

Böheim, René; Hofer, Helmut; Zulehner, Christine

Working Paper

Wage Differences Between Men and Women in Austria: Evidence from 1983 and 1997

IZA Discussion Papers, No. 1554

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Böheim, René; Hofer, Helmut; Zulehner, Christine (2005) : Wage Differences Between Men and Women in Austria: Evidence from 1983 and 1997, IZA Discussion Papers, No. 1554, Institute for the Study of Labor (IZA), Bonn

This Version is available at:

<https://hdl.handle.net/10419/21330>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

IZA DP No. 1554

Wage Differences Between Men and Women in Austria: Evidence from 1983 and 1997

René Böheim
Helmut Hofer
Christine Zulehner

April 2005

Wage Differences Between Men and Women in Austria: Evidence from 1983 and 1997

René Böheim

University of Linz and IZA Bonn

Helmut Hofer

Institute for Advanced Studies, Vienna

Christine Zulehner

University of Vienna

Discussion Paper No. 1554

April 2005

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0

Fax: +49-228-3894-180

Email: iza@iza.org

Any opinions expressed here are those of the author(s) and not those of the institute. Research disseminated by IZA may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit company supported by Deutsche Post World Net. The center is associated with the University of Bonn and offers a stimulating research environment through its research networks, research support, and visitors and doctoral programs. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ABSTRACT

Wage Differences Between Men and Women in Austria: Evidence from 1983 and 1997

In most OECD countries the wage gap between men and women has declined during the past two decades. Developments of the last 20 years, e.g. increased labour market attachment of women, changes in the bargaining structure, and the introduction of equal pay laws, may have reduced the gender wage gap. We investigate the extent, persistence, and socio-economic determinants of the gender wage gap in Austria, for the years 1983 and 1997. Using wage decomposition techniques, we find that the average gender wage gap was almost as high in 1997 as it was in 1983. Not accounting for differences, the gender wage gap dropped from 25.5 to 23.3 per cent. Taking observable differences between men and women into account, we estimate that the mean gender wage gap which cannot be explained, i.e. discrimination against women, dropped from 18 to 15.5 per cent of men's wages. The drop in discrimination is the main reason for the narrowing of the gender wage gap.

JEL Classification: J31, J71

Keywords: wage differentials, wage inequality, decomposition

Corresponding author:

René Böheim
Johannes Kepler University Linz
Department of Economics
Altenberger Str. 69
A-4040 Linz
Austria
Email: rene.boeheim@jku.at

1. Introduction

In most OECD countries the wage gap between men and women has declined during the past two decades.¹ In Austria, the gender wage gap at the beginning of the 1980s was about 37 per cent in the private sector, and about 12 per cent in the public sector (Zweimüller and Winter-Ebmer, 1994). We investigate how the gender wage gap developed between 1983 and 1997, two years for which we have adequate data from the Austrian Mikrozensus. In particular, we analyse how the gender wage gap evolved over time, whether or not segregation by sex in industries effected the wage gap, and whether or not there is evidence of a “glass ceiling”.

The labour force participation of women in Austria has increased during the last two decades. At the beginning of the 1980s, about 50 per cent of Austrian women participated in the labour market. In 2000, about 63 per cent of women participated in the labour market; the labour force participation rate was slightly above the European average. Male labour market participation, in contrast, was around 80 per cent. The unemployment rate was about the same for men and women, 4.8 and 4.6 per cent. Women’s formal education and their labour market attachment have steadily increased throughout the last two decades. This development resulted in fewer and shorter career breaks by women, which arguably has reduced their “disadvantages” in the labour market and possibly reduced the wage gap.

There are several explanations why men and women seem to earn different wages for the same job (Altonji and Black, 1999). The standard approach to analyse wages is the human capital framework where personal characteristics, e.g. formal education, and relative scarcity of skills determine the wage structure. However, there is no theory on why wage differences should *persist* over time. The

¹ See Blau and Kahn (1996) for the US, Joshi and Paci (1998), Machin and Puhani (2002) for Germany and the UK, Johansson, Katz and Nyman (2001) for Sweden, and Weichselbaumer and Winter-Ebmer (2003) for a meta-analysis of gender wage studies.

role of institutions such as wage bargaining arrangements certainly seems to be of importance here. Wage bargaining in Austria has changed during the last two decades. In Austria, wage bargaining was on a sectoral level and has become more decentralised (Boeri et al., 2001). Wages are set increasingly at the company level, rather than at the industry level. Such a transition from centralised to decentralised bargaining may change the relative wages of men and women as firms are more flexible to accommodate changes in the supply of certain skills.

In 1993, Austria introduced an equal treatment law (“Gleichbehandlungsgesetz”). The law stipulates equal pay for equal jobs, which also may have narrowed the gender wage gap. All in all, the developments of the last 20 years lead us to expect a considerable reduction in the gender wage gap. We investigate the extent, persistence and socio-economic determinants of the wage gap in Austria, for the years 1983 and 1997. Using wage decomposition techniques, we find however that the wage gap between men and women was almost as high in 1997 as it was in 1983. Not accounting for differences, the gender wage gap dropped from 25.5 to 23.3 per cent. Taking observable differences between men and women into account, we find that discrimination against women dropped from 18 to 15.5 per cent of men’s wages. This drop corresponds nearly one-to-one to the narrowing of the gender wage gap.

2. Methods

We use the decomposition method by Blinder (1973) and Oaxaca (1973) to estimate differences between the mean wages earned. For men (M) and women (W), a Mincer-type wage equation is estimated:

$$\ln Y_i = \beta_i X_i + \varepsilon_i, \quad i = M, W, \quad (1)$$

where Y_i is the hourly wage, β_i is the vector of coefficients to be estimated, X_i is the vector of characteristics, and ε_i is an i.i.d. error-term.

The difference in the mean wages can be written as

$$\overline{\ln Y_M} - \overline{\ln Y_W} = \hat{\beta}_M (\overline{X_M} - \overline{X_W}) + (\hat{\beta}_M - \hat{\beta}_W) \overline{X_W}, \quad (2)$$

where the first term on the right hand side are the differences at the mean characteristics of both groups evaluated at the prices men receive for these characteristics. (The $\hat{\beta}$ s are the estimated coefficients from equation (1).) The second term on the right hand side gives the differences in prices, evaluated at women's mean characteristics. Any difference that cannot be explained by the sum of these two terms, the residual, is typically ascribed to discrimination.

Extending this approach to decompose the mean wage differences between men and women over time requires the estimation of four wage equations (Juhn, Murphy and Pierce, 1991):

$$\ln Y_{it} = \beta_{it} X_{it} + \varepsilon_{it}, \quad i = M, W \text{ and } t = 1983, 1997. \quad (3)$$

If we subtract the mean wage difference in one period from the difference of the other period, then we can decompose the mean wage difference into four terms:

$$\begin{aligned}
& (\overline{\ln Y_{M,97}} - \overline{\ln Y_{W,97}}) - (\overline{\ln Y_{M,83}} - \overline{\ln Y_{W,83}}) = \\
& \hat{\beta}_{M,83} [(\overline{X_{M,97}} - \overline{X_{W,97}}) - (\overline{X_{M,83}} - \overline{X_{W,83}})] \\
& + (\hat{\beta}_{M,97} - \hat{\beta}_{M,83}) (\overline{X_{M,97}} - \overline{X_{W,97}}) \\
& + (\hat{\beta}_{M,97} - \hat{\beta}_{W,97}) \overline{X_{W,97}} - (\hat{\beta}_{M,83} - \hat{\beta}_{W,83}) \overline{X_{W,83}} .
\end{aligned} \tag{5}$$

The first term on the right hand side is similar to the first term on the right hand side in equation (2). It corresponds to the change in mean characteristics between men and women over time, evaluated at the prices in the first period. The second term on the right hand side in equation (5) gives the change in prices over time, weighted by the differences in mean characteristics of the later period. The last two terms give the change of price differences over time, weighted by women's characteristics. These two terms capture the change in the residual wage gap over time and might be interpreted as the change in discrimination.

These approaches focus on the mean of the wage distribution and therefore provide only a limited picture of the differences in wages between men and women. Several authors have found that the mean wage gaps are not representative of the whole distribution. García, Hernández, and López-Nicolás (2001), using quantile regressions and Spanish data, show that the unexplained part of the wage gap increases over the wage distribution. DiNardo, Fortin and Lemieux (1996), using a semi-parametric kernel density approach, find that the wage gap in the USA increased more at the lower tail of the wage distribution and that labour market institutions (trade unions, minimum wages) reduce the wage gap. We decompose the wage gap at five points of the wage distributions using quantile regressions. We then compare the distributions of the unexplained components over time.

A quantile regression model specifies the quantile of a dependent variable as a linear function of characteristics, such that

$$\ln Y_i = \beta_{iq} X_{iq} + \varepsilon_{iq}, \quad i = M, W \text{ and } q = \text{quantiles } 1, \dots, 5. \quad (6)$$

OLS regressions have the property that the mean of the dependent variable and the mean of the explanatory variables are on the regression line. This property allows the decomposition employed by Blinder and Oaxaca. The estimators for the quantile regression models do not have this property, but, as García et al. (2001) demonstrate, a measure of discrimination can be derived by

$$\ln Y_{Mq} - \ln Y_{Wq} = (\hat{\beta}_{Mq} - \hat{\beta}_{Wq})X + \text{residual}. \quad (7)$$

The conditional quantile wage difference is given by the sum of the difference in quantile prices between men and women weighted with X and the residual. As García et al. (2001) state, the choice of X is arbitrary and consequently also the residual. The residual combines differences in characteristics between men and women and the unexplained component. Therefore, the unexplained component is, compared to the measure of discrimination in the Blinder-Oaxaca decomposition, a more imprecise measure of discrimination.

3. Data

The data are from the Austrian micro-census for the years 1983 and 1997 (Mikrozensus, 1983, 1997). These data are currently the only source for an adequate analysis of wage differences for Austria for such an extended period. Data from administrative records as used by e.g. Gregoritsch, Kalmár and Wagner-Pinter (2000) lack information on the number of hours worked and cannot be used if men and women have significantly different working hours. In general, men tend to work more hours than women. For example, in 2003, 55 per cent of men worked 40 hours or more per week (Statistik Austria, 2005, Table 7.17). In contrast, only 45 per cent of women worked 40 hours or more per week.² For our analyses, we restrict the sample to workers who worked 30 hours or more per week.

Previous studies have often used potential work experience, i.e. age minus school-leaving age, as a proxy for actual work experience. Potential work experience might be a misleading proxy if career interruptions differ between men and women. Actual work experience was asked in the 1983 micro-census, but not in 1997. We therefore use data from the 1996 micro-census where data are available on actual work experience, but not on wages, to augment the 1997 sample. The micro-census is a rotating panel survey and every quarter an eighth of the sample is renewed. This implies that we have lost half of workers which have not been in the sample in 1996. While the resulting sample has enough observations for the analysis of the mean gender wage gap, the number of observations is too low for quantile regressions. For the analyses of quantiles of the wage distribution we use potential experience and the full 1997 sample. To demonstrate that our findings are robust, despite the use of the poor proxy, we present decomposition results for the mean wage gap using potential and actual experience.

Summary statistics for our sample are detailed in Table 1. We have a sample of 6,552 men and 3,635 women for the year 1983 and 1,757 men and 1,015 women for the year 1997. Wages are given as net earnings in the data and deflated to 1997 prices. In 1983, men earned on average 3,157ATS more per month than women did. This difference translates into some 23 per cent of men's average monthly wages. In 1997, men earned on average 3,566 ATS more per month than women, this was about 20 per cent of the average male monthly wage. The variation in monthly wages was higher for men than for women, the Standard Deviation was some 5,200ATS in 1983 (6,800 in 1997) for men and some 3,800 (5,300) for women.

Table 1 shows that in 1983 about 43 per cent of working women had only primary school level qualifications, compared with 27 per cent of working men. In 1997, about 26 per cent of women and 17 per cent of men had only primary school level qualification. The number of both male and female workers with higher educational levels increased; in 1997 about 5.5 per cent had a university degree (1.7 per cent in 1983). The relative increase of high skilled women may have led to a general decrease in wages for both skilled men and women. If wages compensate formal qualifications, we expect the wage gap to have narrowed over the period. In addition, the labour market attachment of women is expected to increase with more formal education, because the opportunity costs to not working are greater, other things equal.

An important aspect of qualification is job related. Our data provide the actual experience in years and the professional position, which allow conclusions about the skill level of the workers. In 1983, women had on average about 69 per cent of actual experience of men, some 13 years relative to men's of about 19 years. In 1997, however, the difference between the two groups has narrowed. Women had on average 80 per cent of men's actual experience (16 vs. 20 years of actual experience). From this we would also expect the wage gap to have narrowed.

² About 20 per cent of women work fewer than 25 hours per week, only some 2 per cent of men work fewer than 25

A recurring theme in the literature of discrimination is the “glass ceiling”, referring to differences in the promotion prospects between men and women. The descriptive statistics show that in 1983 about one per cent of women were employed in the two top hierarchy levels (Executive managers and Managers), in comparison with four per cent of men. By 1997 relatively more women were working in the two top hierarchy levels (7 per cent), but women have not caught up with men (9 per cent).

Occupations where predominantly women work pay lower wages; such a relationship of sex-specific segregation of jobs and wage differences has been found by many authors, e.g. Bayard, Kellerstein, Neumark and Troske (1999). In Table 1 the percentages of female workers in various occupations are given. The classification of occupations is rather coarse, but it shows large differences between men and women. Typical female occupations are the leather, textile, and apparel industry where about 77 per cent of the work force are female. Other occupations with a large share of women in the workforce are trade, tourism, services, and the health sector.

The changes over the last decades, i.e. the increased labour market participation of women, their relative increase in both formal and workplace-specific qualifications, and the penetration into top-level jobs, along with political pressure towards equal opportunities leaves us with an expectation that the gender wage gap should have dropped considerably over these two decades.

4. Results

In Table 2 we present estimates of wage regressions for men and women for the years 1983 and 1997. The results confirm previous results, e.g. Zweimüller and Winter-Ebmer (1994). For

example, workers with more formal education commanded higher wages, but there is evidence that returns to education were lower in 1997 than in 1983. In 1983, the returns to university education were more similar for men and women than in 1997. By 1997, the returns for a university education had dropped for women, but we do not find such a drop for men.

The estimates show that workers who worked in skilled professions also received higher wages than those in unskilled professions. In addition, those who worked in the top levels of a company, i.e. Managers and Executive Managers, earned more than those in lower hierarchy levels.

Wages were not only determined by formal education or job rank, we estimate that actual work experience was associated with an increase of wages over time. Seniority declined with age, the decline in experience started at around 30 years of age; the exemption were women in 1997, where we estimate the turning point to have been at an age of 60.

We also estimate that the more women worked in an occupation, the lower the wages. The wage penalty was somewhat lower for men than for women and there is no statistical evidence that it decreased over time. Foreign nationals received lower wages than Austrians, but the differences for female workers are not statistically significant at conventional levels. White collar workers received higher wages than blue collar workers. Like in many other empirical studies, we find that married women earned less than unmarried women, but men received a marriage premium.

We calculate Blinder-Oaxaca wage decompositions to gauge the amount of discrimination in the Austrian labour market. We interpret the unexplained variance of wages, the residual, as discrimination. The decomposition results are presented in Table 3. Panel A in Table 3 tabulates the decomposition results from our preferred specification where we use wage equations as presented

in Table 2. We present decomposition results for both men's and women's wage distributions as the reference distribution.

Taking the male wage as the reference wage, the discrimination in 1983 was 72 per cent. In other words, the observed characteristics explain about 28 per cent of the difference in wages between men and women. If we take the female wage as the reference wage, the discrimination was slightly lower with 68 per cent. The lower half of Panel A tabulates the decomposition for 1997. In 1997, the male based decomposition indicates that some 66 per cent of the wage gap was due to discrimination. Observed characteristics explain slightly more of the difference in wages between men and women in 1997 than in 1983, 34 vs. 28 per cent. If we use the female based decomposition, we find a discrimination of about 83 per cent, up by 15 percentage points from 1983. This result implies that despite the favourable characteristics women had in 1997, they received a much lower return for their human capital than men.

In Panels B and C we tabulate results from different specifications of the wage equation. With these two additional specifications we demonstrate the robustness of our results. The specification in panel B uses potential experience rather than actual experience, because we do not have actual experience available for the quantile regressions below. The decomposition results are robust to using potential instead of actual experience, but the explanatory power of the wage regressions is reduced.

The specification in panel C uses wage regressions which use potential experience and exclude variables measuring occupational segregation and occupational hierarchy. Occupational segregation and hierarchy may also be seen as a part of discrimination. The results demonstrate that discrimination was lower, if we control for the extent of occupational segregation. It was also lower, when we control for occupational hierarchy. The latter result points to the "glass ceiling"

where women are not discriminated against in terms of payment, but in their chances of promotion. However, all our estimations confirm that a large part of the wage variation cannot be explained by workers' characteristics.

The results presented in Table 3 contradict our initial expectations: discrimination declined only moderately over the period 1983 to 1997. We now turn to analyse what determined this moderate reduction of the gender wage gap. We decompose the gender wage gap over time and present the results in Table 4. The results confirm that, using our preferred specification of the wage regression from Table 2, not much happened between these two years. In almost 15 years, the mean wage gap between men and women was lowered by only 2.2 per cent (2.5 percentage points). The change might be explained by three factors. First, the characteristics of men and women in the labour market have changed over time, for example, women were more highly educated in 1997 than in 1983. Second, the returns to education and experience may have changed over time along with changes in the relative supply of skills. Thirdly, the efforts of politics, and the workings of the market, may have lowered the "taste for discrimination of women" over time.

Our results indicate that the acquisition of human capital by women indeed lowered the gender wage gap. The decomposition over time attributes a reduction of the gender wage gap of 4 per cent to an increase of human capital between 1983 and 1997. The returns to human capital fell over time and the decomposition attributes an increase of the gender wage gap of about 4.6 per cent to the lower returns to human capital (see also Fersterer and Winter-Ebmer, 2003). The third factor, discrimination, changed in favour of women, we estimate that the change in discrimination reduced the gender wage gap by some 2.8 per cent between 1983 and 1997.

The results presented above refer to average wages. It is possible that the wage gap differs over the wage distributions, and that the wage gaps changed differently over time. We also calculate wage

decompositions based on quintile regressions. The underlying wage regressions use potential instead of actual experience because of data limitations, which were explained above.³

Table 5 shows the decomposition results based on the quantile regression results. They show that in 1983 the gender wage gap was greater at higher wage categories, and so was discrimination. If we relate discrimination to the wage gap, we find that discrimination as a proportion of the gender wage gap was lower for high wage earners than for low wage earners. This result is obtained from both the male and the female based decompositions. This implies that despite the lower wage gap for lower wage workers, women were more discriminated against.

The evidence for 1997 is not as clear as for 1983. The male and female based decompositions indicate that the wage gap was smaller for lower wage workers, but in the male based results discrimination was greater for higher wages than for lower wages. The female based results indicate that discrimination was greater for the lower wage workers than for the higher wage workers.

The male based decomposition shows that for the whole wage distribution, the change in the wage gap between 1983 and 1997 was slightly positive, i.e. the gap narrowed. The female based results show a more differentiated pattern: the gender wage gap narrowed for low wage workers, but it increased for high wage workers.

Table 6 tabulates decomposition results when we drop occupational controls from the quantile regressions. Similar to the results from the OLS wage regressions, we find that discrimination was greater if we ignore differential selection into occupations.

³ These regressions results are available on request from the authors.

5. Discussion and conclusions

We have analysed the difference in wages between men and women in Austria, for the years 1983 and 1997. For 1983, we find that women earned on average a quarter less than men did. The 25 per cent difference does not account for observed characteristics. If we take differences in education, job position, and the like, into account, we find that observable characteristics explain about 28 per cent of the mean wage difference between men and women. In other words, women earned, after taking observable characteristics into account, about 18 per cent less than men. This gender wage gap existed at the mean wage, taking men's wages as the reference distribution of wages. If we use women's wages as the reference distribution, we estimate an unexplained difference of 17 per cent. Roughly speaking, discrimination caused women to earn between 17 and 18 per cent less than men, on average.

Several developments between 1983 and 1997 would lead us to expect a sharp decline in the gender wage gap. First, women entered into the labour market much stronger than in previous periods. Second, women increasingly had higher levels of formal education. These two factors, along with a possible skill-biased technological change of the economy, would lead to an increasing supply of workers with high skills, driving their relative wage down, all other factors held constant. A third factor, originating from outside the labour market, may also have influenced the relative wages of men and women. Gender politics, especially anti-discrimination laws, affirmative action and similar programmes, may have changed the bargaining position of women and thus narrowed the gender wage gap.

Our estimates for 1997 however show that the expected sharp decline was not that sharp at all. The mean wage gap, again without accounting for observed differences, dropped from 25.5 per cent to 23.3 per cent. Accounting for observable differences, the average difference in wages between men

and women that cannot be explained was 15.5 per cent (down from 18 per cent), using men's wages as reference. If we view women's wages as the “normal” wage, and men receive a premium over women, we estimate that discrimination actually increased between 1983 and 1997: Using women's wages as reference, women earned 19 per cent less than men in 1997 because of discrimination.

The development of the gender wage gap between 1983 and 1997 can be summarised by changes in three principal components. These are the changes in the mean characteristics, the changes in the relative prices, and the change in discrimination. By applying decomposition techniques to our data, we found that the reduction of the gender wage gap was mainly caused by reduced discrimination. The changes in characteristics and in relative prices were offsetting each other. We found, using quantile regressions, that the gender wage gap was greater at the top end of the wage distribution. Although the gender wage gap narrowed over the whole distribution, discrimination accounted for a greater part of the gender wage gap at the top end of the distribution in 1997.

To conclude, in 15 years the gender wage gap has narrowed only moderately. Although discrimination was less important in 1997 than in 1983, women still earned about one fifth less than men because of discrimination. Discrimination was reduced by 2.5 percentage points in 15 years. If we assume that discrimination continues to fall by the same speed, it will take until the end of this century for men and women to earn equal wages for equal jobs.

Literature

- Altonji, Joseph and Rebecca Blank (1999), *Race and gender in the labor market*; in: Orley Ashenfelter and David Card (eds.), *Handbook of Labor Economics*, Vol. 3c, North-Holland, Chapter 48, 3144–3259.
- Bayard, Kimberly, Judith Hellerstein, David Neumark and Kenneth Troske (1999), New evidence on sex segregation and sex differences in wage from matched employee-employer data, *NBER working paper 7003*, Cambridge (Ma.).
- Blau, Francine D. and Lawrence M. Kahn (1996), Wage structure and gender earnings differentials: an international comparison, *Economica* 63, 29–62.
- Blinder, Alan S. (1973), Wage discrimination: Reduced form and structural estimates, *Journal of Human Resources* 18(4), 436–55.
- DiNardo, John, Nicole Fortin, and Thomas Lemieux (1996), Labor market institutions and the distribution of wages, 1973—1992: a semiparametric approach, *Econometrica*, 64, 1001—44.
- Fersterer, Josef and Rudolf Winter-Ebmer (2003), Are Austrian returns to education falling over time?, *Labour Economics*, 10, 73—89.
- Fortin, Nicole and Thomas Lemieux (1998), Rank regressions, wage distributions, and the gender gap, *Journal of Human Resources*, 33 (3), 610—43.
- García, Jaume, Pedro J. Hernández, and Angel López-Nicolás (2001), How wide is the gap? An investigation of gender wage differences using quantile regression, *Empirical Economics*, 26, 149—67.
- Gregoritsch, Petra Monika Kalmár, and Michael Wagner-Pinter, (2000), *Einkommen von Frauen und Männern in unselbständiger Beschäftigung*, Bundesministerium für Wirtschaft and Arbeit, Wien, <http://www.bmags.gv.at/bmsg/relaunch/portal/content/berichte/doc/einkommen.pdf>.

- Johansson, Mats, Katarina Katz and Håkan Nyman (2001), Wage differentials and gender discrimination – changes in Sweden 1981-1998, Research Paper 15, Department of Economics, University of Stockholm.
- Joshi, Heather and Paci, Pierella (1998), *Unequal Pay for Women and Men*, WITH Press, Cambridge, Massachusetts.
- Juhn, Chinhui, Kevin M. Murphy and Brooks Pierce (1991). Accounting for the slowdown in black-white wage convergence, in: Marvin H. Costas, ed., *Workers and their wages*, Washington, D.C., AEI Press, pp. 107—143.
- Juhn, Chinhui, Kevin M. Murphy and Brooks Pierce (1993). Wage inequality and the rise in returns to skill, *Journal of Political Economy*, 101, 410—42.
- Machin, Stephen and Patrick A Puhani (2002), Subject of degree and the gender wage differential. *IZA discussion paper No. 553*, IZA, Bonn.
- McDowell, John M., Singell, Jr, Larry D. and Ziliak, James D. (1999), Cracks in the glass ceiling: Gender and promotion in the economics profession, *American Economic Review* 89(2), 392–6.
- Oaxaca, Ronald L. (1973), Male-female wage differentials in urban labor markets, *International Economic Review* 14, 693–709.
- Statistik Austria (1983), Mikrozensus 1983, Vienna.
- Statistik Austria (1996), Mikrozensus 1996, Vienna.
- Statistik Austria (1997), Mikrozensus 1997, Vienna.
- Statistik Austria (2005). *Statistisches Yearbuch*, Wien.
http://www.statistik.at/jahrbuch_2005/deutsch/start.shtml.
- Weichselbaumer, Doris and Winter-Ebmer, Rudolf (2003), A meta-analysis of the international gender wage gap, *Discussion paper* 0311, Department of Economics, University of Linz,
http://www.econ.jku.at/weichsel/WPmeta_10.PDF.
- Zweimüller, Josef and Winter-Ebmer, Rudolf (1994), Gender wage differentials in private and public sector jobs, *Journal of Population Economics* 7, 271–85.

Table 1: Descriptive statistics for 1983 and 1997.

Variable	1983			1997		
	All	Men	Women	All	Men	Women
Wage						
Mean in ATS (in Euro)	12650.36 (919.34)	13776.86 (1001.20)	10619.86 (771.78)	16519.78 (1200.54)	17837.10 (1296.27)	14270.78 (1037.10)
Standard deviation	4967.30	5190.46	3765.93	6524.05	6799.01	5319.58
Minimum	3778.22	3778.22	3778.22	3866.67	3866.67	4228.57
Maximum	66264.08	66264.08	50860.58	101538.40	101538.40	76842.09
Hours/week						
White collar worker (=1)	0.432	0.340	0.598	0.475	0.372	0.651
Potential experience ^a	18.24	19.41	16.13	19.57	20.00	18.83
Actual experience	16.55	18.61	12.83	18.53	19.92	16.11
Highest Formal Education						
Primary School	0.327	0.272	0.427	0.205	0.170	0.264
Apprenticeship	0.488	0.590	0.304	0.503	0.590	0.355
Commercial/Technical College (3 years)	0.103	0.060	0.182	0.109	0.072	0.171
High School	0.032	0.025	0.045	0.041	0.031	0.057
Commercial/Technical College (5 years)	0.033	0.035	0.031	0.087	0.080	0.098
University	0.016	0.018	0.012	0.055	0.056	0.055
Professional position						
No formal skills	0.167	0.140	0.216	0.140	0.102	0.205
Low skilled	0.339	0.280	0.445	0.311	0.285	0.355
Medium skilled	0.405	0.478	0.274	0.361	0.428	0.248
High skilled	0.057	0.058	0.054	0.105	0.094	0.124
Managers	0.022	0.029	0.009	0.067	0.069	0.064
Executive managers	0.009	0.014	0.001	0.015	0.022	0.004
Occupation						
All		0.629	0.371		0.588	0.412
Agriculture and Forestry		0.777	0.223		0.687	0.313
Mining		0.854	0.146		0.868	0.132
Construction		0.991	0.009		0.986	0.014
Metalworking industry		0.916	0.084		0.926	0.074
Wood, Paper, Graphic, Chemistry, Operators		0.868	0.132		0.871	0.129
Leather, Textile, Apparel		0.232	0.768		0.370	0.630
Food and beverages		0.792	0.208		0.783	0.217
Unskilled labour		0.592	0.408		0.577	0.423
Trade		0.399	0.601		0.401	0.599
Transportation		0.892	0.108		0.863	0.137
Tourism		0.272	0.728		0.359	0.641
Other service occupations		0.224	0.776		0.231	0.769
Technicians		0.914	0.086		0.877	0.123
Administration		0.521	0.479		0.456	0.544
Health		0.346	0.654		0.690	0.310
Married						
Number of observations	10187	6552	3635	9183	5791	3392
Number of observations for Actual experience	10187	6552	3635	2772	1757	1015

Source: Mikrozensus (1983, 1997). Own calculations.

^a Calculated as Age-Schoolyears-6

Table 2: Estimation results for 1983 and 1997 by sex

	1983		1997	
	Men	Women	Men	Women
Formal education: (Primary School is reference)				
Apprenticeship	0.036 (3.76)	0.017 (1.48)	0.041 (2.15)	0.041 (1.73)
Commercial/Technical College (3 years)	0.062 (3.56)	0.083 (5.75)	0.086 (2.92)	0.105 (3.46)
High School	0.098 (3.87)	0.138 (5.93)	0.077 (1.75)	0.112 (2.83)
Commercial/Technical College (5 years)	0.088 (3.66)	0.136 (5.06)	0.073 (2.19)	0.101 (2.67)
University	0.229 (6.76)	0.271 (5.59)	0.198 (4.87)	0.129 (2.47)
Position (No formal skills is reference)				
Low skilled	0.066 (5.87)	0.045 (4.05)	0.016 (0.72)	0.048 (2.23)
Medium skilled	0.143 (12.17)	0.175 (12.86)	0.097 (4.04)	0.116 (4.41)
High skilled	0.303 (15.52)	0.252 (11.02)	0.208 (6.64)	0.226 (7.15)
Manger	0.448 (16.09)	0.547 (10.24)	0.307 (7.98)	0.283 (6.33)
Executive manager	0.635 (19.09)	0.767 (6.37)	0.453 (8.80)	0.239 (1.71)
Experience	0.020 (14.22)	0.020 (12.75)	0.021 (8.35)	0.015 (5.15)
Experience ² /1000	-0.328 (10.10)	-0.344 (7.87)	-0.347 (6.19)	-0.125 (1.69)
White-collar worker	0.103 (9.98)	0.137 (10.91)	0.120 (6.10)	0.102 (4.50)
Working hours	-0.012 (12.68)	-0.012 (9.75)	-0.009 (5.52)	-0.005 (2.34)
Occupational segregation	-0.063 (3.18)	-0.170 (7.37)	-0.084 (2.35)	-0.150 (2.69)
Married	0.015 (1.67)	-0.024 (2.58)	0.072 (4.73)	-0.018 (-1.09)
Nationality	-0.085 (3.79)	0.002 (0.06)	-0.104 (3.91)	-0.042 (-1.41)
Constant	9.732 (179.85)	9.588 (154.45)	9.774 (106.83)	9.547 (86.36)
Number of observations	6552	3635	1757	1015
R ²	0.35	0.44	0.4	0.41

T-statistics in parentheses.

Table 3: Blinder-Oaxaca Decomposition for 1983 and 1997.

Panel A: Decomposition based on wage regressions in Table 2.

	Mean wage gap	Male based		Female based		
		Discrimination	Characteristics	Discrimination	Characteristics	
1983						
Effect	0.255	0.182 (22.21)	0.072 (11.33)	0.172 (13.84)	0.082 (7.27)	
Proportion	1.000	0.716	0.284	0.677	0.323	
1997						
Effect	0.233	0.155 (11.418)	0.078 (8.037)	0.193 (9.244)	0.040 (2.141)	
Proportion	1.000	0.664	0.336	0.829	0.171	

Panel B: As in Panel A, but with potential experience instead of actual experience.

	Wage difference	Male based		Female based		
		Discrimination	Characteristics	Discrimination	Characteristics	
1983						
Effect	0.255	0.186 (23.30)	0.068 (11.24)	0.185 (15.07)	0.070 (6.26)	
Proportion	1.000	0.731	0.269	0.727	0.273	
1997						
Effect	0.233	0.158 (12.13)	0.075 (8.31)	0.203 (9.76)	0.030 (1.62)	
Proportion	1.000	0.679	0.321	0.871	0.129	

Panel C: As in Panel B, but without occupational segregation and hierarchy variables.

	Wage difference	Male based		Female based		
		Discrimination	Characteristics	Discrimination	Characteristics	
1983						
Effect	0.255	0.225 (31.22)	0.030 (6.27)	0.283 (15.07)	-0.028 (-3.28)	
Proportion	1.000	0.883	0.117	1.111	-0.111	
1997						
Effect	0.233	0.198 (15.76)	0.036 (4.54)	0.260 (14.30)	-0.027 (-1.74)	
Proportion	1.000	0.848	0.152	1.114	-0.114	

T-statistics in parenthesis

Table 4: Decomposition over Time.

Changes of the			
Mean gender wage gap	Mean characteristics	Mean prices	Mean discrimination
-0.022	-0.040	0.046	-0.028

Note: Decomposition based on wage regressions in Table 2.

Table 5: Decomposition of the gender wage gap for quintiles of the wage distributions, 1983 and 1997.

Year	Quintile	Male based			Female based	
		(1) Wage difference	(2) Discrimination	(3) Proportion: (2)/(1)	(4) Discrimination	(5) Proportion: (4)/(1)
1983	10	0.182	0.149	0.817	0.141	0.773
	25	0.216	0.168	0.778	0.187	0.863
	50	0.251	0.177	0.704	0.185	0.735
	75	0.318	0.191	0.600	0.173	0.543
	90	0.336	0.223	0.664	0.189	0.560
1997	10	0.182	0.144	0.792	0.195	1.070
	25	0.241	0.151	0.626	0.201	0.835
	50	0.227	0.164	0.722	0.193	0.850
	75	0.223	0.188	0.841	0.211	0.947
	90	0.241	0.204	0.846	0.232	0.963

Note: based on quintile regressions, specifications of the regressions as in Table 2, but with potential instead of actual experience.

Table 6: Quintile Decomposition for 1983 and 1997

Without hierarchy variables and without occupational segregation						
Year	Quintile	(1) Wage difference	(2) Discrimination	(3) Proportion: (2)/(1)	(4) Discrimination	(5) Proportion: (4)/(1)
1983	10	0.182	0.184	1.011	0.237	1.301
	25	0.216	0.200	0.923	0.266	1.229
	50	0.251	0.218	0.866	0.280	1.114
	75	0.318	0.236	0.742	0.281	0.882
	90	0.336	0.267	0.793	0.314	0.934
1997	10	0.182	0.176	0.966	0.242	1.329
	25	0.241	0.187	0.774	0.243	1.009
	50	0.227	0.207	0.909	0.252	1.108
	75	0.223	0.220	0.986	0.268	1.200
	90	0.241	0.233	0.967	0.289	1.198