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WAGE DIFFERENTIAL AND ALLOCATION: AN APPLICATION TO THE AZORES ISLANDS

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ABSTRACT

This paper provides an analysis of wage differential determinants in the Azores Islands.

We consider the human capital, segmented labor market and assignment (or allocation) theories. From the empirical analysis, we conclude that wages are significantly affected by supply variables such as years of schooling and experience and demand variables expressed by the level of qualification of the job.

We show that the rates of return to schooling, and seniority at the firm are different across the levels of qualification.

By gender we conclude that females face not only low wage rates but also an allocation disadvantage by levels of qualification. In this case "equal pay for equal work" policies can be inefficient against labor market discrimination.

INTRODUCTION

There exists an extensive literature concerning wage differential determinants. In this paper we attempt towards an empirical analysis of wage differential determinants in the Azores Islands. Within the theoretical literature we consider essentially the theories of the human capital, segmented labor market and assignment (or allocation). Similar empirical analysis was done recently by some authors.

The so called human capital earning function includes as explanatory variables individual or supply side characteristics like years of schooling and experience of the workers. The assignment (or allocation) theory predicts that both supply side and demand side variables are relevant. The level of qualification is a special variable used in this paper. It is considered a demand side variable measured on a seven points scale. This classification uses as criterion the

extent of complexity and responsibility of the job.

In the absence of good measures for the demand side there exist a limited number of empirical studies that use them. These are used, for example, by Lucas (1977), Hartog (1981, 1985 and 1986), Hartog and al. (1990) and Van Ophem and al. (1991). From the results obtained it seems that this is one more contribution that validates the role of both demand and supply variables in the explanation of wage differential.

This work determines also the rates of return to schooling, to seniority at the firm and wage differential and allocation by gender.

I. SOME THEORETICAL OBSERVATIONS

Since Mincer's book (1974) the literature on earnings functions has been dominated by the human capital specification. The human capital earnings

functions used here are:

$$\ln W = a + b\,ED \qquad (1.1)$$

and

$$\ln W = a + b\,ED + c\,EXP + d\,EXP^2 \qquad (1.2)$$

where

W - individual earnings

ED - years of schooling

EXP - years of work experience, calculated as EXP = Age - ED - 6.

Since the time of work is not the same across individuals the logarithm of hours worked (ln H) is usually included as an explanatory variable in these equations.

The derivative $d(\ln W)/d\,ED = b$ is interpreted as the rate of return to schooling (Mincer,1974).

The human capital theory focuses on supply side variables of the labor market. The theory implicitly "either assumes that individual with a given amount of human capital are always allocated to their optimal position or that within occupations different amounts of human capital are perfect substitutes" (Hartog, 1985:281). So, no attention is given to demand side variables like occupation or job.

Opposing the human capital theory the segmented labor market theory (or theories) gives emphasis to demand side variables in the explanation of wage differential. Thurow's segmented labor market version stresses that wage rates are determined solely by job or occupation characteristics. In his job competition model, wages are paid based on the characteristics of the job in question and the marginal product resides in the job and not in the worker (Thurow, 1975).

According to Thurow individual characteristics,

like education, are important (used as screening devices) in the process of allocation of individuals to jobs. However, given the job (or being allocated) they do not affect earnings.

A third approach combines both supply side and demand side variables. This approach stresses the existence of an allocation or assignment problem of individuals to jobs and the role of wages in this process.

In this paper we analyze the distribution of individuals over the levels of qualification and the wage function.

In the literature of allocation the wage function is an hedonic price function (as for example Lucas, 1977 and Van Ophem and al. 1991).

The model developed by Van Ophem and al. (1991), in which utility maximizing individuals select a job by considering the utility effect of the job complexity and wage rate, the equilibrium wage

function provides compensation for the jobs with more complexity (as in Tinbergen, 1956).

The equations estimated in this work, relating to the allocation theory are for convenience presented with the empirical analysis.

II. DATA

We use a micro-data sample from Quadros de Pessoal (statistics of individual firms provided annually to the Department of Labor). This sample refers to the year of 1989 and contains 3994 observations from which 2094 are males and 1900 females. It includes information on personal characteristics and wages such as age, level of education, sex, gross wages and hours worked.

Information about the job is also available, including a measure of complexity and responsibility of the job developed by the Department of Labor - the "level of qualification"

(or the job level) measured on a seven points scale. Level 0 is the lowest corresponding to a very simple work which can be performed after a few days of experience. Level 6 the highest corresponding to a very complex work, requiring high responsibility and a scientific basis. The appendix 1 gives a description of the scale.

See Tables A.2.1 to A.2.4 of appendix 2 for data characteristics.

III. ESTIMATION RESULTS

Our estimation results are in the Tables of appendix 2.

III.1. The Human Capital Specifications

We start by the analysis of Tables A.2.5, A.2.6

and A.2.7 for the total sample, males and females respectively, concerning the human capital earnings functions. Equations (1) and (2) have as explanatory variables only personal characteristics (human capital specification). Equations (3) and (4) include the logarithm of hours worked (lnH) as an explanatory variable.

From the regressions (2) the implied rates of return to schooling are 10.3% for the total sample, 11.1% for males and 10.9% for females. Using micro-data for the portuguese mainland Silva (1985) obtained 8.4% for males and 9% for females. More recently Martins (1991) using median values instead of individual values obtained a much lower level: 7.3% for males and 8% for males. Mincer (1974) estimated for males (with data of 1959) a rate of 10.3%. Including lnH as an explanatory variable the rates of return to one year of schooling implied by the regressions (4) are 10.4% for the total sample, 11.4% for males and 10.2% for females.

Attending the relation between ln of earnings

and years of experience equations (2) in Tables A.2.6 and A.2.7 suggest that a peak is reached at 36 years of experience (42 years old) for males and females. Lower values were obtained by Martins (1991): 31 and 27 years of experience for males and females respectively.

III.2 Rates of Return to Schooling and to Seniority at the Firm

Including the individual seniority (tenure) at the firm in the earnings function as an explanatory variable we estimate

$$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + g\,\ln H + e \qquad (3.1)$$

where d*100 is interpreted as the net rate of return to one year of experience at the actual firm (see Abraham and al. 1987).

From Table A.2.8 the rate of return to one year

of schooling is 10.7% for males and 8.8% for females. The net rate of return to one year of experience at the actual firm (seniority) is 1.0% for males and 1.9% for females.

III.3. Expanding the Earnings Function and Calculating the Rates of Return to Schooling Through the Use of Dummy Variables

The use of dummy variables in the estimation of the rates of return to schooling captures some nonlinearities taking into account a desired level of education as reference. Here we also expand the earning function by considering the firm size as an explanatory variable. This variable was recently used by Kiker and Santos (1991). Theoretical support for a positive relationship between firm size and individual earnings was given, for example, by Weiss and al.(1984) and Oi (1990). We estimate

$$\ln W = a + b\,Ed4 + c\,Ed6 + d\,Ed9 + f\,Ed11 + g\,Ed14 + h\,Ed16 + i\,Exp + j\,Exp^2 + l\,Ten +$$

$$+ m\ Ten^2 + n\ A2 + o\ A3 + p\ lnH + e \qquad (3.2)$$

where

Edi dummy variable with value one if the individual has at least i years of schooling (i=4,6,9,11,14,16).

A2 dummy variable with value one if the firm has 25 or more employees an less than 100.

A3 dummy variable with value one if the firm has 100 or more employees.

The category A1, if the firm has less than 25 employees, is used as reference. As can be seen from Table A.2.9, the coefficients of A2 and A3 are positive and coefficient of A2 > coefficient of A3. So monthly earnings increase with the firm size.

Considering ß the coefficient associated to the level of education Edk, and Edj the level of schooling precedent to Edk, the rate of return to one year of schooling when the individual goes from

Edj to Edk is given by

$$r = \frac{\beta}{S_k - S_j} * 100$$

where S_k and S_j are the years of schooling of Edk and Edj respectively. The estimated values of β and the rates of return to one year of schooling are the following

- Insert Table 1 and Table 2 -

As can be observed (see Table A.2.9) the rates of return to schooling for the first four years of schooling are not significantly different from zero, for females. Also they are not significantly different from zero, for males and females, when the individual goes from 14 years of schooling ("bacharelato": university 3 years) to 16 years ("licenciatura": university 5 years). The higher rates of return are observed for "11 versus 14 years" of schooling.

III.4. The Inclusion of the Level of Qualification as an Explanatory variable

According to the allocation theory the earnings functions include supply side variables, or individual characteristics, and demand side variables, or job characteristics. However "labour economists have not sufficiently recognized the role that occupation plays in the determination of wages. The usual approach is to explain wages in terms of the individual characteristics and not of the characteristics of the work that they perform"[Beyer and al., 1989:595].

The level of qualification (or job level) is a variable recently included by some authors as Hartog (1985 and 1988) and Van Ophem and al.(1991) in the earnings functions for Netherlands. It is considered a demand side variable measuring job complexity. To Grift and al. "empirical investigations show a large increase in explanatory power of human capital wage rate equations as soon as job level is introduced as an explanatory

variable"[Grift and al., 1988:4].

In our case the level of qualification (very similar to the job level in Netherlands) is an ordinal variable measured on a seven points scale. We estimate

$$\ln W = a + b\ Ed4 + c\ Ed6 + d\ Ed9 + f\ Ed11 + g\ Ed14 + h\ Ed16 + i'Ni + j\ Exp + l\ Exp^2 + m\ Ten + n\ Ten^2 + o\ A2 + p\ A3 + q\ \ln H + e \qquad (3.3)$$

where

Ni - dummy variable with value 1 if the individual is in the level of qualification i (i=1,2,3,4,5,6). The level 0 is considered the reference category.

The results are in the Table A.2.10. Calculating the rates of return to schooling by the method presented in III.3 we obtain

- Insert tables 3 and 4 -

As can be seen these rates are lower than those obtained in III.3 . This is due to the possible correlation between the education of the individual and the characteristics required by the job (level of qualification). A similar result was obtained by Van Ophem and al. (1991) and Beyer and al. (1989).

From Table A.2.10 the coefficient associated to Ed16 is not significantly different from zero for males and females as in III.3. Also the coefficient associated to Ed4 is not significantly different from zero for females, implying that the rate of return to the first four years of schooling is near zero.

The monthly earnings does not increase necessarily with the complexity of the job. In some cases a job with more complexity is not compensated with higher earnings. For example, the coefficient of the level 3 is higher than that of the level 4 and level 5 higher than level 6.

Equation (3.3) is the equation (3.2) expanded with the inclusion of the level of qualification as an explanatory variable. Using an F test the null hypothesis that the level of qualification has not an explanatory power is rejected. The values of F are the following

- Insert table 5 -

Such as in other works, as for example Hartog (1985 and 1986) or Van Ophem and al. (1991), it seems that demand side variables like the level of qualification of the job (or occupation) are important in the explanation of earnings differential.

III.5. Earnings and Rates of Return Within Levels of Qualification

III.5.1. OLS Estimates

In this part we estimate separate earnings functions for each level of qualification, as was done for example by Grift and al. (1998) or Beyer and al. (1989). The results are presented in Tables A.2.11 and A.2.12 for males and females respectively. We estimate

$$\ln W_{ji} = a_j + b_j Ed_i + c_j Exp_i + d_j Exp^2_i + f_j Ten_i + g_j A2_i + h_j A3_i + l_j lnH_i + e_{ji} \quad (3.4)$$

where

j indicates the level of qualification

i indicates the observation (or the individual)

As can be seen from Tables A.2.3 and A.2.4, there are few observations in the three higher levels of qualification. In order to estimate the earning function presented above the analysis was carried out using only five "levels of

qualification". So, the levels 4, 5 and 6 was considered as one. A similar aggregation was done by Grift and al. (1988), by job levels (very close to the levels of qualification in Portugal), for the Netherlands.

In this analysis we investigate if (1) given the level of qualification, or occupation, the education is an irrelevant variable in the explanation of earnings differential, as Thurow 1975 postulates? If not (2) the rates of return to schooling are different across levels of qualification (or occupations), as was found in Beyer and al. (1989)?.

As can be seen, from Table A.2.11, schooling has an explanatory power within each level of qualification for the males sample. This is not according to Thurow (1975). The rates of return to schooling are different across levels of qualification, being of 2.5% (the lowest) for the level 1 and of 8.9% (the highest) for the level 3. This is according to Beyer and al. (1989).

The net rate of return to seniority at the firm (see Abraham and al. 1987) is not significantly different from zero in the levels of qualification 3 and 4. In the other cases it varies between 0.9% (level 0) and 1% (level 2). Abraham and al. (1987) found for USA values of 1% (Managerial and Professional Nonunion) and 1.4% (Blue Collar Nonunion).

For females the rate of return to schooling is not significantly different from zero in the level 0. In the other cases the rates of return to schooling are between 3.9% (level 1) and 5.5% (level 5). The rates of return to schooling are lower for females than for males, except in the level of qualification 1. The net rate of return to seniority at the firm varies between 0.9% (level 0 - the same as found for males) and 1.5% (level 3).

III.5.2 Selectivity Bias

III.5.2.1. The Problem and the Method of Lee (1983)

Estimating separated earnings functions by levels of qualification may arise some problems of sample selection and conventional OLS estimates may be biased and inconsistent. As in Grift and al.(1988) "the selectivity bias emerges due to the fact that an individual's wage is selectively observed for only one job level, i.e job level to which a worker is actually allocated [...] for a complete picture of the wage structure one also needs information about the wage rate a worker would earned if he had been working in other job levels [Grift and al.,1988:11].

Lee (1983) developed a two step method (multinomial logit-OLS two step method) to correct the selectivity bias. The application of the method was done by Trost and Lee (1984), Dolton and al. (1989) and more recently by Gindling (1991).

Assume as in III.5.1 that earnings are determined by the following function

$$\ln W_{ji} = a_j + b_j \, Ed_i + c_j \, Exp_i + d_j \, Exp^2_i + f_j \, Ten_i + g_j \, A2_i + h_j A3_i + l_j \, \ln H_i + e_{ji} \qquad (3.5)$$

Let Y_{ij} the propensity (not observed) of the individual i to be at the level of qualification j (j=0,...,4). The individual is allocated to the level of qualification where that propensity is the largest. So, we have that

$$Ni = \begin{cases} 0 \text{ if } Y_{0i} = \max_{j=0,1,\ldots,4} (Y_{ji}) \\ 1 \text{ if } Y_{1i} = \max_{j=0,1,\ldots,4} (Y_{ji}) \\ 2 \text{ if } Y_{2i} = \max_{j=0,1,\ldots,4} (Y_{ji}) \\ 3 \text{ if } Y_{3i} = \max_{j=0,1,\ldots,4} (Y_{ji}) \\ 4 \text{ if } Y_{4i} = \max_{j=0,1,\ldots,4} (Y_{ji}) \end{cases} \qquad (3.6)$$

We express Y_{ij} as a linear function of individual characteristics as education, general

experience in the labor market, and seniority at the firm (specific experience) and a random disturbance v_{ij}. This is

$$Y_{ji} = a + \beta_j' Z_i + v_{ji} \qquad (3.7)$$

where

Z_i is the vector of explanatory variables mentioned above a and β_j'(vector) parameters to be estimated

$$E(v_{ji} \mid Z_i) = 0$$

Since an individual is observed only in one of the levels of qualification earnings data are generated according to (3.5) and (3.6). So the earning function is

$$\ln W = \begin{cases} \ln W_0 & \text{if} \quad N = 0 \\ \ln W_1 & \text{if} \quad N = 1 \\ \ln W_2 & \text{if} \quad N = 2 \\ \ln W_3 & \text{if} \quad N = 3 \\ \ln W_4 & \text{if} \quad N = 4 \end{cases} \tag{3.8}$$

where the subscript i is suppressed.

Now taking the expected value in (3.5) conditional on (3.8), we have that

$$E(\ln W_j \mid N=j) = a_j + b_j \, Ed + c_j \, Exp + d_j \, Exp^2 + \\ + f_j \, Ten + g_j \, A2 + h_j A3 + l_j \, lnH + E(e_j \mid N=j) \\ j=0,\ldots,4 \tag{3.9}$$

If $E(e_j \mid N=j)$ is not zero selectivity exists and application of the conventional OLS to the subsamples in general leads to biased and inconsistent estimates.

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We use the method developed by Lee (1983) to correct for selectivity bias. Following Lee the implied equation to be estimated in our case is of the type

$$\ln W_j = a_j + b_j \ Ed + c_j \ Exp + d_j \ Exp^2 + f_j \ Ten + g_j \ A2 + h_j A3 + l_j \ lnH + \theta_j \ S_j + u_j \qquad (3.10)$$

where

$$E(u_j \mid N=j) = 0 \quad (j=0,1,\ldots,4)$$

and

$$S_j = \frac{\phi[\Phi^{-1}(P_j)]}{P_j} \qquad (3.11)$$

ϕ and Φ are the standard normal density and distribution functions respectively. P_j denotes $Pr(N=j)$ to be defined later. θ_j is a parameter that indicates, in our case, the correlation between

individual earnings in a given level of qualification and the probability of the individual be allocated in that level.

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The two step method proposed by Lee (1983), in this case, consists:

1. Estimate an allocation function of individuals to the various levels of qualification by a multinomial logit calculating P_j as

$$\Pr(N=j) = \frac{\exp(b_j Z)}{1 + \sum_{s=1}^{4} \exp(b_s Z)} \qquad j=0,\ldots,4 \qquad (3.12)$$

where, in our case, level 0 is used for normalization ($b_0=0$). So the estimated parameters are interpreted as $b_j - b_0$ (j=1,..,4).

2 . Taking the probabilities P_j we calculate

S_j, by substituting P_j in (3.10). Consistent parameter estimates are obtained by OLS using the equation

$$\ln W_j = a_j + b_j \; Ed + c_j \; Exp + d_j \; Exp^2 + \\ + f_j \; Ten + g_j \; A2 + h_j \; A3 + i_j \ln H + \theta_j \; S_j + E_j \\ j=0,....,4 \qquad (3.13)$$

A test for the presence of selectivity bias involves the null hypothesis $\theta_j = 0$. The error term E_j is heteroscedastic. The true matrix of variances and covariances is estimated, in our results, with the process presented by W. Greene (1989).

+ + +

III.5.2.2 The Allocation Process

The allocation function includes as explanatory variables years of education of the individual, labor market general experience and tenure at the firm (as a proxy for specific experience). Recall that we adopt as reference the level of qualification 0. The coefficients are interpreted as the effect on the probability of the workers being allocated to the other levels of qualification rather than to level 0. The estimate results are in Tables A.2.13 and A.2.15 for males and females respectively.

As expected the coefficient associated to education is positive and increases with the levels of qualification, for males and females. This implies that an additional year of education increases the probability of the individual be allocated to the other levels rather than to the level zero. It also implies that an additional year of education increases the probability of being

allocated to the level of qualification j+1 rather than to the level j (j=1,...,4).[*]

The coefficient associated to general labor market experience has the expected positive sign and size. However it is not significantly different from zero for level 1.

Tenure at the firm has the expected positive sign, but it is not significantly different from zero for males and females in the level 1 and in some cases it does not increases with the levels of qualification.

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[*] The estimated equations are of the type:

$$\ln(P_j/P_0) = a_j + b_j \, Ed + c_j \, Exp + d_j \, Ten + e_j \quad j=1,\ldots,4$$

So

$$\ln(P_{j+1}/P_j) = (a_{j+1} - a_j) + (b_{j+1} - b_j) \, Ed + (c_{j+1} - c_j) \, Exp + (d_{j+1} - d_j) \, Ten + (e_{j+1} - e_j)$$

If $b_{j+1} > b_j$ we have that $(b_{j+1} - b_j) > 0$.

Considering the Chi- squared values in Tables A.2.13 and A.2.15 it is obvious that individuals, or workers, are no randomly allocated to the various levels of qualification. This may be according to Thurow (1975).

III.5.2.3 Estimated Earnings Functions Corrected for Selectivity Bias

Tables A.2.14 and A.2.16 contain the earnings functions parameter estimates corrected for selectivity bias. As can be seen the null hypothesis of $\theta_j=0$ is not rejected at 10% of significance. So we may conclude that, even though allocation of individuals to levels of qualification is not random, the probability that an individual is allocated to a level of qualification is not significantly correlated with the error term of the earning function for that level. The conventional OLS estimates without the correction term are not biased by sample

selectivity.

IV. Earnings Differential Between Males and Females

IV.1 Using Dummy Variables

IV.1.1 The General Case

In this part we present some earnings functions estimates that include as explanatory variable a dummy variable with value one if the observation refers to a female. Since the dummy is a discrete variable, earnings differential (in percentage) between females and males are determined by

$$k = (e^{a} - 1)*100 \qquad (4.1)$$

as proposed by Halvorsen and Palmquist (1980), where a is the dummy coefficient.

We calculate that, ceteris paribus, females earn about 19% less than males. This disadvantage of females was found in several studies relating other countries or regions.

- insert table 6

IV.1.2 Calculating Gender Differential Within Levels of Qualification

We estimate the following earning function by levels of qualification

$$\ln W_j = a_j + b_j \; Ed + c_j \; Exp + d_j \; Ten + f_j \; Exp^2 + g_j \; lnH + i_j \; Female + e_j \qquad (4.2)$$

$j=0,\ldots,4$

The results appear in Table A.2.18. As can be seen the sign associated to female is negative

indicating that females earn less than males within each level of qualification. The values of k are the following

- insert table 7

+ + +

To correct for selectivity bias we use the method of Lee (1983). The results of the multinomial logit estimates are presented in the Table A.2.19. As can be seen the coefficient associated to female is negative and increases in absolute value with the levels of qualification. So, ceteris paribus, females have an allocation disadvantage in the labor market. Measures against labor market discrimination by gender must consider this situation.

The results corrected for selectivity bias are in Table A.2.20. The correction term coefficient is significantly different from zero for levels 1 and 2.

-Insert table 8

The conventional OLS, without the correction term, underestimates the relative earnings difference by gender in the level 1 and overestimate in the level 2.

IV.2. Earnings "Gap" Decomposition.

Usually the earnings "gap" between males and females is decomposed in the following way

$$\ln W_m - \ln W_f = \underset{(A)}{b_m(X_m - X_f)} + \underset{(B)}{X_f(b_m - b_f)} \qquad (4.3)$$

where

- $\ln W_i$ (i=m,f) is the mean of the logarithm of (monthly) earnings (m and f refers to males and females respectively).

- X_i (i=m,f) is the mean of the group characteristics (as years of education or experience).

- b_i (i=m,f) the coefficients estimated for separate earning functions, for males and females.

The first term (or A) explains that difference in terms of mean characteristics (endowments) differential evaluated at the price (coefficients) of males. The second term (or B) is presented in some studies as a measure of discrimination. However "... the second component is a residual, for it to be an exact measure of labor market discrimination all of the factors that determine the wage must be present and properly accounted for [...] if perhaps because of data limitations some have been excluded and other poorly measured, the residual will reflect this omitted influences"[Cotton, 1988:237]. So the calculated difference due to discrimination may be overestimated or underestimated.

From Table A.2.1 we have $\ln W_m$=11.108 and $\ln W_f$=11.003. Tables A.2.1 and A.2.2 include the mean values of some sample variables. Decomposing the earnings gap according to the method presented

above we conclude that the part not explained (maybe discrimination) is higher than that attributable to characteristic (endowment) differences. A similar result was found for the portuguese mainland by Kiker and Santos (1991).

- insert table 9 -

V. Conclusion and Remarks

The match-worker job does not depend only on the attributes of the worker but also the characteristics of the job. This paper shows that in the study of wage differential both education and qualification are important, supporting the same claim found in previous works done with data from other European Countries.

In this study data for the Azores Islands was used. We show that females face an allocation disadvantage by level of qualification, what leads to cases of discrimination even when sex discrimination is unconstitutional as is the case of Portugal.

This paper is an contribution towards explaining the role of allocation in wage differences and the simultaneous estimation of the allocation and wage functions seems to us an important research goal.

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Appendix 1: The Level of Qualification Scale

This is a simplified translation of the level of qualification scale taken from Dec. Lei nº 121/78 elaborated by the Department of Labor. The classification of occupations uses as criterion the extent of complexity . This takes into account not the actual level of education but the knowledge that is required by the occupation. A similar scale for Netherlands was used by Hartog (1986, 1988, 1990) and Van Ophem and al. (1991).

We use the transformation Qual= 7 - level of qualification presented by the Department of Labor. Contrary to the codification of the Department of Labor this implies that the higher is the level of qualification more complex is the occupation or job. The obtained classification is the as follows:

Level 0 - Simple work which can be performed after a few days of experience.

Level 1 - Work not complex. Activities somewhat

repetitive, requiring training or specialization on a limited area.

Level 2 - Somewhat complex work. Activities not repetitive and well defined requiring knowledge on their execution plan.

Level 3 - Executive functions with technical requirements, requiring complete training and specialization.

Level 4 - Orientation of a group of workers in according to the instructions received from higher levels. This requires complete training and specialization in some area.

Level 5 - Functions of organization and planning in one or several areas. This work (or occupation) requires at least knowledge at intermediary level.

Level 6 - Highest management personnel. Work requiring high responsibility and a scientific basis.

Appendix 2: Sample Characteristics and Earnings Functions Estimation Results

Table A.2.1
Sample descriptive statistics

Variable	Mean	Stand. Dev.
ln W (a)	11.058	.50
Males	11.108	.52
Females	11.003	.48
Education (Ed) (years)	6.393	3.0
Males	5.636	2.8
Females	7.227	3.0
Experience (Exp) (years)	20.91	11.5
Males	22.77	11.8
Females	18.84	10.9
Tenure (Ten) (years)	7.817	8.1
Males	8.263	8.5
Females	7.319	7.5
Firm Size (b)	107.9	126.2
Males	107.2	118.3
Females	108.6	134.3
lnH (c)	5.190	.11
Males	5.217	.11
Females	5.160	.10
Exp^2	570.1	596.4
Males	657.9	629.6
Females	473.3	541.4
Ten^2	126.6	230.2
Males	142.0	257.1
Females	109.6	193.9

(a) W=Monthly earnings (b) Number of employees (c) Monthly

Table A.2.2
Dummy variables descriptive statistics

Variable	Mean	Stand. Dev.
Education		
Males		
Ed4	.9560	.205
Ed6	.4078	.491
ED9	.2540	.435
Ed11	.0807	.272
Ed14	.0176	.131
Ed16	.0100	.099
Females		
Ed4	.9873	.112
Ed6	.6573	.475
Ed9	.5000	.500
Ed11	.1894	.392
Ed14	.0179	.133
Ed16	.0153	.123
Firm Size		
Males		
A2	.2750	.447
A3	.3782	.485
Females		
A2	.2357	.425
A3	.3358	.472
Level of qualification		
Males		
Level 0	.1982	.399
Level 1	.1734	.378
Level 2	.4637	.498
Level 3	.0492	.216
Level 4	.0478	.213
Level 5	.0386	.192
Level 6	.0291	.168
Females		
Level 0	.1589	.366
Level 1	.1800	.384
Level 2	.5353	.498
Level 3	.0537	.225
Level 4	.0363	.187
Level 5	.0179	.132
Level 6	.0179	.132

Table A.2.3
Frequencies by levels of qualification and years of schooling (Males)

Level \ years	0	4	6	9	11	14	16	Total
0	46	275	70	19	5	0	0	415
1	24	263	60	13	3	0	0	363
2	21	524	160	199	66	1	0	971
3	0	25	9	40	23	4	2	103
4	1	45	9	31	13	1	0	100
5	0	11	9	45	9	6	1	81
6	0	5	5	16	13	4	18	61
Total	92	1148	322	363	132	16	21	2094

Table A.2.4
Frequencies by levels of qualification and years of schooling (Females)

Level \ years	0	4	6	9	11	14	16	Total
0	14	207	68	9	4	0	0	302
1	6	159	87	57	28	0	4	342
2	3	224	124	432	228	1	5	1017
3	0	13	11	36	32	3	7	102
4	0	17	6	27	18	0	1	69
5	0	0	2	21	10	0	1	34
6	0	7	1	8	6	1	11	34
Total	24	627	299	590	326	5	29	1900

Table A.2.5

Human capital earnings function estimates (Total)
(Dependent: ln monthly earnings)

Regrs.	(1)	(2)	(3)	(4)
Const.	10.5 (636)	9.68 (309)	11.5 (28.9)	9.32 (25.9)
Ed	.0728 (30.9)	.1032 (45.0)	.0698 (26.3)	.104 (40.4)
EXP	----	.0547 (26.2)	----	.0549 (26.2)
EXP^2	----	-.00075 (-18.9)	----	-.00075 (-18.9)
ln H	----	----	-.1890 a) (-2.50)	.0659 b) (.982)
$Adj\ R^2$	.193	.373	.194	.373
F	959	793	483	595
RSS	817.3	635.0	816.0	634.8
N. of obser.	3994	3994	3994	3994

Notes:
(t-values).

ED - years of schooling.

EXP - years of experience calculated as EXP=Age - ED - 6.

----- variable not included.

a) Significant at 5%. b) Not significant.

Table A.2.6

Human capital earnings functions estimation results (Males)
(Dependent: ln monthly earnings)

Regrs.	(1)	(2)	(3)	(4)
Const.	10.6 (479)	9.69 (222)	11.0 (20.1)	8.83 (17.9)
Ed	.0857 (24.4)	.1114 (33.6)	.0844 (21.9)	.1141 (31.3)
EXP	----	.0576 (19.1)	----	.0580 (19.2)
EXP^2	----	-.00079 (-14.3)	----	-.00080 (-14.3)
ln H	----	----	-.0854 a) (-.823)	.1611 b) (1.76)
Adj. R^2	.222	.397	.222	.398
F	599	461	300	347
RSS	444.7	344.1	444.5	343.6
N. of obser.	2094	2094	2094	2094

Notes:

Idem Table A.2.1.

a) Not significant.

b) Significant at 10%.

Table A.2.7

Human capital earnings functions estimation results (Females)
(Dependent: ln monthly earnings)

Regrs.	(1)	(2)	(3)	(4)
Const.	10.4 (425)	9.59 (227)	14.7 (26.9)	12.3 (24.7)
Ed	.0802 (25.1)	.1098 (35.4)	.0686 (20.1)	.1013 (29.6)
EXP	----	.0497 (18.2)	----	.0481 (17.7)
EXP^2	----	-.00069 (-12.9)	----	-.00067 (-12.6)
ln H	----	----	-.8303 (-7.95)	-.5262 (-5.59)
Adj. R^2	.256	.419	.280	.428
F	656	457	370	356
RSS	319.9	249.7	309.6	245.6
N. obser.	1900	1900	1900	1900

Notes:

Idem Table A.2.1.

Table A.2.8

$\ln W = a + b\ Ed + c\ Exp + d\ Ten + f\ Exp^2 + g\ lnH + e$

(Dependent: ln of monthly earnings)

Regrs.	Total	Males	Females
Const.	9.26 (26.3)	8.53 (17.5)	12.8 (26.8)
Ed	9.581 (36.9)	.1077 (29.3)	.0886 (26.2)
EXP	.0447 (20.5)	.0512 (16.5)	.0318 (11.2)
Tenure	.0139 (14.0)	.0107 (8.07)	.0192 (14.1)
EXP^2	-.00068 (-17.4)	-.00077 (-14.0)	-.00052 (-10.0)
ln H	.1012 a) (1.54)	.2341 (2.58)	-.5804 (-6.48)
Adj. R^2	.402	.416	.482
F	539	299	355
RSS	604.8	238.9	222.2
N. obser.	3994	2094	1900

Notes:

(t-values).

a) Not significant.

Table A.2.9

$$\ln W = a + b\,Ed4 + c\,Ed6 + d\,Ed9 + f\,Ed11 + g\,Ed14 + h\,Ed16 + i\,Exp + j\,Exp^2 + l\,Ten + m\,Ten^2 + n\,A2 + o\,A3 + p\,lnH + e$$

(Dependent: ln of monthly earnings)

	Total	Males	Females
Const.	9.12	8.19	12.5
	(27.3)	(17.3)	(27.6)
ED4 a)	.2749	.3472	.1161 e)
	(7.34)	(7.75)	(1.68)
ED6	.1533	.1877	.1453
	(8.55)	(7.40)	(6.24)
Ed9	.2870	.3436	.2517
	(14.8)	(11.5)	(10.7)
Ed11	.1661	.1804	.1476
	(7.79)	(4.61)	(6.47)
ED14	.6010	.5567	.4865
	(7.41)	(5.54)	(3.42)
ED16	-.1012 f)	-.0600 f)	-.0147 f)
	(-1.07)	(-.476)	(-.097)
Exp	.0384	.0455	.0269
	(17.0)	(13.8)	(9.48)
Exp^2	-.0005	-.0006	-.0004
	(-13.8)	(-11.3)	(-8.10)
Ten	.0211	.0189	.0280
	(10.2)	(6.70)	(9.73)
Ten^2	-.0004	-.0003	-.0005
	(-5.59)	(-3.91)	(-5.41)
A2	.1400	.1265	.0994
	(9.51)	(5.92)	(5.27)
A3	.3137	.2794	.3061
	(22.6)	(14.0)	(16.9)
lnH	.1362 d)	.2976	-.4741
	(2.18)	(3.36)	(-5.63)
Adj. R^2	.481	.475	.563
RSS	523.5	298.0	186.7
F	287	147	189
N. Observ.	3994	2094	1900

Notes:(t-values) a) Edi- dummy variable with value 1 if the individual has at least i years of education (i=4,6,9,11,14,16). b) A1 dummy variable with value 1 if the firm has less than 25 employees (reference category); A2-idem, if the firm has 25 or more employees and less that 100; A3- idem, if the firm has 100 or more employees. d) Significant at 5%. e) Significant at 10% f) Not significant.

Table A.2.10

$$\ln W = a + b\,Ed4 + c\,Ed6 + d\,Ed9 + f\,Ed11 + g\,Ed14 + h\,Ed16 + i'Ni + j\,Exp + l\,Exp^2 + m\,Ten + n\,Ten^2 + o\,A2 + p\,A3 + q\,\ln H + e$$

(Dependent: ln of monthly earnings)

	Total	Males	Females
Const.	9.34	8.45	12.0
	(30.2)	(19.1)	(28.6)
ED4(a)	.1709	.2444	.0241 e)
	(4.09)	(5.81)	(.375)
ED6	.0964	.1288	.0962
	(5.78)	(5.40)	(4.41)
Ed9	.1786	.2364	.1538
	(9.69)	(8.28)	(6.79)
Ed11	.1191	.1223	.1105
	(6.00)	(3.33)	(5.19)
ED14	.4027	.3742	.3645
	(5.30)	(3.95)	(2.73)
ED16	-.0762 e)	-.1038 e)	.0180 e)
	(-.860)	(-.851)	(.127)
Qualification(b)			
Level 1	.1812	.2596	.1175
	(10.1)	(10.0)	(4.95)
Level 2	.3007	.3062	.2704
	(18.8)	(13.9)	(12.2)
Level 3	.5532	.5403	.5139
	(19.1)	(12.6)	(14.0)
Level 4	.4683	.4420	.4479
	(15.5)	(10.6)	(10.8)
Level 5	.7197	.7011	.6042
	(19.7)	(14.6)	(10.8)
Level 6	.5677	.6273	.3777
	(13.5)	(10.5)	(6.49)
Exp	.0290	.0349	.0201
	(13.7)	(11.2)	(7.52)
Exp^2	-.0004	-.0005	-.0003
	(-11.3)	(-9.25)	(-6.68)
Ten	.0180	.0135	.0263
	(9.39)	(5.09)	(9.86)
Ten^2	-.0003	-.0002	-.0005
	(-6.02)	(-3.45)	(-6.07)

Cont.

Table A.2.10 (Cont.)

Size			
A2	.1520	.1438	.1152
	(11.1)	(7.23)	(6.51)
A3	.3355	.2893	.3410
	(26.1)	(15.6)	(20.9)
lnH	.1034 d)	.2563	-.3808
	(1.80)	(3.09)	(-4.85)
Adj. R2	.559	.549	.625
RSS	444.8	255.6	159.7
F	268	135	168
N. Observ.	3994	2094	1900

Notes:
(t-values).
(a) Edi - dummy variable with value 1 if the individual has at least i years of education (i=4,6,9,11,14,16). (b) dummy variable with value 1 if the characteristic is relevant.The level of qualification 0 is used as the reference category. (c) Ai - idem Table A.2.5 d) Significant at 10%. (e) Not significant.

Table A.2.11

$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + t'X + e$ (OLS)

(Dependent: ln of monthly earnings) - Males

Regrs.	Level 0	Level 1	Level 2	Level 3	"Level 4"
Const.	5.39 (6.13)	18.7 (13.1)	7.51 (12.1)	11.5 (5.09)	11.3 (9.84)
Ed	.0671 (7.19)	.0250 b) (1.80)	.0796 (14.2)	.0895 (5.89)	.0729 (8.44)
EXP	.0248 (5.14)	.0262 (3.62)	.0442 (10.6)	.0970 (4.77)	.0465 (4.94)
Ten	.0091 (3.00)	.0105 (3.26)	.0038 a) (2.32)	-.0028 c) (-.332)	.0036 c) (1.27)
EXP^2	-.0004 (-4.32)	-.0004 (-3.75)	-.0006 (-8.55)	-.0017 (-4.63)	-.0007 (-4.44)
A2	.1259 (3.29)	.1899 (3.61)	.1084 (3.92)	.1911 c) (1.57)	.2391 (3.70)
A3	.2173 (5.50)	.4226 (9.55)	.2717 (10.4)	.3260 (3.21)	.3337 (5.80)
ln H	.8655 (5.22)	-1.626 (-6.06)	.4627 (4.05)	-.3882 c) (-.891)	-.2340 (-1.10)
$Adj.R^2$	.237	.390	.304	.407	.428
F	19	34	61	11	27
RSS	40.8	46.3	111.6	15.6	29.4
N. obser.	415	363	971	103	242

Notes:

a) Significant at 5%. b) Significant at 10%.

c) Not significant.

Table A.2.12

$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + t'X + e$ (OLS)

(Dependent: ln of monthly earnings) - Females

Regrs.	Level 0	Level 1	Level 2	Level 3	"Level 4"
Const.	6.79 (7.10)	13.8 (14.7)	14.4 (23.3)	8.36 (6.22)	15.2 (7.38)
Ed	.0178 c) (1.46)	.0394 (5.97)	.0490 (10.2)	.0558 (4.44)	.0432 (2.89)
EXP	.0111 b) (1.88)	.0229 (4.79)	.0268 (8.14)	.0359 (2.69)	-.00008 c) (-.006)
Ten	.0093 (2.62)	.0118 (4.96)	.0122 (7.50)	.0152 a) (2.36)	.0119 a) (2.31)
EXP^2	-.0001 c) (-1.62)	-.0004 (-4.54)	-.0006 (-7.41)	-.0006 a) (-2.45)	-.0007 c) (-.284)
A2	.2246 (5.00)	.1978 (6.28)	.0780 (3.19)	.3503 (3.60)	.1541 b) (1.71)
A3	.3898 (8.29)	.3685 (10.1)	.3139 (13.8)	.6634 (7.76)	.4382 (5.10)
ln H	.6481 (3.59)	-7233 (-4.10)	-.8177 (-7.10)	.3356 c) (1.28)	-.8806 a) (-2.26)
Adj. R^2	.364	.417	.517	.599	.438
F	26	36	156	11	16
RSS	23.6	20.7	81.8	12.6	19.7
N. obser.	302	342	1017	102	137

Notes:
(t-values).
a) Significant at 5%. b) Significant at 10%.
c) Not significant.

Table A.2.13

Allocation of the Individuals to the levels of qualification

(Multinomial Logit Estimates)
Males

Regrs.	Level 1	Level 2	Level 3	"Level 4"
Const.	-1.135 (-3.62)	-1.940 (-7.17)	-7.773 (-13.7)	-8.746 (-18.1)
Ed	.0818 b) (1.86)	.3968 (10.6)	.7661 (14.1)	.8645 (17.8)
EXP	.0082 c) (.966)	.0194 (2.67)	.0393 a) (2.37)	.0967 (8.42)
Ten	.0738 (5.77)	.0698 (6.11)	.1266 (6.48)	.0940 (6.44)

Log-Likelihood	- 2458.5
Log-Lik (slopes=0)	- 3369.8
Chi-Squared (12)	1822.7
N. of obser.	2094

Notes:

(t-values).

The level of qualification 0 is used as the reference.

a) Significant at 5%.

b) Significant at 10%.

c) Not significant.

Table A.2.14

$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + t'X + \theta S + E$

(corrected for selectivity bias)

(Dependent: ln of monthly earnings) - Males

Regrs.	Level 0	Level 1	Level 2	Level 3	"Level 4"
Const.	5.27 (6.00)	18.8 (13.0)	7.38 (11.7)	11.7 (4.99)	11.5 (9.50)
Ed	.0111 b) (.214)	.0472 b) (1.31)	.0810 (13.9)	.0802 a) (2.25)	.0516 b) (1.32)
EXP	.0228 (4.47)	.0257 (3.58)	.0441 (10.6)	.0967 (4.93)	.0428 (3.78)
Ten	-.0033 b) (-.273)	.0090 a) (2.33)	.0039 a) (2.36)	-.0040 (-.431)	.0023 b) (.657)
EXP^2	-.0004 (-4.52)	-.0004 (-3.41)	-.0006 (-8.61)	-.0017 (-4.63)	-.0006 (-4.47)
A2	.1228 (3.21)	.1878 (3.61)	.1066 (3.86)	.1895 b) (1.60)	.2396 (3.78)
A3	.2184 (5.61)	.4182 (9.40)	.2717 (10.5)	.3253 (3.32)	.3373 (5.93)
ln H	.8668 (5.30)	-1.605 (-6.05)	.4800 (4.19)	-.3833 b) (-.913)	-.1884 b) (-.857)
S	.3920 b) (1.05)	-.2118 b) (-.657)	.0511 b) (.714)	-.0816 b) (-.287)	-.1199 b) (-.564)
Adj. R^2	.237	.388	.304	.401	.427
F	17	30	54	10	23
RSS	40.7	46.4	111.4	15.6	29.3
N. of obser.	415	363	971	103	242

Notes: (t-values). a) Significant at 5%.
b) Not significant.

Table A.2.15

Allocation of the Individuals to the levels of qualification

(Multinomial Logit Estimates)
Females

Regrs.	Level 1	Level 2	Level 3	"Level 4"
Const.	-1.196 (-3.39)	-3.351 (-10.1)	-8.401 (-13.1)	-9.537 (-15.7)
Ed	.2915 (6.32)	.6438 (14.8)	.8807 (14.2)	.9517 (16.9)
EXP	-.0150 b) (-1.50)	.0206 a) (2.38)	.0473 (2.79)	.0989 (7.39)
Ten	.0181 b) (1.26)	.0425 (3.39)	.0676 (3.26)	.0383 a) (2.24)
Log-Likelihood		- 2072.8		
Log- Lik (slopes=0)		- 2920.7		
Chi - Squared (12)		1695.8		
N. of obser.		2094		

Notes:

(t-values).

The level of qualification 0, is used as the reference.

a) Significant at 5%.

b) Not significant.

Table A.2.16

$$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + t'X + \theta\,S + E$$

(corrected for selectivity bias)
(Dependent: ln of monthly earnings) - Females

Regrs.	Level 0	Level 1	Level 2	Level 3	"Level 4"
Const.	6.75 (6.75)	13.7 (14.8)	14.4 (23.2)	7.01 (3.53)	15.1 (6.37)
Ed	-.5617 c) (-.399)	.0322 b) (1.83)	.0432 (6.42)	.0971 b) (1.96)	.0581 c) (.760)
EXP	.0117 b) (1.94)	.0222 (3.58)	.0273 (8.28)	.0395 (2.92)	.0034 c) (.153)
Ten	.0042 c) (.416)	.0114 (4.52)	.0118 (7.07)	.0200 a) (2.42)	.0118 a) (2.36)
EXP^2	-.0002 c) (-1.56)	-.0004 (-4.65)	-.0004 (-7.55)	-.0006 (-2.61)	-.0007 c) (-.309)
A2	.2250 (5.03)	.1988 (6.37)	.0766 (3.15)	.3631 (3.85)	.1525 b) (1.74)
A3	.3923 (8.39)	.3688 (10.3)	.3136 (13.8)	.6886 (7.99)	.4381 (5.25)
ln H	.6528 (3.67)	-.7135 (-4.09)	-.7986 (-6.80)	.3561 c) (1.42)	-.9234 a) (-2.22)
S	.3322 c) (.533)	.0682 c) (.459)	-.0817 c) (-1.22)	.3883 c) (.879)	.1004 c) (.197)
Adj. R^2	.363	.416	.516	.599	.434
F	22	31	136	20	14
RSS	23.6	20.7	81.8	8.6	19.7
N. of obser.	302	342	1017	102	137

Notes: (t-values) a) Significant at 5%.
b) Significant at 10%. c) Not significant.

Table A.2.17.

Some Earnings Functions Including a Dummy Variable With Value 1 if the Observation Refers to a Female

(Dependent: ln of monthly earnings)

Regrs.	(1)	(2)
Const.	10.45 (29.4)	10.20 (29.7)
Ed	.1089 (43.3)	.0999 (39.9)
EXP	.0530 (26.1)	.0362 (16.2)
Ten	----	.0295 (14.0)
EXP^2	-.0007 (-19.0)	-.0005 (-13.3)
Ten^2	----	-.0006 (-8.43)
ln H	-.1310 a) (-1.98)	-.0567 b) (-.886)
Female	-.2129 (-16.4)	-.2152 (-17.2)
Adj. R^2	.413	.451
F	563	470
RSS	594.3	555.0
N. of obser.	3994	3994

Notes: (t-values)
(a) Significant at 5% (b) Not significant.

Table A.2.18

$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + g\,lnH + i\,Fem + e$

(Dependent: ln of monthly earnings)

Regrs.	Level 0	Level 1	Level 2	Level 3	"Level 4"
Const.	7.34	16.3	10.0	10.5	12.3
	(10.7)	(17.2)	(21.2)	(8.32)	(11.2)
Ed	.0504	.0352	.0802	.0930	.0787
	(6.37)	(4.66)	(13.0)	(8.62)	(10.0)
EXP	.0246	.0254	.0371	.0720	.0364
	(6.22)	(5.25)	(13.0)	(5.57)	(4.37)
Ten	.0158	.0174	.0093	.0115 b)	.0103
	(6.94)	(7.76)	(7.38)	(1.93)	(3.99)
EXP^2	-.0004	-.0004	-.0005	-.0014	-.0006
	(-5.81)	(-5.47)	(-10.7)	(-5.47)	(-4.52)
ln H	.5277	-1.142	.0121 c)	-.1166 c)	-.3590 b)
	(4.12)	(-6.33)	(.139)	(-.479)	(-1.78)
Female d)	-.0631 a)	-.2663	-.1692	-.1327 a)	-.2740
	(-2.45)	(-9.28)	(-9.94)	(-2.24)	(-6.15)
Adj. R^2	.172	.296	.229	.350	.366
F	26	50	142	19	37
RSS	76.0	87.6	232.9	33.1	59.6
N. of obser.	717	705	1988	205	379

Notes: (t-values).

a) Significant at 5%. b) Significant at 10% c) Not significant.

d) dummy variable with value one if the observation refers to a female.

Table A.2.19

Allocation of the Individuals to the levels of qualification

(Multinomial Logit Estimates)
Total

Regrs.	Level 1	Level 2	Level 3	"Level 4"
Const.	-1.264 (-5.52)	-2.493 (-12.0)	-7.812 (-18.5)	-8.751 (-23.6)
Ed	.1919 (6.24)	.5204 (18.7)	.8282 (20.4)	.9257 (25.0)
Ten	.0483 (5.13)	.0560 (6.69)	.0975 (6.91)	.0683 (6.23)
Exp	.0009 a) (.143)	.0220 (3.92)	.0456 (3.84)	.1000 (11.4)
Female b)	-.0597 a) (-.534)	-.2995 (2.99)	-.7751 (-4.18)	-1.247 (-7.95)
Log-likelihood		-4570.1		
Log-lik (slopes=0)		-6351.4		
Chi-Squared (16)		3562.5		
N. of obser.		3994		

Notes:

(t-values)

a) Not significant.

b) Dummy variable with value 1 if the observation refers to a female.

Table A.2.20

$$\ln W = a + b\,Ed + c\,Exp + d\,Ten + f\,Exp^2 + g\,\ln H + i\,Fem + \theta\,S + E$$

(Corrected for selectivity bias)

(Dependent: ln of monthly earnings)

Regrs.	Level 0	Level 1	Level 2	Level 3	"Level 4"
Const.	7.26 (10.6)	16.5 (17.4)	10.0 (21.2)	11.9 (7.89)	11.9 (9.88)
Ed	.0105 c) (.179)	.0710 (3.56)	.0748 (16.1)	.0463 c) (1.46)	.1019 (2.60)
EXP	.0236 (6.22)	.0267 (5.50)	.0375 (13.2)	.0696 (5.45)	.0405 (3.71)
Ten	.0107 (5.61)	.0165 (7.57)	.0090 (7.14)	.0052 c) (.742)	.0112 (3.72)
EXP^2	-.0004 (-5.78)	-.0004 (-4.89)	-.0005 (-10.8)	-.0013 (-5.49)	-.0006 (-4.55)
ln H	.5351 (4.20)	-1.116 (-6.31)	.0284 c) (.324)	-.1389 c) (-.585)	-.3898 b) (-1.86)
Female d)	-.0411 c) (-1.05)	-.3132 (-8.29)	-.1709 (-10.0)	-.0878 c) (-1.35)	-.3265 (-3.17)
S	.2151 c) (.691)	-.3432 b) (-1.90)	-.1118 a) (-2.19)	-.4109 c) (-1.58)	.1367 c) (.579)
Adj. R^2	.172	.298	.300	.355	.364
F	22	44	123	17	32
RSS	76.0	87.2	232.3	32.7	59.5
N. of obser.	717	705	1988	205	379

Notes: (t-values).

a) Significant at 5%. b) Significant at 10%.

c) Not significant.

d) Dummy variable with value one if the observation refers to a female.

Tables to be inserted in the text

Table 1
Males

Years of Schooling	β	$r=[(\beta)/(S_k - S_j)]*100$
4 versus 0 years	.3472	8.6
6 versus 4 years	.1877	9.4
9 versus 6 years	.3436	11.4
11 versus 9 years	.1804	9.0
14 versus 11 years	.5567	18.5
16 versus 14 years	-.0600	-3.0

Source: Table A.2.9 in appendix 2.

Table 2
Females

Years of Schooling	β	$r=[(\beta)/(S_k - S_j)]*100$
4 versus 0 years	.1161	2.9
6 versus 4 years	.1453	7.2
9 versus 6 years	.2517	8.3
11 versus 9 years	.1476	7.3
14 versus 11 years	.4865	16.2
16 versus 14 years	-.0147	-.7

Source: Table A.2.9 in appendix 2.

Table 3
Males

Years of Schooling	β	$r=[(\beta)/(S_k - S_j)]*100$
4 versus 0 years	.2444	6.1
6 versus 4 years	.1288	6.4
9 versus 6 years	.2364	7.8
11 versus 9 years	.1223	6.1
14 versus 11 years	.3742	12.4
16 versus 14 years	-.1038	-5.1

Source: Table A.2.10 in appendix 2.

Table 4
Females

Years of Schooling	β	$r=[(\beta)/(S_k - S_j)]*100$
4 versus 0 years	.0241	.6
6 versus 4 years	.0962	4.8
9 versus 6 years	.1538	5.1
11 versus 9 years	.1105	5.5
14 versus 11 years	.3645	12.5
16 versus 14 years	.0180	.9

Source: Table A.2.10 in appendix 2.

Table 5
Values of F

	Males + Females	Males	Females
F	117.1	57.3	52.9

Source: Tables A.2.9 and A.2.10 in appendix 2.

Table 6
Values of k

Regrs.	(1)	(2)
	-19.1%	-19.3%

Source: Table A.2.17 in appendix 2.

Table 7
Values of k

Regrs.	
[A] Level 0	- 6.1%
[B] Level 1	-23.3%
[C] Level 2	-15.5%
[D] Level 3	-12.4%
[E] Leve 4 + Level 5 + Level 6	-23.9%

Source: Table A.2.18 in appendix 2.

Table 8
Values of k (corrected for selectivity bias)

[B] Level 1	- 29.0%
[C] Level 2	- 10.5%

Source: Table A.2. 20 in appendix 2

Table 9
Earnings "Gap" Decomposition

Tables	Due to Dif. in Characteristics (Abs.)	(%)	Not Explained (Abs.)	(%)
Tables A.2.6 and A.2.7				
Regr.(4)	.0198	19%	.0852	81%
Table A.2.10	.0440	42%	.0610	58%