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The Determinants of Reservation Wages in Germany Does a Motivation Gap Exist?

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The Determinants of Reservation Wages in Germany

Does a Motivation Gap Exist?

by

Björn Christensen

January 2001

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The Determinants of Reservation Wages in Germany
Does a Motivation Gap Exist?*

Abstract:
This paper investigates the reservation wages of unemployed persons on the basis of a job-search model with non-static reservation wages using panel data from Germany from 1987 to 1998. The results suggest that reservation wages are relatively high in Germany compared to other countries. Furthermore, pooled regression results show that most recent wages and personal characteristics of the unemployed are the most important determinants of reservation wages. In contrast neither unemployment duration nor different kinds of unemployment benefits influence reservation wages. Hence the findings corroborate the hypothesis that unemployed persons are not subject to strong financial pressure and thus have no significant motivation to find a new job.

Keywords: Pooled Regression, Unemployment, Labour Supply, Reservation Wages

JEL classification: C23, E24, J22, J64

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The data used in this paper were made available by the German Socio-economic Panel Study (GSOEP) at the German Institute for Economic Research (DIW) Berlin.

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1 Introduction

Long-term unemployment is one of the most striking problems of the German labour market. There are several possible reasons for the high share of long-term unemployed persons in Germany: a continuous hysteresis phenomenon, inflexible labour market structures and a transfer system for unemployed persons reducing the motivation for active job-search. In addition, the majority of long-term unemployed people is characterized by low skills or an education which has lost significance in the course of structural change.

In Germany, the discussion on persistent unemployment concentrates on a downward inflexible wage structure preventing a match between labour demand and labour supply.[1] Contrary to this institutional problem, only few investigations exist which analyse the role of wage claims of unemployed persons. If unemployed persons fix their reservation wages too high and do not lower their reservation wages over the duration of unemployment, reemployment becomes less probable, because human capital decreases with the duration of unemployment. Thus, reservation wages considerably determine the speed of reintegration into the labour market.

The main objective of this paper is to empirically analyse the determinants of reservation wages in Germany on the basis of the Socio-economic Panel (SOEP). For this purpose, a descriptive analysis of the ratio of reservation wages to past wages and a pooled least squares estimation of the reservation wage is carried out.

[1] See for example Christensen and Schimmelpfennig (1998) and Siebert (1998: 123-144).

The main findings are as follows: the reservation wage of a majority of persons in Germany exceeds the last wage in employment, which is in line with existing studies. But I provide evidence that the distribution of reservation wage ratios (reservation wage/last wage) in Germany is shifted to the right in comparison to existing findings of other countries. The least squares estimations show that the last wage and individual characteristics are the most important determinants of reservation wages. No evidence of an influence of unemployment duration and different kinds of unemployment benefits on reservation wages could be found.

The remaining part of the paper is organized as follows. Section 2 describes the underlying theoretical job-search model for explaining reservation wages. Section 3 surveys previous empirical studies on reservation wages. Section 4 presents the estimation strategy. Section 5 contains the data description including the findings for the reservation wage ratios. Section 6 presents the estimation results for the whole sample and for different sub-samples. Section 7 summarizes the main findings of the paper.

2 Reservation Wages and Job-Search Theory[2]

In order to analyse the determinants of reservation wages in detail, a model of job-search theory is needed which includes the reservation wage, the duration of unemployment, unemployment benefits, and individual control variables.

2 This section builds largely on Franz (1999: 206-208).

It can realistically be assumed that an unemployed person will accept a job offer if the offered wage *w* is higher than or equal to the actual reservation wage w_R:

(1) $$w \geq w_R$$

Let *q* be the probability of receiving a wage offer and let *f(w)* be the time-invariant distribution of wages for various jobs. The probability of receiving a wage offer *q* is determined by the general situation on the labour market and by the personal characteristics of the unemployed person (sex, skills, age, etc.). All variables which determine *q* are merged in the vector *z*. Moreover, the individual probability of getting a job is negatively affected by the size of the wage offer: the higher the wage offer, the higher the number of competitors and thus the lower the chances of getting the job. Therefore *p* is the probability of a successful match between the unemployed person and the firm:

(2) $$p(z,\ w_R) = \int_{w_R}^{\infty} q(z,\ w) \cdot f(w) dw$$

The anticipated wage of an accepted wage offer in the next step of search is:

(3) $$E(w|w \geq w_R) = \frac{\int_{w_R}^{\infty} w \cdot q(z,\ w) \cdot f(w) dw}{\int_{w_R}^{\infty} q(z,\ w) \cdot f(w) dw}$$

In the optimum the present discounted value of accepted wage offers and the present discounted value of returns to search must be equal. As the unem-

ployed person only accepts a wage offer greater than or equal to w_R the present discounted value of the reservation wage is:[3]

$$(4) \qquad \sum_{t=0}^{\infty} \frac{w_R}{(1+r)^t} = \frac{(1+r)\cdot w_R}{r}$$

If the unemployed person does not accept the wage offer in $t=0$ but will accept the wage offer in $t=1$, the present discounted value of the next search step is :

$$(5) \qquad u - c + \sum_{t=1}^{\infty} \frac{p(z,\ w_R)\cdot E(w|w \geq w_R)}{(1+r)^t},$$

where u denotes unemployment benefits and c are the constant search costs of the first search step in $t=0$.

Analogously, the next search steps can be calculated if the unemployed person does not accept the wage offer. Adding the present discounted values of returns to search gives:[4]

$$(6) \qquad \frac{(u-c)\cdot(1+r)}{r + p(z,\ w_R)} + p(z,\ w_R)\cdot E(w|w \geq w_R)\cdot \frac{1+r}{r\left[r + p(z,\ w_R)\right]}$$

Equating (6) with (4) and solving for the reservation wage gives:

$$(7) \qquad w_R = \frac{r\cdot(u-c) + p(z,\ w_R)\cdot E(w|w \geq w_R)}{r + p(z,\ w_R)}$$

Thus the reservation wage increases with unemployment compensation and decreases with search costs. Increasing the mean of the probability distribution

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[3] r is the individual discount rate.

[4] See details for calculations in Franz (1999: 208).

of wage offers raises the reservation wage, too. On the other hand, a lower probability of receiving and accepting a wage offer, due to personal characteristics or labour market conditions, tends to reduce the reservation wage.

3 Review of Existing Empirical Studies

The number of empirical studies which analyse reservation wages are rare, mainly because of a lack of data. This is especially the case for Germany where only two studies exist. The studies deal mostly with two broad aspects of reservation wages: (i) the determinants of reservation wages, and (ii) the influence of reservation wages on unemployment duration. Both approaches are generally based on job-search theory.

For Germany, Franz (1982) examines the determinants of the reservation wage on basis of an interview-database from 1976. The regression results show that individual characteristics and the wage offer distribution affect the reservation wage. Moreover, he finds that the entitlement to unemployment compensation as well as labour demand side variables are less important and that no indications for decreasing reservation wages with the duration of unemployment could be found.[5]

The second study for Germany by Schmidt and Winkelmann (1993) is based on data from 1977/78. They combine data on accepted wages after an unem-

[5] As all interview information is given at the beginning of the unemployment spells, no information about declining reservation wages while unemployed were available to Franz (1982). Thus he uses the number of previous spells of unemployment as a proxy variable for the duration of unemployment.

ployment spell with interview data about reservation wages under the restriction of a simple model of stationary search. They find that the predicted reservation wages are compatible with those derived from interview data. Thus, reservation wages seemed to be static over the duration of unemployment in the late 1970s.

Using an UK database for 1982, Jones (1989b) analyses the determinants of reservation wages by two-stage least squares estimations. He finds that in addition to personal characteristics (sex, age, etc.) the last wage has an important influence on reservation wages. The local unemployment rate and unemployment benefits have no clear influence on reservation wages. Using the same sample, Jones (1988) analyses the relationship between unemployment spells and reservation wages and finds that the reservation wage plays a significant role in the determination of unemployment duration.

Hogan (1999) analyses the determinants of reservation wages from a macroeconomic point of view, i.e. the natural rate of unemployment, on the basis of the British Household Panel Survey from 1991 to 1997. He finds that the wage in a previous job and the expected future wage are important determinants of reservation wages and that unemployment rates and unemployment benefits have only small effects on reservation wages.

Feldstein and Poterba (1984) use the Current Population Survey 1976 of the United States to analyse the influence of unemployment insurance on the reservation wage and the unemployment duration. They find a positive effect of unemployment benefits on reservation wages and conclude that a reduction of net unemployment insurance benefits could significantly lower the duration of unemployment.

Barron and Mellow (1981) analyse the probability of leaving unemployment on basis of the U.S. Current Population Survey 1976 and find that a higher relative reservation wage[6] reduces the probability of becoming employed.

Fishe (1982) and Kiefer and Neuman (1979) use a job-search model with non-static reservation wages to test the hypothesis of static reservation wages. Using different U.S. data for the mid seventies they find that reservation wages decline significantly with unemployment duration, but increase with unemployment benefits.[7] Moreover, Fishe (1982) finds a significant drop in reservation wages when unemployment benefits are exhausted.

Warner et al. (1980) use data from the U.S. Census Employment Survey (1970) for analysing search approaches. They find support for the search theory hypothesis that higher reservation wages are negatively related to the probability of leaving unemployment. Moreover, they detect that higher unemployment benefits reduce search intensity, but only slightly change reservation wages.

Maani (1989, 1991) uses data from New Zealand for 1986 and shows that reservation wages are determined on the basis of job seekers' earnings and costs of search. He finds that higher unemployment benefits increase reservation wages, but he also finds that reservation wages do not decline with the duration of unemployment. He explains this result by high stationary search costs due to non-exhausting unemployment benefits. Moreover, he finds that higher

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[6] They estimate a wage equation and then calculate the ratio of current reservation wages to estimated wages, see Barron and Mellow (1981: 429).

[7] Their results base on wage offer distributions. They estimate censored regression models to obtain estimates of a reservation wage equation.

reservation wages increase the duration of unemployment and shows that this depends on unemployment benefits.

Maani and Studenmund (1986) use data from Chile for 1982 and find that job seekers base their reservation wages on their productivity, economic resources, and search costs. Moreover, they show that job seekers reduce reservation wages as their duration of unemployment increases.

Heath and Swann (1999) use Australian data for 1995/1996 and estimate a two-stage least squares model to analyse the determinants of the duration of unemployment. They find that reservation wages – compared to the number of jobs offered – only have a minor effect on the duration of unemployment.

Gorter and Gorter (1993) use a stationary job-search model to analyse the relation between unemployment benefits, reservation wages and search duration for the Netherlands for the period 1985 to 1987. They find a positive relationship between unemployment benefits and reservation wages, but conclude that the job offer arrival rate is the most important variable and thus the level of unemployment benefits is not very important in ending a search spell.

4 The Estimation Model

4.1 The Estimation Approach for the Static Reservation Wage Model

To approximate the reservation wage equation (7) in a linear form for every individual unemployed person, individual characteristics as well as the last

wage $w_{i,L}$ are used as proxies for the expected wage in the case of a successful match[8] and an error term u_i is added:

$$(8) \qquad w_{i,R} = b_0 + b_1 u_i - b_2 c_i + b_3 w_{i,L} + \sum_{k=4}^{n} b_k X_{ik} + u_i$$

As individual characteristics, personal attributes as well as labour market conditions are used. The personal attributes are age, sex, a dummy for disability, four dummies for skills, and the personal status (person from Western Germany, person from Eastern Germany, foreigner). As labour market conditions, the actual unemployment rate in the federal state (Bundesland), the actual unemployment rate differentiated by skills, and the structural development of the respective sector of last employment in relation to the remaining sectors are included. In addition, three dummies for self-assessment of reemployment chances are included. Moreover, as the individual search costs c are not observable, some proxy variables for the financial situation of a person are used: the total income of the household, and the existence of a partner or children. Because of data restrictions, the size of unemployment benefits cannot be included, but three dummies for obtaining unemployment benefits (Arbeitslosengeld), unemployment assistance (Arbeitslosenhilfe) or neither are added. To account for individual working-time demand, four dummies are included which cover the duration of the last job and the working-time preference (full-time/part-time).

4.2 Non-Static Reservation Wages

The preceding discussion focused upon a simple search model where reservation wages are constant over the unemployment spell. However, there are

[8] See chapter 5 and the Appendix for details of data generating.

some reasons why the reservation wage might fall with the duration of unemployment:[9] (i) The unemployment benefits decrease stepwise with duration of unemployment and eventually completely disappear. Thus, the opportunity costs of staying in unemployment increase and the reservation wage can be expected to fall. (ii) A long duration of unemployment may have a signalling function for firms with regard to the productivity of unemployed persons leading to falling wage offers with the duration of unemployment (stigmatisation). (iii) During the unemployment spell, human capital partly gets lost. (iv) At the beginning of their unemployment spell, unemployed persons do not have precise knowledge about the distribution of prevailing wages; thus with longer unemployment duration they might adapt their reservation wages.[10]

Taking into account these dynamic effects, the static model (8) is enlarged to a non-stationarity version by adding a term for duration of unemployment *t*:[11]

$$(9) \qquad w_{i,R} = b_0 + b_1 u_i - b_2 c_i + b_3 w_{i,L} + b_4 t + \sum_{k=5}^{n} b_k X_{ik} + u_i$$

4.3 Estimation Procedure

In the ordinary least squares estimation, one of the basic assumptions is the independence of the regressors from the error term. If this condition is violated, the least squares estimators are biased and inconsistent. However, if one or more of the explanatory variables are endogenous, it will be necessary to

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[9] Theoretical models of decreasing reservation wages can be found for example in Burdett and Vishwanath (1988), Kiefer and Neumann (1979) and van den Berg (1990, 1995).

[10] See Franz (1982: 33-34) for further hypotheses about non-static reservation wages.

[11] The unemployment duration *t* is measured as the duration of unemployment until the point of time in which the reservation wage information is asked.

use instrumental variable methods to ensure that parameter estimates are not biased and inconsistent.[12] In equation (9) the variable "last wage" might be endogenous, because most of the personal attributes directly influence this variable.

The choice of instruments must be restricted to variables which directly affect the wage but which do not directly affect the reservation wage. In technical terms: the variables in the instrument variable vector *Z* must be correlated with those in the vector of explanatory variables *X* and must be uncorrelated in the limit with the disturbance term (Jonston and DiNardo 1997: 155). When some of the explanatory variables are used as instruments, the vector *X* may be partitioned as

$$X = [X_1,\ X_2], \tag{10}$$

where X_2 is the vector of variables which should be replaced by instrument variables and the variables in X_1 serve as instruments for themselves. Under these conditions, the appropriate estimation procedure is a two-stage estimation. In the first stage, each variable of the *X* matrix is regressed on the *Z* matrix to obtain a vector of fitted values:

$$\hat{X} = [X_1,\ \hat{X}_2] \qquad \text{where } \hat{X}_2 = Z(Z'Z)^{-1}Z'X_2 \tag{11}$$

The vector $\hat{X}$ is then taken to regress the reservation wage to obtain the estimation vector $\hat{b}$:

$$\hat{b} = \left(\hat{X}'\hat{X}\right)^{-1}\hat{X}'y \tag{12}$$

---

[12] See Jonston and DiNardo (1997: 153-158) for a discussion of problems with dependent regressors and possibilities to solve these problem by IV-estimation.

The choice of instruments is not always explicit. A discussion of this aspect follows in chapter 6.1.

4.4 Hausman Test Procedure

To decide whether the ordinary least squares method or the two-stage estimation is the best estimation strategy the Hausman test is used (Hausman 1978). If the instruments are orthogonal to the error term u_i, one obtains at any rate a consistent estimator. But if the treated exogenous variable, which is displaced by an instrument, is not correlated with the error term, then the two stage estimation is less efficient than the ordinary least squares method. The Hausman test assesses whether ordinary least squares estimation is adequate. If the null hypothesis that both estimations are consistent is valid, the OLS estimation should be used, because it is consistent and efficient. In this paper a special variant of the Hausman test is used as described in Johnston and DiNardo (1997: 342): in a first step, this procedure regresses the potentially endogenous regressor on the instrument variables as given in equation (11). From this regression the residuals are retrieved. Then the interested equation (9) including this created variable from first stage as additional regressor is estimated. An *F* statistic with the number of suspect variables and the number of observations minus the number of regressors in the second stage as degrees of freedom can be used to test the significance of the predicted values from the first stage.[13] If the ordinary least squares estimation is consistent and thus the null hypothesis of the hausman test cannot be rejected, then the coefficients of the first stage residuals should be insignificant in the second stage estimation. In this case, the ordinary least squares method should be used.

---

[13] See Greene (2000: 385) for details of the *F* statistic.

5 Data Source and Data Description

Before discussing regression results, it is useful to have a closer look at the data which is used in the empirical analysis. In Section 5.1 the German Socio-economic Panel (GSOEP) and the generating process for the data-set is described. In Section 5.2 some descriptive statistics on unemployment duration and reservation wages are discussed.

5.1 The GSOEP

The data is drawn from the German Socio-economic Panel (GSOEP: 1998).[14] This anonymous panel covers 15 waves of individual data for the period 1984 to 1998. The reservation wage is directly observed in nine waves.[15] Individuals who reported that they did not have a job, but would like one, were asked the following question:[16]

> "How high would your net income or salary [per month] have to be for you to take a position offered to you?"

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[14] See, for a detailed description of the SOEP, Projektgruppe Sozio-oekonomisches Panel (SOEP) (1995) and Haisken-De New and Frick (2000). All SAS 8.01 programs for generating the data-set and more detailed information about the generating process are provided by the author upon request.

[15] Information about the reservation wage are included in 1987-1989, 1992-1994, and 1996-1998.

[16] The German question is:"Wie hoch müßte der Nettoverdienst mindestens sein, damit Sie eine angebotene Stelle annehmen würden?". Translation taken from CD-ROM GSOEP (1998), CD-ROM 2, Data file GSOEP15B:docs\quest98\p98eng.pdf, question OP1801.

This information is taken to generate the dependent variable for the geographical region of West Germany.[17] To prevent a bias caused by early retirement, persons who are older than 58 are eliminated. To control for discrimination factors, three dummies are generated for persons from Western Germany, Eastern Germany and foreigners.

The unemployment duration is generated from the calendar information in the GSOEP. For each month in the year preceding the interview, the respondent is asked to enter his employment status. An individual is defined as unemployed, if he has reported to be registered as unemployed at the employment office (Arbeitsamt). The unemployment duration is measured as the duration of unemployment until the point of time in which the reservation wage information is asked. As information about the last net wage is needed, left-censored unemployment spells are included if information about the previous job is given.[18]

All individual characteristics are calculated during an unemployment spell, except for the last wage, the occupation in the last job, the capacity utilization

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[17] For all persons information regarding sex, the month of interview, the year of birth, personal status (Western German, Eastern German and foreigners) and place of domicile (Western Germany/Eastern Germany) must be available. Otherwise these persons are eliminated from the sample.

[18] Wurzel (1993: 119) finds unemployment spells shorter than nine months to be underrepresented in the GSOEP by almost 16 percent. Moreover, Christensen (1999: 15-16) discusses the problem of generating spell-data in the GSOEP and argues that short unemployment spells with explanatory information are underrepresented, because of the yearly interview structure in the GSOEP. Since this is a general problem associated with interview data, the problem cannot be easily overcome.

and the structural development of the sector of the last job.[19] These variables are generated in the year of the beginning of the unemployment spell or in the year before. [20]

For all observations there must be at least information for the reservation wage, the unemployment duration, the last wage in employment, the individual working-time in the last job and the working-time demand. This data-set contains 734 observations. For the regression analysis all variables with missing values are eliminated leading to a data-set of 648 observations. 419 of these observations are experienced by males. 41.4 per cent off all observations are persons without formal skills, 53.1 per cent are semi-skilled persons, 3.5 per cent are skilled persons and 2.0 per cent have high skills.[21]

5.2 Unemployment Duration and the Reservation Wage Ratio

The duration of unemployment is measured as the number of months in unemployment up to the interview month. Figure 1 plots the distribution of unemployment durations for the whole sample (734 observations) and for the sample which is used for the regression analysis (648 observations).

Figure 1 - Distribution of Unemployment Duration (in month)

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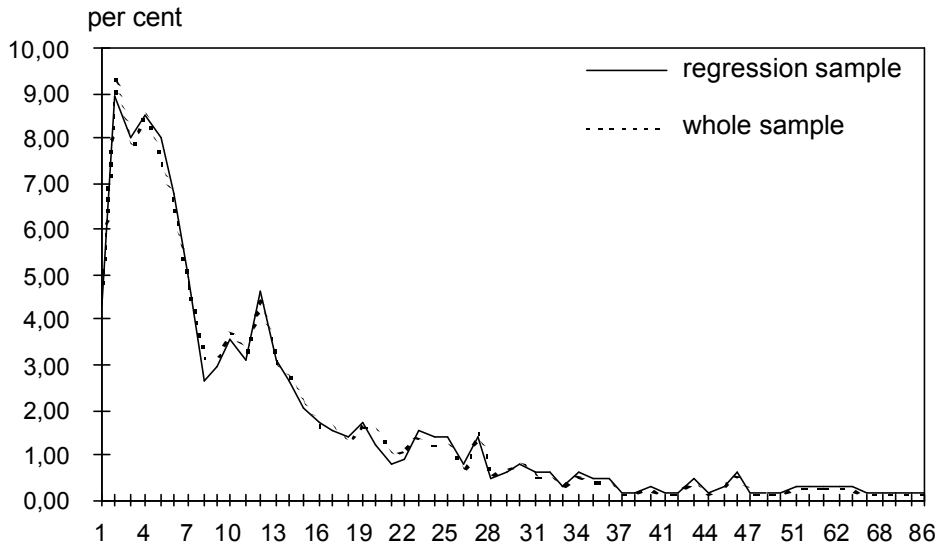
[19] All variables used are described in the Appendix in Tables 6 and 7 with detailed information.

[20] First the variables are taken from the interview before the unemployment began. If missing values exist in this interview, the information from the year before is taken.

[21] For the definition of skill groups see Table 6 in Appendix.



Source: GSOEP (1998); own calculations.

Both distributions are nearly identical. Thus it is improbable that a systematical error exists because of non-random missing values in the explanatory variables for the regression analysis. Both distributions are positively skewed[22] with a mean near 12.5 months and an median of 8 months. For both, 25 per cent of observations have an unemployment duration of less than or equal to 4 months and 75 per cent have an unemployment duration of less than or equal to 16 months.

To gain some understanding of the pattern of reservation wages, the reservation wage ratio, the ratio of the reservation wage to the individual's own last wage, is calculated. The means and medians of the whole sample and various sub-samples are reported in Table 1.

[22] Both have a skewness of 2.2.

Overall, the mean ratio and the median ratio are greater than unity,[23] indicating that people would only accept a job with a higher salary than their previous job. Although the calculated mean ratio of 1.201 for the whole sample seems to be at the upper bound of existing studies, the general result is similar to other studies of the reservation wage ratio. Jones (1989b: 229) finds a mean ratio of 1.077 for the whole sample, Feldstein and Poterba (1984: 148) a mean ratio of 1.07. Hogan (1999: 14) calculated a mean ratio of 1.2 and a median ratio of 0.88. Heat and Swann (1999: 9) find a mean ratio of 1.35 and a median ratio of 1.00. However, their results might be biased towards a higher reservation wage ratio, because they did not index the previous salaries. The only studies in which the mean ratios are obviously smaller than unity are Jones (1989a), who finds a mean ratio of 0.9 for a British cohort study for 1978/79, and Maani (1989), who finds a mean ratio of 0.79 for New Zealand data for 1986. To summarize, the present findings of the reservation wage ratio in Germany are at the upper bound of the existing studies.

Table 1 - Ratio of Reservation Wages to Previous Wages [a]

	Mean	Median	Observations
Total sample	1.201	1.043	734
Sample for Regression Analysis	1.205	1.037	648
Males	1.161	1.037	419
Females	1.287	1.042	229
Having Worked in Full-Time (Last Job) and being Interested in Full-Time Employment	1.184	1.043	529
Having Worked in Part-Time (Last Job) and being Interested in Part-Time Employment	1.496	1.072	49
Age (years):			

[23] Hypotheses tests of the mean reject in all cases the hypothesis that the mean is less than or equal to one at the one percent level.

16 to 25	1.397	1.052	99
26 to 35	1.247	1.056	198
36 to 45	1.102	1.053	150
46 to 58	1.147	1.003	201
Duration of Unemployment (month):			
1 to 3	1.187	1.035	138
4 to 6	1.216	1.051	151
7 to 12	1.190	1.022	141
13 to 24	1.211	1.033	129
more than 25	1.232	1.052	89

[a] All sub-samples are calculated on basis of the regression data-set.

Source: GSOEP (1998); own calculations

Table 1 also contains the mean and median reservation wage ratios categorized by sex and working-time. There appear to be only small differences between the males and females median ratios, only the mean ratio is higher for females than for males. This seems to result from the higher mean ratio in the group of part-time workers, which are all females. As only the category “part-time” exists in the GSOEP-interview, some females might have worked only very few hours a week and want to work more hours in the future. Thus, there might be a sharp increase in reservation wages in some cases.

In the different categories of age, there is no systematical pattern identifiable in the reservation wage ratios. There are, however, some indications that the younger unemployed are striving for higher wages. With regard to the duration of unemployment, there is no evidence that the reservation wage ratios decline during the unemployment spell. This finding is in contrast to theoretical models predicting declining reservation wages with increasing unemployment duration. But the presented result is not striking, because the non-stationarity of reservation wages depends on opportunity costs as described in

chapter 4.2. Thus only in countries with rapidly declining and exhausting unemployment benefits an obvious decline of reservation wages with duration of unemployment is expected.[24] Therefore, the presented results for Germany, which show non-declining reservation wages, may simply indicate a low financial pressure to unemployed persons.

Further insight into reservation wage ratios can be obtained by examining the whole ratio distribution (see Jones 1989b and Feldstein and Poterba 1984). Table 2 explicitly shows this distribution of relative reservation wages and compares them to other studies.

Table 2 - Distribution of Reservation Wage Ratios

Ratio	Own findings in per cent[a]	Findings of Jones (1989b) in per cent	Findings of Feldstein and Poterba (1984) in per cent
< 0.6	3.5	12.9	--
< 0.8	14.2	29.4	--
< 0.9	26.4	--	24
> 1	55.7	43.5	38
> 1.1	40.4	--	28
> 1.2	31.6	24.8	--
> 1.4	18.7	13.8	--
> 1.6	12.7	8.9	--

[a]The data base is the sample which will be used for the least squares estimation.

[24] There are empirical findings which show declining reservation wages, for example, Kiefer and Neumann (1979) and Feldstein and Poterba (1984: 148), who find for U.S. data the mean ratio declining from 1.11 for unemployment spells less than five weeks to 0.99 for unemployment spells greater than 50 weeks. In contrast, Jones (1989a: 7-8) finds static mean ratios using a UK data-set. Jones (1988: 747) argues, that declining and exhausting unemployment benefits were less likely a critical factor in the British case of the early eighties than in North America of the seventies, thus the different empirical results seem plausible.

Source: GSOEP (1998), own calculations; Jones (1989b), Feldstein and Poterba (1984).

In the whole sample 55.7 per cent of all persons want a reservation wage which is higher than their last wage.[25] This result is in line with the mean ratio of which is reported in Table 1. The most striking fact from these findings is that only 26.4 per cent are willing to accept a reservation wage less than 90 per cent of their last wage and that more than 40 per cent want a more than 10 per cent higher reservation wage compared to their last wage. Moreover, only 14.2 per cent would accept a reservation wage ratio of less than 0.8 and only 3.5 per cent would accept a ratio less than 0.6. At the upper end of the distribution, 12.7 per cent of the unemployed said that they would only return to work if they received a wage that was more than 60 per cent higher than their past wage.

These findings indicate a right-shift of the reservation wage ratio distribution in comparison to the results of Jones (1989b). For example, the share of persons who would accept less than 80 per cent of their last wage is two times higher in Jones (1989b). The same applies for ratios greater than one. For example, the share of unemployed persons who want an increase of more than

[25] One possible problem in interpreting the reservation wage ratios might be that persons who want a change in their hours of work will bias the ratios for the whole sample. To determine this bias the reservation wage ratios are calculated only for persons who have worked in full-time and being interested in full-time employment (529 observations). The results of Table 2 stay the same, for example 57.1 per cent have a ratio greater than one, 17.2 per cent have a ratio greater then 1.4 and 11.3 per cent have a ratio less than 0.8. Thus this possible bias seems to be irrelevant.

20 percent (40 per cent, 60 per cent) in the reservation wage is 31.6 per cent (18.7 per cent, 12.7 per cent) in my sample compared to 24.8 per cent (13.8 per cent, 8.9 per cent) in Jones (1989b). The findings in Feldstein and Poterba (1984) are not fully comparable to my results, because 27 per cent of the interviewed persons specified a reservation wage similar to their previous wage,[26] leading to a rather weak variation in the data-set. Nevertheless, the ratio of persons who would accept a reservation wage of less then 90 per cent of their previous wage is nearly the same as in my data-set, but 40.4 per cent of persons in my sample want an wage increase of more than 10 per cent compared to only 28 per cent in the sample of Feldstein and Poterba (1984).[27]

6 Regression Results

In this chapter, the results of various regression analyses of reservation wage equation (9) are reported. Section 6.1 contains the results of the Hausman test procedure and the regression results. In Section 6.2 regression analyses of several sub-samples are discussed.

[26] The last wage was not adjusted for example by consumer prices or earnings growth in the sample of Feldstein and Poterba (1984).

[27] On the same database as Feldstein and Poterba (1984) Clark and Summers (1979) find a ratio of 25 per cent of unemployed persons who reported an increase in reservation wages in relation to their last wage of more than 20 per cent, see Clark and Summers (1979: 58). These findings coincide with the results of Jones (1989b), thus the ratio is smaller than the ratio in my sample.

6.1 Ordinary Least Squares Method versus Instrument Variable Estimation

The OLS estimates of equation (9) and the first stage and second stage of instrument variable estimation[28] are reported in Table 3.

Before interpreting the results, we have to investigate by a Hausman whether the OLS estimation or the two-stage least squares method is the appropriate estimation procedure (see chapter 4.4).

[28] All estimations were calculated in EViews 3.1. The second stage of the instrument variable estimation is calculated by the procedure TSLS, thus the structural residuals are used and the adjusted coefficient of determination is based on the structural residuals, see EViews (1994: 284).

Table 3 - Estimation Results for the OLS- and the IV-Estimation[a]

Variable	**Ordinary Least Squares Method**	**First Stage of Instrument Variable Estimation**	**Second Stage of Instrument Variable Estimation**
Dependent Variable	Reservation Wage	Last Wage	Reservation Wage
Last Wage	0.459*** (0.052)	--	0.605** (0.302)
Male	340.668*** (62.950)	592.171*** (59.389)	253.830 (175.953)
Age	6.830*** (2.050)	12.990*** (2.638)	4.763 (4.489)
Partner	-11.792 (51.001)	150.161** (63.710)	-30.498 (62.787)
Children	85.402*** (20.134)	37.808 (24.825)	79.725*** (24.380)
Disabled	-116.054 (71.298)	-3.223 (85.799)	-115.964 (72.802)
Foreigner	10.038 (41.627)	-45.672 (52.100)	15.363 (44.546)
East German	-122.086 (93.337)	-268.419* (157.576)	-84.770 (121.692)
West German	--	--	--
Non-Skilled Person	-1160.839*** (445.060)	-882.066** (374.085)	-993.801** (474.055)
Semi-Skilled Person	-1309.466*** (445.402)	-757.649** (317.424)	-1196.817*** (426.158)
Skilled Person	-1102.940** (478.025)	-300.669 (359.782)	-1063.405** (440.633)
Highly-Skilled Person	--	--	--
Good Reemployment Chances	174.036** (86.968)	99.638 (112.601)	159.354* (93.347)
Hard Reemployment Chances	-30.000 (54.323)	87.111 (71.053)	-40.791 (55.190)
No Reemployment Chances	--	--	--
Houshold Income	0.001 (0.017)	0.040** (0.017)	-0.005 (0.018)

Table 3 - continued

Variable	Ordinary Least Squares Method	First Stage of Instrument Variable Estimation	Second Stage of Instrument Variable Estimation
Unemployment Insurance	-88.800 (89.178)	212.295** (96.629)	-118.727 (110.696)
Unemployment Assistance	-16.922 (96.505)	187.335* (103.524)	-42.528 (113.869)
No Unemployment Benefits	--	--	--
Regional Unemployment Rate	13.656 (8.704)	-10.484 (12.127)	14.126 (9.092)
Skill-Specific Unemployment Rate	-20.818*** (7.570)	-1.889 (12.775)	-23.184** (9.493)
Structural Change	11.291 (7.504)	11.711 (10.108)	9.368 (8.540)
Unemployment Duration	-2.552 (2.217)	-1.760 (2.683)	-2.008 (2.741)
Full-Time Full-Time	458.914*** (92.614)	836.163*** (85.603)	336.656 (271.783)
Full-Time Part-Time	5.328 (99.013)	672.136*** (101.401)	-93.109 (199.116)
Part-Time Full-Time	840.629*** (172.377)	6.432 (173.553)	841.489*** (177.802)
Part-Time Part-Time	--	--	--
Capacity Utilization	--	-41.523*** (14.175)	--
Constant	1791.635*** (432.802)	4869.286*** (1488.157)	1678.721*** (437.852)
$\overline{R}^2$	0.580	0.380	0.568
F-Statistics[b]	39.915***	18.257***	30.925***
Observations	648	648	648

[a]Heteroscedasticity-consistent standard errors by White (1980) are given in parenthesis; [b] F-test of overall significance; ***, ** and * denote coefficients that are statistically significantly different from zero at the 1, 5, and 10 per cent level; -- labels the reference value for dummy variables or excluded variables.

Source: GSOEP (1998); own calculations.

An important factor that has to be considered when assessing the results of the Hausman test is the validity of the instruments that have been used. An appropriate instrument needs to be correlated with the last wage and should not be correlated with the disturbance term. From the first-stage estimates it is obvious that the capacity utilization of the last employment period has a highly significant influence on last wages.[29] Due to its lag structure this instrument variable is uncorrelated with the error term. Thus the capacity utilization of the period of the last job is an adequate instrument for the two-stage least squares estimation.[30]

The null hypothesis of the Hausman test is that the IV and the OLS estimates are both consistent. The predicted values for the last wage from the first stage, taken as additional regressor in the second stage equation, have an F statistic of 0.273 and are thus insignificant.[31] Hence the OLS estimation is the appropriate estimation strategy.

Based on the OLS estimates reported in Table 3, the reservation wages are significantly based on last wages. The partial coefficient of determination[32] is 0.11, which is the highest value of all explanatory variables. Most of the per-

[29] The negative coefficient of the capacity utilization might seem striking, but it is plausible: as we only sample unemployed persons, their number increases in times of low capacity utilization. As primarily low skilled persons are fired in this situation, the last wage declines with decreasing capacity utilization.

[30] I have tried more than this one instrument. For example I used the variable "occupation in last job" as a dummy variable and both the capacity utilization of the period of last job and the occupation in last job as instruments. The results remain the same, but the data basis reduces to 638 observations, because of some missing values.

[31] The critical value from the F distribution is $F(1; 648)_{0.05} = 3.856$.

[32] See for example Behr (1999: 186) for details on the partial coefficient of determination.

sonal variables are significant and have the expected signs: male, age, and the number of children have positive effects on reservation wages.

The skill variables are all significant and have the expected negative signs, thus the reservation wages for highly-skilled unemployed persons are higher than for less skilled persons. But the range of coefficients is unexpected: the coefficient of the semi-skilled variable is the highest of all three, followed by the non-skilled and the skilled variable which have very similar coefficients. These results point to the surprising fact that non-skilled persons want higher wages than semi-skilled persons. However, the impact of skill-specific labour demand is already adequately captured by the skill-specific unemployment rate. Its coefficient has the expected sign and is highly significant. Thus, the somewhat surprising results might be caused by collinearity. In an OLS estimation excluding the skill-specific unemployment rate, all skill dummies have the expected signs and range and are highly significant.[33]

In contrast to most empirical studies, no significant negative influence of the duration of unemployment on reservation wages can be found. Maani (1989) presents similar results and explains this by non-exhausting unemployment benefits in New Zealand. Franz (1982) and Schmidt and Winkelmann (1993) also could not find a negative correlation between reservation wages and unemployment duration in Germany at the end of the 1970s.

Moreover, the regression results show no influence of the social insurance dummies on the reservation wage. Other empirical studies present mixed results in this respect. Some find a positive relationship between unemployment

[33] The coefficients and standard errors for the three skill groups in relation to highly-skilled persons are: -1484.6 (446.1) for the group of non-skilled persons, -1359.1 (447.8) for the group of semi-skilled persons, and -1127.1 (480.1) for the group of skilled persons.

benefits and reservation wages and some find no correlation between these variables. The minor effects of social insurance on reservation wages in Germany may be due to at least three reasons: (i) The decrease in income from unemployment benefits to unemployment assistance is rather small.[34] (ii) The sub-sample of persons who received no unemployment benefits is small (58 observations) and has a higher-than-average net monthly household income. The average in this sub-sample is 3137.76 DM in contrast to 3063.77 DM in the whole sample. Moreover, only 23 per cent (13 observations) of the persons that do not receive unemployment benefits have a net monthly household income of less than 2000 DM and only 32.14 per cent (18 observations) have a net monthly household income of less than 2500 DM. (iii) If the exhaustion of unemployment benefits dramatically reduces the reservation wages and – as a reaction – unemployed persons intensify their search activities, the share of persons who remains unemployed will be reduced. In this case, those people who react to falling unemployment benefits would leave the sample and stay unobserved. To summarize, the fact that the reservation wages do not decline with falling unemployment benefits or longer duration of unemployment may be caused by the small decline in unemployment benefits with duration of unemployment in Germany and the high household income in cases where no unemployment benefits are received. Thus, it cannot be argued that a strong and fast decline in unemployment benefits would not reduce reservation wages. The opposite seems to be true: the high level of social benefits and household income causes a motivation gap, which is reflected in high and inflexible reservation wages.

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[34] See for example Glismann and Schrader (2000: 3-5) for details of the German unemployment benefits system.

A further interesting variable is the dummy for reemployment chances. Unemployed persons who expect to have good reemployment chances have a significantly higher reservation wage compared to persons who expect to have almost no reemployment chances. The surprising fact is that the reservation wages between these two groups only differ by 174 DM, i.e. only 7.7 per cent of the average reservation wage. This is a further indicator for the high financial security in case of unemployment in Germany.

Among the explanatory variables referring to labour market conditions only the skill-specific unemployment rate has a significant influence on the reservation wage. Although this variable is correlated with the skill dummies, the coefficient can be interpreted with caution if the skill groups are further differentiated. For example, the unemployment rate for non-skilled persons in the period from 1987 to 1998 had a minimum of 12.8 per cent (1992) and a maximum of 24.2 per cent (1997).[35] This nearly doubling in the skill-specific unemployment rate induced a potential reduction in reservation wages of 237 DM. Since the average reservation wage for persons without formal skills is 2145 DM, this is a reduction of 11 per cent in reservation wages due to an increase in the unemployment rate of 11.4 percentage points. Whether this value is high or low cannot be answered, because data about labour demand wages are not available in the dataset used in this paper.

A further point has to be taken into account: the mean ratio of reservation wages is 2145 DM in the group of non-skilled persons and 2246 DM in the group of semi-skilled persons. As the first group faces the highest unemployment rates,[36] it can be specified that they react to labour market situations

[35] See Reinberg (1999: 444) for details.

[36] See Reinberg (1999).

(skill-specific unemployment rate), but on a very high reservation wage level. Thus it can be resumed that the high unemployment rate for non-skilled persons reflects a wage mismatch on the labour market, which is not prevented by reservation wage adjustments. Another interesting fact is that neither regional unemployment nor structural change have a significant influence on the reservation wage. To summarize, the results present only little evidence that labour market conditions have an important influence on reservation wages. Thus the gap between labour demand and labour supply is not bridged by reservation wage adaptations.

6.2 Estimation Results for Different Sub-Samples

As the dummy variable for sex is significant, it is possible that indivdiual characteristics influence the reservation wages of males and females differently. This hypothesis is evaluated in the following.

Sex-specific estimations (Table 4)[37] reveal that last wages are more important for males than for females. This is due to the fact that a higher share of males (95.7 per cent) than of females (77.3 per cent) wants to stay in the same work-time category as before.

[37] Only OLS-estimation results are presented, as on the basis of the Hausman test the null hypothesis cannot be rejected in any case. The F statistic for females is 1.166 (critical value $F(1; 229)_{0.05}=3.882$) and the F statistic for males is 0.036 (critical value $F(1; 229)_{0.05}=3.864$).

Table 4 - Estimation Results for the OLS-Estimation Differentiated by Sex[a]

Variable	**Ordinary Least Squares Method: Only Females**	**Ordinary Least Squares Method: Only Males**
Dependent Variable	Reservation Wage	Reservation Wage
Last Wage	0.286*** (0.073)	0.500*** (0.058)
Age	12.030*** (3.181)	-0.356 (2.627)
Partner	-237.048*** (77.498)	210.016*** (71.309)
Children	12.445 (37.529)	89.351*** (23.142)
Disabled	89.640 (129.321)	-318.250*** (86.869)
Foreigner	30.761 (65.141)	-18.627 (53.657)
East German	-63.308 (147.018)	-131.055 (109.657)
West German	--	--
Non-Skilled Person	-918.632*** (286.576)	-1161.402* (603.007)
Semi-Skilled Person	-822.953*** (226.011)	-1533.701** (597.406)
Skilled Person	-662.609** (258.470)	-1305.044** (636.232)
Highly-Skilled Person	--	--
Good Reemployment Chances	293.259** (126.952)	181.183* (106.996)
Hard Reemployment Chances	-17.077 (74.511)	11.342 (67.465)
No Reemployment Chances	--	--
Houshold Income	0.002 (0.018)	0.005 (0.023)

Table 4 - continued

Variable	Ordinary Least Squares Method: Only Females	Ordinary Least Squares Method: Only Males
Unemployment Insurance	-140.033 (112.307)	-78.910 (126.686)
Unemployment Assistance	65.378 (137.869)	-40.303 (127.630)
No Unemployment Benefits	--	--
Regional Unemployment Rate	13.446 (11.276)	15.126 (11.327)
Skill-Specific Unemployment Rate	-4.880 (11.677)	-40.063*** (9.731)
Structural Change	15.233 (13.492)	9.678 (9.035)
Unemployment Duration	-7.629** (3.713)	-0.902 (2.453)
Full-Time Full-Time	577.473*** (90.545)	--
Full-Time Part-Time	-73.949 (84.586)	-158.104 (253.893)
Part-Time Full-Time	604.363*** (123.765)	983.411** (412.460)
Part-Time Part-Time	--	--#
Constant	1519.785*** (341.468)	2877.175*** (590.114)
$\overline{R}^2$	0.540	0.491
F-Statistics[b]	13.173***	20.210***
Observations	229	419

[a]Heteroscedasticity-consistent standard errors by White (1980) are given in parenthesis; [b] F-test of overall significance; ***, ** and * denote coefficients that are statistically significantly different from zero at the 1, 5, and 10 per cent level; -- labels the reference value for dummy variables; --# for the group of males no person worked part-time and wants to work part-time, thus this category has been omitted and the category full-time full-time has been taken as the reference level.

Source: GSOEP (1998); own calculations.

Most of the differences in the estimates between these sexes are due to individual characteristics. The most striking fact is that the traditional roles with males as first earners and females as additional earners are still alive. For example, the dummy for having a partner is significant for both sexes, but with a negative sign for females and a positive sign for males. Moreover, having children increases the reservation wage for males but not for females. Thus males still often provide for their families.

The fact that the dummy for being disabled is insignificant for females but significant for males may be caused by the number of observations. Only 15 females compared to 42 males are disabled.

One further interesting aspect is the insignificance of the age coefficient for males, which is in contrast to the theory of seniority earnings, which postulates a direct relationship between age and earnings and thus an indirect relationship between reservation wages and age. [38] The reason for this phenomenon is simple: in the first stage of the instrument variable estimation age is significantly positive for males but insignificant for females. Thus the influence of age seems to be captured in the last wage for males, but not for females. Thus the interpretation of the estimation results for age is the same for both sexes.

The skill-specific unemployment rate is only significant for males. The coefficient reflects a reduction in reservation wages of 40 DM per percentage point of the skill-specific unemployment rate. For females such a reduction of reservation wages with higher skill-specific unemployment rates is not observable. Thus males seem to determine their reservation wages more rationally. However, females adapt their reservation wages by 91.5 DM per year during

[38] See Lazear (1981) for the theory of seniority earnings.

unemployment, whereas males do not. Since the mean reservation wage for females is 1696.8 DM, the reduction only amounts to 5.4 per cent.

One further interesting question is the reservation wage across different skill groups. For example, it may be the case that for low-skilled workers the difference between potential net wage incomes and the social welfare payments is very small and thus a reduction of reservation wages with duration of unemployment is prevented.[39] To analyse these aspects estimations of the reservation wage for different skill sub-samples are presented in Table 5.[40]

[39] See Boss (1999) for a discussion of net wage incomes and the social welfare payments in Germany.

[40] Again only OLS-estimation results are presented, as on the basis of the Hausman the null hypothesis cannot be rejected in any case. The *F* statistic for persons without formal skills is 0.292 (critical value $F(1; 268)_{0.05}=3.876$) and the *F* statistic for persons with at least semi-skills is 0.059 (critical value $F(1; 380)_{0.05}=3.866$).

Table 5 - Estimation Results for the OLS-Estimation Differentiated by Skill-Groups[a]

Variable	**Ordinary Least Squares Method: Only for Non-Skilled Persons**	**Ordinary Least Squares Method: Only Persons with at Least Semi-Skills**
Dependent Variable	Reservation Wage	Reservation Wage
Last Wage	0.307*** (0.058)	0.520*** (0.068)
Male	329.621*** (80.524)	346.604*** (90.834)
Age	1.242 (2.585)	9.996*** (3.121)
Partner	-54.024 (69.009)	33.362 (69.830)
Children	103.770*** (24.249)	60.293* (33.896)
Disabled	-8.175 (84.206)	-101.932 (98.427)
Foreigner	21.196 (56.960)	64.109 (62.228)
East German	--[#]	-122.032 (107.649)
West German	--	--
Good Reemployment Chances	72.070 (123.522)	240.471** (116.272)
Hard Reemployment Chances	-58.753 (72.373)	-9.264 (74.561)
No Reemployment Chances	--	--
Houshold Income	0.011 (0.018)	-0.016 (0.025)
Unemployment Insurance	33.622 (116.536)	-184.070 (135.931)
Unemployment Assistance	31.022 (118.166)	-37.500 (153.132)
No Unemployment Benefits	--	--

Table 5 - continued

Variable	Ordinary Least Squares Method: Only for Non-Skilled Persons	Ordinary Least Squares Method: Only Persons with at Least Semi-Skills
Regional Unemployment Rate	27.626** (13.087)	2.044 (11.779)
Skill-Specific Unemployment Rate	-22.677** (8.778)	-23.796* (13.604)
Structural Change	4.403 (10.738)	17.238 (11.013)
Unemployment Duration	0.427 (2.455)	-5.167 (3.795)
Full-Time Full-Time	627.364*** (121.632)	372.392*** (132.039)
Full-Time Part-Time	24.963 (141.801)	1.032 (129.430)
Part-Time Full-Time	782.245*** (177.310)	815.412*** (299.537)
Part-Time Part-Time	--	--
Constant	776.475*** (250.719)	1815.311*** (446.606)
$\overline{R}^2$	0.506	0.606
F-Statistics[b]	15.410***	27.538***
Observations	268	380

[a]Heteroscedasticity-consistent standard errors by White (1980) are given in parenthesis; [b] F-test of overall significance; ***, ** and * denote coefficients that are statistically significantly different from zero at the 1, 5, and 10 per cent level; -- labels the reference value for dummy variables; --# for the group of non-skilled persons no person came from Eastern Germany.

Source: GSOEP (1998); own calculations.

The first point which stands out is the fact that the duration of unemployment is neither significant in the group of non-skilled persons nor in the remaining sample.[41] Thus the missing reaction in reservation wages with increasing dura-

[41] I also estimated the reservation wage regression seperatly for the group of semi-skilled persons and for the group of semi-skilled and skilled persons. In these groups the duration of

tion of unemployment is not only a phenomenon in the group of non-skilled persons.

Again, the coefficient of age is significant in only one sub-sample, the group of at least semi-skilled persons. The explanation is not the same as in the estimation differentiated by sex, because in the group of non-skilled persons the first stage of the instrument variable estimation shows no significance for the age coefficient. Thus seniority wage aspects may play no role for persons in the lower income category.

Another striking fact is that good reemployment chances do not raise the reservation wages in the group of non-skilled persons, but do so in the remaining sample. The share of persons which answered that they would have good reemployment chances is only a bit smaller in the first group than in the second group: 7 per cent in the first and 11 per cent in the last group. Thus it seems to be the case that persons in the lowest skill group have a relatively fixed reservation wage with regard to this aspect.

Finally, the significant positive coefficient of the regional unemployment rate for non-skilled persons is puzzling. Such a coefficient is unexpected and cannot be explained in this context.

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unemployment is highly significant. But the coefficients are -8.1 and -7.3. Thus the reduction of reservation wages with duration of unemployment is marginally small. For example in one year of unemployment the reduction is 97.2 DM respectively 87.6 DM. This is only 4.3 per cent respectively 3.9 per cent of the mean reservation wage of these groups.

7 Summary

The aim of this analysis is to understand the factors which affect reservation wages in Germany in the context of a job-search model with non-static reservation wages. The data-set allowes an analysis of reservation wages for the time span from 1987 to 1998. The sample includes 648 observations experienced by males and females.

The results of the study indicate that the ratio of reservation wages to last wages is extremely high in Germany in comparison to other countries. The share of unemployed persons who are willing to accept a marked-oriented decrease in wages from last to next job is very small and a high percentage of persons even want substantial wage gains. This stands in contrast to theoretical aspects, which indicate that human capital is reduced while being unemployed.

Moreover, the present estimation results verify that last wage and personal characteristics are the most important determinants of reservation wages. In contrast to other existing studies the findings show neither a reduction of reservation wages with unemployment duration nor with different kinds of unemployment benefits. As only unemployed persons can be analysed and the reductions from unemployment insurance to unemployment assistance are very small in Germany, it is not clear whether the reduction and, in the end, the exhaustion of unemployment benefits forces people to intensify their job-search or not. The results also suggest that labour market conditions only play an insignificant role in explaining reservation wages. Only the skill-specific unemployment rate exhibits a significant influence on reservation wages.

The sub-sample estimates indicate that there are only small differences in determinants of reservation wages for males and females and the fundamental results remain unchanged. Personal characteristics reflect that the traditional

roles with regard to males as first earners and females as additional earners are still alive.

The results have also shown that differences between skill groups in explaining reservation wages are only small. There is limited evidence that reservation wages are more sticky for the lowest skill category, as indicated by the absence of a significant influence of age and self-assessment of reemployment chances on reservation wages.

All in all, the results presented in this paper suggest that unemployed persons have no strong pressure to return to work after becoming unemployed. Apparently, they fix their reservation wages at a high level and do not lower them in the course of unemployment. Thus, a motivation gap seems to exist in Germany. Future research should aim at including labour demand aspects in analyses of reservation wages. Moreover, aspects of unemployment benefits should be analysed in more detail to suggest concrete political conclusions with regard to unemployment benefits.

8 Appendix

Table 6 - Description of Data

Variable	Description
Reservation Wage	At most monthly net income in 1995 prices[42] to take an offered position (only unemployed persons)
Last Wage	Monthly net income in 1995 prices[43] in last job (at most two years before information of unemployment)
Male	Dummy for being male
Age	Age in years
Partner	Dummy for having partner or being married
Children	Number of children under 16 in the household
Disabled	Dummy for being handicapped
West German	Person from Western Germany
East German	Person from Eastern Germany
Foreigner	Foreigner and immigrants
Non-Skilled Person	No schooling or basic schooling (Haupt-, Realschule) and no vocational training
Semi-Skilled Person	Basic vocational training (Lehre, Ausbildung) and no basic schooling; university entrance certificate (Abitur, Fachhochschulreife) and no vocational training; basic schooling (Haupt-, Realschule) and vocational training
Skilled Person	university entrance certificate (Abitur, Fachhochschulreife) and vocational training
Highly-Skilled Person	University degree or equivalent (Universität, Fachhochschule, etc.)
Good Reemployment Chances	Easy to find a new job (self-assessment)
Hard Reemployment Chances	Difficult to find a new job (self-assessment)
No Reemployment Chances	Almost impossible to find a new job (self-assessment)

[42] Consumer prices from Sachverständigenrat (2000: table 10*).

[43] Consumer prices from Sachverständigenrat (2000: table 10*).

Table 6 - continued

Variable	**Description**
Low Occupation in Last Job	Necessary education or training at work: no particular education or training, a short introduction on the job, a longer training period in the company, participation in special training or courses
High Occupation in Last Job	Necessary education or training at work: completed vocational education in this area, completed education at an institution of higher education
Full-Time Full-Time	Dummy for having worked in full-time (last job) and being interested in full-time employment
Full-Time Part-Time	Dummy for having worked in full-time (last job) and being interested in part-time employment
Part-Time Part-Time	Dummy for having worked in part-time (last job) and being interested in part-time employment
Part-Time Full-Time	Dummy for having worked in part-time (last job) and being interested in full-time employment
Household Income	Monthly household net income
No Unemployment Benefits	Persons who received no unemployment assistance and no unemployment insurance
Unemployment Assistance	Persons who received unemployment assistance (Arbeitslosenhilfe)
Unemployment Insurance	Persons who received unemployment insurance (Arbeitslosengeld)
Capacity Utilization	Utilization of the production capacity in the manufacturing industry from Sachverständigenrat (1998: table A1)
Regional Unemployment Rate	Aggregate unemployment rate by region (Bundesland) from Statistisches Bundesamt (various issues)
Skill-Specific Unemployment Rate	Within-group unemployment rate matched by formal education for individuals with no vocational training (ohne Berufsausbildung), vocational training (Lehre, Berufsfachschule), advanced vocational training (Fachschule), technical college (Fachhochschule), and university degree (Universität). Data taken from Reinberg (1999: 444)

Table 6 - continued

Variable	**Description**
Structural Change	On the basis of all observations in the GSOEP (1998) total employment growth rates and sectoral employment growth rates (differentiated by occupation) are calculated including the personal weighting of the GSOEP and 0.5 for part-time employment. Then the relative growth rates of every sector in relation to the total growth rate are calculated. [44] To prevent severe fluctuation the moving-average of order four is used. The classification of different occupations in sectoral groups is based on the ISCO 2-Digit and is described in detail in Table 7 in Appendix. No Information about Isco 2 Digit is coded with "0".
Unemployment Duration	Actual number of months an individual is registered as unemployed at the employment office

[44] See Klodt et al. (1997: 165-166) and Schimmelpfennig (1998) for details.

Table 7 - Descriptive Statistics for the Reservation Wage and the Explanatory Variables

Variable	**Mean/Share**[a]	**Standard Deviation**
Reservation Wage	2255.57	826.58
Last Wage	2101.52	810.64
Male	0.65	0.48
Age	37.98	11.14
Partner	0.73	0.44
Children	0.83	1.10
Disabled	0.09	0.28
West German	0.50	0.50
East German	0.02	0.15
Foreigner	0.47	0.50
Non-Skilled Persons	0.41	0.49
Semi-Skilled Persons	0.53	0.50
Skilled Persons	0.04	0.19
Highly-Skilled Persons	0.02	0.14
Good Reemployment Chances	0.09	0.29
Hard Reemployment Chances	0.67	0.49
No Reemployment Chances	0.23	0.42
High Occupation in Last Job[b]	0.36	0.48
Full-Time Full-Time	0.82	0.39
Full-Time Part-Time	0.08	0.26
Part-Time Part-Time	0.08	0.28
Part-Time Full-Time	0.02	0.15
Household Income	3063.77	1595.80
No Unemployment Benefits	0.09	0.28
Unemployment Assistance	0.24	0.43
Unemployment Insurance	0.68	0.49
Capacity Utilization	95.06	2.30

Table 7 - continued

Variable	**Mean/Share**[a]	**Standard Deviation**
Regional Unemployment Rate	9.43	2.61
Skill-Specific Unemployment Rate	11.44	6.98
Structural Change	-0.76	2.68
Unemployment Duration	12.40	12.73

[a] Mean for continuos data and share for discrete data. [b] Only for 638 observations because of missing data.

Source: GSOEP (1998); own calculations.

Table 8 - Occupational Classification of Sectors

Sector	**Occupation**
Primary Occupations:	agricultural administrator; farmer agriculturist; farm hand; forestry worker; fisher, hunter
Secondary Occupations:	
1. Group:	miner; chemical worker; stonemason; glass formers, potters; rubber producer
2. Group:	foundry worker; toolmaker, blacksmith; machine fitter; electrofitter, electro-worker
3. Group:	lumber-paper producer; paper producer; printer, etc.
4. Group:	spinner weaver; tanner, weaver, dipper; tailor; shoemaker
5. Group:	food producer; tobacco producer
6. Group:	tube fitter; painter; bricklayer, carpenter, construction worker
7. Group:	cabinetmaker; jewelry maker
8. Group:	manufacturer; stationary machine operator; convey operator; cransportation operator; handmaid
Personal Service Occupations:	
1. Group:	journalist; sculptor, painter; musician, performer; professional athlete; restaurant and store manager; lodging operator; household supervisor; cook, waiter; domestic helper; drycleaner; hair stylist
2. Group:	transport attendant; conductor; mailman; telephone operator; broadcaster
3. Group:	business manager; business operator; salesperson/buyer; technic salesperson; vendor

Table 8 - continued

Sector	**Occupation**
Personal Service Occupations:	
4. Group:	chemist; architect, engineer; engineer, technical expert; aero-marine engineer; accountant; lawyer; private business leaser; office manager; administrator; stenographer; bookkeeper, cashier; computer operator; office worker etc.; insurance agent; janitor; security service; production supervisor
5. Group:	natural scientist; mathematician; economist; educator; scientist
6. Group:	physician, dentist, vet; relative medical jobs; cleric
7. Group:	legislator; service worker; soldier; officer

Source: GSOEP; idea taken from Klodt et al. (1997) and Schimmelpfennig (1998, 2000); own classification.

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