

Women in the Pipeline: A Dynamic Decomposition of Firm Pay Gaps

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Paradigm change firm pay gaps regulation

- ▶ Traditional concept: “Equal Pay for Equal Work”
 - ▶ “Residual” pay gap (after controlling for “equal work”)
 - ▶ Typically measured using Oaxaca-Blinder decompositions
- ▶ Recent transparency regulations target “raw” pay gaps:
 - ▶ e.g. UK: All firms with 250-plus employees must report the difference between the mean hourly rate of pay of all male employees and that of all female employees.
The Equality Act 2010 (Gender Pay Gap Information) Regulations 2017 No. 172
- ▶ Incentives to equalize workforce composition as well as compensation.
- ▶ “Pipeline” considerations: High-paid female executive takes decades to train!

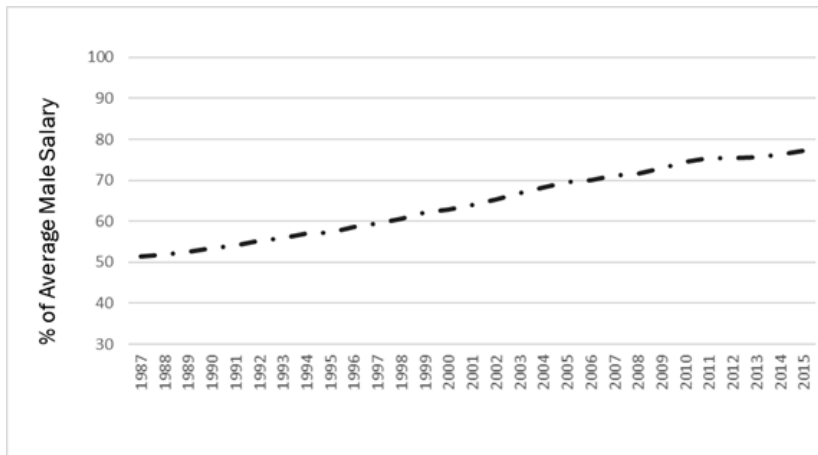
New decomposition approach

- ▶ Question: Where do firm pay gaps emerge in the firm?
- ▶ We decompose raw pay gas into 5 factors:
 - ▶ Composition of hires
 - ▶ Entry salary
 - ▶ Salary growth
 - ▶ Retention
 - ▶ (legacy)
- ▶ Captures inertia associated with long careers (“Pipeline effects”)
- ▶ Allows some dynamic interactions between factors (but no endogenous responses)

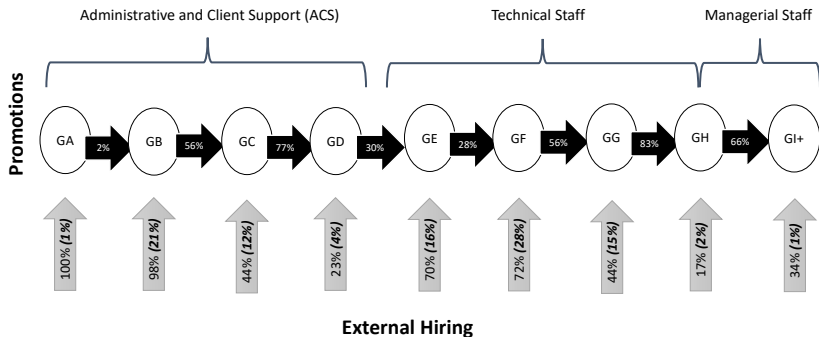
Implementation using micro-simulations

- ▶ Parameterize and estimate each firm process (hiring, raise and retention)
 - ▶ Allow parameters to be group- (men vs. women) and time-specific
- ▶ Micro-simulation algorithm draws number of hires, salaries for new hires, salary raises for incumbents and exits in each period
 - ▶ Replicates distribution of salaries for men and women and raw gender pay gap in each period
- ▶ Re-simulate after equating men and women's parameters governing each process at a time to obtain counterfactual gender pay gaps.
 - ▶ e.g. counterfactual salaries of women if their salary raises were drawn from men's distribution.
 - ▶ decomposition factors are the change in the raw pay gap obtained in each counterfactual.

The Aggregate Gap at the World Bank Group's HQs: Women's Mean Salaries Over Time, Relative to Men's



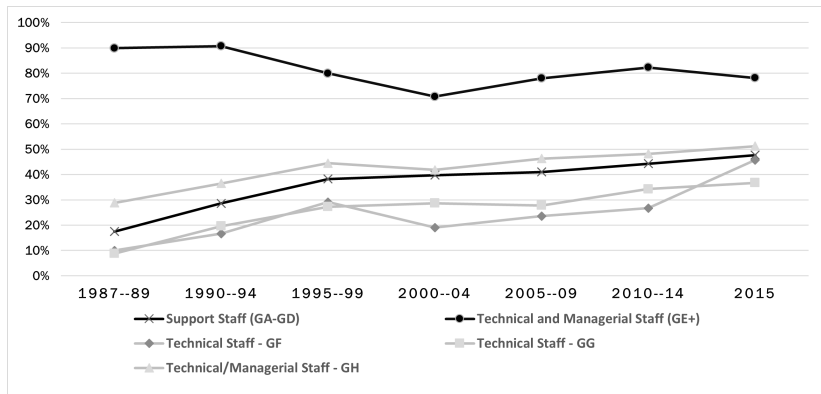
The World Bank's Internal Labor Market (Women)



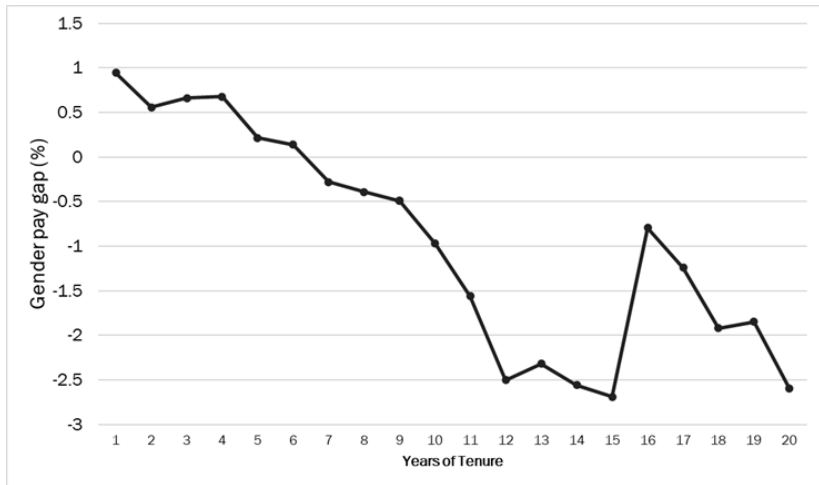
External hires as a % of all entrants in the grade (*as % of all external hires*)

Internal promotions as a % of all entrants in the grade

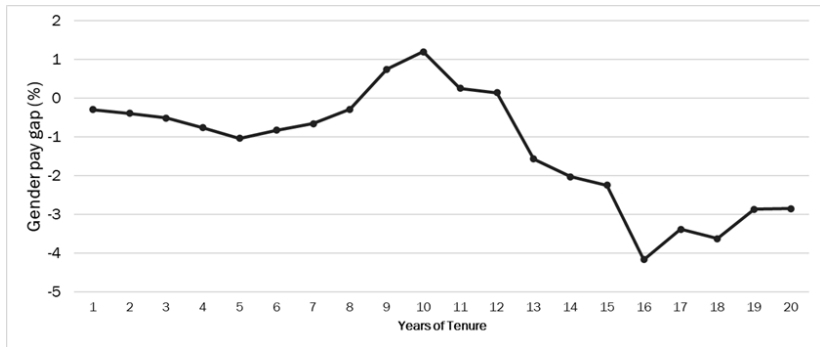
Fraction of Women among New Hires at the WBG, 1987–2015, by Entry Grade



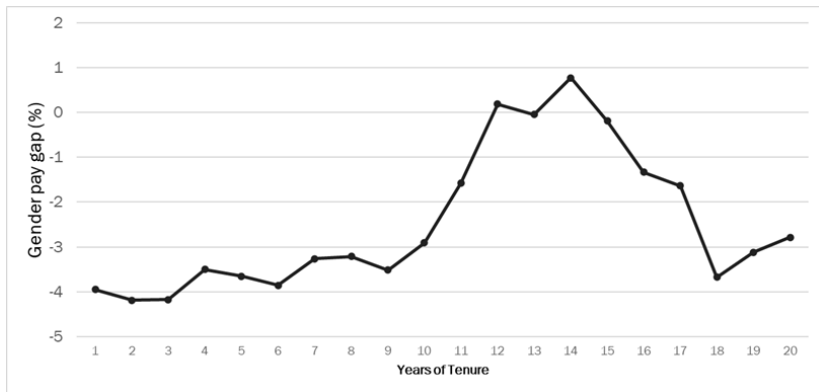
Women's salary paths relative to Men's, GB level (31.9% of hires)



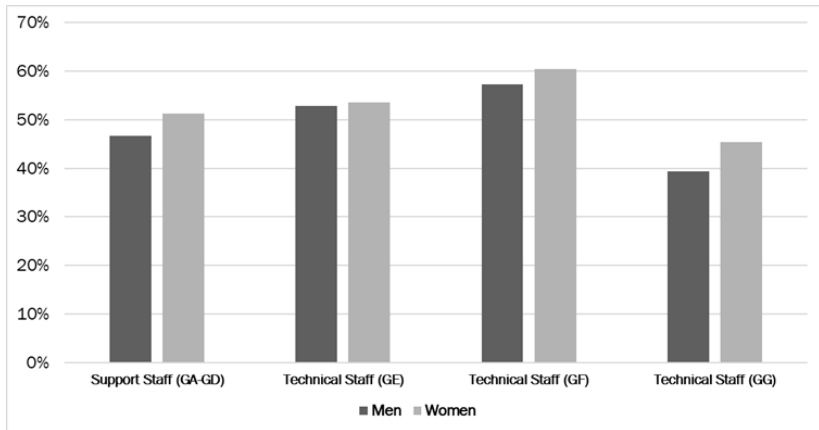
Women's salary paths relative to Men's, GF level (23.5% of hires)



Women's salary paths relative to Men's, GG level (33.3% of hires)



Fraction of Staff Who Remain at the WBG After 15 Years, by entry grade

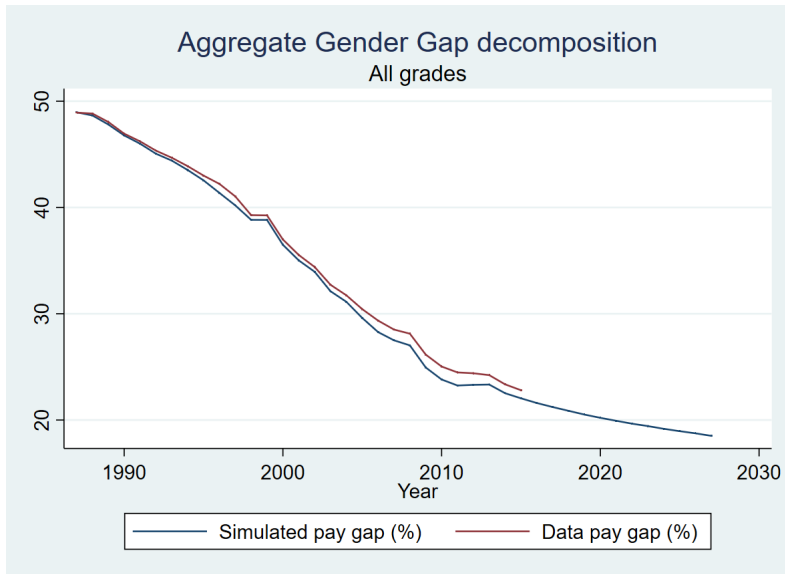


Decomposing the aggregate gender pay gap

	All Grades			Technical Staff		
	mean	<i>p5</i>	<i>p95</i>	mean	<i>p5</i>	<i>p95</i>
legacy	10.7	9.2	12.2	15.6	12.5	18.7
salary growth	5.0	3.5	6.5	6.6	3.0	10.3
retention	0.4	-4.7	4.5	-8.8	-21.0	1.5
entry salaries	7.0	5.6	8.3	9.6	7.1	12.4
grade composition	76.7	72.5	81.4	76.8	67.9	87.0
Total pay gap	<i>%</i>	22.9		11.3		
	000USD	27.4		14.6		

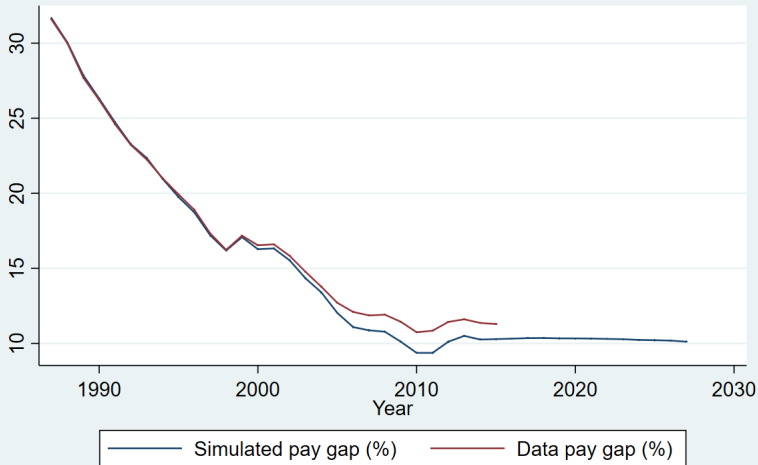
The table entries are percent contributions for each decomposition factor. The distributions of the factor contributions are estimated by simulating the decomposition using each of 250 bootstraps of the simulation input parameters.

Forward Projection of the Aggregate Gender Gap - All Staff



Forward Projection of the Aggregate Gender Gap - Technical Staff

Aggregate Gender Gap decomposition
Grades GE and above



Conclusion

- ▶ Composition effects dominate compensation effects:
 - ▶ Relative position at which men and women were hired historically account for 76% of the WBG's overall gender pay gap
 - ▶ Follow-up: Does occupational segregation arise at hiring or application stage?
- ▶ Policy implication: New transparency regulations could create incentives to outsource highly segregated low-pay jobs.
- ▶ To what extent is the current gap a reflection of past imbalances?
 - ▶ 20% of total gap would go away mechanically over 10 years due to pipeline effects