

**Do Austrian Men and Women Become more Equal? At Least  
in Terms of Labor Supply!**

by

Georg Wernhart<sup>\*)</sup>

Rudolf Witner-Ebmer<sup>\*\*)</sup>

Working Paper No. 0805  
April 2008

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**Johannes Kepler University of Linz**  
**Department of Economics**  
**Altenberger Strasse 69**  
**A-4040 Linz - Auhof, Austria**  
**[www.econ.jku.at](http://www.econ.jku.at)**

\* Georg Wernhart, Austrian Institute of  
Family Studies, University of Vienna

\*\* [rudolf.winterebmer@jku.at](mailto:rudolf.winterebmer@jku.at)  
phone +43 (0)70 2468 -8236

# **Do Austrian Men and Women Become more Equal? At Least in Terms of Labor Supply!**

**Georg Wernhart**

(Austrian Institute for Family Studies, University of Vienna)

**Rudolf Winter-Ebmer**

(Universität Linz and Institute for Advanced Studies, Vienna)

March 2008

## **Abstract:**

We study the development of wage elasticity of labor supply for Austrian men and women over time using comparable and representative survey data for the 1980s and 1990s. The elasticity of men is relatively low and constant over time, similar to the behavior of single women. Most remarkable is the almost continuous reduction in the labor supply reactions of married women: while their elasticity was still several times larger at the beginning of the 1980s, they approached rapidly the much less elastic behaviour of men. These developments are important for the analysis of deadweight losses of taxation as well as the effects of tax reforms and wage subsidy programs.

JEL: J21, J22

Keywords: Labor supply, gender, wage elasticity

Rudolf Winter-Ebmer is also associated with CEPR, London and IZA, Bonn. This research was supported by a grant from the Austrian National Bank (Jubiläumsfonds) and the FWF. Thanks for helpful comments to René Böheim, Helmut Hofer and Doris Weichselbaumer.

## 1. Introduction

Similar to most industrialized countries, female labour supply in Austria has been increasing for the last decades. During the last 35 years labor force participation rate of women (aged between 15-64) has been rising from 49% in 1971 to 67% in the year 2006 (Source: Census 1971, Micro-Census 2006, Statistics Austria). While labor force participation for men has been constant or even somewhat declining, participation rates of women are rapidly approaching those of men. Policy circles – such as the European Union’s Lisbon Agenda – often advocate increases in female labour force participation as remedies for an ageing population, shrinking workforce and increasing retirement burden.

A rising female participation in the employment system can be seen as a general social trend; arising from changing roles of women in society over time, reduced family size or the general quest for emancipation and self-reliance of younger generations of women (Fortin, 2005, Brooks and Bolzendahl, 2004). Economists typically are interested in economic rationales for work participation, in particular the impact of wages on labour supply. Knowledge about labour supply elasticities is necessary to understand the reaction of economic actors to changes in market wages, taxation and parameters of the social security system. General wisdom among labour economists is that the wage elasticity of men is close to zero, whereas (own) wage elasticities of married women are much higher – around  $-0.8$  (Blundell and MaCurdy, 1999). These differences are often explained by the traditional division of labor in the family: women divide their time between market work, leisure and household work, whereas typical men disregard the latter. Because women have closer substitutes for their time spent in market work as men have, changes in market wages can be assumed to have larger substitution effects on women’s labor supply (Blau and Kahn, 2007).

Goldin (1990) argues that an inverse U-shaped development over time for women’s wage elasticities should be observed. At the beginning of the last century when female market work was not so common and was against the social norm in society, women’s wage elasticity related to their own wage should be very low, but their reaction to their husband’s wages should be high: women would take up paid market work only if their husband was not able to support them. As time progressed married women with increasingly higher education entered the labor market more frequently making regular market work for women very common and leading to an increase in the wage elasticity. Goldin (1990) provides some evidence for the

US of an increase in the wage elasticity of female labor supply from 1900 up to the 1950s with a decline thereof later on. Heckman (1993) in a survey was concerned with this development and noted that “whether labor supply behaviour by sex will converge to equality as female labor-force participation continues to increase is an open question” (p. 118).

In this paper we look at trends in wage elasticities concerning work participation and weekly hours for Austrian men and women between 1987 and 1999. We differentiate between married and never-married women; which is very important in explaining labour force participation. As these differences are negligible for men we refrain from this distinction. Labor supply elasticities give an impression about attachment to the labor force; very high elasticities of (married) women have often been interpreted as evidence for low labor force attachment and a traditional family role model: the male bread-winner model where female market participation was considered as supplementary and more volatile. Due to increasing educational attainment of women, developments on the marriage market – lower marriage and higher divorce rates – and most importantly changing social roles and norms, it can be expected that this traditional male-breadwinner model will have considerably lost its importance.

The development of labor supply elasticity is an important policy problem on its own right. Deadweight losses of taxation as well as effects of wage subsidies and features of the tax system like joint (family) taxation crucially depend on it. Recent tax reform proposals of gender based taxation (Alesina et al., 2007) suggest taxing women less heavily than men in order to fight against unequal labor market outcomes of men and women in terms of participation and wages; these proposals rely on gender differences in labor supply elasticities and claim to increase efficiency and gender equality at the same time.

Similar to results for the U.S. (Blau and Kahn, 2007; Heim, 2004), also for Austria we find a declining responsiveness of married women to changes in wages; never married women’s behavior was always much closer to the behavior of men.

## **2. Data and Methods**

Since there are no long-term panel data on wages and employment in Austria we use instead repeated cross-sectional survey data gathered from the Austrian Micro-Census as a pseudo-

panel. The Austrian Micro-Census consists of two programs: A base program covering demographic, household and employment characteristics and special programs on a more irregular basis. Between 1981 and 1999, every other year the income data of the respondents were collected through this special program. Since the Austrian Micro-Census at that time utilized a rotating sample (1/8 of the respondents in the sample were replaced by new ones every quarter) and the income data were only collected every other year, we restrict our analysis to repeated cross-sectional data. To take out effects of an increasing educational attainment over time we focus on (never) married women aged between 25 and 59 and men between 25 and 64. Typically in national employment statistics, long and varying levels of parental leave are coded as employment spells. As we focus on labor force participation, we defined respondents in parental leave as being out of labor force. As parental leave spells were not coded appropriately before 1987, we cannot extend our analysis further back. Due to the unaltered data collecting and processing in the Micro-Census Program during these years and the adjustments concerning parental leave, the resulting data are highly representative and comparable over the time and thus can serve as a pseudo-panel for the purpose of studying changes in labor supply relations.

We use a three-stage estimation procedure. As we are interested in the determinants of participation and working hours, we have to construct potential wages for persons who are not observed having positive working hours – thus their wage rates are not available. For these persons, market wages have to be predicted. We use a Heckman two-step wage regression (Heckman, 1979), taking sample selection into account.

To analyze participation in market work (the extensive margin) we use a probit model where a latent variable  $Y_i^*$ , the latent propensity to participate, is related to individual and market based characteristics  $X_i$ ;  $\beta$  are parameters and  $\varepsilon_i$  are normally distributed error terms:

$$Y_i^* = X_i\beta + \varepsilon_i \text{ with,}$$

$$Y_i = 1 \text{ if } Y_i^* > 0,$$

$$Y_i = 0 \text{ if } Y_i^* \leq 0.$$

The hours of work equation (the intensive margin) is estimated using a Tobit regression where the latent number of hours  $H_i^*$  is explained by characteristics  $X_i$ ; with  $\chi$  as parameters and  $\nu_i$  error terms:

$$H_i = H_i^* = X_i\chi + v_i \quad \text{if } H_i^* > 0,$$

$$H_i = 0 \quad \quad \quad \text{if } H_i^* \leq 0.$$

As explanatory variables we use demographic variables, such as education, age, nationality, marital status and number of children of different age groups as well as the hourly wage and other household income as financial indicators.

Finally, for predicting the potential market wages for non-participating persons in the labor force, we are using (following Heckman, 1979) wage functions with a sample selection correction term.<sup>1</sup> Using the two-step approach, we estimate the propensity to participate in market work for all persons in the data using a probit model first.<sup>2</sup> This enables us to calculate a sample selection term to correct for the (likely) possibility that the persons with observed wages do not consist of a random sample of the population. Instead, it might consist of persons who tend to work because of their higher unobserved productivity. For the second step, we regress log hourly wages on education levels, (potential) experience and region types plus the sample selection correction term, enabling us to predict potential wages for non-participating persons.<sup>3</sup> A more in-depth description of the process can also be found in Wernhart (2005, 26f).

### 3. Results

Table 1 presents marginal effects for labor force participation of married women, never-married women and for men in the years 1987 and 1999. Similar estimations were done for all other years in our sample period. Figure 1 shows the calculated corresponding compensated wage elasticities over time. As the participation equations don't show elasticities and thus don't give a clear pattern about participation reaction to wages, when discussing wage elasticities we will primarily be concerned with the results in Figure 1.

Substantial differences between the three demographic groups can be seen. Higher education leads to higher participation, in particular so in the case of women, but even more so for married women. The presence of children has the expected gender-specific effects: married women reduce participation in the presence of children, irrespective of age; single

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<sup>1</sup> Concerns about missing wages at the upper end of the wage distribution due to non-reporting were studied by Fersterer and Winter-Ebmer (2003), who found that non-reporting posed no problem for typical wage functions.

<sup>2</sup> As variables in the participation equation we use education levels, (potential) experience, as identifying variables the number of children in different age groups, disposable household income and region types.

<sup>3</sup> The sample selection correction term is positive, but only significant at a 10% level for married women.

mothers reduce their participation only during the time their children are below school-entry age, whereas men increase their participation in the presence of children. These results are compatible with a traditional role allocation in the family: the mother cares for her kids at home, whereas the father has to earn more money to feed the kid. There are some changes to this traditional family role model over time: apart from the first 3 years of a new-born child, in later years married women reduce their participation less with the presence of children. The first effect might be due to increased provision and generosity of maternity leave provision in Austrian social law. Over the course of the childhood, the reaction of work participation to the number of dependent children was reduced approximately by one third between 1987 and 1999, which speaks to a better compatibility of children and career.<sup>4</sup> On the other hand, we can see a clear increase for men.

Compensated wage elasticities for participation are presented in Figure 1. The first impression confirms results from other countries: wage elasticities for men are very low, but positive in every year; they fluctuate between 0.05 and 0.1 percent. For women, marital status plays a big role. Whereas married women have high wage elasticities, never-married women's participation behavior is fairly close to that of male workers with elasticities between 0.13 and 0.25. Both groups do not exhibit any noticeable trend over time.<sup>5</sup> The only remarkable trend over time concerns married women. Their participation responsiveness to wages increases somewhat in the late 80s, but after 1991, the wage elasticity is reduced steadily from 0.73 to 0.38. That means that within one decade the wage elasticity of married women's participation behaviour almost halved. This trend is similar to trends in the U.S.: elasticities for married women dropped from about 0.8-0.9 in the 1980s to around 0.4 in the year 2000 (Blau and Kahn, 2007). Again similar to the U.S. trend, the reaction of married women's work participation to other household income (typically the spouses' income or unearned income) is negative but falling over time.

Looking at the behaviour of married women over time, selection issues might cause a problem because of increasingly lower marriage rates; thus making our samples of married and single women non-comparable over time. This should not be a concern for our analysis because it can be assumed that the decrease in the propensity to marry will primarily concern

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<sup>4</sup> Del Bono et al. (2008) find that compatibility of career and family is still a problem for Austrian women, in particular for those in better-paying and more career-oriented jobs. This study does look at fertility rates and does only look at one point in time.

<sup>5</sup> See Bishop et al. (2005) for US evidence on the development of single women's wage elasticity over time, which are also smaller and somewhat falling.

women more attached to the labour force, having less children, etc. In our analysis, these women, generically more attached to the labor market, will over time be taken out from the sample of married women. Taking this demographic shift into account would even increase the downward trend in labour supply elasticities over time.

Table 2 reports results for weekly hours of work equations with the corresponding compensated wage elasticities over time in Figure 2.

Many results are similar to the participation case. Married women work more hours if they are better educated, less if they have children; both relations are somewhat less pronounced in 1999. Children in pre-school age are a significant hindrance for full-time work; a phenomenon which is consistent over this period.

Elasticities for hourly wages are shown in Figure 2. The pattern is similar to the participation pattern, although the convergence in hours elasticities is much higher: Men have much lower elasticities relative to women throughout the period; between 0.02 and 0.09. Married and never-married women react somewhat stronger with their weekly hours on changes in wage rates. After an increase in 1989 married women's elasticities continuously drop from a high of 0.38 to a low of 0.15 at the end of the 1990s. Contrary to the pattern of participation rates, the variability of hours of work of married and never-married women is fairly similar, although the latter's elasticities are somewhat lower in all observed years.

As wages and education are strongly correlated due to the wage formation process based on human capital, effects of wages and education on labor force participation could empirically be difficult to disentangle. This is particularly important considering changes over time. Given the rise in educational attainment of women over this period together with falling rates of returns (Fersterer and Winter-Ebmer, 2003), it is not clear, if the falling wage elasticities of married women are due to behavioral changes or a different composition of the workforce. A simple test for the hypothesis that the falling wage elasticity is due to an increasing share of highly-educated women is to look at sub-samples of women who have the same education. Due to smaller sample sizes, we combine persons from two surveys each – 1987 with 1989 and 1997 with 1999 – and combine also persons having attended academic secondary school with those holding a vocational secondary school degree. The results are shown in Table 3 for participation and hours of work. Looking at married women we see that



– with one exception, secondary schooling – wage elasticities in all educational groups are falling in this period. This is true for participation in market work as well as for weekly hourly wages. These results reinforce the claim that, in fact, labor force attachment of married women changed in the last decade leading to lower reactions of labor force participation with respect to the wage.

How do these labor force participation elasticities compare to other Austrian studies? Zweimüller (1987) uses the Micro-Census for 1984 and finds a wage elasticity of 1.11 and an hours elasticity of 0.17; the estimates refer to all women. Wernhart and Neuwirth (2007) are using the 2004 edition of EU SILC to estimate wage elasticities for participation, using a sample of mothers with the youngest child below the age of 15. They find a wage elasticity of 0.509 for all mothers and a higher wage elasticity of 0.746 for the subgroup of mothers with the youngest child below the age of 6. They argue that due to higher opportunity costs (especially for institutional childcare) the decision to participate (or not) in the labor force during this phase of life depends more on the potential wage. Dearing et al. (2007) are using a structural labor supply model distinguishing the states of full-time and part-time participation as well as non-participation. They concentrate only on mothers with children below the age of ten years and use also data from the EU SILC 2004. A one percent increase in gross hourly wage increases participation of all mothers by 0.155 percentage points, more so in the case of mothers with elder children; which translates into an elasticity of 0.31 percent. This boost in participation arises from an increase in part-time participation of 0.058 and an increase in full-time participation of 0.098 percentage points.

#### **4. Conclusions**

This paper is the first to study changes in the reaction of female labor supply to wages for a European country in-depth. Similar to studies for the US, we find falling wage elasticities for married women over time. This applies both to the participation as well as the hours decision. This fall only occurred starting at the end of the 1980s, which is considerably later as the development in the US. One interpretation might be that the increase in women's educational attainment occurred much earlier in the US as well as the general increase in female labor supply.

As hours elasticities have been traditionally lower for married women, their hours reactions to wage changes is nowadays already very close to that of men: men and women have become very equal, indeed. Starting from a much higher gender difference, participation elasticities for married women also fell substantially, but they are still noticeably higher than those for men.

These changes have important policy consequences. Lower wage elasticities imply lower disincentive effects and lower deadweight losses from taxation. Moreover, they imply also lower positive effects from public programs such as wage subsidies and tax decreases. On the other hand, negative effects of joint income taxation will be smaller as well. Finally, the closer men and women get in their labor supply behaviour, the less opportunities are there for gender based taxation (Alesina et al., 2007) whereby taxes for more elastic women are to be reduced to increase gender equality.

## References

- Alesina, Alberto, Ichino, Andrea and Loukas Karabarbounis: Gender Based Taxation and the Division of Family Chores, Harvard WP 2145, 2007.
- Blau, David M. and P.K. Robbins: Child Care Demand and Labor Supply of Young Mothers over Time, *Demography* 28(3), 1991, 333-351.
- Blau, Francine D. and Lawrence M. Kahn: Changes in the Labor Supply Behavior of Married Women 1980-2000, *Journal of Labor Economics* 25, 2007, 393-438.
- Blundell, Richard and Thomas MaCurdy: Labour Supply: A Review of Alternative Approaches, in: Orley Ashenfelter and David Card (eds.), *Handbook of Labor Economics* Vol 3A, 1999, 1559-1695, Amsterdam, Elsevier.
- Bishop, Kelly, Bradley T. Heim and Kata Mihaly: Have Single Women's Labor Supply Elasticities Shrunk Too? Evidence from the CPS, mimeo, Duke University, 2005.
- Brooks, Clem and Catherine Bolzendahl: The transformation of US gender role attitudes: Cohort replacement, social –structural change, and ideological learning, *Social Science Research* 33, 2004, 106-133.
- Dearing, Helene, Helmut Hofer, Christine Lietz, Rudolf Winter-Ebmer und Katharina Wrohlich: Why are Mothers working longer hours in Austria than in Germany? A Comparative Microsimulation Analysis, *Fiscal Studies* 28/4, 2007, 463-495.
- Del Bono, Emilia, Andrea Weber and Rudolf Winter-Ebmer: Clash of Career and Family: Fertility Decisions after Job Displacement, IZA WP 3272, 2008.
- Fersterer, Josef and Rudolf Winter-Ebmer: Are Austrian Returns to Education Falling Over Time?, *Labour Economics* 10, 2003, 73-89.
- Fortin, Nicole: Gender Role Attitudes and the Labour-Market Outcomes of Women across OECD Countries, *Oxford Review of Economic Policy* 21, 2005, 416-438.
- Goldin, Claudia: *Understanding the Gender Gap*, 1990, New York, Oxford University Press.
- Heckman, James: What Has Been Learned About Labor Supply in the Past Twenty Years?, *American Economic Review* 83(2), 1993, 116-121.
- Heckman, James: Sample Selection Bias as a Specification Error, *Econometrica* 47, 1979, 153-161.
- Heim, Bradley T.: *The Incredible Shrinking Elasticities: Married Female Labor Supply, 1979-2003*, mimeo, Duke University, 2005.
- Wernhart, Georg: *Frauenerwerbstätigkeit in Österreich: Determinanten auf Mikroebene*, Diplomarbeit an der Universität Wien, 2005.

Wernhart, Georg und Norbert Neuwirth: Haushaltseinkommen und Einkommenselastizität der Erwerbsbeteiligung von Müttern, Österreichisches Institut für Familienforschung, WP 63, 2007, Wien.

Zweimüller, Josef, Bestimmungsgründe der Frauenerwerbsbeteiligung: Schätzergebnisse aus dem Mikrozensus, in: Kurt W. Rothschild and Gunther Tichy (eds.), Arbeitslosigkeit und Arbeitsangebot in Österreich, 1987, Springer, Wien.

**Table 1: Participation equation**

Dep. Var.: Work Participation (0/1)	Women				Men All	
	Married 1987	Married 1999	Never Married 1987	Never Married 1999	1987	1999
Log hourly wage	+ 0.215*** (0.024)	+ 0.210*** (0.018)	+ 0.103** (0.042)	+ 0.123*** (0.028)	+ 0.100*** (0.008)	+ 0.094*** (0.009)
Log Other Household Income	- 0.016*** (0.002)	- 0.005** (0.003)	- 0.003 (0.003)	- 0.006*** (0.002)	- 0.001 (0.001)	- 0.000 (0.001)
Age	+ 0.038*** (0.006)	+ 0.086*** (0.007)	+ 0.062*** (0.009)	+ 0.098*** (0.008)	+ 0.046*** (0.002)	+ 0.056*** (0.002)
Age <sup>2</sup>	- 0.001*** (0.000)	- 0.001*** (0.000)	- 0.001*** (0.000)	- 0.001*** (0.000)	- 0.001*** (0.000)	- 0.001*** (0.000)
<u>Education</u> (Base: Compulsory)						
Apprentice	+ 0.050*** (0.013)	+ 0.038*** (0.013)	+ 0.116*** (0.021)	+ 0.126*** (0.019)	+ 0.009* (0.005)	+ 0.049*** (0.006)
Lower vocational school	+ 0.072*** (0.018)	+ 0.044*** (0.017)	+ 0.120*** (0.023)	+ 0.132*** (0.018)	+ 0.016* (0.008)	+ 0.046*** (0.006)
Secondary academic school	- 0.034 (0.027)	+ 0.054** (0.026)	- 0.246*** (0.053)	- 0.052* (0.035)	- 0.128*** (0.019)	- 0.040*** (0.013)
Secondary vocational school	+ 0.049 (0.032)	+ 0.136*** (0.021)	+ 0.037 (0.041)	+ 0.068** (0.025)	- 0.014 (0.013)	+ 0.035*** (0.007)
University	+ 0.318*** (0.027)	+ 0.181*** (0.022)	+ 0.102*** (0.030)	+ 0.121*** (0.021)	+ 0.015 (0.010)	+ 0.065*** (0.005)
<u>Number of Children</u>						
between 0 and 3 years	- 0.259*** (0.015)	- 0.296*** (0.016)	- 0.238*** (0.038)	- 0.325*** (0.028)	+ 0.031*** (0.010)	+ 0.032*** (0.011)
between 4 and 6 years	- 0.163*** (0.013)	- 0.109*** (0.014)	- 0.148*** (0.043)	- 0.103*** (0.029)	+ 0.017* (0.010)	+ 0.049*** (0.014)
between 7 and 9 years	- 0.129*** (0.013)	- 0.118*** (0.013)	+ 0.012 (0.064)	- 0.038 (0.035)	+ 0.016 (0.010)	+ 0.012 (0.011)
between 10 and 15 years	- 0.101*** (0.008)	- 0.076*** (0.009)	+ 0.055 (0.036)	- 0.037 (0.032)	+ 0.016*** (0.005)	+ 0.036*** (0.007)
between 16 and 18 years	- 0.053*** (0.011)	- 0.034*** (0.013)	+ 0.113 (0.078)	- 0.056 (0.056)	+ 0.016*** (0.005)	+ 0.042*** (0.009)
<u>Family Status</u> (Base: not married)						
Married	-	-	-	-	+ 0.063*** (0.009)	+ 0.082*** (0.009)
Divorced	-	-	-	-	+ 0.013 (0.009)	+ 0.014 (0.009)
Widowed	-	-	-	-	+ 0.017 (0.011)	+ 0.022 (0.014)
<u>Nationality</u> (Base: Austria)						
(Ex -) Yugoslavia	+ 0.389*** (0.029)	+ 0.148*** (0.029)	+ 0.122 (0.053)	+ 0.060 (0.053)	+ 0.038** (0.011)	+ 0.014 (0.012)
Turkey	+ 0.199*** (0.055)	- 0.042 (0.044)	-	+ 0.167 (0.027)	+ 0.048* (0.013)	- 0.016 (0.021)
Other Nationality	- 0.213*** (0.046)	- 0.209*** (0.034)	- 0.101 (0.091)	- 0.054 (0.053)	- 0.063*** (0.031)	- 0.179*** (0.027)
Participation	0.464	0.557	0.784	0.769	0.836	0.828
N	10912	10445	1750	2669	15184	15983
Pseudo R <sup>2</sup>	0.17	0.18	0.21	0.28	0.48	0.41

\*\*\* = significant at 1%    \*\* = significant at 5%    \* = significant at 10%

**Notes:** Entries are marginal effects with standard errors in brackets. Marginal effects for dummy variables are calculated as the change in predicted probability when that variable is increased from 0 to 1 with all other variables at their mean values.

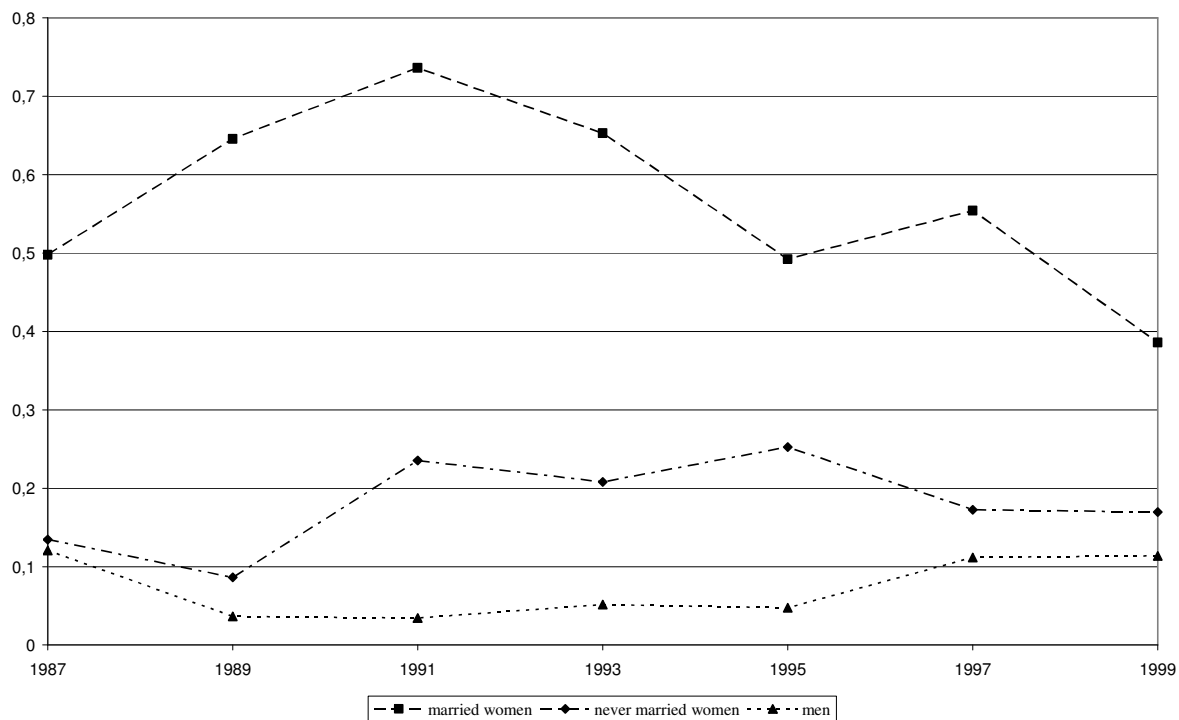
**Table 2: Weekly Hours**

Dep. Var.: Weekly Hours	Women				Men	
	Married		Never Married		All	
	1987	1999	1987	1999	1987	1999
Log hourly wage	+ 2.849*** (0.669)	+ 3.594*** (0.458)	+ 2.111 (1.622)	+ 3.832*** (1.042)	+ 0.552 (0.560)	+ 1.950*** (0.470)
Log Other Household Income	- 0.505*** (0.057)	- 0.265*** (0.065)	- 0.045 (0.104)	- 0.098 (0.067)	- 0.064* (0.038)	- 0.004 (0.032)
Age	+ 1.359*** (0.176)	+ 2.577*** (0.171)	+ 3.291*** (0.376)	+ 3.955*** (0.293)	+ 4.889*** (0.123)	+ 4.645*** (0.114)
Age <sup>2</sup>	- 0.022*** (0.002)	- 0.035*** (0.002)	- 0.045*** (0.005)	- 0.054*** (0.004)	- 0.064*** (0.001)	- 0.060*** (0.001)
<u>Education</u> (Base: Compulsory)						
Apprentice	+ 1.435*** (0.398)	+ 0.775** (0.358)	+ 5.036*** (1.174)	+ 5.550*** (0.947)	- 0.016 (0.352)	+ 4.357*** (0.359)
Lower vocational school	+ 2.342*** (0.547)	+ 1.832*** (0.477)	+ 6.120*** (1.392)	+ 6.492*** (1.154)	+ 1.430*** (0.589)	+ 6.239*** (0.592)
Secondary academic school	- 0.345 (0.789)	+ 2.228*** (0.754)	- 7.329*** (1.348)	- 1.574 (1.183)	- 4.226*** (0.649)	+ 0.481 (0.654)
Secondary vocational school	+ 2.156** (0.976)	+ 4.508*** (0.674)	+ 3.389* (1.974)	+ 4.594*** (1.243)	+ 0.007 (0.698)	+ 5.123*** (0.579)
University	+ 10.962*** (1.292)	+ 6.727*** (0.789)	+ 5.312*** (1.836)	+ 7.446*** (1.325)	+ 2.934*** (0.732)	+ 9.061*** (0.622)
<u>Number of Children</u>						
between 0 and 3 years	- 6.843*** (0.450)	- 8.233*** (0.430)	- 15.403*** (1.879)	- 17.894*** (1.205)	+ 1.237*** (0.390)	+ 0.765** (0.367)
between 4 and 6 years	- 4.256*** (0.402)	- 3.370*** (0.377)	- 6.239*** (1.986)	- 5.639*** (1.171)	- 0.071 (0.373)	+ 0.068 (0.381)
between 7 and 9 years	- 3.238*** (0.366)	- 3.406*** (0.338)	+ 0.133 (2.536)	- 5.762*** (1.344)	- 0.214 (0.359)	- 0.619* (0.357)
between 10 and 15 years	- 2.554*** (0.236)	- 2.166*** (0.227)	- 0.683 (1.362)	- 2.081* (1.160)	+ 0.063 (0.232)	+ 0.194 (0.243)
between 16 and 18 years	- 1.229*** (0.312)	- 0.945*** (0.321)	+ 3.874 (2.623)	- 2.895 (2.027)	+ 1.756*** (0.315)	+ 1.363*** (0.351)
<u>Family Status</u> (Base: not married)						
Married	-	-	-	-	+ 3.077*** (0.437)	+ 4.295*** (0.378)
Divorced	-	-	-	-	- 1.821** (0.775)	- 1.209** (0.598)
Widowed	-	-	-	-	+ 1.196 (1.126)	- 0.808 (1.319)
<u>Nationality</u> (Base: Austria)						
(Ex -) Yugoslavia	+ 10.966*** (1.579)	+ 5.864*** (1.005)	+ 5.685 (4.343)	+ 4.091 (2.765)	- 3.835*** (1.011)	- 2.379*** (0.680)
Turkey	+ 6.715*** (2.221)	- 0.973 (1.161)	-	- 0.111 (5.779)	- 2.239 (1.486)	- 2.244** (0.972)
other Nationality	- 5.408*** (1.283)	- 4.296*** (0.765)	- 6.346*** (2.546)	- 5.942*** (1.581)	- 3.602*** (1.256)	- 8.216*** (0.668)
Expected Weekly Hours	29.391	26.164	31.772	29.310	34.972	33.147
N	10912	10445	1750	2669	15184	15983
Pseudo R <sup>2</sup>	0.04	0.04	0.03	0.04	0.06	0.05

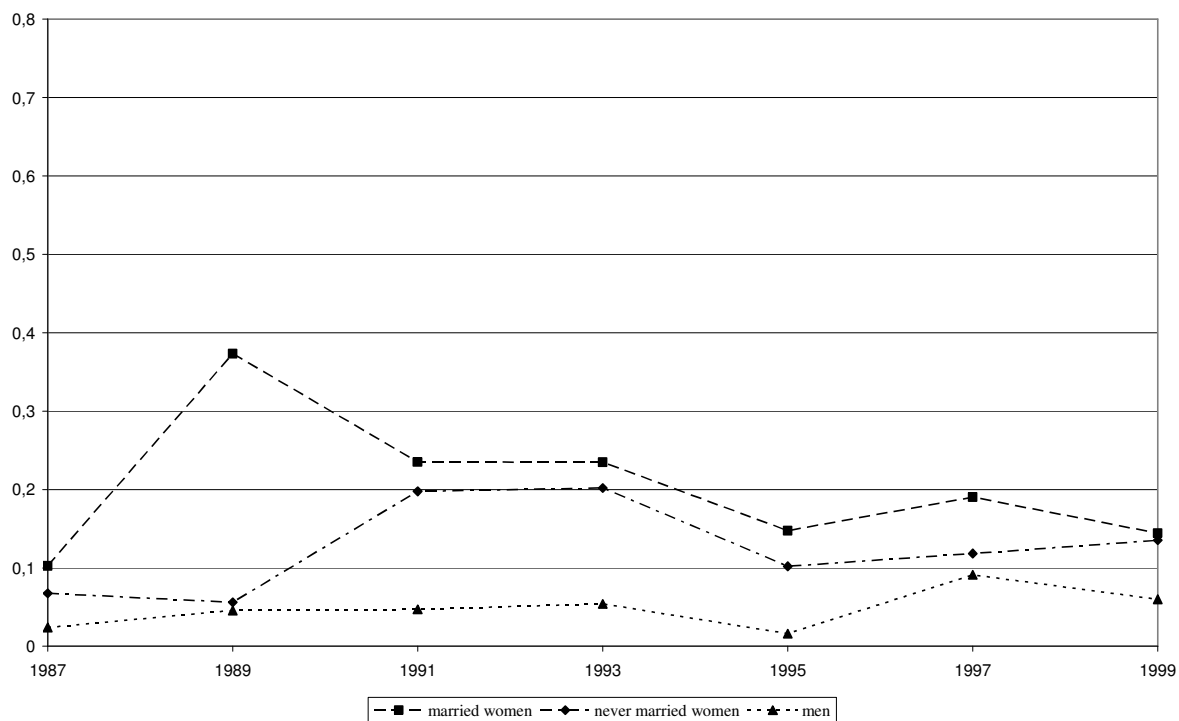
\*\*\* = significant at 1% \*\* = significant at 5% \* = significant at 10%

**Notes:** Entries are marginal effects under the condition that weekly hours > 0

**Figure1: Compensated Wage Elasticities of Participation**



**Figure2: Compensated Wage Elasticities of Hours**



**Table 3: Participation and hours elasticities within educational groups: married and never-married women**

**1987/89**

	Participation					Hours				
	Compulsory education	Apprentice	Lower Vocational school	Secondary school	University	Compulsory education	Apprentice	Lower Vocational school	Secondary school	University
Married 87/89	+0.542*** [10702]	+0.399*** [5427]	+0.391*** [2743]	+0.373*** [1645]	+0.228*** [714]	+0.174*** [10702]	+0.237*** [5427]	+0.227*** [2743]	+0.267*** [1645]	+0.253*** [714]
Never m. 87/89	+0.097 [1124]	+0.242 [840]	+0.023 [580]	+0.932*** [556]	+0.171** [330]	+0.019 [1124]	-0.099 [840]	-0.102 [580]	+0.037*** [556]	+0.029 [330]

\*\*\* = significant at 1%    \*\* = significant at 5%    \* = significant at 10%  
Number of observations in brackets

**1997/99**

	Participation					Hours				
	Compulsory education	Apprentice	Lower Vocational school	Secondary school	University	Compulsory education	Apprentice	Lower Vocational school	Secondary school	University
Married 97/99	+0.362*** [7065]	+0.333*** [6850]	+0.239*** [3144]	+0.481*** [2444]	+0.049*** [1246]	+0.089*** [7065]	+0.102*** [6850]	+0.051 [3144]	+0.171*** [2444]	+0.074 [1246]
Never m. 97/99	+0.335*** [1005]	+0.262*** [1519]	+0.324*** [807]	+0.292*** [1163]	+0.139** [653]	+0.150*** [1005]	+0.204*** [1519]	+0.419*** [807]	+0.149*** [1163]	+0.066*** [653]

\*\*\* = significant at 1%    \*\* = significant at 5%    \* = significant at 10%  
Number of observations in brackets