



**GENDER EFFECTS OF TRANSITION:
THE KYRGYZ REPUBLIC**

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ABSTRACT

Gender changes in the workplace during the transition from central planning are analyzed using household survey data from the Kyrgyz Republic. As the labor market became more market-driven between 1993 and 1997, mean differences by gender in labor force participation (LFP), monthly compensation and hourly wage all narrowed. We also observe gender differences in educational attainment, labor force status, occupation and industry. Probit analysis indicates that LFP is especially high, and increasing, for college-educated women, while married women with young children are less likely to be in the workforce. Analysis of hours worked indicates significant but declining gender differences in 1993 and 1997. Earnings regressions have greater explanatory power than the hours worked model, with wage differentials generally widening between 1993 and 1997, but the gender wage gap narrows. Better-educated female white-collar workers have been the big gainers during transition, with a relatively small decline in hours worked and relatively large increase in wages.

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The position of women in formerly centrally planned economies has been a source of widespread concern. *The Economist* concluded an article on trafficking in women in its 26th August 2000 issue with:

Since the end of Communism, women have experienced a disproportionate share of economic hardships. Two-thirds of Russia's unemployed, for example, are women. Women have increasingly become breadwinners for drunk or absent husbands, even as they have been squeezed from the workplace thanks to industrial restructuring. Lack of opportunity compels East European women to take risks their peers in Western Europe would never contemplate.

The situation is often thought to be even worse in the Islamic former Soviet republics, where a major achievement of the Soviet era was the improvement in the economic status and access to education of women, which contrasted to the situation in Soviet Central Asia's southern neighbors (Afghanistan, Iran and Pakistan). This paper addresses aspects of the economic position of women in one Central Asian country, analysing 1993-7 household survey data from the Kyrgyz Republic for differential impacts of transition on labor force participation, hours worked, and wages by men and women.

In the Soviet era gender equality was guaranteed in economic spheres, although western researchers found that women worked slightly fewer hours outside the home for lower wages than could be explained by human capital models.¹ In the political field, quotas ensured female representation, although as in the economic field a glass ceiling appears to have existed. In the social sphere, the Communist Party was especially active in Central Asia in promoting women's education and access to work outside the home and in discouraging practices such as female seclusion and the veil.²

¹ See for example Swafford (1978) and Ofer and Vinokur (1992). Work on the Soviet labor force, however, tended to rely on samples drawn primarily from the European Soviet republics (eg. using interviews of Soviet émigrés, few of whom came from Central Asia).

² Between 1921 and 1923 Soviet law was established as taking precedence over customary law. Marriage without consent and polygamy were banned, the minimum legal age for marriage was raised from nine to sixteen for brides and set at eighteen for grooms, and women were guaranteed rights to divorce. Massell (1975) is the only detailed western study on female emancipation in Soviet Central Asia. On the mass unveiling campaign (*khudzhum*) initiated in 1927, see also Akiner (1997, 270-1).

Measured by female participation and literacy rates, these policies were successful.³ In 1989, the ratio of average female to average male wages in the Kyrgyz republic was 78%.⁴

Since the dissolution of the USSR at the end of 1991, women in the Kyrgyz Republic have faced erosion of their economic situation in several ways.⁵ First, reassertion of pre-Soviet traditions might be associated with expectations that women will withdraw into the home. Such cultural pressures appear to be weaker in the north of the country, which is both closer to nomadic traditions and more russified, than in the south where Islam has a longer history and stronger hold. Second, the substantial economic decline during the first half of the 1990s, when real output fell by almost half, was associated with a return to home or non-market production which pulled more women than men out of the formal workforce.⁶ Third, the erosion of public services, especially the drastic decline in kindergarten availability and increased costs to parents of elementary schooling, imposed greater private costs on families with children, which may fall disproportionately on women and lead them to withdraw from the labour market.⁷

There are also grounds for expecting the relative position of women to be improved by transition. Writers on the Soviet situation emphasized the downside of

³ The female participation rate in the Kyrgyz republic increased from 29% in 1940 to 48% in 1974 (Ubaidullaeva, 1982, 148). In 1990 83% of women in the Kyrgyz republic were in the official labour force. This was supported by public services such as day-care centres and kindergartens, accessible basic healthcare and extended maternity leave. The majority of the female population had completed secondary education and over a third of female students continued to vocational training or tertiary education. By contrast, in the 1897 census only 0.03% of Turkic people in the Russian empire had any education beyond elementary school (Lubin, 1984, 113). Within the area of modern Kyrgyzstan, literacy rates remained very low, and practically zero among women, until the 1920s.

⁴ Women also worked fewer hours than men, so the hourly wage gap was even smaller. The Kyrgyz ratio of female to male wages was above the Soviet average, perhaps because lower average incomes in the Kyrgyz republic meant that the minimum wage applied to more workers of both sexes than elsewhere in the USSR. In the USA in the late 1980s the ratio was 65% (figures from Atkinson and Micklewright, 1992).

⁵ Bauer, Green and Kuehnast (1997) provide an overview of the position of women in the Kyrgyz Republic since independence, primarily based on interviews with officials from the government and non-governmental organizations.

⁶ Falkingham (1999, 383 and 386) reports on an ILO survey which found that nearly two thirds of the jobs lost in the Kyrgyz Republic during the 1990s were women's and that a third of the women still employed were on maternity leave. Women have also been disproportionately affected by the phenomenon of unpaid wages, which have been most delayed in state sectors such as schools and hospitals where most employees are women.

⁷ In 1989 31% of 1-6 year-olds were in kindergarten, but in 1997 the proportion had fallen to 7% (UNICEF, 1999, 133). Heating of schools is a problem throughout the country, and in the Bel-Adoi region two-thirds of children did not attend school in the winter of 1994 for lack of winter clothes and shoes

increased female labor force participation rates in a society which still expected women to do most of the household chores. The “double burden” on Soviet women was likely to have been most severe in Central Asia where traditional gender roles within the household were most pronounced (Ubaidullaeva, 1982). In the Soviet economy, wage levels forced the participation of both marriage partners in the workforce if the family was to avoid poverty, and transition could increase the choice set for women deciding how to allocate their time between home and the workplace. The universal reduction in employment might hit men harder than women, even if more women became unemployed; female unemployment would reduce the double burden for women, while unemployment for men would be more dispiriting and contribute to the post-Soviet mortality crisis which has fallen disproportionately upon men (Becker and Bloom, 1998), although the drop in male life expectancy has been less sharp in the Kyrgyz Republic than in Russia or Kazakhstan.⁸

How these changes impact on women’s economic status will depend upon many factors, including intra-household allocation of resources, which we do not address. We analyze changes within the workplace, focusing on participation and relative earning capacity of men and women, controlling for other relevant variables.⁹ The literature on Soviet labor force participation suggests that behavior was similar in Soviet and market economies, albeit responding to different conditions, so that we might expect responses to changed relative wages and job options during the transition to a market-based economy to be consistent with the predictions of established economic models.¹⁰ Given that in most centrally planned economies women were at least as well-educated as men by the late 1980s, increased returns to education should not harm, and may benefit, women more than men. On the other hand, increased choice may encourage younger women to withdraw from the workforce in favor of spending more time at home.

Previous analysis of gender changes in the workplace during transition has been based primarily on evidence from eastern Europe or Russia. Increased returns to education after the end of central planning have driven reductions in the male-female

⁸ Reduction in time spent queuing for scarce goods and services in the planned economy has also benefited women more than men.

⁹ We restrict ourselves to economic variables. Some sociologists (eg. Ashwin and Bowers, 1997, 34) provide anecdotal evidence of rapid and general downgrading of women in the post-Soviet workplace.

gap in eastern Europe.¹¹ Orazem and Vodopivec (2000) found that in both the rapidly reformed Estonian labor market and the more regulated Slovenian labor market women were on average better educated than men and hence benefited from the increased returns to human capital, but in both countries women were less mobile than men and this was reflected in female unemployment increasing by more than male unemployment.

Hunt (1998) has analyzed the large reduction in the gender wage gap in East Germany. During the first half of the 1990s women's wages rose by ten percentage points relative to men's wages, and Hunt ascribes four-fifths of this to a selection process due to the withdrawal of poorly qualified women from the labor force. Following German reunification in June 1990, the employment rate for East German 18-54 year-olds fell from 89% to 73% in six years. Hunt (1999) analyses the large drop in labor force participation rates and found that individuals over fifty and women have much longer non-employment durations, and better educated individuals and more experienced workers (as measured by their 1990 wage) have shorter non-employment spells. In the Czech Republic and Slovakia, however, there was little difference between the decline in male and female labor force participation rates (Ham, Svejnar, and Terrell, 1999).

Another factor offsetting the positive effect on female/male wage ratios of increased returns to education is occupational segregation. Ogloblin (1999), using 1994-6 data, concludes that the gender wage gap in Russia could not be explained by differences in education or experience and that most of the gap is attributable to occupational segregation inherited from the Soviet era. Jurajda (2000) finds some evidence of occupational segregation in the Czech Republic and Slovakia; this only accounts for a third of the gender gap after allowing for education and experience, and

¹⁰ Gregory (1982) applied a Becker/Mincer/Schultz model of fertility and labor force participation to Soviet data and obtained similar results to those from western market economies.

¹¹ Svejnar (1999, 2835-9) reviews the earlier literature applying Mincerian earnings function to eastern European transition economies, but his survey contains little on gender aspects of changes in labor markets in these countries. Increased returns to education have been found in Poland (Rutkowski, 1996), the Czech Republic and Slovakia (Chase, 1998), East Germany (Krueger and Pischke, 1995), and Russia (Newell and Reilly, 1996; Brainerd, 1998). In Romania Paternosto and Sahn (1999) found that increased returns to human capital widened male/female wage differentials in rural areas. For China, Gustafsson and Li (2000) found that higher educational attainment of males explains a third of the slight increase in gender wage differentials, from 15.6% in 1988 to 17.5% in 1995, in urban areas. Chase (1998) and Flanagan (1998) both found that returns to experience gained in the planned economy of Czechoslovakia fell during the transition, but specifying returns to experience is subject to serious measurement problems.

two-thirds of the gap is unexplained. On the other hand, Orazem and Vodopivec (2000) found that the industrial distribution of female workers benefited them during the transition in Slovenia and Estonia, because women were over-represented in faster growing sectors.

Newell and Reilly (2000) run quantile regressions on a sample of eleven transition economies, and conclude that the transition has been approximately neutral to female/male pay differentials. Even in the former Soviet Union, where there have been large increases in wage inequality, the relative pay position of women has not worsened on average.¹² Newell and Reilly (2000) also conduct an extended decomposition analysis of Russia and Yugoslavia, where they find little evidence of anything other than minor movements in the observed gender pay gap. These results are broadly consistent with those reported above for Eastern Europe and those of Reilly (1999) and of Glinskaya and Mroz (2000) for Russia. They do, however, contrast with those of Brainerd (1997) who found a “remarkable increase” in female relative wages in eastern Europe, but a substantial decline in Russia and Ukraine which she ascribes to the widening wage distribution in those two countries.¹³

Comparable analytical work on Central Asia is sparse. The evidence on increased returns to education during transition is less clear than in eastern Europe or Russia. Klugman (1998) finds that returns to education in Uzbekistan were similar to those in eastern Europe both before independence and in 1995, with a higher return to university education, especially to women, during transition.¹⁴ In the Kyrgyz Republic there is weak evidence of increased returns to college education and stronger evidence of lower returns to post-secondary vocational training (Anderson and Pomfret, 2000; Pomfret and Anderson, 1999). Klugman’s dissertation is the only study to go further in analysing gender effects in Central Asian labor markets, but she is hampered by the limited data available for Uzbekistan and by conceptual

¹² Their sample included Kazakhstan, Latvia, Russia, Ukraine and Russia from the former Soviet Union, and Bulgaria, the Czech Republic, Hungary, Poland, Slovakia and Yugoslavia from eastern Europe.

¹³ Brainerd uses survey data from Bulgaria, the Czech Republic, Hungary, Poland and Slovakia, and from the Kyrgyz Republic, Russia, and Ukraine. For the Kyrgyz Republic she only uses 1993 data survey data which she describes as post-transition, a characterization with which we disagree (Anderson and Pomfret, 2000). We also had difficulty reconciling her summary statistic of a female/male wage ratio of 100% in 1993, with our ratio, drawn from the same data set, of around three quarters (Appendix Table 3)

¹⁴ Klugman tests for, and rejects, sheepskin effects; it is the amount of education that matters, rather than receipt of formal qualifications.

difficulties.¹⁵ She finds some gender effects of transition, but allowing for education and experience and also for fixed effects associated with residence in the capital and with ethnicity leaves little unexplained “discrimination” in the gender wage gap.

The Kyrgyz Republic has had the most reformist government in Central Asia, so that gender effects of transition should be clearest there. The Kyrgyz Republic also offers better analytical prospects because it has the best survey data in the region.¹⁶ The household survey data come from 1993, before significant economic transformation had taken place, and then annually since 1996 by which time important steps towards a market-based economy had occurred.

The first section of the paper describes the data and uses mean difference tests for gender differences in the variables described above. Over time, as the labor market has become more market-oriented, mean differences in hours of work, the wage, and monthly earnings have narrowed. This is consistent with the findings from eastern Europe, but in contrast to Brainerd’s (1997) argument that the wage gap widened in Soviet successor states. The gender differences in employment and wages are affected by location of the household in rural or urban areas, and also by differences in the characteristics of workers. To isolate the importance of gender and transition in the determination of these employment outcomes, we estimate multivariate models of labor force participation in section 2, and of hours of work and monthly wages in section 3.

1. Data

The data used in this study were obtained from three household surveys modeled after the World Bank’s Living Standards Measurement Surveys (LSMS). Nationally representative, random samples of households were drawn from the Kyrgyz Republic’s population during the fall of 1993 (Kyrgyzstan Multi-purpose Poverty

¹⁵ Her post-transition data come from a 1995 survey of 1500 households in three districts (the capital city, the disadvantaged region of Karakalpakstan, and part of the Ferghana Valley). Her wage equations include an “experience” term, which is complicated by the disrupted workforce participation of women; over thirty percent of women in the sampled households are on maternity leave.

¹⁶ Moreover, the problems due to high fertility rates in Uzbekistan are less pronounced in the Kyrgyz Republic. The total fertility rate, births per woman, has fallen in both countries but the Kyrgyz Republic is always below Uzbekistan: 4.07 in the Kyrgyz republic to 4.81 in the Uzbek republic in 1980, 3.67 to 4.17 in 1991, 3.30 to 3.81 in 1993, 3.31 to 3.59 in 1995, and 2.79 to 3.17 in 1997 (UNICEF, 1999, 116).

Survey, KMPS), 1996 and 1997 (Kyrgyzstan Living Standards Measurement Surveys, KLMS96 and KLMS97), and the current plan is to continue to collect household data annually using a similar survey design. The survey instruments were not identical in the three years; the 1996 and 1997 surveys were the most similar, and were closer to the LSMS model than the 1993 survey.¹⁷ These surveys are better designed than the household budget surveys inherited from the Soviet era and still widely used in the former Soviet republics.¹⁸ In this paper we report results only for 1993 and 1997.¹⁹

For all persons in the household at the time of the survey, data were collected on demographic characteristics, work, income, health, education, and training. Adults answered questions for children, and the survey instruments on education and health differed for adults and children. Women were also queried about their pregnancy and childbirth history as well as their use of contraceptives. The surveys differed in the content of the health questions and the information collected on income and work, but there is sufficient overlap in information on adults to make comparisons over time possible.

The surveys do not contain panel data. A different random sample of households was selected each year. We, therefore, cannot examine, within families, the dynamics of family interaction and work. However, we can examine cohorts of adults and evaluate changes in the behavior of similar households over time. For 1993, we have an analysis sample of 1909 households located in Bishkek, the capital city, and the other six oblasts: Chyi, Osh, Djalabad, Narun, Talas, and Issuk-kul. Bishkek and Chyi are located in the better-off and more secular north of the country, Osh and Djalalabad are in the more traditional and more strongly Islamic south, and Narun, Talas, and Issuk-kul are in the mountain region, where pastoralism is more important than the crop-based agriculture of other rural areas. Within these 1909

¹⁷ For a description of household selection in the LSMS, see Grosh and Glewwe (2000). The 1993 Kyrgyz Republic data were collected by Paragon Research International Inc., under contract with the World Bank, and are described in Pomfret and Anderson (1999). A different consulting firm (Research Triangle Institute) advised the state statistical agency (Goskomstat) in Bishkek on the design and evaluation of the 1996 survey, and Goskomstat, with consultation from the World Bank, managed the collection of the 1997 data and will manage future data collection efforts

¹⁸ Atkinson and Micklewright (1992) review the methodology of the Soviet household budget surveys. These surveys concentrate on households with earners in state factories or on collective farms and hence understate both tails of the distribution. Rural households are undersampled. The samples are not rotated; households included in the initial samples in the 1950s continue to be surveyed and households are only removed by attrition.

¹⁹ The 1996 and 1997 results are similar, so we quote only the more recent year. The 1996 results are available from the lead author upon request.

households, we have usable data on 4997 adults aged 18 and older. For 1997, we have an analysis sample of 2577 households, and 7264 adults with usable data in the sample.²⁰

Tables 1 and 2 present descriptive statistics on monthly wages, hours worked, human capital and employment characteristics of the adults in the 1993 and 1997 samples, by region and by gender. Within each region²¹ and year, we test whether the mean differences in the human capital and employment characteristics differ between men and women. In general, we observe differences in the education, labor force status, job choice, and wages of women and men. Differences in hours of work are smaller.

In each year, men receive higher compensation per month than women (Table 1). Compensation includes money wages and the value of non-wage benefits or in-kind income received. In 1993, the female to male wage ratio is .66 but increases to .83 in 1997. One reason for the narrowing of the gender difference in monthly compensation is the narrowing in the gap in hours of work. In 1993, women report working about 45 hours per week, which is 85 percent of the hours of work reported by working men (52 hours per week). In 1997, men and women work fewer hours per week but women work, on average, 93 percent of the hours of working men, and this gender difference is statistically significant. If we compute the average hourly wage of men and women based on these mean differences in hours of work, we find that the hourly wage gap has also narrowed, from .78 in 1993 to .89 in 1997. Over time, as the labor market has become more market-oriented, mean differences in hours of work, monthly earnings and the hourly wage have all diminished.

We find the same general pattern of gender differences in the north and the south, and in rural and urban areas. In both the rural and urban north, the change in the gender gap in the hourly wage is smaller than the change in the gender gap in the monthly wage, indicating that the change in hours per week has led the reduction in gender wage differentials in the north. In the rural and urban south, the change in gender differences in hours per week is small, but there are significant reductions in

²⁰ Some households and adults were deleted from these final analysis files because of missing information on variables included in our models.

²¹ Based on rural-urban status and oblast, we classify the regions as urban north (Bishkek and urban areas of Chyi), urban south (urban areas of Osh and Djalabad), urban mountain (urban areas of Narun, Talas, and Issuk-kul), rural north (rural areas of Chyi), rural south (rural areas of Osh and Djalabad),

the hourly wage gap (.55 in 1993 to .93 in 1997 in the rural south and .69 to .88 in the urban south). The mountain region is the outlier. In the small urban mountain area, there is no significant change in hours of work but the gender difference in the hourly wage narrows (.54 to .64 in 1997). In the rural mountain area, women work more in 1997 than in 1993 relative to men, but their hourly wage, which is higher than the hourly wage of men in 1993, seems to fall over time to parity with men (1.36 in 1993 to .98 in 1997).

Education differences by gender are significant in 1997 but not in 1993; however, even in 1997, these differences are quite small (Table 2). Education is classified into four categories: incomplete secondary, completed secondary with no additional training, completed secondary with additional training, and college education. Women are more likely to be found in the lowest and highest education categories, while men are more likely to be found in the middle. The major changes in the education distribution over time, for both men and women, are that fewer persons report incomplete secondary education and more persons have obtained higher education by 1997. Urban adults, especially in the north, are more likely to have completed higher education than people in rural areas. Gender differences appear to be larger in the rural areas than in the urban areas, with the rural south being the exception.

Labor force status differs between men and women in most regions and at each point in time. We classify labor force status as one of three categories: currently employed, unemployed but looking for work, and not in the labor force. Women are less likely to report work or unemployment than men in both the 1993 and 1997 samples.

Occupational choices differ between men and women and change over time. In the 1997 survey occupation is coded into five categories: blue-collar worker, white-collar worker, owner/employer, cooperative member, and professional. For 1993 we assign workers to one of these categories based on their three-digit occupation code, which is not available in the 1997 survey.²² Women are more likely to be found in white-collar jobs, while men are concentrated in blue-collar work or are owners of

and rural mountain (rural areas of Narun, Talas, and Issuk-kul).

²² There may be some error in the 1993 coding because the occupation questions are not identical to the 1997 questions.

firms.²³ For both genders there is a shift from blue collar to owner between 1993 and 1997, although this is more pronounced for males. Professional employment declines over time for both men and women. While women are more likely than men to be in professional employment in 1993, professional employment is low but equally represented by men and women in 1997. These patterns persist in all regions.

To evaluate changes in the industrial composition of the labor force over time, we code industry into the six categories in which the industry variable is divided in the 1997 survey: produces goods, produces agricultural products, construction, commerce, transportation, and services. For 1993, no industry data are available except through the three-digit occupation codes. We are able to assign most workers to an industry based on their occupational information, but cannot assign an industry to eight percent of 1993 workers with an occupation code. Among all workers, representation is highest in services and in agriculture, and this is especially true of women (91% in 1993 and 83% in 1997). Few women are found in construction or transportation. These differences persist over time. In urban and rural areas, women are moving out of service jobs and into manufacturing. In rural areas, the proportion in agricultural employment increased between 1993 and 1997 for both sexes, but especially among men.

2. Labor Force Participation

The labor force participation model is estimated using probit analysis over a sample of all adults reporting complete data on work and individual characteristics: 4,997 people in 1993 and 7,264 in 1997. The dependent variable is a dummy variable equal to one if the individual is either employed or unemployed and looking for a job and equal to zero if the individual is neither working nor looking.

Theoretically, labor force participation is affected by the difference between the market wage and the value of not working or reservation wage; the higher the market wage relative to the reservation wage, the more likely the individual is to work or seek work. Characteristics of the individual which likely affect labor force participation, therefore, are linked to either the market wage or the reservation wage.

²³ The exception is in the urban south, where women are more likely than men to be “owners”.

We assume that the market wage depends on the human capital of the individual, region, and demographic traits such as gender and ethnicity that may reflect differences in tastes for work or access to jobs. We expect labor force participation to increase with human capital. Determinants of the reservation wage include marital status and the number of children under the age of six. For women we expect labor force participation to decrease with marriage and the number of children under six; for men we expect positive effects of both variables on the decision to work or seek work. We expect men to work more than women, and we have no expectations about the effect of ethnicity on work.

Summary statistics on the variables included in this model are given in Appendix Table 1. Gender is equal to one if the adult is male and is equal to zero if she is female. Variables measuring the stock of human capital include education, health, and experience of the worker. Education is described above. Health is measured with a self-report of good health. The health variable is equal to one if the adult reports good or very good health and is equal to zero otherwise. Experience in the labor market is proxied by age in a quadratic form. We expect labor force participation to increase at a decreasing rate with age. Ethnicity is measured with four dummy variables for Russian, Uzbek, other Slavic, and other ethnicity; the omitted category is Kyrgyz. The regional categories are described above; the omitted category in the analysis is Rural North. In the pooled data we include a time dummy variable for 1997. Based on the descriptive analysis, we expect labor force participation to be higher in rural areas in 1993 than in the other regions and to decline over time.

The results of the probit estimation are given in Table 3. The cells in this table present the probit coefficients with the standard errors in brackets. The marginal effects of the independent variables on the probability of being in the labor force are in brackets below the standard errors. For each year and with pooled 1993-1997 data, we present results for all individuals and for men and women separately.

Allowing for all the other variables, women are less likely than men to be in the labor force. The marginal effect of gender is large, but decreases. In 1993 men are 29% more likely to work than women, while in 1997 they are 24% more likely to be in the labor force. In each year, the separate regressions for men and women are significantly different, indicating that the rewards for work relative to home production differ by gender.

In the pooled model, allowing for all other variables, between 1993 and 1997 labor force participation falls by 17 percent, with a slightly larger change over time for women than for men. Labor force participation is highest in the north and in the rural south and lowest in the mountain region and urban south, and the regional differences are larger for men. Over time, the regional differences have grown in importance and, in general, men have experienced the largest reductions in labor market activity in most regions. Labor force participation has a nonlinear, quadratic relationship with age. The marginal effect of age is smaller in 1997 than in 1993, but the pattern is similar for men and women. The ethnic differences we measure indicate that Russians and Uzbeks have the highest participation rate and Kyrgyz have the lowest. Gender differences in the importance of ethnicity are small. Location, age and ethnicity all matter, but do not have major gender dimensions.

Human capital characteristics that likely correlate with the market wage do affect the decision to work. More education is associated with increased participation. In 1993 the probability of being in the labor force is .01 higher among workers with secondary education than among workers with incomplete secondary, .11 higher among workers with some vocational training, and .16 higher among those with college education. The marginal effects in 1997 are .13, .17 and .24. At the post-secondary levels of education, women are more responsive to education than men in their labor market activity. If a woman has completed higher education, labor force participation is more than twice as likely as for a comparable man. Comparing 1997 to 1993, educated adults are increasingly more likely to be in the labor market than the uneducated.

Health is associated with labor force participation; adults who self-report good health are more likely to be in the labor force, but men's behavior is significantly more responsive to their own health than women's. We also find a small change over time in the importance of health, and men become more responsive to health than women.

The correlates of the reservation wage – marriage and number of young children – have a weaker impact than human capital variables. Marital status and number of children under six have significant negative coefficients for women's labor force participation in both years, although their marginal effect is lower in 1997. For

men, marital status and number of children under six have positive coefficients as expected, but they are not statistically significant in either year.

The labor force participation model has reasonable explanatory power in both years, supporting the hypothesis that behavior was similar in Soviet and market economics. Surprisingly, however, the adjusted R^2 is lower in 1997 than in 1993. The main gender dimensions are the impact of marriage and young children, and the effect of education on labor force participation. The former variables reduce female participation, but their impact has declined, which does not support the hypothesis that with the shift to a more market-oriented system young married women will choose to substitute time spent at home for time in the workplace. The education variables have a stronger impact on the labor force participation decision, and especially striking is the differential behavior of college-educated women, who have responded to the transition from central planning with disproportionately greater labor force participation than any other group.

3. Hours Worked and Wages Paid

In this section we estimate multivariate models of hours worked and monthly wages. We have usable data on hours for 1987 workers in 1993 and for 5707 in 1997 and on compensation received by 1162 workers in 1993 and 4855 in 1997. The summary statistics are presented in Appendix Tables 2 and 3. We tested for non-randomness of the samples by estimating sample selection adjusted models (Heckman, 1979), assuming that selection is identified by marital status and number of children; in no case did we find evidence of non-random selection of workers. All equations are estimated by ordinary least squares in semi-log form.

In the first versions of the hours and wages models we include the human capital and demographic variables used in the previous section. Wages should increase with the stock of human capital, increase at a decreasing rate with experience, and may differ between men and women or across ethnic groups if gender and ethnicity reflect differential access to jobs. Hours of work should also increase with human capital, if the wage is positively affected by education and health and if the substitution effect of an increase in the wage dominates the income effect. Hours likely have a nonlinear relationship with experience, and we expect that women are

more likely to choose part-time jobs than men. We have no priors on the effects of ethnicity on hours of work. The results are reported in Tables 4a (hours of work) and 5a (monthly compensation).

We then estimate a second version of the hours and wages models including, as explanatory variables, all of the variables in the first version models plus dummy variables for occupation and industry. We include four occupation variables for white-collar job, owner/employer, coop member, and professional worker, and an additional variable that flags those workers with missing data on occupation. The omitted occupation category is blue collar. We include five industry variables for goods production, agricultural production, construction, commerce, and transportation, plus an additional variable that flags those workers with missing data on industry. The omitted industry category is service industry. The occupation and industry flag variables help us determine whether the missing data on these variables are non-randomly selected. The results of the estimation of the second version of the models are given in Table 4b (hours of work) and 5b (monthly wage).

a) Hours Worked

Gender differences in hours of work are significant, but declining (Table 4a). Controlling for other variables, men work 14% more hours than women in 1993 and less than 10% more in 1997. The separate male and female models differ, but both models explain relatively little of the variance in reported hours of work. When we control for occupation and industry, the gender differential persists and is almost the same magnitude (14% and 9%). The occupation and industry variables add slightly to the model's overall explanatory power, but have practically no impact on the gender dimension. This suggests that occupational and industrial choices do not explain why women work fewer hours than men.

Location, ethnicity and education level all affect hours worked, but gender differences in their impact are minor. Workers in the North work longer hours, and Uzbeks longer and Russian workers shorter hours than Kyrgyz; gender differences and changes over time are small. Better-educated men tend to work shorter hours than other workers, but the difference is small. Self-reported health has no effect on hours

worked. Older men work longer hours, but age is not a significant determinant of the hours worked by women.

Women white-collar workers were working less than their male counterparts in 1993, but relatively more in 1997. Female professionals worked significantly fewer hours than other women in 1997, which was not true in 1993 and not true of male workers in either year. By 1997 female professionals work 32 percent fewer hours than blue-collar workers, while hours of work for all other categories of women workers increase. The largest negative impact of transition on hours worked has been for professional women.

The main change in industrial patterns during transition is the erosion of the extra hours worked by agricultural workers in 1993. This applies to both sexes, but especially to women.

b) Monthly Compensation

The explanatory power of the wage regressions is much higher than the hours regression; in the pooled model we explain about 21 percent of the variance in monthly wages. We find, as expected, gender differences in monthly wages, but the effect of gender falls significantly over time from 50% in 1993 to 15% in 1997 in Table 5a and from 40% to 15% in Table 5b. In the market economy, women have narrowed the wage gap. The male and female wage models are also significantly different.

Monthly wages are affected by location, and they change over the 1993-1997 period. Wages are highest in Bishkek and are lowest in the rural areas of the South and the Mountain region. Over time, we find little change in the Bishkek advantage (over the rural North), although residence in the rural areas of the South and the Mountain region has a larger negative effect in 1997 than in 1993. Regional differences have risen for both men and women. When we control for industry and occupation, the regional differences are narrower. In both Tables 5a and 5b a striking change is in the impact of residence in the urban north by gender. In 1993 the Bishkek effect was stronger for men, but in 1997 it was stronger for women. Women have gained relatively most in the best-developed labor market in the country.

Wages are significantly related to the human capital and demographic characteristics of the worker. Ethnicity effects in both models are small but suggest that Russian men earn about 18 percent more than other men, and this advantage increases slightly between 1993 and 1997. When we control for industry and occupation, the Russian advantage is smaller and only significant in 1997. There are no ethnic differences among women in the pooled data, but in 1993 Uzbek women earned 29 percent less than other women.

Human capital does affect monthly wages. The gender differences in returns to post-secondary education are small, and there is little change in these returns over time for either men or women. The returns to higher education are slightly greater for women than for men in 1993; this relationship is reversed in 1997. Age has a non-linear relationship with wages as expected; in 1993 it is significant for both sexes, but in 1997 only for men. Self-reported health has no effect on wages.

Finally, in Table 5b, we find that wages vary by occupation and industry. In 1993 professionals are paid significantly more than blue-collar workers, and there is no difference by gender. In 1997 wage differentials, as expected, have widened substantially, with white-collar workers, owners, and co-op members all receiving significantly more than blue-collar workers. Surprisingly, however, professionals received significantly less than other occupations in 1997 and this is driven by the negative coefficient for professional women. Other things equal, professional women appear to have come off badly in the early years of transition.

Across the industry groups, the lowest paid workers are agricultural workers; their wages are 33 percent lower than the wages of service workers in 1997. Construction workers are the most highly paid with real wages that are 58 percent higher than service workers. Other workers (manufacturing, commerce, and transportation) receive real wages that are 36-43 percent higher than the wages of service workers. As with occupation, industrial differences in wages increased over time. With the exception of construction, the industry differences are similar for women and men by 1997.

4. Conclusions

Transition to a market economy has not been accompanied by a deteriorating situation for women in the labor market. Although some women have undoubtedly suffered from loss of job security and from developments such as the well-publicized trafficking in women, on the whole women have fared no worse, and probably better, than men. This conclusion, supported by evidence from European economies in transition from central planning, is confirmed in this paper in the Asian and Islamic setting of the Kyrgyz Republic. Gender differences in hours worked, wage rates and monthly earnings all narrowed between 1993 and 1997.

Women have benefited more than men from the transition for three reasons. First, the returns to formal education have increased. The centrally planned economies provided equality of access, and in many countries women's educational achievement was on average at least as high as men's by the end of the planning era. In the Kyrgyz Republic a specific exception is the group of professional women, whose labor force position declined markedly, because of a large reduction in hours worked; whether that was a voluntary reduction or not cannot be answered from our data. Big losers during transition were people who had acquired vocational training specific to the planned economy or had moved up the hierarchy; returns to such "experience" have fallen, and in the Kyrgyz Republic as in other transition economies this tended to harm men more than women. The other big losers were the unskilled, but this appears to be gender-neutral in terms of lost employment.

Second, greater choice over labor force participation and hours worked likely benefited women more than men. To be sure, the declining participation rates associated with transition were involuntary in many cases, but unemployment may have been more psychologically damaging to males than to females, who could turn to household work. The huge gender disparity in increased mortality rates in many transition countries lends some support to the hypothesis that men came under greater stress than women. If the hypothesis is correct, then even in countries where reduced employment of unskilled workers fell disproportionately on females, the impact on men may have been more negative.

Third, the unexplained gender wage gap narrowed. Discrimination by gender appears to be less in a market based economy than it was in centrally planned economies.

The evidence presented in this paper strongly supports these conclusions. By 1997, six years after the dissolution of the Soviet Union and a decade after the Law on Enterprises which formally ended Soviet central planning, there is no evidence of deteriorating relative labor market status of women in the Kyrgyz Republic.

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Table 1. Gender differences in wages and hours of work, 1993-1997^a

Variables	1993		1997	
	Men	Women	Men	Women
All regions:				
Hours of work	52.347 [.623]	44.751 [.693]	46.892 [.232]	43.709 [.259]
Monthly compensation	125.13 [4.896]	83.076 [3.290]	603.093 [27.148]	501.426 [16.675]
Urban north:				
Hours of work	48.44 [1.304]	41.058 [1.372]	48.2 [.576]	46.353 [.585]
Monthly compensation	178.245 [11.704]	115.745 [7.701]	1197.072 [128.76]	841.006 [59.525]
Urban south:				
Hours of work	48.411 [1.387]	45.344 [1.751]	45.662 [.661]	41.358 [.799]
Monthly compensation	99.049 [6.595]	64.113 [4.238]	707.182 [66.081]	561.29 [57.894]
Urban mountain region:				
Hours of work	46.456 [1.991]	47.679 [2.683]	44.786 [.906]	43.535 [.866]
Monthly compensation	127.314 [14.979]	70.286 [10.050]	720.477 [58.844]	445.535 [23.445]
Rural north:				
Hours of work	51.553 [1.255]	44.115 [1.095]	53.267 [1.036]	47.142 [.947]
Monthly compensation	115.908 [10.369]	80.044 [5.867]	821.091 [121.991]	589.234 [42.157]
Rural south:				
Hours of work	56.329 [1.109]	49.402 [1.477]	44.201 [.311]	41.888 [.373]
Monthly compensation	99.778 [10.804]	48.513 [3.387]	368.167 [11.448]	323.78 [9.084]
Rural mountain region:				
Hours of work	53.186 [2.818]	35.231 [1.977]	48.084 [.481]	43.625 [.643]
Monthly compensation	84.333 [8.573]	75.706 [11.676]	366.561 [11.398]	324.448 [9.596]

^a Mean values for hours worked and monthly wage in soms; the standard deviation is in parentheses
 Boldface indicates gender differences are significant (5% level) for this variable

Table 2. Gender differences in education and work, 1993-1997.^a

Variable	1993		1997	
	Men	Women	Men	Women
All Regions:				
Education				
Primary	32.4	34.6	15.7	19.0
Secondary	20.1	28.9	49.5	46.5
Other training	27.2	13.3	9.5	5.6
College	20.3	23.2	25.3	28.9
Labor force status:				
Work	66.6	50.8	58.8	39.6
Unemployed	10.8	6.7	7.0	4.7
Not in labor force	22.6	42.5	34.2	55.7
Occupation:				
White collar	11.8	31.1	19.7	33.8
Blue collar	66.1	43.3	38.4	32.7
Owner	11.8	11.3	34.1	26.3
Coop member	0	0	6.8	6.3
Professional	10.3	14.3	1.0	0.9
Industry:				
Produce goods	7.5	2.3	7.5	6.0
Produce agricultural goods	29.3	37.1	55.6	42.2
Construction	13.0	1.5	4.1	1.9
Sales	1.8	4.9	4.9	6.6
Transportation	21.0	0.5	6.3	2.6
Service	27.4	53.7	21.6	40.7

Variable	1993		1997		1993		1997	
	Men	Women	Men	Women	Men	Women	Men	Women
	Urban north:				Rural north:			
Education								
Primary	38.5	40.1	14.3	15.7	40.0	42.3	27.6	29.2
Secondary	9.7	11.3	24.4	27.2	15.4	19.7	34.6	34.3
Other training	21.8	18.7	13.1	7.5	27.7	15.6	14.8	7.6
College	30.0	29.9	48.2	49.6	16.9	22.4	23.0	28.9
Labor force status:								
Working	60.9	46.1	60.5	43.9	69.2	52.4	59.2	37.7
Unemployed	11.3	5.7	13.9	8.1	9.2	5.8	16.1	7.4
Not in labor force	27.8	48.2	25.6	48.0	21.6	41.8	24.7	54.9
Occupation:								
White collar	13.4	36.7	39.1	55.8	12.4	42.3	15.3	27.4
Blue collar	51.9	24.6	40.3	26.5	70.3	37.7	63.6	54.2
Owner	20.1	18.0	17.1	15.7	9.8	7.7	19.7	17.2
Coop member	0	0	0.6	1.0	0	0	1.0	0.3
Professional	14.6	20.7	2.9	1.0	7.5	12.3	0.4	0.9
Industry:								
Produce goods	4.4	4.4	19.3	13.5	8.1	1.4	4.4	3.3
Produce agricultural goods	5.3	3.0	3.4	1.5	24.6	20.0	58.6	44.0
Construction	23.0	4.4	7.5	2.8	15.9	2.7	6.4	7.4
Sales	2.7	4.4	14.0	15.5	2.7	9.7	3.0	5.1
Transportation	18.6	0.8	7.1	2.0	25.7	0.7	7.7	3.9
Service	46.0	83.0	48.7	64.7	23.0	65.5	19.9	36.3

	Urban south:				Rural south:			
Education								
Primary	36.6	32.6	13.0	12.7	25.4	27.4	13.6	19.7
Secondary	17.2	25.7	37.6	41.9	29.9	49.0	60.5	60.1
Other training	23.9	13.1	13.0	6.9	28.9	8.8	7.6	4.2
College	22.3	28.6	36.4	38.5	15.8	14.8	18.3	16.0
Labor force status:								
Working	63.2	52.9	50.6	29.8	73.6	56.3	68.9	53.6
Unemployed	13.6	7.6	11.9	9.1	8.9	6.2	2.0	2.0
Not in labor force	23.2	39.5	37.5	61.1	17.5	37.5	29.1	44.4
Occupation:								
White collar	17.9	29.9	25.0	37.8	10.2	23.4	10.9	14.5
Blue collar	59.0	34.3	50.2	33.6	75.0	63.3	33.5	32.7
Owner	7.7	14.5	20.9	23.2	8.1	6.3	41.6	37.5
Coop member	0	0	9.0	0	0	0	13.8	15.2
Professional	15.4	21.3	3.0	5.4	6.7	7.0	0.2	0.1
Industry:								
Produce goods	9.2	4.1	22.8	12.0	8.9	1.2	2.2	2.3
Produce agricultural goods	14.5	18.0	6.8	9.3	40.4	63.5	82.1	75.4
Construction	15.3	0	10.5	3.1	10.6	0.7	1.0	0.2
Sales	2.3	2.5	16.9	13.1	1.1	4.0	1.2	1.9
Transportation	15.3	0.8	13.5	6.5	20.2	0.5	4.0	1.4
Service	43.4	74.6	29.5	56.0	18.8	30.1	9.5	18.8
	Urban mountain region:				Rural mountain region:			
Education								
Primary	33.6	31.7	13.4	14.1	28.6	38.1	16.2	20.7
Secondary	14.3	16.5	39.0	38.7	20.0	26.7	60.5	53.7
Other training	31.4	18.3	11.2	5.5	30.2	10.7	6.8	4.5
College	20.7	33.5	36.4	41.7	21.2	24.5	16.5	21.1
Labor force status:								
Working	55.7	48.7	49.8	35.9	61.5	39.9	52.8	28.8
Unemployed	17.9	10.8	11.2	9.8	10.9	8.2	3.9	1.3
Not in labor force	26.4	40.5	39.0	54.3	27.6	51.9	43.3	69.9
Occupation:								
White collar	13.0	41.5	38.8	60.1	7.1	24.0	14.6	38.0
Blue collar	53.3	28.6	42.9	29.4	62.3	39.7	29.5	26.6
Owner	15.5	11.7	15.9	9.8	19.1	17.3	48.5	30.1
Coop member	0	0	0	0	0	0	7.3	5.1
Professional	18.2	18.2	2.4	0.7	11.5	19.0	0.1	0.2
Industry:								
Produce goods	12.5	6.5	19.1	13.2	0.8	0.9	1.3	1.1
Produce agricultural goods	2.1	2.2	5.2	1.4	43.7	36.2	78.3	54.7
Construction	8.3	0	9.8	2.1	7.8	1.9	1.8	0
Sales	2.1	10.9	5.2	8.3	1.6	2.9	0.9	2.4
Transportation	29.2	0	19.1	6.9	21.9	0	3.3	1.3
Service	45.8	80.4	41.6	68.1	24.2	58.1	14.4	40.5

^a Percentages

Boldface indicates gender differences are significant (5% level) for this variable

Table 3. Probit models of labor force participation, 1993-1997.

Variables:	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Constant	-3.249 [.134] {.250}	-2.852 [.208] {.141}	-3.04 [.179] {.178}	-4.748 [.256] {.288}	-5.109 [.415]	-4.468 [.349]	-3.303 [.165] {.243}	-2.562 [.253]	-3.32 [.222]
Gender (1=male)	0.647 [.027] {.250}			0.762 [.051] {.288}			0.62 [.033] {.243}		
Year (1=1997)	-0.435 [.031] {-.169}	-0.427 [.048] {-.141}	-0.46 [.040] {-.178}						
Education:									
Completed secondary	0.222 [.042] {.088}	0.206 [.062] {.073}	0.254 [.059] {.091}	0.02 [.069] {.008}	0.17 [.116] {.048}	-0.03 [.091] {-.01}	0.32 [.057] {.126}	0.273 [.079] {.104}	0.398 [.085] {.136}
Secondary + non-college training	0.437 [.053] {.172}	0.374 [.074] {.127}	0.497 [.077] {.186}	0.271 [.076] {.105}	0.239 [.113] {.065}	0.248 [.108] {.09}	0.425 [.079] {.168}	0.329 [.107] {.124}	0.553 [.120] {.195}
Higher education	0.548 [.044] {.214}	0.304 [.066] {.105}	0.721 [.062] {.275}	0.408 [.072] {.155}	0.06 [.113] {.018}	0.536 [.098] {.203}	0.599 [.061] {.236}	0.392 [.086] {.146}	0.807 [.089] {.296}
Age in years	0.198 [.007] {.078}	0.199 [.010] {.067}	0.199 [.009] {.077}	0.302 [.013] {.117}	0.335 [.022] {.092}	0.32 [.019] {.118}	0.164 [.008] {.065}	0.155 [.021] {.057}	0.164 [.011] {.063}
Age squared	-0.003 [.00008] {-.001}	-0.003 [.0001] {-.0009}	-0.003 [.0001] {-.001}	-0.004 [.0002] {-.002}	-0.005 [.0003] {-.001}	-0.005 [.0003] {-.002}	-0.002 [.000] {-.0009}	-0.002 [.0001] {-.0007}	-0.002 [.0001] {-.0008}
Health is good (=1)	0.373 [.052] {.148}	0.613 [.081] {.229}	0.187 [.069] {.071}	0.463 [.095] {.183}	0.678 [.144] {.226}	0.315 [.130] {.109}	0.394 [.064] {.155}	0.639 [.099] {.248}	0.208 [.084] {.077}
Marital status (1=married)	-0.061 [.034] {-.024}	0.078 [.058] {.026}	-0.169 [.044] {-.066}	-0.063 [.061] {-.025}	0.119 [.109] {.034}	-0.273 [.079] {-.102}	-0.069 [.042] {-.027}	0.074 [.071] {.027}	-0.148 [.055] {-.057}
Number of children < age 6	-0.051 [.014] {-.020}	0.001 [.021] {.0004}	-0.104 [.019] {-.040}	-0.06 [.025] {-.023}	0.009 [.043] {.002}	-0.125 [.032] {-.046}	-0.054 [.017] {-.021}	-0.005 [.026] {-.002}	-0.109 [.245] {-.042}
Ethnicity:									
Russian	0.244 [.048] {.094}	0.2 [.075] {.066}	0.284 [.063] {.112}	0.321 [.081] {.121}	0.296 [.130] {.081}	0.372 [.106] {.141}	0.238 [.062] {.093}	0.224 [.096] {.076}	0.248 [.082] {.097}
Uzbek	0.16 [.057] {.062}	0.368 [.092] {.115}	0.034 [.074] {.013}	0.133 [.077] {.052}	0.355 [.132] {.095}	0.025 [.098] {.009}	0.209 [.098] {.082}	0.398 [.150] {.128}	0.085 [.133] {.033}
Other Slavic	0.152 [.105] {.059}	0.059 [.160] {.020}	0.213 [.141] {.083}	0.194 [.193] {.075}	0.207 [.214] {.059}	0.199 [.198] {.074}	0.253 [.179] {.099}	0.156 [.278] {.054}	0.34 [.234] {.133}
Other ethnicity	0.042 [.036] {.017}	0.146 [.089] {.049}	-0.012 [.074] {-.005}	-0.058 [.088] {-.023}	0.224 [.145] {.063}	-0.203 [.115] {-.068}	0.154 [.076] {.061}	0.119 [.118] {.042}	0.204 [.102] {.079}
Region:									
Urban north	-0.108 [.053] {-.042}	-0.168 [.085] {.050}	-0.086 [.069] {-.033}	-0.287 [.085] {-.113}	-0.339 [.138] {-.101}	-0.288 [.112] {-.099}	-0.029 [.071] {-.012}	-0.155 [.114] {-.047}	0.047 [.093] {.018}

Urban south	-0.323 [.061] {-.128}	-0.551 [.096] {-.186}	-0.183 [.081] {-.070}	-0.066 [.095] {-.026}	-0.227 [.151] {-.065}	0.018 [.127] {.007}	-0.511 [.086] {-.201}	-0.79 [.134] {-.283}	-0.325 [.114] {-.116}
Urban mountain	-0.233 [.064] {-.092}	-0.435 [.098] {-.142}	-0.095 [.086] {-.037}	-0.019 [.118] {.007}	-0.14 [.182] {-.038}	0.036 [.159] {.013}	-0.305 [.081] {-.121}	-0.598 [.124] {-.207}	-0.08 [.019] {-.030}
Rural south	0.133 [.051] {.050}	-0.069 [.080] {-.020}	0.306 [.068] {.121}	0.165 [.081] {.062}	0.162 [.131] {.039}	0.187 [.106] {.071}	0.143 [.069] {.055}	-0.205 [.107] {-.064}	0.451 [.091] {.178}
Rural mountain	-0.4 [.052] {-.158}	-0.482 [.080] {-.160}	-0.349 [.070] {-.129}	-0.202 [.094] {-.080}	-0.154 [.147] {-.043}	-0.19 [.126] {-.067}	-0.449 [.068] {-.178}	-0.627 [.104] {-.219}	-0.327 [.092] {-.117}
Sample size	12261	5781	6480	4997	2309	2688	7264	3472	3792
Chi-square	4829.01	1927.06	2485.4	2799	1145	1541	2172	844	1064
Pseudo R-square	0.292	0.275	0.277	0.44	0.464	0.42	0.217	0.189	0.204

^aCells contain probit coefficients, [standard errors], and {marginal effects}.

Boldface if significant at the 5% level of significance.

Table 4a. Models of hours of work, 1993-1997: occupation and industry excluded.

Variables:	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Constant	3.823 [.042]	3.843 [.056]	3.846 [.065]	3.784 [.127]	3.723 [.164]	4.032 [.196]	3.802 [.043]	3.854 [.052]	3.809 [.068]
Gender (1=male)	0.107 [.009]			0.137 [.023]			0.096 [.010]		
Year (1=1997)	-0.002 [.012]	-0.021 [.014]	0.024 [.019]						
Education:									
Completed secondary	-0.024 [.015]	-0.042 [.019]	-0.005 [.025]	-0.018 [.035]	-0.073 [.045]	0.034 [.054]	-0.025 [.017]	-0.035 [.020]	-0.013 [.029]
Secondary + non-college training	0.03 [.018]	0.038 [.021]	0.002 [.033]	0.046 [.033]	0.067 [.040]	-0.04 [.058]	0 [.023]	-0.016 [.025]	0.026 [.042]
Higher education	-0.047 [.015]	-0.064 [.019]	-0.029 [.025]	-0.057 [.032]	-0.082 [.042]	-0.05 [.05]	-0.05 [.017]	-0.066 [.021]	-0.027 [.029]
Age in years	-0.0008 [.002]	0.005 [.002]	-0.004 [.002]	0.0003 [.006]	0.009 [.008]	-0.01 [.009]	0.0009 [.002]	0.005 [.002]	-0.002 [.003]
Age squared (divided by 1000)	0.007 [.020]	-0.064 [.028]	0.052 [.029]	-0.022 [.077]	0.12 [.099]	0.096 [.126]	0.012 [.020]	-0.067 [.026]	0.03 [.03]
Health is good (=1)	-0.01 [.018]	0.004 [.027]	-0.011 [.026]	-0.027 [.052]	0.016 [.076]	-0.057 [.071]	0.002 [.018]	0.005 [.025]	0.002 [.027]
Ethnicity:									
Russian	-0.04 [.016]	-0.053 [.020]	-0.028 [.024]	-0.028 [.034]	-0.076 [.047]	0.026 [.050]	-0.036 [.017]	-0.034 [.021]	-0.039 [.027]
Uzbek	0.123 [.020]	0.093 [.024]	0.159 [.034]	0.088 [.034]	0.07 [.043]	0.125 [.056]	0.093 [.028]	0.055 [.033]	0.13 [.047]
Other Slavic	-0.05 [.036]	-0.051 [.049]	-0.046 [.054]	-0.0009 [.061]	0.003 [.083]	0.01 [.091]	-0.067 [.048]	-0.098 [.067]	-0.051 [.070]
Other Ethnicity	0.049 [.019]	0.045 [.024]	0.059 [.031]	0.107 [.041]	0.087 [.051]	0.159 [.072]	0.009 [.022]	-0.002 [.026]	0.026 [.035]
Region:									
Urban north	-0.017 [.017]	-0.024 [.022]	-0.007 [.026]	-0.057 [.037]	-0.01 [.049]	-0.097 [.056]	-0.01 [.019]	-0.048 [.024]	0.02 [.030]
Urban south	-0.133 [.021]	-0.128 [.027]	-0.134 [.032]	-0.06 [.041]	-0.081 [.055]	-0.042 [.062]	-0.156 [.024]	-0.143 [.030]	-0.168 [.038]
Urban mountain	-0.062 [.024]	-0.113 [.030]	0.001 [.038]	-0.043 [.053]	-0.142 [.072]	0.053 [.080]	-0.081 [.026]	-0.134 [.030]	-0.02 [.043]
Rural south	-0.088 [.017]	-0.086 [.020]	-0.085 [.026]	0.013 [.035]	0.031 [.043]	-0.031 [.058]	-0.132 [.019]	-0.16 [.023]	-0.103 [.030]
Rural mountain	-0.08 [.018]	-0.05 [.022]	-0.115 [.029]	-0.149 [.047]	-0.049 [.059]	-0.302 [.076]	-0.088 [.019]	-0.09 [.023]	-0.095 [.032]
Sample size	7694	4081	3613	1987	1167	820	5705	2914	2793
F-statistic	17.28	7.43	4.42	7.54	3.23	3.38	13.67	6.59	4.07
R-square	0.037	0.028	0.019	0.058	0.04	0.059	0.037	0.033	0.022

Cells contain probit coefficients, [standard errors], and {marginal effects}.

Boldface if significant at the 5% level of significance.

Table 4b. Models of hours of work, 1993-1997: occupation and industry included.

Variables:	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Constant	3.769 [.043]	3.8 [.057]	3.79 [.067]	3.669 [.125]	3.575 [.165]	4 [.191]	3.733 [.044]	3.813 [.054]	3.723 [.071]
Gender (1=male)	0.096 [.010]			0.14 [.024]			0.085 [.010]		
Year (1=1997)	-0.062 [.014]	-0.069 [.017]	-0.052 [.023]						
Education:									
Completed secondary	-0.022 [.015]	-0.036 [.019]	-0.011 [.025]	-0.054 [.035]	-0.088 [.045]	-0.039 [.054]	-0.028 [.017]	-0.039 [.019]	-0.016 [.028]
Secondary + non-college training	0.037 [.018]	0.045 [.021]	0.005 [.033]	0.062 [.032]	0.092 [.039]	-0.051 [.057]	0.003 [.023]	-0.022 [.025]	0.039 [.041]
Higher education	-0.007 [.016]	-0.028 [.020]	0.01 [.025]	0.023 [.035]	-0.03 [.047]	0.049 [.052]	-0.032 [.018]	-0.046 [.021]	-0.01 [.029]
Age in years	0.0001 [.002]	0.005 [.002]	-0.004 [.003]	-0.001 [.006]	0.01 [.008]	-0.015 [.009]	0.001 [.002]	0.006 [.002]	-0.002 [.003]
Age squared (divided by 1000)	-0.002 [.020]	-0.068 [.028]	0.045 [.029]	0.007 [.076]	-0.127 [.098]	0.17 [.123]	0.014 [.020]	-0.073 [.026]	0.03 [.03]
Health is good (=1)	-0.014 [.018]	-0.005 [.026]	-0.012 [.025]	-0.034 [.051]	-0.015 [.076]	-0.033 [.069]	-0.003 [.018]	-0.001 [.025]	0.003 [.027]
Ethnicity:									
Russian	-0.032 [.016]	-0.42 [.021]	-0.022 [.024]	-0.031 [.034]	-0.058 [.046]	-0.002 [.049]	-0.026 [.017]	-0.03 [.022]	-0.027 [.027]
Uzbek	0.119 [.020]	0.093 [.024]	0.148 [.034]	0.066 [.033]	0.064 [.042]	0.062 [.055]	0.099 [.028]	0.046 [.033]	0.142 [.046]
Other Slavic	-0.04 [.036]	-0.042 [.049]	-0.039 [.053]	0.022 [.060]	0.038 [.082]	0.014 [.089]	-0.063 [.048]	-0.096 [.066]	-0.053 [.070]
Other ethnicity	0.044 [.019]	0.037 [.024]	0.057 [.031]	0.072 [.041]	0.065 [.050]	0.113 [.071]	0.009 [.021]	-0.008 [.026]	0.03 [.034]
Region:									
Urban north	0.014 [.018]	0.009 [.023]	0.019 [.027]	-0.019 [.036]	0.02 [.049]	-0.055 [.055]	0.01 [.020]	-0.023 [.025]	0.029 [.031]
Urban south	-0.101 [.021]	-0.1 [.027]	-0.095 [.032]	-0.019 [.041]	-0.044 [.054]	0.004 [.062]	-0.139 [.025]	-0.126 [.031]	-0.144 [.038]
Urban mountain	-0.033 [.024]	-0.08 [.030]	0.025 [.038]	-0.007 [.052]	-0.103 [.071]	0.072 [.078]	-0.059 [.027]	-0.113 [.031]	-0.002 [.044]
Rural south	-0.117 [.017]	-0.104 [.021]	-0.128 [.027]	-0.03 [.034]	0.01 [.043]	-0.13 [.058]	-0.159 [.019]	-0.179 [.023]	-0.138 [.031]
Rural mountain	-0.091 [.018]	-0.059 [.022]	-0.13 [.029]	-0.184 [.046]	-0.072 [.059]	-0.376 [.075]	-0.098 [.020]	-0.098 [.023]	-0.106 [.032]
Occupation:									
White-collar worker	0.027 [.014]	0 [.019]	0.053 [.021]	0.078 [.034]	0.108 [.05]	0.05 [.051]	0.009 [.015]	-0.04 [.019]	0.049 [.024]
Owner	0.008 [.013]	0.0005 [.015]	0.018 [.021]	0.054 [.037]	0.113 [.05]	-0.009 [.058]	0.024 [.013]	0.003 [.015]	0.048 [.022]
Coop member	0.078 [.023]	0.076 [.029]	0.079 [.037]				0.108 [.022]	0.106 [.025]	0.115 [.037]
Professional	-0.145 [.026]	-0.092 [.033]	-0.185 [.040]	-0.07 [.042]	-0.026 [.056]	-0.114 [.064]	-0.179 [.051]	-0.031 [.058]	-0.316 [.084]

Missing occupation	0.075 [.056]	0.0007 [.071]	0.029 [.078]				0.083 [.052]	-0.005 [.059]	0.172 [.087]
Industry:									
Produces goods	0.027 [.021]	-0.01 [.026]	0.063 [.036]	0.058 [.066]	0.043 [.076]	0.204 [.149]	0.01 [.022]	-0.033 [.025]	0.049 [.036]
Produces agricultural products	0.13 [.015]	0.096 [.020]	0.159 [.024]	0.329 [.038]	0.293 [.052]	0.401 [.059]	0.079 [.017]	0.043 [.021]	0.01 [.026]
Construction	0.035 [.026]	-0.003 [.028]	0.097 [.058]	0.029 [.051]	0.025 [.058]	-0.02 [.184]	0.057 [.030]	0.014 [.031]	0.107 [.060]
Sales	0.144 [.024]	0.123 [.033]	0.155 [.034]	0.094 [.082]	0.131 [.138]	0.125 [.103]	0.123 [.024]	0.084 [.031]	0.142 [.036]
Transportation	0.124 [.023]	0.095 [.025]	0.12 [.052]	0.187 [.047]	0.161 [.054]	0.301 [.279]	0.104 [.026]	0.077 [.027]	0.104 [.052]
Missing industry	0.0003 [.021]	-0.017 [.026]	-0.006 [.035]	0.063 [.029]	0.059 [.042]	0.066 [.043]	0.028 [.164]	-0.048 [.153]	0.196 [.418]
Sample size	7694	4081	3613	1987	1167	820	5705	2914	2793
F-statistic	17.2	7.3	6.71	9.44	4.33	5.06	12.34	6.25	4.99
R-square	0.059	0.046	0.048	0.107	0.083	0.106	0.055	0.053	0.045

Cells contain regression coefficients and [standard errors].

Boldface if significant at the 5% level of significance.

Table 5a. Wage model, 1993-1997: occupation and industry excluded.

Variables:	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Constant	3.65 [.092]	3.784 [.137]	3.655 [.122]	2.681 [.251]	3.357 [.359]	2.61 [.354]	4.268 [.097]	4.231 [.146]	4.401 [.130]
Gender (1=male)	0.214 [.020]			0.495 [.045]			0.149 [.022]		
Year (1=1997)	0.484 [.028]	0.348 [.040]	0.609 [.038]						
Education:									
Completed secondary	0.055 [.033]	0.045 [.046]	0.097 [.046]	0.039 [.074]	0.04 [.107]	0.031 [.104]	0.051 [.038]	0.042 [.054]	0.081 [.054]
Secondary + non-college training	0.099 [.040]	0.092 [.054]	0.093 [.061]	0.134 [.064]	0.104 [.083]	0.161 [.100]	0.032 [.052]	0.031 [.070]	0.033 [.078]
Higher education	0.253 [.033]	0.296 [.047]	0.25 [.046]	0.255 [.059]	0.245 [.083]	0.276 [.086]	0.236 [.039]	0.288 [.057]	0.217 [.055]
Age in years	0.016 [.004]	0.021 [.006]	0.013 [.005]	0.052 [.012]	0.043 [.017]	0.058 [.017]	0.013 [.004]	0.019 [.006]	0.008 [.005]
Age squared [divided by 1000]	-0.137 [.042]	-0.221 [.065]	-0.075 [.055]	-0.58 [.052]	-0.501 [.210]	-0.612 [.223]	-0.109 [.045]	-0.196 [.071]	-0.034 [.058]
Health is good (=1)	0.0001 [.038]	0.098 [.063]	-0.065 [.047]	0.143 [.103]	0.112 [.164]	0.119 [.135]	-0.012 [.041]	0.086 [.069]	-0.09 [.050]
Ethnicity:									
Russian	0.078 [.032]	0.176 [.048]	0.008 [.042]	0.083 [.060]	0.142 [.067]	0.033 [.083]	0.093 [.038]	0.197 [.058]	0.005 [.050]
Uzbek	0.027 [.047]	0.045 [.067]	-0.028 [.065]	-0.194 [.075]	-0.107 [.102]	-0.294 [.112]	0.129 [.061]	0.097 [.089]	0.135 [.083]
Other Slavic	0.024 [.082]	0.071 [.127]	0.002 [.104]	0.113 [.122]	0.219 [.174]	0.02 [.171]	-0.003 [.110]	-0.065 [.181]	0.055 [.136]
Other Ethnicity	0.05 [.042]	0.059 [.060]	0.04 [.058]	-0.029 [.089]	-0.168 [.113]	0.222 [.147]	0.051 [.048]	0.106 [.071]	0.008 [.064]
Region:									
Urban north	0.376 [.037]	0.394 [.054]	0.352 [.049]	0.345 [.065]	0.437 [.093]	0.237 [.091]	0.383 [.044]	0.371 [.066]	0.391 [.058]
Urban south	-0.061 [.045]	-0.007 [.068]	-0.109 [.060]	0.002 [.078]	0.026 [.112]	-0.05 [.109]	-0.066 [.055]	0.008 [.084]	-0.122 [.072]
Urban mountain	0.0004 [.049]	0.096 [.070]	-0.115 [.068]	0.015 [.090]	0.159 [.125]	-0.142 [.129]	-0.002 [.059]	0.062 [.084]	-0.087 [.082]
Rural south	-0.412 [.038]	-0.411 [.054]	-0.408 [.052]	-0.151 [.076]	-0.064 [.100]	-0.222 [.118]	-0.454 [.044]	-0.483 [.065]	-0.412 [.060]
Rural mountain	-0.362 [.040]	-0.354 [.057]	-0.346 [.057]	-0.13 [.125]	-0.18 [.162]	-0.015 [.199]	-0.379 [.046]	-0.392 [.066]	-0.345 [.064]
Sample size	6017	3119	2898	1162	602	560	4855	2517	2338
F-statistic	93.52	50.1	53.56	18.13	6.92	7.29	80.7	47.78	40.5
R-square	0.21	0.205	0.229	0.202	0.152	0.167	0.211	0.223	0.202

Cells contain regression coefficients and [standard errors].

Boldface if significant at the 5% level of significance.

Table 5b: Wage model 1993-1997: occupation and industry included.

Variables:	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Constant	3.668 [.090]	3.843 [.137]	3.619 [.120]	2.798 [.250]	3.378 [.360]	2.779 [.353]	4.323 [.095]	4.368 [.146]	4.42 [.126]
Gender (1=male)	0.193 [.020]			0.404 [.048]			0.148 [.021]		
Year (1=1997)	0.49 [.032]	0.397 [.048]	0.551 [.044]						
Education:									
Completed secondary	0.046 [.031]	0.026 [.045]	0.089 [.044]	0.036 [.074]	0.065 [.106]	-0.029 [.105]	0.04 [.036]	0.017 [.051]	0.095 [.051]
Secondary + non-college training	0.042 [.038]	0.026 [.052]	0.065 [.058]	0.076 [.064]	0.072 [.083]	0.161 [.103]	0.015 [.049]	-0.019 [.066]	0.03 [.074]
Higher education	0.202 [.032]	0.22 [.047]	0.211 [.044]	0.199 [.064]	0.187 [.092]	0.208 [.091]	0.172 [.038]	0.201 [.056]	0.174 [.053]
Age in years	0.015 [.003]	0.018 [.005]	0.014 [.005]	0.045 [.012]	0.034 [.017]	0.05 [.017]	0.01 [.004]	0.168 [.068]	0.005 [.005]
Age squared (divided by 1000)	-0.128 [.040]	-0.188 [.063]	-0.097 [.052]	-0.509 [.150]	-0.399 [.209]	-0.536 [.223]	-0.082 [.043]	-0.196 [.071]	-0.007 [.055]
Health is good (=1)	-0.014 [.036]	0.087 [.060]	-0.082 [.045]	0.133 [.102]	0.137 [.162]	0.078 [.134]	-0.035 [.039]	0.062 [.065]	-0.091 [.048]
Ethnicity:									
Russian	0.036 [.031]	0.12 [.047]	-0.014 [.040]	0.049 [.060]	0.102 [.087]	0.004 [.085]	0.061 [.036]	0.138 [.056]	0.019 [.047]
Uzbek	-0.017 [.045]	-0.001 [.064]	-0.049 [.062]	-0.167 [.075]	-0.087 [.101]	-0.295 [.115]	0.042 [.058]	0.02 [.086]	0.043 [.079]
Other Slavic	0.02 [.078]	0.076 [.122]	-0.006 [.098]	0.087 [.120]	0.2 [.174]	0.006 [.170]	-0.018 [.103]	-0.068 [.172]	0.046 [.128]
Other ethnicity	0.032 [.040]	0.013 [.058]	0.046 [.055]	-0.03 [.087]	-0.139 [.112]	0.193 [.146]	0.035 [.045]	0.045 [.068]	0.013 [.060]
Region:									
Urban north	0.252 [.036]	0.237 [.054]	0.265 [.047]	0.307 [.064]	0.413 [.093]	0.196 [.091]	0.2 [.043]	0.143 [.066]	0.272 [.057]
Urban south	-0.179 [.044]	-0.171 [.066]	-0.167 [.057]	-0.015 [.077]	0.042 [.111]	-0.08 [.109]	-0.247 [.043]	-0.28 [.083]	-0.147 [.069]
Urban mountain	-0.122 [.048]	-0.068 [.068]	-0.177 [.065]	-0.004 [.088]	0.126 [.124]	-0.139 [.128]	-0.181 [.056]	-0.18 [.083]	-0.167 [.078]
Rural south	-0.34 [.037]	-0.361 [.053]	-0.314 [.051]	-0.128 [.075]	-0.05 [.099]	-0.155 [.117]	-0.4 [.043]	-0.457 [.064]	-0.244 [.059]
Rural mountain	-0.256 [.039]	-0.272 [.056]	-0.218 [.055]	-0.082 [.124]	-0.105 [.162]	-0.019 [.197]	-0.311 [.044]	-0.356 [.064]	-0.246 [.061]
Occupation:									
White-collar worker	0.065 [.028]	0.094 [.044]	0.081 [.037]	-0.108 [.063]	-0.059 [.098]	-0.125 [.092]	0.15 [.032]	0.15 [.051]	0.16 [.041]
Owner	0.285 [.026]	0.28 [.036]	0.318 [.037]	0.184 [.075]	0.145 [.105]	0.213 [.112]	0.317 [.027]	0.308 [.038]	0.341 [.039]
Coop member	0.641 [.050]	0.565 [.072]	0.731 [.069]				0.676 [.050]	0.602 [.073]	0.759 [.067]
Professional	0.049 [.053]	0.124 [.078]	0.015 [.071]	0.165 [.077]	0.192 [.107]	0.165 [.115]	-0.477 [.099]	-0.12 [.144]	-0.867 [.134]

Missing occupation	-0.128 [.089]	-0.165 [.130]	-0.039 [.121]				0.176 [.119]	0.195 [.161]	0.084 [.178]
Industry:									
Produces goods	0.333 [.043]	0.294 [.061]	0.341 [.061]	0.211 [.126]	0.264 [.155]	0.17 [.237]	0.367 [.045]	0.322 [.067]	0.382 [.061]
Produces agricultural products	-0.346 [.032]	-0.354 [.049]	-0.329 [.043]	-0.15 [.089]	-0.237 [.127]	-0.006 [.131]	-0.333 [.036]	-0.355 [.054]	-0.335 [.047]
Construction	0.529 [.053]	0.373 [.067]	0.846 [.099]	0.37 [.106]	0.311 [.123]	0.744 [.311]	0.575 [.062]	0.399 [.081]	0.867 [.101]
Sales	0.355 [.044]	0.354 [.070]	0.345 [.056]	0.125 [.133]	0.096 [.225]	0.132 [.169]	0.426 [.047]	0.415 [.076]	0.414 [.059]
Transportation ^a	0.339 [.046]	0.302 [.058]	0.311 [.089]	0.235 [.099]	0.251 [.114]		0.367 [.052]	0.342 [.069]	0.307 [.087]
Missing industry	0.148 [.044]	0.143 [.066]	0.1 [.060]	0.195 [.054]	0.195 [.083]	0.217 [.075]	-0.31 [.147]	-0.537 [.208]	-0.062 [.214]
Sample size	6017	3119	2898	1162	602	560	4855	2517	2338
F-statistic	87.01	43.41	49.63	14.22	5.85	6.08	79.72	41.27	45.02
R-square	0.289	0.275	0.318	0.238	0.196	0.207	0.308	0.301	0.336

Cells contain regression coefficients and [standard errors].

^aTransportation is collinear with other variables in the 1993 model for women; it is dropped.

Boldface if significant at the 5% level of significance.

Appendix Table 1. Descriptive statistics, 1993-1997: labor force participation model.

Variables	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Labor force participation (=1)	0.595 [.491]	0.705 [.456]	0.498 [.500]	0.667 [.471]	0.774 [.418]	0.575 [.494]	0.546 [.498]	0.658 [.474]	0.443 [.497]
Gender (1=male)	0.471 [.499]			0.462 [.499]			0.478 [.500]		
Year (1=1997)	0.592 [.491]	0.601 [.490]	0.585 [.493]						
Education:									
Completed secondary	0.385 [.487]	0.378 [.485]	0.392 [.488]	0.247 [.432]	0.201 [.401]	0.287 [.453]	0.48 [.500]	0.495 [.500]	0.465 [.499]
Secondary + non-college training	0.124 [.330]	0.165 [.372]	0.088 [.283]	0.197 [.398]	0.271 [.445]	0.132 [.339]	0.074 [.262]	0.095 [.293]	0.056 [.229]
Higher education	0.25 [.433]	0.233 [.423]	0.265 [.441]	0.218 [.413]	0.202 [.402]	0.232 [.422]	0.271 [.445]	0.253 [.435]	0.289 [.453]
Age in years	38.725 [16.313]	37.846 [15.524]	39.51 [16.948]	39.535 [16.818]	38.283 [15.878]	40.61 [17.518]	38.168 [15.933]	37.555 [15.279]	38.73 [16.491]
Health is good (=1)	0.903 [.296]	0.929 [.256]	0.879 [.326]	0.904 [.294]	0.932 [.253]	0.881 [.323]	0.902 [.298]	0.928 [.259]	0.878 [.327]
Marital status (1=married)	0.699 [.459]	0.735 [.441]	0.666 [.472]	0.712 [.453]	0.752 [.432]	0.677 [.467]	0.69 [.463]	0.724 [.447]	0.658 [.474]
Number of children less than 6 years old	0.858 [1.025]	0.869 [1.030]	0.847 [1.021]	0.857 [1.044]	0.874 [1.051]	0.843 [1.037]	0.858 [1.013]	0.385 [1.015]	0.851 [1.010]
Ethnicity:									
Russian	0.152 [.359]	0.134 [.340]	0.168 [.374]	0.191 [.393]	0.17 [.376]	0.209 [.407]	0.124 [.330]	0.109 [.312]	0.138 [.345]
Uzbek	0.083 [.276]	0.085 [.279]	0.082 [.274]	0.149 [.357]	0.154 [.361]	0.145 [.353]	0.038 [.190]	0.039 [.193]	0.037 [.188]
Other Slavic	0.021 [.143]	0.019 [.135]	0.023 [.150]	0.037 [.188]	0.035 [.184]	0.038 [.191]	0.01 [.100]	0.008 [.088]	0.012 [.111]
Other Ethnicity	0.071 [.257]	0.072 [.258]	0.071 [.257]	0.09 [.286]	0.093 [.291]	0.087 [.283]	0.058 [.234]	0.057 [.232]	0.06 [.237]
Region:									
Urban north	0.171 [.376]	0.153 [.360]	0.186 [.389]	0.182 [.386]	0.165 [.371]	0.197 [.398]	0.163 [.369]	0.145 [.352]	0.179 [.383]
Urban south	0.299 [.458]	0.099 [.298]	0.11 [.313]	0.138 [.345]	0.134 [.341]	0.142 [.349]	0.082 [.274]	0.075 [.264]	0.088 [.283]
Urban mountain	0.073 [.261]	0.072 [.259]	0.075 [.263]	0.06 [.237]	0.061 [.239]	0.059 [.235]	0.083 [.276]	0.08 [.271]	0.086 [.280]
Rural south	0.299 [.458]	0.311 [.463]	0.288 [.453]	0.326 [.469]	0.336 [.472]	0.318 [.466]	0.28 [.449]	0.294 [.456]	0.267 [.442]
Rural mountain	0.23 [.421]	0.245 [.430]	0.218 [.413]	0.126 [.332]	0.135 [.342]	0.118 [.323]	0.302 [.459]	0.318 [.466]	0.288 [.453]
Sample size	12261	5781	6480	4997	2309	2688	7264	3472	3792

Cells contain the mean of the variable with standard deviation below it in brackets.

Appendix Table 2. Descriptive statistics, 1993-1997: hours of work model

Variables	1993-1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Hours of work per week	46.366 [15.694]	48.452 [15.746]	44.009 [15.300]	49.212 [21.035]	52.347 [21.293]	44.751 [19.838]	45.374 [13.202]	46.892 [12.540]	43.791 [13.682]
Gender (1=male)	0.53 [.499]			0.587 [.492]					
Education:									
Completed secondary	0.401 [.490]	0.401 [.490]	0.401 [.490]	0.21 [.407]	0.181 [.385]	0.251 [.434]	0.467 [.499]	0.489 [.500]	0.445 [.497]
Secondary + non-college training	0.126 [.331]	0.161 [.367]	0.086 [.280]	0.26 [.439]	0.317 [.466]	0.179 [.384]	0.079 [.269]	0.098 [.298]	0.058 [.234]
Higher education	0.29 [.454]	0.257 [.437]	0.327 [.469]	0.289 [.454]	0.237 [.426]	0.363 [.481]	0.29 [.454]	0.265 [.442]	0.316 [.465]
Age in years	37.454 [14.185]	36.853 [13.713]	38.133 [14.673]	35.9 [11.106]	35.915 [11.616]	35.878 [10.344]	37.995 [15.074]	37.228 [14.453]	38.795 [15.659]
Health is good (=1)	0.922 [.269]	0.947 [.224]	0.893 [.309]	0.953 [.211]	0.965 [.184]	0.937 [.244]	0.911 [.285]	0.94 [.238]	0.88 [.325]
Ethnicity:									
Russian	0.152 [.359]	0.13 [.336]	0.177 [.382]	0.211 [.408]	0.173 [.378]	0.265 [.441]	0.132 [.338]	0.113 [.317]	0.151 [.358]
Uzbek	0.071 [.258]	0.081 [.273]	0.06 [.238]	0.165 [.371]	0.182 [.385]	0.141 [.349]	0.039 [.193]	0.041 [.199]	0.037 [.188]
Other Slavic	0.018 [.131]	0.015 [.120]	0.021 [.143]	0.037 [.189]	0.033 [.178]	0.044 [.205]	0.011 [.103]	0.008 [.087]	0.014 [.117]
Other ethnicity	0.069 [.254]	0.071 [.257]	0.067 [.250]	0.085 [.278]	0.098 [.297]	0.066 [.248]	0.064 [.244]	0.06 [.238]	0.067 [.251]
Region:									
Urban north	0.184 [.388]	0.161 [.367]	0.211 [.408]	0.187 [.390]	0.163 [.369]	0.222 [.416]	0.183 [.387]	0.16 [.367]	0.208 [.406]
Urban south	0.102 [.302]	0.095 [.294]	0.108 [.311]	0.148 [.355]	0.136 [.343]	0.165 [.371]	0.085 [.279]	0.079 [.270]	0.092 [.289]
Urban mountain	0.055 [.228]	0.056 [.231]	0.054 [.226]	0.055 [.229]	0.049 [.216]	0.065 [.246]	0.055 [.228]	0.059 [.236]	0.051 [.220]
Rural south	0.342 [.474]	0.35 [.477]	0.334 [.472]	0.343 [.475]	0.373 [.484]	0.3 [.459]	0.342 [.474]	0.341 [.474]	0.343 [.475]
Rural mountain	0.191 [.393]	0.214 [.410]	0.165 [.371]	0.084 [.278]	0.087 [.283]	0.079 [.270]	0.228 [.420]	0.265 [.441]	0.19 [.392]
Occupation:									
White-collar worker	0.248 [.432]	0.176 [.381]	0.33 [.470]	0.207 [.405]	0.129 [.336]	0.317 [.466]	0.262 [.440]	0.194 [.396]	0.333 [.471]
Owner	0.25 [.433]	0.269 [.444]	0.229 [.421]	0.109 [.311]	0.095 [.294]	0.128 [.334]	0.3 [.458]	0.339 [.473]	0.259 [.438]
Coop member	0.047 [.213]	0.047 [.211]	0.048 [.215]				0.064 [.245]	0.065 [.247]	0.063 [.242]
Professional	0.042 [.200]	0.038 [.192]	0.045 [.208]	0.134 [.341]	0.11 [.313]	0.168 [.374]	0.01 [.098]	0.01 [.099]	0.009 [.096]
Missing occupation	0.007 [.081]	0.007 [.081]	0.007 [.081]	0 [.081]	0 [.081]	0 [.081]	0.009 [.094]	0.009 [.096]	0.009 [.092]
Industry:									
Produces goods	0.057 [.233]	0.066 [.248]	0.048 [.214]	0.031 [.173]	0.043 [.203]	0.013 [.115]	0.067 [.250]	0.075 [.263]	0.058 [.234]

Produces agricultural products	0.417 [.493]	0.453 [.498]	0.377 [.485]	0.206 [.405]	0.199 [.399]	0.217 [.413]	0.491 [.500]	0.555 [.497]	0.424 [.494]
Construction	0.039 [.193]	0.058 [.233]	0.017 [.130]	0.061 [.239]	0.098 [.297]	0.009 [.092]	0.031 [.173]	0.042 [.200]	0.02 [.139]
Sales	0.047 [.211]	0.037 [.188]	0.058 [.233]	0.018 [.135]	0.011 [.105]	0.029 [.169]	0.056 [.231]	0.047 [.212]	0.066 [.249]
Transportation	0.056 [.229]	0.086 [.281]	0.021 [.144]	0.087 [.281]	0.145 [.352]	0.004 [.060]	0.045 [.207]	0.063 [.243]	0.026 [.160]
Missing industry	0.078 [.268]	0.087 [.282]	0.067 [.250]	0.298 [.458]	0.302 [.459]	0.294 [.456]	0.0009 [.030]	0.001 [.037]	0.0004 [.019]
Sample size	7694	4081	3613	1987	1167	820	5707	2914	2793

Cells contain the mean of the variable with standard deviation below it in brackets.

Appendix Table 3. Descriptive statistics, 1993-1997: wage model.

Variables	1993 & 1997			1993			1997		
	All	Men	Women	All	Men	Women	All	Men	Women
Monthly compensation (soms)	141.422 [279.442]	156.046 [336.073]	125.683 [200.302]	104.863 [104.073]	125.13 [120.125]	83.076 [77.868]	150.172 [306.259]	163.44 [369.105]	135.888 [218.507]
Gender (1=male)	0.518 [.500]			0.518 [.500]			0.518 [.500]		
Education:									
Completed secondary	0.404 [.491]	0.415 [.493]	0.393 [.489]	0.145 [.352]	0.12 [.325]	0.173 [.379]	0.466 [.499]	0.485 [.500]	0.446 [.497]
Secondary + non-college training	0.112 [.315]	0.139 [.345]	0.083 [.276]	0.253 [.435]	0.312 [.464]	0.189 [.392]	0.078 [.268]	0.097 [.296]	0.058 [.233]
Higher education	0.305 [.461]	0.275 [.447]	0.338 [.473]	0.35 [.477]	0.294 [.456]	0.411 [.492]	0.295 [.456]	0.271 [.444]	0.321 [.467]
Age in years	37.869 [14.376]	37.438 [13.976]	38.333 [14.782]	36.896 [11.075]	37.326 [11.609]	36.434 [10.460]	38.102 [15.051]	37.464 [14.487]	38.788 [15.609]
Health is good (=1)	0.92 [.271]	0.943 [.231]	0.895 [.306]	0.952 [.214]	0.963 [.188]	0.939 [.239]	0.912 [.283]	0.938 [.240]	0.885 [.320]
Ethnicity:									
Russian	0.168 [.374]	0.143 [.350]	0.195 [.396]	0.302 [.459]	0.252 [.435]	0.355 [.479]	0.136 [.343]	0.117 [.321]	0.156 [.363]
Uzbek	0.064 [.246]	0.07 [.255]	0.059 [.235]	0.157 [.364]	0.178 [.383]	0.136 [.343]	0.042 [.201]	0.044 [.205]	.04 [.196]
Other Slavic	0.016 [.124]	0.013 [.114]	0.018 [.134]	0.038 [.191]	0.035 [.184]	0.041 [.199]	0.01 [.101]	0.008 [.089]	0.013 [.113]
Other Ethnicity	0.068 [.252]	0.069 [.253]	0.068 [.251]	0.074 [.262]	0.091 [.288]	0.055 [.229]	0.067 [.250]	0.064 [.244]	0.071 [.256]
Region:									
Urban north	0.223 [.416]	0.194 [.395]	0.254 [.435]	0.296 [.457]	0.264 [.441]	0.33 [.471]	0.205 [.404]	0.177 [.382]	0.235 [.424]
Urban south	0.112 [.315]	0.104 [.306]	0.119 [.324]	0.204 [.403]	0.203 [.402]	0.205 [.404]	0.089 [.285]	0.081 [.272]	0.099 [.298]
Urban mountain	0.063 [.244]	0.066 [.248]	0.061 [.239]	0.086 [.281]	0.085 [.279]	0.088 [.283]	0.058 [.234]	0.062 [.240]	0.054 [.227]
Rural south	0.31 [.463]	0.319 [.466]	0.3 [.458]	0.177 [.382]	0.209 [.407]	0.143 [.350]	0.342 [.474]	0.346 [.476]	0.338 [.473]
Rural mountain	0.18 [.384]	0.209 [.406]	0.148 [.356]	0.038 [.191]	0.045 [.207]	0.03 [.172]	0.214 [.410]	0.248 [.432]	0.177 [.381]
Occupation:									
White-collar worker	0.264 [.441]	0.189 [.392]	0.344 [.475]	0.27 [.444]	0.166 [.372]	0.382 [.487]	0.263 [.440]	0.195 [.396]	0.335 [.472]
Owner	0.287 [.452]	0.313 [.464]	0.259 [.438]	0.113 [.316]	0.096 [.295]	0.13 [.337]	0.329 [.470]	0.364 [.481]	0.29 [.454]
Coop member	0.044 [.205]	0.043 [.202]	0.046 [.209]	0 [.372]	0 [.352]	0 [.391]	0.055 [.227]	0.053 [.224]	0.056 [.231]
Professional	0.041 [.198]	0.037 [.189]	0.045 [.208]	0.165 [.372]	0.145 [.352]	0.188 [.391]	0.011 [.106]	0.012 [.107]	0.011 [.105]
Missing occupation	0.013 [.112]	0.012 [.108]	0.013 [.115]	0 [.372]	0 [.352]	0 [.391]	0.016 [.124]	0.015 [.120]	0.017 [.128]

Industry:									
Produces goods	0.059 [.236]	0.066 [.249]	0.052 [.222]	0.034 [.180]	0.047 [.211]	0.02 [.139]	0.065 [.247]	0.071 [.257]	0.059 [.237]
Produces agricultural products	0.387 [.487]	0.439 [.496]	0.331 [.471]	0.09 [.287]	0.088 [.284]	0.093 [.290]	0.458 [.498]	0.523 [.500]	0.388 [.487]
Construction	0.037 [.189]	0.054 [.226]	0.018 [.134]	0.054 [.227]	0.095 [.293]	0.011 [.103]	0.033 [.178]	0.044 [.206]	0.02 [.140]
Sales	0.06 [.237]	0.05 [.218]	0.07 [.256]	0.03 [.171]	0.02 [.140]	0.041 [.199]	0.067 [.250]	0.057 [.232]	0.077 [.267]
Transportation	0.054 [.226]	0.083 [.276]	0.023 [.149]	0.071 [.258]	0.138 [.345]	0 [.199]	0.05 [.218]	0.07 [.256]	0.028 [.166]
Missing industry	0.079 [.269]	0.08 [.271]	0.078 [.268]	0.345 [.582]	0.375 [.484]	0.354 [.479]	0.01 [.010]	0.009 [.093]	0.012 [.107]
Sample size	6017	3119	2898	1162	602	560	4855	2517	2338

Cells contain the mean of the variable with standard deviation below it in brackets.