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International Studies Program
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Who Bears the Burden of Taxes on Labor Income in Russia?

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1. Introduction

In 2001 the Russian government introduced a bold reform of its tax system, which included the adoption of a flat-rate income tax. Until then, only a few countries, including the transition countries of Estonia, Latvia, and Lithuania, had adopted a flat-rate income tax.[1] This reform has naturally attracted a great deal of attention, as many countries have been toying with the idea of a flat-rate income tax. In this paper we investigate the tax incidence of Russia's flat-rate reform. Although there are studies on the incidence of the personal income tax in other countries, to the best of our knowledge no study has been conducted so far on the incidence of income taxes in a transition economy.

Beyond adding to our understanding of the incidence of income taxes in a major transition economy, our analysis can be seen as using the 2001 reform as a natural experiment for examining the depth of the new market institutions introduced in Russia since the demise of the Soviet Union in 1991. As discussed in greater detail below, economic theory predicts and many empirical studies from developed countries find that

[*] We are grateful to Dmitry Shiskin for very able research assistance, and Klara Peters and Andrey Timofeev for helpful comments.
[1] See, for example, Martinez-Vazquez and McNab (2000).

barring a very elastic labor supply, taxes on labor income are paid by labor, and, therefore, a reduction in income taxes associated with a flat-rate reform should result in an increase net-of-tax wages.

In this paper we use micro-level data from the Russian Longitudinal Monitoring Survey (RLMS) and a difference-in-differences econometric model to investigate the incidence of Russia's flat-rate tax reform. The difference-in-differences approach allows us to get around two thorny empirical issues: the imputation of effective marginal tax rates when low levels of voluntary tax compliance exist and the need to find a suitable instrument for potentially endogenous marginal tax rates.

We find that immediately after the 2001 tax reform, the reduction in marginal tax rates had an economically and statistically significant, positive effect on net-of-tax wages, and this effect became larger in the second and third years after the reform, practically accounting for all of the expected reduction in tax burdens. While the phased response to the 2001 tax reform may reflect rigidities in Russia's labor market, overall it seems that Russia's economy has developed over the long decade of transition well functioning features of a market economy. As discussed in greater detail below, our findings also have implications for the expected effects of further tax reform in Russia and other transition countries.

The remainder of the paper is organized as follows. In Section II we briefly review the theory and empirical evidence on the incidence of taxes falling on labor income. In Section III we describe the institutional background of Russia's flat-rate tax reform of 2001. In Section IV we describe our empirical strategy, including the difference-in-differences approach that allows us to get around some difficult econometric issues; this section also describes the data and alternative measures of net-of-tax wages employed in this analysis. Section V presents the empirical results. We conclude in Section VI.

2. The Incidence of Personal Income Taxes

It is customary to assume that the incidence of personal income taxes falls fully on income earners.[2] As is well known, the incidence of a tax depends to a large extent on the

[2] See, for example, Pechman and Okner (1974).

relative elasticities of supply and demand, while the point of collection has no effect on tax incidence.[3] The share of personal taxes on wage income and payroll taxes ultimately borne by employees' increases, all other things held constant, as labor supply becomes more elastic. The elasticity of labor supply depends on a number of factors such as the opportunities available, employment in the underground economy, family circumstances including the level of income and basic needs, education, and skills and experience. A cut in PIT and payroll taxes, as in the case of Russia's 2001 tax reform, should result in an increase in demand for labor (i.e., rightward shift of the demand curve).[4] With a less than perfectly elastic labor supply, all other things held constant, the increase in demand would result in higher net-of-tax wages, lower gross-of-tax wages, and an increase in the number of hours worked. In the case of a relatively inelastic supply of labor, a tax reduction would result in higher net-of-tax wages and a smaller increase in labor supply. Of course, in the extreme case of perfectly inelastic labor supply, a tax cut would result in an equivalent increase in net-of-tax wages with no impact on labor supply.

Evidence from developed economies suggests that, at least in the short-run, labor supply is relatively inelastic.[5] Overall there appears to be a general consensus in the economics literature that direct taxes on income from labor are primarily borne by wage

[3] The conclusion that the point of collection has no effect on the economic incidence of a tax is subject to an important caveat. Specifically the point of collection has important consequences for tax compliance. For example, it is generally recognized that income tax withholding has a positive effect on tax compliance. Since tax compliance affects the economic incidence of a tax, it follows that the incidence of a tax is influenced by the point of collection through its effect on tax compliance.

[4] In the case of payroll taxes, when there is a tax-benefit linkage the labor supply would also shift to the left. The lower funding (and benefits) from the reduced payroll taxes would mean that workers would be willing to work less hard for a given money wage. See, for example, the discussion in Gruber (1997). In Russia, payroll tax contributions are split into one portion going to the general pension fund to cover the basic pension (which partially depends on tenure and salary at retiring time) and the other portion goes into a personal account, which can be put under a management of a few government-approved companies. While the first portion was introduced in 2001, the personal accounts portion was introduced only a couple of years ago. Overall, in Russia, benefits depend on contributions, although the first channel is more indirect (you receive some minimum even if never gainfully employed). Despite the fact, as we see below, that the changes in payroll taxes in the 2001 reform were small by comparison to those in the personal income tax, the potential tax-benefit link means that labor supply may have shifted somewhat to the left leading to higher wages and less employment than in the case where only the demand for labor shifts to the right as a consequence of the income tax and payroll tax reductions. This may introduce an upward bias in the estimated changes in net wages measuring tax incidence.

[5] See, for example, Hausman (1985), McCurdy et al. (1989), and McCurdy (1992). Fullerton and Metcalf (2002) provide a recent review of the evidence. For more recent evidence regarding labor supply elasticities see, for example, Brittain (1971) and Gruber (1997). Fullerton and Metcalf (2002) also provide a recent review of the evidence. There is some limited empirical evidence on specific types of labor such as women and urban labor, for example, see Gong and von Soest (2001) and Dessing (2002).

earners. However, there is a paucity of empirical analysis of this important issue from transitional and developing countries. This is problematic because labor markets in developing and transition countries, particularly Russia, may not conform in important ways to those in many developed countries. For example, Russia has a large informal sector and a resulting low rate of tax compliance; oligopolistic labor markets due to the extremely high concentration of industry, at least by developed country standards; weak rule of law which makes it difficult to enforce labor contracts; and there are a number of rigidities in the labor market. These characteristics of Russia's economy make it difficult to apply evidence gleaned from developed country experience to predict the economic incidence of income taxes in transition economies. This is an important gap in our understanding of labor markets which also has important implications for tax policy design.

3. Institutional Background on Russia's Flat Tax Reform

After many years of unsuccessfully trying to mimic personal income taxation in Western Europe and North America, and in the aftermath of the 1998 ruble crisis, the Russian government decided to break new ground by adopting a rather bold tax reform in 2001. Specifically, the reform created a single rate of 13 percent on all income above a personal deduction of 4,800 rubles (approximately US $166), replacing a combined federal and regional income tax rate structure ranging from 12 to 35 percent with a variety of exemptions and deductions, primarily for social purposes.[6] The reform also introduced changes to the payroll tax system. The payroll tax rate was lowered from a combined (employer plus employee) flat rate of 39.5 percent to an employer rate schedule declining with wage income from a maximum rate of 35.6 percent on wage income between 4,800 rubles and 100,000 rubles (approximately US $3,471) and eventually declining to 2 percent on wage income greater than 600,000 rubles

[6] In 2001, the IMF reports that income per capita was US $3,078: http://www.imf.org/external/pubs/ft/scr/2005/cr05378.pdf. On November 11, 2005, the U.S. dollar was equal to 28.810 Russian rubles. This exchange rate is used throughout this paper to convert Russian rubles into U.S. dollars.

(approximately US $20,826) from 2002 forward.[7] Table 1 summarizes the main features of Russia's 2001 tax reforms, and Table 2 does the same for the 2001 payroll tax reforms.

In Russia, like in many other countries, employers are required to pay all personal income and payroll taxes to the tax authorities through withholding of taxes on employee wages. In contrast to many countries, labor market practices in Russia typically involve negotiations between employers and employees in terms of net-of-tax wages, and the employer only reports the net-of-tax wage to the employee.[8] As a result, employees may not be as aware of the taxes being paid on their labor income, or even if they are being paid at all.[9] Nevertheless, employers naturally must be cognizant of the total wage bill or gross-of-tax wage in making decisions about their demand for labor.

4. Empirical Strategy

Our strategy is to estimate the incidence of Russia's 2001 tax reform by analyzing the impact of the tax change on net-of-tax wages using data drawn from the RLMS and a difference-in-differences empirical approach. The RLMS data are ideal for this purpose because these data report net-of-tax wages of individuals in contrast to many household surveys in other countries which typically report gross wages. The RMLS is also a panel data set; thus we can follow individuals and families over time, including pre- and post-Russia's 2001 tax reform.

4.1 Some estimation issues

The first estimation issue involves the imputation of effective marginal tax rates in low tax compliance contexts and the general difficulty of finding a suitable instrument for potentially endogenous marginal tax rates. Our estimation strategy follows that of Feldstein (1995) and Eissa and Liebman (1996) who, among others, use a difference-in-differences approach to gauge the effect of major tax reforms on individual behavior.

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[7] Under the reform, the payroll tax rates were set to decrease with income from 35.6 percent to 5 percent in 2001, and down to 2 percent from 2002 thereon.

[8] The authors have direct experience with Russia's labor markets.

[9] Since the 2001 reform, there is no need for individuals to report their income unless they have some income that has not been declared by their employers. Previously it was the responsibility of individuals to collect withholding documents (similar to W-2 forms in the U.S.) from their employers to report to the tax authorities their combined sources of income. However, compliance with the latter requirement was quite low.

To implement the difference-in-differences approach, we require a sub-sample of individuals unaffected by the tax reform and a sub-sample affected by the reform. Russia's 2001 tax reform satisfies this requirement. As a result of these reforms, the combined personal income and payroll marginal tax rates on labor income for those with incomes over 600,000 rubles falls from 69.5 percent to 18 percent in 2001 and 15 percent after 2002, which is over a four-fold reduction in statutory marginal tax rates. For those with wage incomes between 100,000 and 600,000 rubles, the reduction in combined marginal tax rates is nearly two-fold. In contrast, the lowest income group – those with wage income between 4,800 rubles and 100,000 rubles saw a rate reduction of about 25 percent. This differential tax treatment allows us to implement a difference-in-differences approach to gauge the effect of Russia's 2001 tax reform on net-of-tax wage income for high income individuals relative to lower income individuals.

In the present context, the advantage of the difference-in-differences methodology is that it allows us to address two issues involving the effective marginal tax rates. First, it is very difficult to impute effective marginal tax rates on an individual by individual basis due to the low levels of voluntary tax compliance in the Russia. In particular, it is not clear whether the amount of income reported in the RLMS is fully reported for tax purposes. A major advantage of the difference-in-differences approach is that we only need to identify individuals subject those in the 4,800 to 100,000 ruble income range. As discussed in the previous paragraph, those in this income range experienced a very modest decrease in tax rates due to the reform than those in the other two tax brackets. We use this differential tax treatment to identify the effect of the tax reform on net-of-tax wages. While the low rate of tax compliance in Russia makes identifying those in the 4,800 to 100,000 ruble income range somewhat problematic, it is not nearly as difficult as trying to impute effective marginal tax rates for each individual.

Second, the difference-in-differences methodology also gets around the difficulty of finding a suitable instrument for potentially endogenous marginal tax rates. In the case of a major tax reform, the change in marginal tax rates is due to exogenous changes in tax law rather than changes in individual behavior.

A third issue is the time period required for markets to adjust to the tax reform so that the full incidence impact of the reforms can be observed. Of course, the speed of the

adjustment process depends on the flexibility and responsiveness of labor markets, which is of independent interest. Since we do not have information on these issues, in order to account for a possible phased response to the reduction in marginal tax rates, we estimate a differences-in-differences model on the same set of individuals for the following pairs of years: 2000-2001, 2000-2002, 2000-2003, and 2000-2004.

4.2 Empirical Model

To estimate the effect of Russia's 2001 tax reform on real net-of-tax wages, we estimate the following difference-in-differences equation:

$$\textit{Real Net-of-Tax Wage}_{it} = \alpha_0 + \alpha_1[\textit{Dummy for Year not equal to 2000}]_{it} + \alpha_2[\textit{Dummy for High Income}]_{it} + \alpha_3[\textit{(Dummy for Year not equal to 2000) x (Dummy for High Income)}]_{it} + \beta X_i + \varepsilon_{it}.$$

Where the subscript i indicates the individual, t indicates the year, X_i is a vector of demographic variables (gender, age, profession, and region) thought to influence earnings. Otherwise, the dependent and independent variables are self-explanatory.

The coefficient α_3, henceforth referred to as the difference-in-differences coefficient, measures the effect of the marginal tax rate reduction on net wages from the primary job of high-income individuals relative to that of low income individuals. Using the 2000-2001 panel, for example, the estimate of this coefficient equals the average change in the net-of-tax wage of high income individuals relative to that of low income individuals in 2001. The regression controls for common economic shocks, such as changing macroeconomic conditions, by isolating the differential effect of the tax reform on the treatment group, which are the high income individuals in our sample.

4.3 Data

As previously noted, the data used in this analysis are drawn from the RLMS. This survey has been conducted annually from 1992 through 2004. The RLMS survey is not a pure longitudinal survey; rather, it is an addressed-based survey. In those cases where a family that participates in one round or survey year does not live in the same dwelling during a subsequent round, the new family living in that dwelling is included in the survey. In this case, the family is treated as a 'new' family because it is their first year of participation in the survey. A family that has participated in at least two consecutive

surveys is categorized as an 'old' family. The RLMS provides information on the net-of-tax wages of each individual family member, and Russia's personal income tax applies to individuals. Thus, the RLMS data are ideal for measuring the effect of Russia's 2001 tax reform on net-of-tax wages. The data used in this analysis cover the periods 2000 to 2004. In each of these five years, the survey is conducted from September to December; this allows us to control for any seasonality in employment or compensation.

The RLMS data consist of 9,074 observations in 2000. We eliminate individuals that would result in unobserved data, the self-employed, and individuals that do not appear in every year from 2000 to 2004. We proceed below by describing the construction of the variables used in this analysis.

4.4 Construction of the Variables

The first step is the construction of the average monthly net-of-tax wage income from the primary job. This can be done on the basis of individual responses to two related but distinct questions in the RMLS.

The first question asks: "*How much money in the last 30 days did you receive from your primary job after taxes?*" The second question asks: "*In the last 12 months, how much was your average monthly wage after taxes—whether it was paid to you on time or not?*"

In some cases, individuals answered one question with a non-zero response while answering the other with a zero response. There are some obvious reasons for this: (i) the first question does not explicitly ask about payments in wage arrears while the second does; (ii) the first question is focused on the most recent 30 days, the other over a 12-month period; (iii) the first question explicitly asks about monetary wages while the second may be interpreted to include in-kind payments.

From the perspective of establishing the incidence of the income tax, it is not obvious which of these two questions provides the most appropriate information on wages. Therefore, we estimate the net-of-tax wage equation using responses to each question for the set of non-zero observations (2,016 and 2,538 observations, respectively). We also estimate two separate equations for the sample reporting non-zero for both questions (1,600 observations).

Since we obtain average monthly net-of-tax wage income from the primary job based on individual responses to these two questions, we estimate annual net-of-tax wages by multiplying in both cases the average monthly wages from the primary job after taxes by 12. Therefore, the dependent variable in our regressions is real, annual net-of-tax wages from the primary job.

To construct the high income dummy variable, we require a measure of taxable income or gross wage income. We impute PIT and payroll taxes from annual, nominal net wages, by assuming full compliance with these taxes and by further assuming that the economic incidence of these taxes is completely on the employee.[10] As mentioned above, we also assume that the PIT and payroll taxes are paid entirely through withholding tax by the employer, meaning that income from other sources play no role in determining the individual's effective marginal tax rate on wage income from the primary job. Finally, our measure of annual net and gross wage income excludes the means-tested allowances paid to individuals by the federal government.

As previously noted, high income individuals are the treatment group in this analysis, and the low income individuals are the control group. The treatment group consists of individuals with annual total nominal taxable wage income from the primary job that falls in the tax brackets experiencing the largest marginal tax rate reductions from the 2001 tax reform, or those with nominal, annual gross wage income from the primary job greater than 50,000 rubles (approximately US $1,736). The control group consists of those individuals that do not experience as large a marginal tax rate reduction from the reform, or those with taxable income less than 50,000 rubles. Descriptive statistics for these variables are reported in Table 3.[11]

[10] Note that by doing this we do not undermine our empirical analysis that estimates the incidence. In the case of gross wages, we simply need a mechanism to determine the relative levels of gross income to define the treatment group. If the incidence of the tax is not fully borne by labor, then those individuals who are close to the income that defines the higher tax bracket may be defined in our sample as the treatment group when they are actually not. This affects very few observations in our sample.

[11] Table 3 is based on a sample of 2,538 observations. From 9,074 individuals in 2000, we exclude both self employed and unobserved net wage income (based on the second question); thus, we exclude 5,693 individuals. We also eliminate individuals that do not appear in every year from 2000 to 2004 or 2,112 individuals. The resulting sample consists of 1,269 individuals (2,538 observations for each 2-year panel)

5. Empirical Results

The empirical results for the net-of-tax wage income regressions based on the first question ("…how much money in the last 30 days did you receive?"), using data for the 1,600 observations with non-zero responses to both questions. The estimated coefficients and standard errors are reported in Table 4. The regression results using the larger sample, based on the first and second questions, are provided in Table 5.

Beginning with the results for the 2000-2001 panel, which are reported in the first column of Table 4, the estimate of the difference-in-differences coefficient (the coefficient on the high income x year dummy) is 1,389 (S.E. = 243), which is statistically significant at conventional levels and significant in economic terms. We estimate several specifications with and without a number of demographic variables that control for gender, age, profession, and region. The estimated difference-in-differences coefficient is little changed by the exclusion of these additional right-hand-side variables.

Importantly, the estimate of the difference-in-differences coefficient (high income x the year dummy) grows over time and remains significant over the entire period (columns 2 to 4 in Table 4). The difference-in-differences coefficient is 1,661 in 2000-2002 and increases to 2,810 in 2000-2003, and increases again to 3,771 in 2000-2004. The latter figure represents a more than 50 percent increase in net-of-tax wages. These findings are also robust to the exclusion of the demographic control variables. It is likely that the growth in the magnitude of the estimates for the difference-in-differences coefficient reflects a phased adjustment to the 2001 tax cut, due perhaps to labor market rigidities.

Alternative estimates for the difference-in-differences coefficient are reported in Table 5 using both questions and the full data samples, as opposed to the non-zero responses to both questions. In Table 5, we only report the estimate of greatest interest to this study: the difference-in-difference coefficient. These results are consistent with those in Table 4. At the very least, the results in Table 5 suggest that net-of-tax wages grow post tax reform, from a positive but small and statistically insignificant level in 2001-2002 to an amount equivalent to about 30 percent of net-of-tax wages by 2004. However, these results, not surprisingly, also suggest that the measurement of the final effect is sensitive to how respondents interpreted the two survey questions.

Overall, the results of our analysis suggest that much of the reduction in taxes at the high end is reflected in higher net-of-tax wages, meaning that the incidence of the income and payroll taxes appear to be borne in large part by labor. Recall that the wedge between the 2000 marginal tax rate and the post-reform rate is approximately 50 percentage points (68.5 percent pre-reform and 18 percent post-reform). The average pre-reform real net-of-tax wage income was 3,877 rubles (US $134.57), implying a gross real net wage of 5,659 rubles (US $196.42) at the margin. The results for 2001-2003 and 2001-2004 bring the post-reform real net-of-tax wage income to a level of 6,687 (US $232.11) and 7,648 rubles (US $265.46), respectively, based on the results of Table 4, or a minimum of 5,438 (US $188.75) and 5,893 rubles (US $204.55), respectively, for the smallest coefficients, based on the lower set of coefficients in Table 5 for the 12 month question. In other words, the large reduction in taxes faced by high income earners yielded increases in net-of-tax wages commensurate with the level of tax. Therefore, as in previous empirical studies of developed countries, direct taxes on labor income in the Russian Federation are largely borne by labor.

Although, as we have noted, the estimates of the difference-in-differences coefficient are little affected by the inclusion or exclusion of the demographic control variables, their sign and significance are of independent interest. Being female, all other things held constant, has a negative and statistically significant effect at conventional levels. Interestingly, the magnitude of this effect seems to grow over time. As one also would expect, work experience, as measured by age, has a positive and statistically significant effect at conventional levels. The effect of experience on wage income seems to be growing over time, as well. As evidenced by the negative sign on the estimated coefficient of age-squared, the effect of experience is diminishing with additional years of experience. However, the effect of additional years of experience does not have a negative effect on wages in the relevant range; the estimated coefficients of age and age-squared obtained from the 2000-2001 panel suggests that additional years of experience does not become negative until after the age of 76, in a country where the life expectancy for men is under 60.

All these findings reported above are qualitatively similar to findings in previous studies for other countries. However, it is interesting that being a member of an ethnic

minority (non-Russian) does not seem to have a statistically significant effect on wage income, except in the 2000-2004 panel where it is statistically significant at conventional levels. This finding is in sharp contrast to the United States, where evidence shows that being a member of a racial minority, all other things held constant, has a negative effect on wage income.

6. Conclusions

In this study we analyze the incidence of Russia's 2001 flat rate tax reform by looking at the impact of the reform on net-of-tax wage income from the individual's primary job. Abstracting from a variety of institutional considerations, the theory of tax incidence would predict that taxes on labor income are borne by labor and that, therefore, Russia's 2001 tax reform should have result in a commensurate increase in net-of-tax wages. The question is whether the many institutional characteristics of Russia's economy actually make it different from a full-fledged market economy.

In our empirical work we find that, indeed, the 2001 flat-rate tax reform resulted in a commensurate increase in net-of-tax wages, which allows us to conclude that taxes on labor income in Russia are largely borne by labor. This is evidence that Russia's economy has developed over the long decade of transition well functioning market economy features and institutions.

The evidence is also important for analyzing the impact of the current and future reforms in Russia. As we find evidence of inelastic supply of labor, we should not expect that this flat-rate income tax reform would yield direct increases in the number of hours worked, nor the output growth that would accompany such increases in labor supply. Instead, we would expect that, post-reform, increases in net-of-tax wages could fuel economic growth by increasing private savings and consumption. Although more speculative, increases in net-of-tax wages may induce people to work harder which also could have a positive effect on economic growth.

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Table 1: Personal Income Tax Rate Structure, by year

Calendar Year 2000		Calendar Year 2001	
Income brackets	Tax rate	Income brackets	Tax rate
Below 3,168 rubles (Below $110)	0 percent	Below 4,800 rubles (Below $167)	0 percent
Between 3,168 and 50,000 rubles (Between $110 and $1,736)	12 percent	Greater than 4,800 rubles (Greater than $167)	13 percent
Between 50,000 and 150,000 rubles (Between $1,736 and $5,207)	20 percent		
More than 150,000 rubles (More than $5,207)	30 percent		

Table 2: Payroll Tax Rate Structure, by year

Calendar Year 2000			Calendar Year 2001	
Legal Incidence	Tax rate	Income Range	Income Range	Tax rate
Employee	1 percent	First ruble	Not applicable	Not applicable
Employer	38.5 percent	First ruble	< 4,800 rubles ($167)	35.6 percent
			100,000 - 300,000 rubles ($3,471 - $10,413)	20 percent
			300,000 - 600,000 rubles ($3,471 - $20,826)	10 percent
			> 600,000 rubles ($20,826)	2 percent (5 percent in 2001 only)

Table 3: Descriptive Statistics: Mean and Standard Deviations

Variables	2000/2001	2000/2002	2000/2003	2000/2004
Net-wage from primary job of low income	888.76 (1836.38)	1,127.62 (2056.25)	1,303.40 (3372.68)	1,313.26 (4,040.52)
Net-wage from primary job of high income	3,877.25 (1,037.94)	4,532.03 (1,780.22)	6,112.58 (2,700.73)	6,828.11 (3,309.78)
Occupation				
Legislators, Senior Managers, Officials	0.056 (0.2307)	0.054 (0.2253)	0.044 (0.2060)	0.044 (0.2060)
Professionals	0.237 (0.4255)	0.233 (0.4227)	0.241 (0.4277)	0.242 (0.4284)
Technicians and Associate Professionals	0.180 (0.3839)	0.188 (0.3908)	0.187 (0.3902)	0.188 (0.3908)
Clerks	0.061 (0.2390)	0.061 (0.2390)	0.064 (0.2441)	0.057 (0.2323)
Service Workers	0.074 (0.2618)	0.073 (0.2599)	0.075 (0.2631)	0.075 (0.2638)
Skilled Agricultural and Fishery Workers	0.002 (0.0400)	0.002 (0.0489)	0.003 (0.0565)	0.003 (0.0529)
Craft and Related Trades	0.128 (0.3341)	0.125 (0.3310)	0.124 (0.3301)	0.125 (0.3305)
Plant and Machine Operators and Assemblers	0.166 (0.3722)	0.174 (0.3795)	0.170 (0.3757)	0.172 (0.3775)
Elementary (unskilled) Operators	0.090 (0.2862)	0.085 (0.2792)	0.086 (0.2810)	0.088 (0.2834)
Army	0.006 (0.0798)	0.005 (0.0691)	0.005 (0.0719)	0.006 (0.0746)
Ethnicity				
Russian	0.435 (0.4958)	0.435 (0.4958)	0.435 (0.4958)	0.435 (0.4958)
Non-Russian	0.064 (0.2448)	0.064 (0.2448)	0.064 (0.2448)	0.064 (0.2448)
Gender				
Male	0.396 (0.4892)	0.396 (0.4892)	0.396 (0.4892)	0.396 (0.4892)
Female	0.604 (0.4892)	0.604 (0.4892)	0.604 (0.4892)	0.604 (0.4892)
Region				
Moscow and ST Petersburg	0.042 (0.1997)	0.042 (0.1997)	0.042 (0.1997)	0.042 (0.1997)
Northern and North Western	0.090 (0.2857)	0.090 (0.2857)	0.090 (0.2857)	0.090 (0.2857)
Central and Central Black-Earth	0.224 (0.4170)	0.224 (0.4170)	0.224 (0.4170)	0.224 (0.4170)
Volga-Vaytsky and Volga Basin	0.228 (0.4196)	0.228 (0.4196)	0.228 (0.4196)	0.228 (0.4196)
North Caucasian	0.095 (0.2935)	0.095 (0.2935)	0.095 (0.2935)	0.095 (0.2935)
Ural	0.166 (0.3725)	0.166 (0.3725)	0.166 (0.3725)	0.166 (0.3725)
Western Siberian	0.071 (0.2572)	0.071 (0.2572)	0.071 (0.2572)	0.071 (0.2572)
Eastern Siberian and Far Eastern	0.084 (0.2774)	0.084 (0.2774)	0.084 (0.2774)	0.084 (0.2774)
Observations	2,538	2,538	2,538	2,538

Note: Standard Deviations are reported in parentheses.

Table 4: Net-of-Tax Wage Regressions. Non-zero responses to both measures of net-of -tax wages

Variable	2000-01	2000-02	2000-03	2000-04
Constant	502.08 (212.75)*	168.26 (287.13)	109.33 (506.27)	-5.73 (682.01)
Dummy year	439.42 (26.71)**	994.73 (34.62)**	1,596.38 (49.61)**	1,919.215 (66.693)**
Dummy high income	1,457.42 (74.22)**	1,423.79 (74.56)**	1,311.38 (89.72)**	1,123.79 (112.98)**
High income x Year dummy	1,389.27 (243.07)**	1,661.15 (164.73)**	2,810.55 (192.40)**	3,771.61 (242.57)**
Age	35.57 (10.76)**	44.41 (12.37)**	81.80 (19.86)**	85.685 (29.29)**
Age-squared	-0.45 (0.13)**	-0.59 (0.15)**	-1.05 (0.24)**	-1.079 (0.35)**
Legislators, senior managers, officials	189.84 (179.23)	805.45 (233.52)**	1,414.16 (428.30)**	2,282.39 (622.83)**
Professionals	58.17 (136.73)	290.52 (74.97)**	385.52 (117.49)**	845.84 (164.49)**
Technicians and associate professionals	70.15 (144.56)	295.46 (92.33)**	454.39 (126.17)**	787.53 (191.87)**
Clerks	17.08 (140.46)	141.72 (102.65)	420.62 (154.52)**	968.88 (242.34)**
Service workers and market workers	-146.71 (139.28)	97.13 (88.43)	121.93 (129.88)	118.75 (168.42)
Craft and related trades	7.27 (178.81)	170.43 (104.38)	211.90 (149.81)	531.21 (194.10)**
Machine operators and assemblers	52.53 (164.42)	167.17 (92.80)	276.55 (122.68)*	687.61 (229.09)**
Northern and North Western	-250.44 (184.83)	-169.87 (215.81)	-740.08 (419.10)	-438.05 (593.04)
Central and Central Black-Earth	-347.68 (146.17)*	-303.42 (176.29)	-980.61 (386.64)*	-1,083.44 (440.61)*
Volga-Vaytski and Volga Basin	-533.43 (132.69)**	-468.14 (174.18)**	-1,258.71 (385.30)**	-1,471.94 (439.03)**
North Caucasian	-527.14 (133.95)**	-475.85 (176.29)**	-1,190.39 (394.22)**	-1,333.95 (476.85)**
Urals	-531.36 (137.41)**	-404.37 (181.16)*	-1,276.12 (382.56)**	-1,499.10 (431.31)**
Western Siberian	-484.30 (149.92)**	-562.48 (181.13)**	-1,378.94 (398.28)**	-1,753.80 (450.39)**
Eastern Siberian and Far Eastern	-537.87 (142.27)**	-408.56 (207.26)*	-1,126.47 (405.14)**	-1,066.37 (486.01)*
Non Russian (ethnicity)	-44.21 (66.42)	-48.58 (65.88)	-52.93 (73.34)	-72.29 (108.77)
Female	-192.35 (56.72)**	-234.60 (73.03)**	-298.14 (109.56)**	-597.83 (177.53)**
Observations	1,600	1,600	1,600	1,600
R-squared	0.53	0.65	0.66	0.59

Robust standard errors are in parentheses.
Note: * Significance level is 5 percent; ** Significance level is 1 percent.

Table 5: Net-of-Tax Wage Regressions: Alternative Wage Questions and Samples

Variable	**2000-01**	**2000-02**	**2000-03**	**2000-04**
Sample 1[1]	Question 1: Money Received in Last 30 Days			
High Income x Year Dummy	1,389.27 (243.07)**	1,662.15 (164.73)**	2,810.55 (192.40)**	3,771.61 (242.57)**
Number of Observations	1,600	1,600	1,600	1,600
R-squared	0.53	0.65	0.66	0.59
Sample 2[2]				
High Income x Year Dummy	1,243.71 (191.55)**	1,670.91 (147.87)**	2,888.93 (174.69)**	3,752.3 (211.24)**
Number of Observations	2,016	2,016	2,016	2,016
R-squared	0.54	0.65	0.65	0.60
Sample 1[1]	Question 2: Average monthly wage in last 12 months			
High Income x Year Dummy	845.95 (124.33)**	899.83 (117.97)**	1,777.94 (148.78)**	2,434.13 (179.66)**
Observations	1,600	1,600	1,600	1,600
R-squared	0.59	0.67	0.67	0.65
Sample 3[3]				
High Income x Year Dummy	145.4 (221.6)	377.4 (197.6)	1,687.7 (232.5)**	2,236.6 (245.5)**
Number of Observations	2,538	2,538	2,538	2,538
R-squared	0.63	0.68	0.66	0.64

Robust standard errors are in parentheses.
Note: * Significance level is 5 percent; ** Significance level is 1 percent.
[1] Sample of 1,600 observations with non-zero responses to both wage questions.
[2] Sample of 2,016 observations with non-zero responses to question 1.
[3] Sample of 2,538 observations with non-zero responses to question 2.