



**UvA-DARE (Digital Academic Repository)**

**Glass ceilings or dead ends: job promotion of men and women compared**

Maassen van den Brink, H.; Groot, W.N.J.

*Published in:*  
Economics Letters

*DOI:*  
[10.1016/S0165-1765\(96\)00902-0](https://doi.org/10.1016/S0165-1765(96)00902-0)

[Link to publication](#)

*Citation for published version (APA):*

Maassen van den Brink, H., & Groot, W. J. N. (1996). Glass ceilings or dead ends: job promotion of men and women compared. *Economics Letters*, 53, 221-226. [https://doi.org/10.1016/S0165-1765\(96\)00902-0](https://doi.org/10.1016/S0165-1765(96)00902-0)

**General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

**Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <http://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.



UB Groningen  
UvA Keur  
Broerstraat 4  
9700 AN Groningen

A078474418 ISN: 683310

RAPDOC (R)

**OPGEHAALD**

NCC/IBL

**Verzoeken te behandelen voor:** 11-05-2005 **Ingediend door:** 0004/9999  
**Datum en tijd van indienen:** 27-04-2005 17:56 **Datum plaatsen:** 27-04-2005  
17:56 **Type aanvrager:** UKB **I.D.:** UVA KEUR (UB GRONINGEN)

PPN: 831768878

Economics letters 1978 Amsterdam North-Holland

**Gewenst:** 1996-00-00 **Deel:** 53 **Nummer:** 2 **Electronisch leveren (LH=N)**

<b>Auteur:</b>	<b>Titel van artikel:</b>	<b>Pagina's:</b>
Groot, W. (ed.)	Glass ceilings or dead ends: Job promotion of men and women compared	221-226

**Opmerking:**arno ID:  
20512

⇒ LEEUW  
WWW

P0255

Vol. 35(1991)-77(2002)

Vol. 1(1978)-

art. niet  
compleet

- |   |   |
|---|---|
| 1. <input type="radio"/> origineel gestuurd | 6. <input type="radio"/> niet beschikbaar       |
| 2. <input type="radio"/> fotokopie gestuurd | 7. <input type="radio"/> uitgeleend             |
| 3. <input type="radio"/> overige            | 8. <input type="radio"/> wordt niet uitgeleend  |
| 4. <input type="radio"/> nog niet aanwezig  | 9. <input type="radio"/> bibliografisch onjuist |
| 5. <input type="radio"/> niet aanwezig      | 10. <input type="radio"/> bij de binder         |

**Fakturen zenden aan:** Rijksuniversiteit Groningen  
Bibliotheek, Uitleenbureau  
Postbus 559  
9700AN Groningen

## Glass ceilings or dead ends: Job promotion of men and women compared

Wim Groot<sup>a,\*</sup>, Henriëtte Maassen van den Brink<sup>b</sup>

<sup>a</sup>*Department of Economics, Leiden University, P.O. Box 9521, 2300 RA Leiden, Netherlands*

<sup>b</sup>*Department of Economics, University of Amsterdam, Roetersstraat 11, 1018 WB Amsterdam, Netherlands*

Received 27 April 1996; final version received 17 September 1996; accepted 25 September 1996

---

### Abstract

Alternative hypotheses that explain the differences in the rate at which male and female workers are promoted to higher job levels are empirically tested. It is found that women are less frequently in jobs that offer promotion possibilities than men. However, given that women are in jobs that offer promotion opportunities, they are not less likely to be promoted to another job within the firm. That women have jobs that offer promotion less frequently than men is due to differences in treatment rather than differences in characteristics.

*Keywords:* Promotion; Male–female differentials; Internal labor markets

*JEL classification:* J62; J71

---

### 1. Introduction

Much of the empirical research on the male–female wage gap concludes that the pay difference is largely attributable to the fact that women are less likely to be found in higher paying jobs than men (see Cain, 1986, and Blau and Ferber, 1987, for surveys). It has been argued that there are glass ceilings within firms that prevent women from advancement to higher job levels. Women have less opportunities for promotion within the firm than men. One recent study that looks at the distribution of men and women with regard to job levels, concludes that women have to meet tougher promotion criteria than men (Jones and Makepeace, 1996). Lazear and Rosen (1990) present a theory that explains differences in job promotion between men and women by differences in the value of non-market activities. Their theory predicts that women must have greater ability than men to be promoted.

In this paper two hypotheses that explain why women are underrepresented at higher job

\* Corresponding author: Tel.: +31-71-527 7750; fax: +31-71-527 7732; e-mail: jfaewg@ruljur.leidenuniv.nl.

levels relative to men are tested. The first hypothesis is: If men and women are both in jobs that offer promotion opportunities, then women have less chance of actually being promoted to higher job levels than men. This is the 'glass ceiling' argument. The alternative hypothesis is: Women are promoted to higher hierarchical levels less frequently, because women are in jobs that offer fewer opportunities for promotion. This we term the 'dead-end' explanation: women are in dead-end jobs with no opportunities for promotion.

The paper is organized as follows. In Section 2 we give a brief description of the data we use in the empirical analysis. The probit estimates of the likelihood of being in a job that offers promotion opportunities and the likelihood of making promotion conditional on being in a job offering promotion are in Section 3. Section 4 concludes.

## 2. The data

The data are taken from the 1991 and 1992 waves of the British Household Panel Survey. For details about this survey, see Taylor (1992). From this data set we have taken a sub-sample of employees. We further restricted the sample by taking only those wage earners who reported to be with the same employer in 1992 as they were in 1991. After further elimination of observations with missing values for essential variables such as promotion opportunities and promotion within the firm, 1552 observations for men and 1595 for women could be used for the empirical analyses.

Promotion opportunities were determined by the response to the following question from the 1991 survey: 'In your current job do you have opportunities for promotion?'

Whether the worker was actually promoted to another job within the firm was derived from the 1992 survey question on the number of different employment spells in the past year (i.e. between September 1991 and September 1992). The promotion variable measures the number of separate jobs held between September 1991 and September 1992 of workers who had not changed employers during the year. The variable does not measure directly whether the change of jobs within the firm was a change to a higher hierarchical level. We only observe whether a change of jobs within the firm has taken place. However, since demotions are rare, we may assume that most of the job changes within the firm were in fact promotions.

Of the male workers, 64.0% report that they are in a job that offers promotion opportunities, while only 46.3% of the female workers are in a job with promotion opportunities. Male workers not only are in jobs that offer promotion opportunities more frequently than female workers, but males are promoted to other jobs at a higher rate as well. Between 1991 and 1992, 10.4% of the males and 7.3% of the females were promoted to another job within the firm. However, if we look at workers who in 1991 were in jobs that offered promotion opportunities, the difference in promotion rates between men and women disappears. Of the male workers in jobs that offer promotion opportunities, 15.6% were promoted between 1991 and 1992. Of the female workers in jobs with promotion opportunities this was 15.2%.

The explanatory variables in the equations include: days of tenure on the job, tenure squared, years of previous experience, previous experience squared, years of education, a

variable for whether the individual is married or living together with a partner, dummy variables for industry, occupation and firm size, a dummy variable for whether the worker is working in the private sector, has a permanent employment contract (as opposed to a fixed term or temporary contract), works as a supervisor, performs his/her tasks outside the firm's premises, a dummy for whether the interests of the workers are represented by a union, whether pay increases with tenure and the worker is paid on an incremental scale ('seniority wage'), whether pay includes incentive bonuses or is related to profits ('incentive pay'), whether the worker has participated in job-related training, and a dummy for participation in training not related to the firm.

### 3. Estimation results

The parameter estimates of the probit models of being in a job offering promotion opportunities in 1991 and of job promotion between 1991 and 1992 are given in Table 1. The dependent variables in the probits are: being in a job offering promotion opportunities in 1991 and job promotion between 1991 and 1992 conditional on being in a job with promotion opportunities in 1991.

A likelihood ratio test (LRT) shows that the hypothesis of equality of parameters of the male and female probits on being in a job that offers promotion opportunities is rejected at the 1% level. The value of the LRT is 94.48, while the critical value of the  $\chi^2$  distribution is 57.81. However, the hypothesis that the male and female coefficients of the job promotion probits are equal cannot be rejected at the 10% level. The value of the LRT for the job promotion probits is 45.15 (the critical value of the  $\chi^2$  distribution is 47.12). The impact of the variables in the probit on being in a job offering promotion significantly differ between men and women, while the impact of variables on the chance of being promoted conditional on being in a job offering promotion opportunities does not. The latter emphasizes the conclusion that if men and women are in jobs with promotion opportunities, then there are no significant differences in promotion behavior.

For both men and for women, promotion and promotion opportunities decrease with tenure at the current firm rather than with previous work experience.

In studies on the male–female wage gap, estimated earnings differentials are frequently decomposed into a component ascribed to differences in endowments between men and women, and a component ascribed to differences in the rate at which these endowments are rewarded (see Oaxaca, 1973). A similar decomposition can be performed for promotion opportunities. The results of this exercise are shown in Table 2. Of the male workers, 64% are in a job that offers promotion opportunities. Of the female workers, this is 46.3%. If, however, male workers were treated as female workers, then only 49.5% of the men would be in jobs with promotion opportunities, while if females were treated as male workers, then 60.2% of the women would be in jobs offering promotion. The decomposition shows that about 20% of the difference in average probability between men and women of being in a job offering promotion can be ascribed to differences in endowments, while about 80% can be ascribed to differences in treatment between men and women.

Table 1

Probit estimates of being in a job offering promotion opportunities in 1991 and job promotion between 1991 and 1992 conditional on being in a job offering promotion opportunities (*t*-values in parentheses)

	Men		Women	
	Job offers promotion opportunities	Job promotion	Job offers promotion opportunities	Job promotion
Intercept	-0.155 (0.444)	-0.473 (1.046)	-1.418** (3.578)	-0.936 (1.230)
Years of previous work experience/100	-0.597 (0.545)	0.143 (0.086)	0.150 (0.136)	-0.536 (0.286)
Years of experience squared/1000	-0.400 (1.409)	-0.325 (0.693)	-0.609* (2.065)	-0.055 (0.101)
Days of tenure at current firm/1000	-0.180** (4.975)	-0.180** (3.188)	-0.185** (3.671)	-0.223* (2.529)
Days of tenure squared/10,000,000	0.109** (3.292)	0.096 (1.817)	0.131* (2.091)	0.164 (1.510)
Years of education	-0.043** (2.703)	0.003 (0.152)	-0.024 (1.455)	-0.011 (0.426)
Marital status	0.178 (1.912)	0.230 (1.733)	-0.188* (2.236)	0.385** (2.766)
Pseudo- <i>R</i> <sup>2</sup>	0.220	0.089	0.260	0.054
Number of observations	1552	1039	1595	785
Log-likelihood	-832.532	-408.528	-870.596	-311.352

\* Significant at the 5% level.

\*\* Significant at the 1% level.

*Note:* In all equations we include the following control variables: eight dummy variables for industry, eight dummy variables for occupation, four dummy variables for firm size, a dummy for working in the public sector. We further included dummy variables for workers with a permanent employment contract, supervisors, union representation in the firm, if the worker performs his work outside the firm, if pay is related to seniority, if work is related to performance, and dummy variables for participation in on-the-job and off-the-job training.

#### 4. Conclusion

In this paper we have tested two hypotheses that explain the differences in the rate at which male and female workers are promoted to higher hierarchical levels in the firm. The first hypothesis states that there is a 'glass ceiling' preventing women from being promoted. The alternative hypothesis holds that women are in dead-end jobs that simply do not offer the possibility of promotion. Two conclusions emerge from the analysis:

Table 2

Predicted probabilities of a job offering promotion opportunities and job change within the firm 1991–1992

	Sample of male workers	Sample of female workers
Worker is in job that offers promotion opportunities in 1991		
Coefficients of male workers	64.0%	60.2%
Coefficients of female workers	49.5%	46.3%
Worker was promoted to another job within the firm between 1991 and 1992, given that he/she was in a job with promotion opportunities in 1991		
Coefficients of male workers	15.6%	19.0%
Coefficients of female workers	13.7%	15.1%

(1) More evidence is found in favor of the ‘dead-end jobs’ hypothesis than for the ‘glass ceiling’ hypothesis. Women are less frequently in jobs that offer promotion opportunities than male workers. However, once workers are in jobs that offer promotion possibilities there are no significant differences in the rate at which male and female workers are promoted to other jobs in the firm.

(2) The difference in the probability that male and female workers are in jobs that offer promotion opportunities can only for a small part be ascribed to differences in characteristics between male and female workers, and to a large extent be explained by differences in which these characteristics are rewarded.

Our findings suggest that the fact that women are less likely to be found in higher level jobs is because employers do not select women for jobs that offer advancement, rather than that women are promoted less frequently in jobs that offer opportunities for advancement.

### Acknowledgements

The data used in this paper were made available through the ESRC Data Archive. The data were originally collected by the ESRC Research Center on Micro-social Change at the University of Essex. Neither the original collectors of the data nor the Archive bear any responsibility for the analyses or interpretations presented here. We thank an anonymous referee for helpful comments on a previous draft of this paper.

### References

- Blau, F. and M. Ferber, 1987, *The economics of men, women and work* (Prentice-Hall, Englewood Cliffs).  
 Cain, G., 1986, *The economic analysis of labor market discrimination: A survey*, in: O. Ashenfelter and R. Layard, eds., *Handbook of labor economics*, vol. I (North-Holland, Amsterdam) 693–785.  
 Jones, D. and G. Makepeace, 1996, *Equal worth, equal opportunities: Pay and promotion in an internal labor market*, *Economic Journal* 106, 401–409.

- Lazear, E. and S. Rosen, 1990, Male–female wage differentials in job ladders, *Journal of Labor Economics* 8, S106–S123.
- Oaxaca, R., 1973, Male–female wage differentials in urban labor markets, *International Economic Review* 14, 693–709.
- Taylor, M., ed., 1992, *British Household Panel Survey user manual* (University of Essex, Colchester).