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Explaining the Gender Wage Gap in Georgia

by

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ABSTRACT

This paper evaluates gender wage differentials in Georgia between 2000 and 2004. Using ordinary least squares, we find that the gender wage gap in Georgia is substantially higher than in other transition countries. Correcting for sample selection bias using the Heckman approach further increases the gender wage gap. The Blinder Oaxaca decomposition results suggest that most of the wage gap remains unexplained. The explained portion of the gap is almost entirely attributed to industrial variables. We find that the gender wage gap in Georgia diminished between 2000 and 2004.

Keywords: Gender Wage Gap; Economic Transition; Georgia
JEL Classifications: J16, J31, P20

The breakdown of the Soviet Union has led to a dramatic economic and social transformation of the Socialist-bloc countries. Increased income inequality has been an unwelcome feature of this transformation in many of these countries. A growing body of literature focuses on the gender dimension of income inequality in this region, where gender equality was lauded as one of the greatest achievements of its former economic system.

This paper contributes to the literature by evaluating the case of Georgia. The paper focuses on a particular aspect of gender inequality, namely the gender wage gap. The objective of the paper is to evaluate gender wage differentials in Georgia during 2000–2004 and to explain their sources. We assess this issue by estimating a Mincerian wage earnings equation with education, experience, and other relevant characteristics as dependent variables and evaluate whether, controlling for these factors, women are remunerated differently from men. We adjust the results for sample selection bias and implement the Blinder-Oaxaca decomposition of the male-female wage gap to identify its causes.

BACKGROUND

Evidence from the Soviet period indicates that the gender wage gap in the Soviet Union was comparable to Western countries (Ofer and Vinokur 1992). The breakdown of the Soviet Union eliminated institutional mechanisms aimed at maintaining gender wage equality and in many countries resulted in the widening of the gap. Although systematic assessment of the situation in Georgia is lacking, available evidence indicates that this is in fact what happened in early 1990s (Yemtsov 2001).

Zooming forward to the most recent past, the Georgian government has taken specific steps aimed at advancing the cause of gender equality. Among most recent changes, in 2004, the Gender Equality Advisory Council was established under the Parliament Speaker's office. In 2005, the Government Commission on Gender Equality (GCGE) was created with a one-year mandate of drafting the National Action Plan for strengthening gender equality. The goal of the Action Plan was to "facilitate the development and adoption of relevant monitoring mechanisms to plan and review

implementation of government obligations to gender equality" (Jashi 2005). In February 2006, the commission and the council set up a joint working group, which produced the Gender Equality Strategy of Georgia (Sabedashvili 2007: 25). This document was presented as "The State Concept on Gender Equality" before the Parliament of Georgia and approved by it in July 2006. However, it has not yet translated into any plan of action for internalizing the gender framework into political, social, and economic decision-making. As a member of the Committee on Elimination of Discrimination against Women pointed out during the meeting with the Georgian representatives, "in practice, many of women's rights [in Georgia are] violated, for example in the field of employment. It [is] not enough to introduce legislation for gender equality—it [is] also important to ensure equality in practice" (CEDAW 2006).

It appears that in the Georgian society gender equality as a societal goal is perceived as a concept imposed from outside and potentially threatening the traditional way of life. Sabedashvili (2007: 24–25) points out that in practice gender equality efforts in Georgia are supported almost exclusively by international donor organizations, which contributes to this perception. It is noteworthy that, according to one survey, 45.4% of the respondents indicate that in their view men and women in Georgia are, in fact, equal (Sumbadze 2008).[1]

Yet, the evidence on political representation points to the contrary. As of 2006, there were no female city mayors in Georgia (Sumbadze 2008). In 2008, only 7 out of 139 members of Parliament were women (5%) (Department of Statitics 2008). As of January 2009, there were no women in the ministerial level positions of the Georgian government.

The focus of this study is on assessing the economic dimension of gender inequality in Georgia, covering the late transition period from 2000 until 2004, when institutional shifts described above started taking place. Therefore, this study aims at establishing a baseline for the future analysis of the impact of gender targeted policies.

Previous work empirically evaluating the gender wage gap in Georgia is very limited. Jashi (2005) provides an excellent descriptive assessment of the gender issues currently facing Georgia. Her survey summarizes recent demographic and socioeconomic

[1] The survey was conducted in 2007 by the Institute of Policy Studies.

trends observed among men and women. Yemtsov (2001) evaluates the connection between the labor market conditions and poverty in Georgia using 1992–1995 household survey data. He briefly mentions the presence of substantial differences in pay between men and women in Georgia during 1992–1995. However, he does not explicitly quantify these differences; nor does he attempt to explain their presence.

At the same time, the gender wage gap literature on transition countries is expanding and can be used to place Georgia in the context of other countries in the region. A number of studies analyze the Russian case. Among them are Brainerd (1998), Newell and Reilly (1996), Reilly (1999), Arabsheibani and Lau (1999), Glinskaya and Mroz (2000), Gerry et al. (2004), Cheidvasser and Benitez Silva (2007), Kazakova (2007), and Johnes and Tanaka (2008). According to these studies, in Russia the female/male wage ratio varies from 0.60 (reported for 1994 in Brainerd [1998]) to 0.78 (reported for 1995 in Glinskaya and Mroz [2000]). Brainerd (2000) analyzes a number of Central and Eastern European countries, among which are three former Soviet Union countries: Russia, Ukraine, and Estonia. She finds that in 1994, in Russia, women earned 68% of what men did. These numbers in Ukraine and Estonia were 60% and 74%, respectively. Anderson and Pomfret (2003) analyze the Kyrgyz data and find that the female-male wage ratio was 66% in 1993 and it increased to 83% in 1997. However, more recent evidence points to the worsening of the situation. According to the Asian Development Bank's Gender Assessment Report (ADB 2005), as of 2000, Kyrgyz women earned 67.6% of what men did and by 2002 the ratio declined further to 64.9%. Most studies find that individual characteristics explain a very small portion of the gender wage differentials. In fact, Anderson and Pomfret (2003) conclude that in Kyrgyzstan in 1993 and 1997, controlling for individual characteristics, women's wages should have been higher than men's wages.

DATA OVERVIEW

The 2000–2004 dataset in this study comes from the Georgian Household Budget Survey (HBS) run by the Georgian Department of Statistics. It is based on a quarterly survey of 3,351 households.

This analysis is focused on investigating gender wage differentials among individuals who work for pay.[2] The sample in the analysis is restricted to the men between 16–64 years old and women 16–59 years old. Employed individuals earning zero income are excluded from the sample.[3]

Wages are defined in terms of monthly wage income from main employment, expressed in Georgian laris. For comparison purposes, we normalize all wage data in terms of year 2000 using official CPI data (Georgian Statistical Yearbook 2006). The education variable is years of education imputed from the data. Following the literature, experience is constructed as age minus schooling minus 6. Regional and industrial variables are dummy variables, which take the value of 1 when the respondent lives in the corresponding region or works in a corresponding industry. Tbilisi is the reference region. Agriculture is the reference sector. The urban variable takes the value of 1 for urban regions and 0 otherwise.

Based on the dataset, Georgian women are more educated than Georgian men. Their mean years of education are 11.9 as opposed to 11.85 for men, although the difference is not statistically significant.

In interpreting the labor force data from the household survey, the peculiarities of the household questionnaire need to be taken into consideration. The reported employment categories are nonworking age, hired employed, self-employed, or not-employed (individuals who have no job, regardless of whether they are searching for one or not[4]). The nonworking age category includes individuals younger than 16 years of age. The not-employed category lumps together nonworking individuals looking for a job (officially unemployed individuals) and those who, for a number of reasons (e.g., retirement or taking care of children), are not looking for a job. As a result, both the labor force participation rate and the unemployment rate calculated from the household survey are likely to be overestimated. Moreover, assuming that a greater proportion of women than men in Georgia are out of the labor force, the participation rate of women is likely to

[2] A number of studies focus on assessing gender wage inequality among self-employed (Hundley 2000; Eastough and Miller 2004).
[3] The employed zero-earning group constitutes 1.8% of the sample.
[4] As opposed to unemployed defined to be individuals without work, available for work, and looking for work, see http://laborsta.ilo.org/applv8/data/c3e.html.

be overestimated more than it is for men. The same can be said about the unemployment rate.

In addition, in the case of the labor force participation rate, the different retirement ages of women and men influence the estimates. Recall that women between the age of 16 and 59 are included in the sample, whereas for men the age range is between 16 and 64.

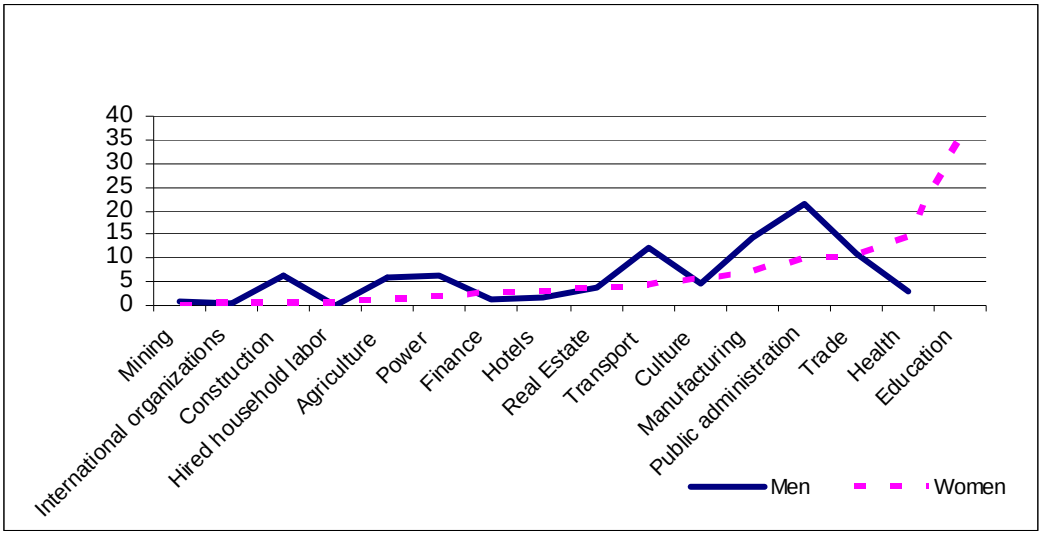
With these points made, we find that during 2000–2004 the labor force participation rate for men was, on average, 7 percentage points higher than it was for women. We observe a positive time trend in female labor force participation during 2000–2004, whereas for men there is no clear pattern. In addition, the female unemployment rate was significantly higher than male unemployment rate.

Table 1. Labor Force Data in the Sample

	Labor Force Participation Rate		**Unemployment Rate**	
	Female	**Male**	**Female**	**Male**
2000	0.5783	0.6457	0.4583	0.3502
2001	0.5755	0.6391	0.4444	0.3341
2002	0.5875	0.6671	0.5325	0.4085
2003	0.5936	0.6503	0.5131	0.3786
2004	0.5918	0.6428	0.4575	0.3433

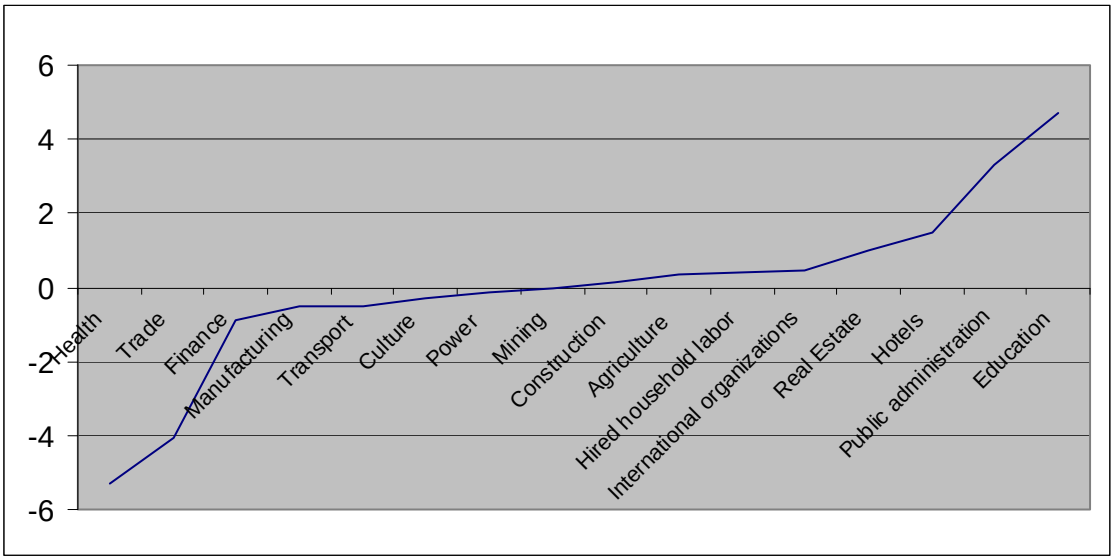
The female labor force is concentrated in three sectors: education, health care and social services, and culture (see figure 1). Almost 57% of the female paid workforce was engaged in these three sectors during 2000–2004. This result is similar to the findings from other countries (ADB 2005). Men are more evenly represented in different sectors of the Georgia economy. The three main employers for men were manufacturing, transport, and public administration, with their total share being 48%.

Figure 1. Industrial Distribution of Employment, by Gender



The share of women in the three dominant sectors decreased from 60.91% in 2000 to 55.31% in 2004, still a high number (see appendix table 2). It is noteworthy that most of the changes in the composition of the female paid labor occurred within the service sector, with the outflow of labor force from health, trade, and finance into the hotel industry, public administration, and education. The movement into public administration and education markedly coincides with the dramatic reorganization within these spheres that has taken place since 2003. At the same time, industries, such as manufacturing, transportation, power, and construction haven't experienced significant shifts.

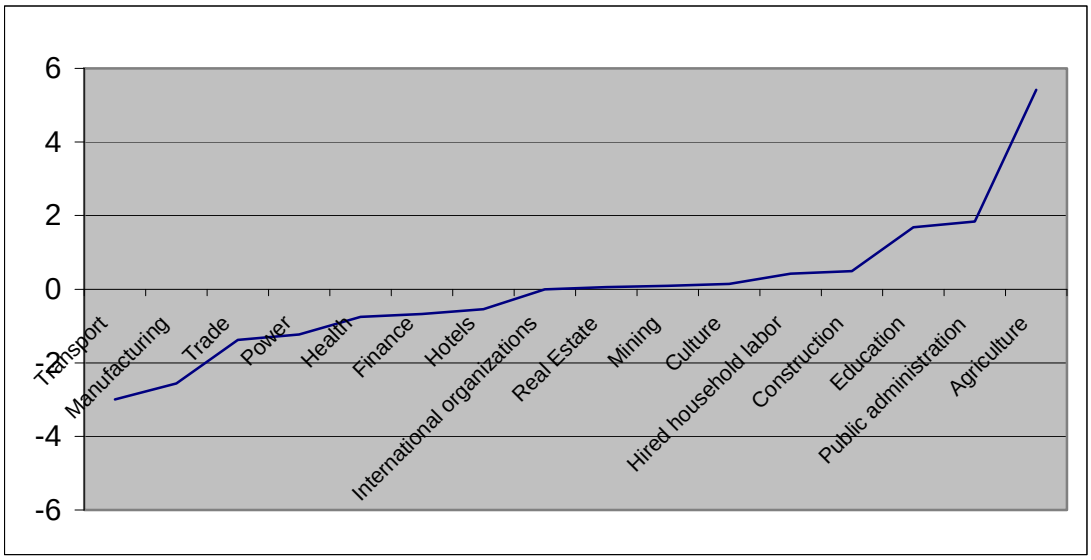
Figure 2. Changes in the Industrial Composition of Female Wage Employment between 2000 and 2004



For men, the picture is somewhat different in that we observe shifts across types of industries. Similar to women, there is movement into education and public administration. The share of manufacturing declines whereas the share of agriculture in paid employment increased, possibly pointing to changes in the structure of the agricultural industry in Georgia.[5]

[5] This observation is particularly interesting as we observe a drop in the share of self-employed farmers. These shifts might indicate an increase in the size of agricultural enterprises.

Figure 3. Changes in the Industrial Composition of Male Wage Employment, 2000–2004



High occupational concentration observed among Georgian women is not uncommon. Some degree of occupational segregation is observed in most countries (Dolado, Felgueroso, and Jimeno 2002). However, because "female" occupations tend to pay less, women, on average, receive lower earnings than men based on the occupational characteristics. In fact, agriculture together with education, health care, and culture—the industries with the highest concentration of women—are the lowest paying industries in the Georgian economy (see table 2).

Table 2. Mean Earnings by Industry, Georgian laris (2000–2004 average)

Industry	Wage
Agriculture	3.10
Mining	85.75
Manufacturing	102.75
Power	92.82
Construction	144.32
Trade	115.72
Hotels	119.29
Transport	139.44
Finance	115.22
Real Estate	86.66
Public Administration	70.61
Education	45.27
Health	39.35
Culture	71.17
Hired Household Labor	87.29
International Organizations	360.10

On average, women earn about 57% of what men do and this pattern is present in each year in the sample. If anything, the situation appears to have worsened during 2000–2004 (see table 3).

Table 3. Average Wages among Wage Workers, in Year 2000 Georgian laris

	Female	Male	Female/Male Ratio
2000	57.70	98.09	0.59
2001	63.88	105.86	0.60
2002	69.25	125.50	0.55
2003	75.15	135.70	0.55
2004	87.62	157.32	0.56

METHODOLOGY

There are large variations in the approaches and variables used for estimating the gender wage gap (Weichselbaumer and Winter-Ebmer 2005). The choice of approach affects the size of the estimated gender wage gap, as well as the estimates of the gender wage discrimination. So does the choice of variables and the inclusion of different groups of individuals.

To enable the comparison of the Georgian case to the studies of other countries, we use an augmented version of the conventional Mincerian earnings equation (Mincer 1974):

$$\ln w_j = \alpha + \mathbf{X_j}\beta + \varepsilon_j, \qquad (1)$$

where subscript j denotes individual j, variable w_j stands for monthly wages of individual j, $\mathbf{X_j}$ is a vector of explanatory variables for individual j, which includes schooling, experience, experience squared, gender, and geographic and industry-level characteristics.[6]

The Mincerian earnings equation is first estimated using an ordinary least squares (OLS) approach. The potential presence of a correlation between the matrix of regressors and the error term has been shown to lead to inconsistent (and biased, in the small sample case) coefficient estimates (Card 1999 and 2001). In the case of the Mincerian earnings equation, there are several potential sources of correlation between the regressors and the error term. Khitarishvili (2008) uses the instrumental variables approach to test for the presence of endogeneity in the education variable and does not find sufficient evidence to reject the hypothesis of exogeneity of education.

In this study we test and correct for another potential source of correlation: sample selection bias. If the selection of individuals into the category of wage earners is not random, the coefficient estimates in the wage equation can be biased. We use the Heckman sample-selection correction method (Heckman 1979) to test and correct for the

[6] The use of industrial dummies in the wage equation in the context of gender wage decomposition has been discussed in Blau and Ferber (1987). They suggest that including industrial dummies provides a lower bound on the discrimination whereas excluding them provides an upper bound.

presence of sample selection bias. The wage equation remains equation (1). The selection equation is:

$$g_j = \delta + \mathbf{Z_j}\gamma + u_j, \qquad (2)$$

where g_j takes the value of 1 if the individual is a paid worker and earning positive income and 0 otherwise; $\mathbf{Z_j}$ includes all variables in $\mathbf{X_i}$ except industrial variables (which do not apply to unemployed individuals), plus dummy variables for marriage and the number of children under 6.

The presence of sample selection bias can be evidenced by the significance of the inverse Mills ratio λ, whose coefficient is ρ times σ. In turn, ρ is the correlation coefficient between ε and u, and σ is the standard deviation of ε.

We test for sample selection bias and find the evidence of its presence for men. We correct for sample selection bias for men and perform a Blinder-Oaxaca decomposition of the male-female wage differential to identify the causes of the wage gap. The objective of the decomposition is to identify how much of the difference in mean wages between men and women can be explained by the predictors. Following the notation of Jann (2008), the objective is to explain $R = E(Y_m)-E(Y_w)$, where Y_m is the mean log wages of men and Y_w is the mean log wages of women.

Based on equation (1), R can be expressed as:

$$R = E(Y_m) - E(Y_w) = E(X_m)'\beta_m - E(X_w)'\beta_w, \qquad (3)$$

given the assumptions that $E(\varepsilon_w)=0$ and $E(\varepsilon_m)=0$.

We avoid the issue of the sensitivity of the results to the choice of the reference group by considering the average of the estimated coefficients for men and women as the nondiscriminatory estimate (Jann 2008). That is,

$$R = [E(X_m) - E(X_w)]'[\mathbf{W}b_w + (I - \mathbf{W})\, b_m] + [(I - \mathbf{W})'\, E(X_m) + \mathbf{W}'\, E(X_w)]'\, (b_m - b_w),$$

where **W** = 0.5I. The first component of R is explained by the predictor differences between men and women and the second component is the unexplained part.

A substantial unexplained component is commonly attributed to gender discrimination, although it might reflect the omission of important variables (Jann 2008).

RESULTS

Mincerian Earnings Functions

We start by analyzing the pooled results for men and women from 2000–2004. At each estimation step (the OLS, Heckman, and Blinder-Oaxaca decomposition), sample weights are used to adjust the results.

The OLS results indicate that the returns to education in Georgia are quite low compared to other countries in the region. The returns to education of 0.0447 for women are slightly higher than the estimate of 0.0427 for men, a common finding in the literature (Shultz 1993; Dougherty 2003), although the estimates are not statistically different from each other.

Experience is insignificant for both men and women. This result, too, is consistent with the literature, although it is unclear whether it is due to its true lack of importance or to the possible attenuation bias attributable to the measurement error. In addition, this measure is likely to underestimate the true importance of experience for women because women are more likely to become and stay unemployed (Lauerova and Terrell 2002; Guarcello et al. 2005).

In provincial regions, men and women tend to fair similarly in terms of their earnings. Samcxe, located in the southwest of Georgia is the poorest, whereas Ajara fairs the best relative to Tbilisi. Men in urban areas are remunerated almost three times more than women.

For both males and females, most industries are characterized by positive wage premia relative to agriculture (the reference industry), with the notable exceptions of health, education, and culture. Of course, as already discussed, these also happen to be the female-dominated industries.

Looking at trends over time for both men and women, returns to education increase between 2000 and 2004, whereas the importance of experience remains marginal for both 2000 and 2004.

For men, it appears that regional disparities had increased by 2004, although urban regions no longer seemed to have as much advantage as in 2000. For, women regional disparities either shrank or didn't increase dramatically, a curious result especially in comparison with male results. The urban variable is insignificant for both time periods.

With some exceptions (notably finance), wage premia for men increased between 2000 and 2004 (not always significantly). Changes in male-dominated mining, manufacturing, power, and construction industries were most significant. For women, wage premia increase in all industries, notably in finance and international organizations. This might indicate that women are taking advantage of these relatively new and expanding high-skilled sectors. Yet, these results have to be interpreted with some caution. Although wage premia for women increased, we observed a simultaneous outflow of female labor from the financial sector. Moreover, we have to be mindful of the fact that for women mean wages in agriculture (relative to which the premia are assessed) decreased from 60.84 laris to 46.10 laris, whereas for men they increased from 83.62 laris to 91.84 laris.

Table 4. OLS Results for Men and Women

	MEN						WOMEN					
	pooled		2000		2004		pooled		2000		2004	
	coefficients†	std. errors	coefficients	std. errors	coefficients	std. errors	coefficients	std. errors	coefficients	std. errors	coefficients	std. errors
Education	0.0427*	0.0063[1]	0.0394**	0.0159	0.0519*	0.0134	0.0447*	0.0066	0.0329**	0.0159	0.0790*	0.0137
Experience	0.0022	0.0051	-0.0064	0.0108	0.0164***	0.0099	0.0092	0.0063	0.0109	0.0144	0.0091	0.0130
Experience[2]	-0.0001	0.0001	0.0000	0.0002	-0.0004**	0.0002	-0.0002***	0.0001	-0.0002	0.0003	-0.0001	0.0003
Urban	0.1619*	0.0387	0.2295**	0.0961	-0.0201	0.0858	0.0552	0.0360	0.0442	0.0889	-0.1108	0.0682
Kaxeti	-0.4593	0.0662	-0.2906***	0.1493	-0.6214*	0.1346	-0.5247*	0.0622	-0.4876*	0.1895	-0.4411*	0.1067
Kvemo Kartli	-0.0359	0.0547	-0.0490	0.1361	-0.3855*	0.1037	-0.0477	0.0513	0.0717	0.1262	-0.2025**	0.0980
Samcxe	-0.6751	0.0776	-0.8710*	0.1949	-0.5697*	0.1468	-0.5672*	0.0736	-1.0829*	0.1536	-0.2888**	0.1267
Ajara	0.0099	0.0561	0.1766	0.1255	-0.3587*	0.1128	-0.0631	0.0571	0.3121*	0.1171	-0.2223***	0.1272
Guria	-0.5396	0.0719	-0.4332*	0.1458	-1.1174*	0.1385	-0.5491*	0.0690	-0.6341*	0.1549	-0.3902*	0.1485
Samegrelo	-0.4618	0.0650	-0.3076**	0.1468	-0.9092*	0.1385	-0.5503*	0.0565	-0.5148*	0.1488	-0.6190*	0.1100
Imereti	-0.4710	0.0546	-0.5266*	0.1328	-0.5426*	0.1066	-0.4368*	0.0518	-0.4163*	0.1218	-0.2952*	0.1078
Shida Kartli	-0.3756	0.0585	-0.3110**	0.1419	-0.6322*	0.1433	-0.4064*	0.0516	-0.4289*	0.1292	-0.4277*	0.1008
Mining	0.2885	0.2032	-0.0193	0.5146	1.2162*	0.2541	-0.3802	0.7661	-		-	
Manufacturing	0.3893	0.0803	0.3617***	0.1957	0.3936**	0.1819	0.4005*	0.1212	0.4330**	0.2134	1.0195*	0.3077
Power	0.3589	0.0942	0.3042	0.2214	0.4922*	0.1890	0.3666**	0.1664	0.1244	0.3292	1.0244*	0.3595
Construction	0.5822	0.0918	0.4415***	0.2385	0.6970*	0.1940	0.0978	0.2893	0.7378*	0.2286	1.8942*	0.4160
Trade	0.4814	0.0832	0.6842*	0.2086	0.5040*	0.1806	0.3697*	0.1187	0.4153***	0.2180	0.9239*	0.2965
Hotels	0.6301	0.1296	0.6333**	0.3200	0.8239*	0.2292	0.6477*	0.1420	0.2006	0.4826	1.1358*	0.3062
Transport	0.5105	0.0848	0.5619*	0.1950	0.5912*	0.1920	0.3378*	0.1252	0.3882***	0.2249	0.8022*	0.3069
Finance	0.3590	0.1715	0.6388**	0.2792	0.5124	0.5354	0.4346*	0.1626	0.2127	0.2923	1.3267*	0.3542
Real estate	0.1899	0.1180	0.1297	0.3096	0.1410	0.1825	-0.0305	0.1470	0.4725	0.3352	0.5376	0.3481
Public admin	0.0052	0.0785	0.0237	0.1960	0.1474	0.1757	-0.1127	0.1189	-0.1345	0.2528	0.4344	0.3002
Education	-0.3256	0.0973	-0.5887**	0.2603	-0.1165	0.1949	-0.2784**	0.1127	-0.2768	0.2005	0.2449	0.2920
Health	-0.3360	0.1586	-0.1581	0.2707	0.1613	0.2482	-0.3532*	0.1162	-0.1682	0.2077	0.1998	0.2999
Culture	-0.0446	0.1007	0.0172	0.2374	0.1066	0.2122	-0.1297	0.1274	0.0945	0.2343	0.5297***	0.3206
Hired HH	-0.3330	0.0883	-0.2977	0.2001	-		0.7504*	0.1724	1.0663*	0.2911	0.9058*	0.3041
International	1.1729	0.3305	-		1.2919*	0.4206*	0.8208	0.6973	0.4831**	0.2385	1.0142***	0.5494
D01	0.1655	0.0506					0.0964***	0.0527				
D02	0.3300	0.0522					0.2823*	0.0500				
D03	0.3454	0.0501					0.2983*	0.0491				
D04	0.6031	0.0478					0.5349*	0.0498				
Constant	3.4122	0.1211	3.4724*	0.3314	3.9042*	0.2486	3.0895*	0.1603	3.1323*	0.3509	2.6320*	0.3651
N	3109		601		679		**2685**		**508**			
R^2	**0.2701**		**.2615**		**0.2973**		**0.3095**		**0.2605**			

†standard errors are robust to heteroscedasticity

Heckman Model: Interpreting the First-Stage Regression Results

Irrespective of the presence or absence of sample selection bias, the first-stage probit results are informative in understanding the characteristics of individuals engaged in wage employment.[7]

We find that marriage, a key variable in determining the probability of a person being wage employed, plays opposing roles for men and for women. Being married raises the probability that a man is employed by 0.2630. For women, the effect is the opposite and very sizable: marriage reduces the probability of a woman being wage employed by 0.3799.

Not surprisingly, having children under six has strong and negative bearing on women's probability of being engaged in wage employment, reducing it by 0.1605. It has

[7] The results are robust to different specifications (e.g., the number of children under sixteen, in addition to the number of children under six).

little effect on the probability of men working for a wage (if anything, it is positive, albeit insignificant).

Table 5. Heckman Correction First-Stage Regression Results

	Males		Females	
	Coefficients	**Std. Errors**	**Coefficients**	**Std. Errors**
Marriage	0.2630*	0.0373	-0.3799*	0.0361
Number of Children	0.0002	0.0230	-0.1605*	0.0326
Education	0.1149*	0.0062	0.1819*	0.0069
Experience	0.0513*	0.0045	0.0857*	0.0054
Experience^2	-0.0009*	0.0001	-0.0014*	0.0001
Urban	0.3470*	0.0329	0.3818*	0.0346
Kaxeti	-0.1818*	0.0569	0.0360	0.0610
Kvemo Kartli	-0.2657*	0.0549	-0.0309	0.0590
Samcxe	-0.2830*	0.0651	0.2291*	0.0664
Ajara	-0.1140**	0.0530	0.0741	0.0576
Guria	-0.2642*	0.0662	0.0097	0.0697
Samegrelo	-0.4623*	0.0585	-0.0755	0.0595
Imereti	-0.1761*	0.0506	0.1136**	0.0521
Shida Kartli	-0.1862*	0.0534	0.1622*	0.0560
D19	-0.0394	0.0454	-0.0357	0.0496
D23	-0.0929**	0.0461	-0.0647	0.0488
D27	-0.0755***	0.0439	-0.0608	0.0469
D32	-0.1336*	0.0433	-0.0350	0.0456
Constant	-2.7572*	0.0959	-4.0083*	0.1122

Education is another key variable in explaining the probability of both men and women being employed for a wage. It plays a more important role for women than for men. For men, the probability of being employed increases by 0.1149, whereas for women it rises by 0.1819. This might indicate that more educated women are more likely to seek employment opportunities. Alternatively, it might mean that employers are paying more attention to women's education than to men's when making hiring decisions, pointing to some differences in the way in which women and men are treated.

Regional variables paint an interesting picture of the labor market situation for men and women. Men living in provincial regions are much less likely to work for pay than women are. This result could be interpreted in a number of ways. It could be that women in rural areas are more likely to find wage employment than men are. Alternatively, rural men are more likely to own land, which automatically qualifies them to be considered self-employed farmers, possibly explaining this result.

Heckman Model: Evidence of Sample Selection Bias

The selection equation in the Heckman model includes marriage and the number of children under six years old as identifying variables. We do not use industrial variables, as they do not apply to the unemployed.

The coefficient on λ is significant for men, indicating the presence of sample selection bias, whereas for women it is insignificant. This result is important as it indicates the presence of different mechanisms describing the selection into wage work for men and women. A number of studies conducted on transition countries find no evidence of sample selection bias (Gerry et al. 2004), while others conduct sample selection bias correction only for women, implicitly assuming that sample selection bias is an issue only for the female population (Arabsheibani and Lau 1999; Arabsheibani and Mussurov 2007). The results in this study point to a need to pay more attention to the causes of sample selection bias among men as well as women.

A key finding, which has received little to no attention in the literature, is the sign of the λ coefficient, $\sigma\rho$, which is negative for both men and women. Given that σ is positive, the key factor determining the sign of the coefficient is ρ. The significance of the coefficient of λ points to the mere presence of sample selection bias, however its sign has direct bearing on the results of the Blinder-Oaxaca decomposition as, under negative ρ, mean wages are underestimated. Thus, finding a negative and significant coefficient for men implies the need for correction only for men, which results in an increase in men's mean wages without a corresponding increase in the mean wages for women. Thus, the gender wage gap with correction for sample selection bias will be higher than without it (a result corroborated by findings in the literature although, again, not sufficiently analyzed).

The negative ρ indicates that characteristics that raise an individual's salary in fact reduce this person's probability of being employed. Given that the coefficient on λ is significant and its value is higher for men than it is for women, we can infer that for men, much more so than for women, factors that lead to their earning higher wages are also factors responsible for their not being hired.

There has been a rise in the number of studies that obtain negative estimates of ρ (see Dolton and Makepeace [1986] for an early work). Given the counterintuitive

nature of this result, the vast majority of studies either does not address this issue or attribute it to a misspecification of the model. In fact, for former Soviet republics, all studies, which use the Heckman correction in the context of gender wage gap, obtain negative estimates of ρ, with none attempting to elaborate on its implications (e.g., Arabsheibani and Lau 1999; Cheidvasser and Benitez Silva 2007; Gerry et al. 2004). Given the mounting evidence, it seems appropriate to pay more attention to this finding, especially because it sheds light on the mechanisms shaping the selection process into wage employment.

The conventional literature on sample selection bias revolves around the reservation wage hypothesis, according to which the unemployed status is supply-driven (Heckman 1979). According to this hypothesis, individuals evaluate wage offers by comparing them to their reservation wages. If the wage offer is below their reservation wage, individuals refuse the offer and, as a result, the offer is unobserved. If the wage offer is above their reservation wage, individuals accept it and, thus, this wage offer is observed. In such a context, obtaining a negative correlation between the error terms of the wage equation and selection equation is counterintuitive, as it appears to mean that individuals are more likely to accept lower rather than higher wage offers. Yet, Ermisch and Wright (1994) find that negative ρ, in fact, can be consistent with the reservation wage hypothesis. They show that ρ will be negative if the variance of wage offers is smaller than the covariance of wage offers and reservation wages. For exposition purposes, if we assume that the means of wage offers and reservation wages are the same, an implication of this finding is that for individuals whose wage offer deviation from the mean is positive, the reservation wage deviation from the mean should be even higher. When that happens, of course, the wage offer will not be accepted. Thus, individuals with higher wage offers also happen to be the ones more likely to be out of the sample with observed wages because they are the ones rejecting the offers.

Nicaise (2001) proposes an alternative explanation according to which unemployment often has an involuntary character, especially in the context of developing and transition countries. That is, market wages are above individuals' reservation wages, but these individuals are not hired by employers. Nicaise (2001) proposes an alternative "crowding" hypothesis, according to which, holding all individual characteristics

constant, employers offer jobs to individuals who are willing to work for lower pay (that is, those who have lower reservation wages). Thus, individuals who are more likely to work are also individuals who are paid less (by employers) than otherwise observationally identical individuals from a population. Thus, in this case, individuals with higher wage offers are less likely to be in the labor force not because they also have higher reservation wages and therefore reject these offers, but because individuals with higher reservation wages are rejected by employers in favor of individuals with lower reservation wages (assuming that such exist).

Heckman Model: Interpreting the Changes in Means and Slopes

According to both interpretations (Ermisch and Wright 1994; Nicaise 2001), in the presence of negative ρ, the uncorrected wage distribution underestimates the true wage distribution. That is, once we correct for sample selection bias, the mean wages should increase. That is in fact the case in this estimation. Once the Heckman correction is implemented, men's mean wages rise from 78.8 laris to 172.4 laris.

The shifts in the slope of the coefficients shed further light on which of the alternative hypotheses dominates. To illustrate this point, we will focus on the interpretation of the education coefficient. In particular, if Ermisch and Wright's intepretation is dominant, it would be sensible to suppose that more educated individuals are also more likely to have higher variation in reservation wages (e.g., more of them require higher reservation wages). Therefore, the most educated are more likely to be underrepresented in the sample compared to the less educated individuals. If so, then correcting for sample selection bias should increase the slope of the education coefficient. In fact, Harmon and Walker (1995) suggest that to be the case, implicitly assuming this interpretation.

On the other hand, if Nicaise's interpretation is dominant, it might make more sense to suppose that less educated individuals have less leverage to bargain for higher wages compared to more qualified, educated individuals. As a result, less educated individuals demanding higher wages might be underrepresented in the sample, as their demands are not met by the employers; thus, correcting for sample selection bias would lower the slope of the education coefficient.

Our results indicate that the slope of the education coefficient in fact decreases for both men and women, which pushes us to conclude that the "crowding" interpretation is dominant. Moreover, a cursory look at the data indicates that labor force participation rates increase with education, a result common in the literature (Cheidvasser and Benitez-Silva 2007), contradicting the needed condition under the reservation hypothesis. This conclusion is consistent with the results observed in many transition countries, in which, given the lack of economic opportunities, the leverage lies in the hands of the employers—workers, especially less educated ones, do not have a lot of say in setting their salaries.

Heckman Model: Interpreting the Presence of Sample Selection Bias among Men and its Lack among Women

We now return to the evidence of sample selection bias among men, with negative and significant coefficient on λ, and the absence of sample selection bias among women. This finding seems to suggest that men are more likely to accept jobs with wages in the lower segment of their wage offer distribution. This can be explained by the fact that finding a job is men's primary responsibility. Women, too, experience a downward pressure on their wages; however, due to their primary role as caretakers, they are less likely to accept jobs in the low segment of female wage offer distribution. As a result, the coefficient on λ, although negative, is insignificant.

Table 6. Estimates of the Extended Mincerian Regression for 2000–2004 (dependent variable ln [Wages])

	OLS				Heckman			
	Males		Females		Males		Females	
	coefficients	Std. Errors	coefficients	Std. Errors	coefficients	Std errors	coefficients	Std. errors
Education	0.0427*	0.0063†	0.0447*	0.0066	-0.0167	0.0103	0.0355***	0.0192
Experience	0.0022	0.0051	0.0092	0.0063	-0.0311*	0.0074	0.0055	0.0096
Experience^2	-0.0001	0.0001	-0.0002***	0.0001	0.0004*	0.0001	-0.0002	0.0002
Urban	0.1619*	0.0387	0.0552	0.0360	-0.0281	0.0490	0.0345	0.0528
Kaxeti	-0.4593	0.0662	-0.5247*	0.0622	-0.3696*	0.0744	-0.5273*	0.0622
Kvemo Kartli	-0.0359	0.0547	-0.0477	0.0513	0.0883	0.0656	-0.0487	0.0515
Samcxe	-0.6751	0.0776	-0.5672*	0.0736	-0.5341*	0.0878	-0.5700*	0.0752
Ajara	0.0099	0.0561	-0.0631	0.0571	0.0610	0.0633	-0.0683	0.0573
Guria	-0.5396	0.0719	-0.5491*	0.0690	-0.4042*	0.0828	-0.5487*	0.0693
Samegrelo	-0.4618	0.0650	-0.5503*	0.0565	-0.2187*	0.0811	-0.5474*	0.0575
Imereti	-0.4710	0.0546	-0.4368*	0.0518	-0.3768*	0.0628	-0.4433*	0.0520
Shida Kartli	-0.3756	0.0585	-0.4064*	0.0516	-0.2773*	0.0666	-0.4156*	0.0533
Mining	0.2885	0.2032	-0.3802	0.7661	0.2613	0.2039	-0.3816	0.7713
Manufacturing	0.3893	0.0803	0.4005*	0.1212	0.3493*	0.0774	0.4068*	0.1220
Power	0.3589	0.0942	0.3666**	0.1664	0.3208*	0.0909	0.3609**	0.1668
Construction	0.5822	0.0918	0.0978	0.2893	0.5514*	0.0890	0.0892	0.2904
Trade	0.4814	0.0832	0.3697*	0.1187	0.4320*	0.0807	0.3643*	0.1196
Hotels	0.6301	0.1296	0.6477*	0.1420	0.5730*	0.1250	0.6387*	0.1435
Transport	0.5105	0.0848	0.3378*	0.1252	0.4801*	0.0816	0.3317*	0.1260
Finance	0.3590	0.1715	0.4346*	0.1626	0.3203**	0.1636	0.4274*	0.1631
Real estate	0.1899	0.1180	-0.0305	0.1470	0.1830	0.1133	-0.0362	0.1474
Public admin	0.0052	0.0785	-0.1127	0.1189	-0.0366	0.0764	-0.1214	0.1203
Education	-0.3256	0.0973	-0.2784**	0.1127	-0.3665*	0.0979	-0.2830**	0.1137
Health	-0.3360	0.1586	-0.3532*	0.1162	-0.3235**	0.1437	-0.3581*	0.1171
Culture	-0.0446	0.1007	-0.1297	0.1274	-0.0830	0.0983	-0.1362	0.1282
Hired HH	-0.3330	0.0883	0.7504*	0.1724	-0.4491*	0.0894	0.7453*	0.1725
International	1.1729	0.3305	0.8208	0.6973	1.1803*	0.3485	0.8108	0.6996
D19	0.1655	0.0506	0.0964***	0.0527	0.1760*	0.0556	0.1025***	0.0530
D23	0.3300	0.0522	0.2823*	0.0500	0.3665*	0.0566	0.2833*	0.0501
D27	0.3454	0.0501	0.2983*	0.0491	0.3780*	0.0534	0.3002*	0.0497
D32	0.6031	0.0478	0.5349*	0.0498	0.6498*	0.0526	0.5367*	0.0502
Constant	3.4122	0.1211	3.0895*	0.1603	5.4320*	0.2908	3.3680*	0.5534
N	3109		**2685**					
R^2	**0.2701**		**0.3095**					
F	**99.22**		**35.80**					
Lambda					-0.7112*		-0.0749	

† All standard errors are robust

Blinder-Oaxaca Decomposition

2000–2004

Taking into account individual characteristics, the uncorrected results suggest that salaried women in Georgia earned only 55.44% of men's earnings during 2000–2004. The corresponding difference coefficient in the decomposition is .59, which is extremely

high relative to other countries (Johnes and Tanaka 2008[8]; Anderson and Pomfret 2003; ADB 2005).

As it was previously discussed, correcting for the Heckman selection raises the gender wage gap. We report the decomposition results with the Heckman correction for men and not for women, given that we didn't find the evidence bias due to sample selection bias among women.

The difference coefficient increases to 1.37 and the means adjust so that women earn, on average, only 25.33% of what men do. This implies that without the downward pressure on wages (either because more qualified men also have higher wage demands or because of the downward pressure on men's wages), the gender wage inequality would in fact have been wider than it appears to be.

Only 12.69% of the difference is explained by predictors. Most of the difference remains unexplained, a result consistent with the literature.

Table 7. Blinder-Oaxaca Decomposition

	Uncorrected			**Corrected**				
	Pooled	**2000**	**2004**	**Pooled**	**2000**	**2004**	**Female-dominated**	**Male-dominated**
Men	4.37	4.10	4.66	5.15	5.05	4.46	3.78	5.43
Women	3.78	3.53	4.08	3.78	3.53	4.08	3.50	3.96
Difference	**0.59**	**0.56**	**0.57**	**1.37**	**1.52**	**0.38**	**0.28**	**1.48**
Explained	**0.17**	**0.20**	**0.12**	**0.17**	**0.20**	**0.12**	**0.05**	**-0.06**
Education				-0.02	-0.02	-0.04	0.03	0.00
Experience				0.00	0.00	0.00	0.06	-0.01
Experience ^{2}				-0.01	-0.01	0.00	-0.05	0.00
Urban				0.00	0.00	0.00	-0.01	-0.02
Region				0.01	0.03	-0.01	0.03	-0.02
Industry				0.21	0.20	0.17	-	-
Time				0.00	-	-	-0.01	0.02
Unexplained	**0.42**	**0.37**	**0.45**	**1.20**	**1.32**	**0.26**	**0.23**	**1.53**

It is noteworthy that given their education, women should in fact be earning more than men, although the contribution of education to the gender wage gap is minimal. The explained portion of the gap is almost completely attributed to industrial wage differentials. This result indicates that personal characteristics seem to matter very little in explaining gender wage differentials. The industry of work, however, is the key factor.

[8] Johnes and Tanaka's specification does not include industrial dummies (this analysis does). Including them would reduce the size of their estimate of the gender wage gap.

To gain additional insight as to within-industry wage differentials, we separate the sample into two groups—male-dominated and female-dominated industries—and decompose the gender wage gap for each category. We define industries in which more than 75% of hired workers are women as female-dominated and industries in which more than 75% of hired workers are men as male-dominated.

Education, health, and domestic household help are the three female-dominated industries. In these industries, as expected, the gender wage gap is much smaller, at 0.28. Out of it, 16.64% is explained. These also happen to be industries with low mean wages (see table 2).

Six industries can be considered male-dominated: agriculture, mining, energy, construction, transport, and public administration. In these industries, the gender wage gap is substantial, at 1.47. Out of it, less than 0% is explained, meaning that based on the included characteristics, women should be earning more than men, but they are not.

In interpreting the results of industry-based decompositions, we have to be mindful of endogeneity. In our interpretation, the dominance of women in an industry leads to less discrimination. However, one of the reasons for women not entering a particular industry might be that they expect more discrimination in it in the first place.

Time Trends

Without the Heckman correction, in 2000 women earned 56.86% of what men did, whereas in 2004 they earned 56.36% of what men did. Thus, without sample selection correction, it seems that there were not changes.

The results corrected for sample selection bias however indicate a sizable drop in the estimated gender wage gap from 1.52 in 2000 to 0.38 in 2004, still high, but a much more "reasonable" number. These correspond to women earning 21.96% of what men earned in 2000 and 68.57% of what men earned in 2004. The drop occurs because men's estimated earnings decreased during this period, whereas women's estimated earnings increased (the same as uncorrected results), both factors contributing to the decrease in the estimated gender wage gap.

The decrease in men's wages occurs because ρ turns positive in 2004 and, thus, the corrected mean wages are lower than the uncorrected mean wages for that year, indicating the "regular" reservation wage story.[9]

In 2000 only 13.04% of this difference was explained by predictors, whereas in 2004 a much higher 32.24% was explained by predictors.

For both 2000 and 2004, based on education alone, women should be earning more than men. However, the most important category explaining the gender wage gap is industrial dummy variables. That is, without industrial dummies we would be able to explain almost none of the gender wage gap.

Blinder-Oaxaca Decomposition: Caveats and Further Analysis

In interpeting the results of this analysis and in comparing them to other studies, we must be wary of several factors. In particular, the omission of potentially important variables could be one factor responsible for the large degree of gender wage gap found in this study. For example, the position in the company is one variable that can influence the size of the estimated gender wage gap. In principle, the size of the estimated wage gap is likely to decrease if more men hold supervisory positions (which also pay more) relative to women. It must be kept in mind that including position as a variable is subject to the same objections as using industrial dummies, as both variables capture aspects of discrimination. Evidence from Georgia indicates that vertical segregation by gender is, in fact, a common occurrence (Sumbadze 2008: 69).

Another potentially important variable is the size of the company. For example, larger companies are presumably more visible. As a result, gender wage differentials in these companies might be lower than they are in smaller companies. In addition, the ownership of the company can play an important role, as private firms might have more leeway at setting their wages and, thus, discrimination might be more prevalent. The findings of Jurajda (2003) support this assertion.

To complement the findings of our analysis with respect to the position within firms, firm size, and firm ownership in Georgia, we use the results of the sociological survey conducted in Georgia in 2006 and 2007 under the UN project "Gender and

[9] First-stage probit results for different years are available upon request.

Politics in South Caucasus." The firms were asked to provide gender statistics, although no questions were asked about salaries. The sample consists of 211 private firms and 11 ministries. The firms are members of the Georgian Business Federation and the Chamber of Commerce and thus comprise a highly selective group. Although the results based on the survey are likely to underestimate the true extent of gender inequality, they can provide helpful insights about the representation of women at the supervisory level and the relationship between gender inequality, firm size, and firm ownership in Georgia.

In the private sector in 2006, 38% of employees were female, however only 22.3% of the supervising positions were held by females. In 2007 the percentage of female employees increased to 42% and the percentage of females in supervisory positions jumped to 38.2%. Although these numbers do confirm that women are underrepresented at the supervisory level, they compare favorably to other countries (Jurajda 2003).[10] The survey results indicate no differences in the proportion of women represented in large firms relative to small firms. Neither does it indicate any differences in the proportion of women between public and private firms.

Another key variable, which we haven't included due to data limitations, is the length of time worked, measured either as a dummy for part-time versus full-time work or as a continuous variable representing the number of hours worked.[11] According to Weichselbaumer and Winter-Ebmer (2005), 99% of studies analyzing the gender wage gap omit the number of hours and 51% of studies omit the part-time dummy. Brainerd (2000) addresses the implications of not having information on the number of hours worked. She acknowledges that if women work fewer hours than men do, which is often the case, then the gender wage gap will be overestimated. However, without additional information the direction of the bias is hard to predict. With respect to part-time work, Malysheva and Verashchagina (2007) find that in most former Soviet countries the share of part-time employment is minor, possibly indicating that omitting this variable is not problematic.

An important avenue for future work includes the investigation of differences that are likely to exist among different income groups, as the present study focused on the

[10] Although, again, we have to be mindful of the selective nature of the survey.
[11] When using hourly wages as the dependent variable, the need to include the hours of work does not arise.

mean wage differentials. Not only the magnitude, but the nature, of discrimination may differ, as could be seen by looking at industrial breakdown (see Jurajda [2003] for more on this).

Finally, future work needs to pay attention to the issue of self-employment. The selection process occurs not only with respect to wage employment, but with respect to self-employment, in particular for women. A growing number of studies argue for the presence of significant differences in the nature and magnitude of the gender wage gap between paid and self-employed workers (Eastough and Miller 2004).

CONCLUSIONS

The results of this study indicate the presence of a substantial gender wage gap in Georgia, most of which cannot be explained by included characteristics. The component of the wage gap that can be explained is almost completely due to occupational differences, with the majority of the paid female labor force working in three industries: education, health care, and culture. These also happen to be industries with the lowest mean wages.

Yet, there are indications of positive changes, as the sample-selection-corrected gender wage gap shrank between 2000 and 2004. During this period, industry premia for women in high-skilled sectors, such as finance and international organizations, as well as manufacturing and energy, increased substantially. Moreover, for women shifts occurred within service industry away from health into education and public administration. For men, the changes in industry premia and industrial shifts were not as pronounced.

The results of this study reflect important differences in the way in which women have adjusted to the transition process compared to men. In some ways, the difficult economic environment coupled with women's caretaking responsibilities have shielded them from experiencing more significant discrimination in the labor market. Due to relatively few economic opportunities, men are facing stiff competition for jobs and seem to be accepting job opportunities with wages that women might refuse, given their higher opportunity cost of time. As a result, men's wages are depressed and, thus, the gender

wage gap does not appear to be as high as it would be if we took into account the individuals that are not observed in the sample.

The results of this study reflect important differences in the way in which women have been affected by the transition process compared to men. It appears that women are less likely to accept jobs with wages in the lower spectrum of their wage-offer distribution, presumably due to their primary caretaking responsibilities. On the other hand, among men, stiff competition for jobs, coupled with their primary responsibility as financial providers, seem to have led to more men accepting jobs at wages in the lower spectrum of their wage-offer distribution. As a result, especially among the less educated, a large percentage of men are likely to remain unobserved in the sample. This leads to the significant sample selection bias among men, which, when corrected for, raises men's mean wages and decreases the estimates of the education coefficient. Thus, in ironic way, a difficult economic environment, together with women's caretaking responsibilities, have shielded women from experiencing more significant discrimination in the labor market.

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APPENDIX

Table A1. Description of the Variables

Variable	Description
Gender	0 – male; 1 – female
Marriage	0 – not married, divorced, or widowed; 1 – registered marriage, non-registered marriage, or separated (married)
Regional Dummies	1 if region = the region of interest, 0 otherwise
Urban or Rural	0 – rural, 1 – urban
Branch of Employment	1 – agriculture, forestry, fishing 2 – mining and quarrying 3 – manufacturing 4 – power, gas, and water supply 5 – construction 6 – trade and repair of domestic appliances 7 – hotels and restaurants 8 – transport, storage, and communications 9 – financial intermediation 10 – transactions with real estate, leasing, and R&D 11 – public administration 12 – education 13 – health care and social services 14 – other services, culture, entertainment, and recreation 15 – hired services in households 16 – extraterritorial (international) organizations

Table A2. Female Paid Labor Force Composition by Industry

	2000	2001	2002	2003	2004
Agriculture	1.17	0.97	1.28	2.44	1.52
Mining	0.00	0.48	0.37	0.15	0.00
Manufacturing	6.44	7.25	5.69	8.09	7.12
Power	1.02	1.77	2.39	2.90	0.76
Construction	0.15	0.48	0.55	0.31	0.30
Trade	11.42	9.18	9.91	8.70	9.70
Hotels	1.46	2.74	3.67	2.29	3.18
Transport	4.25	3.70	4.40	3.82	4.39
Finance	2.78	2.74	1.83	1.68	2.27
Realestate	3.07	2.58	2.57	3.51	4.09
Publicadmin	6.59	12.40	10.09	8.70	9.85
Educations	33.67	33.33	35.60	35.42	36.67
HealthS	21.38	16.59	15.78	14.05	13.03
Culture	5.86	5.64	5.32	6.72	5.61
HiredHH	0.44	0.00	0.55	0.92	0.91
International	0.29	0.16	0.00	0.31	0.61

Table A3. Male Labor Force Composition by Industry

	2000	2001	2002	2003	2004
Agriculture	3.64	4.18	4.59	8.64	8.82
Mining	1.04	0.28	1.15	0.81	1.12
Manufacturing	15.21	14.92	15.41	13.09	13.31
Power	6.76	6.28	7.05	6.21	5.60
Construction	6.11	4.60	5.74	6.88	7.28
Trade	10.66	9.34	10.16	12.55	10.64
Hotels	1.95	2.37	1.31	0.27	1.45
Transport	12.61	13.53	12.79	10.53	9.52
Finance	1.69	1.12	0.82	1.35	1.40
Realestate	4.29	2.23	2.13	4.72	4.20
Publicadmin	19.12	24.41	22.95	21.73	20.31
Educations	7.54	9.34	6.89	6.21	7.28
HealthS	4.03	2.93	3.77	2.16	2.66
Culture	5.07	4.46	5.08	4.45	5.46
HiredHH	0.26	0.00	0.00	0.00	0.00
International	0.00	0.00	0.16	0.40	0.84