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AN EQUIVALENCE SCALE FOR TIME

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The series is indebted to Diana Encel for her continuing editorial contribution.

Tony Eardley
Editor

Abstract

This article proposes an ‘equivalence scale for time’ by which information on total working time in both paid and unpaid labour can be derived from information about paid working time and household structure. Different scales are offered for males and females, and an adjustment according to year is also provided. This proposal is based on highly significant and robust Ordinary Least Squares (OLS) analyses of time-use surveys involving 99 137 respondents from 28 western countries.

1 Introduction

Studies of income distribution typically employ equivalence scales, adjusting households' cash incomes for the effects of household structure on standards of living. Here we propose an analogous equivalence scale for time, adjusting estimates of work time for the effects of household structure on paid and unpaid labour time.

Equivalence scales for time are strictly analogous to equivalence scales for income in several respects. Equivalence scales for income start with actual cash income, adjusting that in the light of household structure. Our equivalence scale for time similarly starts with time spent in paid labour, adjusting that in the light of household structure.

Equivalence scales for income are purely descriptive, at least in the first instance. They represent the level of cash income that would be required for people in households of different structures to enjoy the same standard of living. Our equivalence scale for time is descriptive in the first instance. It represents how much (or little) paid labour time would be expected to be required for people in households of different structures to put in the same total number of work hours, including both paid and unpaid labour.

Both sorts of equivalence scales involve normative assumptions at the margins, and both can be used to serve larger evaluative purposes. Much of the motivation underlying equivalence scales rendering different households comparable with one another is to probe inequality or relative poverty among them, whether in terms of money or of time. Elaborating those normative implications is a project to be pursued elsewhere: here we content ourselves with the more descriptive side of that task, merely sketching possible applications in our closing paragraphs.

2 The Equivalent Income Analogy

Let us recall why equivalence scales are required for income. Income is, among other things, a measure of potential standard of living[1]. Yet

1 'Potential', in deference to income which is saved rather than spent (Ringen, 1988).

individuals in households with the same income would enjoy the same potential standard of living only if, *inter alia*, their households were of exactly the same structure. If one household is larger than the other, then the same income would have to be shared among more individuals. The reduction would not however be strictly proportional to the number of individuals in the household, given the economies of scale in running larger households and the lesser consumption on the part of children within them.

Equivalence scales for income correct for both effects at once, taking account of the number of individuals in the household in a less-than-proportionate way that reflects those economies of scale of larger households. 'Equivalent income' is reckoned as:

Equivalent income = (total household income)/(equivalence scale)

The equivalence scale is sometimes represented as a simple schedule with different weights attached to adults, to children and to subsequent individuals within each group. Thus, for example, the original OECD (1982) scale assigns a value of 1 for the first adult, 0.7 for subsequent adults and 0.5 for children less than 14 years old, with the equivalence scale for any given household being just those values summed across all members of the household. A simpler variation on that method, less generous to large families, is the 'modified OECD scale' which assigns the first adult a value of 1, each subsequent adult 0.5 and each child 0.3. Equivalence scales are sometimes written more simply still as N^s, where N is the number of individuals in the household and s is a coefficient between zero and one. One alternative method which is gaining increasing currency among academic analysts is to take the equivalence scale to be the square root of N, i.e., letting $s = 0.5$. Sensitivity analyses regularly reveal that it makes a difference to one's conclusions, at least at certain margins, which equivalence scale is employed[2].

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2 See, for example, Buhmann, Rainwater, Schmaus and Smeeding (1988); Coulter, Cowell and Jenkins (1992); Atkinson, Rainwater and Smeeding (1995); Deaton (1997, 241-69); Atkinson (1998, sec. 1.3).

3 The Point and Problems of Equivalence Scales

Equivalence scales for both income and time are approximations based on assumptions necessitated by the absence of direct evidence on the phenomena in question.

The phenomenon we are trying to investigate through equivalent income is the standard of living. Sometimes we do have direct evidence from living standards surveys, or at least direct evidence on household expenditures which approximates for living standards, but in most of the socioeconomic data sets we find ourselves analysing we have neither sort of information[3]. In the absence of direct consumption evidence on an individual basis, we try to surmise standard of living from certain facts about the household's income, size and composition. That is the role that equivalence scales for income play in the analysis of ordinary socio-economic statistics.

Such equivalence scales make various assumptions, among them that everyone within the same household has an identical standard of living. To some extent, that assumption seems well warranted by the facts of joint consumption within households, living under the same roof and eating off the same table. However, joint consumption expenses hardly exhaust households' expenditures. Assuming that everyone within the same household has the same standard of living amounts to an assumption that the household's remaining income (after joint consumption expenses have been paid) is pooled, with all household members having strictly equal drawing rights on it. From what we know about control over economic resources within the family, that assumption seems implausible[4]. In the absence of direct evidence on individual expenditures and consumption, however, such crude assumptions and rough approximations are the best we can do. Such is inevitably the way with equivalence scales for income.

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3 Even then, of course, there are still various normative judgments required to move from either set of indicators to conclusions about what should be deemed to constitute an 'equivalent' standard of living or pattern of expenditures in two differently-constituted households.

4 See, for example, Young (1952); Piachaud (1982); Pahl (1983, 1980); Folbre (1982, 1994); Deaton (1997, 233-40).

With equivalence scales for time, the phenomenon we are trying to investigate is the total amount of time individuals and households spend 'working', whether in paid or unpaid (domestic) labour. Again, we sometimes have direct evidence of this from 'time-budget surveys'; we will be using exactly that evidence to generate the equivalence scales for time proposed below[5]. But the socioeconomic data sets we ordinarily find ourselves analysing typically contain no direct information on the amount of time individuals spend in unpaid labour. Again, we have to try surmising total working time from certain facts about the individual's paid working time and the size and composition of that individual's household. That is the role we envisage equivalence scales for time playing in the analysis of socioeconomic statistics and relative welfare.

Our proposed equivalence scale for time, like more familiar ones for income, similarly constitutes an approximation based on certain assumptions, necessitated by the paucity of direct evidence on total working time in standard socioeconomic data sets. We do not run into exactly the same problems: unlike equivalence scales for income, ours for time does not need to assume uniformity within the household; we will be able to estimate total working time at an individual level in a way that reflects substantial differences within any given household. Our equivalence scales for time, however, like equivalence scales for income, do have to assume uniformity across households. Of course we know it cannot altogether be true that every man with a wife and children works exactly the same number of hours in paid and unpaid labour as every other man with a wife and children; and still less does every woman with identical household characteristics work exactly the same number of hours in paid and unpaid labour as every other. What our equivalence scale for time offers is only an approximation, abstracting from multitudinous factors (conspicuous among them, individuals' wage rates). As our results will show, however, the approximations prove to be powerful ones.

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5 Even then, there are further normative assumptions involved in calling different time budgets 'equivalent'. Conspicuous among them is the assumption that an hour's work is the same as any other hour's work, no matter what sort of work is being done or when and by whom. Furthermore there is the difficulty that money can be transferred between individuals, whereas this not so straightforward with some uses of time.

4 Methods

We generate our equivalence scales through the analysis of pooled data from 28 surveys of time use among individuals aged 20 through 59 in 14 western countries between 1961 and 1992[6]. The sample sizes range from a low of 960 (Netherlands 1975) respondents to highs of 10 277 (Finland 1987) and 9602 (Australia 1992). Pooling all 28 studies yields a total number of 99 137 respondents. The managers of these data provide a variety of 'weights' which might be employed in analysing them[7]. We found, however, that these weights made a negligible difference to the analysis reported here, so (since weights are always inevitably controversial) we simply use these data in their unweighted form.

Time budget information is collected from individuals in either of two principal ways. The preferred method is through daily diaries, in which individuals record what they were doing every 5, 10 or 15 minutes of the day; ideally those reports are made in the respondent's own words, with researchers subsequently coding them into specified categories of a fairly fine-grained sort (reduced from a maximum of over 150 codes to some 20 codes in the pooled data). The other principal method of collecting such data involves asking respondents to estimate how much time each day they spend on various specified activities (OECD, 1995). These methods yield results which can have important differences for some

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6 The Multinational Comparative Time Budget Data Archive is compiled and updated by Jonathan Gershuny at the University of Essex ESRC Centre for Micro-Social Change; documentation is found in Gershuny (1990). The 25 western surveys included in Gershuny's data set have been supplemented by the three further Australian studies listed, available through the Household Data Facility of the Households Research Unit, University of Melbourne. The surveys, together with descriptive statistics, are listed in an Appendix. For other analyses based on this data set, see Gershuny (1992); Gershuny and Robinson (1988); and Robinson and Gershuny (1994). Gershuny's data set also includes a further seven surveys involving a total of 29 794 respondents from six east European countries. Those surveys are also listed in the Appendix, together with corresponding descriptive statistics on them. These samples from 'state socialist' economies represent a way of life, and a pattern of time use, no longer found in those countries or elsewhere. We thus restrict our main analysis to the western subset of the larger Gershuny data base.

7 Weights include a 'survey weight' to bring each survey to a standard size (of 2000 cases); a 'country weight' to bring each country to 2000 cases; and a 'sex and employment weight', to bring each sample into line with each country's sex, age and employment profile as reported by ILO for the year in question.

applications, but at the level of aggregation which we will be employing in this exercise those difference seem not to matter much[8].

In our analysis, we sum across several more specific activity codes to yield two basic variables[9]. Our 'paid labour time' variable sums the individual's self-reported 'working time' and 'travel to work time'. Our 'unpaid labour time' variable sums the times the individual reports spending on: 'domestic activities' (cooking, cleaning, laundry, gardening, pet and car care, etc.); 'child care'; and 'purchasing'. Our 'total work time' variable then simply sums those 'paid labour time' and 'unpaid labour time' variables for each individual.

As regards crucial demographic variables, some time-budget surveys are better than others. A few are conducted on the household as well as on an individual level, and in those studies we certainly get (and in others we sometimes get) reports of the exact number of other adults and the exact number of children in the household. Most time-budget surveys, however, are conducted purely on an individual basis[10]. Where two people in the same household happened to have been interviewed, there is no way of linking them. Also, the most these surveys often tell us about household characteristics is whether the respondent is married or not and whether the respondent has children under 15 or not.

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8 On these complex issues, see Robinson (1985); Niemi (1993); Robinson and Gershuny (1994); Baxter and Bittman (1995); Robinson and Godley (1997).

9 In the master files, the time reported under each of those specific activity codes is in minutes per day, and any particular respondent's report pertains to one specific day. To yield the time variable in the weekly form we shall report, we simply multiplied those minutes/day statistics by seven and divided by 60. We have been able to check for any biases introduced by this procedure using the 1992 Australian data, which contains information not only about minutes in paid labour on the day in question but also a respondent's self-reported 'usual weekly hours in paid labour'. The mean number of weekly hours in paid labour estimated through our procedure corresponds almost exactly to the mean in the 'usual weekly hours' self-report. The standard deviation of our estimate is of course higher, since some respondents who usually worked a 40 hour week were reporting minutes spent working on the particular day in question, which happened to be a non-working day. But since each day is weighted equally in the survey, those effects seem to cancel out in aggregate, as reflected in the identical means.

10 Two-thirds of the dozen most recent time-use surveys within the OECD are conducted only on an individual basis, without any household component (OECD, 1995).

In constructing comparable variables across all 28 surveys, the compilers of the Multinational Comparative Time Budget Data Archive were compelled to construct their variables in a way that corresponds to the lowest common denominator amongst all of them[11]. The 'number of children' variable thus merely records whether or not the respondent has any children aged under 15 (0 if no, 1 if yes) and the 'number of adults' variable merely records whether or not the respondent is married or living together in a de facto marriage (0 if no, 1 if yes).

Previous time use studies indicate sharp gender differences, with the presence of children in particular impacting much more strongly upon the unpaid work time of women than men[12]. Accordingly, we split our sample by gender and report gender-specific equivalence scales.

Finally, these 28 time-budget surveys straddle some 31 years. Over the course of that time, there has been a slow change in the amount of time people spend on both paid and unpaid work. Some of these changes have had sociological bases, others technological ones. Although the changes have been occurring relatively slowly, they do accumulate in a significant way over the 31 years straddled by these surveys. Furthermore, these forces will presumably continue working into the future as well. Hence for our equivalence scales to be useful into the future we will need to provide the relevant time adjustments to bring them up to date. To control for these time effects, we have employed a 'period' variable which amounts to the year of the survey in question, minus 1961 (the year of the first survey).

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11 Some of the underlying national data sets contain fuller information on exact numbers of children and adults in households, but that information is not available on the public-use version of the Multinational Comparative Time Budget Data Archive.

12 See, for example, Land (1978); Berk and Berk (1979); Gershuny and Robinson (1988); Hochschild (1989); Baxter and Gibson (1990); Bittman (1992); Jenkins and O'Leary (1995, 1997); OECD (1995); Bittman and Pixley (1997); and Robinson and Godley (1997).

5 Results

In the analysis, all the variables discussed above were entered into a regression equation of the following form:

(Total weekly work hours, paid and unpaid) =
(weekly hours in paid labour)
+ (presence of kids dummy)
+ (presence of adults dummy)
+ (period of survey = years since 1961)

The equation was estimated separately for men and women, employing Ordinary Least Squares regression techniques[13].

It should be noted that this very simple equation leaves out a number of factors. For example, it takes no account of age effects (beyond merely confining our sample to people aged 20 through 59), nor wage or income effects. It also takes no account of the labour force participation of other members of one's household. A priori, all of those things might ordinarily be expected to exert some substantial influence on people's total hours in paid and unpaid labour.

It is therefore remarkable how well total hours in paid and unpaid work throughout the western world is predicted by such a very simple equation. As shown in Table 1, the percentage of variance explained is higher for men than women, but by most standards the R^2 of 0.59 for women is remarkably high and that for men of 0.91 astonishingly so[14]. As expected, the presence of children or even of other adults in the household costs women more time (principally in unpaid labour) than men. Women's total work time is more a matter of unpaid work time, whereas men's is more powerfully related to their hours in paid labour[15].

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13 We also regressed equations employing those variables in multiplicative forms, and still other equations (using the 1992 Australian data, which has real numbers rather than dummies) employing a square root of the number of children and adults. Neither of those other functional forms improves the fit of the equation over the simple additive form reported here.

14 As shown by the standard deviation of residuals around the regression line, however, that still leaves unexplained over nine hours a week of men's work time and over 15 hours of women's.

15 That is why the men's constant is so low: almost all their total labour time is a matter of paid labour time.

Table 1: OLS Regression on Total Weekly Hours in Paid and Unpaid Labour in Western Countries, 1961-1992

Dependent variable	Constant (SE)	Weekly hrs paid work (SE)	Presence of children (=0,1) (SE)	Presence of other adults (=0,1) (SE)	Period (1961=0) (SE)	R^2 (SD)
Female	30.25	0.68	10.07	6.88	-0.23	0.62
	(0.24)	(0.00)	(0.15)	(0.17)	(0.01)	(15.19)
Male	7.59	0.88	3.33	0.54	0.15	0.91
	(0.16)	(0.00)	(0.10)	(0.11)	(0.01)	(9.29)

The period effect works in different directions, with women's total weekly work hours decreasing over the years and men's increasing rather more gradually.

In a way, these high R^2 values are artefactual. Time in paid work appears on both sides of the equation, as an independent variable on the right and as a part of 'total work hours' on the left. This seems inevitable and eminently justifiable, given the nature of exercise upon which we are embarked. As stated earlier, our aim is to generate an equivalence scale which will serve as a 'transformation rule' for turning one sort of data (about paid work hours, household composition and gender) into another (about total work hours). Paid work hours clearly influences total work hours, both by constituting part of them and also by influencing the number of hours remaining available for unpaid work. It clearly belongs on the right hand side of the equation, and by its nature is an indispensable part of the left.

Unpaid labour hours can, of course, be calculated for any given individual by subtracting known paid work hours from the number of total work hours estimated through our procedures. As Table 2 shows, when the same equation is used to estimate unpaid labour time rather than total work time, the only thing that changes is the coefficient attached to paid labour time (and of course the R^2). The constant and the coefficients attached to the household structure variables and to the period control remain identical. Thus, those primarily interested in

Table 2: OLS Regression on Total Weekly Unpaid Labour in Western Countries, 1961-1992

Dependent variable	Constant (SE)	Weekly hrs paid work (SE)	Presence of children (=0,1) (SE)	Presence of other adults (=0,1) (SE)	Period (1961=0) (SE)	R^2 (SD)
Female	30.25	-0.32	11.07	6.88	-0.23	0.44
	(0.24)	(0.01)	(0.15)	(0.17)	(0.01)	(15.17)
Male	7.59	-0.12	3.33	0.54	0.15	0.19
	(0.16)	(0.00)	(0.10)	(0.11)	(0.01)	(8.76)

estimating unpaid labour time can just subtract paid labour time from our estimates of total working time, confident that the results would have been the same had unpaid labour time been estimated directly.

These basic results travel well across all 28 countries under study. Taking the US as the baseline case and estimating the same equation with all other countries appearing as dummies yields literally identical R^2 values and virtually identical coefficient values on each of the independent variables. The only thing that differs is the constant, which (incorporating the value attached to the country dummy) then becomes country specific. But even that constant does not vary very widely around the result for the pooled sample reported in Table 1, and even among women the cross-country variation in that constant is not great[16].

Whereas the relationship between total work time and these independent variables appears to be much the same across all these 28 western

16 That constant is an hour and a half per week higher for US men than the pooled sample. In Sweden men work almost an two and a half hours more, whereas in Denmark and West Germany and the UK they work about an hour less than the pooled sample. Otherwise the specific country estimates for men hover very near those for the pooled sample.

The constant is just under an hour lower for US women than the pooled sample. There, we see slightly more variation among countries, with French women working fully three hours more than the pooled sample, and Australian and West German around two hours more. Finnish and Danish women work four and three hours less, respectively, than the pooled sample, and British and Dutch women over two hours less. In the remaining cases, the country-specific constant is relatively close to that of the pooled sample.

countries, there may well be greater variation as we move beyond the western world. This speculation is borne out by inspection of time-use data from pre-1989 work time in eastern Europe. This represents a way of life that is now gone forever, of course. But it seems that work-time patterns there were indeed systematically different from those found in our western sample (Table 3).

Table 3: OLS Regression on Total Weekly Hours in Paid and Unpaid Labour in Eastern European Countries, 1964-1988[(a)]

Dependent variable	Constant	Weekly hrs paid work	Presence of children (0,1)	Presence of other adults (0,1)	Period (1961=0)	R^2 (SE)
Female	40.29	0.61	6.88	8.50	-0.41	0.61
	(0.54)	(0.00)	(0.40)	(0.49)	(0.02)	(15.45)
Male	10.26	0.89	2.47	2.78	-0.10	0.90
	(0.38)	(0.00)	(0.26)	(0.34)	(0.01)	(9.38)

Note: (a) These data are derived seven surveys with 29 794 respondents drawn from six countries of pre-1989 eastern European, which are also contained in the Multinational Comparative Time Budget Data Archive and listed in the Appendix.

Compared with the western results reported in Table 1, it seems that total work time among eastern Europeans used be higher overall. The constant is higher, by almost 10 hours a week for females (although that is partly offset by the lower time costs associated with children for eastern European women). Furthermore, in eastern Europe both women and especially men experienced higher time costs associated with the presence of other adults in the household than reported in Table 1 for their western counterparts.

6 Computing Equivalent Time and its Applications

Based on the regression results in Table 1, we can now lodge our proposal for an equivalence scale for time. Given information on an individual's gender, paid work hours and family status, the total amount

of time that we expect that individual to spend working in paid and unpaid labour can be calculated as given in Table 4.

Table 4: Equivalence Scales for Time

For females:
Total weekly hours in paid and unpaid work =
+ 30.58 - [0.23 times (Year - 1961)]
+ 0.68 times paid work hours per week
+ 11.07 if children present
+ 6.88 if married or de facto
For males:
Total weekly hours in paid and unpaid work =
+ 7.59 + [0.15 times (Year - 1961)]
+ 0.88 times paid work hours per week
+ 3.33 if children present
+ 0.54 if married or de facto

Different researchers will inevitably find different uses for equivalence scales for time. In closing, let us simply sketch three of the more obvious uses.

Economists have long been sensitive to how much economic activity escapes the 'measuring rod of money' and hence goes uncounted in conventional National Accounts statistics[17]. Among the steps needed to remedy that is to calculate the 'full income' of households, taking account of unmarketed 'household production' activities as well as the proceeds of more ordinary market activities. A crucial step in determining the economic value of household production lies in determining the amount of time individuals spend in unpaid labour within the household. Once we have that, we can then put a monetary value on those labour hours, based on either opportunity costs or replacement costs[18].

17 There have been a number of attempts to incorporate measures of paid work into national accounting, including work by the United Nations Human Development Programme. On the UNHDP's activities, see Ironmonger (1996); Goldschmidt-Clermont and Pagnossin-Aligisakis (1995). On earlier US attempts, see Olson (1969); US DHEW (1969); Moss (1973).

18 See Becker (1965); Gronau (1973); Pollack and Watcher (1975); Garfinkel and Haveman (1977a,b); Waring (1988); Travers and Richardson (1993); Saunders, O'Connor and Smeeding (1994); Goldschmidt-Clermont, L. and E. Pagnossin-Aligisakis (1995); OECD (1995); Jenkins and O'Leary (1996).

The equivalence scale for time that we have proposed generates estimates of total work time, paid and unpaid. On the opportunity cost method, 'full income'[19] could then be computed simply by multiplying total work time by the individual's wage rate (which itself could be determined either by what the individual is receiving in wages or by what a human capital equation says an individual with such characteristics should be able to command in the market). On the replacement cost method, 'full income' could be computed simply by multiplying unpaid labour time by the estimated market price of hiring in others to perform the sorts of activities involved.

Two other applications of our equivalence scales for time would be to study 'time poverty' and 'time inequality' analogously to income poverty and income inequality[20]. Free time is not only an important resource in its own right. It is also a crucial complement to virtually any other resources, time invariably being required to make use of them (Zeckhauser 1975). The distribution of free time across individuals could thus be seen as at least as important as the distribution of income across individuals.

The familiar battery of techniques for studying the distribution of incomes can easily be adapted for these purposes. We can set 'time poverty' lines at 'half the median national individual's free time', and compute what proportion of the population is in that situation and for how long. We can compute Gini and Theil coefficients representing the inequality in the distribution of free time across a population. For all those purposes, however, the first step is calculating how much free time individuals can be expected to enjoy. That is precisely what our

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19 Becker (1965) originally proposed that full income should include the opportunity cost of leisure time, as well as the goods and services produced by paid and unpaid work. Subsequent research has tended to avoid placing a monetary value on leisure (Travers and Richardson, 1993; Saunders, O'Connor and Smeeding, 1994; Goldschmidt-Clermont, L. and E. Pagnossin-Aligisakis, 1995; OECD, 1995; Jenkins and O'Leary, 1996).

20 Time poverty has traditionally been the preserve of sociologists (see, for example, Baxter and Gibson, 1990; Bittman, 1992; Gershuny, 1992; Hochschild, 1997, and economists writing in more sociological mode (Linder, 1970; Schor, 1991). An economic approach to time poverty is suggested by Vickery (1977) and to equality of leisure time by Beckerman (1978).

equivalence scale does. It enables us to compute the expected total amount of time any given individual spends in paid or unpaid work, which we can then subtract from 24 hours a day (or 16, allowing eight hours for sleep) to measure how much ‘free time’ that individual actually enjoys.

All those represent larger tasks which must necessarily be left for another occasion. But all of them point to potentially major uses to which an equivalence scale for time might be put.

Appendix: Descriptive Statistics on Time Use Surveys Used

A. Western Sample, respondents aged 20-59 years

	Year of survey	Number of cases	Total weekly work hours, paid and unpaid		Paid work hours per week	
			female mean (standard deviation)	male mean (standard deviation)	female mean (standard deviation)	male mean (standard deviation)
Australia	1974	1275	49.63	51.15	15.52	52.10
			(22.69)	(29.75)	(25.38)	(31.08)
	1987	2259	54.65	55.67	22.17	47.34
			(24.82)	(31.93)	(30.88)	(34.62)
	1992	9602	49.88	50.58	20.68	42.10
			(25.56)	(32.65)	(28.91)	(35.17)
Belgium	1965	1872	55.94	58.10	20.92	54.34
			(22.11)	(28.68)	(29.09)	(30.42)
Canada	1971	1778	52.66	52.32	19.45	45.11
			(22.42)	(28.64)	(27.83)	(30.40)
	1981	1845	49.94	48.37	25.00	39.42
			(24.78)	(28.77)	(29.01)	(31.03)
	1986	8138	51.02	49.88	25.13	40.92
			(26.31)	(31.53)	(30.41)	(33.81)
	1992	6351	52.37	50.32	26.20	41.79
			(27.96)	(33.28)	(31.72)	(35.61)
Denmark	1964	2365	48.36	50.28	13.90	47.31
			(23.08)	(28.90)	(23.50)	(29.75)
	1987	2389	48.33	48.85	28.88	41.30
			(27.42)	(33.58)	(30.15)	(35.49)
Finland	1979	8307	54.28	47.16	29.36	39.80
			(24.13)	(29.03)	(28.12)	(30.61)
	1987	10 277	50.77	46.87	28.16	38.91
			(25.88)	(30.62)	(29.08)	(32.53)
France	1965	2897	61.92	59.74	22.26	53.69
			(20.93)	(27.78)	(29.79)	(29.93)
	1974	4633	55.51	48.20	20.57	40.09
			(23.06)	(30.03)	(28.24)	(33.01)
Germany (West)	1965	2123	53.31	50.87	16.33	46.90
			(24.80)	(33.58)	(27.56)	(35.62)
Italy	1980	2113	56.99	51.64	17.55	46.35
			(23.60)	(31.09)	(26.74)	(32.71)

A. Western Sample (Continued)

	Year of survey	Number of cases	Total weekly work hours, paid and unpaid		Paid work hours per week	
			female mean (standard deviation)	male mean (standard deviation)	female mean (standard deviation)	male mean (standard deviation)
Netherlands	1975	960	41.95 (12.01)	43.69 (20.34)	7.16 (13.55)	36.02 (21.19)
	1980	1523	41.85 (17.75)	41.51 (18.96)	8.94 (14.71)	33.50 (20.83)
	1985	2348	42.32 (13.55)	45.27 (17.57)	12.15 (17.13)	36.68 (19.98)
Norway	1971	4309	54.79 (22.73)	51.88 (30.41)	16.32 (24.93)	46.17 (32.32)
	1981	3410	51.42 (24.02)	50.19 (30.55)	20.96 (26.94)	41.48 (32.82)
Sweden	1991	6178	50.10 (27.08)	46.06 (32.82)	23.82 (30.12)	33.92 (35.43)
UK	1961	1702	52.79 (13.02)	53.29 (14.98)	18.69 (22.25)	49.48 (17.23)
	1975	1901	48.28 (13.45)	47.87 (15.32)	18.39 (19.05)	43.59 (16.96)
	1985	1996	46.94 (14.28)	45.31 (17.92)	18.69 (19.16)	36.37 (20.37)
US	1965	1790	55.67 (24.04)	59.18 (28.18)	20.09 (28.88)	52.38 (30.87)
	1975	1753	51.07 (25.56)	52.53 (30.60)	21.60 (29.22)	45.96 (32.88)
	1985	2268	52.80 (26.19)	55.28 (31.24)	25.94 (31.18)	45.84 (34.69)
Total		99 137				

B. Eastern European Sample, respondents aged 20-59 years

	Year of survey	Number of cases	Total weekly work hours, paid and unpaid		Paid work hours per week	
			female mean (standard deviation)	male mean (standard deviation)	female mean (standard deviation)	male mean (standard deviation)
Bulgaria	1988	14,834	60.44 (26.75)	50.76 (32.30)	33.43 (32.55)	45.19 (34.07)
Czecho-slovakia	1964	1563	70.09 (23.57)	58.64 (28.57)	33.87 (30.55)	49.55 (30.13)
Germany (East)	1965	1549	68.07 (23.43)	64.75 (30.62)	26.41 (31.56)	54.38 (34.38)
Hungary	1965	1989	73.39 (24.26)	68.01 (29.47)	36.60 (32.48)	61.61 (31.14)
	1977	4663	62.69 (23.31)	54.87 (27.54)	31.22 (27.67)	47.58 (29.40)
Poland	1965	2859	68.11 (24.80)	64.82 (26.48)	33.55 (31.27)	56.77 (28.58)
Yugoslavia	1965	2227	69.54 (25.14)	58.14 (28.66)	31.42 (30.37)	51.69 (29.83)
Total		29 794				

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