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"Household specialisation and gender equality in transition.

**Paid and unpaid work of women and men in Soviet and post-Soviet
Taganrog"**

Katarina Katz,

Lena Sand

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SCHOOL OF BUSINESS, ECONOMICS AND LAW, UNIVERSITY OF GOTHENBURG

Department of Economics

Visiting adress Vasagatan 1,

Postal adress P.O.Box 640, SE 405 30 Göteborg, Sweden

Phone + 46 (0)31 786 0000

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Katz, Katarina *

Sand, Lena **

ABSTRACT

Using unique survey data from the Russian industrial city Taganrog in 1989 and 1998, we analyse changes in the gender division of labour among gainfully employed women and men, pre- and post-transition. In Soviet Taganrog, dual earner families predominated, but nevertheless men were usually primary earners, while women did the bulk of housework. After transition, contrary to early predictions, aggregate female and male employment rates have declined to a similar extent but the time-use data indicate increased gender specialisation among the employed. Thus, the dual earner norm mainly remains but the pre-existing gender difference within it has increased considerably, particularly among couples with pre-school children.

Keywords: Non-market work, gender division of labour, Russia

JEL-codes: D13, J16, J22, P39

* Corresponding author. Dept. of Economics, University of Göteborg, Box 640, S-405 30 Göteborg, Sweden.

Fax +46 (31) 773 41 54, e-mail: Katarina.Katz@economics.gu.se

** Dept. of Economics, University of Göteborg, Box 640, S-405 30 Göteborg, Sweden.

Fax +46 (31) 773 41 54, e-mail: Lena.Sand@economics.gu.se

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1. Introduction

The collapse of the Soviet system raised the issue of whether the introduction of a market economy would increase or decrease the level of gender equality. On the one hand, Soviet women had some rights to lose, compared to many market economies. They had, by international standards, high rates of employment. The level of education of working women was as high as that of men. Mothers had the right to 60 weeks of pregnancy and maternity leave, 16 weeks of which were paid. Nevertheless, Soviet society and Soviet labour were characterised by blatant gender inequality. Would the market do away with discrimination which was not economically rational or would women be even more vulnerable in a competitive market environment? The issue addressed by this paper, whether transition from a non-market to a market order, has increased or decreased gender differentiation and inequality in the division of time between paid and unpaid labour, has implications for the relation between economic systems and gender orders.

Very early during the transition, both Western and Eastern feminists voiced fears that economic reform in the former Soviet Union would be at the expense of women and of gender equality. Many predicted that Soviet women would be even more disadvantaged in a competitive market economy and that “*economic transformation will tend to make the notion of paid work as the norm for women anachronistic*” (Barbara Einhorn 1993:117) in the transition economies of Eastern and Central Europe. In this literature a large-scale decline in women’s labour force participation; high female unemployment and feminisation of poverty were described as imminent, or even as already having occurred in Russia. The catchword that in Russia “unemployment has a female face” became the conventional wisdom. The logical conclusion was to predict a shift from the dual earner model which had been general in the USSR, to a breadwinner model where married women became full-time home makers, supported by husbands working in the market. (For examples see Susan Bridger, Rebecca Kay and Kathryn Pinnick 1996; Monica Fong 1994; Nanette Funk and Magda Mueller 1993; Barbara Hopkins 1996; Zoya Khotkina, 1994, Elena Mezentseva, 1994a, Marina Malysheva 1996; Anastasia Posadskaya 1994.).

At the same time, most Russian politicians, news media, intellectuals, entertainers and popular culture welcomed gender roles that Western feminists would describe as “more traditional”, and advocated an end to what they called the Soviet “over-emancipation” of

women and to a *”totalitarian system built on force and the demise of individual differences including the differences between men and women”* (Lissyutkina 1993: 277).¹ In the apt words of Elisabeth Waters (1993, 288): *“When the [Soviet] propaganda claims concerning women’s emancipation were eventually challenged, it was less to expose their lack of substance than to deny the validity of the professed objectives.”*

The conclusion that unemployment and poverty would disproportionately affect women was drawn with too little previous empirical research. The fact that the living standards of many women declined dramatically in the 1990s does not necessarily mean that they fell more than those of men. Authors concerned with gender equality may have underestimated the increase in class inequality, the extent to which large groups of both women and men were impoverished.

Statistics from the State Employment Service showed that more women than men were registered as unemployed but when the first Labour Force Surveys were made in 1992, they showed equal unemployment rates and equal aggregate declines in participation for women and men. Tanya van der Lippe and Eva Fodor (1998) found that gender differences in employment and wages in pre- and post-transition surveys from Russia and several Eastern European countries were nearly the same. In the mainstream economics literature on the Russian labour market, issues like unemployment and wage arrears were considered to affect men rather more than women.

Later studies showed that reality was more complex and contradictory. The qualitative interviews with Russian women by Sarah Ashwin and Elaine Bowers (1997) showed a strong and continued work-commitment among women workers. Katarina Katz (2001) surveys the statistical evidence and finds that while at the aggregate level, the “return of women to the home” had not taken place, yet there was some evidence of increasing gender wage differentials and of longer career breaks for mothers. A full picture of what Russia’s transition to the market has meant for the gender order will require a lot of detailed empirical analysis of the gender division of labour, wealth and resources rather than sweeping generalisations.

¹ For a Russian feminist analysis of this ideological shift, see Klimenkova (1994).

While there are studies of changes in employment and participation rates in Russia, the contribution by this paper is an analysis of changes in the time spent on paid and unpaid work by employed women and men in a Russian city, Taganrog, in 1989 and in 1997/98. We, first, describe how the amount of time spent on paid and unpaid work differs between working men and women in each year – what constitutes an average working day for female and male workers, in different household formations, before and after transition. Second we analyse how the time spent has changed between 1989 and 1997 for each gender and demonstrate that the gender differences - the gender specialisation of labour – has increased after transition even among women and men who are gainfully employed. Third, we discuss the increased polarisation between male and female roles that we find in the context of the Soviet and post-Soviet gender order and in relation to bread-winner and dual earner models of the household.

The following section will, very briefly, outline the perception of the gender division of labour which underpins the empirical analysis. As mentioned, the main contribution of the present paper is a study of specialisation among employed women and men. Yet, this needs to be put in context by information on the extent to which women and men are employed² in the two years under study. In section 3, therefore, we use published sources to outline the participation and employment of women and men in Russia as a whole and in Taganrog. Section 4 summarises results from previous time-use studies in Russia. In section 5 we describe the data and introduce the city Taganrog where they were collected. The first part of this section will also discuss in some detail sampling and measurement problems that are essential for the statistical analysis and the statistical approach chosen in the following. This choice is described and discussed in the last part of section 5, after definition of the variables we have used in our analysis. Section 6 reports the time spent on market work and on non-market work of different kinds. The second part of the section indicates how time-use varies according to demographic characteristics, such as marital status and having children and the third relates it to differences in education. Section 7 concludes.

² Or more precisely, the extents to which they are employed and the extent to which they are at work. With long parental leaves, taken up mainly by mothers, as in Russia and Scandinavia, female and male at-work rates differ considerably more than employment rates, which include employees on leave.

2. On the gender division of labour

The gender division of labour concerns both the extent to which women and men participate at all in paid and unpaid work, respectively, and the amounts that they perform if they do participate, as well as the degree of specialisation in different tasks within unpaid work, and the gender segregation, by sector, occupation, industry, establishment and position, in paid work. It consists of differences in quality as well as quantity – in the different prestige, forms, conditions and content of different - more or less male or female dominated - tasks and occupations.

Quantitative study of the gender division of labour, and of unpaid work generally, is usually made with time-use data. In addition to the practical difficulties of getting accurate measures of time spent on different activities (such as problems of recall, coding of simultaneous activities etc.) there are more conceptual problems, in particular as regards the definition of unpaid work. The exact demarcation line between “work” and “non-work” inevitably includes a subjective element and some degree of arbitrariness (Susan Himmelweit 1995). The same activity may be experienced as “leisure” by some individuals and as “work” by others, and by the same individual at different times and in different contexts, but quantitative analysis requires a uniform coding of activities.

The gender division of paid work interacts with that of unpaid work. Women and men spend different amounts of time on unpaid work such as housework, gardening and childcare, not only when women are outside the labour force, unemployed or on childcare leave, but also when two spouses are both engaged in market work. If men tend to work longer hours and/or have higher earnings, this reinforces a division where women take a larger share of the unpaid work in the home. The strength of Gary Becker’s (1991) theory of specialisation within the household is that it draws attention to how a small initial advantage of men in market work gives rise to a spiral of increasing polarisation of tasks if the household maximises present joint income. Among its weaknesses – as many feminist authors have pointed out - is that it does not explain the origin of the original advantage, disregards long-term effects and the consequences in case of a breakup of the household and that it assumes a joint household utility function without regard to conflicts of interest or power relations.³

³ See – for example - Paula England 1993; Nancy Folbre 1994; Katz 2001

An unequal gender division of labour cannot be reduced to “efficient specialisation”, in the household or on the labour market. Such a perspective does not adequately address the unequal power relations of either gender, class or ethnicity and neglects motives and forces beyond the purely economic. Underlying our analysis is an assumption that the division of paid and unpaid labour is both an outcome and a determinant of the relative power of women and men in any given society, and we recognise the interaction between economic forces, on the one hand, and norms and constructions of the “gendered nature” of different tasks and of their “appropriate” distribution according to gender, class, ethnicity, age and family status.

The gender division of paid and unpaid work varies between different countries, in interaction with their different cultural norms and traditions, their different social and economic conditions and, also, depending on the social policies, the different welfare regimes in different countries. Dominique Anxo, Lennart Flood, Letizia Mencarini, Ariane Pailhé, Anne Solaz and Maria Letizia Tanturri (2007), in a comparison between France, Italy, Sweden and the US link the relatively more equal gender division of labour in Sweden to policies such as subsidised public childcare and generous parental leave. Different policies are seen as part of the reason why participation rates are lower among married women without children than among single women in Italy and the US, but not in France or Sweden. In France and Sweden, both with extensive public child-care provision, mothers of school-age children have as high participation rates as married women without children, but work fewer hours, while in the US mothers of school age children have lower participation rates rather than shorter work weeks.

The transition in Russia has, of course, been a shift between two very different political and welfare regimes. Space does not permit a more extensive comparison, but we can note some similarities and differences between Soviet and post-Soviet Russia, as well as between Russia and some Western countries. In particular, we find it interesting to compare with Sweden, the Western country where female labour force participation has been closest to that in the USSR. Both states provided public child-care, but of very different quality. In both countries, women were entitled to long leave after child-birth, with the right to return to the same or equivalent job, but while compensation in Sweden is 80 percent of earnings (up to a ceiling) for about a year, Soviet women received full compensation for 18 weeks, and after that only a very low flat rate benefit. In Sweden, parents have been able to share the leave since 1974, while this

was not the case in the USSR until 1991. While a high female employment rate was a stated objective of the governments of both countries, there was much more public debate about change in gender roles within the household in Sweden, and this was reflected in the education system, Soviet school-children and students were taught essentialist and conservative ideals of passive, caring femininity and active, self-assertive masculinity (Marianne Liljeström 1993). In the words of a Russian feminist scholar, “...*Soviet gender equality was expressed through general employment of women in social production, it hardly concerned the gender division of domestic labour*” (Mezentseva 2004:304). Tatyana Teplova (2007:290) connects the lack of support for “‘shared’ domestic and parental responsibilities between spouses” with the specific construction of “motherhood” in Soviet ideology. Another crucial difference is that the repressive political system of the USSR could not accept an independent organisation of women.

The time that the mother can stay home with the right to return to the same job was extended from 18 months to three years in 1991. At the same time, the right to parental leave, after the fully paid 20 weeks of pregnancy and maternity leave, was made formally equal for men and women, but in practise, paternal leave is very rare. Not only culture and tradition stand in the way –since fathers usually earn more than mothers, the low level of the benefit is a strong reasons against sharing the leave between parents. Teplova (2007:285) makes childcare provision the centre of her analysis of the “movement toward neofamilism in the Russian welfare state”. She notes that centralised state ownership of enterprises, in an apparent paradox, led to a decentralization of elements of the Soviet welfare state where each enterprise (or educational institution) was a “microwelfare state in itself, with its own system of childcare facilities ... transportation, schools, food provision, pioneer camps, and rest houses” (ibid.: 6). Since almost all adults were either employed or students, this decentralized provision of services was universal, but unequal. The privatization of enterprises therefore also implied the reduction or dismantling of a lot of welfare services – not least the considerable subsidies from enterprises to nurseries and kindergartens for their employees. The number of pre-school children aged three years and above in public childcare institutions declined from 9 million to 4.3 million from 1990 to 2000 (Teplova 2007:292). Teplova calculates from the all-Russia household panel, Russian Longitudinal Monitoring Survey

(RLMS)⁴ that 60 percent of all pre-school children were cared for at home and 47 percent of those aged 3-6 years, in the middle of the 1990s. According to official statistics, however, in 2000, just over 80 percent of children from three years to school age attended nurseries. (Federal'naia sluzhba gosudarstvennoi statistiki 2006:354). Among children age 18 months to three years, the percentage was only 18 percent.

Feminist organisations exist, but are small and with very limited influence.

In the USSR, labour legislation prohibited discrimination in hiring and wage-setting and protected the employment of women who were pregnant or on maternity leave. Anti-discrimination regulation in the Russian Labour Code of 2001 is similar but somewhat weaker. However, as Irina Kozina and Elena Zhidkova (2005:61) note, the difference in legislation “*pales into insignificance*” alongside the lack of enforcement of it.

A setback for gender equality would not have to take the extreme form of a large proportion of women leaving paid employment completely. Employed women might take a larger share of unpaid work in dual earner households. Women might reduce their hours of paid work and men increase theirs, increased segregation on the labour market (and changes in the wage structure) could increase the gender wage differential, decreasing women's relative importance as earners and their bargaining position within the household.

Our study shows empirically that housework and market work are more unequally shared between employed women and men in post-transition Taganrog than they were in the Soviet period. This is an important result, for four reasons. First, that women do a more than equal share of unpaid work constitutes an injustice in itself. Second, the work of Sarah Ashwin (2005b) and others indicates that women draw strength from their importance in the household and its social networks, while men depend almost entirely on paid employment for self-esteem and social status and that, therefore, further marginalisation of men in the household leaves them even more vulnerable to adversity in the labour market. Third, since inequality in market work and inequality in non-market work are mutually reinforcing, the increase in non-market work, that we find, puts women at a disadvantage in the labour

⁴ The RLMS survey is a national sample, but since it began in 1992 it cannot be used to compare Soviet and post-Soviet conditions, See further, http://www.cpc.unc.edu/projects/rlms/rlms_home.htm

market. Fourth, we empirically demonstrate that a phenomenon which may be expected as a result of increased gender inequality in employment and pay has indeed materialised.

3. Transition, gender and employment in Russia and Taganrog

Female employment rates were high in the USSR, by international standards, although lower than those of men, partly because retirement age was 55 years for women and 60 years for men. In addition, maternity leaves were long. Women and men in the labour force had equal levels of education but there was pervasive gender segregation in education and employment, both vertical and horizontal. Women were concentrated into services, office work and production of consumer goods, while men predominated in heavy industry, in skilled manual jobs and at managerial levels. Wage statistics were not published separately by gender, but there was a strong negative correlation between percent female of an industry's labour force and its average wage level (Katz 1994).⁵

Soviet gender ideology was contradictory. Women ought to participate in "social production" but careers ought to come second to being mothers and wives. Women's earnings were essential for households, but the husband remained identified as the main "provider" (*kormilets*) of the family (Marina Kiblitckaya 2000; Ashwin 2005b). Women's "special rights", such as maternity leave and "protective" work legislation were double edged since they contributed to the widespread conviction that women were "second rate" workers (Elena Mezentseva 1994b), an attitude that persists today, among both women and men (Ashwin 2005b; Kozina and Zhidkova 2005). The endemic shortage of labour power and the insensitivity to marginal costs intrinsic to the Soviet "planning"⁶ system made it easy, however, even for marginally less productive or more expensive workers to find jobs.

In the USSR, there was shortage of labour power, after transition there was unemployment. A return of women, particularly mothers, to the home was proposed as a remedy both for unemployment and for the onerous "double burden" of Soviet women. At the same time, a

⁵ About gender and the Soviet labour market, see Alastair McAuley (1981), Ashwin (2000) and Katz (2001).

⁶ Why the Soviet economic system should not be described as a planned economy is beyond the scope of this paper, but see Ticktin (1992).

dramatic drop in real household incomes made it even less realistic for the large majority of women to abstain from paid work.

According to the Labour Force Survey (LFS) (Goskomstat RF 2001a), in the age range 15-72 years, the female employment rate fell from 60 % in 1992 to 48 % in 1998, and the male from 74 % to 59 %. (In addition, an unknown number were working unofficially, but not reporting it.) Thus, female employment declined in after 1992, but less than that of men.

Since the Russian Labour Force Surveys started in 1992, no comparable data are available for 1986-1991 when many enterprises decreased their staff. According to a few case studies and anecdotal evidence, the greatest cut-backs were among administrative and office staff, categories that were predominantly female. Statistics based on enterprise reports indicate a much larger fall in employment for women than for men, since the Soviet period. These figures are, however, less reliable than the LFS.⁷ Therefore it is possible, but not sufficiently demonstrated, that over a longer period women's employment had declined somewhat more than that of men. Yet, a female employment rate of 73.1 percent between age 16 and pension age, compared to a male rate of 79.0 can hardly be described as predominance of a single-earner, breadwinner model.

As mentioned in the Introduction, unemployment, as defined by the ILO was, and is, slightly higher among men than among women. By 1998 the level was 12.9 percent among women, and 13.5 percent among men. Unemployed women, however, are more likely to register with the Employment Service (*Zluzhba Zaniatosti*).

There were factors that would tend to the relative disadvantage of women – less funding for public services that employed many women, increased sensitivity of employers to costs connected with leave to care for children, decreased subsidies for public childcare, longer parental leaves and idealisation of the non-working mother. Women on average received lower hourly wages than men (Andrew Newell and Barry Reilly 2001; Elena Glinskaya and Thomas Mroz 2000), particularly in second jobs (Mark Foley 1997). Thus, the most economically efficient short-term solution for many households must have been for male household members to seek additional paid employment, while the female took on an even

larger share of housework than before and, in addition, replaced goods and services previously bought on the market with home-produced.

There were, however, also processes at work which would be more to the disadvantage of men. The industries hardest hit by economic crisis were male dominated - military production, metalworking and coal mining. The relative wages of skilled manual occupations in manufacturing, most of them male-dominated, fell drastically. The increase in alcoholism, from an already high level, affected male workers far more than female.

It is difficult to compare employment or at-work rates in the two samples which will be utilised in the time-use analysis and which are described in section 5, below. In the 1989 sample, employment and at-work rates can be estimated from a question about self-defined occupational status. For 1997/98 this is not possible.⁸ We can, however, cite Katz and Natalia Vinokurova (2002) who compare self-reported occupational status of men and women in Taganrog in 1989 and 2000. The 1989 data are the same as those used in this paper and those for 2000 are from a survey of 1100 households, sampled in the same manner as the 1997/98 data that we use. In both 1989 and 2000 there is a gender difference in employment rates, but in the age interval from 16 years to pension age, the male employment rate in 2000 is only 4 percentage points higher than the female. This number agrees with national LFS-statistics (Goskomstat RF 2001b).

In the 20-64 age range, female employment rate had fallen by 22 percentage points, from 82 to 60 percent from 1989 to 2000 and the male by 19 percentage points, from 91 to 72 percent. If women on maternity leave are excluded, the proportion had fallen equally for women and men. (Two percent of the women were on maternity leave in 2000, compared to nearly 5 percent in 1989, because of the large decrease in birth-rates.) If compulsory temporary

⁷ See Simon Clarke (1999).

⁸ In the 1989 data the set of respondents who reported labour income the previous month was almost identical to that of self-defined working individuals, while in 1997/87 more self-defined “working” individuals reported zero earnings the previous month than can be explained by having only just started to work – even among those who in the time-use questions reported market work the preceding day, about one in seven claimed not to have had any labour income the preceding month. At this time, many people worked in the black or grey sectors of the economy and did not report their earnings to the tax authorities. They probably did not disclose them to interviewers either. This is why we do not use reported earnings to calculate employment rates in 1997/98.

redundancy is also taken into account, the male at-work rate has declined by one and a half percentage point more than the female.

Katz and Vinokurova also compare at-work rates for mothers of pre-school children and find that they were very much lower after transition. Only for those with children under one year had at work-rates increased – from zero to 15 percent - while among mothers of children aged 1-2 years, only one in three worked in 2000, as compared to two out of three in 1989. In 1989 more than 90 per cent of women whose youngest child was 3-6 years old were working, but only 64 percent in 2000. Thus, similar drops in aggregate male and female employment may hide a disproportionate decline in employment among mothers. Comparison of the Labour Force Surveys in 1992 and 1998 shows that while the employment rate of men fell more than that of women in the “student” and “pensioner” age ranges (15-19, 55-59 and 60-72), female employment declined more than the male in all five-year cohorts from age 20 to 39. A very rough calculation based on “reasons for absence” reported in the LFS indicates that if women on maternity leave are excluded, the female rates would be some 3 percentage points lower. Teplova (2007) calculates from RLMS that 64 percent of all women of working age (18-55) were working 2001 and 71 percent of men (age 18-60). Among mothers with children under seven years 48 percent worked, while another 12 percent were employed, but on leave. (The male-female difference was three percentage points smaller than in 1994, but the difference between mothers of young children and other women was two percentage points larger.)

4 Time-use study in Russia – history and earlier results

Although there was a strong tradition of time-use research in the USSR, going back to 1924, not much primary data from the Soviet period are available today. After transition, resources for survey studies have been more limited and since good quality time-use data are particularly expensive to collect, very little have been collected.

A seminal study of time use in 12 countries use, led by Alexander Szalai in the mid-60s, indicated that total labour time - paid plus domestic - was higher in the USSR than in all the other countries, except Poland. The time spent on housework in the USSR, was near the average, but that in paid labour was exceptionally high. The difference between the total work of men and women was 2.3 hours per day, 0.1 hours less than in record-holding Poland and

West Germany. (In Norway the gender differential was 0.4 hours per day, and in the DDR, 1.1 hours, as in Belgium.)⁹

A 1985 survey of workers and employees in manufacturing and mining (Goskomstat SSSR 1989), showed that women spent 3 hours and 13 minutes on housework an average work day and 6 hours 18 minutes each non-work day. For men, the figures were 58 minutes, and 2 hours 44 minutes, respectively. Men, however, spent more time on paid work than women.

To the best of our knowledge, only two local repeated cross-section surveys have been used to compare time-use in Soviet and post-Soviet Russia. One is of a rural population in West-Siberia, conducted by Galina Gvozdeva¹⁰ and the other from the city of Pskov, in North-Western Russia and led by Vassiliy Patrushev and Tatiana Karakhanova. The latter study is based on high-quality time-use surveys from 1965, 1986 and 1997/98. Sadly, funding limited the 1997/98 sample to 320 adults, 231 of which were employed. From 1986 to 1997/98, the time spent on paid work (including work related activities) increased from 50.5 to 52 hours per week for employed men and decreased from 45.5 to 38.3 hours for women, whereas housework time remained practically constant at 27 hours per week for employed women and increased by about 1½ hours to 16.2 hours for men (Patrushev 2001). Despite the fall in birth-rates, the average time spent by working men on childcare remained practically constant at four hours per week, while that of women decreased from 5 ½ to just under four (Karakhanova 2001). A survey in 2003/2004 indicated a decrease in gender polarisation. Women spent more time in paid work and men less, but above all, men spent much more time on garden work. However, the sample included only 144 employed respondents, more of whom were above pension age than in the 1997/98 sample (Karakhanova 2006)¹¹.

Victoria Vernon (2004) uses data from the all-Russia household panel, Russian Longitudinal Monitoring Survey (RLMS)¹². Men performed more market work than women but had a

⁹ All figures quoted in Susan Lingsom (1978: 56-57).

¹⁰ Unfortunately, we have not been able to get a report from this project.

¹¹ The data are a panel and it does not appear that any new respondents were added in the later waves to make the age distribution more representative.

¹² In the RLMS survey respondents are asked how much time they spent on some pre-specified activities in the last seven days, a format that involves problems of recall.

smaller weekly total burden of work. Taking an average over the 1994-98 samples, Vernon finds that employed women worked a total of 81 hours per week and employed men 61 hours. Mezentseva (2004) also uses the RLMS and calculates that working age women spend 2.3 times as much time on domestic work as working age men, but she notes that RLMS does not include repairs and other traditionally “male” tasks in its time use categories and therefore overestimates the gender differential.

Other local household surveys have measured time use in post-reform Russia, often with small samples. In a survey of such studies, Svetlana Barsukova and Vadim Radaev (2001) cite an article from 1998 by Vassiliy Patrushev, according to which the total workload of the adult population increased during the first half of the 1990:s, as well as another study by Viktor Artemov from 1999, arguing that the workload of women, already larger than that of men, also increased more than theirs. A large increase in non-market work outweighed a decrease in women’s market work.

Hjeds-Löfmark (2005) uses the 1997/98 Taganrog data to analyse the housework of married/cohabitating couples. She finds that the amount of housework performed by women does not vary with their own education, but in households where the man has university education, both husband and wife do about an hour more of housework than in others. The presence of children under 17 increases the woman’s housework by one to five hours, depending on the age of the youngest child. The man’s housework increases by an hour per day if there is a child of less than four years old, while the effect of having older children is small and not statistically significant. Being the earner of a larger share of household labour income is connected both with less hours of housework and with smaller share of housework, for women as well as men.

5. Data and measurement

5.1 The Data

The South-Russian city Taganrog has been the site of a series of surveys conducted from 1967 to 2000, focussing on different socio-economic themes (Natalia Rimashevskaya 2001; Katz 2001). Two of the surveys, one from 1989 and one from 1997/98 included questions about time-use and the data from these two are used in the present study. Although local, the Taganrog data provide unique information from Soviet and post-Soviet Russia. Furthermore,

Taganrog has much in common with many other localities in Russia, as a middle-sized city¹³ dominated by a few large industrial enterprises which formerly produced for the privileged military sector, but which after transition and the reduction in military spending faced either privatisation and conversion, or collapse. With all due qualifications for the heterogeneity of this vast country, Taganrog can be taken as an informative example of provincial, industrial, urban Russia.

Both sets of data are collected from surveys of Taganrog households, 1187 in 1989 and 1000 in 1997/98. In 1989 a randomised procedure was used to sample dwellings from the official housing register. In 1997/98 a register of dwellings (flats, detached houses and rooms in hostels) was constructed from the electoral register and a sample drawn with a randomised procedure. Interviews were spread over the four quarters of the year to catch seasonal variations. In both surveys, the sampling frame ensured that each Taganrog household had the same probability of being sampled. They are, therefore, probability samples that can be statistically expected to be representative of the (registered) population of the city.¹⁴

The time-use data were not collected in an ideal manner: Respondents were asked retrospectively how much time they spent on each of a number of pre-specified activities on a given day. In 1997/98, the same interview, including the time-use questions, was made with each adult in the sampled household. In 1989 one household member was chosen for a full interview while only a few questions were asked about the others. Therefore, for 1989, we only have time-use data concerning one individual in each household. In the following, “respondents” or “main respondents” in 1989 will refer to this subset of one interviewee per household as opposed to the larger set of all adult household members.¹⁵

All time-use analysis, involves problems of measurement and of econometric modelling (Frank Juster and Thomas Stafford 1991; Anders Klevmarken 1998). There are no perfect answers to these problems, but they motivate a careful and detailed account of how sets of

¹³ It has approximately 300 000 inhabitants.

¹⁴ The non-registered population in Taganrog includes the institutionalised and the homeless (in many cases addicts or ex-convicts) but the greater part are internal refugees from the nearby Caucasus.

¹⁵ The full 1989 sample includes 3722 individuals, 2378 are aged 20-64 and 1070 of these are “main respondents”. In the 1997/98 sample there are 2869 individuals, 2199 are in the 20-64 age range.

time-use data are constructed, how they have been treated and what simplifications have been made.

In our case, a difference between the two data sets restricts the range of feasible issues and methods. In 1989 respondents were asked about two days, the previous *budnii den'*, and the previous *vykhodnoi den'*. We have not found any equivalent terms in English, nor any precise definitions in the Russian literature or in the interviewer instructions issued for the survey. The “last *budnii den'*” could be taken to be either the last week-day, the last day the respondent was scheduled to work or the last day she/he actually worked. Out of those respondents in the 1989 sample who describe themselves as “working”, less than 1.5 percent did not report any work during the last “*budnii den'*”, which seems an unrealistically low rate of absence. We therefore believe the spontaneous answer we have been given when we have questioned Russian scholars: Employed respondents will speak about the last day they actually were at work. The issue is of quantitative importance. Paul Carlin and Lennart Flood (1997) have shown that when Western surveys ask how much people work per week “on average”, respondents answer as if they worked a full work-week 52 weeks per year. They omit to take holidays and absence from work into account and the result is a substantially exaggerated estimate of time worked per year. If our Taganrog respondents refer only to the last day they actually worked, an estimate of average hours per week or per year based on these data will be similarly upward biased. A *vykhodnoi* day, we interpret as a day when a person is not scheduled to work.

In the 1997/98 survey the respondents were asked about the day before the interview.¹⁶ Thus, these data include both days when the respondent worked, days of absence, weekends and holidays. The only way in which a uniform criterion can be applied in both data sets, is to include only those who reported some time spent on market work under the question about

¹⁶ Interviews were relatively evenly spread over the week, as indicated by the table below. There is some overrepresentation of Saturdays, a day on which respondents were more likely to be at home and interviewers more likely to have time to do what was for most of them a second job. We could have made the 1997/98 data more representative by weighting for day of the week but since this is not possible for the 1989 data it would have reduced comparability.

| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---------------|----------------|------------------|-----------------|---------------|-----------------|---------------|
| 10% | 14% | 15% | 16% | 14% | 19% | 12% |

the last “working day” in 1989 and the question about “the previous day” in 1997/98. Further, “study” was not one of the pre-defined time-use categories in the 1989 survey. To avoid measurement errors, those who defined their primary occupation as “student” were therefore excluded from the analysis.¹⁷ We will call a day when some market work is performed a “workday”.

Regrettably, the “main respondents” in 1989 were not selected through a randomised procedure. Thus, the set of respondents included in the time use analysis could be biased relative to the set of all working household members and, therefore, to the reference population which is the working population of Taganrog.¹⁸ An analysis of the differences in characteristics between working household members who were interviewed about time-use and those who were not, is made in Appendix A5. It led us to conclude that sample selection bias is not a grave problem for our analysis, if it is made separately by gender but that there is good reason to make it also separately by demographic characteristics.

In the 1997/98 data there is less reason to fear sampling bias. The main issue to note is that the fewer the days per week that an individual works, the lower is her/his probability of having worked the day before the interview and therefore of being included.¹⁹ At the same time, it is difficult to make a comparison similar to that for the 1989 sample because, as explained above, the 1997/98 data do not provide any good defining criterion for “working” respondents. A comparison of those reporting earnings in the time-use subsample and in the whole sample show very small discrepancies.

Since our statistical analysis is restricted to a day on which market work is performed, our qualitative conclusions depend crucially on the assumption that male/female differences in time spent and changes in time use between 1989 and 1997/98 have the same sign on work-days and days when respondents are off from work. (The quantitative proportions do not have

¹⁷ Some self-defined students report time spent on “work” but we cannot be sure whether this is paid work or time spent studying.

¹⁸ Since the sample of all household members is a probability sample of the population of the city, the employed household members can be statistically expected to be a representative sample of the employed population.

¹⁹ Space does not permit a more detailed discussion of this. The available information can be obtained from the authors.

to be identical.) For instance, we find that women spend more time cooking and cleaning than men on work days. If men cook and clean much more than women on Saturdays and Sundays, our conclusion that employed women do a larger share of these chores than employed men may be wrong. We do not, however, consider such a scenario very plausible. The 1989 Goskomstat time-use survey, mentioned in the previous section, indicates that the gender division of housework is, if anything, slightly more uneven during days off work.

5.2 Specification of time-use categories

The activities pre-specified in the two questionnaires have been aggregated so as to make variable definitions as nearly identical as possible in the two data sets.²⁰ The variable **market work** is the time respondents assigns to wage-work and self-employment²¹, including travel to and from work. For total unpaid work we use the variable **housework**. This is the sum of **shopping** (including visiting service establishments), **traditional housework** (cooking, cleaning, laundry, washing dishes etc.), **other housework** (such as repairs or manufacturing something for the household), **childcare** and **gardening** (subsidiary agriculture). The 1997/98 data included chopping wood for fuel and care for elderly and sick relatives. This information is not available for 1989. We have included chopping wood in “other housework”. For 1997/98 there are also data on time spent on care for sick or elderly relatives. Because this is not available for 1989, we have not included it in the comparison but will say a few words about the extent of such work in 1997/98.

Childcare, the total time devoted to children, is further divided into two kinds of activities. “*Ukhod za detmi*” refers to meeting mostly physical needs of the children - such as feeding, dressing and bathing them. “*Vospitanie detei*” – bringing up, or educating children – includes activities such as playing with children, reading to them, helping with homework, taking them for walks or to cultural events. To render these concepts briefly in English, we will call the first **care for child** and the second **activities with child**.

²⁰ The full list of activities in English and Russian are available from authors.

²¹ In the 1997/98 questionnaire there are questions about informal work, specifically about individual work activities, paid services and small-scale trade, and these are included in market work. In both years there are data on first and second jobs and these are both included.

5.3 Method of analysis

Obviously, the time which women and men devote to paid and unpaid work varies with the type of household they belong to, and the role they have in it: Whether they are married/cohabitating or single, whether they have children, and, if so, children of which age. To capture this, a number of time-use studies from different countries use the life-cycle approach, developed by Paul C. Glick (1947). A recent example is the study of several Western countries by Anxo et. al. (2007), cited in section 2, above. We avoid the term “life-cycle” since it can be taken to imply not only that a trajectory from young single, to young married without children, to married with young children and so on, is followed by a numerical majority, but that it is “normal” in a normative sense. For lack of a better, neutral, term we will speak of demographic groups or categories or about the type of household and the individual’s position in it. We use eight categories, the same as in Statistics Sweden (1992; 2003). These are:

- Single, without own children living in the household²², and aged 20-44 years.
- Married/cohabitating, no own children living in the household, and aged 20-44 years.
- Married/cohabitating, with own child/ren in the household, the youngest aged 0-6.
- Married/cohabitating, with own child/ren in the household and the youngest 7-16.
- Single, with own child/ren in the household and the youngest child aged 0-6.
- Single, with own child/ren in the household and the youngest child aged 7-16.
- Single, without own children living in the household, and aged 45-64 years.
- Married/cohabitating, no own children living in the household, and aged 45-64 years.

Note that both married and single individuals, with or without children, may live together with their parents, with grown-up children, siblings or other relatives. It would have been of interest to use a more detailed division, for instance to distinguish multigenerational households, to discuss married and cohabitating couples separately²³ but the limited size of our samples limits the number of categories which can be used in estimates with a reasonable level of precision.

²² Parents whose children are all above the age of 16 years or who do not live in the same household with them are counted as "living without own children". A person who lives in the same household as his/her spouse and a child of the spouse, is considered as “living with own child”, and so is an adoptive parent but not other relatives.

²³ Mezentseva (2004) compares the time spent on housework by women and men with different marital status and concludes that there is hardly difference between formally married and cohabitating couples.

Anxo et al. (2007) begin by reporting gender differentials in market work, housework and leisure within each country and country differentials for each gender, based on descriptive statistics (the average time spent), first for each country/gender sub-group then divided by life-course category. In the following section, they analyse changes over the life-course by multivariate analysis separately by gender and country, including dummies for the life-cycle stages among the co-variates.

We will follow a partly similar path. First, we will report average time spent on various activities by each of the four gender/year sub-samples, and second we will do the same for each demographic category within these four. Finally, we will estimate multivariate models with controls for demographic category and education. We use an ordinary Tobit model for estimates of unpaid work, to take into account that a number of respondents report zero time in these activities. We use an ordinary least squares regression for estimates of market work since our analysis concerns a day in which a positive amount of market work is performed.

To both discuss in detail the amount of time spent, the gender differentials in time spent each year, the difference between the two points in time for each gender and difference-in-difference estimates of changes in the gender differential over time and of the gender differences in change over time for nine activities and report and discuss multivariate analysis of each of them would require far too much space. We have therefore limited the reporting of multivariate estimates to aggregate non-market and market work, except in section 6.3 on time-use differences between respondents with and without university education. Those results, as well as the descriptive statistics of gender and year differentials cover a more detailed range of activities.

The rationale for making the multivariate analysis is that differences between genders and the changes over time could be due to differences in demographic²⁴ and educational²⁵

composition. Otherwise, it would be enough to calculate the averages for each gender in each year. If demographic categories account for the greater part of variation, and education for none of it, to report the unadjusted averages for each demographic category (as is done in Table A2, below) and to predict it from the multivariate model would be logically equivalent. Since the former can be presented more briefly and transparently, it would require a positive advantage to make predictions from a multivariate model preferable. Table A2 presents in a dense form the information a reader needs to calculate differences according to gender, year or demographic category, as well as their precision. To allow the reader to make predictions from the non-linear Tobit model requires the reporting of much more information.

The estimated parameters from a Tobit model do not give easily interpretable quantitative information. It is therefore usual to calculate marginal effects and report these rather than the parameters. The marginal effect of a given variable is a partial derivative and takes different values for respondents with different characteristics in other respects. The standard is therefore to report marginal effects at sample mean of all variables or to evaluate the marginal effect at each observation and then take the arithmetic mean. The difference between the average time that individuals in two different demographic groups spend on an activity answers the question “What is the difference between those individuals who actually are in these groups?”. The differences between the marginal effects calculated from the Tobit model answer the question “What difference would it make to the time spent whether individuals who are equal in respect of all other variables in the model belong to one or the other demographic groups?”. This means that there are two issues to consider when choosing between the “average time spent-approach” and a multivariate analysis. The first is which of the two questions one wants to address. The second is whether the answers differ or not – in other words whether the observed differences between the demographic groups are due to differences in their composition.

²⁴ The total fertility rate in Russia was 1.9 in 1990, 1.2 in 1998. In 1990 there were 8.9 marriages per 1000 of population, in 1997 there were 6.3. Life expectancy has decreased for both genders, particularly for men. (Goskomstat RF, 2001a: 125)

²⁵ The proportion with university education in the economically active population of Russia (aged 16-72) increased from 14.6 to 17.6 percent for men and from 17.2 to 21.1 percent for women between 1992 and 1998 (Goskomstat 2001b:37).

As concerns the first issue, within a limited amount of space we have chosen to prioritise looking in detail at the question of how much time is spent on each activity by each demographic group over that of the differences between demographic group, while many other studies, of countries where more of the empirical facts are already better known, concentrate on the latter.

As concerns the second question, of those characteristics that could differ, those which are most relevant and available in these data are levels of education which are correlated both with behavioural norms and potential earnings. We therefore tested the importance of education for paid and unpaid labour by estimating three models for the variables Market work and Housework for each of the four gender/year categories separately. Model 1 controlled for the eight demographic categories only, Model 2 for these and for five levels of education²⁶ and Model 3 for the demographic categories and for having or not having university education. Formal log-likelihood ratio-tests (William Greene 2003:484-485) of models 1 and 2 for non-market work shows that the hypothesis that all education parameters are equal to zero is rejected at 5%-level (but not 1 %-level) for women in 1989 and men in 1998, but not rejected even at 10 %-level for men in 1989 or women in 1998. The Schwartz and Akaike Information Criterion for Models 1 and 2 in each of the four gender/year sub-samples show small differences, and in six cases out of the eight favour Model 1 over Model 2. Model 3 fares very slightly better. Table A4 reports the test statistics²⁷ A model including dummies both for own education and education of the spouses was estimated on the subsamples of married/cohabitating respondents. No variables for spouse's education had a parameter significant at the 5 %-level. Three effects were significant at the 10 %-level: Having a wife with less than secondary education implied less housework for men in both years and women whose husband had university education did more housework than other women in 1998.

For market work, Chow-tests of the OLS-models (Greene 2003:95-97) did reject the hypothesis that all education parameters were equal to zero at 5%-level for women in 1989, but not even at 20% for the other three sub-samples. Altogether, controlling for education

²⁶ These were Completed Higher (University); Specialised Secondary or Incomplete Higher; General Secondary; Vocational (PTU); and Compulsory education.

²⁷ Full estimates of the models are available from the authors.

does not seem to add much to the statistical accuracy of the estimates, once the demographic characteristics are controlled for.

For all these reasons, the treatment in the text of the multivariate models estimated will be relatively brief. We report and summarise the results of Model 2 for total market work and non-market work and the effects of university education on a number of activities, estimated from Model 3. Alongside the average marginal effects, we will report the estimated parameters and their standard deviations.

6. Results

6.1 Average time spent on market work and other activities during a workday

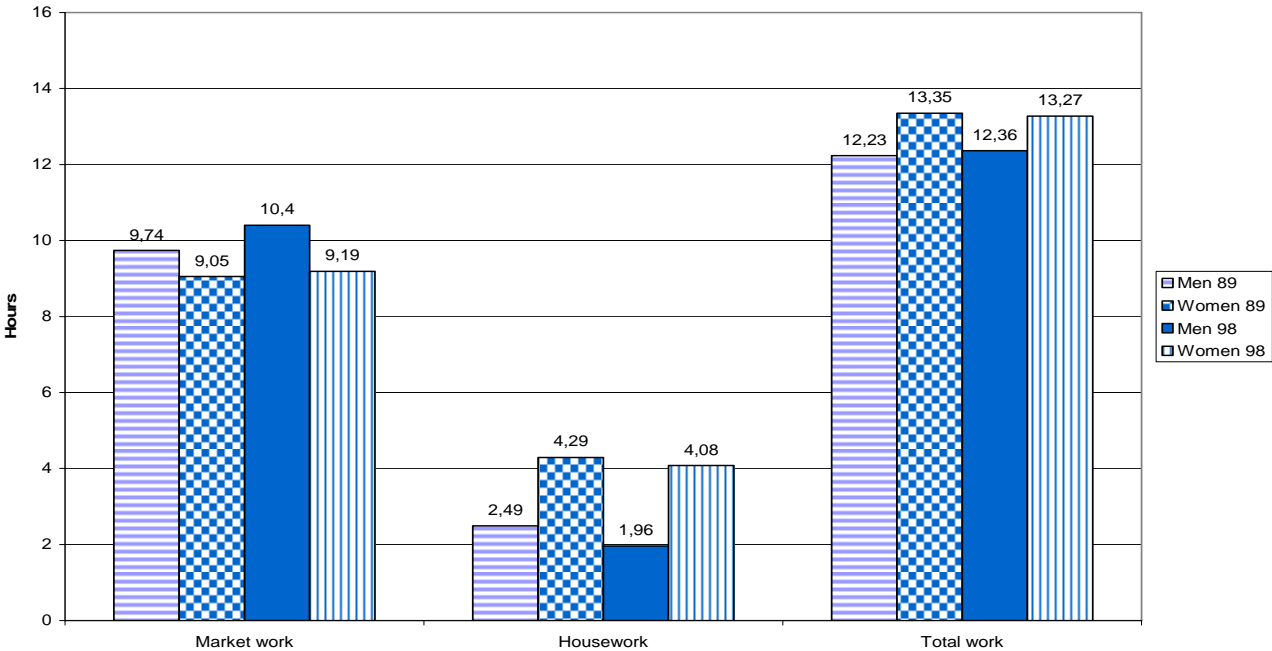
Figure 1 outlines average time used during a workday, for women and men in 1989 and 1997/98 respectively. (Means and standard deviations of all variables are reported in Table A2 in the Appendix) The male/female differences are statistically significant²⁸ for all activities in both years, except for “activities with children” in both years and “other housework” in 1989. Of the differences between the years, the increase in market work and decrease in housework for men are statistically significant at the 5 % level.

In both years, **total workdays** are long, about 12 hours for men and 13 hours for women. In 1989 the men spent 9 hours and three quarters on **market work** during a workday, and women 9 hours. In 1997/98, the men had increased the time devoted to paid work by another 40 minutes, despite a slight reduction in travelling time. For the women, market work increased by a few minutes. (The change is neither economically nor statistically significant.) Thus, the gender difference widened from 40 minutes to one hour and 10 minutes. Men spent two and a half hours on **housework** according to the 1989 survey, nearly two hours less than the women. Both men and women spend less time on housework in 1997/98 than in 1989, but the gender difference has increased to 2 hours and 15 minutes.²⁹

²⁸ Unless otherwise, specified “statistically significant” means at the 5%-level.

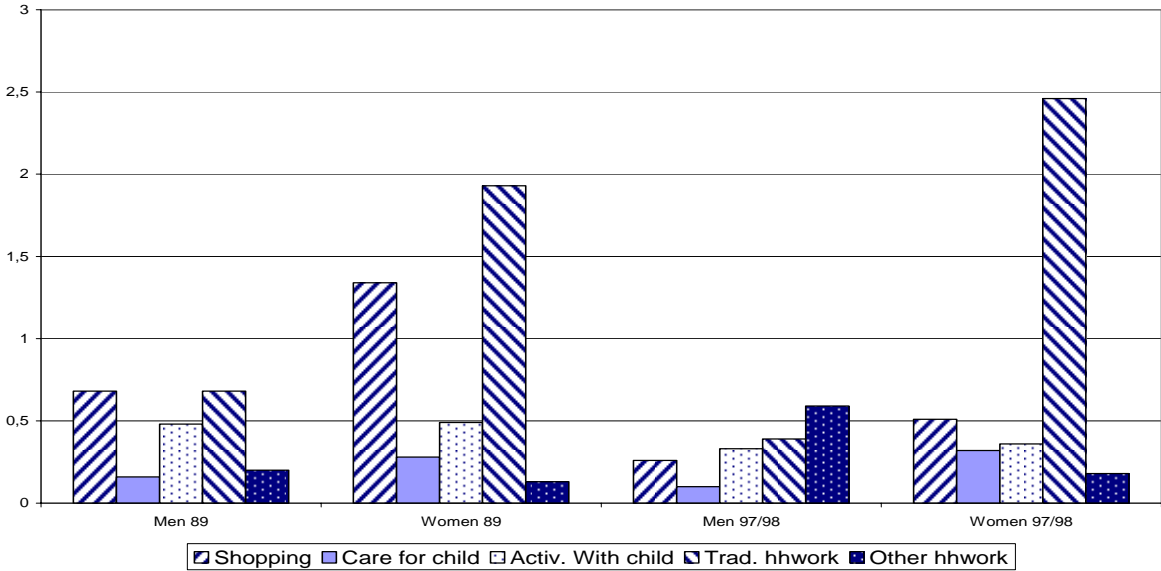
²⁹ As an additional check, gender differences were estimated on the pooled samples of men and women, separately for the two years and changes over time were estimated with pooled samples from the two years, separately by gender. In both cases there were controls for demographic composition and education (but without interaction effects between these covariates and year or gender). The estimated gender/year differentials deviate

Figure 1. Time spent on market work, household work and total work during a workday. In hours and fractions of hours.



The tendency towards increased specialisation is confirmed if we look at the main components of unpaid work, as shown in Figure 2.

Figure 2. Time spent on various types of non-market work during a workday. In hours and fractions of hours.



from the unadjusted estimates by 0-5 minutes which is not a magnitude of economic or social importance. (The estimates for Market work were made with OLS and those for Housework with a Tobit-model.)

The largest gender difference is in **traditional housework**, on which the women spent nearly two hours in 1989, compared to about 40 minutes for the men. By 1997/98, women had increased this work by half an hour and men decreased theirs by 17 minutes. “**Other household work**” includes tasks traditionally performed by men – repairs and maintenance of housing and equipment, chopping firewood etc. In 1989, only 12 minutes were spent on this by men and 8 minutes by women. In 1997/98 the expenditure of time remains practically the same for women – but has trebled for men. (Chopping firewood was included in “other housework” in 1997/98 and not in 1989 but this change in definition does not explain the difference between the years since average time spent on this activity was 15 seconds for men, and less for women.) We see men doing more of the “men’s work” and women more of the “women’s work” in 1997/98 than in 1989. The strong gender norms concerning “male” and “female” tasks in the household are expressed in the qualitative interviews cited in Ashwin (2005b). As she notes, the division assigns far more time-consuming duties to women, particularly in modern, urban housing where the tasks carried out by men in a rural, environment without central heating or tap water are no longer necessary.

Women devote more time to **childcare** than men do but not very much more – in 1989 the gender difference was only 8 minutes, in 1997/98 a quarter of an hour. Yet, there is gender specialisation here too: Women undertook 3-4 times as much as men of the physical care for children, but leisure and educational activities with them were almost equally shared.

Soviet shortages made searching and queuing for goods time-consuming– about 80 minutes per working day for the Taganrog women in 1989! In 1997/98 this has been reduced to half an hour. Men, in both years, did about half as much shopping as women. We note, however, that Goskomstat, (1989) reports 46 minutes for women and that in Pskov, Karakhanova (2001) finds women spending only 0.6 hours per week less on shopping and using services in 1997/98 than in 1986.³⁰

³⁰ Consumer goods shortages became worse during *perestroika* (1988-1991) and therefore more time may have been needed for shopping in 1989 than a few years earlier.

6.3. Gender differences and changes over time in different households

In this section we will present the differences between women and men, and the changes over time for each gender, differentiated by demographic groups in the form of average time spent on activities within each group. (For full estimates, see Table A3 of the Appendix.).

Three sub-groups saw considerable increases in total work-days, with probability-values under 0.10.³¹ Single men, aged 45-64, worked one and a half hour more in 1997/98. Half of this increase was in market work, half in housework. The total workdays of single women aged 20-44 and of single mothers with pre-school children were lengthened by about an hour. For single mothers, as well as for married men, with school-age children work-days increased by about half-an-hour. An increase in work-load of this size does affect well-being, but the sub-samples are small and the precision of the estimates is low. Single mothers in 1997/98 have the longest workdays of all sub-groups – more than 14 hours, irrespective of the children's age.

Changes in time spent on market work differed considerably between demographic groups. For married men without children, there is hardly any change at all, for single men an increase of about three quarters of an hour (not statistically significant), while men with children spend a whole hour more on market work in 1997/98 (significant at 10 %-level). Among women, the younger single women and the single mothers increased their market work by between half-an-hour and an hour, married mothers of school-children decreased theirs by half an hour.³²

Changes in time spent on unpaid housework also depend very much on position in the household. The aggregate decrease for men is driven mainly by a considerably smaller participation of married fathers in housework. The average decrease is nearly three quarters of an hour, more for those with pre-school children and less for men with school-age children.

³¹ The limited number of observations in each category results in low precision. We will mention when estimates are statistically significant at the 0.05 or 0.10 levels. (Attempts were made to improve precision by using fewer and larger household categories, but it did not allow us to draw new or stronger conclusions. This is reported in Appendix A6.)

³² Of these changes, only that for the single women, aged 20-44 was significant at the 10%-level.

Thus, there is evidence of an increased specialisation also within dual-earner households with children. Fathers spend more time being “providers” and working women more being “wife and mother” in the 1990’s than before transition. Among women and men without children, there is, however, little indication of change in the distribution of total paid and unpaid work.

The “gendered” character of specific household tasks has been strengthened. The single women - with and without children - spend approximately the same amount of time on traditional household chores before and after transition but married women - also with and without children - have increased the time spent on traditional housework, significantly at the 10%-level. The largest increase, one hour per day, is for younger married women without children! Married men decrease their participation in this “feminine” work although the decrease is statistically significant only for the older married and for those with pre-school children. Instead men do more other household tasks, such as repairs. The increase ranges from quarter of an hour for those with children under seven years, to 30-35 minutes for the young married without children, as well as for the older single. The change over time is significant for all categories of men, except the older single, of whom there are very few in the sample. For women, the changes in this type of work are very small.

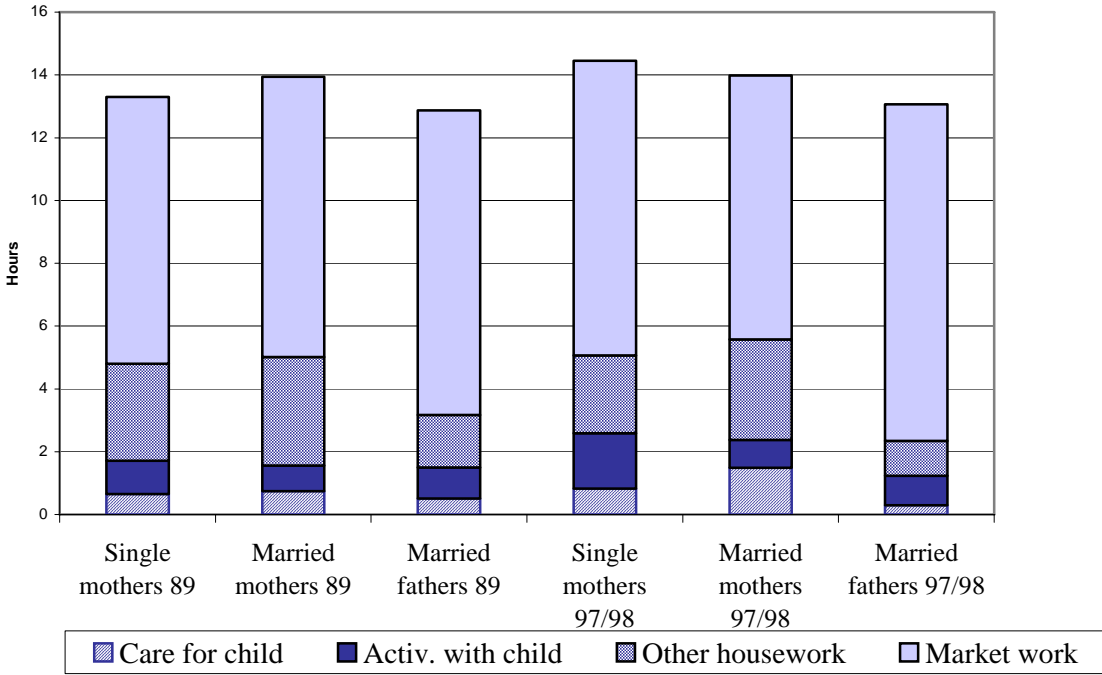
We cannot compare care for other relatives in the two years, since information is only available for 1997/98. In that year, the average time spent on this was only a couple of minutes per working day for men, while it was eight minutes for women. The category with the highest average, among both women and men, are the older, single, followed by the younger single. Women aged 45-64 and not married spend an average of 24 minutes on care for relatives. Behind these averages is, of course, large dispersion with many zero observations. The eight men and 31 women who performed some care for sick or elderly relatives on the day of measurement, spent an average of one hour and three quarters on it. (The male and female average differed only by about five minutes – the great gender difference was in frequency, not in intensity.)

The gender division of labour among parents of young children is of particular importance. First, this is a period when couples, even if they want gender equality, are under practical, pecuniary and psychological pressures to specialise, according to traditional patterns. Single mothers of young children also have great difficulties combining parenting and careers.

Second, work interruptions and part-time work when the children are small, affect the careers and earnings of women over their whole working lives.

Figure 3 shows time-use on a work-day of married mothers and fathers and single mothers with at least one child under seven years. (There are no single fathers of pre-school children in the samples.) In 1989, married mothers had the longest total workdays of the three groups, and fathers had the shortest. Fathers of young children spent nearly an hour more on market work than married, working mothers. (If the children were over 7 years, there was no difference.) Working mothers, single or married, spent 3 – 3 ½ hours per working day on household work, not directly devoted to children, while employed fathers spent less than 2 hours.

Figure 3 Time-use of parents of children under 7 years in 1989 and 1997/98. In hours and fractions of hours.



Note: Market work includes travel to work. Housework is all unpaid work in the household, including shopping and repairs, except time for children.

In 1997/98, the difference between the total amount of work of married mothers and fathers is reduced, but the differences in composition of this total have increased. In 1997/98 fathers of young children spend about two hours more on market work than mothers do, mothers spend two hours more on housework than fathers. In both cases the gender difference has nearly

doubled from 1989 to 1997/98. Single mothers with pre-school children spend one hour more on market work than married mothers in 1997/98, whereas in 1989 they spent nearly half an hour less.

In the 1989 sample, the total time spent on children is about 1 ½ hours for both married women and men with young children and only a little more for single mothers. In 1997/98, mothers devote roughly twice as much time to their children as fathers. Mothers of pre-school children, married or single, have increased the time spent on them by nearly an hour. In both years, married men and women take similar part in activities with children, while the women spend more time on the physical care for them. That single mothers spend more time both with children and in market work may reflect lack of alternative childcare.

Those who do not stand in a parental relation to children in the household, on average spend very little time with children. Of course, a number of grandparents and other relatives help with childcare, and this seems to be more common in the 1990s, but the number of non-parent carers in the sample is too small for analysis to be meaningful.³³ The same applies to care for sick or elderly relatives – eight men and 31 women spent time on this during the day recorded. The average for those who did was about an hour and three quarters, for both genders. The group with both the greatest frequency and the longest time among those who participate is among single women aged 45-64. In this group 20 percent of respondent report time spent on this activity, on average two hours.

6.4 Results of the multivariate analysis

Estimates of Model 2 for time spent on market work are reported in Table 1. They indicate that within gender and year, variation is very limited. The differences between the demographic and educational groups measured by the coefficients have low precision. The low explanatory power of the models is reflected in the extremely small adjusted R² values. The result that stands out is that women with university education had shorter work days than others in 1989. This will be discussed further, below.

³³ In 1989, 7% of female main respondents without own children in the household reported some time with children, 5% of the male, In 1997/98 the percentages were 12 and 8, respectively. The overwhelming majority were over 45 years old.

Table 1 Model 2 (with demographic and educational categories[#]) of market work

| | Men 1989 | | Women 1989 | | Men 1998 | | Women 1998 | |
|--|----------|-----------|------------|-----------|----------|-----------|------------|-----------|
| | Param. | Std. Dev. | Param. | Std. Dev. | Param. | Std. Dev. | Param. | Std. Dev. |
| Intercept | 9,74 | 0,47 | 8,93 | 0,43 | 11,09 | 0,51 | 9,48 | 0,37 |
| Married. 20-44 yrs. no children | 0,69 | 0,58 | 0,21 | 0,50 | -0,06 | 0,69 | -0,39 | 0,52 |
| Married youngest child 0-6 | -0,10 | 0,51 | 0,30 | 0,46 | -0,05 | 0,57 | -0,94* | 0,53 |
| Married, youngest child 7-16 | -0,42 | 0,50 | 0,73 | 0,45 | -0,20 | 0,53 | 0,05 | 0,41 |
| Single, youngest child <7 | 0,00 | , | -0,17 | 0,59 | 0,00 | , | 0,04 | 0,78 |
| Single, youngest child 7-16 | -0,24 | 2,44 | 0,43 | 0,53 | 0,68 | 1,73 | 0,27 | 0,52 |
| Single 45-64 yrs | -0,72 | 0,69 | -0,07 | 0,51 | -0,74 | 1,06 | -0,39 | 0,47 |
| Married. 45-64 yrs. no children | 0,11 | 0,52 | 0,46 | 0,48 | -0,68 | 0,53 | -0,17 | 0,43 |
| University degree | 0,12 | 0,32 | -0,77*** | 0,24 | -0,63 | 0,38 | -0,34 | 0,28 |
| General secondary | -0,09 | 0,38 | -0,21 | 0,25 | -0,76* | 0,43 | -0,05 | 0,32 |
| Vocational (PTU) | 0,39 | 0,41 | -0,18 | 0,43 | -0,37 | 0,51 | -0,32 | 0,52 |
| Less than secondary | 0,10 | 0,49 | 0,20 | 0,35 | -0,75 | 0,79 | -0,36 | 0,68 |
| N | 371 | | 543 | | 481 | | 427 | |
| Adj. R2 | -0.001 | | 0.0195 | | -0.0025 | | -0.0053 | |

*** Significant at 1%, ** significant at 5 %, * significant at 10%

Full definition of demographic and education variables in the text.

Reference categories are “Single, without children, aged 20-44” and “specialised secondary education”.

Time spent on non-market work shows more variation over the life-cycle, given year and gender. The marginal effects of the demographic categories, when education is controlled for, are numerically close to the unadjusted differentials, as calculated from Table A3. Only in nine cases, five of which pertain to men in 1989, do the deviations amount to more than 10 percent of the unadjusted differential and in most cases far less. In one case out of the 24, does the deviation exceed 20 percent. Therefore, to limit repetition, we will only summarise the results briefly. They are reported in Tables 2A and 2B.

Among individuals aged 20-45, marriage implies an increase in household work for all four categories, but in both years the effect is a little larger for women. The effect is very slightly smaller in 1997/98 than in 1989. Thus, the gender difference in the impact of marriage is almost the same in the two years.

Having a child increases the non-market work of parents, but to different degrees. In 1989 the difference in time spent on unpaid work between young, married without children and

Table 2A Estimates of Model 2 of total non-market work for the 1989 sample.

| | Men 1989 | | | Women 1989 | | |
|--|-----------|----------|------------------------------|------------|----------|-----------------|
| | Parameter | Std. Dev | Marginal effect ^a | Parameter | Std. Dev | Marginal effect |
| Intercept | 0,56 | 0,44 | | 2,02 | 0,35 | |
| Married. 20-44 yrs. no children^b | 1,11* | 0,53 | 0,95 | 1,25*** | 0,40 | 1,24 |
| Married youngest child 0-6 | 2,63*** | 0,47 | 2,24 | 2,76*** | 0,37 | 2,72 |
| Married, youngest child 7-16 | 2,28** | 0,47 | 1,94 | 2,26*** | 0,36 | 2,23 |
| Single, youngest child <7 | 0,00 | | | 2,60*** | 0,48 | 2,57 |
| Single, youngest child 7-16 | 3,44 | 2,11 | 2,93 | 2,29*** | 0,43 | 2,26 |
| Single 45-64 yrs | 1,42** | 0,63 | 1,21 | 1,74*** | 0,41 | 1,72 |
| Married. 45-64 yrs. no children | 1,44*** | 0,48 | 1,22 | 1,93*** | 0,39 | 1,91 |
| University degree | -0,45 | 0,28 | -0,38 | 0,57*** | 0,20 | 0,57 |
| General secondary | 0,24 | 0,33 | 0,20 | 0,09 | 0,20 | 0,09 |
| Vocational (PTU) | 0,03 | 0,36 | 0,03 | 0,00 | 0,35 | 0 |
| Less than secondary | 0,22 | 0,43 | 0,19 | 0,38 | 0,28 | 1,24 |
| Sigma | 2,06 | 0,09 | | 1,74 | 0,05 | |
| N | 371 | | | 543 | | |

*** The parameter is significant at 1%, ** significant at 5 %, * significant at 10%.

^a The marginal effect reported is the mean of the individual marginal effects for the sample.

^b Reference categories are “Single, without children, aged 20-44” and “specialised secondary education”.

Table 2B Model 2 of total non-market work for the 1997/98 sample.

| | Men 1998 | | | Women 1998 | | |
|--|-----------|----------|-----------------|------------|----------|-----------------|
| | Parameter | Std. Dev | Marginal effect | Parameter | Std. Dev | Marginal effect |
| Intercept | -0,32 | 0,46 | | 2,26 | 0,34 | |
| Married. 20-44 yrs. no children | 1,04* | 0,61 | 0,71 | 1,12 | 0,48 | 1,05 |
| Married youngest child 0-6 | 2,00*** | 0,50 | 1,36 | 3,19 | 0,48 | 3,07 |
| Married, youngest child 7-16 | 1,45*** | 0,47 | 0,99 | 1,98 | 0,38 | 1,83 |
| Single, youngest child <7 | 0,00 | , | , | 2,66 | 0,71 | 2,56 |
| Single, youngest child 7-16 | -0,98 | 1,61 | -0,67 | 2,12 | 0,47 | 1,87 |
| Single 45-64 yrs | 2,51** | 0,89 | 1,71 | 1,54 | 0,43 | 1,36 |
| Married. 45-64 yrs. no children | 0,93** | 0,47 | 0,64 | 1,79 | 0,39 | 1,40 |
| University degree | 1,18*** | 0,33 | 0,80 | 0,35 | 0,26 | 0,30 |
| General secondary | 0,58 | 0,37 | 0,40 | -0,22 | 0,29 | -0,19 |
| Vocational (PTU) | 0,13 | 0,44 | 0,09 | 0,23 | 0,47 | -0,02 |
| Less than secondary | -0,92 | 0,73 | -0,63 | -0,41 | 0,61 | -0,37 |
| Sigma | 2,71 | 0,12 | | 2,17 | 0,08 | |
| N | 481 | | | 427 | | |

*** The parameter is significant at 1%, ** significant at 5 %, * significant at 10%.

^a The marginal effect reported is the mean of the individual marginal effects for the sample.

^b Reference categories are “Single, without children, aged 20-44” and “specialised secondary education”.

married parents of pre-school children was an hour and a half for women and one hour and eighteen minutes for men. Having children of school-age added an hour to the unpaid work of both mothers and fathers. In 1997/98, a small child added less unpaid work for fathers than in 1989, about 40 minutes, but more for married mothers – two whole hours. Thus, the gender difference in the impact of having young children was much larger in 1997/98, even among employed parents – and as noted above, the percentage of mothers of pre-school children who were employed at all had decreased. In 1997/98, for married fathers, school-age children added only about a quarter of an hour to unpaid work, but three quarters of an hour to that of married mothers.

Older single individuals do substantially more non-market work than the younger, in both years. Among married couples without children living the household, the difference between older and younger is quite small for men but substantial for women.

As could be expected from the goodness-of-fit statistics discussed in section 5.3, most differences in non-market work connected with level of education have very low statistical precision. The exception is having, or not having, university education. Figure 4 reports the unadjusted average time spent on non-market work by respondents with and without higher education. In both years, women who have university education spent about half an hour more on housework than those with less schooling. But while in 1989, men with university education spent less time on unpaid work than those with lower education, we find the reverse in 1997/98. The gender difference in time spent on market work was just over an hour for respondents with university education, in both years. For those with lower education, the gender differential in market time increased from about half an hour to over an hour.

Figure 4 Hours of housework of respondents with and without higher (university) education.

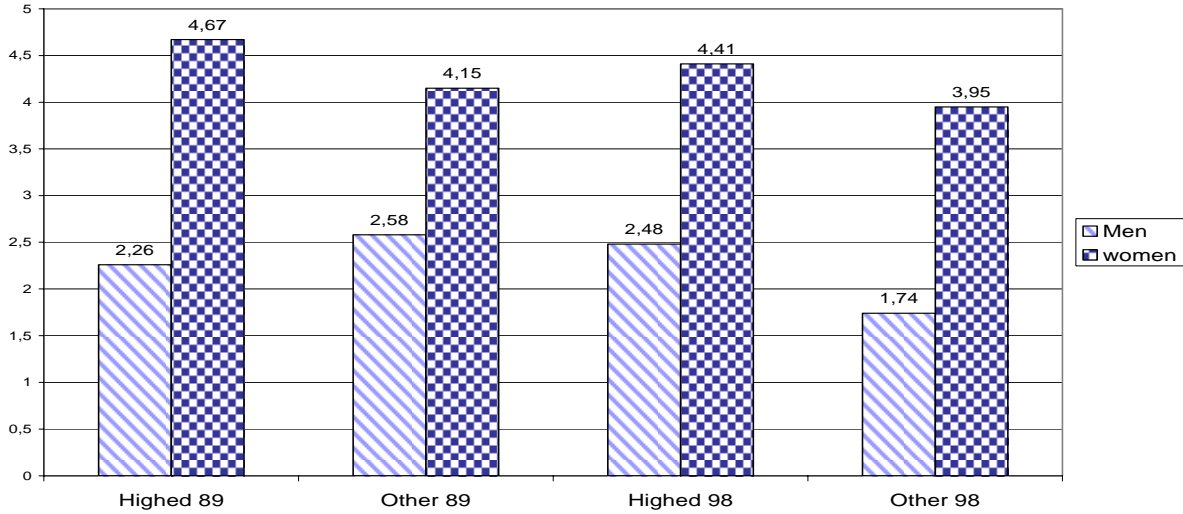


Table 3 shows the mean marginal effect of having university education on time spent on various activities, as estimated by Model 3, which includes a dummy for university education, in addition to the demographic categories. The multivariate analysis confirms that having higher education increased the time spent on housework for women by 25-30 minutes in both years, while for men the effect was negative in 1989 but positive in 1997/98. In particular, highly educated men in 1989 did less shopping than the less educated – perhaps because industrial workers had more access to work-place shops. In 1989 women spent more time with their children if they had university education, but not in 1997/98.

Thus, we find that in 1989 there was less gender specialisation among couples with lower education than among those with a university degree. By 1997/98, gender differences among the less educated have increased to a level more similar to that of those with higher education. The reasons for this and what it means to the women is not possible to infer from these data. Katz (1997) points out that according to Soviet labour legislation a number of female dominated professional and semi-professional occupations should have a shorter full-time work week than the standard 41 hours and that the women with shorter statutory work weeks in Taganrog did more housework. These laws may not be enforced in the same way today. As concerns the women without higher education, we note that Russian women manual workers are an economically very vulnerable group and that Ashwin and Bowers (1997) find in qualitative interviews that to them paid work is very important indeed for social networks, self-esteem and sense of identity as well as for economic welfare and independence.

Table 3 Difference in time spent between respondents with and without university education[#]. (Adjusted for household status.). In hours.

| | Men | | | Women | | | Men | | | Women | | |
|------------------------------|---------|-------|------|----------|-------|------|---------|-------|------|---------|-------|------|
| | 1989 | | | 1989 | | | 1997/98 | | | 1997/98 | | |
| | Mean | Para- | Std. | Mean | Para- | Std. | Mean | Para- | Std. | Mean | Para- | Std. |
| | Marg. | meter | dev | Marg. | meter | dev | Marg. | meter | dev | Marg. | meter | dev |
| | Eff. | | | Eff. | | | Eff. | | | Eff. | | |
| Market work | 0.06 | 0.06 | 0.28 | -0.70*** | -0.70 | 0.21 | -0.31 | -0.31 | 0.33 | -0.28 | -0.28 | 0.26 |
| Housework | -0.46** | -0.53 | 0.25 | 0.49*** | 0.49 | 0.17 | 0.71*** | 1.04 | 0.29 | 0.39* | 0.41 | 0.24 |
| Shopping | -0.26** | -0.55 | 0.24 | 0.12 | 0.15 | 0.14 | 0.10* | 0.44 | 0.26 | 0.08 | 0.16 | 0.13 |
| Trad. housework | -0.16 | 0.39 | 0.29 | 0.24** | 0.26 | 0.12 | 0.08 | 0.27 | 0.25 | 0.25 | 0.27 | 0.18 |
| Other housework | -0.12* | -0.99 | 0.60 | 0.02 | 0.20 | 0.31 | 0.23* | 0.90 | 0.47 | 0.08 | 0.55 | 0.38 |
| Garden work | 0.06 | 0.33 | 0.50 | 0.00 | 0.01 | 0.47 | 0.14 | 1.24 | 0.69 | -0.02 | -0.40 | 1.07 |
| Care for child | 0.02 | 0.24 | 0.59 | 0.02 | 0.06 | 0.18 | 0.04 | 0.62 | 0.67 | -0.08 | -0.35 | 0.29 |
| Activities with child | 0.09 | 0.26 | 0.19 | 0.12* | 0.28 | 0.15 | 0.15** | 0.66 | 0.28 | 0.10 | 0.46 | 0.31 |
| Time with children | 0.10 | 0.25 | 0.22 | 0.12* | 0.25 | 0.15 | 0.17** | 0.71 | 0.35 | -0.02 | -0.06 | 0.27 |
| Total workday | -0.38 | -0.38 | 0.28 | -0.22 | -0.22 | 0.19 | 0.44 | 0.44 | 0.32 | 0.09 | 0.09 | 0.25 |

***The parameter is significant at 1%, ** significant at 5 %, * significant at 10%

7. Summary and Conclusions

Soviet women carried a heavy double burden of unequally paid work in the labour market and unequally shared unpaid work in the home. In most families two incomes were necessary for a standard of living considered to be normal, but the husband earned more. He was seen as the main provider and his career usually had first priority. Women were often considered as less productive workers. On the other hand, old traditions and official ideology agreed that women had a “natural” advantage in homemaking and childcare.

Like the national statistics, the Taganrog data show only a small increase in the aggregate gender difference in labour force participation and at-work rates, contrary to what many feminists expected in the early 1990s. Nevertheless, it is wrong to conclude that nothing much has happened. First, the difference in hours of paid work between employed men and women has widened. In today’s Russia men take on second jobs and work overtime to a larger extent than women. Second, it is a fallacy of composition. Work interruptions of women with young children are longer in the 1990s. Such protracted absences from work are likely to have long term effects on careers. We therefore fear that gender differences in pay, promotion, status and career opportunities will be even greater in the future. One of the probable reasons behind the drastic fall in the birth rate is that it has become even more difficult to combine motherhood and a career. The increased polarization of tasks we find among couples with children may partly reflect selectivity in the sense that couples who under 1989 conditions would have had children and “specialized” less than the average, may be more likely to choose in today’s Russia not to have children at all.

The quantitative evidence does not enable us to separate the extent to which the increased gender division is a result of changed institutional and economic conditions – opportunities and incentives - and to what extent it is due to, or connects with, a change in gender norms, gender discourses and the construction of gendered identities. A full picture of the conceptions of gender in post-transition Russia requires both quantitative and qualitative research. Yet, our data do show that the dual earner household is predominant in both Soviet and post-Soviet Taganrog but that there is, within that model, a separation of economic roles for women and men in both years and that this separation is stronger, the division more unequal in all respects in 1997/98 than in 1989. Svetlana Yaroshenko, Elena Omel’chenko, Natal’ya Goncharova and Olga Issupova (2005: 147) conclude from in-depth interviews with

Russian women and men that the gender differences observed in employment and housework are “... rooted in local understandings of the gender division of labour” which assign the role of “primary breadwinner” to men and not to women. The strengthening of the “male provider” role in post-Soviet Russia that their study (as well as others also reported in Ashwin 2005) implies, is certainly very compatible with the changes in behaviour that our quantitative results show.

Ashwin (2005) emphasises the back-side of the coin for men. When their status in the household and in society, their self-esteem and their social network depend exclusively on their role as workers and earners, a failure to fulfil that role as is expected of them, can be disastrous. Ashwin notes that in her interviews, men seem to suffer more socially and psychologically from unemployment than women who have alternative options for getting respect and for contributing to the family’s welfare. While women in Russia are more likely to be poor than men, men are more likely to succumb to alcohol abuse and have suffered a much larger increase in mortality. Male life expectancy was 65 years in 1989 and 61 years in 1998, the female decreased from 74 to 73 years in the same period. (Both were even lower in the early 1990s.) The gender difference in life expectancy is one of the largest in the world, if not the largest. Rigid and normative constructions of gender harm both women and men.

Transition to a market economy in Russia increased social inequality dramatically and was accompanied by widespread poverty. Most families need two earners. Yet, many mothers of young children stay home several years and even when both spouses work, we note an increased imbalance in a division of labour that was unbalanced already. The man’s position as primary breadwinner and secondary home-maker, and the woman’s as second earner and primary home-maker, were inherited from the Soviet past but have been strengthened in post-Soviet Russia. An increasingly unequal division of paid and unpaid work even among women and men who are engaged in paid work, is an indication of increased gender inequality in the society. Since control of monetary resources is both a symbol and a means of power in a market society, the degree of difference in this respect tells us something about the relative social power of women and men. Increased specialisation may be economically “rational” for individual households, in the short run, but they must have negative long term effects on women’s relative power in the household as well as on their future prospects in the labour market while it can have devastating effects for the men who are not able to live up to the image of the “provider”.

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APPENDICES

A1. Descriptive statistics for respondents included in the time-use analysis 1989 and 19978 and for all earners aged 20-64^a in the 1989 sample, not included in the time-use analysis,

| | 1989 Included in time-use analysis | | | | 1989 Not in time-use analysis | | | | 1997/98 In time-use analysis | | | |
|--|---------------------------------------|-------|--------|------|----------------------------------|-------|-------|------|---------------------------------|-------|-------|-------|
| | Men | | Women | | Men | | Women | | Men | | Women | |
| | Mean | S.d. | Mean | S.d. | Mean | S.d. | Mean | S.d. | Mean | S.d. | Mean | S.d. |
| Age | 41,1 | 10,4 | 39,1 | 9,6 | 39,8 | 12,3 | 38,6 | 12,4 | 40,1 | 11,7 | 40,7 | 10,5 |
| Labour income (current roubles) | 266,4* | 161,2 | 161,0* | 60,8 | 234,3 | 104,5 | 153,8 | 55,0 | 555,1 | 452,9 | 343,1 | 281,1 |
| Nr of children | 0,67 | 0,76 | 0,79* | 0,79 | 0,65 | 0,80 | 0,54 | 0,70 | 0,70 | 0,79 | 0,64 | 0,75 |
| Single, aged 20-44 | 0,08* | 0,27 | 0,05* | 0,22 | 0,14 | 0,35 | 0,13 | 0,34 | 0,11 | 0,32 | 0,12 | 0,32 |
| Married. 20-44 yrs. no children | 0,11 | 0,31 | 0,11 | 0,31 | 0,10 | 0,30 | 0,13 | 0,34 | 0,08 | 0,28 | 0,09 | 0,28 |
| Married youngest child 0-6 | 0,23 | 0,42 | 0,20 | 0,40 | 0,23 | 0,42 | 0,16 | 0,37 | 0,20 | 0,40 | 0,08 | 0,28 |
| Married, youngest child 7-16 | 0,27 | 0,45 | 0,26 | 0,44 | 0,23 | 0,42 | 0,23 | 0,42 | 0,29 | 0,45 | 0,26 | 0,44 |
| Single, youngest child <7 | 0,00 | 0,00 | 0,05* | 0,21 | 0,00 | 0,04 | 0,01 | 0,12 | 0,00 | 0,00 | 0,03 | 0,17 |
| Single, youngest child 7-16 | 0,00 | 0,05 | 0,08* | 0,27 | 0,00 | 0,00 | 0,02 | 0,14 | 0,01 | 0,09 | 0,09 | 0,29 |
| Single 45-64 yrs | 0,06* | 0,23 | 0,10 | 0,30 | 0,03 | 0,16 | 0,08 | 0,27 | 0,02 | 0,16 | 0,13 | 0,34 |
| Married. 45-64 yrs. no children | 0,24 | 0,43 | 0,16* | 0,37 | 0,26 | 0,44 | 0,22 | 0,41 | 0,28 | 0,45 | 0,21 | 0,40 |
| University degree | 0,29* | 0,46 | 0,27 | 0,44 | 0,23 | 0,42 | 0,24 | 0,43 | 0,34 | 0,47 | 0,31 | 0,46 |
| Professional secondary | 0,33 | 0,47 | 0,33 | 0,47 | 0,36 | 0,48 | 0,32 | 0,47 | 0,51 | 0,50 | 0,60 | 0,49 |
| General secondary | 0,16 | 0,37 | 0,24 | 0,43 | 0,16 | 0,36 | 0,25 | 0,43 | 0,10 | 0,30 | 0,05 | 0,22 |
| Vocational school | 0,13 | 0,34 | 0,05 | 0,23 | 0,14 | 0,35 | 0,05 | 0,22 | 0,05 | 0,22 | 0,04 | 0,18 |
| Not full secondary | 0,08 | 0,28 | 0,10 | 0,30 | 0,09 | 0,29 | 0,10 | 0,31 | 0,01 | 0,09 | 0,00 | 0,07 |
| N | 371 | | 543 | | 661 | | 486 | | 481 | | 427 | |

^a Earners are those who report any labour income the month preceding the interview

* Difference between those included and those not included in time-use analysis significant at 5%-level.

A2 Average time used during a workday for women and men in 1989 and 1998.

In hours and fractions of hours. Standard deviations in italics.

| | Men 1989 | | Women 1989 | | Men 1997/98 | | Wom. 1997/98 | |
|--------------------------|-----------------|-------------|-------------------|-------------|--------------------|-------------|---------------------|-------------|
| | Mean | Std.dev. | Mean | Std.dev. | Mean | Std.d. | Mean | Std.d. |
| Market work | 9.74 | <i>2.39</i> | 9.05 | <i>2.17</i> | 10.40 | <i>3.31</i> | 9.19 | <i>2.40</i> |
| Housework | 2.49 | <i>1.89</i> | 4.29 | <i>1.85</i> | 1.96 | <i>2.05</i> | 4.08 | <i>2.22</i> |
| Of which | | | | | | | | |
| Shopping | 0.68 | <i>0.95</i> | 1.34 | <i>1.11</i> | 0.26 | <i>0.66</i> | 0.51 | <i>0.65</i> |
| Trad. housework | 0.68 | <i>1.04</i> | 1.93 | <i>1.17</i> | 0.39 | <i>0.78</i> | 2.46 | <i>1.59</i> |
| Other housework | 0.20 | <i>0.64</i> | 0.13 | <i>0.39</i> | 0.59 | <i>1.25</i> | 0.18 | <i>0.54</i> |
| Gardening | 0.29 | <i>0.74</i> | 0.13 | <i>0.45</i> | 0.25 | <i>0.82</i> | 0.13 | <i>0.67</i> |
| Care for child | 0.16 | <i>0.65</i> | 0.28 | <i>0.58</i> | 0.10 | <i>0.46</i> | 0.32 | <i>0.75</i> |
| Activities with child | 0.48 | <i>0.76</i> | 0.49 | <i>0.74</i> | 0.33 | <i>0.33</i> | 0.36 | <i>0.81</i> |
| Total work | 12.23 | <i>2.46</i> | 13.35 | <i>2.10</i> | 12.36 | <i>3.19</i> | 13.27 | <i>2.36</i> |
| N | 371 | | 543 | | 481 | | 427 | |

A3 Average time spent on different activities during a workday by demographic group

| Single without children, age 20-44 | | | | | | | | | | |
|---|----------------|-----------|-------------------|-----------|---------|----------------|-----------|-------------------|-----------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=29) | | 1997/98 (N=55) | | p-value | 1989 (N=28) | | 1997/98 (N=50) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 9.83 | 2.01 | 10.62 | 4.36 | 0.2663 | 8.57 | 1.70 | 9.35 | 2.14 | 0.0875 |
| Excl. travel | 8.74 | 1.92 | 9.67 | 4.50 | 0.1924 | 7.43 | 1.73 | 8.56 | 2.06 | 0.0144 |
| Shop | 0.39 | 0.67 | 0.23 | 0.64 | 0.2741 | 0.60 | 0.72 | 0.30 | 0.51 | 0.0636 |
| Chcare | 0 | 0 | 0 | 0 | - | 0 | 0 | 0.06 | 0.42 | 0.3222 |
| Chactiv | 0 | 0 | 0.01 | 0.07 | 0.3218 | 0 | 0 | 0.04 | 0.28 | 0.3222 |
| Childtime | 0 | 0 | 0.01 | 0.07 | 0.3218 | 0 | 0 | 0.10 | 0.51 | 0.1678 |
| Trad. hhwork | 0.63 | 0.83 | 0.28 | 0.52 | 0.0442 | 1.48 | 1.09 | 1.74 | 1.53 | 0.3926 |
| Other hhwrk | 0.03 | 0.18 | 0.36 | 0.89 | 0.0111 | 0.18 | 0.61 | 0.16 | 0.50 | 0.8919 |
| Garden | 0.10 | 0.31 | 0.22 | 0.81 | 0.3574 | 0.11 | 0.42 | 0.03 | 0.21 | 0.3672 |
| House-work | 1.17 | 1.34 | 1.17 | 1.63 | 0.9993 | 2.36 | 1.72 | 2.51 | 2.21 | 0.7447 |
| Total workday | 11.01 | 2.17 | 11.79 | 4.26 | 0.2700 | 10.93 | 2.08 | 11.85 | 2.32 | 0.0799 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Married without children, age 20-44 | | | | | | | | | | |
|--|----------------|-----------|-------------------|-----------|---------|----------------|-----------|-------------------|-----------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=41) | | 1997/98 (N=40) | | p-value | 1989 (N=60) | | 1997/98 (N=37) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 10.51 | 2.77 | 10.64 | 4.31 | 0.8710 | 8.97 | 1.24 | 8.99 | 1.88 | 0.9688 |
| Excl. travel | 9.20 | 2.85 | 9.78 | 4.44 | 0.4930 | 7.78 | 1.11 | 8.03 | 1.84 | 0.4703 |
| Shop | 0.77 | 0.87 | 0.30 | 0.65 | 0.0091 | 1.25 | 0.98 | 0.54 | 0.73 | 0.0002 |
| Chcare | 0 | 0 | 0 | 0 | - | 0 | 0 | 0.01 | 0.08 | 0.3240 |
| Chactiv | 0.02 | 0.16 | 0 | 0 | 0.3233 | 0.03 | 0.18 | 0.01 | 0.08 | 0.4662 |
| Child | 0.02 | 0.16 | 0 | 0 | 0.3233 | 0.03 | 0.18 | 0.03 | 0.11 | 0.8345 |
| Trad. hhwork | 0.72 | 1.26 | 0.50 | 1.01 | 0.3982 | 1.67 | 0.94 | 2.64 | 1.64 | 0.0021 |
| Other hhwrk | 0.12 | 0.40 | 0.69 | 1.50 | 0.0262 | 0.28 | 0.57 | 0.12 | 0.33 | 0.0886 |
| Garden | 0.23 | 0.56 | 0.30 | 0.88 | 0.6807 | 0.18 | 0.60 | 0.05 | 0.33 | 0.1757 |
| House-work | 1.86 | 1.61 | 1.84 | 2.22 | 0.9524 | 3.41 | 1.47 | 3.46 | 1.79 | 0.8714 |
| Total workday | 12.37 | 2.65 | 12.48 | 4.03 | 0.8898 | 12.38 | 1.55 | 12.45 | 1.63 | 0.8336 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Married, youngest child <7 years | | | | | | | | | | |
|--|----------------|--------------|-------------------|--------------|---------|-----------------|--------------|-------------------|--------------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=87) | | 1997/98 (N=96) | | p-value | 1989 (N=106) | | 1997/98 (N=36) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 9.70 | 2.65 | 10.72 | 2.85 | 0.0141 | 8.93 | 2.60 | 8.41 | 2.06 | 0.2263 |
| Excl. travel | 8.63 | 2.66 | 9.91 | 2.82 | 0.0022 | 7.89 | 2.66 | 7.58 | 2.07 | 0.4846 |
| Shop | 0.78 | 0.98 | 0.29 | 0.95 | 0.0010 | 1.34 | 1.15 | 0.49 | 0.59 | 0.0001 |
| Chcare | 0.51 | 1.16 | 0.30 | 0.74 | 0.1625 | 0.74 | 0.73 | 1.49 | 1.49 | 0.0059 |
| Chactiv | 0.99 | 0.86 | 0.93 | 0.99 | 0.7117 | 0.82 | 0.82 | 0.88 | 1.07 | 0.7766 |
| Childtime | 1.49 | 1.33 | 1.24 | 1.36 | 0.2020 | 1.56 | 1.02 | 2.37 | 1.58 | 0.0063 |
| Trad. hhwork | 0.66 | 1.01 | 0.23 | 0.58 | 0.0008 | 1.99 | 1.22 | 2.46 | 1.49 | 0.0990 |
| Other hhwrk | 0.16 | 0.50 | 0.40 | 1.04 | 0.0441 | 0.08 | 0.27 | 0.19 | 0.51 | 0.1906 |
| Garden | 0.08 | 0.35 | 0.16 | 0.64 | 0.3152 | 0.04 | 0.26 | 0 | 0 | 0.0948 |
| House-work | 3.17 | 2.11 | 2.34 | 2.00 | 0.0076 | 5.01 | 1.88 | 5.57 | 1.90 | 0.1287 |
| Total workday | 12.87 | 2.56 | 13.06 | 2.61 | 0.6268 | 13.94 | 1.87 | 13.98 | 1.55 | 0.8888 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Married, youngest child 7-16 years | | | | | | | | | | |
|---|-----------------|--------------|--------------------|--------------|---------|-----------------|--------------|--------------------|--------------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=102) | | 1997/98 (N=139) | | p-value | 1989 (N=141) | | 1997/98 (N=110) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 9.40 | 1.51 | 10.48 | 3.25 | 0.0007 | 9.39 | 2.23 | 9.41 | 2.65 | 0.9536 |
| Excl. travel | 8.39 | 1.42 | 9.67 | 3.26 | 0.0001 | 8.29 | 2.31 | 8.58 | 2.68 | 0.3828 |
| Shop | 0.71 | 0.98 | 0.22 | 0.55 | 0.0001 | 1.44 | 1.10 | 0.47 | 0.57 | 0.0001 |
| Chcare | 0.10 | 0.38 | 0.11 | 0.43 | 0.8953 | 0.26 | 0.56 | 0.39 | 0.62 | 0.0970 |
| Chactiv | 0.75 | 0.78 | 0.44 | 0.78 | 0.0023 | 0.76 | 0.73 | 0.45 | 0.76 | 0.0012 |
| Childtime | 0.85 | 0.85 | 0.54 | 1.00 | 0.0105 | 1.02 | 0.88 | 0.83 | 0.96 | 0.1118 |
| Trad. hhwork | 0.55 | 0.95 | 0.46 | 0.85 | 0.4457 | 1.81 | 1.12 | 2.68 | 1.57 | 0.0001 |
| Other hhwrk | 0.30 | 0.90 | 0.74 | 1.40 | 0.0037 | 0.10 | 0.34 | 0.20 | 0.67 | 0.1438 |
| Garden | 0.37 | 0.89 | 0.20 | 0.76 | 0.1247 | 0.13 | 0.44 | 0.08 | 0.39 | 0.3488 |
| House-work | 2.79 | 1.78 | 2.18 | 2.12 | 0.0177 | 4.50 | 1.58 | 4.32 | 2.00 | 0.4438 |
| Total workday | 12.19 | 1.93 | 12.67 | 2.93 | 0.1278 | 13.89 | 1.85 | 13.73 | 2.26 | 0.5469 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Single, youngest child <7 years | | | | | | | | | | |
|---|---------------|--------------|------------------|--------------|---------|----------------|--------------|-------------------|--------------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=0) | | 1997/98 (N=0) | | p-value | 1989 (N=25) | | 1997/98 (N=12) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | | | | | - | 8.50 | 2.03 | 9.38 | 1.87 | 0.2113 |
| Excl. travel | | | | | - | 7.48 | 2.01 | 8.46 | 1.88 | 0.1696 |
| Shop | | | | | - | 0.95 | 0.85 | 0.72 | 0.50 | 0.3137 |
| Chcare | | | | | - | 0.65 | 0.90 | 0.83 | 0.78 | 0.5295 |
| Chactiv | | | | | - | 1.06 | 1.13 | 1.76 | 1.49 | 0.1775 |
| Childtime | | | | | - | 1.71 | 1.55 | 2.59 | 1.35 | 0.0990 |
| Trad. hhwork | | | | | - | 1.94 | 1.32 | 1.69 | 0.97 | 0.5294 |
| Other hhwrk | | | | | - | 0.12 | 0.36 | 0.03 | 0.09 | 0.2281 |
| Garden | | | | | | 0.08 | 0.40 | 0 | 0 | 0.3273 |
| House-work | | | | | - | 4.80 | 2.35 | 5.07 | 1.54 | 0.6865 |
| Total workday | | | | | - | 13.30 | 2.02 | 14.45 | 1.54 | 0.0750 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Single, youngest child 7-16 | | | | | | | | | | |
|------------------------------------|---------------|--------------|------------------|--------------|---------|----------------|--------------|-------------------|--------------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=1) | | 1997/98 (N=0) | | p-value | 1989 (N=25) | | 1997/98 (N=12) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 9.50 | - | 11.20 | 2.14 | - | 9.00 | 1.41 | 9.61 | 3.20 | 0.2827 |
| Excl. travel | 8.00 | - | 10.50 | 2.38 | - | 8.00 | 1.33 | 8.63 | 3.32 | 0.2769 |
| Shop | 0 | - | 0.05 | 0.10 | - | 1.35 | 1.04 | 0.74 | 0.97 | 0.0090 |
| Chcare | 0 | - | 0 | 0 | - | 0.33 | 0.58 | 0.49 | 0.68 | 0.2834 |
| Chactiv | 2.00 | - | 0 | 0 | - | 0.83 | 0.82 | 0.79 | 1.09 | 0.8761 |
| Childtime | 2.00 | - | 0 | 0 | - | 1.16 | 0.91 | 1.28 | 1.25 | 0.6259 |
| Trad. hhwork | 1.00 | - | 0.38 | 0.75 | - | 2.03 | 1.03 | 2.02 | 1.47 | 0.9882 |
| Other hhwrk | 0 | - | 0 | 0 | - | 0.05 | 0.22 | 0.13 | 0.45 | 0.3204 |
| Garden | 1.00 | | 0 | | - | 0.02 | 0.15 | 0.19 | 0.97 | 0.2907 |
| House-work | 4.00 | - | 0.43 | 0.72 | - | 4.61 | 1.52 | 4.52 | 2.18 | 0.8269 |
| Total workday | 13.50 | - | 11.63 | 2.69 | - | 13.61 | 1.44 | 14.12 | 2.85 | 0.3170 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Single without children, aged 45-64 | | | | | | | | | | |
|--|----------------|-----------|-------------------|-----------|---------|----------------|-----------|-------------------|-----------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=21) | | 1997/98 (N=12) | | p-value | 1989 (N=55) | | 1997/98 (N=55) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 9.13 | 0.99 | 9.88 | 3.44 | 0.4725 | 8.72 | 2.44 | 8.94 | 2.82 | 0.6543 |
| Excl. travel | 8.10 | 0.99 | 8.83 | 3.30 | 0.4653 | 7.66 | 2.35 | 7.95 | 2.60 | 0.5421 |
| Shop | 1.03 | 0.99 | 0.41 | 0.42 | 0.0221 | 1.37 | 1.30 | 0.53 | 0.63 | <0.0001 |
| Chcare | 0 | 0 | 0 | 0 | - | 0.03 | 0.15 | 0.05 | 0.30 | 0.5480 |
| Chactiv | 0 | 0 | 0 | 0 | - | 0.09 | 0.31 | 0.22 | 0.82 | 0.2670 |
| Childtime | 0 | 0 | 0 | 0 | - | 0.12 | 0.37 | 0.28 | 1.02 | 0.2788 |
| Trad. hhwork | 1.02 | 1.14 | 1.29 | 0.99 | 0.4909 | 2.19 | 1.53 | 2.33 | 1.41 | 0.6331 |
| Other hhwrk | 0 | 0 | 0.54 | 1.08 | 0.1089 | 0.22 | 0.50 | 0.25 | 0.61 | 0.7439 |
| Garden | 0.19 | 0.51 | 0.67 | 1.61 | 0.3412 | 0.15 | 0.45 | 0.13 | 0.72 | 0.8744 |
| House-work | 2.25 | 1.88 | 2.99 | 2.78 | 0.4248 | 4.04 | 2.16 | 3.93 | 2.25 | 0.7863 |
| Total workday | 11.38 | 2.12 | 12.88 | 2.13 | 0.0732 | 12.76 | 2.75 | 12.87 | 2.51 | 0.8247 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

| Married without children, aged 45-64 | | | | | | | | | | |
|---|----------------|-----------|-------------------|-----------|---------|----------------|-----------|-------------------|-----------|---------|
| | Men | | | | | Women | | | | |
| | 1989 (N=21) | | 1997/98 (N=12) | | p-value | 1989 (N=55) | | 1997/98 (N=55) | | p-value |
| | Mean | Std. dev. | Mean | Std. dev. | | Mean | Std. dev. | Mean | Std. dev. | |
| Market work | 9.93 | 2.99 | 9.95 | 2.85 | 0.9741 | 9.27 | 2.27 | 9.18 | 1.84 | 0.7662 |
| Excl. travel | 8.87 | 3.12 | 9.01 | 2.85 | 0.7238 | 8.16 | 2.27 | 8.40 | 1.82 | 0.4324 |
| Shop | 0.52 | 0.96 | 0.27 | 0.54 | 0.0241 | 1.57 | 1.14 | 0.53 | 0.66 | 0.0001 |
| Chcare | 0.07 | 0.36 | 0.04 | 0.36 | 0.5760 | 0.04 | 0.25 | 0.03 | 0.32 | 0.8786 |
| Chactiv | 0.13 | 0.53 | 0.06 | 0.32 | 0.2717 | 0.01 | 0.11 | 0.06 | 0.32 | 0.2088 |
| Childtime | 0.20 | 0.63 | 0.10 | 0.56 | 0.2425 | 0.05 | 0.27 | 0.09 | 0.45 | 0.4887 |
| Trad. hhwork | 0.75 | 1.09 | 0.37 | 0.79 | 0.0064 | 2.15 | 1.06 | 2.89 | 1.71 | 0.0007 |
| Other hhwrk | 0.24 | 0.65 | 0.64 | 1.27 | 0.0022 | 0.13 | 0.34 | 0.16 | 0.50 | 0.5929 |
| Garden | 0.52 | 0.99 | 0.35 | 0.89 | 0.1834 | 0.28 | 0.59 | 0.33 | 1.07 | 0.6865 |
| House-work | 2.23 | 1.75 | 1.76 | 1.96 | 0.0628 | 4.18 | 1.59 | 4.09 | 2.28 | 0.7574 |
| Total workday | 12.16 | 2.82 | 11.71 | 3.02 | 0.2504 | 13.46 | 2.09 | 13.27 | 2.33 | 0.5811 |

Note: Values are given in hours and fractions of hours. Values for which the difference between 1989 and 1997/98 is significant on at least the 10 %-level are shadowed.

A4 Test statistics for comparison of models of housework.

Estimated on each gender/year subsample

Model 1 Only lifecycle variables

Model 2 Lifecycle variables and own education

Model 3: Lifecycle variables and own education modeled only as VUZ or not VUZ

Model 4 Only education

Estimated on the gender/year subsamples of married/cohabitating respondents³⁴

Model 5 Lifecycle variables

Model 6 Lifecycle variables, husband’s and own education

Panel A: Women 1989

| Modell | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|-------|-------|-------|-------|--------|--------|
| loglikelihood | -1053 | -1048 | -1049 | -1090 | -748.7 | -743.5 |
| AIC | 2124 | 2121 | 2118 | 2191 | 1507 | 1513 |
| Schwartz | 2163 | 2177 | 2161 | 2217 | 1527 | 1565 |

Panel B:Men 1989

| Model | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|--------|--------|---------|---------|--------|--------|
| loglikelihood | -714.1 | -710.5 | -711.73 | -735.83 | -629.1 | -623.7 |
| AIC | 1444 | 1445 | 1441 | 1484 | 1268 | 1273 |
| Schwartz | 1476 | 1492 | 1477 | 1507 | 1287 | 1327 |

Panel C: Women 1998

| Model | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|--------|--------|--------|---------|--------|--------|
| loglikelihood | -911.0 | -909.2 | -909.6 | -935.46 | -572.2 | -564.2 |
| AIC | 1840 | 1844 | 1839 | 1883 | 1154 | 1154 |
| Schwartz | 1876 | 1897 | 1880 | 1907 | 1172 | 1201 |

Panel D: Men 1998

| Model | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------|--------|--------|---------|---------|--------|--------|
| loglikelihood | -873.9 | -867.6 | -870.02 | -881.41 | -762.8 | -754.2 |
| AIC | 1764 | 1759 | 1758 | 1775 | 1536 | 1513 |
| Schwartz | 1797 | 1809 | 1796 | 1800 | 1556 | 1565 |

A5 Bias in the selection of “main respondents” in the 1989 sample.

Interviewers were instructed to get one person, if possible someone who was employed, to agree to be interviewed; to try to get about as many women as men and if there were employed members of different generations, to prefer the younger. The outcome was that the

³⁴ 718 out of 914 respondents in the 1989 time-use sample are married; information on education of spouse is missing for 11 of these. In the 1998 time-use sample 681 out of 908 are married and information on education of spouse is missing in 11 cases.

main respondents differ from the set of all household members, since individuals with different characteristics were more or less likely to be at home when the interviewer called and more or less willing to be interviewed. Most blatantly, the proportion of women among respondents in the time-use analysis is 59 percent while it is 49 percent among all working household members in the same age range. According to informal conversations with the researcher who led the survey, women more often agreed to a lengthy interview.

The extent to which there is a selection problem in the 1989 data can be seen from Table A1, which in addition to descriptive statistics for women and men included in the time-analysis provides the same information for those working household members in the 1989 sample for which we do not have time-use data. A “working household member” was defined as one who received labour income in the preceding month. (As mentioned above, this set was almost identical to that of self-defined working individuals.) The over-sampling of women is not in itself a problem, since we make separate estimates for men and women. Other indications of selectivity are smaller and most are consistent with the sampling method. Young, single individuals were, according to the interviewers, less willing to sacrifice their time and are underrepresented, among both women and men. Since one person per household was selected, irrespective of household size, single mothers and older, single people are overrepresented. University educated men are overrepresented by six percentage points. Otherwise, education levels are almost identical in the two subsamples. Among both genders, earnings are higher among those included in the analysis. The difference is statistically significant, but not of economically significant magnitude.

A6 Merging demographic groups to improve statistical precision.

Since the small sample size in each of the demographic groups give less precision in the estimates we have tried to use a less detailed decomposition of the sample. We merged:

1. Married and single without children aged 20-44-
2. Married and single without children aged 45-64.
3. Single individuals, not living with own children, of all ages.
4. Married individuals, not living with own children, of all ages.

5. Married and single mothers ³⁵of pre-school children.
 6. Married and single mothers of school-age children.
 7. Married parents irrespective of whether the child/ren was of school or pre-school age.
 8. Single parents irrespective of whether the child/ren was of school or pre-school age.
1. The reallocation of time from *traditional household work* to *other household work* is statistically significant for the men and the increase in *traditional household work* for women in the group of respondents **aged 20-44 without children**. There is also a significant decrease in time spent on *shopping* for both men and women and in time spent *at work* for the women. Each of these changes was significant either among married or single respondents, and the differences pointed in the same direction for the other group. Merging makes them statistically significant.
 2. The reallocation of time from *traditional household work* to *other household work* among the men is significant also in the group of married and single respondents **aged 45-64, without children**. For the women we get significant values for the increase in time spent on *traditional household work*. The decrease in time spent on *shopping* is statistically significant for both genders. For both men and women only the decrease in time spent on shopping was significant in the separate groups, and for the single men, the change in time spent on traditional household work even had the opposite sign (although not significant).
 3. When all **single men without children** are taken together, there is a significant increase in the variable *other household work* and a decrease in *traditional household work* and *shopping*. In the two age ranges taken separately, the younger showed a reallocation from traditional to other household work, while the older had the more marked and statistically significant decrease in time spent on shopping (significant) and even an increase in time spent on traditional household work, although not significant. The increase in time spent *at work*, is significant at the 10

³⁵ There were no single fathers of pre-school children in the samples and very few single fathers of school age children. (One 1989 and four in 1997/98.)

%-level. In the separate groups we saw an increase in this variable of 45-55 minutes, but with much lower precision. For the women, merging the age groups among single respondents without children gives a significant increase of the time spent *at work* and a significant decrease time spent on *shopping*. In the separate groups, only the younger had a significant increase in time spent at work, while the older had a large and significant decrease in time spent on shopping.

4. In the group of **married without children**, aged 20-64, we get significant values for the reallocation of time from *traditional household work* to *other household work* and a significant decrease in time spent on *shopping* among the men. This agrees with the pattern in the separate age groups, but there, the decrease in traditional household work was not significant among the younger married men. For the married women in this group we get a significant increase of time spent on *traditional household work* and a significant decrease in the variable *shop*. This was the case also in the separate age groups.
5. Among married and single mothers with **children under 7 years** we find statistically significant values for an increase in time spent on *children* (primarily *child care*) and decrease in time spent on *shopping*, which are the same changes that we saw for the group of married women with children under 7 years. Hence, merging married and single does not facilitate inference within this group, on the contrary, it obscures the large increase in total workload that was significant at the 10%-level for the single women with children under 7 years.
6. Among the women living with **children of age 7-16** there are significant increases in *child care* as well as in *traditional household work* along with significant decreases in time spent on *child activities* and *shopping*. When married and single mothers were analysed separately, the increase in time spent on *child care* was not significant at the 5 % level.
7. In the group of **married men with children**, there is a significant increase in time spent on *market work*, a significant decrease in *activities with children* and total time spent with children. The reallocation of time from *traditional* to *other household work* is also statistically significant, as well as the decrease in time spent on

shopping. The net result is a significant decrease in time spent on non-market work. For **married women with children** time spent on *child care, traditional household work* and *other household work* has increased significantly, concurrently with a decrease in the variables *shop* and *child activities*. It should be noted that the increase in time spent on other household work was not significant in any of the two separate groups. The change in time spent has been in opposite direction for mothers of younger and older children for several activities, including *market work, total housework* and *total workload*.

8. Among **single women with children**, the only significant change at the 5 % level is the decrease in time spent on *shopping*, which was significant in the group of single women with school children, but not in the group with small children. The increases in market work and total workload are significant at 10 %, but not at 5 –level. When the single mothers were divided according to the age of the children, the only significant increase was in total workload among the single women with small children.