
Determinants of Soviet Household Income

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Abstract

World Values Survey data are used to examine household income in the Soviet Union. The data, gathered Summer/Fall 1990, provide a rare opportunity to empirically examine microeconomic factors influencing a Soviet household's position in the regional/national income distribution. The survey contains data - collected regionally - from the three Baltic republics, Belarus, and the Moscow region. The data indicate certain patterns that existed and determined Soviet household income though there are often considerable regional variations. Further, there are marked differences between income distribution determinants in the Soviet Union and the U.S. and West Germany though similarities exist as well.

JEL Classification: D31, P36

Keywords: income distribution, household income, Soviet Union

1. Introduction

While a considerable amount has been written about income in the Soviet Union (SU), little microeconomic evidence exists concerning individual or household income determination. Here a data set that has been little utilized by economists, the 1990-1993 World Values Survey, is used to examine household income in the Soviet Union. Data were collected from approximately 1000 individuals in each of five Soviet regions from June-October 1990; about one year prior to Soviet dissolution. The data, described in more detail below, allow for an examination of household money income determination in these five regions.

The empirical results indicate that certain patterns existed across geographic regions in the SU, though they also indicate that considerable differences existed as well. Further, while it is possible to find similarities with Western countries, the data indicate marked differences with Western household income determinants as well. The paper focuses solely on household income, though it is readily conceded that the link between consumption, material well-being, and income was likely quite different in the SU than in Western market economies. Further, while much may be inferred about relative household income inequality within the SU and between the SU and the West from the data and results, the primary focus here is on what determined relative standing in the Soviet income distribution as opposed to actual income differentials between "rich" and "poor."

The data also provide some insight into income determination during the perestroika reform period. Thus the paper provides a bridge between much of the empirical evidence on Soviet income largely from the 1970s (see below) and the evidence that exists from the transition period in the former SU.

¹ I would like to thank Bernd Hayo, members of ZEI, EuroFaculty, Millersville University/Franklin & Marshall College research seminars, and three anonymous referees and the editors of the European Journal of Comparative Economics for helpful comments. I would also like to thank Elena ashkirova for information regarding the World Values Survey data. Remaining errors are my own. Address: P.O. Box 1002, Millersville, PA 17551, USA, e-mail: Kenneth.smith@millersville.edu

The remainder of the paper is structured as follows: Section II provides a brief literature review. Section III describes the data and the empirical estimation methods. Section IV presents the results, and Sections V provides concluding remarks

2. Literature Review

Bergson (1984) provides an extensive review of the literature regarding Soviet incomes through the early 1980's. As Bergson notes, much of the literature deals with income inequality - in particular comparisons with income inequality in Western market economies - and on saving in the SU. The savings literature generally focuses on so-called "forced saving" implying savings were accumulated due to a lack of outlets for disposable income in the form of consumption.

As Bergson notes, studies of Soviet income inequality have been adversely affected by a lack of data. However, he concludes that the level of income inequality prevailing in the SU of the late 70's - early 80's was considerably less than that of the U.S. though comparable to that of Sweden. Bergson further notes that there have been considerable swings in the level of inequality throughout Soviet history.

The literature on savings in the SU focuses on savings motives and whether or not consumer goods shortages influenced Soviet savings. Examples of earlier studies (Pickersgill, 1976 and Ofer and Pickersgill, 1980) conclude that Soviet household saving functions were rather similar to those of Western households largely discounting the forced savings notion. Pickersgill relied on data reconstructed by Western economists from a variety of Soviet sources while Ofer and Pickersgill used data from a cross-section of Soviet emigrant families.² However more recent evidence by Kim (1997 and 1999) indicates that Soviet savings typically have been underestimated. Kim also provides evidence that shortages did play a significant role in determining Soviet household savings - especially from the mid-1980s on. Additionally Smith (2003) using World Values Survey data presents evidence indicating a weak link between household income and subjective welfare in the SU relative to market economies. This suggests a relatively weak link between income and material consumption.

However, while Pickersgill, Ofer and Pickersgill, and Kim all use measures of household income in their work, they provide little insight into the nature and determination of Soviet household income. Further while empirical work has been done on wages (primarily) in the former Soviet Union (see Brainerd, 1998, and Reilly, 1999, examples using Russian data, Newell and Reilly, 1999, as an example using data from several former Soviet republics, Noorkoiv et al., 1998, and Kroncke and Smith, 1999 for examples using the Estonian Labour Force Survey, and Galbraith et al., 2004, who compare regional and sectoral data from Russia and China), little empirical investigation exists examining wages or income prior to the Summer 1991 breakup of the SU.

Exceptions do exist though. Noorkoiv et al. (1998) and Kroncke-Smith (1999) exploit the retrospective nature of the Estonian Labour Force Survey (conducted in early 1995 but gathering wage information going back to 1989) to examine wages in general (Noorkoiv et al.) and wage differentials based on ethnicity (Kroncke-Smith). Further some work has been done on data gathered through the Soviet Interview

² The findings of Pickersgill (1976) and Ofer and Pickersgill (1980) are supported by a body of work from Richard Portes indicating repressed inflation was not systematic in the SU after the mid 1950s (as summarized in Portes (1989)).

Projects (SIPs). The SIPs gathered data from approximately 2800 Soviet émigrés to the U.S. and over 1000 Soviet émigrés to Israel. SIP data has been used to examine several aspects of earnings and productivity in the former SU (see Vinokur and Ofer, 1987, Ofer and Vinokur, 1992, and Gregory, 1987, for example). The evidence from the SIP projects relates to economic conditions in the SU in the 1970s well before the Gorbachev reform period examined here.

3. Data and Estimation

The World Values Survey data were compiled by the World Values Study Group (1994).³ In all, surveys were conducted in 43 nations/regions between 1990 and 1993. In the June-October 1990 period, surveys were conducted in the three Baltic republics (Lithuania, Latvia, and Estonia), Belarus, and the Moscow region of the then SU. The samples are random and meant to be as representative as possible. Prevailing conditions in the SU naturally made conducting surveys somewhat difficult and it is questionable whether the data are always representative. For example, agricultural workers appear to be considerably underrepresented in the Baltic republics and Belarus. The overall sample sizes range from 903 in Latvia to 1015 in Belarus. All data were collected by personal interview, and potential interviewees include all adult citizens of the SU within a particular republic or the Moscow region.

The survey was designed primarily to collect data on individual values concerning politics, religion, economic conditions, etc. The survey does include questions on household income and a variety of variables that are generally used to estimate income or wages (dating back to Mincer's work, 1974). Unfortunately, in several key ways, the data are lacking. Data were not collected for all individuals in a household. Information on the employment, education, ages, etc., of spouses, children, or other household members is not available. Thus interviewees are included in the estimation samples only if they report being the primary income earner of their household. Initial equations are estimated using aggregate samples. Separate estimations are conducted for households headed by married couples and those headed by single individuals. Further, some variables that might be of interest in income/wage equations are not available in the data set. For example, while data on occupation of the primary income earner are available, data on industry/sector worked in are not.

Despite the data's shortcomings, they offer an excellent opportunity to examine determinants of Soviet household income over a geographically diverse area. Further, since data were collected by republic/region, the data offer excellent opportunities for interregional comparisons. Household income equations are estimated for a pooled Soviet sample and each of the individual republics and the Moscow region. Household income equations are also estimated for the U.S. and West Germany. The paper presents results for the U.S. and West Germany primarily to provide a frame of reference for the Soviet results.

The data do not provide a specific household income figure. Instead individuals place their household in one of ten income categories. To facilitate comparison between nations and/or regions, households in each national/regional group are placed in four income groups - low to high income. As closely as the data allow, households

³ World Values Survey data have been used extensively by political scientists though rarely by economists. For a full description of the data (including the survey) and a more complete list of publications that have employed the World Values Survey see www.worldvaluessurvey.com.

are divided into income quartiles for the initial estimations (Table 2). As Table 1 indicates, this can be done only in a very rough way. Household income is defined as total household money income (from all sources net of taxes) in Lithuania, the U.S., and West Germany. The income categories for Belarus, Estonia, Latvia, and Moscow are based on total per capita household income. Thus the pooled Soviet sample excludes Lithuania as the income definition is not directly comparable with the other Soviet regions.⁴ Table 3 presents results of an estimation for the pooled Soviet sample where primary income earners are divided by a set per capita rouble figure for their households. Notes to Tables 1 and 3 provide boundaries for the income groups in each nation/region.

Ordered logit estimations are conducted to determine how characteristics of the primary income earner affect a household's position in the overall national/regional income distribution. Tables 2-6 present results from the logit estimations. If income is ordered $i=1,..,4$ (low to high), the ordered logit results can be interpreted as follows:

$$\Pr(\text{inc} = i) = \frac{1}{1 + \exp(\sum_j \beta_j x_j - \text{cut}_i)} - \frac{1}{1 + \exp(\sum_j \beta_j x_j - \text{cut}_{i-1})}$$

where $\text{cut}_0 = -\infty$, $\text{cut}_4 = +\infty$, the β_j 's represent the ordered logit coefficients, and the x_j 's represent independent variables used in the logit regressions (defined in Table 8). Even though the independent variable is constructed based on total household income, the estimations are quite similar - due to the limitations of the data - to those generally used in individual wage/income estimations (based on Mincer's work). Independent variables are chosen that significantly influence individual human capital (i.e., education and age as a proxy for experience) as are dummies for occupational group, key demographic factors (i.e., marital status, number of children, and health status), and, where the data permit, locational and ethnic factors.

In sum, the estimation approach is similar to studies examining wage/income data in market economies. Ofer and Vinokur (1992) argue and present evidence that this is likely the most appropriate approach for empirical examination of labor, wage, and income data from the SU even in periods predating the reforms of the mid-late 80s.

4. Results

Table 1 presents means for the dependent and independent variables. Since all variables are dummies, the means are presented as percentages in each particular group.

Several demographic features are worthy of note. First, the percentage of those over 60 and consequently of retired people in the Soviet sample is relatively small indicating older workers and pensioners are unlikely to be the primary income earners of their households. This probably reflects, to a large extent, the nature of extended family households in the SU. That is a Soviet household was much more likely to include children, parents, and grandparents than a Western household (Ofer and Vinokur, 1992). Second, there are far fewer childless households in the Soviet samples than in the American or German samples. The data do not provide information on the age of children in the household, but this probably also reflects the fact children were likely to live at home longer in Soviet households. Third, Soviet households were also

⁴ For example, since the Soviet respondents - except for Lithuanians - do report income per household member, the presence of children in the household is perhaps the most important factor determining income in Estonia, Latvia, Belarus, and Moscow. Conversely, children have relatively little effect on the income variable in Lithuania (see Table 7 for example).

considerably more likely to contain a married couple. The sum effect of these three factors indicates more members in a typical Soviet household than a Western household. Fourth, Soviet wives were their household's primary income earner significantly more often than their U.S. or West German counterparts. Fifth, one of the positive legacies of the SU was wide access to education. This is apparent in the high percentage of households with a primary income earner with at least some post-secondary education. Finally, despite the much publicized universal free health care of the SU, Soviets did not consider themselves to be particularly healthy. A relatively small percentage reported being in good health. Soviets in the sample were only about 40 percent as likely as Americans to consider themselves in good health. However, the percentage reporting to be in poor health was similar to (even slightly lower than) West Germany, though still well over double that of the American sample.

Table 2 presents the initial ordered logit estimations where a common set of explanatory variables is used for all nations/regions. First the pooled Soviet results are considered in relation to the U.S. and West Germany. The pooled Soviet sample generally provides a good means of distinguishing existing patterns within the SU, though considerable regional differences exist in the results (these are discussed in more detail below).

While Table 2 indicates a significant relationship between the age of the primary income earner and household income in the SU, the effects are considerably weaker than in the U.S. or West Germany. However the pattern of age effects is identical between the three countries with the probability of occupying a higher rung on the income distribution rising with age group until the primary income earner passes 60.

The results also indicate relatively small differentials in income distribution between wage and salary occupational groups (mp, ow, sk, un, and ag) in the SU. In particular, the distributional differences between white collar office workers and skilled blue collar workers are very small in the SU. Further, there is relatively little difference between these two groups and unskilled blue collar workers. Conversely, there is evidence of significant differences in U.S. and West German household incomes depending on the occupation of the primary income earner with white collar workers doing considerably better than blue collar workers and skilled blue collar workers doing much better than unskilled blue collar workers. Agricultural workers tend to do the worst amongst wage/salary workers in the SU and U.S., though again the difference between agricultural workers and other occupational groups in the SU is relatively small. German agricultural workers appear to do quite well.

One striking feature of the Soviet results is how well households with a self-employed primary earner fare. There is a much stronger positive distributional effect associated with self-employment than with any wage/salary occupational category. This is in contrast to West Germany where the self-employed do approximately as well as the highest paid wage/salary earners (managerial-professional employees) and in sharp contrast to the U.S. where the self-employed do about as well as skilled blue collar workers. While the data generally do not allow for distinguishing between public and private sector employment, clearly the self-employed are not working for the government. Thus the Soviet self-employment coefficient provides evidence that private entrepreneurial activity was already quite rewarding even prior to the breakup of the Soviet Union.

Ofer and Vinokur (1992) note that many individuals earned income from private sources even in the early-mid 1970s. Most of this income came from provision of

services outside of one's primary employment. The World Values Survey asks only about one's main source of income and not about additional jobs. Thus it is quite possible that many people in the Soviet samples that report being self-employed are also employed in the state sector as well. However, by 1990, limited private enterprise was also allowed in the SU and probably considerably more prevalent than in the 1970s.

Another striking fact is that the results indicate that households headed by pensioners did very poorly relative to all groups of workers in the SU and relative to their counterparts (in terms of relative position in the income distribution) in the U.S. and West Germany. Ofer and Vinokur's results indicate that the pensioners fared poorly in the 1970s as well.

Educational effects in the pooled Soviet sample are insignificant. The effects of both secondary and post secondary education on income distribution are small relative to West Germany. In the U.S. sample, the effect of the primary earner's education on household income distribution is surprisingly small - particularly for secondary education, although the effect of post secondary education in the U.S. is fairly large and significant.

The results concerning characteristics related to human capital and occupation are consistent with findings of other studies on individual wages in pre-transitional or early transitional economies throughout Central and Eastern Europe and the former SU (see Flanagan, 1998, Newell and Reilly, 1999, Orazem and Vodopivec, 1995, and Rutkowski, 1996, for example).⁵ Such studies generally find that individual wages were quite compressed across groups with different human capital characteristics - not surprising in societies stressing income equality. Generally, these studies also find that returns to various human capital characteristics (particularly education) and wage premiums to high skill occupations increase dramatically as the transition progresses through its early stages. Available evidence indicates this decompression occurred in Russia (Brainerd, 1998) and Estonia (Norikoiv et al., 1998, and Kroncke-Smith, 1999) in the early post-Soviet years with respect to returns to education and wage premiums for high-skill occupations. However, evidence suggests returns to experience remained quite low and perhaps even decreased in early transition (see Smith, 2001, for example).

Although the World Values Survey data were gathered several years after the implementation of Gorbachev's wage reforms, the results with respect to education and occupation are broadly consistent with evidence on Soviet labor earnings from the 1970s. Using SIP data (that gathered data on work conducted in the SU in the late 1970s), Gregory (1987) finds that former Soviet workers were most dissatisfied with the way the Soviet compensation system rewarded the highly educated and in the lack of compensating wage differentials across various occupational classes.

Given that income categories are based on per capita income in the SU, excepting Lithuania, and total household income in the U.S. and West Germany, it is difficult to compare the distributional effects of certain household/personal characteristics of the primary earner. However, it is possible to draw two broad conclusions from the data. First, while Soviet households with a male primary income earner tend to do better than households with a female primary income earner, the effect is considerably smaller than in either the U.S. or, particularly, West Germany. The poor earnings performance of female workers also appears to reach back to at least the 1970s (see Vinokur and Ofer, 1987, and Ofer and Vinokur, 1992) and certainly

⁵ Results from a simplified human capital estimation regarding ag/experience and education are presented in Tables 6 and 7 and are discussed below.

extended into the transition across much of the former SU (see Brainerd, 1998, and Reilly, 1999, for example). Second, while having a primary income earner in good health (relative to someone reporting fair health) has a positive and significant effect on Soviet household income, the effect is again relatively small. Conversely, the effect of the primary income earner being in poor health (again relative to someone reporting being in fair health) is negative and relatively large.

Naturally, having children present in the household produces a large and significant negative impact on per capita household income in the four Soviet regions, and the negative effect increases with the number of children in the home. Being married conversely has a positive, though relatively small, impact on per capita household income for the Soviet sample. It is difficult to compare the effects of marital status or children in the home on the Soviet sample with the effects of these factors on the U.S. or West German sample. If Lithuania is fairly typical of the other Soviet regions though, it is likely that children residing at home have a relatively small negative impact on Soviet per capita household income and marital status a relatively large positive effect. Given the availability of state-provided childcare and the labor force participation rates of Soviet women (generally over 80 percent) the children and marital effects are not surprising. Ofer and Vinokur (1992) find similar phenomena in the 1970s.

To a large extent, the four individual Soviet regions of the aggregate sample, and Lithuania as well, follow the patterns established by the pooled Soviet estimation. Often, however, one or more regions deviates from the pattern.

Though age effects do vary somewhat across regions, Belarus is a clear outlier in this regard. The age of the primary earner in Belarus has a very large relative effect on income distribution. Further, it appears that the older the primary income earner the better. This likely has much to do with the composition of the Belarussian sample. It has very few individuals over 60, only one retired individual, and an extremely high proportion of managerial/professional workers who are likely to have relatively high returns to work experience even in a planned economy. Occupational effects are broadly similar in all regions with low differentials across different skill categories of wage and salary workers. Further, self employment is quite lucrative in all Soviet regions examined. Since a significant portion of the Moscow sample (almost 4.5 percent) reported being in the military, military personnel are included in the Moscow estimations. As it turns out, households headed by military personnel do quite well in Moscow. Educational effects are insignificant with the exception of the effect of secondary education on the Lithuanian distribution. There is considerable variation in the effect of the gender of the primary earner on household income distribution in the Soviet regions. Estonia and Lithuania have a gender effect comparable to the U.S. with Latvia not far behind. However the gender effect is quite weak in Moscow and, quite surprisingly, there is a negative, though insignificant, coefficient for Belarus indicating households with a female primary earner do better. Though Lithuania is difficult to compare with the other regions, the effect of children in the home is quite similar across Soviet regions. There is some variation across regions with respect to the strength of the marriage effect. Married couples in Latvia do particularly well. Belarus is again an outlier with respect to the effect of health status. The boost to income from being in good health is relatively strong and there is even a positive though insignificant coefficient associated with poor health status. Lithuanians suffer most from having a primary earner in poor health.

Table 3 presents the results of expanded regressions for the Baltic states, the U.S., and West Germany. Town size (of residence, not workplace) is available for all but Lithuania, and data on ethnicity is available for all but West Germany. Table 3 also presents results for a pooled Soviet sample where households are categorized into four groups based on actual (money) per capita household income (see the note to Table 3) and not on their standing in the regional income distribution.

Despite the fact that the size (in terms of the percentage of the sample in each group) of the four income groups are quite different in the pooled Soviet sample used for the estimations of Table 3, the results are quite similar to those of Table 2. The most notable difference is the inclusion of region dummies in Table 3. The regional dummies indicate that Belarus and Moscow had considerably higher per capita household incomes than did Estonia and particularly Latvia. Some caution is warranted in that the interviews in the Baltic republics were conducted from June-August 1990 while interviews in Belarus and Moscow were conducted in October, November 1990. While the second half of 1990 was a period of fairly rapid nominal wage increases in the SU and in these particular regions (Nove, 1992, and Milanovic, 1998), on the order of one or more percent per month, wage increases certainly cannot account for the very large apparent income differentials between Moscow/Belarus and the Baltic republics. Given its population and status, the size and direction of the differential between Moscow and the Baltic republics is perhaps not surprising. However, the differential with Belarus perhaps is surprising. However, the composition (age, occupational, etc.) of the Belarussian sample certainly raises questions about how representative it truly is.

The town size coefficients for Estonia and Latvia indicate a strong positive relationship between living in larger towns/cities and household income. Overall the effect of living in a town with a population greater than 100,000 has a strong positive effect on both Baltic republics - comparable to the positive effect of living in a large town/city in the U.S. (town size has little influence in West Germany). In particular, living in a city with a population larger than 500,000 seems to have a very strong positive effect in both Baltic republics. It is doubtful that this result can be generalized for the SU as a whole. The only cities fitting this category are Tallinn in Estonia and Riga in Latvia. Both cities are extremely large in relation to the population of their respective republics and the cities are now national (then republic) capitals. Thus these two cities enjoy a level of importance disproportionate to their population if the SU is considered as whole.

The results also indicate considerable ethnic effects on household income in the Baltic republics. All the Baltic republic samples contain significant ethnic minorities (see Table 1) - particularly of ethnic Russians. The ethnicity of the primary income earner appears to matter little in Estonia. This is consistent with findings on ethnic wage differentials in Soviet Estonia circa late 1989 (Noorkoiv et al. and Kroncke-Smith). However, there is significant evidence that households with an ethnic Russian primary earner do relatively well in Latvia and Lithuania (or at least did in Soviet times). In Latvia, there is significant evidence indicating native Latvians do relatively poorly. There is an insignificant negative effect for the mix of other ethnic groups (primarily Belarussians and Ukrainians) in Latvia. In Lithuania, there is an insignificant negative effect for households with a Lithuanian primary earner and a somewhat larger though still insignificant effect for ethnic Poles. However, there is a large, significant negative effect for the mix of other ethnic groups (again largely Belarussian and Ukrainian).

The results regarding ethnicity are particularly interesting for two reasons. First, to my knowledge, they represent the only evidence of wage differentials favoring ethnic Russians in the former SU controlling for a variety of factors (excepting results mentioned above for Estonia). In the economics literature, such differentials are often associated with evidence of discrimination. Second, the results indicate that a dramatic and rapid shift took place with respect to relative earnings between ethnic Russians and ethnic Balts in Estonia and Latvia. Kroncke-Smith (1999) provide evidence of wage differentials favoring ethnic Estonians in early transitional Estonia (despite the fact no evidence of ethnic wage differentials was present in 1989) and Chase (2000) provides evidence of wage differentials favoring ethnic Latvians in the later 1990s in Latvia. While Chase's results for Latvia do not account for the potential effects of ethnic Russian migration, the retrospective nature of the Estonian data used by Kroncke-Smith (1999) allow for the effects of migration to be controlled for when comparing the late Soviet with early transition periods in Estonia.

Though household income is used as the dependent variable, much relevant information is collected only about the individual interviewee. To provide insight into the differences between households headed by a married (including those living as married) couple and households headed by unmarried individuals, the samples are divided by marital status.

Table 4 presents the results for households with a married primary income earner and Table 5 presents the results for households with an unmarried primary income earner. One distinct feature of the samples is the gender composition of primary income earners. The vast majority of primary earners in married couples are male, though, compared with the U.S. and West Germany, this is true to a much lesser extent in the SU. Conversely, in all regions/countries, females constitute the majority of unmarried primary income earners. In the case of unmarried individuals, the female majority is far greater in all Soviet regions than in the U.S. or West Germany. The differences between the Soviet samples and the West German and U.S. samples are certainly attributable to high labor force participation rates among Soviet women.

While marital status certainly has significant effects on the relative influence of the independent variables on household income in the U.S. and West Germany, the effects seem even more profound in the pooled Soviet sample and individual Soviet regional samples. First, age plays a considerably smaller role amongst unmarried people than in households with a married couple. In part this may have to do with lower female returns to experience in the SU though one can only speculate on this. It is well established that women have lower returns to work experience in the U.S. (see Oaxaca, 1973, and Krueger and Pischke, 1995, for example). This is perhaps reflected in the coefficients on *age2* and *age3* in the U.S. sample that are far lower than the corresponding coefficients in the married U.S. sample. In both the married and unmarried Soviet samples, differences in income distribution across occupational groups are relatively small. Not surprisingly, individual workers do very well relative to individual pensioners. Conversely, relative returns to education are quite strong in the unmarried Soviet sample. This may reflect stronger returns to education amongst females in the SU. The gender effect is considerably larger in the single Soviet sample than in the married sample (this is true for West Germany as well). Finally, good health seems to have a stronger positive effect on household income amongst married Soviets. However, the detrimental effect of poor health appears to be greater amongst singles in the SU.

The observations made in the previous paragraph generally hold up in the individual Soviet regions though, particularly in the unmarried sample, there is a problem with rather small sample sizes. Belarus is again an outlier with respect to age, with age effects strongly positive in the unmarried sample and larger than in the married sample for the three oldest groups. Latvia is a notable exception regarding gender effects. There is essentially no difference in standing in the income distribution between single men and women. However, married couple households in Latvia appear to do much better when the primary income earner is male. Lithuania serves as an outlier with respect to education. There are significant positive effects associated with both secondary and post secondary education of the primary income earner in households headed by a married couple. However, post secondary education has no effect on income distribution for single individuals.

The final estimations (Tables 6 and 7) employ the data to examine specifically the distributional effect of standard human capital factors, particularly experience as proxied by age and education. The estimations include only age (and the square of age), education, controls for certain household demographic factors, and, when available, geographic controls. The samples in Tables 6 and 7 are also restricted to normal working-age populations (see the note to Table 6). As noted, household income is the dependent variable in these estimations. Thus the data are not ideally suited for human capital estimations. However, restricting the sample to working age populations certainly ensures that the primary source of income (especially in the SU) is labor earnings. Furthermore, the results are consistent with general findings on human capital and provide the most straightforward means of comparing human capital effects in the SU and established market economies, and examining potential human capital effects on differences within the SU.

With respect to age, Table 6 presents results that would tend to indicate shallow age-earnings profiles in the SU relative to the U.S. and particularly West Germany. The findings indicate that workers receive considerably lower gains to work experience in the SU in their early working lives. However the evidence indicates that while age-earnings profiles are shallower, they tend to peak at a later age. Table 7 presents a fairly direct means of comparing the effects of human capital factors on income. Columns 2-5 of Table 7 indicate how an extra year of age affects one's probability of falling in the lowest income category, and columns 6-9 indicate how an extra year of age affects one's probability of reaching the highest income category. In terms of practical importance and particularly statistical strength, the results indicate that relative youth is considerably more likely to lead to a lower step on the income distribution ladder in the market economies and higher age (and experience) significantly improves one's chance to move up the ladder relative to the SU.

The age-earnings results are consistent with the limited evidence existing from the Soviet period (see Smith, 2001, as an example). There is also considerable evidence suggesting that returns to experience remained relatively low in early transition (see Smith, 2001, Brainerd, 1998, Krueger and Pischke, 1995, and Orazem and Vodopivec, 1995 as examples).

With respect to education, the human capital comparison again indicates fairly weak returns to higher educational levels in the SU relative to the U.S. and West Germany, though in the simplified regressions, there is evidence of positive returns to higher educational attainment in the SU. Tables 6 and 7 illustrate fairly weak returns to education in the pooled Soviet sample. Specifically, Table 7 indicates that obtaining

advanced secondary or even complete secondary education has little effect on one's probability of being in the lowest or highest income categories relative to individuals who only completed primary or limited secondary education. However there is marginally significant evidence that indicates that post-secondary education does positively affect one's probable standing in the Soviet income distribution. For the Lithuanian sample, those with advanced or completed secondary and post secondary education tend to do better than those with only primary education or limited secondary education. However there is no statistical difference between those with post-secondary education and those who completed their education between 16 and 18 years of age. Conversely, the U.S. and West German results indicate quite potent returns to post-secondary education.

Interpreting the marginal effects presented in Table 7 literally, the evidence suggests that, relative to the probability of falling into the lowest income group for someone who has completed his or her education by age 15, an individual with post-secondary education will be about seven percent less likely to do so in the pooled Soviet sample, 11.6 percent less likely in the Lithuanian sample, 13.6 percent likely in the U.S. sample, and nearly 23 percent less likely in the West German sample. Conversely, Table 7 indicates that those with post-secondary education (again relative to those who completed their education by age 15) had significantly higher probabilities of reaching "high" income status. The estimates of the respective marginal effects are 8.5 percent in the pooled Soviet sample, 9.8 percent in the Lithuanian sample, 21.9 percent in the U.S. sample, and 28.8 percent in the West German sample.

As a final note, simple interaction terms (results not reported) were used to test for differences across Soviet regions in terms of human capital effects in addition to the apparent difference that exists between Lithuania and the pooled Soviet sample with respect to education. The additional estimations do provide some evidence of differences across regions. Specifically, evidence indicates somewhat weaker returns to education in Estonia relative to Latvia, Belarus, and Moscow (there is no evidence of differential returns among the latter three) and even shallower age-earnings profiles than Latvia, Belarus, or Moscow. Conversely, the evidence indicates relatively strong returns to experience (age) in Belarus. Again this may be an anomaly related to the Belarussian sample that has an extremely high proportion of managerial and professional workers.

5. Conclusions

This paper presented empirical results indicating what factors influence standing in the Soviet income distribution and to what degree they do so. To some extent the evidence indicates similarities with Western market economies exemplified here with U.S. and West German data (as hypothesized by Ofer and Vinokur, 1992). Generally, human capital and demographic factors affect a household's standing in the regional/national income distribution in similar ways. In all three cases the data indicate that a high income household is likely to have a middle-aged, married, well-educated male in good health as its primary earner. However, all these factors (with the exception of the marital effect) appear to have a relatively weak influence in the SU. Occupation also has relatively little effect in the Soviet sample, but self-employment seems relatively lucrative. Further, though there do seem to be Soviet patterns, virtually every independent variable or set of variables (i.e., age or occupation) has its maverick region or regions.

The expanded estimations provide evidence of rather strong locational effects in Estonia and Latvia. In particular, living in a bigger town/city has a strong positive influence on standing in the regional income distribution, though the generality of these results to the SU as a whole is questionable. The expanded equations also point to rather large ethnic effects in Latvia and Lithuania. The evidence indicates that having an ethnic Russian primary earner was a significant boost to income in these two republics.

Further, there appear to be larger differences in household income determinants between households headed by married couples and those headed by single individuals in the SU than in either the U.S. or West Germany. However, in all cases, these differences may have more to do with the gender composition of primary earners between households headed by married couples and those headed by single individuals than with the effect of marital status itself.

Finally, results presented here serve in some way to bridge existing evidence on income and earning formation in the SU and former SU. The results indicate an income (largely meaning earnings) structure circa 1990 broadly similar to that that existed in the 1970s despite several years of ostensible wage and economic reforms. However, the data available from the World Values Survey allows for more detail than has previously existed as well as an exploration of geographic differences. The results also support indications from other work that rapid changes occurred in wage structure in the early years of transition – perhaps most dramatically in the Baltic States – with respect to how such factors as human capital and personal characteristics, specifically ethnicity, affected earnings and income.

Table 1: percentages in each group

variable	pooled SU (w/o Lithuania)	Belarus	Estonia	Latvia	Lithuania	Moscow	USA	West Germany
N	2140	523	643	504	488	493	833	1073
inc1	21.90	26.77	18.04	25.00	29.09	18.24	20.09	39.05
inc2	27.54	21.22	27.84	27.78	23.57	33.47	35.13	21.90
inc3	20.50	17.21	24.42	17.86	30.74	22.65	17.86	18.27
inc4	30.06	34.80	29.70	29.37	16.60	25.65	26.91	20.78
age1	17.29	22.76	17.73	15.47	15.16	13.23	12.11	15.89
age2	29.45	32.31	26.13	29.17	22.34	31.06	23.38	20.50
age3	24.84	25.43	23.17	25.79	19.67	25.85	17.16	17.33
age4	19.29	15.68	19.28	19.25	19.26	22.65	16.33	15.94
age5	9.13	3.82	13.69	10.32	23.57	7.21	31.02	30.29
mp	35.69	51.05	19.28	35.32	12.50	39.48	27.03	2.70
ow	18.97	12.05	26.13	25.79	31.56	9.22	10.81	35.79
sk	28.15	23.33	37.01	24.01	12.30	24.65	20.45	20.04
un	9.23	11.09	6.84	3.77	17.62	15.43	11.75	6.90
ag	0.51	0.19	0.16	1.79	4.10	0	0.47	0.75
gi	0	0	0	0	0	4.41	0	0
se	3.17	2.10	1.71	3.17	2.87	6.21	3.88	4.19
ret	4.28	0.19	8.86	6.15	19.06	0.60	25.62	29.64
edu1	7.13	7.84	7.16	5.95	18.03	7.42	16.80	45.76
edu2	29.08	35.18	32.50	21.63	27.05	25.45	35.96	34.67
edu3	63.79	56.98	60.34	72.42	54.92	67.13	47.24	19.57
gender (% male)	58.97	65.20	55.52	53.57	60.45	64.30	71.43	70.27
hchild0	30.02	16.63	37.79	32.14	38.32	31.68	57.47	66.63
hchild1	32.39	26.58	29.86	32.54	31.15	41.68	16.45	16.50
hchild2	31.03	47.04	26.28	28.57	24.59	23.65	15.86	14.17
hchild3	6.38	9.75	6.07	6.75	5.94	2.81	10.22	2.70
marr	71.71	75.72	66.87	75.99	65.98	70.34	58.99	60.02
good	31.08	31.93	32.19	29.17	40.16	31.06	79.32	56.66
fair	56.34	58.51	53.50	58.33	48.16	55.71	15.39	29.55
poor	12.58	9.56	14.31	12.50	11.68	13.23	5.29	13.79
town1	--	--	29.08	31.35	--	--	24.32	26.37
town2	--	--	14.15	16.86	--	--	26.56	29.08
town3	--	--	15.55	--	--	--	14.92	9.60
town4	--	--	6.84	14.88	--	--	16.33	18.83
town5	--	--	34.37	36.51	--	--	17.86	16.12
native	--	--	60.81	43.65	72.95	--	--	--
Russian	--	--	31.57	40.67	10.66	--	--	--
Polish	--	--	--	--	9.43	--	--	--
other ethnicity	--	--	7.62	15.67	6.97	--	--	--
white	--	--	--	--	--	--	82.96	--

Notes: Income categories in monetary terms are defined as follows: Belarus (monthly per capita roubles) - inc1=0-100, inc2=101-125, inc3=126-150, inc4=150+; Estonia and Latvia (monthly per capita roubles) - inc1=0-70, inc2=71-100, inc3=101-150, inc4=150+; Moscow (monthly per capita roubles) - inc1=0-100, inc2=101-150; inc3=151-200, inc4=200+; Lithuania (combined household monthly roubles) - inc1=0-200, inc2=201-300, inc3=301-500, inc4=500+; U.S. (combined household annual dollars) - inc1=0-20,000, inc2=20,000-30,000, inc3=30,000-40,000, inc4=40,000+; West Germany (combined household monthly DM) - inc1=0-3000, inc2=3000-4000, inc3=4000-5000, inc4=5000+.

Approximate exchange rates at the time were: USD 1 = DM 1.60, USD 1.60 = RB 1 (official), USD 1 = RB 25-30 (market rate - (Nove)).

Table 2: Ordered Logit Results (Dependent Variable: inc)

variable	pooled SU	Belarus	Estonia	Latvia	Lithuania	Moscow	USA	West Germany
age2	0.212* (0.127)	0.617** (0.244)	0.205 (0.240)	0.335 (0.282)	0.137 (0.304)	0.407 (0.291)	0.682*** (0.237)	0.793*** (0.205)
age3	0.536*** (0.133)	1.084*** (0.271)	0.426* (0.247)	0.645** (0.293)	0.680** (0.315)	0.608** (0.307)	0.835*** (0.251)	1.176*** (0.223)
age4	0.775*** (0.141)	1.393*** (0.316)	0.520** (0.263)	1.094*** (0.308)	1.000*** (0.326)	0.870*** (0.313)	1.399*** (0.258)	1.207*** (0.227)
age5	0.700*** (0.194)	2.151*** (0.466)	0.480 (0.361)	0.806** (0.400)	0.635* (0.374)	0.257 (0.430)	1.183*** (0.286)	1.165*** (0.329)
mp	2.302*** (0.243)	0.710*** (0.268)	2.432*** (0.405)	2.574*** (0.435)	2.859*** (0.452)	0.439 (0.297)	2.354*** (.270)	3.194*** (0.458)
ow	2.006*** (0.244)	0.659* (0.353)	2.195*** (0.379)	1.949*** (0.435)	2.093*** (0.390)	0.158 (0.371)	1.693*** (0.296)	1.813*** (0.296)
sk	1.958*** (0.244)	0.626** (0.293)	1.794*** (0.378)	2.592*** (0.449)	2.371*** (0.429)	-0.095 (0.293)	1.264*** (0.264)	1.378*** (0.308)
un	1.532*** (0.255)	--	1.510*** (0.429)	1.615*** (0.575)	1.944*** (0.412)	--	0.702** (.281)	0.795** (0.357)
ag	1.229** (0.602)	--	--	1.034 (0.729)	1.648*** (0.541)	--	0.409 (1.117)	2.735*** (0.700)
gi	--	--	--	--	--	0.863* (0.456)	--	--
ret	--	--	--	--	--	-1.111 (1.135)	--	--
se	3.039*** (0.334)	1.644** (0.646)	3.629*** (0.751)	3.976*** (0.719)	3.716*** (0.689)	1.057** (0.426)	1.241*** (0.397)	3.080*** (0.444)
edu2	0.022 (0.173)	-0.038 (0.326)	0.281 (0.337)	-0.276 (0.403)	0.733** (0.327)	-0.108 (0.379)	-0.072 (0.201)	0.584*** (0.147)
edu3	0.164 (0.167)	0.160 (0.319)	0.236 (0.335)	0.408 (0.381)	0.432 (0.304)	0.076 (0.360)	0.513** (0.202)	1.253*** (0.183)
gender	0.342*** (0.097)	-0.323 (0.213)	0.753*** (0.180)	0.598*** (0.194)	0.687*** (0.223)	0.393* (0.220)	0.709*** (0.170)	1.022*** (0.166)
hchild1	-0.999*** (.111)	-1.255*** (0.297)	-1.056*** (0.200)	-0.599** (0.194)	0.693*** (0.227)	-1.362*** (0.222)	-0.193 (0.192)	-0.068 (0.175)
hchild2	-1.801*** (0.124)	-2.028*** (0.313)	-2.031*** (0.238)	-2.160*** (0.271)	0.770*** (0.268)	-2.196*** (0.275)	0.347* (0.207)	0.161 (0.194)
hchild3	-2.594*** (0.197)	-2.794*** (0.414)	-2.767*** (0.368)	-3.574*** (0.448)	0.954** (0.400)	-2.938*** (0.568)	0.083 (0.245)	0.176 (0.382)
marr	0.198* (0.108)	0.061 (0.264)	0.231 (0.189)	0.473** (0.232)	1.351*** (0.238)	0.326 (0.224)	0.941*** (0.161)	0.988*** (0.160)
good	0.194** (0.093)	0.528*** (0.187)	0.108 (0.178)	0.295 (0.204)	-0.113 (0.197)	-0.127 (0.197)	0.512*** (0.197)	0.482*** (0.148)
poor	-0.236* (0.127)	0.139 (0.293)	-0.228 (0.231)	-0.521* (0.272)	-0.812** (0.337)	-0.404 (0.261)	-0.057 (0.330)	-0.146 (0.221)
cut1	0.370 (0.300)	-1.224 (0.456)	0.133 (0.520)	1.237 (0.597)	3.172 (0.527)	-1.766 (0.486)	2.009 (0.387)	3.525 (0.379)
cut2	1.837 (0.302)	-0.137 (0.453)	1.773 (0.525)	2.868 (0.608)	4.704 (0.553)	0.096 (0.481)	4.135 (0.408)	4.861 (0.394)
cut3	2.846 (0.306)	0.687 (0.454)	3.050 (0.533)	3.872 (0.620)	6.692 (0.583)	1.266 (0.483)	5.161 (0.421)	6.109 (0.409)
Log likelihood	-2709.49	-653.80	-788.83	-593.61	-534.84	-612.00	-956.16	-1157.44
chi2 (k)	460.70***	106.53***	183.86***	193.59***	258.18***	117.05***	334.13***	553.99***

Notes: Unskilled workers are the reference group for Belarus and Moscow due to a lack of retired persons in the samples (one and three respectively). Agricultural workers are dropped from the samples in Belarus, Estonia, and Moscow for the same reason.

Military personnel are used in Moscow as they represent a significant block of workers in the overall sample of primary household income earners.

Here and in subsequent tables, * denotes significance at the ten percent level, ** denotes significance at the five percent level, and *** denotes significance at the one percent level.

Table 3: Ordered Logit Results - Modified Equations (Dependent Variable: inc)

variable	Pooled SU	Estonia	Latvia	Lithuania	USA	West Germany
age2	0.291** (0.130)	0.171 (0.242)	0.393 (0.288)	0.153 (0.310)	0.710*** (0.238)	0.783*** (0.205)
age3	0.608*** (0.136)	0.414* (0.249)	0.455 (0.304)	0.700** (0.319)	0.720*** (0.253)	1.189*** (0.224)
age4	0.836*** (0.144)	0.463* (0.264)	1.048*** (0.319)	0.990*** (0.327)	1.440*** (0.264)	1.218*** (0.228)
age5	0.863*** (0.198)	0.539 (0.365)	0.744* (0.416)	0.596 (0.377)	1.114*** (0.290)	1.178*** (0.330)
mp	3.327*** (0.340)	2.630*** (0.409)	2.772*** (0.447)	2.834*** (0.452)	2.436*** (0.274)	3.217*** (0.460)
ow	2.964*** (0.337)	2.366*** (0.384)	2.136*** (0.447)	2.077*** (0.389)	1.612*** (0.302)	1.815*** (0.297)
sk	2.891*** (0.339)	1.959*** (0.381)	2.798*** (0.460)	2.333*** (0.429)	1.330*** (0.268)	1.384*** (0.309)
un	2.579*** (0.351)	1.573*** (0.434)	1.636*** (0.585)	1.988*** (0.412)	0.815*** (0.284)	0.800** (0.358)
ag	1.957*** (0.717)	--	1.457* (0.762)	1.652*** (0.538)	0.571 (1.157)	2.683*** (0.704)
se	4.182*** (0.406)	3.565*** (0.757)	4.096*** (0.752)	3.655*** (0.694)	1.420*** (0.404)	3.092*** (0.445)
edu2	0.103 (0.182)	0.298 (0.345)	-0.408 (0.411)	0.838** (0.331)	-0.154 (0.206)	0.599*** (0.149)
edu3	0.236 (0.176)	0.219 (0.343)	0.182 (0.393)	0.511* (.304)	0.383* (0.208)	1.285*** (0.185)
gender	0.402*** (0.100)	0.751*** (0.181)	0.493** (0.198)	0.739*** (0.225)	0.660*** (0.173)	1.030*** (0.167)
hchild1	-1.029*** (0.113)	-1.155*** (0.204)	-0.684*** (0.245)	0.680*** (0.228)	-0.168 (0.196)	-0.077 (0.177)
hchild2	-1.907*** (0.129)	-2.065*** (0.239)	-2.266*** (0.278)	0.754*** (0.269)	0.429** (0.210)	0.135 (0.196)
hchild3	-2.549*** (0.212)	-2.714*** (0.372)	-3.404*** (0.457)	0.844** (0.405)	0.214 (0.248)	0.150 (0.383)
marr	0.189* (0.112)	0.252 (0.191)	0.585** (0.241)	1.378*** (0.241)	0.968*** (0.165)	0.975*** (0.161)
good	0.206** (0.095)	-0.008 (0.181)	0.283 (0.207)	-0.148 (0.198)	0.523*** (0.199)	0.492*** (0.148)
poor	-0.186 (0.135)	-0.394* (0.235)	-0.536* (0.275)	-0.791** (0.341)	-0.042 (0.335)	-0.161 (0.222)
town2	--	0.581** (0.237)	0.296 (0.263)	--	0.224 (0.191)	-0.035 (0.166)
town3	--	0.337 (0.256)	--	--	0.075 (0.224)	-0.029 (0.229)
town4	--	1.238*** (0.345)	0.547* (0.283)	--	0.883*** (0.229)	-0.259 (0.190)
town5	--	0.935*** (0.205)	1.000*** (0.231)	--	0.447** (0.220)	-0.049 (0.198)
native	--	0.003 (0.188)	-0.412** (0.197)	-0.251 (0.288)	--	--
other	--	-0.015 (0.310)	-0.162 (0.265)	-1.401*** (0.440)	--	--

Polish	--	--	--	-0.443 (0.421)	--	--
white	--	--	--	--	0.335* (0.186)	--
Estonia	-0.769*** (0.120)	--	--	--	--	--
Latvia	-1.066*** (0.127)	--	--	--	--	--
Moscow	0.057 (0.121)	--	--	--	--	--
cut1	1.820 (0.394)	0.649 (0.561)	1.373 (0.613)	2.916 (0.600)	2.324 (0.459)	3.468 (0.391)
cut2	3.288 (0.398)	2.335 (0.568)	3.071 (0.626)	4.478 (0.622)	4.542 (0.481)	4.805 (0.406)
cut3	4.569 (0.402)	3.666 (0.578)	4.126 (0.639)	6.500 (0.648)	5.605 (0.493)	6.055 (0.419)
log likelihood	-2533.02	-773.99	-578.45	-528.94	-932.74	-1156.34
chi2(k)	629.23***	213.55***	223.90***	269.98***	380.97***	556.20***

Notes: Town size is not reported for Belarus, Lithuania, or Moscow.

Town3 is dropped from the Latvian estimation as only one person reported living in a town with a population between 50,000 and 100,000.

No information on ethnicity is available for Belarus, Moscow, or West Germany.

Ethnic Russians are the reference group for the Baltic states.

Five regional dummies are included in the U.S. estimation.

The pooled SU estimations are based on constant per capita household income across regions. The four groups are (in roubles per month): inc1=0-100, inc2=101-150, inc3=151-200, and inc4=200+.

Percentages in each income category are: inc1 - 36.77, inc2 - 28.38, inc3 - 19.76, inc4 - 15.09. Belarus serves as the reference group with dummies used for the other three regions.

Table 4: Ordered Logit Results (Dependent Variable: inc) - Households Headed by a Married Couple

variable	pooled SU	Belarus	Estonia	Latvia	Lithuania	Moscow	USA	West Germany
N	1535	396	430	383	322	347	494	644
% male	72.25	78.79	69.07	62.92	77.02	80.69	89.88	89.91
age2	0.522*** (0.153)	0.642** (0.286)	0.476 (0.302)	0.481 (0.323)	0.516 (0.369)	0.951*** (0.354)	0.890*** (0.332)	0.545* (0.279)
age3	0.764*** (0.161)	1.133*** (0.319)	0.503 (0.310)	0.760** (0.328)	1.340*** (0.396)	1.083*** (0.378)	1.096*** (0.349)	1.067*** (0.289)
age4	1.041*** (0.173)	1.322*** (0.357)	0.558 (0.349)	1.264*** (0.350)	1.395*** (0.408)	1.356*** (0.393)	1.586*** (0.348)	0.855*** (0.293)
age5	1.105*** (0.246)	2.240*** (0.525)	0.666 (0.482)	0.983** (0.502)	0.858* (0.478)	0.559 (0.565)	1.108*** (0.386)	1.114*** (0.420)
mp	1.908*** (0.318)	0.703** (0.290)	2.164*** (0.522)	2.354*** (0.565)	2.563*** (0.544)	0.720* (0.370)	2.260*** (.343)	3.279*** (0.525)
ow	1.628*** (0.326)	0.891** (0.424)	1.735*** (0.502)	1.845*** (0.576)	1.889*** (0.465)	0.362 (0.493)	1.507*** (0.404)	2.151*** (0.370)
sk	1.503*** (0.318)	0.484 (0.318)	1.313*** (0.493)	2.297*** (0.568)	2.052*** (0.519)	0.051 (0.354)	1.095*** (0.333)	1.592*** (0.308)
un	1.076*** (0.335)	--	1.057* (0.574)	1.519** (0.762)	1.336*** (0.486)	--	0.503 (.374)	1.155** (0.444)
ag	1.621** (0.749)	--	--	1.320 (0.979)	1.390** (0.638)	--	0.339 (1.978)	3.037*** (0.830)
gi	--	--	--	--	--	1.037** (0.520)	--	--
se	2.689*** (0.413)	1.892** (0.786)	3.046*** (0.840)	3.581*** (0.800)	3.747*** (0.799)	1.247** (0.528)	0.694 (0.456)	2.970*** (0.444)

edu2	-0.154 (0.212)	-0.105 (0.365)	-0.376 (0.487)	-0.452 (0.497)	0.703* (0.375)	-0.029 (0.453)	-0.208 (0.267)	0.513*** (0.177)
edu3	-0.041 (0.203)	-0.069 (0.354)	-0.486 (0.335)	0.253 (0.464)	0.617* (0.346)	0.101 (0.426)	0.270 (0.267)	1.419*** (0.233)
gender	0.201* (0.112)	-0.710*** (0.243)	0.562*** (0.216)	0.649*** (0.217)	0.536** (0.270)	0.279 (0.266)	0.672** (0.281)	0.581** (0.261)
hchild1	-0.793*** (0.143)	-0.222 (0.410)	- 1.025*** (0.268)	-0.685** (0.297)	0.703** (0.291)	-1.091*** (0.286)	-0.147 (0.248)	-0.239 (0.196)
hchild2	-1.662*** (0.148)	-1.192*** (0.389)	- 2.019*** (0.290)	-2.103*** (0.311)	0.625* (0.323)	-2.021*** (0.329)	0.283 (0.272)	0.161 (0.212)
hchild3	-2.445*** (0.215)	-2.007*** (0.473)	- 2.831*** (0.402)	-3.479*** (0.483)	0.960** (0.456)	-2.770*** (0.642)	0.252 (0.312)	0.399 (0.471)
good	0.241** (0.109)	0.642*** (0.214)	0.115 (0.212)	0.335 (0.236)	-0.255 (0.232)	-0.127 (0.230)	0.868*** (0.262)	0.358** (0.178)
poor	-0.154 (0.154)	0.094 (0.337)	-0.131 (0.298)	-0.400 (0.310)	-0.937** (0.423)	-0.144 (0.326)	0.034 (0.428)	-0.383 (0.285)
cut1	-0.103 (0.392)	-0.877 (0.595)	-1.146 (0.754)	0.581 (0.723)	1.737 (0.657)	-1.336 (0.618)	1.137 (0.582)	1.995 (0.497)
cut2	1.355 (0.394)	0.202 (0.593)	0.518 (0.751)	2.233 (0.730)	3.230 (0.674)	0.509 (0.618)	3.292 (0.599)	3.412 (0.510)
cut3	2.364 (0.397)	1.012 (0.596)	1.760 (0.757)	3.218 (0.742)	5.343 (0.708)	1.804 (0.621)	4.300 (0.611)	4.669 (0.524)
log likelihood	-1955.67	-504.69	-503.51	-452.35	-371.69	-430.47	-564.05	-775.12
chi2(k)	312.48***	66.31***	68.67***	142.49***	118.05***	84.89***	157.99***	229.97***

Table 5: Ordered Logit Results (Dependent Variable: inc) - Households Headed by Unmarried Individual

variable	pooled SU	Belarus	Estonia	Latvia	Lithuania	Moscow	USA	West Germany
N	605	127	213	121	166	146	339	429
% male	25.29	22.83	28.17	23.97	28.31	25.34	44.54	40.79
age2	-0.432* (0.239)	0.593 (0.519)	-0.663 (0.454)	-0.373 (0.584)	-0.084 (0.606)	-0.773 (0.569)	0.457 (0.355)	1.197*** (0.322)
age3	0.253 (0.250)	1.959*** (0.642)	0.474 (0.445)	-0.346 (0.711)	-0.351 (0.638)	-0.267 (0.601)	0.515 (0.377)	1.263*** (0.417)
age4	0.410 (0.257)	2.845*** (1.012)	0.407 (0.426)	0.220 (0.673)	0.784 (0.628)	0.171 (0.604)	1.364*** (0.409)	2.211*** (0.421)
age5	0.332 (0.334)	3.499*** (1.215)	0.007 (0.561)	-0.278 (0.719)	0.955 (0.745)	-0.418 (0.713)	1.632*** (0.452)	1.544*** (0.589)
mp	2.682*** (0.396)	0.536 (0.767)	1.900*** (0.656)	2.500*** (0.712)	4.770*** (1.106)	0.215 (0.517)	2.788*** (0.453)	3.238*** (0.968)
ow	2.361*** (0.385)	0.416 (0.773)	2.099*** (0.578)	1.626** (0.684)	3.459*** (0.978)	0.030 (0.582)	2.349*** (0.466)	1.478*** (0.521)
sk	2.676*** (0.410)	1.229 (0.843)	1.886*** (0.599)	3.408*** (0.857)	3.585*** (1.017)	0.041 (0.571)	1.754*** (0.453)	1.502*** (0.585)
un	2.189*** (0.415)	--	1.544** (0.657)	0.968 (0.848)	4.116*** (1.015)	--	1.220** (0.445)	0.259 (0.634)
ag	0.277 (1.021)	--	--	.424 (1.120)	3.283*** (1.251)	--	0.352 (1.442)	2.395* (1.388)
gi	--	--	--	-	--	0.584 (1.366)	--	--

se	3.355*** (0.620)	1.246 (1.333)	--	--	3.658** (1.631)	1.162 (0.779)	3.184*** (0.749)	3.499*** (0.823)
edu2	0.491 (0.309)	0.730 (0.770)	0.955* (0.507)	0.520 (0.780)	1.018 (0.783)	-0.448 (0.721)	0.129 (0.316)	0.796*** (0.279)
edu3	0.741** (0.302)	1.767** (0.779)	1.100** (0.507)	1.081 (0.761)	-0.112 (0.304)	-0.189 (0.688)	0.813** (0.318)	1.145*** (0.329)
gender	0.699*** (0.205)	0.981* (0.584)	1.369*** (0.352)	0.286 (0.469)	1.224*** (0.464)	0.103 (0.477)	0.773*** (0.230)	1.510*** (0.238)
hchild1	-1.132*** (0.193)	- 2.893*** (0.570)	- 0.881*** (0.337)	-0.124 (0.460)	1.304*** (0.457)	- 1.661*** (0.412)	-0.293 (0.326)	0.951** (0.425)
hchild2	-1.647*** (0.282)	- 3.412*** (0.780)	- 1.368*** (0.534)	- 2.834*** (0.808)	2.225*** (0.634)	- 2.704*** (0.671)	0.438 (0.365)	0.059 (0.773)
hchild3	-3.031*** (0.738)	- 5.242*** (1.424)	--	--	0.585 (0.400)	-2.979** (1.421)	-0.585 (0.492)	-0.237 (0.792)
good	0.027 (0.187)	-0.052 (0.418)	-0.067 (0.343)	0.149 (0.429)	0.480 (0.433)	-0.024 (0.426)	0.007 (0.302)	0.798*** (0.280)
poor	-0.465** (0.207)	0.058 (0.687)	-0.669* (0.385)	-0.813 (0.594)	-0.325 (0.621)	-0.955** (0.458)	-0.038 (0.518)	0.087 (0.378)
cut1	0.826 (0.506)	-1.027 (1.020)	0.523 (0.780)	1.067 (1.122)	4.793 (1.183)	-3.234 (0.873)	2.208 (0.591)	4.291 (0.681)
cut2	2.416 (0.516)	0.407 (1.005)	2.203 (0.798)	2.604 (1.145)	6.657 (1.235)	-1.135 (0.837)	4.384 (0.627)	5.571 (0.708)
cut3	3.468 (0.524)	1.547 (1.016)	3.620 (0.817)	3.660 (1.169)	8.459 (1.292)	-0.190 (0.831)	5.528 (0.653)	6.893 (0.741)
log like- lyhood	-731.27	-129.86	-248.00	-143.30	-143.07	-171.79	-379.99	-363.58
chi2(k)	188.90***	58.50***	88.11***	45.49***	91.99***	48.79***	98.24***	182.20***

Table 6: Ordered Logit Results (Dependent Variable: inc)

variable	Pooled SU	Lithuania	USA	West Germany
age	0.068** (0.033)	0.136* (0.082)	0.170*** (0.054)	0.332*** (0.050)
age2	-0.0005 (0.0004)	-0.001 (0.001)	0.002*** (0.0006)	0.004*** (0.0006)
edu2	0.133 (0.245)	0.990** (0.392)	0.510 (0.483)	0.597*** (0.155)
edu3	0.442* (0.237)	0.745** (0.249)	1.234*** (0.481)	1.493*** (0.179)
gender	0.403*** (0.112)	0.820*** (0.213)	0.534*** (0.176)	0.878*** (0.182)
hchild1	-0.998*** (.116)	0.673*** (0.250)	-0.275 (0.210)	-0.217 (0.187)
hchild2	-1.928*** (0.134)	0.593** (0.278)	0.188 (0.203)	0.005 (0.196)
hchild3	-2.637*** (0.209)	0.830** (0.388)	0.103 (0.258)	0.099 (0.398)
marr	0.161*** (0.094)	1.156*** (0.249)	1.127*** (0.178)	1.054*** (0.189)
location controls	Yes	No	Yes	Yes
cut1	0.171 (0.662)	4.081 (1.615)	3.937 (1.187)	7.521 (1.002)
cut2	1.1584 (0.663)	5.425 (1.633)	6.025 (1.201)	8.828 (1.018)
cut3	2.612 (0.665)	7.205 (1.653)	7.093 (1.207)	10.006 (1.027)
log likelihood	-2564.19	-484.88	-821.42	-1033.27
chi2(k)	327.83***	82.83***	170.29***	231.31***

Notes:

The samples for these estimations are restricted to the normal working age population (up to 60 in the Soviet Union and 65 in the U.S. and West Germany)

age = age in years and age2 is age*age.

Table 7: Marginal Effects (Dependent Variable: inc)

variable	pooled SU	Lithuania	USA	West Germany	pooled SU	Lithuania	USA	West Germany
	Effect on low income probability				Effect on high income probability			
age	-0.010** (.005)	-0.020* (.012)	-0.017*** (.005)	-0.062*** (.010)	0.014** (.007)	0.019* (.011)	0.032*** (.010)	0.053*** (.008)
age2	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
edu2	-0.020 (0.036)	-0.129*** (0.046)	-0.048 (0.044)	-0.109*** (0.027)	0.027 (0.050)	0.157** (0.070)	0.100 (0.097)	0.099*** (0.027)
edu3	-0.071* (0.040)	-0.116** (0.055)	-0.136** (0.061)	-0.227*** (0.023)	0.085* (0.044)	0.098** (0.043)	0.219*** (0.079)	0.288*** (0.039)
gender	-0.063*** (0.015)	-0.130*** (0.037)	-0.057*** (0.021)	-0.182*** (0.040)	0.078*** (0.018)	0.106*** (0.027)	0.095*** (0.030)	0.121*** (0.023)
hchild1	0.168*** (0.021)	-0.092*** (0.032)	0.029 (0.024)	0.042 (0.037)	-0.182*** (0.020)	0.102** (0.041)	-0.050 (0.037)	-0.033 (0.028)
hchild2	0.348*** (0.027)	-0.081** (0.035)	-0.018 (0.018)	-0.001 (0.037)	-0.322*** (0.019)	0.090** (0.045)	0.037 (0.041)	0.001 (0.031)
hchild3	0.568*** (0.040)	-0.096*** (0.035)	-0.010 (0.024)	-0.018 (0.034)	-0.279*** (0.012)	0.144* (0.079)	0.020 (0.051)	0.016 (0.067)
marr	-0.025 (0.018)	-0.194*** (0.046)	-0.125*** (0.023)	-0.212*** (0.040)	0.031 (0.022)	0.141*** (0.027)	0.199*** (0.030)	0.152*** (0.025)

Table 8: Variable Definitions

inc	total household money income in Lithuania, the U.S., and West Germany; total household money income per capita in Belarus, Estonia, Latvia, and Moscow.
age1	1 if person under 30 years of age; 0 otherwise - used as reference group
age2	1 if person aged 30-39; 0 otherwise
age3	1 if person aged 40-49; 0 otherwise
age4	1 if person aged 50-59; 0 otherwise
age5	1 if person 60 and over; 0 otherwise
Mp	1 if person in a wage/salary managerial or professional job; 0 otherwise
ow	1 if person in a wage/salary non-managerial and non-professional white collar job; 0 otherwise
sk	1 if person in a wage/salary skilled blue-collar job; 0 otherwise
un	1 if person in a wage/salary unskilled blue-collar job; 0 otherwise
ag	1 if person in a wage/salary agricultural job; 0 otherwise
gi	1 if person in a wage/salary military job; 0 otherwise (used only for Moscow)
se	1 if person self employed; 0 otherwise
ret	1 if person retired; 0 otherwise - used as the reference for primary source of income (mp - ret)
edu1	1 if person completed education at 15 years of age or younger; 0 otherwise - used as reference group
edu2	1 if person completed education between 16 and 18 years of age; 0 otherwise
edu3	1 if person completed education after age 18; 0 otherwise
gender	1 if male; 0 if female
hchild0	1 if no children at home; 0 otherwise - used as reference group
hchild1	1 if 1 child at home; 0 otherwise
hchild2	1 if 2 children at home; 0 otherwise
hchild3	1 if 3 or more children at home; 0 otherwise
marr	1 if person married or living as married; 0 otherwise
good	1 if person reports being in good health; 0 otherwise
fair	1 if person reports being in fair health; 0 otherwise - used as reference group
poor	1 if person reports being in poor health; 0 otherwise
town1	1 if person lives in a town with population under 10,000; 0 otherwise - used as reference group

town2	1 if person lives in a town with population 10,001-50,000; 0 otherwise
town3	1 if person lives in a town with population 50,001-100,000; 0 otherwise
town4	1 if person lives in a town with population 100,001-500,000; 0 otherwise
town5	1 if person lives in a town with population over 500,000; 0 otherwise
native	1 if person of native Baltic republic (Lithuanian, Latvian, Estonian) ethnicity; 0 otherwise
other	1 if person of non-native and non-Russian ethnicity; 0 otherwise
Russian	1 if person of Russian ethnicity; 0 otherwise (used only for the Baltic states)
white	1 if person white; 0 otherwise (used only for the U.S.)
region	regional dummies are used for the northeast, southeast, south, north, and western U.S. in the expanded logit regressions and for Belarus, Estonia, Latvia, and Moscow in the modified pooled Soviet regression

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