01***	0.00***	0.00	0.00	0.00**	0.00*	0.00**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
With dep. children	− 0.00*	− 0.00	− 0.00	− 0.00**	− 0.00	− 0.00	− 0.00	− 0.00*	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
In couple with dep. children	− 0.00	0.00	− 0.00	0.00	− 0.00	0.00	− 0.00**	− 0.00	− 0.01***	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Public sector	− 0.00	− 0.00	0.00	− 0.00	0.00	0.00	0.00	0.00**	0.00	0.00	0.00	− 0.00	− 0.00	− 0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)
Observations	17,046	17,745	16,772	15,574	13,410	13,840	13,204	13,218	13,606	12,994	12,447	12,874	12,085	11,588	10,995

Contribution of main socio-demographic characteristics, human capital attributes and sectoral indicators. Occupations (SOC) are omitted for layout reasons. Significance levels: p value < 0.01 ***, p value < 0.05 **, p value < 0.1 *

Table A7 Kolmogorov–Smirnov test for equality of distributions

	Men versus Women in female-dominated sectors	Men versus Women in male-dominated sectors	Workers in female-dominated sectors versus male-dominated sectors if women	Workers in female-dominated sectors versus male-dominated sectors if men
	(1)	(2)	(3)	(4)
Predicted wage	0.1700	0.1541	0.2438	0.1890
Residual wage	0.0366	0.0243	0.0442	0.0231
Counterfactual predicted wage	0.1055	0.0871	0.0867	0.0471
Counterfactual residual wage	0.0821	0.1136	0.1518	0.1791

The Kolmogorov–Smirnov test is a non-parametric test for comparing the equality of two distributions without imposing the normality assumption. The first two columns compare the distribution of men against the distribution of women working in female-dominated sectors (Column 1) or male-dominated sectors (Column 2). The last two columns compare the distribution of workers in female-dominated sectors against those in male-dominated sectors if women (Column 3) or if men (Column 4). All test statistics are significant at 1% level

Appendix B

See Fig. B1.

(a) *F^{u}ll sample*
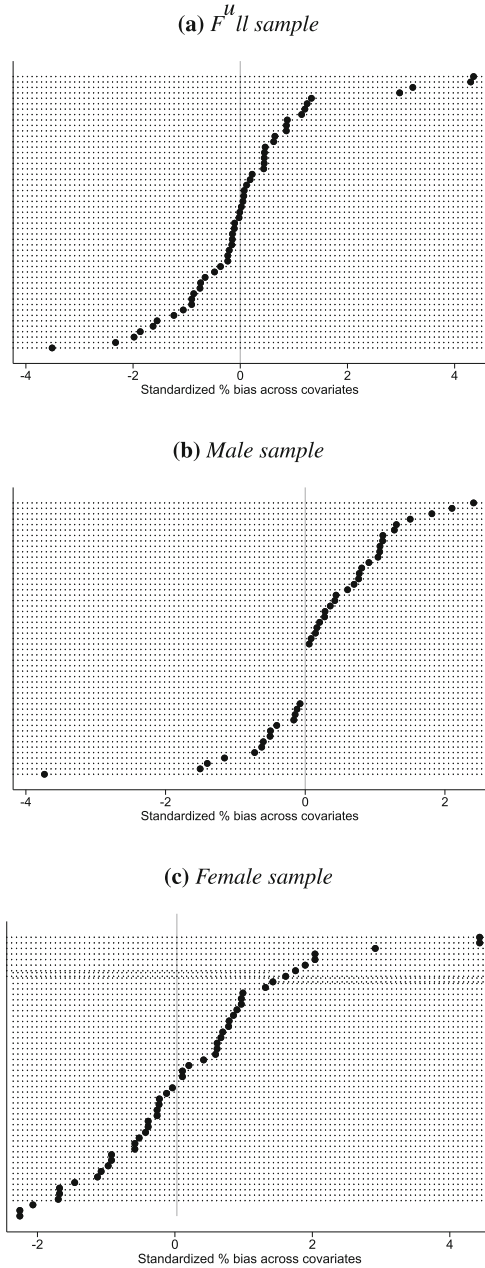

(b) *Male sample*

(c) *Female sample*

Fig. B1 Covariate imbalance test, single components. *Note*: The included covariates are balanced because the standardised bias after matching is within ±5% (Rosenbaum and Rubin, 1985). Therefore, the matching method builds a valid comparison group

Appendix C

See Tables C1 and C2.

Table C1 Share of workers by sector and occupation

Occupations	1	2	3	4	5	6	7	8	9	Total
Sectors										
A—Agriculture, forestry and fishing	0.09	0.02	0.03	0.05	0.16	0.03	0.01	0.06	0.24	0.69
B—Mining and quarrying	0.08	0.10	0.08	0.04	0.07	0.00	0.01	0.10	0.01	0.48
C—Manufacturing	1.89	1.45	1.55	1.08	2.46	0.03	0.31	2.68	1.13	12.57
D—Electricity, gas and air con supply	0.09	0.14	0.11	0.07	0.13	0.00	0.10	0.04	0.02	0.70
E—Water supply, sewerage and waste	0.11	0.09	0.10	0.08	0.05	0.00	0.03	0.22	0.20	0.89
F—Construction	0.92	0.71	0.45	0.59	1.96	0.02	0.08	0.57	0.49	5.78
G—Distribution	2.17	0.44	1.10	1.34	1.08	0.05	6.36	0.95	1.90	15.38
H—Transport	0.51	0.19	0.42	0.55	0.21	0.32	0.18	1.65	1.06	5.08
I—Accommodation and food services	0.64	0.03	0.13	0.27	0.86	0.17	0.30	0.11	2.90	5.41
J—Information, communication	0.56	1.27	0.65	0.27	0.19	0.00	0.24	0.07	0.28	3.54
K—Financial and insurance services	0.98	0.67	1.25	1.33	0.02	0.01	0.40	0.01	0.06	4.73
L—Real estate services	0.29	0.10	0.33	0.27	0.06	0.05	0.08	0.01	0.05	1.23
M—Professional, scientific and technical activities	1.05	1.99	1.37	1.27	0.18	0.11	0.18	0.11	0.42	6.69
N—Admin and support services	0.55	0.40	0.54	0.44	0.25	0.25	0.31	0.14	1.02	3.90
P—Education	0.34	6.18	0.95	0.97	0.19	2.68	0.04	0.04	1.00	12.39
Q—Health and social work	1.14	3.90	2.66	1.78	0.22	5.15	0.13	0.09	0.72	15.79
R—Arts, entertainment and recreation	0.38	0.20	0.51	0.40	0.19	0.28	0.12	0.03	0.36	2.47
S—Other service activities	0.21	0.34	0.23	0.28	0.11	0.65	0.06	0.05	0.18	2.11
T—Households as employers	0.00	0.00	0.00	0.00	0.02	0.09	0.00	0.00	0.03	0.15
Total	11.99	18.21	12.44	11.11	8.41	9.90	8.94	6.94	12.07	100.00

The percentages are calculated on total employed workers (self-employed are excluded). Labels for occupations: 1—Managers, Directors And Senior Official; 2—Professional Occ.; 3—Associate Professional And Technical Occ.; 4—Administrative And Secretarial Occ.; 5—Skilled Trades Occ.; 6—Caring, Leisure And Other Service Occ.; 7—Sales And Customer Service Occ.; 8—Process, Plant And Machine Operatives; 9—Elementary Occ

Table C2 Contribution of individual components of KBO decomposition, full sample

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Endowment effect															
Log(hours)	− 0.11***	− 0.08***	− 0.15***	− 0.11***	− 0.12***	− 0.12***	− 0.11***	− 0.06***	− 0.10***	− 0.16***	− 0.12***	− 0.11***	− 0.12***	− 0.08***	− 0.07***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)
Log(hours)^2	0.11***	0.07***	0.15***	0.11***	0.12***	0.12***	0.10***	0.06***	0.10***	0.16***	0.12***	0.10***	0.12***	0.07***	0.06***
	(0.014)	(0.014)	(0.015)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)	(0.016)
EEA	− 0.00	− 0.00	− 0.00	− 0.00	0.00	0.00**	0.00	0.00*	0.00	0.00**	0.00	0.00***	0.00	0.00	0.00*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Non-EEA	− 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	− 0.00	− 0.00**	− 0.00**	− 0.00	− 0.00	− 0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.01	0.02***	0.03**	− 0.00	0.00	0.00	0.01**	− 0.00	0.00	0.00	0.00	− 0.00	0.00	0.00	0.01**
	(0.007)	(0.008)	(0.010)	(0.009)	(0.003)	(0.002)	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)
Experience	0.01**	0.01**	0.01**	0.03***	0.01**	0.00	0.00	0.01***	0.00**	0.01**	0.01**	0.01**	0.00*	0.01**	0.00
	(0.005)	(0.005)	(0.006)	(0.007)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
Years educ	0.01***	0.00	− 0.00	− 0.01**	0.00	0.00	− 0.00	− 0.01**	− 0.01	− 0.01***	− 0.01	− 0.01***	− 0.02***	− 0.02***	− 0.02***
	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)

Table C2 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Training	– 0.00***	– 0.00***	– 0.00***	– 0.00***	– 0.00***	– 0.00***	– 0.00***	– 0.00***	– 0.00**	– 0.00***	– 0.00	– 0.00*	– 0.00*	– 0.00	– 0.00**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
In couple	– 0.00	0.00	– 0.00	– 0.00	0.00	0.00**	0.00	0.00	0.00	0.00	0.00	0.00**	0.00**	0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
With dep. children	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***	0.00**	0.00***	0.00***	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
In couple with dep. children	0.00	– 0.00	0.00	– 0.00	0.00	0.00	0.00	0.00*	0.00**	0.00*	0.00*	0.00	0.00	0.00*	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Low gender sect. segregation	0.02***	0.02***	0.02***	0.02***	0.02***	0.01***	0.02***	0.01***	0.01***	0.01***	0.00*	0.00**	0.01**	0.01***	– 0.00
	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
Public sector	– 0.01***	– 0.01***	– 0.01***	– 0.02***	– 0.02***	– 0.01***	– 0.02***	– 0.02***	– 0.01***	– 0.01***	– 0.01***	– 0.01***	– 0.01***	– 0.01***	– 0.01***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)

Table C2 continued

Coefficient effect

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Log(hours)	1.65***	0.96***	2.02***	2.41***	0.62***	1.51***	1.31***	0.96***	0.49**	2.36***	1.65***	1.56***	1.79***	2.14***	1.22***
	(0.240)	(0.229)	(0.233)	(0.243)	(0.226)	(0.219)	(0.239)	(0.242)	(0.239)	(0.263)	(0.260)	(0.270)	(0.302)	(0.296)	(0.341)
Log(hours)^2	− 0.96***	− 0.63***	− 1.19***	− 1.34***	− 0.50***	− 0.94***	− 0.83***	− 0.66***	− 0.39***	− 1.31***	− 0.98***	− 0.93***	− 1.06***	− 1.21***	− 0.82***
	(0.122)	(0.120)	(0.123)	(0.129)	(0.121)	(0.117)	(0.127)	(0.128)	(0.127)	(0.138)	(0.137)	(0.141)	(0.157)	(0.157)	(0.183)
EEA	− 0.00	0.00	0.00	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	0.00	− 0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Non-EEA	0.00	0.00	0.00	0.00	− 0.00	− 0.00**	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age	− 0.04	0.31	− 0.03	0.83***	0.33	0.49	− 0.08	0.89***	0.23	− 0.06	0.03	0.84**	− 0.33	0.27	0.06
	(0.303)	(0.288)	(0.304)	(0.313)	(0.342)	(0.327)	(0.330)	(0.336)	(0.336)	(0.343)	(0.326)	(0.339)	(0.338)	(0.350)	(0.420)
Experience	0.29**	0.02	0.13	− 0.17	0.00	0.19	0.18	− 0.09	0.10	0.13	− 0.00	− 0.25**	0.15	− 0.10	0.19
	(0.117)	(0.107)	(0.115)	(0.118)	(0.133)	(0.125)	(0.123)	(0.124)	(0.123)	(0.124)	(0.112)	(0.119)	(0.116)	(0.118)	(0.146)
Years educ	0.32	0.36*	0.23	0.39*	0.31	0.42*	0.45*	0.26	0.80***	0.80***	0.80***	0.81***	0.30	0.82***	0.66*
	(0.198)	(0.202)	(0.213)	(0.222)	(0.242)	(0.236)	(0.250)	(0.254)	(0.258)	(0.268)	(0.271)	(0.274)	(0.284)	(0.300)	(0.344)

Table C2 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Training	0.01**	0.01	0.01*	0.02***	0.01	− 0.00	0.00*	0.00	0.01***	0.00	0.01***	0.01***	0.00	0.01**	0.00
	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
In couple	0.03***	0.02***	0.04***	0.03***	0.02**	0.01	0.04***	0.02***	0.04***	0.04***	0.04***	0.03***	0.03***	0.02***	0.04***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
With dep. children	0.02***	0.03***	0.04***	0.03***	0.04***	0.03***	0.04***	0.03***	0.04***	0.03***	0.03***	0.02***	0.03***	0.04***	0.01*
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)
In couple with dep. children	0.01	0.01	0.00	0.00	− 0.00	0.00	− 0.02***	0.01	− 0.01**	− 0.01*	− 0.01	− 0.00	− 0.00	− 0.01	− 0.00
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)
Low gender sect. segregation	0.02	0.00	0.02	0.01	0.04	− 0.03	0.04	− 0.02	− 0.04	− 0.04	− 0.05	− 0.04	0.00	0.03	0.07**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.006)
Public sector	− 0.01***	− 0.01**	− 0.02***	− 0.01***	− 0.01***	0.01	− 0.02***	− 0.02***	− 0.02***	0.01*	− 0.01***	− 0.00	− 0.00	− 0.01**	− 0.01**
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)
Constant	− 0.89***	− 0.65***	− 0.98***	− 1.61***	− 0.50**	− 0.80***	− 0.83***	− 0.77***	− 0.57**	− 1.46***	− 0.93***	− 1.30***	− 0.83***	− 1.64***	− 1.08***
	(0.214)	(0.203)	(0.211)	(0.220)	(0.232)	(0.229)	(0.227)	(0.230)	(0.232)	(0.240)	(0.253)	(0.249)	(0.256)	(0.262)	(0.296)

Table C2 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Interaction effect															
Log(hours)	0.19***	0.11***	0.22***	0.25***	0.07***	0.17***	0.14***	0.10***	0.05**	0.23***	0.16***	0.15***	0.17***	0.19***	0.10***
	(0.028)	(0.025)	(0.025)	(0.026)	(0.026)	(0.025)	(0.026)	(0.026)	(0.025)	(0.026)	(0.026)	(0.027)	(0.029)	(0.027)	(0.027)
Log(hours)^2	− 0.22***	− 0.14***	− 0.25***	− 0.27***	− 0.11***	− 0.21***	− 0.17***	− 0.13***	− 0.08***	− 0.25***	− 0.19***	− 0.18***	− 0.20***	− 0.21***	− 0.12***
	(0.028)	(0.026)	(0.026)	(0.026)	(0.027)	(0.026)	(0.026)	(0.026)	(0.025)	(0.027)	(0.026)	(0.027)	(0.029)	(0.027)	(0.028)
EEA	− 0.00	0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	− 0.00	0.00	0.00	0.00	− 0.00	0.00	− 0.00	0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Non-EEA	0.00	0.00	0.00	0.00	− 0.00	− 0.00**	− 0.00	− 0.00	− 0.00	− 0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age	− 0.00	0.01	− 0.00	0.04***	0.00	0.00	− 0.00	0.01**	0.00	− 0.00	0.00	0.01	− 0.00	0.00	0.00
	(0.010)	(0.011)	(0.014)	(0.014)	(0.005)	(0.003)	(0.004)	(0.005)	(0.003)	(0.003)	(0.003)	(0.004)	(0.002)	(0.003)	(0.005)
Experience	0.02**	0.00	0.01	− 0.01	0.00	0.00	0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	0.00	− 0.00	0.00
	(0.007)	(0.008)	(0.009)	(0.009)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)
Years educ	0.00	0.00	− 0.00	− 0.00	0.00	0.00	− 0.00	− 0.00	− 0.00	− 0.01**	− 0.00	− 0.01**	− 0.00	− 0.01**	− 0.01*
	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)

Table C2 continued

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Training	− 0.00*	− 0.00	− 0.00*	− 0.00**	− 0.00	0.00	− 0.00*	− 0.00	− 0.00**	− 0.00	− 0.00**	− 0.00*	− 0.00	− 0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
In couple	0.00***	0.00**	0.00***	0.00***	0.00*	0.00	0.00***	0.00**	0.00***	0.00***	0.00***	0.00***	0.00***	0.00**	0.00***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
With dep. children	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00***	− 0.00
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)
In couple with dep. children	0.00	− 0.00	0.00	− 0.00	− 0.00	0.00	− 0.00**	0.00	− 0.00*	− 0.00*	− 0.00	− 0.00	− 0.00	− 0.00	− 0.00
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Low gender sect. segregation	− 0.00	− 0.00	− 0.00	− 0.00	− 0.01	0.00	− 0.00	0.00	0.00	0.00	0.00	0.00	− 0.00	− 0.00	0.00
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Public sector	0.01***	0.01**	0.01***	0.01***	0.01***	0.00	0.01***	0.01***	0.01***	0.01*	0.01***	0.00	0.00	0.01**	0.01**
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	32,066	33,053	31,683	29,746	26,656	27,577	26,540	26,531	27,039	25,873	24,915	25,819	24,236	23,151	21,378

Contribution of main socio-demographic characteristics, human capital attributes and sectoral indicators. Significance levels: p value < 0.01 ***, p value < 0.05 **, p value < 0.1 *
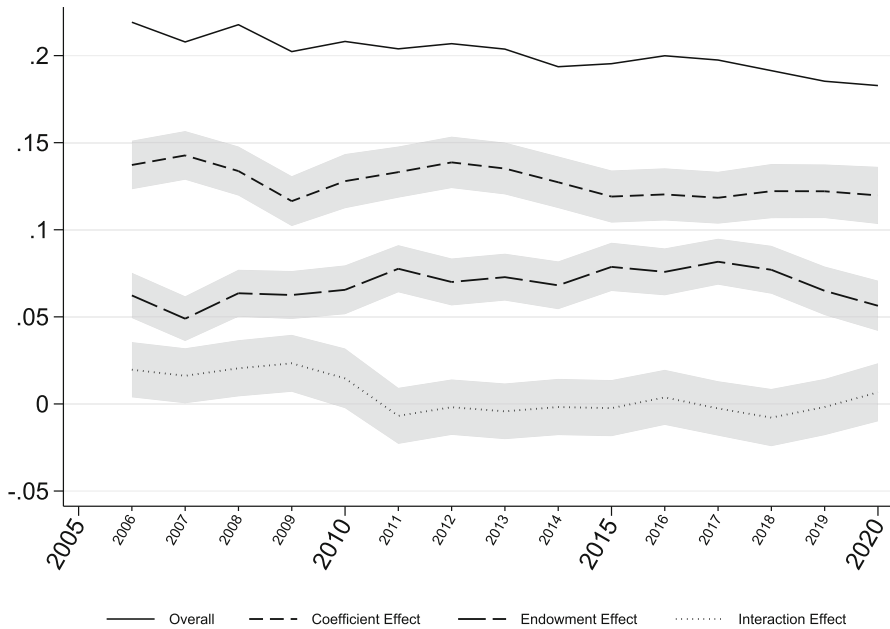
Appendix D

See Fig. .

Fig. D1 KBO decomposition, full sample. *Note*: The figure shows the evolution of the components of the KBO decomposition and their sum over time for full sample. Women are contrasted to men. The dashed line represents the *coefficient effect*, the long-dashed line the *endowment effect* and the dotted line the part of the "unexplained" component of the threefold decomposition (or *interaction effect*). The corresponding shadowed areas display the 95% confidence intervals. The solid line is the sum of the three effects and reveals their overall contribution. The wage difference between men and women is, on average, 0.2 logarithmic points over time. Most of the gender pay gap (around three-fourths) can be explained by differences in the estimated coefficients between genders. The *coefficient effect* on average quantifies indeed an increase of 0.16 logarithmic points in women's wages when the male coefficients are applied to female characteristics. In addition, this component displays a downward trend after 2008. The *endowment effect* would quantify an expected average increase in women's wage by around 0.05 points if they had male predictors levels. Therefore, differences in observed characteristics account for one-fourth of the gap. ESTIMATION NOTE: Both models for women and men are estimated using the Mincerian regression equation (with OLS). The shaded area is the 95% confidence intervals

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