Geographic Wage Inequality in Russia: the Role of Workforce Heterogeneity and Different Returns to Workers' Characteristics

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Abstract

This work explores spatial wage inequality in the Russian Federation and decomposes the interregional wage differences into the effects of workforce composition and returns to workers' characteristics in order to find the main determinants of geographic earnings inequality at individual level. Applying the Oaxaca-Blinder decomposition to the Russian Longitudinal Monitoring Survey (RLMS) data from 1994-2004 (rounds 5, 9, and 13), I find that although workforce characteristics vary noticeably across the eight macro-regions of Russia, almost all the difference in real wages is due to different pricing of those characteristics and even more importantly due to the region specific fixed effects. Price-quantity correlation analysis reveals that returns to college education, work experience, and professional jobs are consistently larger in the regions where these attributes are scarcer, while returns to other characteristics exhibit time-varying patterns. Policy makers who aim to reduce the regional distortions in real earnings should consider taking a systemic approach.

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Introduction

Wage inequality has been an important issue in the Western countries for long (e.g. Wolfson 1958, McInnis 1966, Scully 1969). Following the transition from a centrally planned to a market based economy that commenced in early 1990's, Russia, which arguably used to be one of the most egalitarian societies in the world under socialism, experienced a tremendous rise in the dispersion of labor income (Brainerd 1998, Lukyanova 2006) that placed it in line with, if not ahead of, the USA. Different variance decompositions reveal that the major sources of the wage inequality in Russia are gender the gap and regional differences in income (Lukyanova 2006). While the former has been studied extensively (Brainerd 2000, Ogloblin 1999 etc.), the latter despite being widely recognized remains measured, but not analyzed (Lukyanova 2006 and my own research of existing literature).

Yet, geographic wage inequality is a matter of concern for governments of most countries and usually attracts a lot of public attention (Pereira and Galego 2007). High levels of inequality may cause such problems as depopulation and degradation of certain regions, interregional tensions, political instability etc. Therefore, politicians tend to rectify this problem by appropriate policy responses. To plan and implement such responses it is instrumental to understand the reasons for the interregional inequality.

According to the standard economic theories these reasons can be the following. The first is the long-run equilibrium of the supply and demand for different kinds of labor across regions (Goldfarb and Yezer 1976). Ceteris paribus similar regions with different demand for labor (e.g. due to industry structure) or different supply of it (e.g. due to demographic reasons) should have different levels of labor income according to this theory. The second reason for regional inequality is a temporary disequilibrium caused by frictions and imperfect worker mobility across locations and occupations (skill adjustment) (Pereira and Galego 2007). For example, if a region experiences a crisis or a structural change, the supply of labor

cannot be adjusted immediately that causes decreases in the labor income. The third explanation of geographic wage inequality is related to the compensation for the quality (amenities) and cost of living in different places (Roback 1982). To attract people to work in areas with a harsh climate or heavy pollution it is necessary to compensate them accordingly that makes such areas more affluent than the otherwise identical regions with a better life quality. Likewise, it is necessary to compensate workers for the cost of living in large cities or other expensive locations that make these locations nominally richer. The fourth explanation deals with different institutional arrangements (e.g. minimum wage) in different jurisdictions of a federation (Pereira and Galego 2007) or different levels of unionism in different regions. The effect of the minimum wage is straightforward and regions with a higher share of unionized workers tend to have higher average wages (ceteris paribus) as long as unions are effective in bargaining with employers.

Within the supply-demand framework, it is particularly interesting to see if spatial differences in wages are driven by different quality of workforce or different returns to workers' characteristics caused by different demand for them. Understanding of this issue can suggest a direct policy response such as adjusting the quality of workforce or facilitating its mobility or fighting discrimination (e.g. gender gap). Consequently, a plethora of studies (e.g. Sahling and Smith 1983, Garcia and Molina 2002, Pereira and Galego 2007 etc.) have applied different decomposition techniques (most commonly Oaxaca-Blinder) to evaluate the role of the differences in the workers' qualities and returns to these qualities.

To the best of my knowledge, there has been no attempt to apply this analysis to study geographic wage inequality in the Russian Federation that has only been measured previously, but not analyzed further (Lukyanova 2006 and my own research of existing literature). Yet, for such a large and diverse country as Russia, this issue is very important. The purpose of this work is thus to estimate and decompose the regional (real) wage differentials across Russia's macro regions in order to evaluate the role of the workforce heterogeneity and differences in returns to workers' characteristics. Unlike most previous similar studies of other countries, this paper not only decomposes the wage differentials into price and quantity (quality) components, but also goes on to associate the workers' qualities pricing patterns with relative abundance/scarcity of these qualities. While a positive correlation between characteristics endowments may suggest a high demand for them in the region or positive externalities they may create, a negative correlation may suggest that the pricing patterns stem from the supply side forces.

The remaining part of the paper is organized as follows: Section 1 provides the background information about Russia's regions; Section 2 describes the data that I use; Section 3 elaborates on the methodology; Section 4 states the results of my analysis; and Section 5 suggests the policy implications.

1. Regions of the Russian Federation

Russia is the largest country in the world with a territory exceeding 17 million square kilometers (four times the size of the European Union (EU) after the 2007 accession) and a population of 142 million people (Goskomstat 2008). The Russian Federation comprises 83 federal subjects (oblasts, krais, republics, autonomous districts, and autonomous oblasts) that have local elective legislative bodies and a governor appointed by the president. These regions are very diverse: 21 of them are so-called ethnic republics that enjoy higher degree of autonomy and have a special status for the local indigenous ethnic minority; 14 regions are so-called federal donors meaning that they are able to collect more taxes than they need to cover their expenditures and pay the surplus to the federal budget and the remaining ones are subsidized from the center; the population of the federal subjects of Russia varies from 60

thousand in Chukotka to over 10 million in the Moscow City. Almost likewise vary the levels of welfare and average wages: from RUB 6,214 (\$270) or 41% of the national average in the Caucasian republic of Dagestan to RUB 43,172 (\$1,877) or 287% of the national average in sub-arctic gas-rich Yamalo-Nenetskiy District (Goskomstat 2008). Interestingly, while wages tend to be higher in the northern regions, life expectancy shows the opposite tendency that may reveal certain hedonic nature of wages – in particular, the shortest life expectancy at birth is observed in Koryakia (from 2007 part of Kamchatka Krai), where it is 47 years, and the longest life expectancy is in Dagestan, where it exceeds 70 years (Demoscope 2006).

Since May 2000, the area of Russia is divided into seven federal districts. The districts are not constituent members of the Russian Federation and they do not have their own government or legislature; what they have are presidential envoys (representatives plenipotentiary) who with their offices supervise the work of federal agencies (e.g. tax, customs, military) in the districts and coordinate interregional projects as well as report to the president on the performance of local governors that may affect their re-appointment. The federal districts are formed on the geographic basis and correspond to the economic macroregions of Russia (sometimes they comprise several economic macro-regions). The differences between the federal districts are much smaller than between individual regions, because the districts are much larger and extremes play a smaller role at this level. Therefore, federal districts are the most logical units for a regional analysis of Russia. However, the data that are available for this analysis (Russian Longitudinal Monitoring Survey, RLMS) are based on a questionnaire prepared long before the federal districts were formed and thus do not permit to trace these districts. Instead RLMS divides the country into eight macro-regions that are also formed on a geographic and economic basis and sometimes coincide with the federal districts (for comparison of RLMS macro-regions and the federal districts see Table 1

and Table 2 in the Tables Section). The boundaries of the RLMS regions can be seen on the map presented in Appendix D.

As I estimate and decompose geographic wage differentials at the level of the eight RLMS regions, it is important to provide detailed information about these regions so that to form a context for this study. In the following sub-section, I describe each region individually.

Key economic statistical indicators of the RLMS regions obtained from the online database of the Russian State Statistical Bureau (Goskomstat) are summarized in Table 3. Gross Regional Product (GRP) per capita (and its growth) and population figures refer to 2005 and the average wage (both nominal and at PPP) refer to 2008; this inconsistency is caused by the fragmented nature of the data provided by Goskomstat that does not contain all indicators for all regions for all years. The ethnic composition refers to 2005 and is derived from Wikipedia. Descriptions of the industry composition in the regions are obtained from the articles on the regions of Russia in Wikipedia (that in turn cites the offices of the representatives plenipotentiary in the federal districts) as well as from other open sources quoted where appropriate.

1.1. Capitals

This region comprises two federal cities of the Russian Federation – Moscow, the current capital, and St. Petersburg, the historical and, since 2007, judicial capital. Their joint population as of January 2008 is 15 million people, of whom 2/3 live in Moscow. The population of the region increased by 1 million people in 1995-2005 with the whole growth attributable to Moscow. Both cities are major political, cultural, and economic centers of the country. Federal government agencies, financial institutions, head offices of major companies are concentrated here in proportion of approximately 4 to 1 in favor of Moscow.

Except these sectors (i.e. government, financial intermediation, and company management), both cities have a lot of industrial production within municipal borders and

manufacturing plays an important (though much smaller than services) role in their economy. The share of manufacturing in the GRP of each city exceeds 20% and includes such industries as machinery, shipbuilding, metal works, chemical and light industry, manufacturing of electronics and devices, food production (both cities); car and truck manufacturing (Nissan, Honda, and Ford assembly lines), optics, brewery (St. Petersburg) (Wikipedia 2008).

Both capitals are more affluent than the rest of the country and together form the richest macro-region of the country with a GRP per capita of 260% of the national average that grows almost twice the national pace (11.9% vs. 6.4%) and an average nominal wage of 159% of the national average - 174% in Moscow and 125% in St. Petersburg. When adjusted for the price level, however, the wage in the Capitals Region is 123% of the national average.

Regarding the social conditions in the region, both cities have very low unemployment rates. Unfortunately, Goskomstat does not provide consistent unemployment rates in the ILO definition at regional level, but still from the fragmented data that are available it is clear that unemployment in the region is the lowest among the countries macro-regions.

1.2. Central Region

The Central Region in the RLMS definition coincides with the Central Federal District with exception of the Moscow city around which it is located. The region comprises 17 federal subjects and has a population of 27 million (down from 29 million in 1995), more than any other RLMS region has. The region is more urbanized than the country on the whole with about 79% of residents living and working in cities (vs. 73% in the whole country) (Goskomstat 2002).

The Central Region is subdivided into two economic areas: "black-soil" and "nonblack-soil". In the former, the most important industries are iron ore mining and processing (Novolipetsk Steel Factory, listed on the London Stock Exchange, is the world leader in slab and grain-oriented steel and one of the largest producers of steel in Europe) and agriculture. And in the latter, such sectors as machinery, light industry, and food processing are dominant.

The level of GRP per capita is the second lowest among Russia's macro-regions – just 65% of the national average and it grows in line with the whole economy of Russia – in 2005 it grew by 5.8% just four decimal percentage points below the real growth of the Russian economy. The wage level is 83% of the country's average (92% when adjusted for the cost of living). Wages vary from about 60% of the national average in Tambov Oblast to some 120% in the Moscow Oblast (if Moscow Oblast is excluded, then the upper edge is 80% in Belgorod and Yaroslavl). Interestingly, the relative wage level in the region uniformly exceeds the relative level of GRP that is a consequence of the fact that wages are more condensed and also that they are affected by the nearby Moscow City, which is an option for many workers in the region. This proximity also affects unemployment that is lower here than nationwide (Goskomstat 2008).

1.3. Northern (Northwestern) Region

This region covers the northern part of European Russia (see Appendix D) with the exception of the St. Petersburg City and with a population of 9 million people is the least populated macro-region in the RLMS definition. Between 1995 and 2005 the number of residents in the North decreased by 10%, which is the most severe depopulation in the country - total population in this time decreased by 3.3%. The region comprises 10 federal subjects, of which three are ethnic; yet minorities constitute only 14% of the population compared to 21% nationwide.

The region is rich in natural resources – oil and gas, coal, bauxites, ore as well as wood. Extraction of resources, wood cutting and production of paper are major industries here along with metal welding, manufacturing of machinery, ship building (especially military) and ports on the Baltic, Barents, and White Sea coasts. Due to cold weather and infertile soils,

agriculture is scarce and the region depends on food supplies from other regions as well as imports.

The region is more affluent than the country on average – its GRP per capita is 105% of the national average and generally grows in line with it – in 2005 it grew by 5.8% just four decimal percentage points below the real growth of the Russian economy. The wage level here is comparable to the national average (102% of it) in nominal terms and is 12% below it when adjusted for the cost of living. The differences in income are striking here – while the nominal wage level in Pskov Oblast is only 64% of the national average, it reaches 250% of the national average in sub-arctic Nenets District. The explanation for the gap lies in the distribution of natural resources in the region (strongly biased towards the Arctic Circle) and in the so called "northern coefficients", i.e. higher minimum wages in the northernmost oblasts and as well as higher salaries in the state sector that also affect earnings in the private sector (as a side option). Judging by the Goskomstat (indirect) indicators, unemployment in the region is somewhat higher than in the country on average.

1.4. Volga Region

This region is located in the eastern part of European Russia along the Volga River in its middle and lower flow (see Appendix D). The region comprises 12 federal subjects, of which six are ethnic republics, and its population is 24.5 million (5% down since 1995), of which 32% are minorities – by half more than nationwide.

Some parts of the region (particularly Tatarstan) are rich in oil and refining and petrochemicals are a major industry here processing not only local oil, but also a large part of the oil from Siberia. Another important industry is car manufacturing – the city of Togliatti is home to the largest vehicle factory in Russia VAZ producing over 750 thousand Lada cars per year (VAZ 2007), in Nizhniy Novgorod the second largest producer of automobiles GAZ is

located, and in Kazan KAMAZ trucks are assembled. Other dominant industries are food production, agriculture, and fishing.

The level of GRP per capita in the region is 73% of the national average and it grows slower than the Russian economy on the whole – in 2005 it grew only by 4%, 2 percentage points below the national level. One of the reasons for the slow growth is that Russian vehicle producers are uncompetitive and for the last ten years they have been struggling to survive mainly through lobbying restrictions on cars imports. The wage level here is similar to the GRP level – 75% of the national average in nominal terms, but some 86% when adjusted for the price level. The dispersion of wages within the region is rather small – from 59% of the national average in Mari El to 86% in Tatarstan. The level of unemployment is in line with the rest of the country.

1.5. Caucasus (Southern) Region

This region occupies the southern part of European Russia and includes the northern part of the Caucasus range and exactly coincides with the Southern Federal District. The south of Russia is very different from the rest of the country. First of all, this is the only region whose population exhibits a natural increase – despite massive outwards migration it rose by 2.4% between 1995 and 2005 and reached almost 23 million people, of whom over 35% are ethnic minorities. Of the region's 13 federal subjects eight are ethnic republics. Secondly, since 1991 it experienced two wars and several waves of large scale terrorist attacks that all together claimed over 100 thousand lives, left several cities in ruins, hindered oil transit from Azerbaijan, and completely discouraged foreign investment into the region (Wikipedia 2008). Consequently, this region is the poorest and has the worst social problems in Russia including high unemployment, crime and violence, corruption and political instability. This does not apply to all parts of the region. Volgograd, Astrakhan, Rostov Oblasts and Krasnodar Krai have a profile similar to the nearby provinces of the Central and Volga Regions.

The northern and eastern parts of the region have fertile soils and agriculture is developed there. Actually Krasnodar Krai produces over 20% of all grain in Russia and also is the only place in the country where local wine and tea are produced commercially. The share of rural population in the Caucasus Region is the highest and exceeds one third. Other important sectors here are manufacturing of agricultural vehicles and equipment, cars (Daewoo assembly line in Rostov), construction materials (bricks and cement), harvesting precious woods, fishing, and sea-side and mountain tourism. Sochi, the only place in Russia located in the subtropics and a popular national summer tourist destination, hosts the 2014 Winter Olympics.

The GRP per capita in the region is only 46% of the national average and since mid-2000s grows at approximately the same pace – it grew by 6.8% in 2005, 0.4 percentage points faster than the Russian economy on the whole. The nominal wage level is only 67% of the national average (77% when adjusted for the cost of living). Particularly poor are the republics of Chechnya, Dagestan, and Ingushetia, whose GRP per capita is about 20% of the national average. The wages in Chechnya are 68% of the national average though, because the republic receives large subsidies from Moscow and companies and state agencies pay premia for risk here. Dagestan is more disadvantaged in this respect as its average wage better corresponds to its GRP and is only 41% of the national average. The richest part of the region is Krasnodar Krai where the average nominal wage reaches 76% of the national level.

1.6. Urals

This region covers the middle and southern part of the Urals mountain range. It comprises five federal subjects (four oblasts and one ethnic republic of Bashkorstan) and has a population of 15 million, 3.5% down since 1995. Ethnic minorities constitute 17% of the

population. Over 80% of the residents of Urals live and work in urban areas (Goskomstat 2002), more than in any other macro-region except the Capitals.

The Urals Mountains are rich in mineral resources especially metals and gems (emeralds) and metal works is the most important industry in the region along with heavy machinery (Uralmash) and manufacturing of heavy weapons (tanks, missiles, etc.) and tractors. Chemical industry and production of construction materials are also important here.

The level of GRP per capita in the region is 78% of the national average and in 2005 it grew by 7.8%, 1.4 percentage points higher than the whole economy did. The wage level is 87% nominally and 97% adjusted for the cost of living; the highest nominal wage is observed in Yekaterinburg Oblast (103%) and the lowest – in Kurgan Oblast (67%). Unemployment rate is similar to the one nationwide.

1.7. West Siberia

This macro-region comprises 9 federal subjects between the Urals Mountains in the west and the Yenisey basin and Sayany Range in the east. The population of the region is 14.6 million people, 2.8% down from 1995. Ethnic minorities form about 13% of the population.

The region has the largest oil and gas deposits in Russia that are concentrated in the Khanty-Mansiysk and Yamalo-Nenets Districts. All major oil companies including Rosneft, Sibneft, TNK-BP, and Lukoil extract oil here; Gazprom, the largest producer of gas in the world gets most of its supplies here. Refining and petrochemicals are major industries in West Siberia concentrated in Tomsk and Omsk Oblasts. Other dominant sectors are metal works, machinery, electrical power (hydro power plants on Siberian rivers), research and development in Novosibirsk, coal mining in Kemerovo Oblast, agriculture and production of food in Altai Krai.

The level of GRP is 181% of the national average (primarily due to oil and gas), but it grows slowly – in 2005 it rose only by 3.5%, about half of the national pace. The main reason

for such a sluggish real growth lies in the stagnation of physical volumes of oil extraction – the revenues of most Russian oil companies have been rising primarily due to skyrocketing prices, but not increases of extraction, which hardly grew in the recent years due to obsolete equipment and insufficient geological works (EIA 2008). The wage level in the region is 109% of the national average nominally and 103% when adjusted for the cost of living. The highest GRP and wages (over 200% of the national average) are observed in the sparsely populated oil and gas rich Khanty-Mansiysk and Yamalo-Nenets Districts and the lowest in the rural Altai Krai (less than 60% of the national average for both indicators).

The region has higher than average level of unemployment that is concentrated in Kemerovo Oblast, whose economy is based on largely (though far not always) unprofitable coal mining. The problems of this oblast are not limited to high unemployment, but also include massive wage arrears that persist since 1990s and affect even profitable coal mines (Wikipedia 2008).

1.8. East (East Siberia and Far East)

This is the largest macro-region of the Russian Federation occupying an area larger than the one of the European Union after the accession of Bulgaria and Romania and comprising 15 federal subjects including six ethnic entities with a total population of 15 million people, 9.3% down since 1995 that is a result of both strong natural decline and outwards migration especially from the northern remote areas which experienced severe disruptions of food and fuel supplies in the 1990s. The share of ethnic minorities is 18%.

The major industries in the region are fishing - more than 4/5 of Russia's fishing fleet, one of the five largest fishing fleets in the world, is based on the Pacific (Fishcom 2008); oil and gas in Sakhalin; diamonds in Yakutia - ALROSA, based in Mirnyi, is the second largest supplier of diamonds after De Beers producing 25% of world's diamonds (Wikipedia 2008); gold, platinum, nickel, bauxites, and other metals in the northern part of the region; electricity (hydro power plants on Siberian rivers); wood cutting and logging in taiga.

Despite abundance of natural resources, the GRP per capita in the region is 69.5% of the national average and it grows slower than the Russian economy on the whole – in 2005 real growth was 4.8%, 2.4 percentage points below the national rate. The wage level is 108% of the national average nominally, but only 87% when adjusted for the cost of living reflecting the dependence of the region on imports of food and fuel and high transportation costs. The highest nominal wages are observed in Roman Abramovich governed Chukotka – 216% of the national average, and the lowest – in Zabaikalskiy Krai – 86%. Unemployment here is in line with the country in general.

2. Data

As already mentioned, this study is based on the Russian Longitudinal Monitoring Survey (RLMS) data. RLMS is a unique representative random household survey designed to evaluate the impact of economic reforms on the households and individuals in Russia and carried out by the joint efforts of the Carolina Population Center and Russian Institute of Sociology in cooperation with the Russian State Statistical Bureau (Goskomstat). The data are exceptionally good for a spatial analysis of inequality, because the survey employs multistage probability sampling where the territory of Russia is subdivided into purposefully designed population units and then the units for the survey are chosen randomly based on the principle of probability proportional to size. Then the next-stage random selection procedures are applied to choose particular households. What is important for me is that as a result of such a sampling, the data cover the whole territory of the Russian Federation in a representative way without any regional biases (e.g. towards richer or poorer regions or to more or less densely populated areas). From the 15 rounds of RLMS, I use the data from the rounds 5, 9, and 13 covering the last months of 1994, 2000, and 2004 respectively. The years are chosen so that to cover a decade up to the most recent survey that is available. I do not pool the data, as in the meantime profound economic and social changes took place and it is of interest to see how these affected geographic distribution of income. I do not take every survey in the decade as a single year is too short a period to expect large changes, instead I just take the starting and the ending points and a mid-point (since RLMS was not carried out in 1999, I take 2000 in lieu).

The RLMS sample includes about 11,000 individuals of all ages (representative to the overall population) in each survey period. To carry out a wage analysis, a representative sub-sample of positive wage earners needs to be selected. This selection is described in the next sub-section.

2.1. Sample Selection

Following previous studies of wage inequality in Russia (Ogloblin 1999, Lukyanova 2006), I focus on prime age working individuals who actually worked in the last 30 days prior to the interview. The restriction of the sample to the prime age (18-60 for men and 18-55 for women) workers is motivated by the fact that working pensioners in Russia (i.e. men after 60 and women after 55) are a very special group of wage earners (see Kolev and Pascal 2002) characterized by very low reservation wages and largely obsolete skills; what is more in some regions there are special arrangements for pensioners; hence, including them into the sample would add unnecessary distortions.

From all prime age wage earners only those are included who considered paid work as their main occupation and worked at least 86 hours in the reference period (equivalent to a half of normal/average working hours). The 86 hours restriction is justified by the assumption that those people who work very little have a rather special wage structure and/or reservation wage. I also remove from the sample those who reported over 500 hours of work in the last 30 days (equivalent of 16.7 hours per day every day), as these clearly overestimate their working hours. Finally, I am left with a sample of 3,079 positive wage earners in 1994, 2,877 – in 2000, and 3,433 – in 2004. The distribution of workers across the eight macro-regions is presented in Table 4, which also provides allocation of the total population across these regions. It can be seen that the samples used in my work are geographically representative (except the Capitals in 2000 and 2004) with only minor distortions that likely stem from different participation rates across the regions. Although I do not possess the figures of actual participation rates, the participation rates that are derived from the RLMS data (see Table 5) confirm this supposition. The deviation in the Capitals is probably caused by the fact the level of income there is higher (i.e. higher opportunity cost of time to take part in the survey) and life is very busy and hectic (average time to commute to and from work in Moscow exceeds 3 hours per day) and hence it is rather hard to get people take part in the survey. I recognize this as a problem, but I believe it should not affect the results much.

Having defined the sample for my analysis, in the following sub-section I describe it in more detail providing the background labor market parameters of the overall RLMS dataset (representative of the whole population of the country) that affect my sample selection and the particular job market indicators relevant for my analysis within the selected sample relating them where possible to the respective Goskomstat figures.

2.2. Sample Labor Market Characteristics in RLMS Context

As mentioned before, I start my analysis of the sample labor market characteristics from analyzing the background fundamental labor market characteristics of the overall RLMS sample that single out the wage earners from the total population – the participation and employment rates. Then I go on to describe the parameters that refer to my selected subsample and are directly relevant for my analysis – wages (and wage arrears) and working hours. My description is focused on the interregional and intertemporal analysis of these characteristics. The figures referred to in this sub-section are presented in Table 5.

The first important labor market indicator is the supply of workforce expressed in the number of people actually working or immediately available to start work. The participation rates in the RLMS sample are in line with the international level (in its higher part) and for all the macro-regions except Caucasus exceed 70% in all the periods. Interestingly, these rates are the highest in the Northern Region where participation consistently exceeds 80% and the lowest – in the Southern Region (Caucasus) confirming the common stereotype that people in the north work more. In the intertemporal perspective, the participation rates exhibit a clear downward trend – in all the regions the share of prime age individuals on the labor market decreased by on average 5 percentage points between 1994 and 2004. The reason for this lies most probably in the transition to a market economy and restructuring – while more or less everyone used to work in the Soviet times (Ogloblin 1999), now the participation rates are around 80% in the prime age group that is comparable to the UK (Office for National Statistics of the UK).

Regarding unemployment, one particularly clear trend is observable – the unemployment rates uniformly jump between 1994 and 2000 and then fall again in some cases even more than they had increased. The explanation for this is the Russian financial crisis of late 1998 whose consequences took a few years to disappear. With the rapid economic growth that started after the crisis, the situation began to improve that is visible from the 2004 figures. Geographically, the lowest unemployment rate is observed in the Capitals that is consistent with their status as the most affluent region and the highest – in Western Siberia. Despite enormous oil and gas wealth, this sector gives work only to a limited part of the workforce and the region also has several particularly depressive parts, for

example, the coal mining oblast of Kemerovo, where many mines are being closed due to bankruptcy and miners often go on strike (RIA 2008).

As mentioned previously wage arrears used to be and often remain a significant problem in Russia. Since arrears strongly distort reported wages (due to timing imbalance between earning and actually receiving the wage), they deserve special attention in my work. In 1994, with the exception of the Capitals arrears uniformly affected 40% of workers in all the regions, with the average delay of 3 months. Given the 20% monthly inflation in 1994 (Goskomstat), arrears actually destroyed a large part of the earning before it was actually paid out. This affected inequality in the way that workers in the regions with a lower level of arrears (basically the Capitals) enjoyed ceteris paribus higher real wage. By 2004, wage arrears dropped to 14.2% nationwide and practically to nothing in the Capitals, but remained quite high in Western Siberia where some 27% of workers were exposed to them in 2004. The uneven incidence of arrears across regions is a particular problem for my work as it makes wages in different regions distorted to a different extent. Removing the workers with wage arrears from the sample cannot alleviate this problem, because these workers are a nonrandom part of the population (according to Earle and Sabirianova they earn less). I describe the way I solve this issue in the next sub-section, but now I go on to other job market indicators.

Regarding the working hours, these vary very little across regions and in time and are concentrated around the official (KZoT 2001) 40-hour week. From that little variation that is observable it can be concluded that the "most diligent" workers live in Western Siberia and the "laziest" – in the Capitals. In terms of intertemporal evolution, hours tend to increase in the aftermath of the financial crisis in 2000 and then fall again (but not uniformly).

The most important indicator for my analysis, the wages, exhibit several interesting tendencies. First of all, it can be noticed that the wage levels in the sample correspond to the

officially reported wages (see Table 3) not uniformly. For example, Western Siberia that has higher than average wages according to the Goskomstat data of 2008, in the sample exhibits the same feature only in 1994 and 2000, but not in 2004; or Caucasus that is the poorest region by the Goskomstat 2008 wages (and also GRP), is the poorest in the sample only in 1994, but in 2004 manages to exceed the national level. In general the sample wages and the official ones (based on the data on all workers obtained from the Tax Authority) exhibit a correlation of 0.73 in 1994, 0.60 – in 2000, and 0.31 – in 2004. The small correlation in 2004 is not caused by any of the adjustments I make, for the unadjusted raw RLMS wages exhibit a similar pattern. Several other reasons may be responsible for that. Firstly, imperfect reporting - wages reported to the Tax Authority tend to be much lower than the actual ones and misreporting is not uniform across the regions (regions with higher level of economic crime and tax evasion are likely to have more misreporting). Secondly, my sample is based only on selected prime-age individuals (see Data) and Goskomstat reports the wages of all workers. What is more I report geometric averages of wages (anti average logarithms that are used in the decomposition), while Goskomstat uses arithmetic ones - given the wide and skewed distribution of wages in Russia this averages can be different. Finally, there is a certain time difference between the sample and Goskomstat data that can have certain effect (even though in 1994 and 2008 the wages are more similar).

All in all, despite these problems, I believe that as the correlation between the sample and overall wages is positive and high, the usage of this data does not cause serious problems. After all most other studies of labor in Russia are also based on the data from RLMS (e.g. Earle and Sabirianova 2002, Ogloblin 1999, Lukyanova 2006 etc.).

The highest wages in the sample are observed in the Capitals (consistent with Goskomstat) and the lowest in the Volga Region (the second lowest in Goskomstat 2008). In

consistence with previous studies (Lukyanova 2006) geographic inequality soars in the aftermath of the 1998 crisis that hit workers unevenly and then descends by 2004.

2.3. Variables

As I am interested in the differences in real comparable wages, I first need to construct a wage variable that is not distorted by the intertemporal and cross-regional price differential (inflation and the cost of living) and which refers to a comparable amount of work (in terms of time. As RLMS does not report such a wage, I construct it on my own using the RLMS and Goskomstat data and performing several adjustments that I describe further in this section and whose technical details are presented in Appendix A.

What RLMS reports is the wage received (but not necessarily earned) in the last 30 days prior to he interview. As already mentioned, many workers in Russia experience wage arrears. Hence the wage received in the last 30 days may be incomplete or refer to an earlier period. Therefore, the first adjustment I make deals with accounting for arrears. In this, I follow Earle and Sabirianova (2002) and estimate so-called full contractual wage that is equal to the wage received in the last 30 days for those reporting no arrears and equal to the total wage debt (including the money actually received in the last 30 days) divided by its duration (including the last 30 days) for those experiencing wage arrears.

The second adjustment deals with inflation. As mentioned earlier, each RLMS round is carried out during three to four months with the first interviews taking place in September and the last – in December. As in the periods studied the inflation was considerable (reached 20% per month in 1994 and was still over 1% per month in 2004 according to Goskomstat), the real wages in the early interviews vary from the nominally the same wages reported at the end of the survey round. To adjust for monthly inflation, I run a pooled wage regression of the full contractual wage on the full set of explanatory variables used throughout my analysis and

described further and monthly dummies. I then use the estimated coefficients of the monthly dummies to bring the wages from different months to the same (September) base.

The third adjustment deals with the interregional price differentials. According to Goskomstat (as of 2008) the cost of the minimal consumer basket of goods in Moscow and St. Petersburg exceeds the one in Caucasus by more than 50% which means that the wages in the Capitals must be at least by half higher than in Caucasus to provide the same (minimal) quality of life. In order to make wages comparable in terms of what they can buy locally, I divide them by the regional cost of living indices based on the cost of the minimal consumer basket of goods (subsistence minimum) in February 2008. I recognize that this method is imprecise for these indices capture only the cost of living differentials for the poor and only in 2008, but unfortunately no other consistent indicator of the regional price levels is available to me. I believe this adjustment is still helpful, because it grasps the long-term cost of living patterns observed in Russia since the Soviet times when the Capitals and the Northern regions exhibiting the highest price levels and the Southern regions – the lowest (Lukyanova 2006).

The fourth adjustment addresses the work status (part-time or full-time in the 35-hour week definition) and working hours. The adjustment for status in addition to hours is needed because part-timers are usually different from other workers in their opportunity cost of time or ability to work and earn. To make the wages of part-timers and full-timers comparable and bring all the wages on the same scale for the standard 173.33-hour working month (40-hour working week prescribed by law (KZoT 2001)), I regress full contractual wages adjusted for inflation on the full set of explanatory variables and the working hours, status, and the interaction of the status and hours and then using the estimated coefficients recalculate all wages for the same standard number of hours and the full-time status (see details in Appendix A). Although this method may not completely cure the part-timers problem, I believe it is much better than leaving part-timers, who form about 1/6 of all workers, out of sample.

The parameters which are used as dependent variables in the wage equation and along which my decomposition is based are individual characteristics of workers in the sample. Their definitions are provided in Table 6. They refer to the workers' gender, education (in categories), (potential) work experience, ownership type of the worker's employer, and worker's 1-digit occupation type.

Gender is expressed by a dummy variable that takes the value of one for male workers. Regarding educational attainment of individuals, RLMS distinguishes seven different groups: PhD degree holders, university or college graduates, graduates of three types of vocational schools, general secondary school graduates, and people with no complete secondary education. Since I deal with a rather small sample, I reduce the number of the categories to four. To do this I first add the PhD's (who are very few) to the other university graduates. Then, I check the coefficient estimates on the different levels of secondary (vocational and general) education in the pooled (across regions) wage regressions in each of the periods and merge the graduates of non-specialized vocational schools with the general secondary school leavers as the coefficient estimates on all these categories are not different from one another at 1% level in any period, while specialized secondary vocational training is different from any of them at 1% level in all the periods studied (see Appendix B).

Work experience unfortunately is not reported in RLMS; therefore I estimate potential work experience by subtracting from the individual's age 15 and the years of schooling after the eighth grade (if the individual has any). This method assumes that children start school at the age of seven (that is normal in Russia) and even if they do not complete eight grades, they do not start working (or getting useful work experience) till the age of 15.

Concerning the ownership type of the worker's employer, I single out the private sector employees leaving the public workers and self-employed individuals (who are extremely few and not different from other workers on average) as the base category.

Regarding the occupations, I use one-digit occupations (although RLMS traces fourdigit ones). Sometimes it is argued that occupations should not be included at all, because they might be endogenous. Yet, I believe that 1-digit occupations are similar to education and other human capital variables for they primarily describe the level of skill (e.g. professional vs. unskilled) and sometimes responsibility (e.g. manager) and thus they must be included into the analysis. Previous works (e.g. Garcia and Molina 2002, Pereira and Galego 2007) use occupations and in this I follow them.

Having described the sample and variables, I pass to the description of particular methods that I employ in my analysis.

3. Methodology

The most common technique used for a static analysis of income differentials is the difference decomposition proposed by Oaxaca (1973) and Blinder (1973). Barsky et al. (2002) use it to study the wealth gap between the white and black Americans, Cotton (1988) - to decompose the gender gap, Blackaby and Murphy (1995), Garcia and Molina (2002) and many others – to study geographic wage inequality. I follow this practice and utilize the Oaxaca-Blinder decomposition in my work to analyze the static differences between average wages in each of the eight macro-regions of Russia and the national average wage and see why regional wages deviate from the pooled average – due to different workforce quality or different returns to workers characteristics. After performing the decomposition for the static cross-regional differentials, I also use the same technique to decompose the intertemporal changes in the differentials (between 1994 and 2004) and analyze which factors (characteristics or prices) drove those changes.

The essence of the static Oaxaca-Blinder decomposition is to estimate the wage equation where the observed wage of an individual is explained by their characteristics (for

particular parameters see Data) separately for each of the eight macro-regions of interest and for a base group and then use the obtained coefficient estimates and regional and base group average values of the characteristics to break the difference between the observed regional average log wage and the mean of the pooled log wage in two parts using this formula:

(1)
$$D_i = lnW_i - lnW_p = X'_iB_i - X'_pB_p = (X'_i - X'_p)B_p + X'_i(B_i - B_p)$$

Where lnWi is the average natural logarithm of the (adjusted real contractual) wage (Wi therefore is geometric average wage) in region i and lnWp – the average natural logarithm of the wage in the base group; X's are vectors of different workers' characteristics (defined in Table 6) and B's are vectors of coefficient estimates from regional and base group wage regressions.

The first part of the far right-hand side of Equation 1 corresponds to the part of the difference between the average wages in region i and in the base group attributable to the differences in the observed quality of workforce and the second part corresponds to the differences in returns to those characteristics.

Thus, the Oaxaca-Blinder decomposition permits to detect the sources of the regional wage differentials be that observable characteristics or their prices and what particular characteristics and what particular prices.

Since the results of the Oaxaca-Blinder decomposition depend on the choice of the base group, it is extremely important to choose the right reference population. Following other studies that employed this decomposition (e.g. Ogloblin 1999), I use the whole population pooled across the regions as my base group. In order to check the robustness of my results and their sensitivity to the choice of the base group, I also repeat my analysis using the Central Region as a reference group. The choice of this region as an alternative base is motivated by the fact that this region has the largest and most representative (i.e. similar to the

average) population and also is the historic centre of Russia. The findings of the alternative base decomposition are used only for comparison and are not discussed in detail.

After performing the decomposition of the static differentials, I go on to analyze the changes in these differentials across time using essentially the same technique:

$$(2) \ \Delta D_{it} = D_{it} - D_{it-1} = [(X'_{it} - X'_{pt})B_p + X'_i(B_{it} - B_{pt})] - [(X'_{it-1} - X'_{pt-1})B_{pt-1} + X'_{it-1}(B_{it-1} - B_{pt-1})] = \\ = [(X'_{it} - X'_{pt})B_p - (X'_{it-1} - X'_{pt-1})B_{pt-1}] + \\ + [X'_i(B_{it} - B_{pt}) - X'_{it-1}(B_{it-1} - B_{pt-1})] = \Delta C_{it} + \Delta P_{it}$$

In (2) the change in the wage differentials is decomposed into two distinctive parts: ΔC_{it} attributable to characteristics and ΔP_{it} attributable to their prices - exactly the same way as in the static decomposition. This dynamic analysis permits to detect the driving forces of the evolution of regional inequality.

While it is clear how differences in workers' characteristics can affect the wage differential – it is reasonable to expect that workforce with lower skills or a larger share of disadvantaged workers will earn less on average; the differences in pricing revealed by the decomposition deserve further study. Therefore I estimate the correlation between regional prices of workforce characteristics (i.e. coefficient estimates from the regional regressions) and the mean values of those characteristics in the regions. This price-quantity correlation analysis is a simple tool that permits to distinguish between the demand and supply as the pivotal force determining the prices for workers' attributes. The idea behind this analysis, inspired by Blanchard and Cremer (1997) and Pereira and Galego (2007), is described in detail in the relevant part of the Analysis section.

4. Analysis

4.1. Workers Characteristics

As the question of this work is to find out what is responsible for the geographic wage inequality – qualities or prices, it is of utmost importance to first see how different the workforce is across the regions. Table 7 presents the summary of the regional workforce characteristics.

In terms of gender composition, the workforce, like the population in general, is more female in Russia. The reasons for this disproportion observable in many countries around the world is the shorter life expectancy for men (according to Goskomstat (2000) men in Russia live on average by 13 years less than women do) and what is even more important extremely high death rates among prime-age males which skyrocketed in the 1990s (according to Demoscope journal of demographics (2002), the death rate among prime age males in Russia is as much as three times larger than among females). As a result, in all regions except the Capitals the share of men drops between 1994 and 2004.

The regions with a larger share of male workers as of 2004 are Urals, East, and the Capitals, with the latter being the only one where it exhibits an increase from 1994. This increase might be caused by a massive inwards migration to the Capitals as well by a decrease in female participation in this region that is the most affluent in the country and where more women can afford to stay out of work. It can, however, also be spurious caused by relatively small sample (218 people in 2004). The smallest share of male workers as of 2004 is in the North, where the life of men is particularly short. Regarding the unevenness of gender composition of workers across regions, it somewhat increased between 1994 and 2004.

The differences of the gender composition of the workforce can be a potential source of large wage differential due to existence of the so-called gender pay gap; hence the aforementioned facts need to be borne in mind.

Regarding the educational attainment of workers, large cross-regional differences can be observed at all levels. In particular, the largest percentage of college graduates live in the Capitals where their share is close to 30% in 2004 and the smallest share – in Urals – just 17.2% as of 2004. The large share of educated workers observed in the Capitals is not surprising for Moscow and St. Petersburg are not only the most affluent cities, but also unrivaled centers of education. The low level in Urals is probably caused by the heavy industrial orientation of this region with more factory workers – indeed the share of people with vocational training (typical for the working class) is the highest in Urals.

In the intertemporal perspective, it is striking to see that although in consistence with the increased prestige and availability of higher education after the fall of the Soviet Union (Kastueva-Jean 2006) the share of college graduates increases considerably between 1994 and 2000, later it uniformly falls in all regions (though it still stays above the 1994 level). One of the reasons for this observation can again lie in the financial crisis of 1998 – probably it affected college graduates less than other workers and more of them kept their jobs.

If the average (potential) experience is concerned, it can be seen that despite aging of the population the average endowment of experience uniformly decreases between 1994 and 2004. One of the reasons for this can lie in the fact that the number of grades in the secondary school (which are deducted from age when calculating potential experience) was increased from 10 to 11 (Wikipedia) in early 1990's.

Another observation is that by 2004 the cross-regional differences in the years of experience decreased. As of 2004, the most experienced workers are observed in the Central

Region and the lowest – in the Capitals, the latter fact being explained by the higher level of education (more years of schooling) of workers in the capital cities.

One more crucial parameter of the workforce in transition countries is the share of workers in the private sector. In the early years of transition in 1994 this share is around 20-22% in most regions and exhibits variation from 18.2% in the Volga Region to 28.3% in the Capitals. As a market economy develops in Russia this percentage of the private sector workers increases uniformly in all regions and in 2004 varies from 36.2% in Caucasus to 56.0% in the Capitals. What is interesting is that unlike in other countries of Eastern Europe (e.g. Baltics) in Russia the private sector pays more than the public sector does and sometimes this difference can be striking, hence the difference in the share of the private sector workers (that also reflects the progression of reforms) can be a source of geographic inequality.

The last dimension of the workforce composition that I consider is the occupational division. As discussed previously, the 1-digit occupations that I employ correspond to the level of skill and responsibility and thus directly reflect the quality of workforce. In terms of managerial employees, the Capitals is evidently the best endowed region (6.0% in 2004) while Caucasus is the least endowed one (2.4% in 2004). This is not surprising knowing that the Capitals also have the bulk of (country) head offices of national and international companies, while Caucasus is probably the least developed region that also has the smallest share of private sector workers. Regarding the intertemporal perspective, the share of managers grows vividly between 1994 and 2000 and then somewhat declines (except the Capitals). If other occupations are considered, it should be noted that the share of professionals drops on average between 1994 and 2004, but grows in the North and Volga Regions, with the latter being the "most professional" region as of 2004 (19.1%) while Urals and Western Siberia are the least (12.6% in each). The shares of technicians and clerks stay relatively stable over time exhibiting limited variation across the regions. The share of service

and market workers increases a lot almost uniformly (except Volga that has the lowest share of them (9.4%) as of 2004) as both sectors flourish and the variance in this characteristic decreases. The number of craft and plant workers plummets between 1994 and 2004 as the share of industry drops following the common trend of most transition countries in the last decade and developed countries already earlier. While it is uniformly high – around 20% (except plant in the Capitals) – in 1994, it drops to 15% and 19% on average respectively and only remains high (though lower than before) in the heavily industrial Urals Region (both around 20%); the lowest shares are observed in the Capitals – 13.3% for each.

Thus having reviewed the workforce characteristics I can expect to see large wage differentials stemming from the differences in the average level of education (primarily the share of college graduates), differences in the ownership structure of employers, and probably also different occupational distribution. Gender allocation of workforce can also play some role if a large gender gap is present, but the level of experience is unlikely to affect geographic inequality. Yet, before passing to the actual decomposition let's consider the returns to the workers' characteristics first.

4.2. Regression ("Pricing") Analysis

Running the Mincerian wage equation augmented with ownership and occupations on regional and pooled data produces coefficient estimates that describe the pricing of different workers' characteristics across the regions. The summary of the regression results is provided in Table 8. It should be noted that almost all the coefficient estimates in the pooled regressions are highly statistically significant (based on White heteroskedasticity consistent standard errors) and many are significant in the regional ones, where the samples are much smaller. I suspect that those that are insignificant would have much higher p-values if it were not for the sample size.

From the very first glance it can be noticed that there are rather large differences in the constants¹ among the regions suggesting big discrepancies in the wage level not explained by any particular characteristics or their prices. The largest constants in 1994 and 2004 are observed in the Northern Region. This is not surprising for the residents of the northern areas enjoy so called "northern coefficients" for the harsh climate, but not for their characteristics. The constant in this equation is basically average logarithm of the wage of an uneducated unskilled and inexperienced female worker in the public sector. A low constant can stem from the overall low level of income in the region like it probably is in the Caucasus and Volga Regions, or from a very disadvantaged position of this particular group that seems more plausible in Western Siberia. The Capitals, the richest region, does not enjoy the highest constant which means that residents of the region do not get their high salaries for nothing.

If one considers the gender gap, it is the smallest (except 1994) in the Capitals – only 9.3% in 2000 and 22.8% in 2004, while it is 35.6% and 38.8% on average respectively. Probably, in Moscow and St. Petersburg where the population is the most educated and cultured there is least space for gender discrimination (as long as the gender gap measures this). The most women-unfriendly region as of 2004 is the North that has a gender gap of 46.7% in this period. In 1994, in turn, the North has the smallest gender gap of just 20.2%.

Returns to education exhibit different trends, patterns, and even signs across the regions. The clearest and most statistically significant is the return to a university diploma that is around 60% nationwide (unchanged between 1994 and 2004, but slightly higher in 2000). In the Capitals the value of a college diploma rises from 11% in 1994 to 53% in 2000 and then drops to 44% in 2004 that is the second lowest indicator in this period nationwide after the Central Region where it is just 27% in 2004 down from 84% in 1994. The highest return to university training in 2004 is observed in the region with the smallest fraction of university

¹ The analysis of the constants in the regional regressions is similar to the analysis of the regional dummies in the pooled regression. I focus on the former, because it is a part of the Oaxaca-Blinder decomposition.

graduates – Urals where a diploma adds on average 92% to the wage compared to the lowest education category.

Returns to experience are small (less than 1% per year nationwide in 1994 and 2000 including the effect of its square) and mostly statistically insignificant across the regions which makes their variation relatively unimportant. Obsolescence of the experience acquired before the transition should probably be blamed for it.

The private sector premium rises with the development of this sector expressed by the share of workers it employs. Nationwide the premium increases from 4% in 1994 to 27% in 2004. It exhibits a similar pattern in all individual regions (sometimes rising from negative values). The highest premium as of 2004 is observed in the Central Region (39%) and the lowest – in the North (15%). It is worth to note that the dispersion of the premium (unlike the dispersion of the share of the private sector workers) in 2004 is much smaller than in 1994 when it varied from (-27%) in the East to (+49%) in the Capitals.

Regarding the returns to the level of professional skill and responsibility, it shows different trends in time across the regions, but increases overall for the highest (managerial) level from 44% in 1994 to 56% in 2004 and decreases for the craft and plant workers from about 50% to some 35%. The Capitals and Urals exhibit an opposite trend in managers and a similar one in craft and plant workers. The only region where returns to these categories grow is Caucasus. Overall, the differences in returns to occupations in the observed period decrease rather than increase, but remain substantial (see Table 8).

In general, the differences in pricing look somewhat larger than the ones in the characteristics. Yet, to get the final picture, I proceed to the decomposition.

4.3. Decomposition of Static Regional Wage Differentials

The Oaxaca-Blinder decomposition of the static geographic wage differentials reveals (see Table 9) that the lion's share of these differentials – about 90% on average in all the

periods - stem from the differences in the pricing of the workers' characteristics and only a very limited part is explained by the differences in the characteristics themselves. The most important element of the pricing effect though is not even attributable to any particular quality of workers, but just to the differences in the constants, i.e. overall wage level in the region.

Among the characteristics price differences, the most important are probably the ones related to returns to schooling and to a lesser extent experience and ownership (but not uniformly); occupational effects are strong, but often have an opposite sign to the overall differential implying they rectify the overshot effect of the constant.

The characteristics part of the differentials is small or even negative (of the opposite sign to the overall differential). In 2004, it only plays a serious role (1/3 of the differential) in the Capitals where the quality of the workforce is a lot better than in the other regions. Interestingly, in 1994 almost all the wage differential in the Central Region is explained by its characteristics endowment; yet this result disappears by 2000 and does not return. A similar sporadic effect is also observed in 2000 in Western Siberia; however, in this period the wage differential there drops almost to zero. Among the characteristics the most important are ownership, education, and also occupations. Among the prices of particular workers' attributes, the strongest effect have returns to education, experience, and ownership; occupational prices generally (except Caucasus and Western Siberia) have an opposite to the overall differential effect that partially off-sets the strong effect of the constant.

The decomposition based on the Central region as a reference group reveals essentially the same results confirming the inferences made above (see Appendix C). The only important difference is that the share of characteristics increases substantially in the Capitals wage differential, where in 2004 more than two thirds (compared to one third in the decomposition based on the pooled reference group) of it are attributable to the differences in

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the workers attributes; otherwise the results are practically the same suggesting that they are robust and not sensitive to the change of the decomposition base.

4.4. Decomposition of Intertemporal Changes in Regional Wage Differentials

Intertemporal analysis of the regional wage differentials reveals (see Table 10) that between 1994 and 2004 the overall differentials between regions and the country on the whole increase for all regions except the poorest (in 1994 and according to Goskomstat) – Caucasus and Volga regions.

In all the regions except the North, Volga, and Caucasus, the inequality caused by differences in characteristics increases in absolute value. Yet, in all the regions without exceptions the dynamics of the change in the inequality is driven primarily by the changes in prices, which account for over 80% of the overall change on average.

Among the characteristics, the pivotal for change are ownership and in some cases education, while the other ones have sporadic effects. Among the prices, tremendous changes (sometimes with a switch of the sign of the respective component) are observed in the differentials attributable to education and gender. Due to the change of sign, these changes do not necessarily increase the role of these characteristics in the static wage differentials.

The intertemporal decomposition performed on the alternative base (see Appendix C) shows somewhat different results in terms of magnitudes and signs that stem from the imbalance in the development of wages in the Central Region and the country in general. Yet, all the inferences regarding the role of different forces in driving the changes stay the same.

Hence, having found that most of the cross-regional wage differentials in Russia in all the periods stem from pricing and by 2004 its role increases, it is of interest to see what drives the different prices. The reason for the different constants (the major source of the geographic inequality) lies in all the region specific fixed effects that are unobservable in the framework of my analysis and can stem from geographic, political and other reasons. It is much more interesting and relevant from the economic point of view to see why prices of particular workers' attributes vary across regions – is this variation caused by supply or demand factors? To answer this question I proceed to a simple, but informative analysis of the correlation between the regional endowments of workforce attributes and the returns to these attributes.

4.5. Sources of Different Pricing of Workers' Attributes

In order to see how the returns to workers' characteristics in different regions are affected by the endowments of these characteristics, I estimate static and time-pooled cross region correlation coefficients between the mean values of the characteristics in question (all the variables in the regression analysis) and their estimated coefficients in the regional wage regressions. The correlation coefficients are reported in Table 11.

The logic of this analysis is simple. A positive correlation suggests that in regions where certain characteristics are relatively abundant, they are also better compensated. The reason for this can be twofold: first, it may reveal that resources (i.e. workers with particular attributes or the attributes themselves) move (physically or in terms of skill adjustment) to the regions where there is a higher demand for them and where they can get more; and second, that there exist spillovers and positive networking effects (Pereira and Galego 2007). For example, the more private sector workers there are in a region, the more developed this sector is and the more opportunities exist for private firms, the more profitable they are, and the higher are the wages in the private sector as a result (for more details of this theory see Blanchard and Kremer 1997). A negative correlation in turn can mean that better remunerated are relatively scarce skills. In this case the prices are probably dictated by a limited supply. Although it is obviously the interaction of demand and supply (as well as institutions and different distortions) that shapes prices, and there are also alternative theories regarding the

price formation, I believe this differentiation between demand and supply as the pivotal factor in determining regional differences in returns to workers characteristics is of interest to the study of economics in general and thus is a contribution of my work to learning.

Table 11 reveals that the share of male workers and the gender gap in regions are positively correlated on the whole and in 1994 and particularly in 2000, but not in 2004. The positive correlation in 1994 and 2000 is very likely to be explained by the demand factors – men receive a higher premium where they are more demanded, (in this case, in the harsh conditions of the North and East) and they move there making up a relatively higher share of workers there. In 2004, the situation changes, which is to a large extent caused by the fall of male population in the regions where they enjoyed a higher premium due to the high death rate among prime-age males there (Demoscope 2002) as well as by the increase in the percentage of male workers in the Capitals where the gender gap is the lowest.

The share of workers with higher education exhibits a consistent negative correlation with returns to a university diploma, which is consistent with the supply theory. University graduates receive more where they are hard to find. For the other education levels the correlation is strongly positive in 1994 reflecting the people's more common choice to stay with only secondary education where it is more demanded and relatively better paid, but by 2000 the correlation drops to almost zero suggesting approximately equal importance of the supply and demand forces in the price formation.

The average level of experience in the region exhibits a very clear and consistent pattern – a strong negative correlation in the level and a positive one in the squares. This implies that like higher education experience is more valued where it is thin on the ground – a straightforward outcome of a steep supply.

In 1994 and 2000, the share of private sector employees is strongly positively correlated with the private sector premium revealing the demand side effects as well as very

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likely positive networking effects of the private sector development. In 2004, the situation changes, possibly because supply overreacts to demand and saturates the market or because the networking effects are superseded by congestion and competition. Another explanation may lie in the demand from the public sector that starts to grow around that time.

The strong positive correlation between the endowment of managerial skill and returns to it observed in 2000 very likely reflects the effect of the demand forces that are particularly important in the aftermath of the 1998 crisis when restructuring is needed. By 2004, the situation changes and the availability of supply starts to set the rules of the game. For professionals, the correlation is consistently (though very weakly) negative possibly stemming from the supply factors. For technicians the correlation is weak and negative in 1994, but then switches its sign. The opposite (though a bit later) happens to the craft and plant workers. For technicians, the supply forces become more important, but the opposite occurs to the blue-collar workers. Sign changes also affect clerks and services workers. The reasons for such developments lie in the particular needs of the market that change so rapidly in a transition economy.

4.6. Summary

As the previous parts have shown interregional differences in the workforce characteristics play only a minor role in the overall geographic wage inequality in Russia, while the returns to the employees' attributes form the lion's share of the differentials. The only region where characteristics are consistently important is the Capitals, where these characteristics are a lot more advantageous than in all other regions. From the prices, the strongest effect has the constant, i.e. overall level of income in the region not explained by any particular individual attributes. The characteristics which have the strongest quantity and price effects are education and ownership, while experience only has an important price, but not quantity effect; occupational composition plays a relatively important role in some regions (particularly Volga, Urals, Western Siberia, and Caucasus) and occupational prices generally have an opposite to the overall effect (except Caucasus and Western Siberia) that partially rectifies the impact of the constants. Interestingly, despite huge differences in the gender gap, the gender pricing has only a limited positive impact (except the North and Urals regions, where it is somewhat larger) or even a negative (though also mainly small) impact.

Between 1994 and 2004, the wage differentials increase in all the regions except the poorest and although the absolute value of the discrepancies caused by different workers characteristics increases, their share gets smaller as the largest part of all the changes that take place is driven by changing returns to the characteristics. Among the price components, the largest changes occur to the return to education and the gender gap.

The results of both the static and the intertemporal decompositions are robust to the change in the base group.

Speaking about the sources of the pricing effects, the price-quantity correlation analysis reveals that the returns to college education as well as to positions with professional qualification and work experience are consistently higher in the regions where these qualities are scarcer implying that their prices are dictated by a limited supply. Gender gap and the private sector premium in turn exhibit positive correlation with the share of male and private sector workers in 1994 and 2000 probably stemming from the demand and positive externalities and networking effects, but in 2004 become on average smaller in the regions with relative abundance of these workers possibly suggesting market saturation or also increased effect of the supply forces in the regions with fewer such workers. The same pattern is observed for managerial qualification and to a lesser extent technical and service occupations. Craft and plant occupations in turn exhibit the opposite pattern with a negative price-quantity correlation in 1994 and 2000 and a positive one in 2004 suggesting that the market for them changes from supply to demand driven.

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5. Policy Implications

In the light of the findings of this work, it can be concluded that the regional inequality in real comparable wages in Russia is not associated with any particularly biased distribution of the workforce, but rather with inequitable returns to workers' attributes and more importantly with region specific factors expressed in the constant and not related to any particular individual characteristics. If policy makers aim to achieve more geographic equality to have more balanced regional development and cohesion in the country, a systemic 360-degree approach must be taken.

As particular measures within such an approach, I would suggest the following:

- Fighting the unobservable difference in the level of real comparable income between regions by adopting a regional minimum wage linked to the regional cost of living (currently this is only partially implemented through northern coefficients);
- Developing infrastructure and encouraging interregional trade and competition (eliminating local monopolies) to reduce the impact of transportation costs and regional price distortions;
- Fighting gender discrimination especially in the periphery regions through antidiscrimination rules (e.g. prohibit employers to have gender as a requirement when hiring to general positions) and educating workers and employers;
- Investing in the education (especially higher education) in the regions with fewer college graduates and creating incentives for the graduates to stay home;
- Fostering skill mobility by providing courses and training for re-specialization especially in the regions with disadvantageous industry composition and high structural unemployment (similarly to the EU programs);

 Fostering the private sector development (especially in the periphery) through reduced bureaucracy and simplified firm registration procedures, start-up loans, business parks, SME development funds etc. and at the same time gradually bringing public sector salaries in line with the private sector especially for low-income workers.

I believe that the aforementioned measures can potentially have a strong rectifying impact on the regional (real comparable) income inequality and may also be helpful for the overall economic development of Russia. Yet, it must be admitted that in such a large and geographically diverse country some regional discrepancies are inevitable and even necessary to compensate for different quality of life across the regions.

Conclusion

In this work I have attempted to describe and explain the geographic wage inequality in the Russia Federation in the decade from 1994 to 2004. Having carefully analyzed the RLMS data from the rounds 5, 9, and 13 I found sizeable differences in the labor income adjusted for the cost of living as well as for working hours and status, inflation and arrears across the eight macro-regions of Russia. The differences in the workforce characteristics are also sizeable, though less pronounced than the ones in income. In particular, the Capitals Region has a noticeably more advantageous composition of workers than any other region does. What is more, some regions have a more industrial economy than others do which is expressed in a large share of workers with vocational training and blue-collar occupations. The level of the private sector development exhibits large differences across the country and, although it uniformly grows everywhere, the cross-regional gaps in its share grow faster. Gender composition shows some variation across regions and gets more different with time. The level of work experience hardly varies across the regions. Despite these differences, the workforce characteristics explain only a very small fraction of the regional wage differentials. Among the pricing differentials, the most important element is the constant that captures region specific effects not related to particular workers' qualities. Regarding the prices of particular attributes, although they show noticeable variation, they do not individually have a consistent strong effect on the geographic differentials, though sporadically such elements as returns to education, private sector premium, and occupational prices are very important.

The intertemporal decomposition analysis showed that between 1994 and 2004 the wage differentials increase in all the regions except the poorest and, although the absolute value of the discrepancies caused by different workers characteristics increases, their share gets smaller as the largest part of all the changes that take place is driven by changing prices of the characteristics. Among these prices, the largest changes occur to the returns to education and the gender gap. The results of both the static and the intertemporal decompositions are robust to the change in the base group.

The price-quantity correlation analysis revealed that returns to college education, work experience, and positions within the professionals occupation are consistently supply driven, while gender gap, private sector premium, and remuneration of managers (and to a lesser extent technicians and service workers) are primarily demand driven in 1994 and 2000, but in 2004 become supply determined. An opposite trend is observed for the blue-color jobs.

In my study, I analyzed only the differences in the average wages across the regions and decomposed these into the parts explained by observed workers' characteristics and the prices of these characteristics. Future studies could use different decomposition techniques (e.g. Juhn-Murphy-Pierce) and analyze the effects of unobserved workers' qualities and the returns to those unobserved qualities. Juhn-Murphy-Pierce decomposition also has the potential to reveal more about the dynamics of the geographic inequality. What is more future researchers can use larger samples (possibly by merging several consecutive rounds of RLMS and controlling for time fixed effects) or divide the country into fewer more distinctive regions to get more statistically robust results of whatever decomposition they employ.

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Tables

	Table 1: Fed	eral Districts of R	ussia	
	Population (2005)	Share of Total (%)	Federal Subjects	Capital
Districts in Europe:				
Central	37,545,831	26.2	18	Moscow
Northwestern	13,731,015	9.6	11	Saint Petersburg
Volga	30,710,168	21.4	14	Nizhny Novgorod
Southern (Caucasus)	22,820,849	15.9	13	Rostov-on-Don
Districts in Asia:				
Urals	12,279,234	8.6	9	Yekaterinburg
Siberia	19,794,160	13.8	12	Novosibirsk
Far East	6,592,959	4.6	6	Khabarovsk

Table 2: RLMS Regions of Russia

	Population (2005)	Share of Total (%)	Federal Subjects	Largest City
Regions in Europe:				
Capitals	15,006,578	10.5	2	Moscow
Central	27,139,253	18.9	17	Voronezh
North	9,131,015	6.4	10	Kaliningrad
Volga	24,480,957	17.1	12	Nizhniy Novgorod
Caucasus	22,820,849	15.9	13	Rostov-on-Don
Regions in Asia:				
Urals	15,200,967	10.6	5	Yekaterinburg
West Siberia	14,677,512	10.2	9	Novosibirsk
East	15,017,088	10.5	15	Krasnoyarsk

Table 3: Economic Indicators of RLMS Regions

	GRP per Capita	Real Growth	Average Wage	Cost of Living	Average Wage at PPP
	(% of Nat.	(0/ 2005)	(% of Nat.	(% of Nat.	(% of Nat.
	Average, 2005)	(%,2003)	Average, 2008)	Average, 2008)	Average, 2008)
Russian					
Federation	100.0	6.4	100.0	100.0	100.0
Capitals	260.3	11.9	159.0	129.0	123.2
Central	64.3	5.8	83.5	91.0	91.7
North	104.5	5.8	102.0	116.0	87.9
Volga	73.3	4.0	75.4	88.0	85.7
Caucasus	45.9	6.8	66.5	86.0	77.3
Urals	78.7	7.8	87.0	90.0	96.6
West Siberia	181.3	3.5	109.1	106.0	102.9
East	69.5	4.8	108.1	124.0	87.2

			21001100					- Sumpio						
		1995				2001			2005					
_	Population	Share (%)	Sample	Share (%)	Population	Share (%)	Sample	Share (%)	Population	Share (%)	Sample	Share (%)		
Russia	148,459,937	100	3078	100.0	146,303,611	100.0	2877	100	143,474,219	100	3433	100		
Capitals	13,930,864	9.4	329	11.7	14,829,047	10.1	154	5.4	15,006,578	10.5	218	6.4		
Central	29,029,822	19.6	572	18.6	28,060,891	19.2	585	20.3	27,139,253	18.9	671	19.5		
North	10,018,249	6.7	246	8.0	9,484,052	6.5	208	7.2	9,131,015	6.4	240	7.0		
Volga	25,806,415	17.4	536	17.4	25,212,649	17.2	523	18.2	24,480,957	17.1	648	18.9		
Caucasus	22,283,505	15.0	346	11.2	22,761,875	15.6	316	11.0	22,820,849	15.9	381	11.1		
Urals	15,745,220	10.6	480	15.6	15,555,797	10.6	494	17.2	15,200,967	10.6	611	17.8		
Westsib	15,096,606	10.2	292	9.5	14,907,316	10.2	281	10.8	14,677,512	10.2	325	9.5		
East	16,549,256	11.1	277	9.0	15,491,984	10.6	316	11.0	15,017,088	10.5	339	9.9		

Table 4: Distribution of Population across the Regions in the Sample and in General

Notes: samples refer to the year end of 1994, 2000, and 2004 respectively.

		Russia			Capitals			Central	entral North				Volga		
	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Participation (%)	79.2	75.3	74.8	80.4	77.1	79.2	81.3	79.3	77.2	82.1	82.4	80.1	81.4	75.9	74.9
Unemployment (%)	8.0	13.1	10.5	9.8	11.1	6.2	7.1	12.9	8.9	9.5	19.4	11.2	5.1	15.0	10.4
Workers (RLMS total)	4208	4069	4542	503	215	280	785	794	859	305	321	339	718	751	848
Sample (% of RLMS total)	73.1	70.7	75.6	65.4	71.6	77.9	72.9	73.7	78.1	80.7	64.8	70.8	74.7	69.6	76.4
Arrears $(\%)^2$	39.7	28.0	14.2	24.3	11.0	3.7	35.0	24.3	10.4	48.4	32.7	10.8	40.7	28.9	11.4
Duration of arrears $(months)^3$	2.6	4.5	2.4	2.2	2.6	1.6	2.8	2.8	2.3	2.8	3.3	1.8	2.7	5.4	2.3
Hours worked (weekly) ⁴	40.3	41.5	41.0	39.9	40.7	39.9	40.5	40.5	40.4	40.0	41.6	41.6	40.4	41.5	41.5
Adjusted nom. wage level $(\%)^5$	100.0	100.0	100.0	148.4	180.7	163.8	92.5	105.7	104.4	142.4	146.4	148.0	68.7	73.4	82.3
Adjusted wage level at PPP $(\%)^4$	100.0	100.0	100.0	114.0	138.0	128.9	100.7	112.3	112.9	121.6	122.5	124.7	77.4	81.4	91.2

 Table 5: RLMS Regional Indicators (Part 1)

 Table 5: RLMS Regional Indicators (Part 2)

		Russia		(Caucasus	5	Urals			Westsib			East		
	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Participation (%)	79.2	75.3	74.8	71.5	64.4	61.9	81.7	78.9	78.4	76.0	75.2	76.2	78.3	71.5	75.8
Unemployment (%)	8.0	13.1	10.5	9.1	12.3	11.7	8.6	11.6	11.3	7.4	12.6	12.1	8.9	11.3	10.4
Workers (total)	4208	4069	4542	494	454	514	622	683	767	390	431	442	391	420	493
Sample (% of total)	73.1	70.7	75.6	70.0	69.6	74.1	77.2	72.3	79.7	74.9	65.2	73.5	70.8	75.2	68.8
Arrears $(\%)^1$	39.7	28.0	14.2	40.1	33.2	10.8	40.4	22.3	8.5	42.7	40.6	26.8	52.7	31.3	17.7
Duration of arrears $(months)^2$	2.6	4.5	2.4	2.4	5.8	2.1	2.4	3.1	2.5	3.1	7.8	3.4	2.6	4.4	1.7
Hours worked (weekly) ³	40.3	41.5	41.0	42.1	42.8	41.2	38.8	39.6	40.2	40.3	43.8	42.5	40.4	42.8	40.9
Adjusted nom. wage level $(\%)^4$	100.0	100.0	100.0	67.0	78.3	91.4	101.4	100.9	100.2	139.0	109.4	81.2	126.3	104.1	99.0
Adjusted wage level at PPP $(\%)^{\sharp}_{\Im}$	100.0	100.0	100.0	77.2	89.1	103.3	111.6	109.1	107.8	130.0	100.8	74.1	100.9	82.2	77.8
0 Col															
eTD															

² In the sample
³ Average across the workers exposed to arrears in the sample
⁴ Sample average
⁵ Sample geometric average (anti average log) in the region relative to the national geometric average (anti average log)

	Table 6: Variable Definitions Variable Definition Variable Definition MALE Males Omitted Females MALE Males Omitted Females Education Dummies COLUNIV College/University ORDSCH Ordinary school: general SPECSECSCH Specialized secondary school secondary, secondary vocational, and ordinary vocational school; Dmitted Incomplete secondary school and ordinary vocational school; EXP Age - 15 - years of schooling EXP ² Square of experience after grade 8 PRIVOWN Private sector Omitted Public sector or ambiguous Occupation Dummies PRIVOWN Private sector Omitted Public sector or ambiguous Occupation Dummies MGR Managers, officials, etc. SERVICE Service and market workers PROF Professionals CRAFT Craft and related trade workers TECH Technicians PLANT Plant and machine operators											
Variable	Definition	Variable	Definition									
		Gender										
MALE	Males	Omitted	Females									
	Educ	ation Dummies										
COLUNIV	College/University	ORDSCH	Ordinary school: general									
SPECSECSCH	Specialized secondary school		secondary, secondary vocational,									
Omitted	Incomplete secondary school		and ordinary vocational school;									
	I	Experience										
EXP	Age - 15 - years of schooling	EXP^2	Square of experience									
	after grade 8											
	Owne	rship Dummies										
PRIVOWN	Private sector	Omitted	Public sector or ambiguous									
	Occur	pation Dummies										
MGR	Managers, officials, etc.	SERVICE	Service and market workers									
PROF	Professionals	CRAFT	Craft and related trade workers									
TECH	Technicians	PLANT	Plant and machine operators									
CLERK	Clerks	Omitted	Elementary, unskilled occupations;									
			agricultural workers, army etc.									

	Russia			Capitals			Central			North			Volga		
_	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Gender									1						
MALE(%)	51.6	48.8	48.9	48.6	44.2	54.1	53.1	47.7	47.4	52.4	49.5	45.4	48.9	44.9	48.1
Education															
COLUNIV(%)	21.5	27.5	22.7	37.4	37.7	29.4	22.6	28.2	24.1	17.9	24.0	19.2	19.0	27.7	26.2
SPECSECSCH(%)	25.5	25.9	25.7	21.9	20.8	23.4	24.5	28.5	28.6	26.4	18.3	22.1	27.5	28.3	27.6
ORDSCH	43.4	34.5	46.1	34.4	34.4	39.5	44.2	33.3	42.6	47.6	39.4	53.8	44.5	34.0	43.1
in which															
SECVOCSCH(%)	16.5	18.7	20.1	14.9	19.5	13.3	15.7	17.8	19.8	21.1	25.0	26.3	15.1	16.4	17.9
ORDVOCSCH(%)	9.1	8.6	7.7	7.6	9.1	9.2	10.3	8.5	6.7	11.8	11.5	7.9	9.5	8.2	7.3
GENSECSCH(%)	17.8	7.2	18.3	11.9	5.8	17.0	18.2	7.0	16.1	14.6	2.9	19.6	19.9	9.4	17.9
Other (%)	9.6	12.1	5.5	6.3	7.1	7.7	8.7	10.0	4.7	8.1	18.3	4.9	9.0	10.0	3.1
Years of Schooling.	11.8	12.7	12.2	12.5	13.3	12.6	11.8	12.8	12.4	11.8	12.4	11.9	11.7	12.7	12.5
	(2.2)	(2.6)	(2.8)	(2.2)	(3.0)	(3.2)	(2.2)	(2.5)	(2.8)	(2.0)	(2.6)	(2.9)	(2.1)	(2.4)	(2.8)
Exportioneo															
EXPEDIENCE (mg)	107	183	19/	107	186	178	10.0	19/	199	10.0	177	185	10.4	183	10 1
EAFLINEINCE (VIS)	(10.4)	(10.5	(10.4)	(10.4)	(10.3)	(10.8)	(10.6)	(10.4)	(10.7)	(10.1)	(10.3)	(10.5	(10.7)	(10.7)	(10.1)
	(10.4)	(10.0)	(10.9)	(10.4)	(10.3)	(10.0)	(10.0)	(10.4)	(10.7)	(10.1)	(10.3)	(10.0)	(10.7)	(10.7)	(10.7)
Ownership															
PRIVOWN (%)	21.9	25.2	37.5	28.3	32.5	56.0	22.7	28.0	39.8	20.7	33.7	46.3	18.2	22.8	29.8
Occupations	u														
MGR(%)	1.2 5	5.3	3.7	1.5	3.2	6.0	1.0	4.8	3.6	0.8	4.8	3.3	1.5	6.5	4.0
PROF(%)	19.0 3	16.3	15.9	29.2	20.1	14.2	22.6	15.2	16.1	15.0	13.9	17.5	16.5	18.5	19.1
TECH(%)	14.3 Ę	15.5	16.3	17.6	19.5	22.0	12.2	16.2	18.6	15.4	13.9	15.8	16.0	17.2	18.8
CLERK(%)	6.5 ⊟	5.6	6.1	4.3	6.5	7.3	8.0	6.2	5.7	4.1	4.3	6.7	6.5	3.8	6.6
SERVICE (%)	7.00	10.6	11.1	8.8	14.3	9.6	5.1	10.8	10.7	6.9	10.6	11.7	7.1	10.9	9.4
CRAFT(%)	20.5	15.8	15.7	18.8	11.0	13.3	18.5	14.9	14.5	18.3	14.9	12.1	21.9	16.1	14.0
PLANT (%)	20.1	19.1	19.3	10.6	13.0	13.3	21.2	20.7	18.8	25.6	23.6	21.3	18.8	18.0	18.8
Other (%)	11.3	11.7	11.9	9.1	12.3	14.2	11.4	11.3	12.1	13.8	13.9	11.7	11.7	9.0	9.1

 Table 7: Workforce Characteristics (Part 1)

				18		JIMOICE			u (4)						
_		Russia			Caucasus			Urals			Westsib			East	
_	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Gender															
MALE(%)	51.6	48.8	48.9	55.9	50.6	49.9	52.7	50.4	50.1	51.5	47.7	48.3	49.1	55.4	50.1
Education															
COLUNIV(%)	21.5	27.5	22.7	20.5	28.2	22.0	17.1	23.9	17.2	19.3	28.5	20.6	20.2	26.9	24.5
SPECSECSCH(%)	25.5	25.9	25.7	25.1	27.2	22.3	23.8	25.5	26.8	28.1	21.7	24.6	27.4	27.8	22.7
ORDSCH(%)	43.4	34.5	46.1	43.2	30.1	48.0	49.8	39.5	50.4	44.4	34.1	50.4	35.3	30.3	43.2
in which															
SECVOCSCH(%)	16.5	18.7	20.1	18.7	16.8	19.4	18.3	21.5	23.7	19.0	20.6	21.8	10.1	15.2	17.1
ORDVOCSCH(%)	9.1	8.6	7.7	5.8	9.2	10.5	10.2	8.9	6.9	6.1	7.8	7.1	10.8	6.6	8.0
GENSECSCH(%)	17.8	7.2	18.3	18.7	4.1	18.1	21.3	9.1	19.8	19.3	5.7	21.5	14.4	8.5	18.0
Other (%)	9.6	12.1	5.5	11.2	14.5	7.7	9.3	11.1	5.6	8.2	15.7	4.4	17.1	15.0	9.6
Years of Schooling	11.8	12.7	12.2	11.7	12.7	12.0	11.5	12.5	11.9	11.8	12.6	12.1	11.5	12.5	12.3
	(2.2)	(2.6)	(2.8)	(2.2)	(2.6)	(2.8)	(2.2)	(2.4)	(2.8)	(2.1)	(2.7)	(2.5)	(2.4)	(2.7)	(3.0)
Experience															
EXPERINCE (yrs)	19.7	18.3	18.4	20.6	17.4	18.6	19.7	18.3	18.5	18.8	19.0	18.1	20.8	18.4	18.2
	(10.4)	(10.6)	(10.9)	(11.2)	(11.1)	(10.9)	(10.1)	(10.5)	(11.2)	(9.3)	(9.9)	(10.6)	(9.9)	(11.4)	(11.6)
Aumorchin															
PRIVOWN (%)	21.9	25.2	37.5	22.8	21.8	362	20.8	20.0	37.2	183	260	40.9	249	253	283
	21,9	25.2	57.5	22.0	21.0	50.2	20.0	20.0	57.2	10.5	20.0	-10.2	24.9	23.3	20.5
Occupations		Ę				i									
MGR(%)	1.2	^{ctio} 5.3	3.7	0.9	4.7	2.4	0.6	5.9	2.9	0.7	5.7	4.9	2.5	4.7	3.5
PROF(%)	19.0	3 16.3	15.9	16.4	19.0	17.3	15.6	16.6	12.6	20.0	17.1	12.6	16.2	10.8	16.5
TECH(%)	14.3	Ê 15.5	16.3	15.6	14.2	13.9	12.1	13.2	14.2	14.2	15.7	14.8	12.6	15.5	11.5
CLERK (%)	6.5	B 5.6	6.1	6.1	6.6	6.6	5.8	6.1	5.7	7.8	5.3	4.6	9.0	6.3	6.5
SERVICE (%)	7.0	10.6	11.1	7.5	10.8	12.9	7.1	8.3	11.5	5.8	13.9	13.5	9.4	8.9	10.9
CRAFT(%)	20.5	15.8	15.7	18.7	13.6	16.0	27.1	20.6	20.0	18.0	13.2	16.9	18.8	16.8	16.5
PLANT (%)	20.1	19.1	19.3	19.6	15.2	17.3	21.3	18.0	21.6	23.4	19.2	17.5	22.4	23.7	23.3
Other(%)	11.3	11.7	11.9	15.3	15.8	13.6	10.4	11.3	11.5	10.2	10.0	15.1	9.0	13.3	11.2

Table 7: Workforce Characteristics (Part 2)

	Russia		1		Capitals			Central		,	North			Volga	
	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Constant	6.499 ³	5.995 ³	7.484 ³	6.828^3	6.488 ³	7.880^{3}	6.412^3	6.496 ³	7.935 ³	6.764 ³	6.346 ³	7.957 ³	6.054^3	5.751 ³	7.207 ³
Gender			1												
MALE	0.327^3	0.356^{3}	0.388^{3}	0.362^{3}	0.093	0.228^{3}	0.362^{3}	0.332^{3}	0.359^{3}	0.202	0.264	0.467^3	0.204^3	0.332^{3}	0.389^{3}
Education															
COLUNIV	0.589^{3}	0.676^{3}	0.597^{3}	0.113	0.526^{3}	0.437^{3}	0.835^{3}	0.440^3	0.273^{1}	0.497	0.639^2	0.533	1.071^{3}	0.739^{3}	0.765^3
SPECSECSCH	0.335^{3}	0.347^3	0.323^{3}	-0.030	0.369^2	0.219	0.458^{3}	0.169	0.016	0.385	0.253	0.171	0.471^3	0.356^{3}	0.382^{3}
ORDSCH	0.161^{3}	0.195^{3}	0.235^{3}	-0.176	0.177	0.212^{1}	0.305^{3}	0.057	0.018	0.188	0.222	0.055	0.411^3	0.174	0.332^{3}
Experience															
EXP	0.013^{3}	0.031^3	0.010^{3}	0.020	0.027^{1}	0.024^{1}	0.018	0.035^{3}	0.001	0.019	0.025	0.027	0.003	0.022^{1}	0.007
EXP ² /100	-0.034^3	-0.073^3	-0.035^3	-0.065^{1}	-0.057	-0.063^{1}	-0.044^{1}	-0.100^3	-0.007	-0.058	-0.081	-0.089^2	0.017	-0.040	-0.025
Ownership															
PRIVOWN	0.044	0.172^{3}	0.274^3	0.488^{3}	0.569^{3}	0.206^{3}	0.066^{3}	0.139 ¹	0.390^{3}	0.009	0.261^{1}	0.158	0.106	0.082	0.205^{3}
Occupations			1												
MGR	0.442^3	0.475^3	0.564^3	0.926^{3}	0.079	0.558^2	-0.121	0.495^2	0.444^2	1.221^{3}	0.719^{1}	0.480^2	0.263	0.369^2	0.582^3
PROF	0.427^3	0.380^{3}	0.389^{3}	0.347^2	0.131	0.176	0.155	0.095	0.363^{3}	0.429	0.296	0.162	0.276^{1}	0.559^3	0.385^3
TECH	0.376^{3}	0.431^3	0.312^{3}	0.329^2	0.231	0.143	0.262^{1}	0.123	0.224^2	0.286	0.507^{1}	0.151	0.342^{3}	0.414^{3}	0.464^3
CLERK	0.287^3	0.266^3	0.367^{3}	0.401^{1}	0.183	0.112	0.275	0.377^2	0.224^2	0.157	0.295	0.458	0.254^{1}	0.300^{1}	0.479^3
SERVICE	0.386^{3}	0.334^{3}	0.187^{3}	0.183	-0.077	0.099	0.389^2	0.176	0.028	0.678^3	0.030	-0.178	0.306^2	0.420^{3}	0.348^3
CRAFT	0.496^{3}	0.504^3	0.362^{3}	0.523^3	0.540^3	0.145	0.436^{3}	0.376^{3}	0.316 ³	0.331	0.415	0.249	0.511^3	0.599^3	0.511^3
PLANT	0.502^{3}	0.477^3	0.320^{3}	0.752^{3}	0.489^{3}	0.174^{1}	0.301^2	0.208^{1}	0.201^2	0.540^3	0.822^{3}	0.197	0.475^3	0.559^3	0.467^3
		_													
\mathbf{R}^2	0.141	- <u>5</u> 0.151	0.182	0.257	0.277	0.207	0.157	0.122	0.200	0.135	0.213	0.187	0.217	0.185	0.214
Observations	3,078	<u>≜</u> 2,877	3,433	329	154	218	572	585	671	246	208	240	536	523	648

 Table 8: Regression Analysis – Coefficient Estimates (Part 1)

Notes: Dependent variable ^{3,2,1} – significant at 1%, 5%, and 10% level respectively (inferences based on the White heteroskedasticity-consistent standard errors). Standard errors are not reported here due to the large size of the table, but they are available (along with the data files and Eviews outputs) from the author upon request.

	Russia			Caucasus			Urals		,	Westsib			East		
	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Constant	6.499 ³	5.995 ³	7.484 ³	6.733 ³	5.659 ³	7.471 ³	6.899 ³	5.838 ³	7.307 ³	5.896 ³	5.958 ³	7.554 ³	6.796 ³	5.768^{3}	7.020^{3}
Gender															
MALE	0.327^3	0.356^{3}	0.388^{3}	0.312^{3}	0.347^3	0.341 ³	0.429^3	0.556^{3}	0.446^{3}	0.359^{3}	0.221	0.389^{3}	0.310^2	0.463^3	0.445^3
Education									1			1			
COLUNIV	0.589^{3}	0.676^{3}	0.597^3	0.372^{1}	0.986^{3}	0.646^3	0.164	0.616^{3}	0.921^{3}	0.951^3	0.811^3	0.465^2	0.631^3	0.900^{3}	0.647^3
SPECSECSCH	0.335^{3}	0.347^3	0.323^{3}	0.096	0.476^3	0.272	0.133	0.383^{3}	0.655^{3}	0.873^3	0.489^2	0.283	0.323^{1}	0.620^{3}	0.513^3
ORDSCH	0.161^3	0.195^{3}	0.235^3	-0.113	0.164	0.207	-0.113	0.215^{1}	0.504^3	0.536^2	0.169	0.094	0.151	0.344 ¹	0.269
Experience															
EXP	0.013^{3}	0.031^3	0.010^{3}	-0.016	0.063^3	0.016	0.0143	0.027	0.010	0.033	0.015	-0.001	-0.001	0.007	0.012
EXP ² /100	-0.034^3	-0.073^3	-0.035^3	0.037	-0.148^3	-0.054^2	-0.044^2	-0.050^3	-0.033^3	-0.107^{1}	-0.055	-0.023	0.000^{3}	0.001	-0.032
Ownership															
PRIVOWN	0.044	0.172^3	0.274^3	-0.067	0.016	0.230^{3}	0.015	0.292^3	0.192^3	-0.126	-0.111	0.204^2	-0.274^2	0.133	0.291^3
Occupations	2	2					2	2					2		
MGR	0.442^{3}	0.475^3	0.564^3	-0.171	0.404	0.732^2	0.818^3	0.738^3	0.603^3	0.111	0.641	0.585^{3}	0.579^2	0.387	0.616^{3}
PROF	0.427^{3}	0.380^{3}	0.389^3	0.5423	0.030	0.4313	0.5133	0.5693	0.3553	0.9253	0.8463	0.4873	0.4281	0.3113	0.6053
TECH	0.376^{3}	0.431^3	0.312^{3}	0.467^3	0.330^{1}	0.379^{3}	0.321^2	0.598^3	0.241^2	0.762^{3}	0.968^{3}	0.119	0.182^{1}	0.423^2	0.515^3
CLERK	0.287^3	0.266^{3}	0.367^3	0.200	0.004^2	0.426^{3}	0.132	0.277^{1}	0.444^3	0.493^3	0.234^{3}	0.123	0.497^{1}	0.135	0.447^2
SERVICE	0.386^{3}	0.334^{3}	0.187^{3}	0.313^{1}	0.460	0.251^2	0.209	0.400^{3}	0.201^{1}	0.763^{3}	0.650^{3}	0.129	0.319^{1}	0.406^{1}	0.482^{3}
CRAFT	0.496^{3}	0.504^3	0.362^{3}	0.405^3	0.549^3	0.555^3	0.379^{3}	0.537^3	0.336^{3}	0.894^3	0.834^{3}	0.314 ³	0.463^{1}	0.354	0.339^{1}
PLANT	0.502^{3}	0.477^3	0.320^{3}	0.316^2	0.587^3	0.582^3	0.418^{3}	0.552^{3}	0.338^{3}	1.166	0.905^{3}	0.106	0.219	0.159	0.347^2
\mathbf{R}^2	0.141	_ਰ 0.151	0.182	0.148	0.242	0.240	0.193	0.282	0.253	0.270	0.185	0.166	0.155	0.161	0.183
Observations	3,078	2,877	3,433	346	316	381	480	494	611	292	281	325	277	316	339

 Table 8: Regression Analysis – Coefficient Estimates (Part 2)

Notes: Dependent variable $\frac{3}{2}$ natural logarithm of adjusted real full contractual monthly wage. 3,2,1 – significant at 10%, 5%, and 10% level respectively (inferences based on the White heteroskedasticity-consistent standard errors). Standard errors are not reported here due to the large size of the table, but they are available (along with the data files and Eviews outputs) from the author upon request.

		Capitals		1	Central			North			Volga	
-	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Characteristics:												
Gender	-0.010	-0.016	0.020	0.005	-0.004	-0.006	0.003	0.003	-0.014	-0.009	-0.014	-0.003
Education	0.067	0.051	0.017	0.004	0.012	0.010	-0.012	-0.040	-0.015	-0.007	0.009	0.020
Experience	0.000	0.006	0.002	-0.004	0.004	0.001	0.002	0.002	0.002	-0.002	-0.002	0.002
Ownership	0.003	0.013	0.051	0.000	0.005	0.006	0.000	0.015	0.024	-0.002	-0.004	-0.021
Occupations	0.002	-0.017	-0.002	-0.001	0.001	-0.001	-0.005	-0.005	-0.001	-0.002	0.013	0.014
Character. Total	0.062	0.036	0.088	0.005	0.018	0.010	-0.013	-0.026	-0.004	-0.022	0.003	0.012
Pricing:												
Const	0.329	0.492	0.396	-0.087	0.501	0.451	0.265	0.351	0.474	-0.445	-0.244	-0.277
Gender	0.017	-0.116	-0.087	0.019	-0.011	-0.014	-0.066	-0.045	0.036	-0.060	-0.011	0.000
Education	-0.374	-0.058	-0.080	0.149	-0.163	-0.258	0.010	-0.015	-0.142	0.240	0.013	0.102
Experience	-0.015	-0.002	0.119	0.051	-0.044	-0.043	0.006	-0.132	0.055	0.060	-0.012	-0.008
Ownership	0.125	0.129	-0.038	0.005	-0.009	0.046	-0.007	0.030	-0.054	0.011	-0.020	-0.020
Occupations	-0.006	-0.161	-0.143	-0.136	-0.177	-0.079	-0.013	0.048	-0.144	-0.043	0.064	0.100
Pricing Total	0.076	0.285	0.166	0.001	0.096	0.103	0.195	0.236	0.224	-0.237	-0.211	-0.103
TOTAL	0.139	0.321	0.254	0.006	0.114	0.113	0.182	0.210	0.221	-0.258	-0.207	-0.091

 Table 9: Decomposition of Regional (log) Wage Differentials (Part 1)

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		Caucasus	ļ		Urals		0	Westsib	,		East	
_	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Characteristics:												
Gender	0.014	0.007	0.004	0.004	0.006	0.004	0.000	-0.004	-0.002	-0.008	0.024	0.005
Education	-0.008	0.001	-0.010	-0.022	-0.016	-0.019	-0.002	-0.008	-0.006	-0.014	-0.004	-0.007
Experience	0.011	-0.011	-0.001	-0.002	0.002	-0.002	0.012	0.013	0.003	-0.001	-0.012	-0.005
Ownership	0.000	-0.006	-0.003	0.000	-0.009	-0.001	-0.002	0.001	0.009	0.001	0.000	-0.025
Occupations	-0.019	-0.025	-0.010	0.011	0.006	-0.001	0.004	0.003	-0.013	0.007	-0.001	0.003
Character. Total	-0.001	-0.034	-0.021	-0.009	-0.011	-0.019	0.012	0.005	-0.009	-0.015	0.007	-0.029
Pricing:						1						
Const	0.234	-0.337	-0.012	0.401	-0.157	-0.176	-0.603	-0.038	0.070	0.297	-0.227	-0.464
Gender	-0.008	-0.004	-0.023	0.053	0.101	0.029	0.016	-0.064	0.000	-0.008	0.059	0.029
Education	-0.223	0.113	-0.014	-0.257	0.003	0.281	0.388	0.060	-0.108	0.002	0.182	0.070
Experience	-0.193	0.244	0.010	-0.019	0.032	0.001	0.058	-0.224	-0.146	-0.108	-0.092	0.037
Ownership	-0.025	-0.034	-0.016	-0.006	0.024	-0.030	-0.031	-0.074	-0.028	-0.079	-0.010	0.005
Occupations	-0.036	-0.065	0.109	-0.062	0.095	-0.008	0.417	0.341	-0.080	-0.078	-0.115	0.101
Pricing Total	-0.252	-0.083	0.054	0.110	0.097	0.095	0.245	0.002	-0.292	0.025	-0.203	-0.222
TOTAL	-0.253	-0.117	0.033	0.101	0.086	0.075	0.257	0.007	-0.300	0.010	-0.196	-0.251

 Table 9: Decomposition of Regional (log) Wage Differentials (Part 2)

		1 a.		tempora		-2004)	Decompos		incertoine	ui (105)	wage Din	ci cittiaic					
		(Capitals				Central				North				Volga		
	Base	Change	Differential	Sign	Base	Change	Differential	Sign	Base	Change	Differential	Sign	Base	Change	Differential	Sign	
Characteristics:																	
Gender	-0.010	0.030	Increased	Changed	0.005	-0.011	Increased	Changed	0.003	-0.016	Decreased	Changed	-0.009	0.006	Decreased	Same	
Education	0.067	-0.050	Decreased	Same	0.004	0.006	Increased	Same	-0.012	-0.003	Increased	Same	-0.007	0.027	Increased	Changed	
Experience	0.000	0.002	Increased	Same	-0.004	0.004	Decreased	Changed	0.002	0.000	Increased	Same	-0.002	0.004	Decreased	Changed	
Ownership	0.003	0.048	Increased	Same	0.000	0.006	Increased	Same	0.000	0.024	Increased	Changed	-0.002	-0.019	Increased	Same	
Occupations	0.002	-0.004	Decreased	Changed	-0.001	0.000	Increased	Same	-0.005	0.004	Decreased	Same	-0.002	0.016	Increased	Changed	
Character. Total	0.062	0.026	Increased	Same	0.005	0.005	Increased	Same	-0.013	0.009	Decreased	Same	-0.022	0.033	Decreased	Changed	
Pricing:																	
Const	0.329	0.067	Increased	Same	-0.087	0.539	Increased	Changed	0.265	0.209	Increased	Same	-0.445	0.168	Decreased	Same	
Gender	0.017	-0.104	Increased	Changed	0.019	-0.033	Decreased	Changed	-0.066	0.102	Decreased	Changed	-0.060	0.060	Decreased	Changed	
Education	-0.374	0.294	Decreased	Same	0.149	-0.407	Increased	Changed	0.010	-0.152	Increased	Changed	0.240	-0.137	Decreased	Same	
Experience	-0.015	0.133	Increased	Changed	0.051	-0.095	Decreased	Changed	0.006	0.049	Increased	Same	0.060	-0.068	Decreased	Changed	
Ownership	0.125	-0.163	Decreased	Changed	0.005	0.041	Increased	Same	-0.007	-0.046	Increased	Same	0.011	-0.032	Increased	Changed	
Occupations	-0.006	-0.137	Increased	Changed	-0.136	0.057	Decreased	Same	-0.013	-0.131	Increased	Same	-0.043	0.143	Increased	Changed	
Pricing Total	0.076	0.090	Increased	Same	0.001	0.102	Increased	Same	0.195	0.030	Increased	Same	-0.237	0.134	Decreased	Same	
TOTAL	0.139	0.115	Increased	Same	0.006	0.107	Increased	Same	0.182	0.039	Increased	Same	-0.258	0.167	Decreased	Same	

Table 10: Intertemporal (1994-2004) Decomposition of Regional (log) Wage Differentials (part 1)

		(Caucasus				Urals				Westsib			,	East	
	Base	Change	Differential	Sign												
Characteristics:																
Gender	0.014	-0.011	Increased	Same	0.004	0.001	Increased	Same	0.000	-0.002	Increased	Same	-0.008	0.013	Decreased	Changed
Education	-0.008	-0.002	Increased	Same	-0.022	0.002	Decreased	Changed	-0.002	-0.003	Increased	Same	-0.014	0.008	Decreased	Same
Experience	0.011	-0.012	Decreased	Changed	-0.002	-0.001	Increased	Same	0.012	-0.009	Decreased	Same	-0.001	-0.004	Increased	Same
Ownership	0.000	-0.004	Increased	Changed	0.000	0.000	Increased	Same	-0.002	0.011	Increased	Changed	0.001	-0.026	Increased	Changed
Occupations	-0.019	0.009	Decreased	Same	0.011	-0.013	Decreased	Changed	0.004	-0.017	Increased	Changed	0.007	-0.004	Decreased	Same
Character. Total	-0.001	-0.020	Increased	Same	-0.009	-0.010	Increased	Same	0.012	-0.021	Decreased	Changed	-0.015	-0.014	Increased	Same
Pricing:																
Const	0.234	-0.246	Decreased	Changed	0.401	-0.577	Decreased	Changed	-0.603	0.673	Decreased	Changed	0.297	-0.761	Increased	Changed
Gender	-0.008	-0.015	Decreased	Changed	0.053	-0.025	Decreased	Same	0.016	-0.016	Decreased	Same	-0.008	0.037	Increased	Changed
Education	-0.223	0.209	Decreased	Same	-0.257	0.538	Increased	Changed	0.388	-0.496	Decreased	Changed	0.002	0.069	Increased	Same
Experience	-0.193	0.203	Decreased	Changed	-0.019	0.019	Decreased	Changed	0.058	-0.204	Increased	Changed	-0.108	0.145	Decreased	Changed
Ownership	-0.025	0.009	Decreased	Same	-0.006	-0.024	Increased	Same	-0.031	0.003	Decreased	Same	-0.079	0.084	Decreased	Changed
Occupations	-0.036	0.145	Increased	Changed	-0.062	0.054	Decreased	Same	0.417	-0.497	Decreased	Changed	-0.078	0.179	Increased	Changed
Pricing Total	-0.252	0.305	Decreased	Changed	0.110	-0.015	Decreased	Same	0.245	-0.537	Increased	Changed	0.025	-0.247	Increased	Changed
TOTAL	-0.253	0.286	Decreased	Changed	0.101	-0.026	Increased	Same	0.257	-0.557	Increased	Changed	0.010	-0.261	Increased	Changed

 Table 10: Intertemporal (1994-2004) Decomposition of Regional (log) Wage Differentials (part 2)

Table 11: Cross-	regional I	Price-Fact	tor Corre	elations
	1994	2000	2004	TOTAL
Gender				
MALE	0.186	0.688	-0.700	0.167
Education				
COLUNIV	-0.425	-0.231	-0.382	-0.184
SPECSECSCH	0.785	0.162	-0.009	0.278
ORDSCH	0.224	-0.032	-0.059	0.079
Experience				
EXPERIENCE	-0.793	-0.696	-0.182	-0.557
EXPERIENCESQ	0.713	0.676	0.137	0.653
Ownership				
PRIVOWN	0.434	0.489	-0.265	0.439
Occupations				
MGR	0.101	0.574	-0.302	0.125
PROF	-0.193	-0.027	-0.025	-0.017
TECH	0.183	-0.378	-0.393	-0.230
CLERK	0.548	-0.523	0.295	0.266
SERVICE	-0.518	-0.178	-0.171	-0.425
CRAFT	-0.294	-0.256	0.250	0.008
PLANT	-0.087	-0.132	0.167	-0.017

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Appendix A – Wage Adjustments

(I) Adjustment for Arrears

(1)
$$W_i^C = (E_i + WD_i)/(D_i + 1)$$

Where E_i is the wage reported by worker I in RLMS, WD_i is the wage owed to the worker I, D_i is the duration of the wage debt excluding the last 30 days, and W_i^C is the full contractual wage of the worker i. Further W_i with different superscripts correspond to the wage of individual i after each consecutive adjustment.

(II) Adjustment for Inflation

- (1) $\ln(W_i^C) = X_i'B + T_i'A + \varepsilon_i$
- $(2)\,\ln(W^P_i)=\ln(W^C_i)-T'_iA$

Where X_i is the vector of individual characteristics used in the decomposition, B is the vector of the estimated coefficients of these characteristics from the pooled wage regression, T_i is the vector of monthly dummies and A – the vector of their coefficient estimates.. The adjustment is borrowed from Ogloblin 1999.

(III) Adjustment for the Regional Cost of Living

 $W_i^R = W_i^P / C_{ri}$

Where Cri captures the price index in the region where individual i lives.

(IV) Adjustment for the Work Status and Hours

$$(1) \ln(W_i^R) = b_p P_i + b_{ph} P_i \ln(H_i) + b_{fh} F_i ln(H_i) + X_i \prime B + u_i$$

$$(2) \ln(W_i) = \ln(W_i^R) - b_p P_i - b_{ph} P_i \ln(H_i) - b_{fh} (F_i ln(H_i) - \ln(173.33))$$

Where P_i is a dummy equal to 1 if worker i works part-time (<35 hrs per week) and 0 otherwise, H_i is the number of hours per month the individual i works, F_i is the full-time status dummy equal to 1- P_i , X_i is the vector of explanatory variables used in the decomposition, and b_p , b_{ph} , and b_{fh} are respectively the coefficient estimate of the part-time dummy, the interaction of the part-time dummy with the working hours, and the interaction of the full-time dummy with the working hours in the wage regression (1) run on the pooled data.

Appendix B – Coefficient Tests for the Categories of Secondary Education

Variable in the Pooled		P-value	
Wage Regression	1994	2000	2004
SECVOCSCH-ORDVOCSCH	0.132	0.018	0.181
SECVOCSCH-GENSECSCH	0.771	0.272	0.714
GENSECSCH-ORDVOC SCH	0.141	0.178	0.322
SPECSECSCH - SECVOCSCH	0.003	0.014	0.004
SPECSECSCH - GENSECSCH	0.000	0.000	0.000
SPECSECSCH - ORDVOCSCH	0.000	0.000	0.000

Notes: Null Hypothesis: the coefficients of the variables (in each pair) in the pooled wage equation are the same.

SPECSECSCH – Specialized secondary school (similar to associate degree in the USA). SECVOCSCH – Secondary vocational school (grants vocation and permits to enter university). ORDVOCSCH – Ordinary vocational school (grants vocation, but does not permit to enter university).

GENSECSCH - General secondary school (permits to enter university, no vocation).

P-values based on White heteroskedasticity consistent standard errors.

		Tabl	e C1: Dec	ompositior	n of Region	nal (log) V	Vage Diffe	rentials (P	art 1)			
		Capitals			North			Volga			Caucasus	
_	1994	2000	2004	1994	2000	2004	1994	2000	2004	1994	2000	2004
Characteristics:												
Gender	-0.016	-0.012	0.024	-0.003	0.006	-0.007	-0.015	-0.009	0.003	0.010	0.010	0.009
Education	0.082	0.029	0.013	-0.020	-0.032	-0.013	-0.016	-0.002	0.006	-0.018	-0.004	-0.006
Experience	0.002	0.001	0.001	-0.010	0.002	0.000	0.001	-0.007	0.001	-0.008	-0.014	0.000
Ownership	0.004	0.006	0.063	-0.001	0.008	0.025	-0.003	-0.007	-0.039	0.000	-0.009	-0.014
Occupations	-0.002	-0.022	0.000	0.006	-0.005	-0.002	0.011	0.003	0.014	0.000	-0.013	-0.007
Character. Total	0.069	0.003	0.102	-0.028	-0.021	0.004	-0.022	-0.022	-0.016	-0.017	-0.030	-0.018
Pricing:												
Const	0.416	-0.008	-0.055	0.352	-0.150	0.022	-0.357	-0.745	-0.728	0.321	-0.837	-0.464
Gender	0.000	-0.106	-0.071	-0.084	-0.034	0.049	-0.077	0.000	0.014	-0.028	0.008	-0.009
Education	-0.542	0.115	0.172	-0.135	0.128	0.104	0.095	0.176	0.365	-0.366	0.270	0.230
Experience	-0.067	0.042	0.162	-0.045	-0.093	0.099	0.009	0.032	0.036	-0.244	0.286	0.052
Ownership	0.119	0.140	-0.103	-0.012	0.041	-0.107	0.007	-0.013	-0.055	-0.030	-0.027	-0.058
Occupations	0.135	0.020	-0.065	0.113	0.224	-0.063	0.080	0.250	0.180	0.082	0.099	0.186
Pricing Total	0.061	0.204	0.040	0.189	0.117	0.105	-0.243	-0.299	-0.188	-0.265	-0.201	-0.062
TOTAL	0.130	0.207	0.141	0.161	0.095	0.108	-0.265	-0.322	-0.204	-0.282	-0.231	-0.080

Appendix C – Difference Decomposition on the Central Region Base

		Urals		<u> </u>	Westsib			East	
-	1994	2000	2004	1994	2000	2004	1994	2000	2004
Characteristics:									
Gender	-0.002	0.009	0.010	-0.006	0.000	0.003	-0.015	0.026	0.010
Education	-0.032	-0.021	-0.018	-0.010	-0.010	-0.009	-0.033	-0.009	0.000
Experience	0.013	-0.002	0.000	0.002	0.008	0.001	0.000	-0.022	-0.001
Ownership	-0.001	-0.011	-0.010	-0.003	-0.003	0.004	0.001	-0.004	-0.045
Occupations	0.029	0.014	-0.002	0.008	-0.002	-0.012	0.014	0.005	0.003
Character. Total	0.007	-0.011	-0.021	-0.009	-0.007	-0.012	-0.032	-0.003	-0.032
Pricing:									
Const	0.488	-0.658	-0.628	-0.516	-0.538	-0.381	0.384	-0.728	-0.915
Gender	0.035	0.113	0.044	-0.002	-0.053	0.014	-0.025	0.073	0.043
Education	-0.400	0.159	0.528	0.242	0.213	0.144	-0.133	0.336	0.312
Experience	-0.071	0.075	0.041	0.006	-0.179	-0.101	-0.162	-0.042	0.075
Ownership	-0.011	0.031	-0.074	-0.035	-0.065	-0.076	-0.085	-0.002	-0.028
Occupations	0.057	0.263	0.072	0.550	0.521	-0.001	0.052	0.054	0.181
Pricing Total	0.099	-0.017	-0.016	0.245	-0.101	-0.401	0.031	-0.308	-0.331
TOTAL	0.105	-0.028	-0.037	0.236	-0.108	-0.413	-0.001	-0.312	-0.363

 Table C1: Decomposition of Regional (log) Wage Differentials (Part 2)

		Iabl		i tempor a		-2004)	Decompo		Region	ai (105)	mage Di					
		(Capitals				North				Volga			(Caucasus	
	Base	Change	Differential	Sign	Base	Change	Differential	Sign	Base	Change	Differential	Sign	Base	Change	Differential	Sign
Characteristics:																
Gender	-0.016	0.041	Increased	Changed	-0.003	-0.005	Increased	Same	-0.015	0.018	Decreased	Changed	0.010	-0.001	Decreased	Same
Education	0.082	-0.069	Decreased	Same	-0.020	0.007	Decreased	Same	-0.016	0.021	Decreased	Changed	-0.018	0.012	Decreased	Same
Experience	0.002	-0.001	Decreased	Same	-0.010	0.010	Decreased	Changed	0.001	0.000	Increased	Same	-0.008	0.008	Decreased	Same
Ownership	0.004	0.059	Increased	Same	-0.001	0.027	Increased	Changed	-0.003	-0.036	Increased	Same	0.000	-0.014	Increased	Changed
Occupations	-0.002	0.002	Decreased	Changed	0.006	-0.008	Decreased	Changed	0.011	0.003	Increased	Same	0.000	-0.006	Increased	Same
Character. Total	0.069	0.032	Increased	Same	-0.028	0.032	Decreased	Changed	-0.022	0.006	Decreased	Same	-0.017	-0.001	Increased	Same
Pricing:																
Const	0.416	-0.471	Decreased	Changed	0.352	-0.330	Decreased	Same	-0.357	-0.370	Increased	Same	0.321	-0.785	Increased	Changed
Gender	0.000	-0.071	Increased	Same	-0.084	0.133	Decreased	Changed	-0.077	0.092	Decreased	Changed	-0.028	0.019	Decreased	Same
Education	-0.542	0.714	Decreased	Changed	-0.135	0.239	Decreased	Changed	0.095	0.270	Increased	Same	-0.366	0.596	Decreased	Changed
Experience	-0.067	0.229	Increased	Changed	-0.045	0.144	Increased	Changed	0.009	0.027	Increased	Same	-0.244	0.296	Decreased	Changed
Ownership	0.119	-0.222	Decreased	Changed	-0.012	-0.095	Increased	Same	0.007	-0.062	Increased	Changed	-0.030	-0.028	Increased	Same
Occupations	0.135	-0.200	Decreased	Changed	0.113	-0.176	Decreased	Changed	0.080	0.099	Increased	Same	0.082	0.104	Increased	Same
Pricing Total	0.061	-0.021	Decreased	Same	0.189	-0.084	Decreased	Same	-0.243	0.054	Decreased	Same	-0.265	0.203	Decreased	Same
TOTAL	0.130	0.011	Increased	Same	0.161	-0.052	Decreased	Same	-0.265	0.061	Decreased	Same	-0.282	0.202	Decreased	Same

 Table C2: Intertemporal (1994-2004) Decomposition of Regional (log) Wage Differentials (part 1)

			Urals	,			Westsib				East	,
	Base	Change	Differential	Sign	Base	Change	Differential	Sign	Base	Change	Differential	Sign
Characteristics:												
Gender	-0.002	0.011	Increased	Changed	-0.006	0.009	Decreased	Changed	-0.015	0.025	Decreased	Changed
Education	-0.032	0.014	Decreased	Same	-0.010	0.001	Decreased	Same	-0.033	0.033	Decreased	Changed
Experience	0.013	-0.013	Decreased	Changed	0.002	0.000	Decreased	Same	0.000	-0.001	Increased	Changed
Ownership	-0.001	-0.009	Increased	Same	-0.003	0.007	Increased	Changed	0.001	-0.046	Increased	Changed
Occupations	0.029	-0.031	Decreased	Changed	0.008	-0.020	Increased	Changed	0.014	-0.011	Decreased	Same
Character. Total	0.007	-0.028	Increased	Changed	-0.009	-0.003	Increased	Same	-0.032	0.000	Decreased	Changed
Pricing:									1 1 1			
Const	0.488	-1.115	Increased	Changed	-0.516	0.134	Decreased	Same	0.384	-1.299	Decreased	Changed
Gender	0.035	0.008	Increased	Same	-0.002	0.016	Increased	Changed	-0.025	0.069	Increased	Changed
Education	-0.400	0.928	Increased	Changed	0.242	-0.098	Decreased	Same	-0.133	0.445	Increased	Changed
Experience	-0.071	0.112	Decreased	Changed	0.006	-0.107	Increased	Changed	-0.162	0.237	Decreased	Changed
Ownership	-0.011	-0.063	Increased	Same	-0.035	-0.041	Increased	Same	-0.085	0.057	Decreased	Same
Occupations	0.057	0.015	Increased	Same	0.550	-0.551	Decreased	Changed	0.052	0.129	Increased	Same
Pricing Total	0.099	-0.115	Decreased	Changed	0.245	-0.646	Increased	Changed	0.031	-0.362	Increased	Changed
TOTAL	0.105	-0.143	Decreased	Changed	0.236	-0.648	Increased	Changed	-0.001	-0.362	Increased	Changed

 Table C2: Intertemporal (1994-2004) Decomposition of Regional (log) Wage Differentials (part 2)

Appendix D – Map of Russia



Source: www.map-of-russia.org