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Pay Transparency Initiative and Gender Pay Gap: Evidence from Research-Intensive Universities in the UK

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Overview

- We examine the impact of a pay transparency initiative on the gender pay gap in research intensive universities in the UK.
- We show that information shock can significantly reduce the gender pay gap.
- We find that it is likely to be driven by bargaining effect within institution.

Background

- One of the most persistent and prominent features of labour markets around the world is that women earn less than men.
 - In the UK a female typically earn £81 for every £100 earned by a man (O'Reilly et al., 2015).
- In the higher education sector:
 - In the **UK** (Gamage, Smith, and Sevilla, (2020)., McNabb and Wass, 1997; Blackaby et al., 2005; Euwals and Ward, 2005; Schulze, 2015; Mumford and Sechel, 2019)
 - In the **US** (Ginther, 2001; Ginther and Hayes, 2003; Ginther and Kahn, 2014; Sutanto et al., 2014; Tao, 2018)
 - In **Europe** (Corsi et al., 2014).

Background II

- *Policies in Academia:*
 - Positive action (Gregory-Smith, 2018; Gamage & Sevilla, 2019; Healy & Ahamed, 2019)
 - Gender-neutral clock stopping policies (Antecol et al., 2018)
 - Mentoring programs (Ginther et. al, 2020)

Background III - Pay Transparency policies

- Governments introduced pay transparency policies to tackle the gender pay gap
 - eg: UK 2017 pay reporting legislation, Danish pay transparency law, Austrian Pay transparency law.
- Why pay transparency?
 - 53% of women and 47% of men in work are reluctant to share information on how much they earn with colleagues (Fawcett Society, 2018)
 - 31% believe that the contracts prohibit them from talking about their pay (Fawcett Society, 2018)

Conceptual Framework

- A simple Beckerian or statistical model of discrimination: information asymmetry can lead to discriminatory practice and permanent gender wage gaps (Charles and Guryan, 2007)
- Reputation effect: the publication of gender inequality indicators (such as the gender pay gap) can affect an organisation's reputation (Blundell, 2020 and Duchini et al., 2020)
- Bargaining effect: women are more likely to ask for higher pay when presented with wage information concerning their peers (Cullen and Pakzad-Hurson, 2019; Rousille, 2021)

Contribution to the Literature

- Pay transparency can:
 - well-being (Perez-Truglia, 2015)
 - job satisfaction (Akerlof and Yellen, 1990; Card et al., 2012; Breza et al., 2018)
 - work effort, output and employee relations (Cullen and Perez-Truglia, 2017)
- What about the gender pay gap? -Mix findings
 - Canadian, Danish and British pay transparency policies have helped to reduce the gender pay gap, Backer et al., (2019), Bennedsen et al. (2019) Blundell, 2020; Duchini et al., 2020).
 - Austrian and American not so much (Gulyas et al.2020; Burn and kettle, 2019)

Our contribution

- We assess the causal role of information asymmetries on gender pay gaps using quasi-experimental approaches.
- External validity and mechanisms: We utilise high-quality administrative panel data—thus allowing us to look at career trajectories and wage growth over 13 year period—with information on, nearly, the entire population of academics in the Russell Group universities in the UK.

Table 1: Previous studies on the effect of pay information shock and the gender pay gap

Policy and Country	Authors and Year	Data Source and Years	Method	Effect
Denmark adopted Act no. 562 that created the requirement for firms to report gender-based dis-aggregated statistics Denmark	Bennedsen M., Simintzi E., Tsoutsoura M., Wolfenzon, D. (2019)	Integrated Database for Labor Market Research 2003-2008	Difference in Difference in difference method comparing wages of men and women in treated firms following the intervention	Overall effect on the pay gap: 2 pp fall (Causal) Relative effect: Wages increase, more so for women than men
Public Sector Salary Disclosure Act, 1996 Canada	Baker M., Halberstam Y., Kroft K., Mas A., Messacar D. (2019)	Statistics Canada's University and College Academic Staff System (UCASS) dataset 1970-2017	Difference in difference comparing wages of men and women following the intervention and an event study to determineshort-run and long run impact	Overall effect on the pay gap: 2.2-2.4 pp (Causal) Relative effect: Wages fall, less so for women than men
Equality Act 2010 (Gender Pay Gap Information) Regulations 2017 UK	Blundall J. (2020)	Annual Survey of Hours and Earnings (ASHE) 2015-2019	Difference in Difference in difference method comparing wages of men and women in treated firms following the intervention	Overall effect on the pay gap: 2.3 pp fall (Causal) Relative effect: Wages fall among men and wages increase among women

Policy and Country	Authors and Year	Data Source and Years	Method	Effect
Equality Act 2010 (Gender Pay Gap Information) Regulations 2017 UK	Duchini E., Simion S., Turrell A. (2020)	Annual Survey of Hours and Earnings (ASHE) 2012-2019	Difference in Difference comparing wages of the treated and controlled firms after the intervention separated by gender.	Overall effect on the pay gap: 2.8 pp fall (Causal) Relative effect: Fall in wages of men only
Local Government Compensation Reporting Program, 2010 US	Mas A.(2017)	CalPERS data multiple 2000-2012 records	Difference in difference in difference comparing wages of men and women in new disclosure cities following the intervention.	Overall effect on the pay gap: N/A Relative effect: Fall in wages of men only

Policy and Country	Authors and Year	Data Source and Years	Method	Effect
Austrial Pay Transparency law Austria	Gulyas A., Seitz S., Sinha S. (2020)	Austrian social security administration 1997-2018	Event Study comparing the gender wage gap in treated and controlled firms following the intervention	Overall effect on the pay gap: no effect Relative effect: N/A
Publishing mean salary on a job portal UK	Rousilles N., (2020)	Hired.com data	Difference in Difference methods comparing male and female ask wage before and after the intervention	Overall effect on the pay gap: 3.9-3.4 fall (gender ask gap) Relative effect: Increase in female asking
The times higher Education Pay reporting UK	Gamage D., Kavetsos G., Sevilla S. & Mallick S. (2020)	Higher Education Statistical Agency Administrative dataset 2004-2016	Difference in difference methods comparing the wages of males and female before and after the intervention	Overall effect on the pay gap: 0.62pp fall (causal) Relative effect: Increase in female wages only

Policy and Country	Authors and Year	Data Source and Years	Method	Effect
State bans on pay secrecy US	Burn I., Kettler K. (2019)	Current Population Survey 1977-2016	Difference in Difference comparing the wages of male and female managers	Overall effect on the pay gap: No effect Relative effect: median: Increase wages of women only & >median: Increase in male wages of females fall (verysmall magnitude)
State bans on pay secrecy US	Kim (2015)	Current Population Survey 1977-2012	Difference in Difference method comparing wages of men and women in states that's outlawed pay secrecy	Overall effect on the pay gap: 4.8-4 pp fall (Causal) Relative effect: Increase female wages only

Institutional Framework

- Time Higher Education (THE) Pay reporting
 - THE pay reporting in 2007.
 - It includes average nominal pay (in pounds) of male and female full-time academics.
 - Universities can opt out from the the publication - only two universities explicitly opted out.
 - Easily accessible via the THE website.
 - Since its first publication more universities were added to the list.
- University Setting
 - Russell Group universities (research-intensive)
 - 24 universities
 - 74% of research income among UK universities
 - They are are comparable to US universities
 - High autonomy from the government over budget and pay (Aghion et al (2010))
- Pay Structure
 - Non-professorial pay: sector-wide collective bargaining
 - Professorial pay: determined through individual bargaining

Example...

Rank	07-08	06-07	Institution	Professors (£)			Senior lecturers/researchers (£)			Lecturers (£)			Researchers (£)		
				Female	Male	All	Female	Male	All	Female	Male	All	Female	Male	All
1	(1)		London Business School	..	176,993	177,522	..	146,652	145,515	110,596	112,495	111,695	..	..	..
2	(3)		Royal College of Music	..	..	..	..	..	51,599	..	..	..	..	..	..
3	(5)		London School of Economics	80,665	86,510	85,305	52,624	52,738	52,706	44,451	44,963	44,777	34,812	40,208	37,314
4	(6)		City University London	72,912	82,007	79,908	49,980	51,301	50,694	41,804	40,184	41,091	32,638	34,056	33,474
5	(8)		Queen Mary, Uni of London	72,498	74,542	74,102	51,544	52,923	52,499	40,018	38,419	39,024	33,664	34,792	34,198
6	(14)		Institute of Education	70,616	73,044	72,045	48,157	47,374	47,828	41,744	40,914	41,428	36,232	36,860	36,441
7	(7)		Cranfield University	..	78,744	78,908	54,205	53,805	53,864	40,425	43,253	42,795	32,648	37,933	36,601
8	(9)		London Sch of Hygiene Trop Med	75,848	82,367	80,236	56,151	57,186	56,795	43,489	43,401	43,448	34,060	34,433	34,155
9	(n/a)		Royal College of Art	..	65,705	61,315	..	..	48,969	..	..	..	..	..	33,535
10	(11)		St George's, Uni of London	..	82,109	81,340	52,304	59,389	55,996	39,767	40,441	40,148	31,209	33,528	32,132
11	(n/a)		Ravensbourne College	..	..	..	..	42,958	46,267	..	..	..	..	..	..
12	(15)		University of Warwick	69,593	76,949	75,659	46,914	49,494	48,598	37,777	38,477	38,277	32,956	35,845	34,747
13	(12)		Royal Holloway, Uni of London	60,397	67,593	66,316	47,421	48,262	47,968	38,019	37,387	37,623	27,513	29,589	28,705
14	(13)		Imperial College London	78,768	81,952	81,590	61,368	60,278	60,511	42,321	43,057	42,804	32,610	33,917	33,445
15	(n/a)		Royal Northern College of Music	..	..	..	..	..	..	..	..	..	..	..	..
16	(21)		University of the Arts London	62,582	..	64,456	44,758	44,983	44,887	38,193	39,392	38,902	37,993	44,065	40,902
17	(24)		University of Glasgow	75,256	77,566	77,172	45,807	46,959	46,592	37,320	37,724	37,557	30,251	31,767	31,088
18	(10)		The Open University	70,175	68,632	69,196	47,851	48,181	48,030	39,228	40,254	39,724	31,885	34,496	33,413
19	(26)		Goldsmiths, Uni of London	61,083	62,821	62,329	50,156	49,178	49,625	39,937	41,002	40,460	30,127	32,782	31,994
20	(18)		University of Liverpool	74,434	77,430	77,018	56,490	56,168	56,253	38,816	40,114	39,607	30,834	30,149	30,421

Source: THE website

Data

- Data Source : UK HESA data- rich population-level panel data
- Our sample includes faculty members with
 - full-time permanent contracts
 - engaged in teaching and research
 - in years 2004-2016
- Sample:
 - 64,770 observations, 10,770 individuals (female)
 - 173,145 observations, 25,205 individuals (male)
 - 24 universities

Descriptive Statistics

Table 1: Descriptive statistics

Variables	Female		Male		Difference (Male - Female)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Real Wages (2016 prices)	55,420	15,084	62,582	19,321	7,162***	200.6117
Log-Wages	10.89	0.244	11.00	0.268	0.109***	0.003
<i>Ethnicity</i>						
White	0.899	0.302	0.909	0.287	0.0107***	0.0039
Black	0.0047	0.0683	0.0058	0.0762	0.0011	0.0009
Asian	0.0652	0.247	0.0620	0.241	-0.0032	0.0033
Other	0.0314	0.174	0.0227	0.149	-0.0086***	0.0022
Age	44.26	8.937	46.85	9.355	2.596***	0.1109
<i>Highest Qualification</i>						
Doctorate	0.811	0.392	0.880	0.325	0.0694***	0.0047
Postgraduate, equivalent	0.134	0.341	0.0768	0.266	-0.0574***	0.004
First Degree, equivalent	0.04	0.196	0.0287	0.167	-0.0112***	0.0023
Below Undergraduate Level	0.0025	0.0499	0.0025	0.0494	-0.0001	0.0007
Other Qualification	0.012	0.109	0.0115	0.107	-0.0005	0.0013
No Qualification	0.0006	0.0248	0.0004	0.0202	-0.0002	0.0002

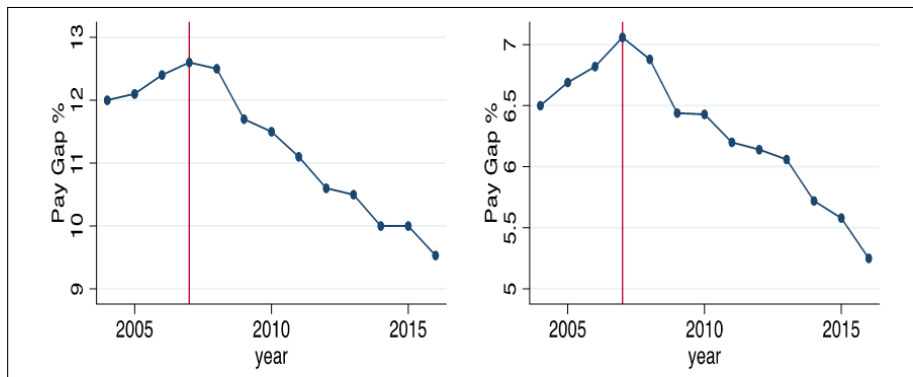
Notes: HESA dataset from 2004-2016. There are of 64,770 observations consisted of 10,770 female faculty and 173,145 observations of 25,205 male faculty in 24 universities over 13 years. The sample consists of full time permanent and research and teaching academics. Log real annual wages and nominal wages are adjusted using 2016 CPI index. Annual earnings are censored at the top and the bottom 1% to prevent extreme outliers affecting mean annual earnings.

Descriptive Statistics

- Male academics earn £7,162 more (approximately 11 %) compared to their female peers
- Although there is about a 3:1 higher representation of male to female academics, this actually reflects an increasing representation - in the 1970s only 10% of academics were females (Mcnabb and Wass, 1997).
- On average, male academics in our sample are more likely to have a doctorate and are older by two years compared with their female peers.
- In terms of ethnicity, male and female academics are generally similar, with around 90% of academics coming from White ethnic background

Trends in the Gender Pay Gap

Figure 1: Trends in the gender pay gap, Russell Group Universities



Source HESA 2004-2016. Control included age, age squared, ethnicity, education and university FE

Trends in the Gender Pay Gap

- We observe the upward trend up until 2007 -the intervention year- and a gradual fall there after, which is especially pronounced from 2009 onwards
- Over the period the raw gender pay gap ranged between around 12% and 9.6% and the controlled pay gap ranged between around 6.5% and 5.3%
- These figures are comparable to gender pay gap literature in UK (Gamage, Sevilla, and Smith, 2020; McNabb and Wass, 1997; Blackaby et al., 2005; Euwals and Ward, 2005; Schulze, 2015; Mumford and Sechel, 2019), in the United States (Ginther, 2001, Ginther and Hayes, 2003; Ginther and Kahn, 2014; Sutanto et al., 2014; Tao, 2018) and in Europe (Corsi et al., 2014)

Methodology

- We exploit the temporal variation in pay publication using a diff-in-diff approach.
- We compare the within-individual changes in salaries of women before and after pay transparency compared to men.

Methodology II

Our main specification is a Fixed Effect specification:

$$Y_{ijt} = \alpha + \beta D_t + \lambda(D_t \times F_i) + X_{ijt}\gamma + \eta_j + \delta_t + \gamma_{jt} + \epsilon_{ijt} \quad (1)$$

- Y_{ijt} - real log wages using 2016 prices as the base year for individual i in university j and year t
- D_t - dummy variable taking value 1 after pay publication
- $(D_t \times F_i)$ - interaction between the intervention and the female dummy variable (takes value 1 if individual i is a female and 0 otherwise)
- X_{ijt} - a vector of socio-demographic characteristics
- η_j - university dummies
- δ_t - time fixed effects
- γ_{jt} - university-specific time fixed effects

Identification Assumptions

- No anticipated effect
- No other policies, coinciding with and unrelated to the pay reporting, causing a change in the gender pay gap.
- **Likely to hold:**
 - ⇒ Pay publication is exogenous to university level wage setting- unlikely to have anticipated effect.
 - ⇒ Only Athena SWAN intervention at that focus on gender representation.

We test for validity of these identification assumptions in several ways

Main Results

Table 2: Impact on the gender wage gap

Dependent Variable: Log Wages	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5
Pay Transparency	0.152*** (0.00106)	0.0789*** (0.000862)	0.0788*** (0.000855)	0.0303 (0.115)	-0.0172 (0.114)
Pay Transparency X Female	0.0174*** (0.00211)	0.00430** (0.00189)	0.00480** (0.00189)	0.00647*** (0.00188)	0.00617*** (0.00176)
Constant	10.86*** (0.000667)	9.061*** (0.0180)	9.086*** (0.0209)	8.677*** (0.382)	8.632*** (0.377)
Observations	237,917	237,917	237,917	237,917	237,917
R-squared	0.351	0.504	0.507	0.568	0.628
Number of Individuals	35,976	35,976	35,976	35,976	35,976
Individual FE	Yes	Yes	Yes	Yes	Yes
Individual Controls	No	Yes	Yes	Yes	Yes
University FE	No	No	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes
Uni X Year FE	No	No	No	No	Yes

Notes: Source HESA dataset. Sample: Full-time permanent academics on teaching and research contracts observed over 13 years from 2004-2016. The table presents estimates from equation 1. The dependent variable is log real annual wages adjusted using 2016 CPI index. Annual wages are censored at the top and the bottom 1% salaries earned to prevent extreme outliers affecting mean salaries. Individual controls include age, age squared, the highest level of education. Robust standard errors are clustered at the Individual level are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Impact of pay transparency on the Gender Wage Gap

- We estimate Equation 1 using a fixed-effect model on the sample of academics in Russell Group Universities and adding controls progressively.
- Column 5 - full set of controls benchmark specification.
- According to this benchmark estimate, following the pay reporting the log of female annual earnings increased, on average, by 0.62 percentage points.
- An increase in average female annual earnings by £323 relative to men.
- Male earnings remain constant.
- Based on average pre-intervention earnings levels of men and women, this translates to a 4.38% decrease in the gender pay gap.

Main Results

Table 3: Impact of pay transparency on wages - Balanced sample

Dependent Variable: Log Wages	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5
Pay Transparency	0.170*** (0.00170)	0.0838*** (0.00014)	0.0839*** (0.00140)	0.2450 (0.16400)	0.1470 (0.13700)
Pay Transparency X Female	0.0238*** (0.00390)	0.00130*** (0.00360)	0.0133*** (0.00360)	0.00144*** (0.00360)	0.00127*** (0.00330)
Constant	10.91*** (0.00110)	9.068*** (0.03760)	9.091*** (0.04480)	9.541*** (0.5700)	9.303*** (0.47400)
Individual Controls	No	Yes	Yes	Yes	Yes
University FE	No	No	Yes	Yes	Yes
Year FE	No	No	No	Yes	Yes
Uni X Year FE	No	No	No	No	Yes
Observations	67,910	67,910	67,910	67,910	67,910
R-squared	0.433	0.531	0.537	0.586	0.667
Number of Individuals	5,225	5,225	5,225	5,225	5,225

Notes: Source HESA dataset. Sample: Full-time permanent academics on teaching and research contracts observed over 13 years from 2004-2016. The table presents estimates from equation 1 using a balanced sample. The dependent variable is log real annual wages adjusted using 2016 CPI index. Annual earnings are censored at the top and the bottom 1% salaries earned to prevent extreme outliers affecting mean salaries. All estimates include individual fixed effects. Individual controls include age, age squared, the highest level of education. Robust standard errors are clustered at the Individual level are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Impact of pay transparency on the Gender Wage Gap

- We estimate Equation 1 using a balanced sample in order to assess the sensitivity of our findings
- The estimates in the balanced sample are more pronounced, with log female annual earnings estimated to increase by 1.27 percentage points, while male earnings remain constant.
- This is a fall in the gender pay gap of 11.43% based on average male and female wage gap before the intervention
- We also do not find a significant change in the overall male earnings levels.

Comparison to Previous Causal Estimates

- Almost all the studies (four out of five) find a fall in the gender pay gap following a pay transparency intervention. This is similar to our results.
- However, the magnitudes reported in other studies are larger than ours. Whereas previous relevant studies find a fall in the pay gap between 2-2.8 percentage points, we see a fall in the gender pay gap by 0.62 percentage points.
- Compared to this intervention, our intervention only affected the higher education sector, in which wages are more difficult to adjust than in the general workforce
- When we consider professors who are not subject to pay structures then the estimates are closer to what other studies find for the UK

Simultaneity of Other Policies- Non-STEM Sample

- On average, following the pay reporting, log female annual earnings increased by 0.68 percentage points
- These results confirm that the pay transparency intervention affected the gender pay gap in non-STEM disciplines, not covered by the Athena SWAN intervention
- It provides compelling evidence suggesting that our results are not driven by another policy that coincided with pay publication

Identification Tests - Test for Parallel Trends - Event Study

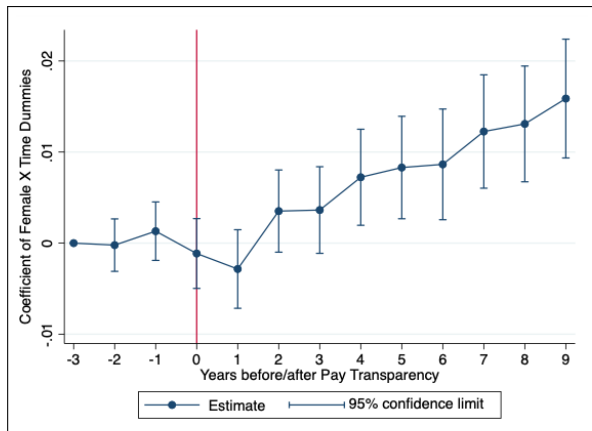
- We exploit the exact timing of intervention to test that the pay transparency shock generated sharp changes in the gender pay gap, which are arguably orthogonal to unobserved determinants of the wage gap that evolve more smoothly.
- Following Autor (2003), Kavetsos et al. (2020) and Kleven et al. (2019), we employ a difference-in-differences event study methodology.
- We substitute the intervention dummy, D_t , with a complete set of dummies going three years before to nine years after the pay publication, and interact with the female dummy.

$$Y_{itj} = a + \sum_{\tau=-3}^{\tau=9} \theta_{\tau} D_{\tau} + \sum_{\tau=-5}^{\tau=9} \beta_{\tau} (D_{\tau} \times F_i) + X_{it} + \theta_i + \eta_j + \gamma_{jt} + \epsilon_{itj} \quad (2)$$

- where D_{τ} , is a vector of year dummies for the τ_{th} year before and after the pay reporting. To separate the gender differences in the trends, we interact the time dummies with the female dummy, $D_{\tau} \times F_i$.

Identification Tests - Test for Parallel Trends

Figure 2: Coefficient plot



Source HESA dataset. Sample: Full-time permanent academics on teaching and research contracts observed over 13 years from 2004-2016. The figure presents coefficient estimates of Female and year dummy interaction in equation 3 – refer Table A3 in Appendix A for values. The dependent variable is log real annual wages adjusted using 2016 CPI index. Yearly wages are censored at the top and the bottom 1% salaries earned to prevent extreme outliers affecting mean salaries. Year (-3) is the reference year

Identification Tests - Test for Parallel Trends

- The decline in the gender pay gap does not occur before the pay transparency intervention.
- None of the coefficient for the years preceding the pay publication nor the coefficient for the years of the pay publication are statistically significantly different from zero.
- This result increases our confidence in the validity of our identification strategy, as it would be difficult to explain the discontinuous fall in the gender pay gap following pay publication due to trends in unobservable characteristics.

Mechanism: Test for Reputation Effect

We follow a similar method to Card (1992) and Bertrand et al. (2019): exploit heterogeneity in the pre-intervention gender pay gap at the university level.

- Measure the university-level pre-intervention wage gap by taking the difference between the male and female log annual earnings at the university-year level, averaged over the pre-treatment period.
- Standardise the variable to have a mean of zero and a standard deviation of one
- Interact with the *FemaleXIntervention*

Mechanism: Reputation Effect

Table 4: Heterogeneity: Test for Reputational Effect

<i>Dependent Variable: Log-Wages</i>	(1) Pre-existing pay gap
Pay Transparency	-0.0266 (0.1140)
Uni Gap	-0.0905 (0.0533)
Pay Transparency × Female	0.0062*** (0.0018)
Pay Transparency × Uni Gap	-0.0160 (0.0222)
Female × Uni Gap	0.0072 (0.0087)
Pay Transparency × Female × Uni Gap	-0.0005 (0.0016)
Constant	8.5760*** (0.3740)
Individual controls	Yes
University FE	Yes
Year FE	Yes
uni × Year FE	Yes
<i>N</i>	237,915
<i>Nofindividuals</i>	35,975
<i>R</i> ²	0.628

Notes: Source HESA dataset. Sample: Full-time permanent academics on teaching and research contracts observed over 13 years from 2004–2016. The dependent variable is log real annual wages adjusted using 2016 CPI index. Column 1 presents estimates from equation 1 after interacting average standardised university level pre-existing gender pay gap with the female and intervention interaction term. All estimates include individual fixed effects. Individual controls include age, age², the highest level of education. Robust standard errors, clustered at the Individual level, are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$

Mechanism: Bargaining Effect

- Women bargain better when presented with wage information (Roussille, 2021).
- We conduct two tests to investigate whether our results are driven by women bargaining for higher wages.
 - 1 We exploit the heterogeneity in the pre-intervention female representation at the university level.
 - Presented with the wage information, universities with high female representation may face greater pressure to adjust the wages compared with universities with low female representation.
 - 2 We use above and below the median earnings as a proxy for occupational hierarchy.

Mechanism: Movement vs Internal Promotion

- Negotiation effects can occur in two ways:
 - ① Within institutions where women negotiate higher salaries within a given rank and through promotions.
 - ② Women negotiate a higher wage on outside offers
- We examine whether female academics are more likely to move between universities or move out of the higher education sector following the pay publication. We estimate the following linear probability model:

$$M_{itj} = a + \beta_1 D_t + \beta_2 (D_t \times F_i) + X_{it} + \theta_i + \eta_j + \delta_t + \gamma_{jt} + \epsilon_{itj} \quad (3)$$

- Where M represents movement, a dummy variable taking value one if the individual move to a different university or leaves the higher education sector in year $t + 1$, and zero otherwise.
- Our key regressor is $D_t X F_i$

Bargaining Effect and Movement

Table 5: Heterogeneity: Test for Bargaining Effect

<i>Dependent Variable: Log-Wages</i>	(1) Female repres.	(2) Below median wage	(3) Above median wage	(4) Movement
Pay Transparency	-0.0131 (0.114)	0.237*** (0.0709)	0.0434 (0.011)	0.126 (0.0805)
Pay Transparency × Female	0.0063*** (0.0018)	0.005** (0.0021)	0.0143*** (0.0024)	0.00111 (0.00286)
Mean Repres.	0.04*** (0.0149)			
Pay Transparency × Mean Repres.	-0.0055 (0.0085)			
Female × Mean Repres.	-0.0135 (0.0083)			
Pay Transparency × Female × Mean Repres.	-0.002 (0.0019)			
Constant	8.61*** (0.378)	9.209*** (0.204)	9.449*** (0.411)	0.505* (0.268)
Individual Controls	Yes	Yes	Yes	Yes
University FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Uni × Year FE	Yes	Yes	Yes	Yes
R ²	0.719	0.567	0.628	0.325

Notes: Source HESA dataset. Columns 1 & 2 present estimates for equation 1 for academics below and above the median wage, respectively. Column 3 presents estimates from equation 1 after interacting average standardised university-level female representation with the female and intervention interaction term. Column 4 presents estimates for equation 5, where the dependent variable is binary, taking value 1 if an individual moves to university j . Column 5 presents estimates for equation 5, where the dependent variable is binary taking value 1 if an individual moves to university j in year t . Robust standard errors, clustered at the Individual level, are shown in parentheses. *** $p < 0.01$, ** $p < 0.05$

Bargaining Effect

- The coefficient of the triple interaction Pay Transparency \times Female \times Mean Representation is not statistically significant
- On average, female academics earning below the median experience an increase in log earnings by 0.50 percentage points (a fall of £223 or a 22.8% fall in the gender pay gap).
- Academics earning above the median annual earnings experience an increase of 1.43 percentage points (a fall of £980 or a 25.9% fall in the earnings gap).

Movement

- We find that following pay transparency women seem more likely to move to other universities or outside academia compared with men. However, the results are statistically insignificant.

These estimates suggest that the effect is driven by women at the top of the earnings distribution, probably through internal promotion or salary increases.

Conclusion

- Overall the intervention led to a fall in gender pay gap.
- Main Channels:
 - likely to be driven by changes in bargaining power.
 - do not find evidence of reputation effect.
- Lower bound: Accessibility and awareness of such transparency policies (Backer et al., 2019; Pfefer, 2020)

Thank you!