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THE STRUCTURE OF WAGES DURING THE ECONOMIC TRANSITION IN ROMANIA

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ABSTRACT

This paper uses cross-sectional individual data from the 1994 Integrated Household Survey of Romania to analyze the determinants of male and female wages in public and private enterprises. Using quantile regression, the rate of return to education and experience at different quantiles of the wage distribution is estimated. Higher levels of education are significantly associated with higher wages for both males and females in public firms. In private firms, only college education is correlated with significantly higher wages. Differences in individual characteristics are found to explain the highest portion of the male-female wage differential in Romania in both sectors.

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1. INTRODUCTION

During the Ceausescu years the Romanian economy was characterized by excessive state-ownership and extreme centralization of decision making (Ben-Ner and Montias 1991). Labor markets, in particular, were subject to a number of constraints including a strict regulation of mobility, central allocation of university graduates to jobs, and a centralized wage-setting process with a standard set of rules based on industry, occupation, and length of service (Earle and Sapatoru 1993).

Soon after the revolution of 1989, the new Wage Law of February 1991 formally decentralized wage determination in Romania. All state and privately owned commercial companies were granted the right to determine their wage structure autonomously through collective or individual negotiations between employees and employer. Pay was no longer tied to performance as it was during the years of socialism, and all restrictions on eligibility for promotion, bonuses, and internal and external migration were lifted. Also, hours of work were reduced from 46 to 40 hours per week without any decrease in monthly wages (Earle and Oprescu 1993).

The decentralization in wage setting, however, was not accompanied by the privatization of the 6,000 state-owned enterprises or supported by other institutional reforms. Instead, strong intervention by the government in markets continued and weak financial discipline was exercised on a recurrent basis. As a result, employment declines were quite small even though economic output declined by one-third between 1989-92

(Allison and Ringold 1996). Most of the employment adjustments consisted mainly of layoffs or retirement of (mostly female) blue-collar workers in large state-owned enterprises producing textiles, metal products, and machinery, industries that had lost their traditional markets due to the slowdown of economic growth in other transition economies. These factors, combined with the Government's domestic and foreign price liberalization program that began in 1990, have led to Romania experiencing one of the steepest declines in real wages in Eastern Europe. In 1993, for example, real wages in Romania were only 66 percent of their 1989 level (Rutkowski 1996).

Recent cross-country studies of the changes in the wage structure in Central and Eastern Europe document that the transition to market-based institutions has led to a rise in inequality of earnings and an increase in the returns to higher education (e.g., Rutkowski 1996). In most countries, economic transition has led to a decrease in the mean and an asymmetric change in the tails of the wage distribution. Real wages at the bottom decile of the wage distribution in each transition economy decreased substantially while real wages at the top decile of the wage distribution decreased relatively less.[1]

This study uses individual socioeconomic data from the 1994 Romanian Integrated Household Survey to conduct one of the first investigations into the structure of male and female wages during the economic transition in Romania. In order to obtain a more detailed picture of the determinants of wages as well as within- and cross-gender inequality of wages, quantile regression is used. Quantile regression allows a more

[1] In fact, in some countries such as Hungary and Croatia, the real wages of high paid workers increased.

flexible characterization of the determinants of wages, especially when there is interest in the determinants of wages at the higher and lower tails of the distribution. In addition to focusing on gender, the study distinguishes between state-owned or public enterprises and private firms in order to account for potential differences in the wage determination process and differences in the returns to education in these two sectors. Economic reforms are likely to give rise to bottlenecks in certain educational or technical skills. Estimates of the rate of return to education in the emerging private sector in Romania can be of considerable use to policymaking because they will help in the design of training programs that are relevant to labor market conditions and thus conducive to economic growth.

2. DATA AND DESCRIPTIVE STATISTICS

The analysis is based on individual-level data from the 1994 Integrated Household Survey (IHS) conducted by the National Center of Statistics (NCS) of Romania with the assistance of the World Bank. The IHS is the first large-scale nationally representative data survey in Romania, allowing one to draw reliable inferences about behavior and household or individual welfare. The survey is cross-sectional, containing information for approximately 2,600 different households interviewed each month.

This paper uses the survey rounds collected between the months of April and December 1994 and variables related to the hours worked and wages received by 15-65 year old adults who reported their occupational status as employees during the previous

month of the survey. Most (63 percent) of the workers in Romania are wage/salary workers.[2] Specifically, 69 percent of the males and 56 percent of the females in the survey are employed as salary workers. Wage work is concentrated in the urban areas, where approximately 92 percent of the employed work as wage employees. Self-employment activities and work as unpaid family labor occupy 18.6 percent and 15.2 percent, respectively, of all the persons in the labor force. These latter two activities are concentrated mainly in the rural areas of the country.

Excluding individuals with military occupations, and incomplete observations, such as observations with missing monthly payments or hours of work, the final sample contains 11,415 observations on males and 7,940 observations on females. Table 1 contains the means and standard deviation of all the variables used. As is evident, there is a differential in the mean wages of males in the public and private sectors.[3]

To facilitate comparison of the empirical distributions of male and female wages, Figure 1 contains four quantile-quantile plots of male and female log wages in public and private firms. Quantile-quantile plots are graphs of the data values of the variable in the vertical axis sorted in ascending order against the data values of the similarly sorted variable in the horizontal axis. Figure 1a reveals that in public firms the distributions of male and female wages are very similar in shape, spread, and level. Most of the

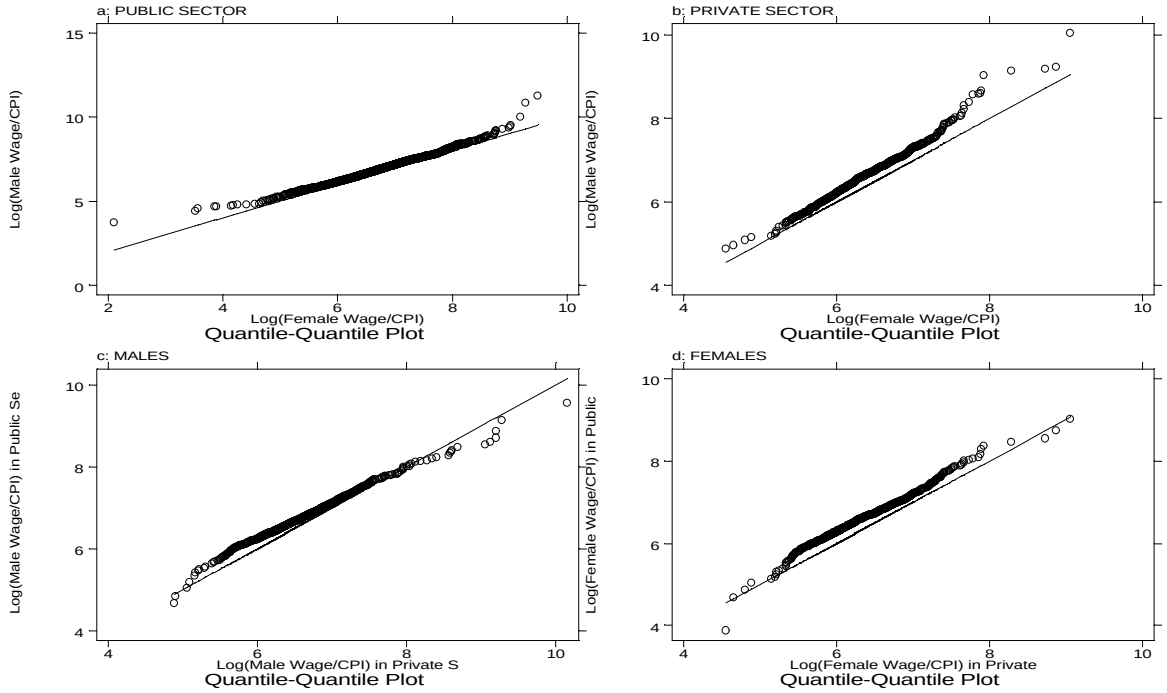
[2] A more extensive analysis of the labor markets in Romania based on the same survey can be found in Skoufias (1995).

[3] This differential is also present when comparing mean log wages of males and females by age, education level, industry, and occupation.

Table 1 Sample means and standard deviations (S.D.) of variables

	Public Sector				Private Sector			
	Males		Females		Males		Females	
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Log Wage per Hour	6.769	0.51	6.615	0.50	6.616	0.57	6.367	0.52
Education Level:								
Primary or Less	0.041	0.20	0.030	0.17	0.035	0.18	0.025	0.16
Lower Secondary (Cycle I)	0.183	0.39	0.201	0.40	0.178	0.38	0.177	0.38
Upper Secondary (Cycle II)	0.273	0.45	0.405	0.49	0.300	0.46	0.498	0.50
Professional Studies	0.269	0.44	0.135	0.34	0.229	0.42	0.146	0.35
Technical/Apprentice	0.031	0.17	0.022	0.15	0.045	0.21	0.031	0.17
Foreman	0.056	0.23	0.015	0.12	0.045	0.21	0.005	0.07
Post Secondary	0.031	0.17	0.062	0.24	0.017	0.13	0.034	0.18
3 yr College	0.018	0.13	0.022	0.15	0.017	0.13	0.011	0.11
4 yr College	0.099	0.30	0.109	0.31	0.135	0.34	0.073	0.26
Age	38.627	10.37	37.274	9.07	35.049	10.92	33.206	9.86
Head of Household	0.781	0.41	0.144	0.35	0.704	0.46	0.132	0.34
Hungarian	0.059	0.24	0.062	0.24	0.096	0.29	0.107	0.31
Other Ethnic Background	0.016	0.13	0.012	0.11	0.025	0.16	0.011	0.11
Occupation:								
Management/Administration	0.016	0.12	0.006	0.08	0.053	0.22	0.022	0.15
Professional	0.094	0.29	0.118	0.32	0.089	0.28	0.046	0.21
Technician	0.087	0.28	0.152	0.36	0.071	0.26	0.077	0.27
Clerk	0.029	0.17	0.143	0.35	0.032	0.17	0.113	0.32
Service/Sales	0.037	0.19	0.116	0.32	0.137	0.34	0.386	0.49
Farming	0.025	0.16	0.013	0.11	0.028	0.16	0.010	0.10
Craftsman	0.426	0.49	0.259	0.44	0.312	0.46	0.210	0.41
Operative	0.206	0.40	0.084	0.28	0.144	0.35	0.019	0.14
Laborer	0.081	0.27	0.110	0.31	0.135	0.34	0.117	0.32
Rural Area	0.386	0.49	0.214	0.41	0.316	0.47	0.218	0.41
Industry:								
Agriculture, Forestry, Fishing	0.120	0.33	0.049	0.22	0.119	0.32	0.038	0.19
Extractive	0.071	0.26	0.022	0.15	0.003	0.05	0.003	0.06
Processing	0.365	0.48	0.402	0.49	0.180	0.38	0.223	0.42
Utilities	0.055	0.23	0.021	0.14	0.013	0.11	0.002	0.05
Construction	0.091	0.29	0.027	0.16	0.190	0.39	0.035	0.18
Retail, Wholesale, Hotel/Rest	0.025	0.16	0.093	0.29	0.245	0.43	0.538	0.50
Transport, Commun., Storage	0.121	0.33	0.056	0.23	0.102	0.30	0.011	0.11
Finance, Banking, Insurance	0.010	0.10	0.034	0.18	0.009	0.10	0.025	0.16
Real Estate	0.004	0.06	0.005	0.07	0.023	0.15	0.009	0.10
Public Administartion	0.053	0.22	0.037	0.19	0.011	0.10	0.005	0.07
Education	0.036	0.19	0.119	0.32	0.002	0.04	0.003	0.06
Health & Social Assist.	0.018	0.13	0.089	0.28	0.004	0.06	0.017	0.13
Social &Personal Services	0.031	0.17	0.045	0.21	0.090	0.29	0.075	0.26
Other	0.001	0.03	0.001	0.03	0.009	0.10	0.015	0.12
Region:								
Bucharest	0.112	0.32	0.151	0.36	0.195	0.40	0.132	0.34
SE	0.237	0.43	0.230	0.42	0.189	0.39	0.191	0.39
SW	0.231	0.42	0.213	0.41	0.162	0.37	0.199	0.40
NW	0.220	0.41	0.217	0.41	0.254	0.44	0.283	0.45
NE	0.200	0.40	0.190	0.39	0.199	0.40	0.195	0.40
Nobs:	10,316		7,044		1,078		879	

Figure 1



observations are on or slightly above the diagonal line, which implies that male wages are slightly higher or equal to female wages. At the lower and higher quantiles of the wage distributions, where the points on the plot lie above the diagonal line, male wages are higher than female wages. Figure 1b reveals that in private firms the distributions of male and female wages have a different shape, spread, and level. In contrast to public firms, most of the observations are above the diagonal line, implying that male wages are higher than female wages. In addition, at the lower and higher quantiles of the wage distribution, male wages are generally much higher than female wages.

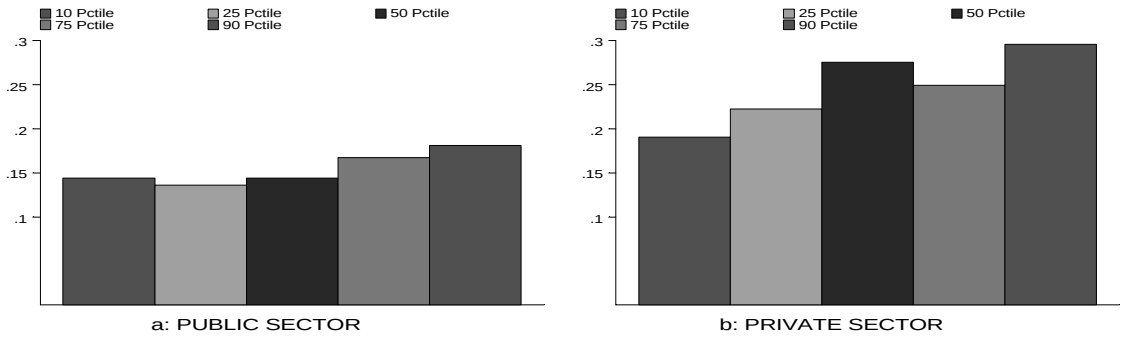
Along similar lines, Figures 1c and 1d compare the distributions of gender-specific wages in the public and private sectors. Most male workers in public firms receive higher wages than males in private firms. Low-wage workers receive higher wages in public firms compared to low-wage workers in private firms and the opposite pattern is observed for wages of higher workers. In contrast, for females, excepting the highest three quantiles, wages in public firms are generally higher than female wages in the private sector.

Figure 2 permits a more detailed look at the gender log-wage differential by displaying the difference between male and female log wages at different percentiles of the corresponding male and female distribution.[4] In the public sector, the male-female differential at the median (50^{th} percentile) is just under 15 percent, whereas in the private sector, the median wage differential increases to 27.6 percent. In addition, the wage differential is higher at higher quantiles of the male and female wage distributions, suggesting that at higher-paying jobs men earn higher wages than females.

Figure 3 allows one to examine inequality of wages within gender. Two measures of wage inequality are used: (1) the .90-.10 spread, and (2) the .75-.25 spread. Irrespective of the measure used, inequality in female wages is slightly lower than inequality in male wages in both public and private firms. Moreover, inequality of male

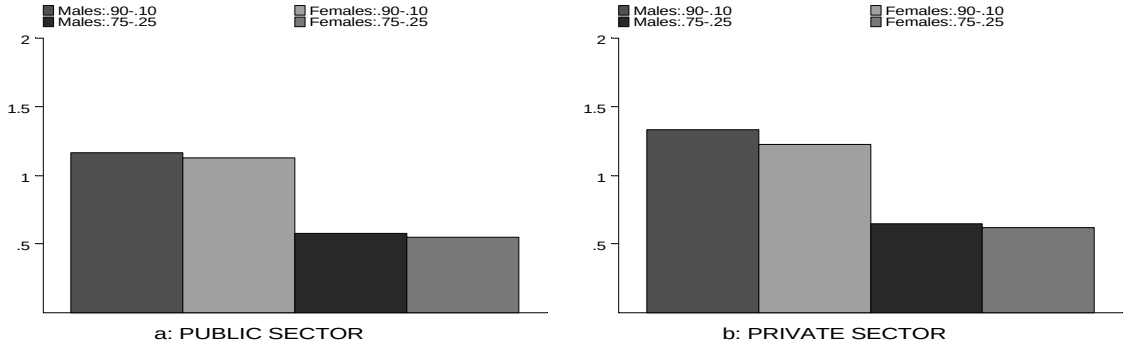
[4] For example, the 10^{th} percentile (or .10 quantile) wage is the value of the wage rate below which lie 10 percent of the observations.

Figure 2



AT DIFFERENT PERCENTILES
GENDER LOG-WAGE DIFFERENTIAL

Figure 3



WITHIN GENDER LOG-WAGE INEQUALITY

and female wages is higher in the private sector than the public sector, an indication that inequality is likely to increase as the process of privatization continues.

3. EMPIRICAL ANALYSIS

DETERMINANTS OF GENDER-SPECIFIC WAGES

The earnings functions estimated have the standard specification in the literature. The hourly wage rate is constructed by summing the gross salary received in the month before the interview with bonuses received out of net profits and other benefits and dividing by the total hours worked during the last month. Thus the wage rate used is gross of contributions to the unemployment and pensions funds (1 percent and 3 percent, respectively) and taxes paid, and it does not include the value of in-kind benefits. Only a very small fraction of the sample reported receiving in-kind benefits. As of December 1994, the annual inflation rate in Romania was 62 percent. To account for differences in inflation rates across different regions of the country, the hourly wage rate was deflated by a price index that varies across months, regions, and rural-urban areas within each region. As a means of adopting a flexible specification for the marginal rate of return to education, the level of education of the individual was used.[5] A set of eight binary variables are constructed, each taking the value of 1, respectively, if the highest completed education level of the person is lower secondary (gymnasium, cycle I), upper

[5] Another alternative would be to use a polynomial specification for the years of education.

secondary (lyceum, cycle II), professional studies, technical/apprentice, foreman, postsecondary, three-year college, and four-year college or higher. Thus the reference education levels are no schooling and primary level of schooling (even if incomplete).[6]

Additional explanatory variables include age and binary variables indicating whether the person is the head of household, of Hungarian origin, or of other ethnic origin (Romanian being the omitted category). The potential working experience of a person is also calculated, and the model is estimated using experience in place of age without any substantial change in the estimates. Firms of mixed ownership and cooperatives were classified as public (or state-owned) firms. Binary variables for the month of interview (April-December), the geographical region of the household, and whether it is located in an urban or rural area are also included.

Everything else being equal, additional differences in the pay of men and women can arise from the industry and occupation of the worker. There are two opposing arguments as to whether industry and occupation dummies should be included in regressions aimed at explaining the male-female wage differential. If these dummy variables captured exclusively the differences in the working conditions and the skill level of employees, then the industry and occupation dummies should be included to

[6] The structure of the educational system in Romania is as follows. Basic education is compulsory through grade 8. Secondary level schooling, for ages 14-18, is diversified, comprising: (a) four-year academic high schools; (b) technical high schools offering four-year day and five-year evening programs; and (c) two- and three-year vocational schools attached to enterprises and vocational programs attached to cooperatives. Higher education is provided through 48 public universities, polytechnics, and institutes, as well as 66 private universities that have sprung up since 1989. Two-year industrial foremen's (technicians') programs and evening courses for adults are offered at the campuses of technical high schools.

account for these compensating differentials. If, however, some industries and occupations pay efficiency wages or premiums for some other reason, then these dummy variables should be left out, so as to attribute such premiums into the unexplained portion of wage differences. Given that there is no clear evidence on the extent to which industry and occupation dummies capture compensating differentials and skills differences (e.g., Krueger and Summers 1988), both sets of estimates, with and without the dummies for industry and occupation, are presented. The reference occupation and industry included in the constant term of the regressions are management/administration and agriculture/forestry/fishing, respectively.

Since the number of trade unions grew rapidly in the early years of the transition (Earle and Oprescu 1993), it would be desirable to account for the union status of an employee. Unfortunately, the survey provides no information as to whether an employee belongs to a union or about the extent of unionization in the firm where he/she is employed. Given that unions are largely nonexistent in the private sector (Earle and Oprescu 1993), it is likely that the estimated coefficients of the separate wage regressions for public and private firms capture a significant part of the effect of union membership on wages.

Assuming a linear specification of the conditional quantile of the logarithm of wages ($\ln W$), the θth conditional quantile of $\ln W$ may be denoted as

$$Q_{\theta}(\ln W \mid X) = \beta_{\theta} X, \qquad \textbf{(1)}$$

where β is a vector of coefficients, and X is a vector of explanatory variables characterizing the individual human capital. In this framework, the coefficient of the jth element of X may be interpreted as the marginal change in the θth conditional quantile of the log wage due to a marginal change in the jth element of X.[7]

Tables 2 and 3 contain the estimates for the .50 quantiles (or medians) of the male and female wage distributions in the public and private sectors, respectively. In both tables, columns (a) and (b) contain the estimates obtained with the industry and occupation dummy variables included in the regressions, whereas columns (c) and (d) contain the estimates obtained with these dummy variables excluded. In estimating these quantile equations, the correlation in the error terms across different quantiles have been taken into account.[8] In interpreting the results, the reader should keep in mind that no corrections for possible biases that might arise from sample selection into the wage sector or into the private and public sectors have been made (e.g., see Van Der Gaag and Vijverberg 1988).

The estimates of the quantile equations for males and females in public enterprises are discussed first. Columns (a) and (b) in Table 2 reveal that a higher level education is significantly associated with higher wages for both males and females in each quantile. There is also considerable variation in gender-specific wages across occupations,

[7] More detailed expositions of the theory and uses of quantile regression can be found in Koenker and Basset (1978), Deaton (1997), and Buchinsky (1998).

[8] STATA's "sqreg" command is used. It allows simultaneous estimation of different quantile equations and yields an estimate of the entire variance-covariance matrix of the estimators by bootstrapping. All t-values are calculated based on bootstrapped standard errors using 35 bootstrap replications.

Table 2 .50 quantile (median) regression estimates for males and females in *public* firms

Dependent variable: Ln(Wage per Hour)

	(a): Males		(b): Females		(c): Males		(d): Females	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Education Level:								
Lower Secondary (Cycle I)	0.017	0.71	0.051	1.81	0.060	3.00	0.129	4.18
Upper Secondary (Cycle II)	0.103	3.68	0.144	4.64	0.183	9.46	0.299	9.01
Professional Studies	0.099	4.01	0.136	4.63	0.183	8.41	0.256	7.99
Technical/Apprentice	0.082	2.36	0.111	3.05	0.168	4.28	0.221	3.95
Foreman	0.220	7.02	0.137	2.38	0.326	12.69	0.315	7.11
Post Secondary	0.220	7.14	0.204	5.05	0.336	6.19	0.387	9.60
3 yr College	0.300	4.20	0.251	4.32	0.447	13.73	0.555	12.09
4 yr College	0.403	6.73	0.328	6.42	0.532	21.59	0.704	21.51
Age	0.024	7.41	0.026	5.70	0.025	7.10	0.031	7.81
Age Squared	-0.027	-6.67	-0.026	-4.17	-0.029	-6.45	-0.032	-5.65
Head of Household	0.113	10.02	0.026	1.95	0.136	9.40	0.036	1.66
Hungarian	-0.043	-1.96	0.021	0.82	-0.028	-1.33	0.005	0.25
Other Ethnic Background	-0.104	-2.36	0.042	0.69	-0.106	-2.61	-0.042	-0.95
Occupation:								
Professional	-0.186	-4.64	-0.191	-1.42				
Technician	-0.217	-3.30	-0.371	-2.89				
Clerk	-0.255	-4.28	-0.416	-3.16				
Service/Sales	-0.382	-5.80	-0.523	-3.84				
Farming	-0.286	-3.99	-0.520	-3.58				
Craftsman	-0.249	-3.86	-0.421	-3.14				
Operative	-0.236	-3.55	-0.350	-2.71				
Laborer	-0.441	-6.83	-0.640	-4.88				
Rural Area	-0.058	-5.24	-0.050	-2.77	-0.062	-7.48	-0.036	-2.60
Industry:								
Extractive	0.612	21.16	0.351	7.64				
Processing	0.148	10.98	-0.012	-0.43				
Utilities	0.338	10.10	0.260	4.30				
Construction	0.117	7.32	0.089	2.60				
Retail, Wholesale, Hotel/Rest	-0.014	-0.48	-0.105	-2.74				
Transport, Commun., Storage	0.194	8.41	0.142	3.87				
Finance, Banking, Insurance	0.116	2.09	0.135	3.28				
Real Estate	0.057	0.99	-0.115	-2.25				
Public Administartion	0.165	7.98	-0.070	-1.94				
Education	0.026	0.91	-0.039	-1.30				
Health & Social Assist.	-0.012	-0.47	-0.065	-2.17				
Social &Personal Services	0.032	1.45	-0.169	-4.20				
Other	0.361	2.50	0.076	0.24				
Region:								
SE	0.096	5.86	0.121	6.63	0.090	4.41	0.119	6.39
SW	0.080	4.65	0.072	3.55	0.103	4.85	0.072	3.88
NW	0.048	2.84	0.068	3.23	0.048	2.43	0.056	3.02
NE	0.069	3.67	0.068	4.09	0.048	2.47	0.066	3.73
Nobs:	10,316		7,044		10,318		7,044	
Pseudo R2	0.164		0.1504		0.094		0.997	

Notes: Additional regressors included but not reported: 8 dummies for month of inteview and a constant term.
t-values calculated using bootstrapped standard error estimates based on 35 iterations.

Table 3 .50 quintile (median) regression estimates for males and females in *private* firms

Dependent variable: Ln(Wage per Hour)

	(a): Males		(b): Females		(c): Males		(d): Females	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Education Level:								
Lower Secondary (Cycle I)	-0.035	-0.42	0.195	1.14	0.004	0.04	0.277	1.69
Upper Secondary (Cycle II)	0.142	1.68	0.284	1.65	0.231	2.01	0.408	2.31
Professional Studies	0.090	1.07	0.252	1.34	0.148	1.22	0.364	2.14
Technical/Apprentice	0.059	0.53	0.272	1.35	0.049	0.41	0.294	1.50
Foreman	0.184	1.60	0.543	1.30	0.287	2.41	0.474	0.99
Post Secondary	0.200	1.38	0.282	1.64	0.541	2.88	0.508	2.78
3 yr College	0.332	1.97	0.999	1.94	0.476	2.13	1.347	2.35
4 yr College	0.270	2.31	0.375	1.56	0.584	4.85	0.976	4.76
Age	0.035	2.90	0.035	1.61	0.035	3.69	0.042	2.62
Age Squared	-0.040	-2.59	-0.035	-1.11	-0.041	-3.56	-0.044	-1.84
Head of Household	0.204	4.84	0.016	0.47	0.249	5.25	-0.050	-0.89
Hungarian	-0.007	-0.16	0.057	0.87	-0.003	-0.04	0.098	1.31
Other Ethnic Background	0.263	2.09	0.155	0.80	0.226	1.15	0.086	0.38
Occupation:								
Professional	0.011	0.10	-0.072	-0.30				
Technician	-0.127	-1.13	-0.177	-0.79				
Clerk	-0.193	-1.38	-0.368	-1.69				
Service/Sales	-0.422	-3.40	-0.525	-2.28				
Farming	-0.452	-2.53	-0.453	-1.18				
Craftsman	-0.258	-2.17	-0.416	-1.81				
Operative	-0.276	-2.54	-0.226	-0.81				
Laborer	-0.457	-3.61	-0.651	-2.83				
Rural Area	0.026	0.66	-0.037	-0.91	-0.059	-1.49	-0.042	-0.71
Industry:								
Extractive	0.425	2.11	-0.106	-0.43				
Processing	0.191	3.58	-0.039	-0.28				
Utilities	0.264	1.68	-0.459	-1.03				
Construction	0.299	4.95	0.019	0.11				
Retail, Wholesale, Hotel/Rest	0.258	3.19	-0.115	-0.89				
Transport, Commun., Storage	0.315	4.08	0.087	0.54				
Finance, Banking, Insurance	0.252	0.81	0.331	1.37				
Real Estate	0.222	2.30	-0.288	-1.07				
Public Administartion	0.208	0.94	0.328	0.87				
Education	0.469	1.00	0.162	0.29				
Health & Social Assist.	-0.028	-0.07	-0.156	-1.00				
Social &Personal Services	0.295	3.42	0.046	0.33				
Other	0.413	1.12	-0.138	-0.66				
Region:								
SE	0.026	0.42	-0.054	-0.75	0.056	1.25	-0.046	-0.52
SW	0.002	0.03	-0.034	-0.43	0.018	0.30	-0.032	-0.43
NW	0.024	0.41	-0.004	-0.06	0.043	0.91	-0.041	-0.52
NE	0.034	0.58	0.054	0.69	0.019	0.30	0.048	0.60
Nobs:	1,078		879		1,078		879	
Pseudo R2	0.2119		0.1967		0.1584		0.1214	

Notes: Additional regressors included but not reported: 8 dummies for month of inteview and a constant term.
t-values calculated using bootstrapped standard error estimates based on 35 iterations.

industries, and regions even after controlling for age and education level. The negative coefficients of the occupational dummies imply that these occupations pay significantly lower wages in comparison to management/administration.

For both males and females, the marginal rate of return of a higher level of education is lower in comparison to the corresponding rate of return obtained by excluding the industry and occupation dummies. The extent to which the coefficients of the education variables decrease after including industry and occupation dummies varies depending on gender and the level of education. Female household heads seem to earn a significantly positive premium but much smaller than that paid to male heads of household. Also, males (but not females) of Hungarian or other ethnic background seem to earn lower wages than those of Romanian nationality (the reference nationality included in the constant term), a result suggestive of discrimination based on ethnic background.

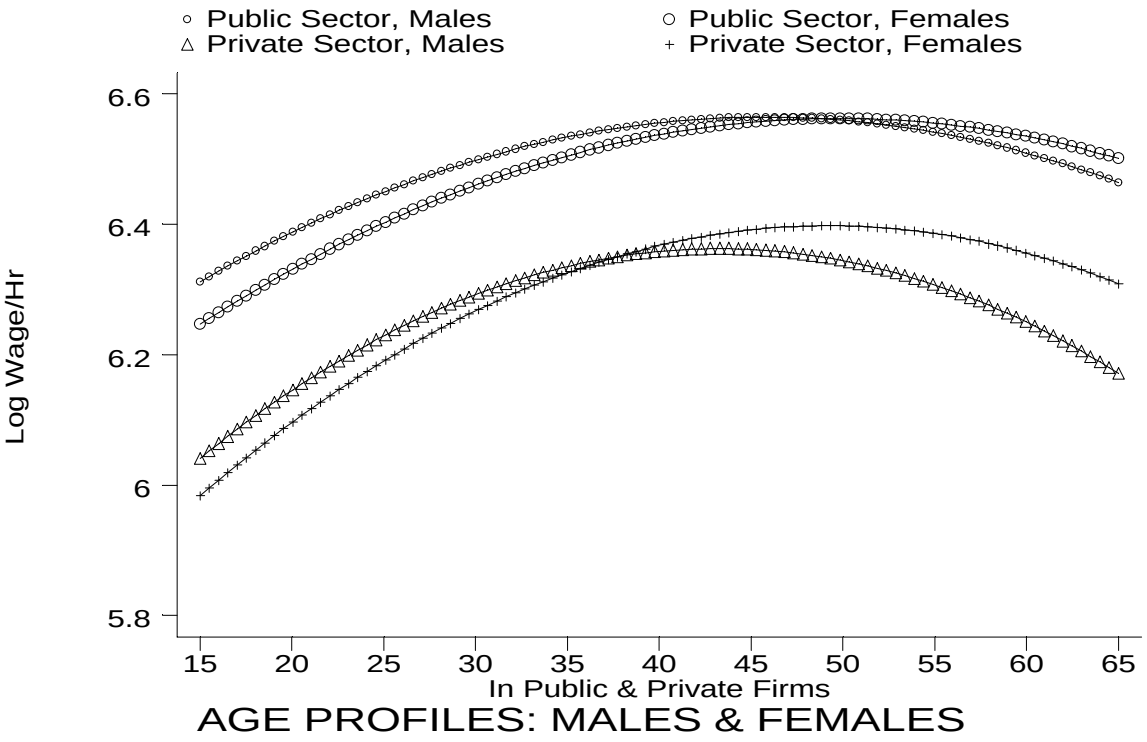
The median regression estimates for males and females working in the private sector are reported in Table 3. As in the public sector, the point estimates of the education level variables decrease substantially when industry and occupation dummies are included. For males, the point estimates of the marginal returns to education in the private sector are generally higher than in the public sector. The same is true for females, especially for those with a three-year college education. This finding is in accordance with Rutkowski (1996) who reports that in Central and Eastern European economies the transition has largely benefitted the most educated workers. Given that female rates of

return are relatively higher than the rates of return for males in either sector suggests that the economic transition to date has benefitted females relatively more than males. Another difference with the public sector is that in the private sector it is males of ethnic background other than Romanian that earn higher wages, ceteris paribus.

In either sector, the wage-age profiles of both males and females also have the usual concave shape. Figure 4 contains the wage-age profiles of males and females. These profiles are for an individual of Romanian ethnicity in urban Bucharest with an upper-secondary level of education, working as a craftsman in the processing industry. In the private sector, the wage-age profiles are uniformly lower than the public sector. Moreover, in the private sector, the wage-age profile of females overtakes the male profile at an earlier age (35 years old) than in the public sector, where female wages overtake male wages at approximately 37 years of age.

In view of the graphical evidence presented above and the experience of other transitional economies, Tables 4 and 5 also present gender specific estimates of the determinants of the .10 quantiles and .90 quantiles of the male and female wage distributions in each sector. These regressions provide a better insight into whether there are major structural differences in the determinants of wages and the gender wage differential at the upper or lower tails of the wage distributions. One key question is whether the point estimates of the observable worker characteristics at the tails of the distribution are significantly different from estimates at the median of the distribution. At first sight it appears that there are significant differences in the returns to education across

Figure 4



quantiles. But closer scrutiny with tests of the joint null hypotheses $\beta_{.10} = \beta_{.50} = \beta_{.90}$ for each education level by gender and by sector reveals otherwise. The p-values of these F-tests are reported in Table 6. As can be easily seen, the null hypothesis cannot be rejected at the conventional significance levels, except in three cases where the p-values are slightly above or below 5 percent. These are the coefficients for males in the public sector with upper secondary education, professional studies, and foreman training. For these three education groups the estimated coefficients in the .10 and .90 quantiles were significantly higher than the estimate at the median. Arguably, these results can provide one plausible explanation of why the gender wage gap in the public sector was higher at

Table 4 .10 quantile regression estimates for males and females in public and private firms

Dependent variable: Ln(Wage per Hour)

	Public Sector				Private Sector			
	Males		Females		Males		Females	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Education Level:								
Lower Secondary (Cycle I)	0.064	1.83	0.064	1.19	-0.041	-0.27	0.033	0.12
Upper Secondary (Cycle II)	0.170	4.33	0.187	3.00	0.099	0.68	0.238	0.82
Professional Studies	0.174	4.54	0.155	2.46	0.039	0.27	0.300	1.11
Technical/Apprentice	0.101	1.66	0.051	0.53	-0.141	-0.74	-0.025	-0.07
Foreman	0.296	5.66	0.147	1.68	0.152	0.93	0.245	0.47
Post Secondary	0.221	2.87	0.259	3.44	0.462	2.12	0.440	1.26
3 yr College	0.290	3.49	0.353	4.34	0.105	0.39	-0.114	-0.24
4 yr College	0.373	5.28	0.411	5.45	0.075	0.45	0.255	0.70
Age	0.018	2.98	0.032	6.24	0.012	0.83	0.049	2.11
Age Squared	-0.019	-2.56	-0.032	-4.72	-0.018	-0.95	-0.057	-1.78
Head of Household	0.117	8.25	0.019	0.98	0.281	3.79	-0.050	-0.59
Hungarian	-0.073	-2.17	0.020	0.51	0.112	1.13	0.180	2.54
Other Ethnic Background	-0.173	-2.34	-0.004	-0.07	0.390	3.18	0.338	1.27
Occupation:								
Professional	-0.142	-2.04	-0.134	-0.82	0.041	0.33	0.153	0.47
Technician	-0.216	-3.86	-0.226	-1.44	-0.250	-2.08	-0.249	-1.44
Clerk	-0.253	-4.20	-0.252	-1.58	-0.377	-2.15	-0.371	-1.58
Service/Sales	-0.407	-6.21	-0.430	-2.62	-0.475	-3.90	-0.531	-3.06
Farming	-0.394	-5.43	-0.304	-1.60	-0.924	-3.85	-0.749	-1.45
Craftsman	-0.265	-4.43	-0.350	-2.15	-0.403	-4.47	-0.381	-1.83
Operative	-0.258	-4.13	-0.248	-1.43	-0.325	-2.97	-0.112	-0.34
Laborer	-0.461	-6.87	-0.484	-2.86	-0.738	-5.93	-0.517	-2.83
Rural Area	-0.059	-4.61	-0.063	-2.74	-0.089	-1.33	-0.100	-1.16
Industry:								
Extractive	0.485	12.88	0.390	7.05	0.208	0.57	0.692	1.56
Processing	0.165	6.23	0.103	2.38	0.024	0.22	0.432	1.53
Utilities	0.317	8.84	0.362	7.20	0.204	1.34	0.423	0.74
Construction	0.145	5.77	0.169	3.39	0.151	1.33	0.402	1.28
Retail, Wholesale, Hotel/Rest	-0.034	-0.52	-0.060	-1.15	-0.035	-0.32	0.425	1.45
Transport, Commun., Storage	0.198	7.66	0.205	3.83	0.056	0.48	0.798	2.31
Finance, Banking, Insurance	0.119	2.32	0.146	3.04	0.244	0.76	0.730	2.24
Real Estate	0.180	1.83	0.107	0.55	-0.067	-0.41	0.447	1.27
Public Administartion	0.154	5.02	0.022	0.46	-0.185	-0.64	0.773	1.82
Education	0.060	1.48	0.058	1.41	0.726	1.36	0.275	0.40
Health & Social Assist.	0.026	0.48	0.063	1.46	0.176	0.84	0.223	0.64
Social &Personal Services	-0.087	-2.04	-0.188	-3.11	0.131	0.95	0.456	1.33
Other	0.056	0.44	-0.109	-0.31	-0.246	-0.54	0.313	0.77
Region:								
SE	0.096	4.32	0.138	5.55	-0.095	-1.39	0.198	2.37
SW	0.052	2.45	0.073	3.68	-0.189	-2.00	0.025	0.26
NW	0.024	1.04	0.057	2.60	-0.118	-1.18	0.116	1.25
NE	0.028	1.12	0.031	1.33	-0.102	-1.19	0.112	0.89
Nobs:	10,316		7,044		1,078		879	
Pseudo R2	0.1491		0.151		0.2567		0.1884	

Notes: Additional regressors included but not reported: 8 dummies for month of inteview and a constant term.
t-values calculated using bootstrapped standard error estimates based on 35 iterations.

Table 5 .90 quantile regression estimates for males and females in public and private firms

Dependent variable: Ln(Wage per Hour)

	Public Sector				Private Sector			
	Males		Females		Males		Females	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Education Level:								
Lower Secondary (Cycle I)	0.074	2.35	0.140	3.50	-0.073	-0.45	0.230	1.19
Upper Secondary (Cycle II)	0.147	4.28	0.202	4.88	0.075	0.47	0.393	1.94
Professional Studies	0.143	3.71	0.182	4.36	-0.038	-0.25	0.258	1.34
Technical/Apprentice	0.096	1.88	0.145	1.81	-0.079	-0.38	0.246	0.96
Foreman	0.298	6.47	0.168	1.98	-0.070	-0.32	0.358	1.74
Post Secondary	0.299	4.15	0.295	5.59	0.432	1.31	0.216	0.93
3 yr College	0.445	3.23	0.313	2.93	0.668	0.93	1.017	1.77
4 yr College	0.517	4.40	0.398	4.97	-0.101	-0.42	0.531	1.42
Age	0.021	4.70	0.015	1.80	0.027	1.64	0.055	2.11
Age Squared	-0.022	-4.08	-0.012	-1.04	-0.030	-1.56	-0.063	-1.58
Head of Household	0.154	7.38	0.025	0.73	0.354	3.51	0.004	0.05
Hungarian	-0.060	-1.66	0.014	0.31	-0.068	-0.68	0.132	1.42
Other Ethnic Background	-0.126	-2.30	-0.056	-1.01	1.039	2.45	-0.083	-0.26
Occupation:								
Professional	-0.158	-1.99	-0.006	-0.08	0.160	0.89	-0.777	-1.32
Technician	-0.197	-2.62	-0.276	-2.65	0.392	1.16	-1.115	-1.74
Clerk	-0.281	-3.55	-0.356	-3.29	-0.189	-0.62	-1.088	-1.51
Service/Sales	-0.366	-3.97	-0.433	-4.30	-0.553	-1.92	-1.326	-1.95
Farming	-0.258	-2.58	-0.486	-3.08	-0.561	-1.78	-1.366	-1.95
Craftsman	-0.262	-3.76	-0.374	-3.47	-0.342	-1.26	-1.364	-2.02
Operative	-0.206	-2.88	-0.233	-1.94	-0.405	-1.38	-1.208	-1.75
Laborer	-0.455	-6.38	-0.586	-5.39	-0.417	-1.52	-1.474	-2.10
Rural Area	-0.063	-3.53	-0.041	-1.60	0.060	0.91	-0.127	-2.23
Industry:								
Extractive	0.802	16.45	0.454	5.64	-0.057	-0.28	-0.611	-2.98
Processing	0.136	5.27	0.059	1.37	0.131	0.89	-0.051	-0.27
Utilities	0.447	9.49	0.423	5.54	0.038	0.22	-0.282	-0.89
Construction	0.084	2.73	-0.011	-0.16	0.289	1.90	-0.063	-0.23
Retail, Wholesale, Hotel/Rest	-0.052	-0.96	-0.103	-1.94	0.304	2.31	-0.217	-1.24
Transport, Commun., Storage	0.202	7.10	0.193	3.60	0.342	1.97	-0.379	-1.20
Finance, Banking, Insurance	0.089	1.32	0.250	3.63	0.311	1.30	0.327	1.35
Real Estate	-0.070	-0.66	-0.143	-1.38	0.111	0.45	-0.382	-1.38
Public Administartion	0.129	2.95	0.002	0.03	0.576	1.91	0.060	0.15
Education	0.235	3.76	0.227	3.40	0.627	2.20	0.243	0.36
Health & Social Assist.	-0.119	-2.55	-0.105	-2.12	1.061	1.51	-0.342	-1.25
Social &Personal Services	0.122	2.01	-0.006	-0.10	0.447	2.25	-0.125	-0.69
Other	0.012	0.19	0.202	0.87	0.207	0.48	-0.074	-0.28
Region:								
SE	0.023	0.71	0.041	1.35	-0.120	-1.35	-0.001	-0.02
SW	0.028	0.92	0.048	1.13	-0.124	-1.16	-0.006	-0.07
NW	0.000	0.01	0.061	1.59	-0.128	-1.47	-0.022	-0.31
NE	0.071	2.07	0.022	0.62	-0.100	-1.26	0.067	0.70
Nobs:	10,316		7,044		1,078		879	
Pseudo R2	0.1919		0.1762		0.2461		0.2832	

Notes: Additional regressors included but not reported: 8 dummies for month of inteview and a constant term.
t-values calculated using bootstrapped standard error estimates based on 35 iterations.

Table 6 P-values of F-tests that individual coefficients are equal across the .10, .50, and .90 quantiles

	Public Sector		Private Sector	
	Males	Females	Males	Females
Lower Secondary (Cycle I)	0.124	0.152	0.968	0.807
Upper Secondary (Cycle II)	0.057	0.412	0.867	0.819
Professional Studies	0.056	0.655	0.625	0.981
Technical/Apprentice	0.945	0.761	0.455	0.551
Foreman	0.040	0.939	0.466	0.709
Post Secondary	0.505	0.270	0.413	0.833
3 yr College	0.538	0.332	0.591	0.174
4 yr College	0.594	0.272	0.219	0.814

the upper tails of the wage distribution (see Figure 2). However, this explanation fails in the private sector, where the gender wage gap is greater. In the private sector there are no significant differences between the returns at the median and the returns at the upper and lower tails of the distribution for both males and females.

DETERMINANTS OF GENDER-SPECIFIC WAGE INEQUALITY

Estimates of the differences in the coefficients of the .90 and .10 quantiles also permit one to identify the factors that significantly increase or decrease the dispersion in wages within gender categories. Factors that are significantly associated with increases in wage dispersion within a gender (or a sector) are likely to be correlated with differences in the wages between males and females. In Table 7, the estimates of the difference in the coefficients from the .90 and .10 quantiles are reported: that is,

$$Q_{.90}(\ln W \mid X) - Q_{.10}(\ln W \mid X) = (\beta_{.90} - \beta_{.10})X,$$

Table 7 Determinants of within-gender wage dispersion in public and private firms

	Public Firms				Private Firms			
	Difference between 90 & 10 Quantile coeffs				Difference between 90 & 10 Quantile c			
	Males		Females		Males		Females	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
Education Level:								
Lower Secondary (Cycle I)	0.010	0.24	0.076	1.23	-0.032	-0.16	0.197	0.66
Upper Secondary (Cycle II)	-0.024	-0.50	0.015	0.23	-0.024	-0.11	0.155	0.58
Professional Studies	-0.031	-0.63	0.027	0.39	-0.077	-0.36	-0.042	-0.15
Technical/Apprentice	-0.005	-0.06	0.095	0.93	0.062	0.20	0.271	0.75
Foreman	0.002	0.03	0.021	0.19	-0.222	-0.90	0.113	0.25
Post Secondary	0.077	0.78	0.036	0.46	-0.031	-0.07	-0.225	-0.63
3 yr College	0.155	1.08	-0.040	-0.30	0.564	0.75	1.131	1.64
4 yr College	0.144	1.03	-0.013	-0.12	-0.175	-0.49	0.276	0.58
Age	0.003	0.39	-0.017	-1.57	0.014	0.65	0.006	0.21
Age Squared	-0.003	-0.36	0.020	1.34	-0.012	-0.42	-0.006	-0.13
Head of Household	0.037	1.54	0.006	0.15	0.073	0.80	0.053	0.46
Hungarian	0.013	0.30	-0.007	-0.12	-0.180	-1.24	-0.048	-0.44
Other Ethnic Background	0.047	0.63	-0.052	-0.61	0.650	1.32	-0.420	-1.32
Occupation:								
Professional	-0.016	-0.14	0.128	0.77	0.118	0.60	-0.930	-1.15
Technician	0.019	0.25	-0.050	-0.31	0.642	1.63	-0.867	-1.32
Clerk	-0.028	-0.31	-0.104	-0.63	0.188	0.68	-0.717	-1.04
Service/Sales	0.042	0.48	-0.003	-0.02	-0.078	-0.27	-0.795	-1.16
Farming	0.136	1.25	-0.181	-0.95	0.363	0.92	-0.617	-0.71
Craftsman	0.003	0.04	-0.024	-0.15	0.061	0.24	-0.983	-1.44
Operative	0.051	0.59	0.015	0.09	-0.080	-0.29	-1.095	-1.65
Laborer	0.007	0.07	-0.102	-0.64	0.321	1.22	-0.957	-1.47
Rural Area	-0.004	-0.24	0.022	0.79	0.149	1.69	-0.027	-0.30
Industry:								
Extractive	0.317	4.91	0.063	0.67	-0.265	-0.80	-1.303	-3.28
Processing	-0.029	-0.85	-0.044	-0.78	0.108	0.70	-0.483	-1.78
Utilities	0.130	2.40	0.061	0.70	-0.166	-0.96	-0.706	-1.16
Construction	-0.061	-1.59	-0.180	-2.61	0.139	0.93	-0.465	-1.34
Retail, Wholesale, Hotel/Rest	-0.018	-0.20	-0.043	-0.62	0.339	2.02	-0.642	-2.43
Transp., Commun., Storage	0.004	0.11	-0.011	-0.18	0.286	1.61	-1.177	-3.86
Finance, Banking, Insurance	-0.029	-0.38	0.104	1.13	0.067	0.21	-0.403	-0.63
Real Estate	-0.250	-1.74	-0.250	-1.37	0.178	0.72	-0.829	-2.29
Public Administartion	-0.025	-0.49	-0.020	-0.24	0.762	1.46	-0.713	-1.37
Education	0.175	2.47	0.169	2.12	-0.098	-0.26	-0.032	-0.06
Health & Social Assist.	-0.145	-1.77	-0.168	-3.15	0.885	1.11	-0.565	-1.46
Social &Personal Services	0.210	2.63	0.182	2.10	0.316	1.53	-0.580	-1.84
Other	-0.043	-0.31	0.311	0.76	0.452	0.85	-0.387	-1.15
Region:								
SE	-0.073	-1.77	-0.097	-2.77	-0.025	-0.21	-0.200	-1.37
SW	-0.024	-0.59	-0.025	-0.66	0.065	0.49	-0.031	-0.21
NW	-0.023	-0.66	0.004	0.12	-0.010	-0.08	-0.139	-1.07
NE	0.043	0.90	-0.008	-0.21	0.001	0.01	-0.045	-0.34
Nobs:	10,316		7,044		1,078		879	

Notes: Additional regressors included but not reported: 8 dummies for month of inteview and a constant term.
t-values calculated using bootstrapped standard error estimates based on 35 iterations.

for males and females in the public and private sectors. A variable with a statistically significant and positive coefficient is associated with increased dispersion in wages, whereas one with a negative coefficient decreases dispersion.

Not surprisingly, Table 7 reveals that the education coefficients at the .90 and .10 quantiles are not significantly different from each other. This implies that controlling for regional differences and differences in occupation and industry, the level of education does not have a significantly direct effect on the spread of male and female wages in public or private firms. Thus, if the industrial and occupational structure were to remain unchanged, subsidies for education would lead to increased male and female earnings in the private sector without increasing the inequality of wages within genders. Moreover, since in the private sector the rates of return to education are higher for females than males, the wage differential between males and females is likely a decrease, ceteris paribus.

From Table 7 one can easily infer what the F-tests of the joint hypotheses tests confirm. In the public sector, the only significant determinants of the dispersion of both male and female wages are the industrial classification of the firm and region. Similar tests in the private sector indicate that regional differences do not significantly contribute to the dispersion of wages within either gender. Also, in both public and private sectors, the dispersion of wages within gender does not depend on the occupation of individuals.

DECOMPOSING WAGE DIFFERENTIALS

Blinder's (1973) and Oaxaca's (1973) decomposition of the mean log wage differential is used to examine the extent to which cross-gender and within-gender differences in wages can be attributed to differences in observable human capital variables or other unexplained factors. Given that the Blinder/Oaxaca decomposition of wage differentials is applicable only at the conditional mean of male and female wage distribution, the separate wage functions for males and females in each sector are estimated via ordinary least squares[9]:

$$E\left(\ln W_M \mid X_M\right) = \beta_M X_M \tag{2a}$$

$$E\left(\ln W_F \mid X_F\right) = \beta_F X_F . \tag{2b}$$

Based on the estimated coefficients, the difference in mean log wages can be expressed as

$$\overline{\ln W}_M - \overline{\ln W}_F = \left(\tfrac{1}{2}\right)\left(\hat{\beta}_M + \hat{\beta}_F\right)\left(\overline{X}_M - \overline{X}_F\right) + \left(\tfrac{1}{2}\right)\left(\hat{\beta}_M - \hat{\beta}_F\right)\left(\overline{X}_M + \overline{X}_F\right), \tag{3}$$

where the first term on the right-hand side is the portion of the wage differential explained by differences in the observable (average) characteristics of males and females (endowment effect) and the second term is the portion of the wage gap due to differences in the coefficients or the estimated returns to the characteristics of males and females

[9] The OLS estimates of the male and female wage functions are not reported since they are not substantially different from the median regression estimates reported in Tables 2 and 5.

(coefficient effect).[10] The latter term constitutes the unexplained portion of the wage differential, or a measure of our ignorance. As it is well known in the wage discrimination literature, this decomposition technique suffers from index number problems (Oaxaca 1973; Jones 1983; Neumark 1988; Glinskaya and Mroz 1997). Given this shortcoming, the simple average of the male and female coefficients are used as the no-discrimination wage structure.[11]

Using equation (3) above, Table 8 reports the decomposition of the mean log wage differentials across males and females in the public and private sector of Romania and across the public and private sector for each gender. The estimates under specification A are obtained with the industry and occupation dummies included in the wage regressions, whereas the estimates under specification B are obtained with the industry and occupation dummies excluded. Clearly, the inclusion or exclusion of the industry and occupation dummies makes a big difference in terms of what fraction of the differential is explained by observable characteristics. In the public sector, under specification A, most of the difference (69.7 percent) between male and female wages can be attributed to differences in observable characteristics in human capital. However, the percentage of the differential explained decreases down to 27.4 percent when the industry and dummy variables are excluded form the wage regression. The same pattern is apparent in the

[10] In decomposing differences in gender-specific wages across public (*G*) and private firms (*P*), equation (3) is also applicable by replacing the subscripts *M* and *F* with *G* and *P*, respectively.

[11] Recent studies that also use the simple average of the male and female coefficients include Hotchkiss and Moore (1996) and Idson and Feaster (1990).

Table 8 Decompositions of log wage differences

	Mean Log Wage Differential	Specification A		Specification B	
		Explained [% of Total]	Unexplained [% of Total]	Explained [% of Total]	Unexplained [% of Total]
Among Males and Females in Public Firms	0.15439	0.10760 [69.69]	0.04680 [30.30]	0.04234 [27.45]	0.11201 [72.55]
Among Males and Females in Private Firms	0.24916	0.16188 [64.97]	0.08729 [35.03]	0.10301 [41.34]	0.14615 [58.66]
Among Males in Public and Private Firms	0.15303	0.08369 [54.69]	0.06934 [45.31]	0.01519 [9.95]	0.13780 [90.05]
Among Females in Public and Private Firms	0.24780	0.16075 [64.87]	0.08705 [35.13]	0.05767 [23.27]	0.19013 [76.73]

Notes: Specification A: Industry and occupation dummy variables included in the wage regressions.
Specification B: Industry and occupation dummy variables excluded from the wage regressions.

private sector, where the percentage of the difference explained by observable differences in the human capital of males and females is slightly lower (64.97 percent). The differences in the fraction of the wage differential explained become even bigger when comparing the mean wages of males in the public and private sectors. The average wage for males in public firms is 15.3 percent higher than that in private firms. When industry and occupation dummies are excluded from the wage regressions, only 9.95 percent of the differential can be explained by observable worker characteristics. The percentage of the differential explained increases to 54.7 percent when occupation and industry are included as part of the observable characteristics of the worker.

OCCUPATIONAL SEGREGATION

As the preceding discussion shows, differences between males and females in the industry of employment and occupation play a very significant role in explaining the wage gap between males and females. This section takes a closer look at the question of

occupational segregation based on gender for the private and public sectors. The Duncan index provides a practical way of measuring the degree of occupational segregation in the data (Duncan and Duncan 1955). It is defined as

$$D = (1/2)\sum_{k=1}^{N} \left| F_k - M_k \right|, \tag{4}$$

where N is the total number of occupations and F_k (M_k) is the proportion of all females (males) in occupation k. An index equal to zero means that males and females have identical employment distributions across occupations, whereas an index equal to one corresponds to the extreme case of complete segregation.[12]

Using the 72 different occupation codes recorded in the survey, the estimated Duncan index is 0.0576 in the public sector and 0.532 in the private sector. This means that only 5.76 percent of the men (or women) would have to change occupations in the public sector for the distribution of men and women across occupations to be identical. In contrast, the emerging private sector seems to be characterized by high occupational segregation. This is not surprising considering the fact that more than 50 percent of the females in the private sector have two of the nine occupational categories (38.9 percent in service/sales and 21 percent in crafts; see Table 1).

[12] A similar index can be calculated across industrial categories and/or industry and occupation categories. Given the obvious concentration of both male and female wage-workers in a small number of industries, such as the processing industry in the public sector and the retail/hotel industry in the private sector (see Table 1), this analysis focuses on occupational segregation.

It is known that the size of the index is sensitive to the level of aggregation of occupations. The greater the aggregation, the lower the index (Strober 1994). In view of the detailed occupational codes available in the survey, the low index in the public sector suggests that occupational segregation is trivial. As a test of the sensitivity of the Duncan index to the level of occupational aggregation, the index is also calculated by aggregating the occupational codes into broader categories. As expected, the new values are lower but not too much lower. With the nine occupational categories, the Duncan index is 0.03367 and 0.3122 in the public and private sectors, respectively. For comparison, the Duncan index for the United States in 1988 at a level of occupational aggregation similar to the 9 categories used here is 0.33. This suggests that as of December 1994, occupational segregation in the private sector of Romania is not too different from that in other market economies.

4. CONCLUSION

This paper has used cross-sectional individual data from Romania to analyze the determinants of male and female wages in public and private enterprises. In brief, the results obtained from this study are the following. In the public sector, higher levels of education are significantly associated with higher wages for both males and females. Also, the marginal rate of return to education is higher for men than for women. In the emerging private sector, college education yields a much higher marginal rate of return to women than men. The male-female wage differential is higher in the private sector than

in public firms (24.9 percent and 15.4 percent, respectively). Seventy percent and 65 percent of the male-female wage differential in Romania in the public and private sector, respectively, is explained by differences in individual characteristics, industry, and occupation. When industry and occupation of an individual are left out of the wage regression, the portion of the male-female wage differential explained decreases significantly.

The new government in power since the end of 1996 has affirmed its strong commitment to implementing far-reaching reforms. As the process of reform in Romania intensifies, there are bound to be further changes in the determinants of individual wages and inequality. In conclusion, it should be pointed out that the results of this study could only be characterized as preliminary at best.

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