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## TRENDS IN TIME ALLOCATION: A CROSS-COUNTRY ANALYSIS

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# TRENDS IN TIME ALLOCATION: A CROSS-COUNTRY ANALYSIS*

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**(Preliminary Draft)**

***Abstract***

*Using detailed time-use data for seven industrialized countries from the 1970s until today we document general decreases in men's market work coupled with increases in men's unpaid work and child care, and increases in women's paid work and child care coupled with decreases in unpaid work. We also find almost universal increases in the time devoted to watching television over this period, and uncover a widespread increase in leisure inequality in favor of lower educated adults. Trends in leisure inequality mirror the general increase in income and earnings inequality experienced in most countries over this period, especially after the mid-1980s. All these findings are consistent with previous results for the US. However, in contrast to the increases in leisure found for the US, we fail to find common trends in leisure time across countries over the period analyzed. By uncovering how individuals allocate their time outside of the market for a wide range of industrialized countries over a long period of time, our results may improve our understanding of the dynamics of economic change and welfare.*

**JEL Classification**: D12, D13, J2

**Keywords**: Time Use Survey, Leisure Inequality

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## 1. INTRODUCTION

It can be argued that the fundamental scarce resource in the economy is time. More importantly, unlike the scarcity of goods, the 24 hours per day time constraint does not relax in a growing economy (Hamermesh and Lee, 2007). Uncovering how individuals allocate their time outside of the market is thus crucial for increasing our understanding of the dynamics of economic change and welfare. Except for some pioneer exceptions (Juster and Stafford, 1985; Kooreman and Kapteyn, 1987; Biddle and Hamermesh, 1990), economists have –perhaps surprisingly- yet to pay serious attention to the use of time other than in the context of labor supply (see Hamermesh and Pfann (2005) for a recent review of the state of the art). The aim of this paper is to address this major omission. We use detailed time-use data for seven developed countries to examine the trends in the allocation of time from the mid-1970s until today, and document how the time devoted to leisure, work, and parental child care has evolved for men and women of different educational attainment.

We find no clear trends in leisure time across countries over the relevant period. We document that leisure increased for men in Australia, Finland and the United Kingdom an average of about 4 hours per week. In France, the Netherlands and Norway men experienced a smooth decline in leisure by an average of almost 5 hours per week. Leisure time remained relatively constant for men in Canada over the relevant period. Changes in leisure were less pronounced for women. Leisure time decreased for women in Canada, the Netherlands, Norway and the UK by 2 hours and 50 minutes per week over the relevant period, and remained constant for Australian and French women. Finland is the only country where women experienced an increase in leisure, by about 6 hours per week, especially during the 1990s.

Whereas increases in unpaid work and child care were mostly financed by declines in paid work for men (with the exception of France and the Netherlands), decreases in unpaid work (and to a lesser extent leisure) financed the increases in the time devoted to paid work and child care for women in all countries (except for Finland). We document almost universal decreases in men's market work (an average of 4 hours and 45 minutes per week), with the exception of France and the Netherlands. Men increased the time devoted to unpaid work and child care activities in all countries by an average of 3 hours and 35 minutes, and 1 hour per week (even in countries where leisure also increased). Women increased the time devoted to paid work in almost all countries, by an average of 6 hours and 35 minutes, and decreased the time devoted to unpaid work (by 5 hours and 45 minutes per week on average). Child care increased in most countries for women (by an average of 1 hour and 20 minutes per week), with the exception of Canada and the Netherlands where child care time remained constant over the analyzed period.

There are substantial increases in the time spent watching television in most countries, with an overall increase of over 2 hours per week for men and women. The only exceptions to this increasing trend are men in the Netherlands, and women in Australia, the Netherlands and the UK. Men and women also increased the time devoted to sports by about 1 hour and 20 minutes per week in all countries. With few exceptions, the time spent sleeping also increased, by 1 hour and 45 minutes per week for men, and 2 hours and 5 minutes per week for women. In most countries, men decreased the time spent reading (by 1 hour and 25 minutes per week), eating (by 2 hours per week), and the time devoted to personal care activities (by an average of 1 hour and 55 minutes per week). Women also spent 2 hours per week less eating by the end of the period in most countries, with the exception of France where time devoted to eating increased by 1 hour, and less time reading (1 hour and 5 minutes per week).

We also show a growing inequality in leisure in favor of less educated adults in all countries. We look at two different moments of the leisure distribution, the Gini Index for leisure and the ratio of the $90^{th}$ percentile and the $10^{th}$ percentile of leisure. Both measures seem to suggest that inequality steadily increased in most countries over the relevant period. We also explore trends in leisure inequality by educational status, with low educated adults having increased (decreased) their leisure to a greater (lesser) extent than highly educated adults. In turn, the spread in the leisure distribution resulted in less educated men and women experiencing a relative gain in leisure with respect to highly educated adults in most countries.

Most of the divergence in leisure time for both men and women across educational groups is concentrated in the middle of the period, particularly in the 1980s and 1990s, which coincides with the well-documented change in wages and consumption between education groups during recent decades in these countries. Differences in leisure across the education distribution are due primarily to differences in paid work, which increased (decreased) more (less) for highly educated adults. Among leisure activities, socializing stands out as the factor explaining the divergence in leisure between educational groups. Although the time spent socializing decreased in some countries and increased in others, it seems that in those countries where the time spent in socializing activities increased, it increased more for high-school drop outs, and in those countries where the time spent socializing decreased, it decreased more for individuals with at least some college.

By studying several countries over a long period of time our work crucially adds to the study of trends in the allocation of time in the US, including the most recent work by Aguiar and Hurst's (Aguiar and Hurst 2007, 2009), and previous notable research such as Ghez and Becker (1975), Juster and Stafford (1985), and Robinson and Godbey (1999). Specifically, we are able to improve our understanding of how changes in the allocation of time experienced in the

United States compares to changes in a broad group of other industrialized economies. In contrast to the previously reported increases in leisure for the US, we fail to find any uniform trend in leisure time for men and women across the countries in our sample. As in the US however, we document decreases in men's market work coupled with increases in men's unpaid work and child care, and increases in women's paid work and child care coupled with decreases in unpaid work for most countries. We also find almost universal increases in the time devoted to watching television over this period, and uncover a widespread increase in leisure inequality over the period that closely resembles the evidence reported by Aguiar and Hurst (2007) for the US. Our paper also expands recent cross-country studies such as Burda, Hammermesh and Weil (2008), Gershuny (2009a), Hook (2006), and Gauthier, Smeeding, and Furstenberg (2004) among others. These studies generally use earlier data to document changes in the use of time for a variety of developed economies from the early and mid-1970s until the mid-1990s. Our paper analyses a greater number of countries over a longer time period, and extends these cross-country comparisons by additionally documenting for the first time a generalized growing dispersion in leisure.

The remainder of the paper is organized as follows. Section 2 describes the data and the variables used in the analysis. Section 3 shows trends in time allocation decisions of individuals from the selected countries. Section 4 shows how leisure inequality has evolved over the period. Section 5 sets out the main conclusions.

## 2. DATA AND VARIABLES

We examine diary data since the 1970s for the following industrialized countries (corresponding sample years in parentheses): Australia (1974-1982-1992-1997), Canada (1971-1981-1986-1992-1998), Finland (1979-1987-1999), France (1974-1998), the Netherlands (1975-1980-1985-1990-1995-2000-2005), Norway (1971-1981-1990-2000), and the UK (1975-1983-1987-1995-2000). Our choice of countries and time periods is based on the availability of data based on 24-hour time diaries, a restriction that facilitates the comparison of time use patterns across countries. A diary is completed by respondents on selected days, and is divided into intervals where the respondent records a main activity (and other features depending on the survey such as the secondary activity carried out simultaneously with the primary activity, whether the activity was performed in the company of a child, another member of the household, or another adult, and where the activity took place).[1] An extensive literature

[1] Some of our data come from the Multinational Time Use Study (MTUS), an ex-post harmonized cross-time, cross-national comparative time-use database, constructed from national random-sampled time-diary studies (http://www.timeuse.org/mtus). The MTUS aggregates daily 'primary activity' in 40 time use categories (and an

confirms the reliability and validity of diary data and their superiority over other time-use surveys based on stylized questions, asking respondents to estimate time in activities on a 'typical day' (e.g., Robinson and Godbey 1985; Juster and Stafford 1985). In the labor supply literature for example, Klevmarken (2005) argues that information on actual hours of work from time-use surveys are more relevant than normal hours or contracted hours generally reported in stylized questions. He shows that time-use data yields much smaller estimates of wage rate effects compared to measures of normal hours of work, which may have important implications for tax policy design among others.

Although the classification of time-use activities changes over time and across countries, and some activities disappear and new activities emerge (just as in the case of expenditure diary categories in expenditure surveys), our broad classification of activities into leisure, paid work, unpaid work and child care provides a good basis to run meaningful comparisons over time and across countries. We acknowledge that the time use surveys were conducted in a variety of different manners across the different countries and that comparing the exact amount of time spent in different activities across countries becomes more problematic when finer classifications of time use categories are considered, as the exact classification of activities may have changed across countries and over time. This is particularly the case when comparing leisure activities. As noted by Aguiar and Hurst (2007), some of these patterns compare highly and low educated individuals, which relies on within survey variation and is thus not subject to the concern that these surveys are not literally comparable.

For the sake of comparison with previous studies (e.g., Aguiar and Hurst 2007), and to minimize the role of time allocation decisions that have a strong inter-temporal component over the life cycle, such as education and retirement, we restrict the sample used throughout the analysis to non-retired/non-student individuals between the ages of 21 and 65 (inclusive), so results should be interpreted as being 'per working-age adult'. We also use the demographic weighting as proposed by Katz and Murphy (1992) to ensure a constant representation of types of individuals and days of the week. Appendix B gives a detailed description of how demographic weights are computed for each country.

The conceptualization of time use categories is usually driven by a systematic, principle-driven approach of distinguishing *means vs. ends*. The so-called *third person criterion* for example, excludes from the definition of leisure any activity that might be carried out by some

additional category for missing time), with approximately 30 standardized demographic variables. We have harmonized these surveys to the standard time use and demographic variables included in the MTUS. All the surveys provide weights designed to ensure that the surveys are nationally representative. Table A1 in Appendix A shows the countries and surveys we use in our analysis, and gives the total (unweighted) numbers of diary evidence available in for each country and survey.

third party without losing the intended utility for the final consumer. Unfortunately, the third person criterion involves questionable assumptions such that the enjoyment derived from work can legitimately be ignored, and that all leisure is enjoyable. However, one quarter of time that would be considered leisure according to the conventional implementation of the *third person criterion*, and one third of what would conventionally be considered work, is unexpectedly placed by the diarists (Gershuny 2009b). Certain activities, such as sleeping, eating, personal and medical care, or resting, do not fall comfortably into the *means vs. ends* classification. These activities cannot be purchased in the market, but they may not be considered leisure in the sense that they are necessary for life. Nonetheless, some variation in the time spent in these activities may result from conscious choice. Biddle and Hamermesh (1990) show that sleep time responds to economic incentives such as the wage. Decreasing marginal utility of sleep (and of other consumption activities) is indeed shown by Gershuny (2009b) using (subsequent) diary reports of enjoyment. Similarly, many of the tasks constituting child care can be purchased in the market, so it could be conceptualized as a part of unpaid production (e.g., Guryan, Hurst and Kearney 2008; Aguiar and Hurst 2007; Fisher et al. 2007). However, parents report that the time with their children is among their more enjoyable activities, especially when compared with other standard home production activities (e.g., Guryan, Hurst and Kearney 2008, Krueger 2007; Kahneman and Krueger 2006; Kahneman et al. 2004; Robinson and Godbey 1985; Juster and Stafford 1985).

Rather than trying to resolve this debate on theoretical grounds, we adopt an empirical approach, and follow Aguiar and Hurst (2007) in the definition of time use categories. According to these authors, we consider the following categories (see Appendix A Table A for an overview of the activities included in our definition of activities):

*Paid work* includes all time spent working in the paid sector on main jobs, second jobs, and overtime, including any time spent working at home, plus time spent commuting to/from work.

*Unpaid work* includes any time spent on meal preparation and cleanup, doing laundry, ironing, dusting, vacuuming, indoor household cleaning, indoor design and maintenance (including painting and decorating), time spent obtaining goods and services (i.e., grocery shopping, shopping for other household items, comparison shopping), and time spent on other home production such as home maintenance, outdoor cleaning, and vehicle repair.

*Child care* includes all the time devoted to child care as primary activity (e.g., feeding and food preparation for babies and children; washing, changing babies and children; putting children and babies to bed or getting them up; babysitting; medical care of babies and children;

reading to, or playing with babies and children; helping children with homework; supervising children).[2]

*Leisure* includes activities such as watching television, sports, general out-of-home leisure, gardening and pet care, and socializing, and coincides with the definition of *Leisure Measure 2* in Aguiar and Hurst (2007).[3] Results are consistent to the use of other alternative measures of leisure (see Appendix C for a description of these results).

## 3. TRENDS IN TIME USE

### 3.1. General Changes in Time Allocation

Tables 1 and 2 show the trends in the time devoted to *leisure* (Panel A), *paid work* (Panel B), *unpaid work* (Panel C), and *child care* (Panel 4) for both men and women, respectively.

Leisure evolved differently for men in different countries. Leisure increased for men in Australia, Finland, and the United Kingdom, while in France, the Netherlands and Norway men experienced a decline in leisure. Leisure ranged between 103 and 114 hours per week in the 1970s, and between 105 and 117 hours per week by the end of the period. In Australia, Finland and the United Kingdom, leisure increased an average of about 4 hours per week over the relevant period, especially in the 1990s. In France, the Netherlands, and Norway men experienced a relatively smooth decline in leisure by an average of almost 5 hours per week over the relevant period. In Canada, leisure remained relatively constant. Changes in leisure have been mostly concentrated on the 1990s and 2000s, while the 1970s and 1980s were periods of relative stability.

Decreases in paid work and to a lesser extent in leisure time financed the increases in unpaid work and child care for men in most countries. Men increased the time devoted to unpaid work and child care activities in all countries, even in countries where leisure also increased. The time devoted to unpaid work was between 8 and 15 hours per week in the 1970s, and between 12 and 17 hours per week by the end of the period.[4] The time spent on child care activities also

[2] There is a concern however that child care reported as primary activity significantly underestimates total child care time (e.g., Budig and Folbre 2004; Folbre and Bittman 2004; Bianchi 2000), as it does not take into account other time that parents spend supervising children. We acknowledge that our results rely on this simpler definition of child care.

[3] Fahr (2005) includes reading journals and newspapers as "informal education", although describes such activities as "part of daily leisure time" as we do.

[4] It is beyond the aim of this paper to assess the channels behind the patterns of time use documented here. See Jacobsen and Kapteyn (2005) for an interesting exercise using Dutch data between 1995 and 2005. They show that a change in shopping hours regulations not only had a positive effect on the total time devoted to shopping, but also on the time devoted to paid work .

increased over the relevant period in all countries, although to a lesser extent than unpaid work, ranging between 0.5 and 2 hours per week at the beginning of the period, and between 2 and 3 and a half hour by the end of the period. Increases in unpaid work and child care were mostly financed by declines in paid work. Paid work declined for men an average of 7 hours and 30 minutes per week (with the exceptions of France and the Netherlands where men experienced an increase of 1 hour and 30 minutes, and 4 hours per week, respectively). Greater decreases in leisure made it still possible for men to devote more time to unpaid work and child care in these countries. Paid work ranged between 39 and 53 hours per week at the beginning of the period, to a range of between 31 and 44 hours per week by the end of the period. There seems to be some convergence in the case of paid work, whereby countries where men had a relatively high number of paid work hours (such as Australia and the UK) experienced the greater declines in paid work hours, whereas in countries with lower levels of paid work at the beginning of the period experienced a lower decline.

Leisure decreased for women in Canada from the mid 1970s to the 1990s by 2 hours per week, and in the Netherlands, Norway and the UK to the mid 2000s on average by 3 hours per week. The decline in leisure is concentrated in the 1990s for Canada and the UK, while for Norway and the Netherlands we find a smooth decline. Leisure remained constant for Australian and French women. Finland is the only country where leisure increased by about 6 hours per week between the 1970s and the 1990s, especially during the 1990s.

Women increased the time devoted to child care and decreased the time devoted to unpaid work in all countries. Child care ranged between 2 hours and 30 minutes and 7 hours per week week in the 1970s, and between 5 and 9 hours per week by the end of the period. Similarly, unpaid work ranged between 29 hours and 37 hours and 30 minutes per week in the 1970s, and between 24 and 31 hours per week by the end of the period. Time devoted to paid work also increased in all countries by an average of 6 hours and 35 minutes per week, except for Finland where paid work declined over the relevant period by 5 hours and 15 minutes per week.[5] Decreases in unpaid work and leisure financed the increases in the time devoted to paid work and child care in all countries except for Finland. In Canada, the Netherlands, Norway, and the UK, where leisure decreased by 2 hours and 50 minutes per week, the time devoted to paid work and child care increased by 8 hours and 30 minutes, and 1 hour and 15 minutes per week, respectively, while the time devoted to unpaid work decreased by 7 hours and 15 minutes. In Australia and France, where leisure remained constant over this period, the increase in the time devoted to paid work (2 hours and 50 minutes per week) and child care (1 hour and 15 minutes

[5] Finland is the country where women had the highest number of hours devoted to paid work at the beginning of the period.

per week) was entirely financed by the decrease in unpaid work (4 hours and 15 minutes per week). In Finland, the only country with increases in leisure for women, decreases in paid work (5 hours and 15 minutes per week) and unpaid work (2 hours and 50 minutes per week) financed the increases in the time devoted to child care (1 hour and 50 minutes per week) and leisure (6 hours and 5 minutes per week).[6]

Table 3 shows changes in the time devoted to different leisure activities for men (Panel A) and women (Panel B).[7] Based on Aguiar and Hurst (2007), we consider the following activity groups: TV watching, sleep (which includes taking naps and sleeping at night), personal care (such as dressing up and grooming activities), gardening and pet care, sports and physical activities (such as walking, hunting, fishing, cycling, weightlifting), eating, reading (magazines, newspapers, etc), socializing (such as visiting friends and having friends over, parties, receptions, restaurants, talking by phone with friends etc), and 'other activities' (e.g., relax, do nothing, gambling, playing an instrument, listen to radio, cinema or theatre).

We show increases in the time spent watching television in most countries with an overall increase of over 3 hours per week for men and women. The only exceptions to this increasing trend are men in the Netherlands, and women in Australia, the Netherlands and the UK. Men and women also increased the time devoted to sports by about 1 hour and 20 minutes in all countries, while the time spent sleeping increased by 1 hour and 45 minutes per week for men, and 2 hours and 5 minutes per week for women in all countries, with the exception of Norway. There is no clear convergence in the cross-country trends for socializing time for either men or women over the relevant period. Men and women experienced a decrease in the time spent eating in all countries by an average of 2 hours per week, with the exception of France where the time devoted to eating increased for both men and women. Men decreased the time spent in reading (by 1 hour and 25 minutes per week, excluding the UK), and personal care (by 1 hour and 55 minutes per week on average, except for Australia and the Netherlands), and women decreased the time spent reading (by 1 hour and 5 minutes per week on average in Australia, France, the Netherlands and the US).

## 4. LEISURE INEQUALITY

[6] Aguiar and Hurst (2007) and some other authors have noted that the increase in the time devoted to parental child care time in the US, especially in recent decades, may be due to changes in survey methodology (e.g., Bianchi 2000; Ramey and Francis 2006; Guryan, Hurst, and Kearney 2008). We document generalized parental time increases in most countries, which suggest that US patterns may be not an artifact of the data, but rather part of a more general trend.

[7] A p-value lower than 0.05 means that the change has been statistically significant at the 95% level. Table A3 in Appendix shows the activities included in each component of leisure according to the MTUS classification.

The previous section has documented trends in leisure over the last decades. In this section we consider how the entire leisure distribution has evolved to shed some light onto leisure inequality trends.[8] We first look at two different moments of the leisure distribution: the Gini index for leisure and the ratio of the 90th percentile and the 10th percentile of leisure, for each country and decade. We also analyze the extent to which leisure has become more unequal between education groups.

Columns (1) to (5) in Panel A and B of Table 4 shows the Gini index for leisure (multiplied by 100) and the ratio of the 90th percentile and the 10th percentile of leisure. The Gini Index ranges from 0 to 100. A low Gini index indicates a more disperse leisure distribution, with 0 corresponding to complete equality (e.g., all the individuals have the same amount of leisure), and 100 corresponding to complete inequality. According to both measures, the dispersion of the distribution of leisure steadily increased in all countries over the relevant period, which means that adults with the highest level of leisure at the beginning of the period increased their relative leisure time compared to adults with the lowest level of leisure time at the beginning of the period. The Netherlands and Canada are the countries that experienced the greatest increase in the dispersion of the leisure distribution. In the Netherlands, the increase in the Gini index was 7.15, and the increase in the 90th to 10th percentile ratio was 0.60, which correspond to an increase in the difference of leisure time favoring the 90th percentile of 40 hours per week between the 1970s and the 2000s (i.e., from 101.50 and 133.25 hours per week for the $10^{th}$ and $90^{th}$ percentile in the 1970s, to 78.75 and 150.5 hours per week for the $10^{th}$ and $90^{th}$ percentile in the 2000s, respectively). In Canada, the corresponding increases were 2.50 for the Gini index and 0.27 for the 90 to 10 percentile ratio, which corresponds to an increase in the difference of leisure time favoring the 90th percentile of 14 hours per week between the 1970s and the 1990s (i.e., i.e., from 78.12 and 141.75 hours per week for the $10^{th}$ and $90^{th}$ percentile in the 1970s, to 71.75 and 149.33 hours per week for the $10^{th}$ and $90^{th}$ percentile in the 1990s, respectively). France and Finland are the countries that experienced the smallest increases in the dispersion of the leisure distribution. The Gini index increased 0.29 in France, and 0.70 in Finland, whereas the 90 to 10 percentile increased by .01 in France (i.e., an increase in the difference of leisure time over the analyzed period favoring the 90th percentile of 45 minutes), and .07 in Finland (i.e., an increase favoring the 90th percentile of 5 hours and 50 minutes per week).

[8] Other authors have used other forms of leisure to complement income inequality measures. For example, Sevilla-Sanz, Gimenez Nadal, and Gershuny (forthcoming) look at the fragmentation of leisure in the US for the period 1965-2003 and report that while highly educated men have experienced a more favorable trend in leisure fragmentation than low educated men, highly educated women have experienced a less favorable trend in leisure fragmentation than their low educated counterparts. In a similar vein, Hamermesh (2005) finds that higher household incomes enable people to purchase more temporal variety, which influences individual well-being since temporal routine is boring and undesirable.

The greater dispersion in the leisure distribution documented in Table 4 coincides with the greater dispersion in income and earnings documented for most countries over this period. [9] Columns (1) to (5) in Panel A and B of Table 5 show the Gini Index for income (multiplied by 100) and the 90$^{th}$ to 10$^{th}$ percentile ratio for earnings, for each country and decade.[10] According to both indicators, the dispersion in the income and earnings distributions increased in all countries, with the exception of Finland and France which, as in the case of leisure, show the smallest increase in the dispersion of the income and earnings the distributions according to the Gini index and a decrease in the dispersion of the distributions according to the 90 to 10 percentile ratio.

Table 6 reports the demographically adjusted time spent in leisure for men and women, broken down by educational attainment. We use three harmonized education categories: less than high school diploma (<12 years of schooling), high school diploma (12 years of schooling), and some college or more (>12 years of schooling). We focus on differences in leisure time between individuals with less than high school (low educated individuals), and individuals with some college/college graduates (highly-educated individuals).

In most countries except for Norway, differences in the change of leisure time between low and highly educated adults increased over this period in favour of the less educated. In the United Kingdom leisure increased relatively more for men with less than a high school degree (by about 4 hours per week) relatively to men with some college or more (who experienced increases of half an hour per week). Similar trends are found in Australia and Finland, although these trends across educational groups are not significantly different from each other. In the Netherlands – where leisure decreased— leisure decreased relatively more for highly educated men (by 7 hours and 30 minutes per week) than for high school drop outs (by 2 hours and 40 minutes per week). Men with less than a high school diploma in Canada and France experienced an increase in leisure, while men with some college or more experienced a decrease in leisure. In Norway leisure decreased for both educational groups, albeit more for men with less than a high school diploma (these trends are however not significantly different from each other at standard significant levels). Women with less than a high school diploma in Canada, France and Norway experienced an increase in leisure, while women with some college or more

[9] These results are consistent with those in the literature (see Atkinson (2008), Acemoglu (2003), Alderson and Nielsen (2002), Atkinson and Brandolini (2001), Gustafsson and Johansson (1999), and Gottschalk and Smeeding (1997) for cross-country comparisons of income inequality in OECD countries over this period).

[10] We take the Gini Index for income from the 'University of Texas Inequality Project', based on the World Bank Dataset (www.worldbank.org). Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from the Luxembourg Income Study database. We calculate the 90 to 10 earnings percentile ratio using the 90 and 10 earnings percentiles from the OECD Earnings database (stats.oecd.org). The ninth and first deciles are upper-earnings decile limits, unless otherwise indicated, of gross earnings of full-time dependent employees.

experienced a decrease in leisure. In the Netherlands – where leisure decreased— leisure decreased relatively more for highly educated women (by 5 hours and 45 minutes per week) than for high school drop outs (2 hours per week). In Australia, Finland and the United Kingdom the difference in the changes over the period between the two educational groups is not statistically significant, although the figures indicate relative gains of leisure for less educated women in Australia and the United Kingdom.

The widespread increase in leisure inequality favoring the less educated documented in Table 6 mirrors the general increase in income and earnings inequality favoring highly-educated individuals experienced in most countries over this period, especially after the 1980s. As reported by Aguiar and Hurst (2007), who document that the timing of the changing inequality in leisure across education groups coincided with the timing of the changing inequality in wages and consumption for the case of the United States. Table 6 shows that most of the divergence in leisure time for both men and women is concentrated in the middle of the period, particularly in the 1980s and 1990s, and coincides with the well-documented change in wages and consumption between education groups in these countries in recent decades.[11] In contrast to income inequality however, which favored highly educated individuals, the increase in leisure inequality favored the less educated.

Tables 7 to 9 show the drivers behind the increase in the education gap in leisure time over this period. Table 7 shows that the divergence in leisure for both men and women is due primarily to differences in paid work. In most countries, paid work hours fell by a much greater degree for less-educated men (8 hours and 15 minutes per week on average) than for highly-educated men (2 hours and 50 minutes per week on average). In fact, paid work hours increased for men with some college or more in France (1 hour and 45 minutes per week), and the Netherlands (4 hours and 35 minutes per week). For women however, high school dropouts experienced an increase of 50 minutes per week on average in paid work, whereas women with some college or more experienced a much greater increase (of 5 hours per week on average). The only exceptions to this trend are men and women in Norway, men in Australia and Finland, and women in Canada.[12]

[11] See Freeman and Katz (1995), and Katz and Autor (1999) for a cross-country comparison of the college wage premium over this period. For more country-specific account, see Boudarbat et al. (2010) and Brzozowski et al. (2009) for Canada, Eriksson and Jäntii (1997) for Finland, Katz and Autor (1999) and Freeman and Katz (1995) for France and the Netherlands, Hægeland et al. (1999) for Norway, and Machin (1997) and Gosling, Machin and Meghir (2000) for the UK.

[12] The relative gains in leisure time for individuals with less than a high school diploma continues to hold even after conditioning on employment. Tables D1 and D2 in Appendix D show that the same differential trends are observed among working individuals, which suggests that the relative gains in leisure for the less educated is not a result of these individuals opting out of the labor market, and may reflect heterogeneity in preferences as well as exogenous market forces..

Despite overall increases in child care over the male education distribution, neither child care nor unpaid work contributed to the divergence across education groups in leisure for men. Child care increased more for men with some college or more than for high school dropouts in most countries, although only for the United Kingdom such difference is statistically significant at the 95% level. Similarly, changes in unpaid work for less and highly educated men were not statistically significant different from each other. Unpaid work increased relatively more for men with some college or more in Finland (a difference of 2 hours and 45 minutes per week favouring the highly educated men), and increased less in the Netherlands and the UK (by an average of 4 hours and 45 minutes per week for the highly-educated versus 7 hours and 20 minutes per week for less-educated men).

The variation of child care and unpaid work time across education groups over this period is much more uniform across countries for women than for men. Highly-educated women in Canada, Norway and the UK experienced an increase in child care time of 1 hour and 50 minutes per week on average, versus just 30 minutes per week for less-educated women (less educated women in Norway actually decreased child care time by 1 hours and 25 minutes per week). In contrast, in Australia, Finland and France women with some college or more experienced a smaller increase (or even a decrease) in child care time (increase of 2 hours per week on average) with respect to less-educated women (who experienced an increase of 5 minutes per week on average), although differential trends are not significantly different. Unpaid work time decreased relatively more for women with some college or more in Australia, the Netherlands and the United Kingdom (by an average of 8 hours and 15 minutes per week for the highly-educated versus 1 hour and 55 minutes per week for less-educated women). In Canada and Norway, unpaid work decreased less for highly educated women (by an average of 2 hours and 15 minutes per week for the highly-educated versus 5 hours and 30 minutes per week for less-educated women). In Finland unpaid work increased for women with less than a high school diploma, while it increased for highly educated women.

Tables 10 and 11 explore how the time devoted to different leisure activities has evolved for individuals with different educational attainment. There are not many common patterns between educational groups in the evolution of the time spent in different leisure activities across countries. The only activity that stands out is socializing. Although the time spent socializing decreased in some countries and increased in others, it seems that in those countries where the time spent in socializing activities increased, it increased more for high-school drop outs, and in those countries where the time spent socializing decreased, it decreased more for individuals with at least some college. To the extent that spending leisure time socializing with other adults is more pleasurable than other leisure activities (Sevilla-Sanz, Gimenez-Nadal and Gershuny

2011; Kahneman et al. 2004; Robinson and Godbey 1999), college educated individuals may have not only decreased the quantity of leisure time with respect to less educated adults, but also their quality may have relatively suffered. Unlike in the United States, where low educated individuals experienced a relative increase in the time spent watching television, there are no clear patterns in the differences between educational groups with respect to the time spent watching television, especially for men. In Australia, Norway, and the United Kingdom highly educated men and women experienced an increase of 2 hours on average on the amount of time spent watching television, whereas men and women with less than a high school qualification experienced a lower increase of 1 hour and 10 minutes per week. In contrast, the increase in the time spent watching television was greater for high school drop-outs than for adults with some college degree or more in Canada, Finland and France.

## 5. CONCLUSIONS

This paper has first looked at the trends in the allocation of time from the1970s until today for seven industrialized countries. Men and women devote a considerable amount of time to household production activities and child care. Moreover, the time devoted to these activities has substantially changed over the years. Men increased the time spent in household chores, whereas women decreased the time devoted to unpaid home activities, and both increased the time spent caring for children in most countries over the period. Increases in unpaid labor were mostly financed by declines in paid work for men, whereas declines in unpaid work (and to a lesser extent leisure) financed the increase in the time devoted to paid work and child care for women. As noted by Aguiar and Hurst for the US (2005), our findings contrast with the usual practice of conceptualizing leisure as time away from market work, and suggest that a more thorough consideration of the range of activities individuals engage in may have important implications of our understanding of labor supply decisions.

In contrast to the documented increase in leisure in the US over the same period, we show that there is no clear convergence in leisure trends for men and women across our sample of industrialized countries. In line with US findings, however, we also document an increase in the dispersion in the leisure distribution in all countries, especially after the 1980s. Similarly, leisure time increased relatively more for high school drop outs relatively to adults with some college or more in those countries where leisure increased, and decreased relatively less in those countries where leisure decreased. The increase in leisure inequality in favour of less educated adults is due primarily to differences in paid work, and it mirrors the general increase in income and earnings inequality experienced in most countries over this period. Thus, unlike what

happened in the US, the cross-sectional and time series evidence presented in this paper suggest that, for the most part, higher incomes have become increasingly associated with less leisure time.

The universal increases in leisure inequality found here crucially inform a recent broadening of focus from production to the measurement of well-being. Stiglitz, Sen and Fitoussi (2009) among others have recently proposed a broad range of measures of household economic activity to evaluate quality of life, including time spent in leisure activities. To the extent that leisure time has value, the evidence presented in this paper may provide a promising line of research for understanding income inequality and for interpreting the decline in relative wages and consumption that has been documented in most countries in light of the simultaneous relative growth of leisure for the less educated.

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**Table 1. Trends in *leisure, paid work, unpaid work,* and *child care* (men)**

| Time-use category (hours per week) | DECADE 70's | DECADE 80's | DECADE 90's | DECADE 00's | Diff. | P-Value |
|---|---|---|---|---|---|---|
| **Panel A: Leisure** | | | | | | |
| **Australia** | 103.45 | 103.50 | 106.60 | - | 3.15 | (0.02) |
| **Canada** | 105.45 | 106.51 | 105.68 | - | 0.23 | (0.78) |
| **Finland** | 111.61 | 111.13 | 117.79 | - | 6.19 | (<0.01) |
| **France** | 114.09 | - | 110.12 | - | -3.97 | (<0.01) |
| **The Netherlands** | 114.15 | 112.79 | 108.53 | 106.47 | -7.68 | (<0.01) |
| **Norway** | 108.35 | 109.81 | 107.79 | 105.46 | -2.89 | (<0.01) |
| **The United Kingdom** | 111.59 | 113.52 | 116.12 | 114.54 | 2.95 | (<0.01) |
| **Panel B: Paid work** | | | | | | |
| **Australia** | 53.01 | 50.16 | 43.95 | - | -9.06 | (<0.01) |
| **Canada** | 47.39 | 44.48 | 44.06 | - | -3.33 | (<0.01) |
| **Finland** | 39.46 | 39.29 | 30.83 | - | -8.62 | (<0.01) |
| **France** | 40.44 | - | 41.94 | - | 1.50 | (0.08) |
| **The Netherlands** | 39.37 | 38.25 | 41.91 | 43.36 | 3.98 | (<0.01) |
| **Norway** | 45.36 | 42.08 | 41.80 | 40.76 | -4.60 | (<0.01) |
| **The United Kingdom** | 47.14 | 38.30 | 37.10 | 34.05 | -13.10 | (<0.01) |
| **Panel C: Unpaid work** | | | | | | |
| **Australia** | 9.61 | 11.40 | 13.40 | - | 3.79 | (<0.01) |
| **Canada** | 12.30 | 13.79 | 14.29 | - | 1.99 | (<0.01) |
| **Finland** | 14.50 | 15.43 | 16.06 | - | 1.56 | (<0.01) |
| **France** | 11.48 | - | 12.62 | - | 1.14 | (<0.01) |
| **The Netherlands** | 10.39 | 12.95 | 13.32 | 13.33 | 2.94 | (<0.01) |
| **Norway** | 11.47 | 12.28 | 14.38 | 16.75 | 5.28 | (<0.01) |
| **The United Kingdom** | 7.65 | 13.69 | 10.83 | 16.15 | 8.50 | (<0.01) |
| **Panel D: Child Care** | | | | | | |
| **Australia** | 1.52 | 2.12 | 2.44 | - | 0.92 | (<0.01) |
| **Canada** | 1.64 | 2.07 | 2.82 | - | 1.18 | (<0.01) |
| **Finland** | 1.02 | 1.09 | 1.96 | - | 0.94 | (<0.01) |
| **France** | 1.45 | - | 1.91 | - | 0.46 | (<0.01) |
| **The Netherlands** | 2.05 | 2.19 | 2.66 | 2.71 | 0.66 | (<0.01) |
| **Norway** | 1.77 | 2.73 | 3.13 | 3.34 | 1.57 | (<0.01) |
| **The United Kingdom** | 0.67 | 1.67 | 2.70 | 2.11 | 1.44 | (<0.01) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure, paid work, unpaid work* and *child care* are measured in hours per week, see Table Appendix A2 for definitions of time-use categories. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France.

**Table 2. Trends in *leisure, paid work, unpaid work,* and *child care* (women)**

| Time-use category (hours per week) | DECADE 70's | DECADE 80's | DECADE 90's | DECADE 00's | Diff. | P-Value |
|---|---|---|---|---|---|---|
| **Panel A: Leisure** | | | | | | |
| **Australia** | 110.90 | 109.09 | 109.38 | - | -1.52 | (0.13) |
| **Canada** | 107.25 | 107.47 | 105.16 | - | -2.08 | (<0.01) |
| **Finland** | 107.43 | 109.21 | 113.54 | - | 6.11 | (<0.01) |
| **France** | 106.81 | - | 107.28 | - | 0.47 | (0.39) |
| **The Netherlands** | 118.71 | 116.33 | 114.90 | 113.47 | -5.24 | (<0.01) |
| **Norway** | 108.81 | 110.80 | 109.09 | 107.32 | -1.49 | (0.02) |
| **The United Kingdom** | 115.25 | 114.87 | 112.18 | 112.79 | -2.46 | (<0.01) |
| **Panel B: Paid work** | | | | | | |
| **Australia** | 14.52 | 18.04 | 18.02 | - | 3.50 | (<0.01) |
| **Canada** | 19.40 | 25.46 | 28.30 | - | 8.90 | (<0.01) |
| **Finland** | 27.52 | 27.07 | 22.27 | - | -5.26 | (<0.01) |
| **France** | 19.96 | - | 22.15 | - | 2.18 | (<0.01) |
| **The Netherlands** | 6.15 | 9.26 | 14.85 | 18.51 | 12.36 | (<0.01) |
| **Norway** | 14.51 | 19.92 | 24.28 | 26.13 | 11.62 | (<0.01) |
| **The United Kingdom** | 18.06 | 15.42 | 20.88 | 19.26 | 1.20 | (0.04) |
| **Panel C: Unpaid work** | | | | | | |
| **Australia** | 35.26 | 31.78 | 30.84 | - | -4.42 | (<0.01) |
| **Canada** | 32.83 | 27.45 | 26.11 | - | -6.71 | (<0.01) |
| **Finland** | 28.92 | 26.99 | 26.10 | - | -2.82 | (<0.01) |
| **France** | 34.98 | - | 30.98 | - | -4.00 | (<0.01) |
| **The Netherlands** | 35.65 | 34.31 | 30.19 | 28.25 | -7.40 | (<0.01) |
| **Norway** | 37.45 | 29.43 | 25.60 | 24.15 | -13.30 | (<0.01) |
| **The United Kingdom** | 30.75 | 31.40 | 24.78 | 29.19 | -1.56 | (<0.01) |
| **Panel D: Child Care** | | | | | | |
| **Australia** | 5.96 | 8.16 | 7.76 | - | 1.80 | (<0.01) |
| **Canada** | 7.10 | 6.17 | 6.94 | - | -0.16 | (0.55) |
| **Finland** | 3.11 | 3.68 | 4.99 | - | 1.88 | (<0.01) |
| **France** | 5.84 | - | 6.51 | - | 0.67 | (<0.01) |
| **The Netherlands** | 5.89 | 6.35 | 6.37 | 5.61 | -0.27 | (0.24) |
| **Norway** | 6.53 | 6.97 | 8.19 | 9.31 | 2.78 | (<0.01) |
| **The United Kingdom** | 2.63 | 5.29 | 7.77 | 5.18 | 2.55 | (<0.01) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure, paid work, unpaid work* and *child care* are measured in hours per week, see Table Appendix A2 for definitions of time use variables. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France.

**Table 3. Change in the time devoted to *leisure* activities (men and women)**

| Leisure (hours per week) | Total Leisure | TV Watching | Reading | Eating | Socializing | Sports | Sleeping | Personal Care | Gardening | Other Activities |
|---|---|---|---|---|---|---|---|---|---|---|
| **Panel A: Men** | | | | | | | | | | |
| **Australia** | 3.15 | 1.19 | -0.83 | -1.61 | 1.07 | 1.83 | 1.45 | 0.69 | 0.43 | -1.08 |
| | (0.02) | (0.04) | (0.00) | (0.00) | (0.08) | (0.00) | (0.01) | (0.00) | (0.08) | (0.07) |
| **Canada** | 0.23 | 1.81 | -1.02 | -2.58 | 2.35 | 2.29 | 0.69 | -2.95 | 1.05 | -1.42 |
| | (0.78) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.07) | (0.00) | (0.00) | (0.00) |
| **Finland** | 6.19 | 7.00 | -1.50 | -3.24 | 1.14 | 0.85 | 1.78 | -0.24 | 1.27 | -0.88 |
| | (<0.01) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.04) | (0.00) | (0.01) |
| **France** | -3.97 | 3.90 | -1.41 | 0.29 | -2.80 | 0.92 | 1.31 | -3.98 | 0.04 | -2.22 |
| | (<0.01) | (0.00) | (0.00) | (0.08) | (0.00) | (0.00) | (0.00) | (0.00) | (0.73) | (0.00) |
| **The Netherlands** | -7.68 | -1.16 | -2.56 | -0.93 | -2.81 | 0.24 | 0.01 | -0.61 | -0.38 | 0.53 |
| | (<0.01) | (0.00) | (0.00) | (0.00) | (0.00) | (0.13) | (0.99) | (0.24) | (0.00) | (0.08) |
| **Norway** | -2.89 | 4.95 | -0.73 | -2.09 | -0.82 | 0.44 | -1.95 | -2.43 | -0.58 | 0.32 |
| | (<0.01) | (0.00) | (0.00) | (0.00) | (0.04) | (0.02) | (0.00) | (0.00) | (0.00) | (0.29) |
| **The United Kingdom** | 2.95 | 1.50 | -0.15 | -1.96 | 1.43 | 1.89 | 2.83 | -1.15 | 0.51 | -1.95 |
| | (<0.01) | (0.00) | (0.16) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| **Panel B: Women** | | | | | | | | | | |
| **Australia** | -1.52 | -0.87 | -0.52 | -3.00 | 1.88 | 1.34 | -1.34 | 1.03 | 0.62 | -0.66 |
| | (0.13) | (0.07) | (0.01) | (0.00) | (0.00) | (0.00) | (0.01) | (0.00) | (0.00) | (0.21) |
| **Canada** | -2.08 | 1.36 | -0.15 | -3.43 | 2.50 | 1.54 | 0.34 | -2.10 | 0.42 | -2.57 |
| | (<0.01) | (0.00) | (0.26) | (0.00) | (0.00) | (0.00) | (0.30) | (0.00) | (0.00) | (0.00) |
| **Finland** | 6.11 | 5.05 | -0.24 | -2.05 | 0.48 | 1.76 | 1.95 | 0.29 | 1.62 | -2.76 |
| | (<0.01) | (0.00) | (0.12) | (0.00) | (0.08) | (0.00) | (0.00) | (0.01) | (0.00) | (0.00) |
| **France** | 0.47 | 3.13 | -0.44 | 0.95 | -1.80 | 1.38 | 3.39 | -4.10 | 0.08 | -2.10 |
| | (0.39) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.27) | (0.00) |
| **The Netherlands** | -5.24 | -0.12 | -2.11 | -1.48 | -3.26 | 1.02 | 0.93 | 0.36 | 0.09 | -0.66 |
| | (<0.01) | (0.59) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.13) | (0.04) | (0.00) |
| **Norway** | -1.49 | 4.28 | 0.57 | -2.35 | -0.39 | 0.69 | -1.70 | -2.39 | -0.56 | 0.35 |
| | (0.02) | (0.00) | (0.00) | (0.00) | (0.31) | (0.00) | (0.00) | (0.00) | (0.00) | (0.17) |
| **The United Kingdom** | -2.46 | -0.86 | 0.46 | -2.63 | -0.66 | 1.47 | 3.41 | -1.03 | 0.41 | -3.03 |
| | (<0.01) | (0.01) | (0.00) | (0.00) | (0.03) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* activities are measured in hours per week, see Table Appendix A3 for definitions of leisure activities. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week, p-value of the difference in parentheses.

**Table 4. Trends in *leisure* inequality (men and women)**

| | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s |
|---|---|---|---|---|
| | **Panel A: Gini Index** | | | |
| **Australia** | 12.87 | 13.99 | 14.25 | - |
| **Canada** | 12.97 | 14.26 | 15.47 | - |
| **Finland** | 13.12 | 13.84 | 13.82 | - |
| **France** | 13.27 | - | 13.56 | - |
| **The Netherlands** | 6.650 | 6.940 | 7.470 | 13.800 |
| **Norway** | 13.26 | 13.32 | 13.83 | 14.54 |
| **The United Kingdom** | 11.72 | 12.51 | 14.16 | 13.62 |
| | **Panel B: 90th/10th** | | | |
| **Australia** | 1.783 | 1.879 | 1.924 | - |
| **Canada** | 1.815 | 1.938 | 2.081 | - |
| **Finland** | 1.855 | 1.912 | 1.928 | - |
| **France** | 1.848 | - | 1.853 | - |
| **The Netherlands** | 1.313 | 1.338 | 1.380 | 1.911 |
| **Norway** | 1.867 | 1.848 | 1.867 | 1.969 |
| **The United Kingdom** | 1.680 | 1.771 | 1.913 | 1.884 |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of leisure. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. Gini index is multiplied by 100.

**Table 5. Trends in income and earnings inequality (men and women)**

| | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s |
|---|---|---|---|---|
| | | **Panel A: Gini Index** | | |
| **Australia** | 30.896 | 33.261 | 37.459 | - |
| **Canada** | 34.459 | 36.008 | 37.379 | - |
| **Finland** | 31.119 | 30.960 | 33.61 | - |
| **France** | 33.356 | 33.855 | 34.91 | - |
| **The Netherlands** | 32.816 | 33.525 | 35.461 | - |
| **Norway** | 31.209 | 32.362 | 34.226 | - |
| **The United Kingdom** | 29.851 | 33.328 | 35.292 | - |
| | | **Panel B: 90th/10th** | | |
| **Australia** | 2.641 | 2.858 | 2.878 | 3.084 |
| **Canada** | 3.733 | 4.311 | 3.973 | 3.662 |
| **Finland** | 2.649 | 2.495 | 2.372 | 2.43 |
| **France** | 3.493 | 3.185 | 3.147 | 2.971 |
| **The Netherlands** | 2.573 | 2.510 | 2.710 | 2.906 |
| **Norway** | - | - | 1.962 | 2.061 |
| **The United Kingdom** | 3.176 | 3.198 | 3.426 | 3.517 |

Index for income obtained from the World Bank Dataset (data.worldbank.org). Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from the Luxembourg Income Study database. We calculate the 90 to 10 earnings percentile ratio using the 90 and 10 earnings percentiles from the OECD Earnings database (stats.oecd.org). The ninth and first deciles are upper-earnings decile limits, unless otherwise indicated, of gross earnings of full-time dependent employees.

**Table 6. *Leisure* inequality, low and highly educated (men and women)**

| Leisure (hours per week) | | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s | Diff. $T_i$-1970's | $Diff_{low} - Diff_{high}$ |
|---|---|---|---|---|---|---|---|
| **Panel A: Men** | | | | | | | |
| **Australia** | **Less than high-school** | 104.67 | 106.44 | 110.62 | - | 5.95 | 3.86 |
| | **Some college and college grads** | 101.89 | 101.14 | 103.98 | - | 2.09 | (0.42) |
| **Canada** | **Less than high-school** | 104.56 | 110.57 | 111.68 | - | 7.12 | 8.79 |
| | **Some college and college grads** | 105.86 | 104.15 | 104.19 | - | -1.67 | (<0.01) |
| **Finland** | **Less than high-school** | 111.61 | 111.10 | 118.11 | - | 6.50 | 0.19 |
| | **Some college and college grads** | 108.75 | 107.69 | 115.06 | - | 6.31 | (0.94) |
| **France** | **Less than high-school** | 114.96 | - | 115.17 | - | 0.21 | 3.72 |
| | **Some college and college grads** | 111.19 | - | 107.68 | - | -3.51 | (0.08) |
| **The Netherlands** | **Less than high-school** | 115.25 | 114.81 | 112.33 | 112.59 | -2.66 | 4.88 |
| | **Some college and college grads** | 112.24 | 108.88 | 106.72 | 104.70 | -7.54 | (0.02) |
| **Norway** | **Less than high-school** | - | 111.18 | 109.56 | 105.00 | -6.18 | -1.88 |
| | **Some college and college grads** | - | 108.22 | 108.15 | 103.92 | -4.30 | (0.50) |
| **The United Kingdom** | **Less than high-school** | 111.79 | 114.94 | 126.06 | 115.87 | 4.08 | 3.61 |
| | **Some college and college grads** | 112.39 | 110.12 | 110.32 | 112.86 | 0.47 | (0.04) |
| **Panel B: Women** | | | | | | | |
| **Australia** | **Less than high-school** | 111.69 | 112.64 | 112.42 | - | 0.73 | 3.22 |
| | **Some college and college grads** | 106.30 | 104.21 | 103.81 | - | -2.49 | (0.26) |
| **Canada** | **Less than high-school** | 108.53 | 112.59 | 113.18 | - | 4.65 | 7.76 |
| | **Some college and college grads** | 106.09 | 104.54 | 102.98 | - | -3.11 | (<0.01) |
| **Finland** | **Less than high-school** | 107.88 | 109.23 | 113.61 | - | 5.73 | -2.10 |
| | **Some college and college grads** | 105.56 | 106.44 | 113.39 | - | 7.83 | (0.24) |
| **France** | **Less than high-school** | 107.53 | - | 111.32 | - | 3.79 | 6.54 |
| | **Some college and college grads** | 106.90 | - | 104.15 | - | -2.75 | (<0.01) |
| **The Netherlands** | **Less than high-school** | 119.32 | 117.16 | 117.59 | 117.32 | -2.00 | 3.70 |
| | **Some college and college grads** | 115.47 | 112.34 | 111.75 | 109.77 | -5.70 | (<0.01) |
| **Norway** | **Less than high-school** | - | 111.75 | 111.83 | 115.18 | 3.43 | 5.54 |
| | **Some college and college grads** | - | 107.64 | 104.92 | 105.53 | -2.11 | (0.10) |
| **The United Kingdom** | **Less than high-school** | 115.97 | 116.03 | 119.38 | 114.34 | -1.63 | 1.30 |
| | **Some college and college grads** | 114.28 | 109.63 | 106.74 | 111.35 | -2.93 | (0.39) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of leisure. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France. $Diff_{low} - Diff_{high}$ indicates the difference in the change in leisure between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling) over the relevant period, p-value of such difference in parentheses.

**Table 7. Inequality in *paid work* over the period, low and highly-educated (men and women)**

| Paid work (hours per week) | | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s | Diff. $T_i$-1970's | $Diff_{low} - Diff_{high}$ |
|---|---|---|---|---|---|---|---|
| | | **Panel A: Men** | | | | | |
| **Australia** | **Less than high-school** | 52.43 | 47.43 | 40.15 | - | -12.29 | -4.23 |
| | **Some college and college grads** | 52.83 | 52.40 | 44.77 | - | -8.06 | (0.49) |
| **Canada** | **Less than high-school** | 48.34 | 39.92 | 38.22 | - | -10.12 | -8.22 |
| | **Some college and college grads** | 47.25 | 46.93 | 45.34 | - | -1.90 | (<0.01) |
| **Finland** | **Less than high-school** | 39.17 | 39.05 | 30.73 | - | -8.44 | 2.33 |
| | **Some college and college grads** | 43.16 | 38.90 | 32.39 | - | -10.77 | (0.35) |
| **France** | **Less than high-school** | 40.16 | - | - | 37.68 | -2.48 | -4.18 |
| | **Some college and college grads** | 42.23 | - | - | 43.93 | 1.70 | (0.09) |
| **The Netherlands** | **Less than high-school** | 38.65 | 36.21 | 37.02 | 36.93 | -1.72 | -6.32 |
| | **Some college and college grads** | 40.26 | 41.70 | 44.27 | 44.87 | 4.60 | (0.01) |
| **Norway** | **Less than high-school** | - | 41.81 | 39.26 | 41.84 | 0.03 | -0.73 |
| | **Some college and college grads** | - | 39.53 | 41.88 | 40.30 | 0.76 | (0.83) |
| **The United Kingdom** | **Less than high-school** | 47.24 | 36.84 | 30.17 | 31.94 | -15.30 | -6.19 |
| | **Some college and college grads** | 44.22 | 39.11 | 41.33 | 35.11 | -9.11 | (<0.01) |
| | | **Panel B: Women** | | | | | |
| **Australia** | **Less than high-school** | 14.21 | 13.88 | 14.11 | - | -0.10 | -11.87 |
| | **Some college and college grads** | 13.50 | 23.65 | 25.27 | - | 11.77 | (<0.01) |
| **Canada** | **Less than high-school** | 14.61 | 16.05 | 17.42 | - | 2.81 | -2.41 |
| | **Some college and college grads** | 26.65 | 31.56 | 31.87 | - | 5.22 | (0.21) |
| **Finland** | **Less than high-school** | 26.71 | 26.61 | 22.17 | - | -4.54 | 5.86 |
| | **Some college and college grads** | 35.29 | 31.03 | 24.89 | | -10.40 | (<0.01) |
| **France** | **Less than high-school** | 16.72 | - | - | 11.97 | -4.76 | -9.24 |
| | **Some college and college grads** | 25.94 | - | - | 30.42 | 4.48 | (<0.01) |
| **The Netherlands** | **Less than high-school** | 5.19 | 6.88 | 8.78 | 10.22 | 5.03 | -13.15 |
| | **Some college and college grads** | 9.11 | 20.28 | 25.53 | 27.29 | 18.18 | (<0.01) |
| **Norway** | **Less than high-school** | - | 18.81 | 22.41 | 21.65 | 2.84 | 1.19 |
| | **Some college and college grads** | - | 23.62 | 28.92 | 25.27 | 1.65 | (0.21) |
| **The United Kingdom** | **Less than high-school** | 17.31 | 13.02 | 16.44 | 16.10 | -1.21 | -5.13 |
| | **Some college and college grads** | 20.82 | 23.65 | 33.02 | 24.74 | 3.92 | (<0.01) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. Paid work is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of paid work. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France. $Diff_{low} - Diff_{high}$ indicates the difference in the change in paid work between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling) over the relevant period, p-value of such difference in parentheses.

**Table 8. Inequality in *unpaid work* over the period, low and highly-educated (men and women)**

| Unpaid work (hours per week) | | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s | Diff. $T_i$-1970's | $Diff_{low} - Diff_{high}$ |
|---|---|---|---|---|---|---|---|
| | | **Panel A: Men** | | | | | |
| **Australia** | **Less than high-school** | 10.04 | 11.88 | 13.77 | - | 3.73 | -0.45 |
| | **Some college and college grads** | 10.12 | 11.17 | 14.30 | - | 4.18 | (0.84) |
| **Canada** | **Less than high-school** | 12.63 | 14.82 | 14.98 | - | 2.35 | -0.20 |
| | **Some college and college grads** | 11.64 | 13.44 | 14.19 | - | 2.55 | (0.83) |
| **Finland** | **Less than high-school** | 14.83 | 15.75 | 16.01 | - | 1.19 | -2.69 |
| | **Some college and college grads** | 11.88 | 16.48 | 15.76 | - | 3.88 | (0.01) |
| **France** | **Less than high-school** | 11.33 | - | - | 12.30 | 0.97 | -0.31 |
| | **Some college and college grads** | 11.22 | - | - | 12.50 | 1.28 | (0.74) |
| **The Netherlands** | **Less than high-school** | 10.06 | 13.32 | 14.87 | 15.07 | 5.01 | 2.24 |
| | **Some college and college grads** | 10.29 | 12.28 | 12.24 | 13.06 | 2.77 | (0.10) |
| **Norway** | **Less than high-school** | - | 12.21 | 15.93 | 16.86 | 4.64 | 1.02 |
| | **Some college and college grads** | - | 14.47 | 13.68 | 18.09 | 3.62 | (0.53) |
| **The United Kingdom** | **Less than high-school** | 7.42 | 14.06 | 10.23 | 17.09 | 9.67 | 3.06 |
| | **Some college and college grads** | 9.51 | 15.13 | 10.34 | 16.13 | 6.61 | (<0.01) |
| | | **Panel B: Women** | | | | | |
| **Australia** | **Less than high-school** | 36.50 | 34.24 | 33.04 | - | -3.46 | 6.00 |
| | **Some college and college grads** | 36.57 | 28.23 | 27.12 | - | -9.46 | (0.02) |
| **Canada** | **Less than high-school** | 36.04 | 32.45 | 30.39 | - | -5.66 | -2.27 |
| | **Some college and college grads** | 27.88 | 24.22 | 24.49 | - | -3.39 | (0.06) |
| **Finland** | **Less than high-school** | 29.73 | 28.70 | 26.50 | - | -3.24 | -5.45 |
| | **Some college and college grads** | 20.42 | 22.91 | 22.63 | - | 2.21 | (<0.01) |
| **France** | **Less than high-school** | 37.99 | - | - | 36.49 | -1.50 | 0.95 |
| | **Some college and college grads** | 27.71 | - | - | 25.26 | -2.45 | (0.49) |
| **The Netherlands** | **Less than high-school** | 36.33 | 36.39 | 34.31 | 33.30 | -3.03 | 8.09 |
| | **Some college and college grads** | 33.97 | 25.90 | 22.68 | 22.84 | -11.12 | (<0.01) |
| **Norway** | **Less than high-school** | - | 31.81 | 28.70 | 26.38 | -5.43 | -4.27 |
| | **Some college and college grads** | - | 25.02 | 23.62 | 23.86 | -1.16 | (<0.01) |
| **The United Kingdom** | **Less than high-school** | 31.24 | 33.68 | 27.42 | 31.94 | 0.70 | 4.97 |
| | **Some college and college grads** | 29.10 | 27.11 | 17.61 | 24.83 | -4.27 | (<0.01) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. Unpaid work is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of unpaid work. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France. $Diff_{low} - Diff_{high}$ indicates the difference in the change in unpaid work between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling) over the relevant period, p-value of such difference in parentheses.

**Table 9. Inequality in *child care* over the period, low and highly-educated (men and women)**

| child care (hours per week) | | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s | Diff. $T_i$-1970's | $Diff_{low} - Diff_{high}$ |
|---|---|---|---|---|---|---|---|
| | | **Panel A: Men** | | | | | |
| **Australia** | **Less than high-school** | 0.70 | 1.73 | 1.87 | - | 1.18 | 0.52 |
| | **Some college and college grads** | 2.34 | 2.38 | 3.00 | - | 0.66 | (0.54) |
| **Canada** | **Less than high-school** | 1.30 | 1.75 | 2.05 | - | 0.76 | -0.39 |
| | **Some college and college grads** | 1.91 | 2.27 | 3.07 | - | 1.15 | (0.23) |
| **Finland** | **Less than high-school** | 0.97 | 0.98 | 1.79 | - | 0.81 | -0.11 |
| | **Some college and college grads** | 2.42 | 3.06 | 3.34 | - | 0.92 | (0.83) |
| **France** | **Less than high-school** | 1.09 | - | - | 1.50 | 0.40 | 0.34 |
| | **Some college and college grads** | 2.26 | - | - | 2.32 | 0.06 | (0.32) |
| **The Netherlands** | **Less than high-school** | 1.99 | 1.89 | 2.22 | 1.58 | -0.41 | -0.58 |
| | **Some college and college grads** | 2.95 | 2.89 | 3.16 | 3.12 | 0.17 | (0.31) |
| **Norway** | **Less than high-school** | - | 1.97 | 2.15 | 1.80 | -0.18 | -0.05 |
| | **Some college and college grads** | - | 4.24 | 3.13 | 4.10 | -0.13 | (0.94) |
| **The United Kingdom** | **Less than high-school** | 0.62 | 1.48 | 0.59 | 1.84 | 1.22 | -0.70 |
| | **Some college and college grads** | 0.46 | 2.51 | 4.18 | 2.38 | 1.92 | (<0.01) |
| | | **Panel B: Women** | | | | | |
| **Australia** | **Less than high-school** | 4.23 | 6.45 | 6.44 | - | 2.21 | 2.23 |
| | **Some college and college grads** | 9.59 | 10.80 | 9.57 | - | -0.02 | (0.10) |
| **Canada** | **Less than high-school** | 7.64 | 5.49 | 5.77 | - | -1.88 | -3.00 |
| | **Some college and college grads** | 5.93 | 6.20 | 7.04 | - | 1.12 | (<0.01) |
| **Finland** | **Less than high-school** | 2.70 | 2.46 | 4.60 | - | 1.90 | 1.35 |
| | **Some college and college grads** | 5.50 | 6.56 | 6.05 | - | 0.55 | (0.09) |
| **France** | **Less than high-school** | 5.39 | - | - | 7.23 | 1.84 | 2.17 |
| | **Some college and college grads** | 7.00 | - | - | 6.67 | -0.33 | (0.01) |
| **The Netherlands** | **Less than high-school** | 10.06 | 13.32 | 14.87 | 15.07 | 5.01 | 2.24 |
| | **Some college and college grads** | 10.29 | 12.28 | 12.24 | 13.06 | 2.77 | (0.73) |
| **Norway** | **Less than high-school** | - | 5.03 | 4.40 | 3.76 | -1.27 | -2.73 |
| | **Some college and college grads** | - | 10.68 | 9.82 | 12.13 | 1.46 | (0.03) |
| **The United Kingdom** | **Less than high-school** | 2.13 | 4.57 | 2.62 | 3.87 | 1.74 | -1.11 |
| | **Some college and college grads** | 2.53 | 5.73 | 8.01 | 5.38 | 2.85 | (<0.01) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. Child care is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of child care. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France. $Diff_{low} - Diff_{high}$ indicates the difference in the change in child care between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling) over the relevant period, p-value of such difference in parentheses.

**Table 10. Difference in the change of time devoted to *leisure* activities over the period between educational groups (men)**

| Leisure (hours per week) | | Total Leisure | TV Watching | Reading | Eating | Socializing | Sports | Sleeping | Personal Care | Gardening | Other Activities |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Australia | **Less than high-school** | 5.96 | 1.43 | -1.08 | -1.85 | 2.11 | 2.22 | 3.29 | 1.10 | 0.11 | -1.38 |
| | | (0.02) | (0.18) | (0.03) | (0.00) | (0.01) | (0.00) | (0.00) | (0.00) | (0.84) | (0.20) |
| | **Some college and college grads** | 2.09 | 5.18 | -2.86 | -1.30 | -1.53 | 2.59 | -0.05 | 0.63 | 0.60 | -0.84 |
| | | (0.61) | (0.00) | (0.01) | (0.08) | (0.50) | (0.00) | (0.97) | (0.05) | (0.36) | (0.69) |
| Canada | **Less than high-school** | 7.12 | | -1.06 | -1.85 | 3.19 | 2.54 | 1.41 | -3.14 | 1.50 | -1.03 |
| | | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.01) | (0.00) | (0.00) | (0.06) |
| | **Some college and college grads** | -1.67 | 2.04 | -1.61 | -2.38 | 1.33 | 1.91 | 0.41 | -2.87 | 0.96 | -1.42 |
| | | (0.24) | (0.01) | (0.00) | (0.00) | (0.01) | (0.00) | (0.49) | (0.00) | (0.00) | (0.02) |
| Finland | **Less than high-school** | 6.49 | 7.09 | -1.52 | -3.27 | -0.38 | 0.83 | 1.81 | -0.27 | 1.31 | -0.76 |
| | | (0.00) | (0.00) | (0.00) | (0.00) | (0.21) | (0.01) | (0.00) | (0.03) | (0.00) | (0.04) |
| | **Some college and college grads** | 6.32 | 6.93 | -0.68 | -2.60 | -1.52 | 1.22 | 3.33 | -0.20 | 0.65 | -1.76 |
| | | (0.00) | (0.00) | (0.22) | (0.00) | (0.03) | (0.04) | (0.00) | (0.38) | (0.00) | (0.05) |
| France | **Less than high-school** | 0.21 | 6.40 | -1.68 | 0.45 | -2.54 | 1.00 | 3.30 | -4.36 | -0.40 | -2.18 |
| | | (0.88) | (0.00) | (0.00) | (0.17) | (0.00) | (0.01) | (0.00) | (0.00) | (0.11) | (0.00) |
| | **Some college and college grads** | -3.52 | 3.31 | -1.84 | 1.09 | -4.56 | 1.33 | 1.08 | -3.64 | 0.54 | -1.84 |
| | | (0.03) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.18) | (0.00) | (0.00) | (0.01) |
| The Netherlands | **Less than high-school** | -2.67 | 0.39 | -2.48 | -0.57 | -2.15 | -0.11 | 0.97 | -0.78 | -0.25 | 2.24 |
| | | (0.03) | (0.38) | (0.00) | (0.01) | (0.00) | (0.66) | (0.10) | (0.28) | (0.06) | (0.00) |
| | **Some college and college grads** | -7.53 | 0.46 | -3.40 | -0.36 | -4.01 | 0.65 | -0.27 | 0.00 | -0.62 | -0.34 |
| | | (0.00) | (0.34) | (0.00) | (0.34) | (0.00) | (0.04) | (0.70) | (1.00) | (0.09) | (0.61) |
| Norway | **Less than high-school** | -5.24 | 4.29 | -2.18 | -1.23 | -3.48 | 0.47 | -0.69 | -1.30 | -0.10 | -0.98 |
| | | (0.03) | (0.00) | (0.00) | (0.00) | (0.00) | (0.55) | (0.50) | (0.00) | (0.78) | (0.22) |
| | **Some college and college grads** | -4.05 | 4.04 | -2.07 | -1.42 | -1.39 | -0.32 | -0.17 | -1.97 | -0.14 | -1.43 |
| | | (0.01) | (0.00) | (0.00) | (0.00) | (0.04) | (0.40) | (0.78) | (0.00) | (0.52) | (0.03) |
| The United Kingdom | **Less than high-school** | 4.08 | 2.00 | -0.21 | -1.21 | -2.12 | 1.77 | 2.93 | -1.14 | 0.75 | -2.03 |
| | | (0.00) | (0.00) | (0.15) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| | **Some college and college grads** | 0.47 | 2.10 | 0.50 | -2.30 | -1.17 | 1.59 | 0.04 | -0.89 | -0.06 | -3.28 |
| | | (0.75) | (0.00) | (0.08) | (0.00) | (0.07) | (0.00) | (0.96) | (0.00) | (0.84) | (0.00) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* is measured in hours per week, see Table Appendix A3 for a list of activities included in our definition of leisure. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. We report differences in leisure activities between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling). p-value of the difference in parentheses.

**Table 11. Difference in the change of time devoted to *leisure* activities over the period between educational groups (women)**

| Leisure (hours per week) | | Total Leisure | TV Watching | Reading | Eating | Socializing | Sports | Sleeping | Personal Care | Gardening | Other Activities |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Australia | **Less than high-school** | 0.74 | -1.58 | -0.31 | -2.50 | 2.78 | 1.45 | -1.55 | 1.19 | 0.90 | 0.13 |
| | | (0.62) | (0.03) | (0.27) | (0.00) | (0.00) | (0.00) | (0.05) | (0.00) | (0.00) | (0.87) |
| | **Some college and college grads** | -2.49 | 0.79 | -1.30 | -4.53 | 1.08 | 1.92 | 0.31 | 1.27 | 0.58 | -2.14 |
| | | (0.30) | (0.44) | (0.02) | (0.00) | (0.36) | (0.00) | (0.81) | (0.00) | (0.02) | (0.12) |
| Canada | **Less than high-school** | 4.65 | 3.80 | -0.28 | -2.75 | 2.60 | 1.27 | 1.49 | -2.27 | 0.82 | -0.67 |
| | | (0.00) | (0.00) | (0.11) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.11) |
| | **Some college and college grads** | -3.11 | 1.99 | -0.70 | -2.73 | 1.04 | 1.76 | 0.20 | -2.02 | 0.38 | -3.22 |
| | | (0.01) | (0.00) | (0.02) | (0.00) | (0.06) | (0.00) | (0.75) | (0.00) | (0.00) | (0.00) |
| Finland | **Less than high-school** | 5.73 | 5.16 | -0.27 | -2.04 | -0.61 | 1.73 | 1.95 | 0.31 | 1.73 | -3.26 |
| | | (0.00) | (0.00) | (0.13) | (0.00) | (0.05) | (0.00) | (0.00) | (0.02) | (0.00) | (0.00) |
| | **Some college and college grads** | 7.83 | 4.40 | 0.71 | -2.32 | -1.04 | 1.87 | 2.26 | 0.05 | 1.40 | -1.10 |
| | | (0.00) | (0.00) | (0.10) | (0.00) | (0.11) | (0.00) | (0.01) | (0.81) | (0.00) | (0.23) |
| France | **Less than high-school** | 3.79 | 6.43 | -0.72 | 0.98 | -2.52 | 1.14 | 4.20 | -4.06 | -0.12 | -2.45 |
| | | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.38) | (0.00) |
| | **Some college and college grads** | -2.75 | 3.49 | -1.86 | 0.99 | -4.71 | 1.11 | 3.52 | -3.98 | 0.30 | -3.66 |
| | | (0.10) | (0.00) | (0.00) | (0.01) | (0.00) | (0.00) | (0.00) | (0.00) | (0.04) | (0.00) |
| The Netherlands | **Less than high-school** | -2.01 | 2.17 | -2.93 | -0.86 | -3.56 | 0.81 | 2.46 | 0.13 | 0.21 | -0.61 |
| | | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.68) | (0.00) | (0.07) |
| | **Some college and college grads** | -5.70 | 0.86 | -1.83 | -3.10 | -2.66 | 0.84 | 0.79 | 1.36 | -0.28 | -2.32 |
| | | (0.00) | (0.19) | (0.00) | (0.00) | (0.01) | (0.00) | (0.27) | (0.00) | (0.18) | (0.00) |
| Norway | **Less than high-school** | 2.61 | 2.53 | -0.95 | -1.62 | -0.58 | 1.05 | 1.59 | -0.55 | -0.13 | 0.83 |
| | | (0.19) | (0.00) | (0.01) | (0.00) | (0.59) | (0.07) | (0.19) | (0.03) | (0.51) | (0.29) |
| | **Some college and college grads** | -2.32 | 2.60 | -0.72 | -0.80 | -2.14 | 0.02 | -0.26 | -0.50 | -0.73 | -0.12 |
| | | (0.09) | (0.00) | (0.00) | (0.00) | (0.01) | (0.95) | (0.67) | (0.01) | (0.00) | (0.81) |
| The United Kingdom | **Less than high-school** | -1.63 | -0.27 | 0.54 | -2.10 | -3.58 | 1.28 | 3.85 | -1.14 | 0.57 | -2.78 |
| | | (0.02) | (0.55) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| | **Some college and college grads** | -2.93 | 1.66 | 0.45 | -3.37 | -0.97 | 0.94 | 0.45 | -0.76 | -0.52 | -4.09 |
| | | (0.03) | (0.01) | (0.12) | (0.00) | (0.14) | (0.00) | (0.48) | (0.00) | (0.05) | (0.00) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* is measured in hours per week, see Table Appendix A3 for a list of activities included in our definition of leisure. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. We report differences in leisure activities between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling). p-value of the difference in parentheses.

# APPENDIX A

**Table A1. Description of time use surveys**

| Country | Year | Survey coverage | Original sample size | Analysis sample size |
|---|---|---|---|---|
| **Australia** | 1974 | Mach 1974 | 2,400 diaries | 1,128 diaries |
| | 1987 | 23 May - 4 June 1987 | 3,222 diaries | 2,361diaries |
| | 1992 | February 24 - March 7, May 25 - June 6, September 28 - October 10, November 23 - December 5 | 13,724 diaries | 8,937 diaries |
| | 1997 | 27 January - 8 February, 21 April - 3 May, 23 June - 5 July, 27 October - 8 November 1997 | 14,012 diaries | 9,271 diaries |
| **Canada** | 1971 | 27 January - 8 February, 21 April - 3 May, 23 June - 5 July, 27 October - 8 November 1997 | 2,138 diaries | 1,886 diaries |
| | 1981 | 11 September to 29 October, November 1981 | 2,658 diaries | 1,919 diaries |
| | 1986 | 25 October 1986 - 22 December | 9.618 diaries | 6,855 diaries |
| | 1992 | January - December 1992 | 8,936 diaries | 6,205 diaries |
| | 1998 | January - December 1998 | 10,726 diaries | 6,919 diaries |
| **Finland** | 1979 | September - November 1979 | 11,908 diaries | 8,399 diaries |
| | 1987 | April 1987 - March 1988 | 15,219 diaries | 9,706 diaries |
| | 1999 | March 1999 to February 2000; a small number of diaries collected in February 1999 and March 2000 | 10,076 diaries | 5,874 diaries |
| **France** | 1965 | May 1965-April 1966 | 2,868 diaries | 2,668 diaries |
| | 1974 | May 1974-April 1975 | 6,642 diaries | 4,484 diaries |
| | 1998 | 16 February 1998 - 14 February 1999 | 15,430 diaries | 9,422 diaries |
| **The Netherlands** | 1975 | Oct-75 | 7,926 diaries | 7,128 diaries |
| | 1980 | Oct-80 | 16,569 diaries | 15,592 diaries |
| | 1985 | Oct-85 | 20,667 diaries | 18,268 diaries |
| | 1990 | Oct-90 | 21,852 diaries | 17,608 diaries |
| | 1995 | Oct-95 | 20,610 diaries | 9,613 diaries |
| | 2000 | Oct-00 | 12,532 diaries | 9,613 diaries |
| | 2005 | Oct-05 | 13,142 diaries | 9,657 diaries |
| **Norway** | 1971 | September 1971 - August 1972 | 6,516 diaries | 6,498 diaries |
| | 1981 | October 1980 - September 1981 | 6,068 diaries | 4,365 diaries |
| | 1990 | 1 February 1990 and 30 January 1991 | 6,129 diaries | 4,247 diaries |
| | 2000 | February 2000 - February 2001 | 6,628 diaries | 4,413 diaries |
| **The United Kingdom** | 1975 | 14-20 August, 4-10 September 1974; 12-18 February, 26 February - 4 March 1975 | 19,490 diaries | 8,136 diaries |
| | 1983 | Autumn 1983, Winter 1984 | 9,206 diaries | 6,083 diaries |
| | 1987 | Jul-87 | 8,854 diaries | 5,097 diaries |
| | 1995 | 1995 | 1,906 diaries | 1,253 diaries |
| | 2000 | June 2000 - August 2001 | 19,400 diaries | 10.988 diaries |

Source: Multinational Time Use Study (MTUS, www.timeuse.org) version 553 and harmonized surveys by authors. "Analysis sample size" refers to the number of observations from each survey that we use in our main empirical analysis. We restrict the sample to include only those individuals who had time diaries that summed to a complete day (i.e., 1440 minutes). All surveys include sample weights, and weights are adjusted to ensure each day of the week and each survey are uniformly represented.

**Table A2. Time use activities**

| | Time use categories | Paid Work | Unpaid Work | Child Care | Leisure |
|---|---|---|---|---|---|
| **AV1** | **paid work** | X | - | - | - |
| **AV2** | **paid work at home** | X | - | - | - |
| **AV3** | **second job** | X | - | - | - |
| **AV4** | **school/classes** | X | - | - | - |
| **AV5** | **travel to/from work** | X | - | - | - |
| **AV6** | **cooking, washing up** | - | X | - | - |
| **AV7** | **housework** | - | X | - | - |
| **AV8** | **odd jobs** | - | X | - | - |
| **AV9** | **gardening** | - | - | - | X |
| **AV10** | **shopping** | - | X | - | - |
| **AV11** | **Child\-{-}Care** | - | - | X | - |
| **AV12** | **domestic travel** | - | X | - | - |
| **AV13** | **dressing/toilet** | - | - | - | X |
| **AV14** | **personal services** | - | - | - | X |
| **AV15** | **meals, snacks** | - | - | - | X |
| **AV16** | **sleep** | - | - | - | X |
| **AV17** | **leisure travel** | - | - | - | X |
| **AV18** | **excursions** | - | - | - | X |
| **AV19** | **active sport** | - | - | - | X |
| **AV20** | **passive sport** | - | - | - | X |
| **AV21** | **walks** | - | - | - | X |
| **AV22** | **religious activities** | - | - | - | - |
| **AV23** | **civic duties** | - | - | - | - |
| **AV24** | **cinema, theatre** | - | - | - | X |
| **AV25** | **dances, parties** | - | - | - | X |
| **AV26** | **social club** | - | - | - | X |
| **AV27** | **pub** | - | - | - | X |
| **AV28** | **restaurant** | - | - | - | X |
| **AV29** | **visit friends** | - | - | - | X |
| **AV30** | **listen to radio** | - | - | - | X |
| **AV31** | **TV, video** | - | - | - | X |
| **AV32** | **listen to tapes, etc.** | - | - | - | X |
| **AV33** | **study** | X | - | - | - |
| **AV34** | **reading books** | - | - | - | X |
| **AV35** | **reading papers, magazines** | - | - | - | X |
| **AV36** | **relaxing** | - | - | - | X |
| **AV37** | **conversation** | - | - | - | X |
| **AV38** | **entertaining friends** | - | - | - | X |
| **AV39** | **knitting, sewing, etc.** | - | - | - | X |
| **AV40** | **other hobbies and pastimes** | - | - | - | X |

Source: Multinational Time Use Study (MTUS, www.timeuse.org) version 553 and harmonized surveys by authors (see Appendix Table A1 for a description of the surveys included).

**Table A3. Leisure activities**

| AV CODE | Classification | TV Watching | Reading | Eating | Socializing | Sports | Sleep | Personal Care | Gardening | Other Activities |
|---|---|---|---|---|---|---|---|---|---|---|
| **9** | **Gardening** | - | - | - | - | - | - | - | X | - |
| **13** | **Dress/personal care** | - | - | - | - | - | - | X | - | - |
| **14** | **Consume personal services** | - | - | - | - | - | - | X | - | - |
| **15** | **Meals and snacks** | - | - | X | - | - | - | - | - | - |
| **16** | **Sleep** | - | - | - | - | - | X | - | - | - |
| **17** | **Free time travel** | - | - | - | - | - | - | - | - | X |
| **18** | **Excursions** | - | - | - | - | - | - | - | - | X |
| **19** | **Active sports participation** | - | - | - | - | X | - | - | - | - |
| **20** | **Passive sports participation** | - | - | - | - | X | - | - | - | - |
| **21** | **Walking** | - | - | - | - | X | - | - | - | - |
| **24** | **Cinema or theatre** | - | - | - | - | - | - | - | - | X |
| **25** | **Dances or parties** | - | - | - | X | - | - | - | - | - |
| **26** | **Social clubs** | - | - | - | X | - | - | - | - | - |
| **27** | **Pubs** | - | - | - | - | - | - | - | - | X |
| **28** | **Restaurants** | - | - | - | X | - | - | - | - | - |
| **29** | **Visit friends at home** | - | - | - | X | - | - | - | - | - |
| **30** | **Listen to radio** | - | - | - | - | - | - | - | - | X |
| **31** | **Watch television or video** | X | - | - | - | - | - | - | - | - |
| **32** | **Listen to records, tapes, cds** | - | - | - | - | - | - | - | - | X |
| **34** | **Read books** | - | X | - | - | - | - | - | - | - |
| **35** | **Read papers, magazines** | - | X | - | - | - | - | - | - | - |
| **36** | **Relax** | - | - | - | - | - | - | - | - | X |
| **37** | **Conversation** | - | - | - | X | - | - | - | - | - |
| **38** | **Entertain friends at home** | - | - | - | X | - | - | - | - | - |
| **39** | **Knit, sew** | - | - | - | - | - | - | - | - | X |
| **40** | **Other leisure** | - | - | - | - | - | - | - | - | X |

Source: Multinational Time Use Study (MTUS, www.timeuse.org) version 553 and harmonized surveys by authors (see Appendix Table A1 for a description of the surveys included).

## APPENDIX B: Demographic Weighting

We report trends over the last decades holding constant the demographic composition of the sample, following Aguiar and Hurst (2007) Specifically, we divide the sample into demographic cells defined by five age groups (21–29, 30–39, 40–49, 50–59, 60–65), three education categories (uncompleted secondary or less, completed secondary, above secondary education), two sex categories (male and female), and whether or not there is a child under 18 in the household. We do not create separate cells distinguishing child status for respondents aged sixty to sixty-five due to the small number that have children present in the home. This division yields forty-eight demographic cells for each country. To calculate the constant weights used for our demographic adjustments, we pool together all of our time use data sets for each country, and compute the percentage of the population that resides in each demographic cell for each country. Following Katz and Murphy (1992), we use these fixed weights to calculate weighted means for each activity in each year

Since our analysis is based on gender and educational characteristics, means for each subsample are calculated in a similar manner with the weights scaled to sum to one. For instance, when only gender is considered, we calculate the percentage of men that resides in each demographic cell (according to age range, education, and presence of children), with these percentages summing to one for men in each country. The same applies for women. We refer to this weight as “gender weight”. When gender and education are considered at the same time, we calculate the percentage of men that resides in each demographic cell (according to age range and presence of children), with these percentages summing to one for men in each country and educational level. We refer to this weight as “educational weight”. We use the “gender weight” when we analyze trends for men and women, while we use the “education weight” when we analyze trends by gender and educational level.

When pooling the surveys together to compute the percent of the population in each of our cells, we used the weights provided by the surveys to ensure the data is representative of the total population. We adjusted these weights so that each day of the week and each survey are equally represented in the overall sample.

## APPENDIX C: Results for alternative definitions of leisure

*Leisure Measure 1*: It includes the time devoted to gardening/pet care, free time travel, excursions, active sports participation, passive sports participation, walking, cinema or theatre, dances or parties, social clubs, pubs, restaurants, visit friends at home, listen to radio, watch television or video, listen to records, tapes or cds, read books, papers or magazines, relax, conversation, entertain friends at home, knit, sew and "other leisure".

*Leisure Measure 3*: It includes the time devoted to gardening/pet care, free time travel, excursions, active sports participation, passive sports participation, walking, cinema or theatre, dances or parties, social clubs, pubs, restaurants, visit friends at home, listen to radio, watch television or video, listen to records, tapes or cds, read books, papers or magazines, relax, conversation, entertain friends at home, knit, sew, "other leisure", dress and personal care, consume personal services, meals and snacks, sleep, and child care.

*Leisure Measure 4*: It is calculated as the residual of the time devoted to market and non-market work. The difference between Leisure Measure 3 and Leisure Measure 4 includes time spent in civic duties, and religious activities.

**Table C1. Trends in *Leisure Measure 1* (men and women)**

| Time-use category (hours per week) | DECADE 70's | DECADE 80's | DECADE 90's | DECADE 00's | Diff. | P-Value |
|---|---|---|---|---|---|---|
| **Panel A: Men** | | | | | | |
| **Australia** | 33.33 | 32.97 | 35.86 | - | 2.53 | (0.02) |
| **Canada** | 33.41 | 36.44 | 38.24 | - | 4.83 | (0.00) |
| **Finland** | 37.92 | 39.27 | 44.25 | - | 6.33 | (0.00) |
| **France** | 33.33 | - | 30.99 | - | -2.34 | (0.00) |
| **The Netherlands** | 42.12 | 41.78 | 39.18 | 35.61 | -6.52 | (0.00) |
| **Norway** | 34.85 | 38.69 | 39.95 | 38.05 | 3.20 | (0.00) |
| **The United Kingdom** | 40.17 | 43.58 | 43.69 | 39.73 | -0.44 | (0.39) |
| **Panel B: Women** | | | | | | |
| **Australia** | 34.10 | 34.28 | 35.72 | - | 1.62 | (0.07) |
| **Canada** | 31.79 | 34.15 | 34.30 | - | 2.50 | (0.00) |
| **Finland** | 34.32 | 36.72 | 39.07 | - | 4.75 | (0.00) |
| **France** | 27.22 | - | 25.98 | - | -1.24 | (0.00) |
| **The Netherlands** | 42.63 | 41.83 | 40.49 | 37.17 | -5.46 | (0.00) |
| **Norway** | 32.83 | 38.72 | 38.73 | 37.39 | 4.56 | (0.00) |
| **The United Kingdom** | 40.51 | 40.27 | 38.00 | 35.98 | -4.53 | (0.00) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure Measure 1* is measured in hours per week. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France.

**Table C2. Trends in *Leisure Measure 3* (men and women)**

| Time-use category (hours per week) | DECADE 70's | DECADE 80's | DECADE 90's | DECADE 00's | Diff. | P-Value |
|---|---|---|---|---|---|---|
| **Panel A: Men** | | | | | | |
| **Australia** | 104.97 | 105.62 | 109.04 | - | 4.07 | (0.00) |
| **Canada** | 107.09 | 108.58 | 108.50 | - | 1.41 | (0.09) |
| **Finland** | 112.62 | 112.22 | 119.75 | - | 7.13 | (0.00) |
| **France** | 115.54 | - | 112.02 | - | -3.51 | (0.00) |
| **The Netherlands** | 116.20 | 114.99 | 111.19 | 109.19 | -7.02 | (0.00) |
| **Norway** | 110.12 | 112.55 | 110.92 | 108.80 | -1.32 | (0.11) |
| **The United Kingdom** | 112.26 | 115.19 | 118.82 | 116.65 | 4.39 | (0.00) |
| **Panel B: Women** | | | | | | |
| **Australia** | 116.86 | 117.25 | 117.15 | - | 0.28 | (0.77) |
| **Canada** | 114.34 | 113.63 | 112.10 | - | -2.24 | (0.00) |
| **Finland** | 110.54 | 112.90 | 118.53 | - | 7.99 | (0.00) |
| **France** | 112.65 | - | 113.79 | - | 1.15 | (0.04) |
| **The Netherlands** | 124.60 | 122.68 | 121.26 | 119.08 | -5.51 | (0.00) |
| **Norway** | 115.34 | 117.77 | 117.28 | 116.63 | 1.29 | (0.06) |
| **The United Kingdom** | 117.88 | 120.16 | 119.95 | 117.97 | 0.08 | (0.86) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure Measure 3* is measured in hours per week. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France.

**Table C3. Trends in *Leisure Measure 4* (men and women)**

| Time-use category (hours per week) | DECADE 70's | DECADE 80's | DECADE 90's | DECADE 00's | Diff. | P-Value |
|---|---|---|---|---|---|---|
| **Panel A: Men** | | | | | | |
| **Australia** | 103.86 | 104.32 | 108.16 | - | 4.30 | (0.00) |
| **Canada** | 106.63 | 107.62 | 106.83 | - | 0.20 | (0.82) |
| **Finland** | 112.95 | 112.16 | 118.75 | - | 5.80 | (0.00) |
| **France** | 114.63 | - | 111.46 | - | -3.17 | (0.00) |
| **The Netherlands** | 116.04 | 114.61 | 110.09 | 108.52 | -7.52 | (0.00) |
| **Norway** | 109.40 | 110.91 | 108.65 | 106.77 | 2.63 | (0.00) |
| **The United Kingdom** | 112.10 | 114.33 | 117.01 | 115.32 | 3.22 | (0.00) |
| **Panel B: Women** | | | | | | |
| **Australia** | 112.26 | 110.02 | 111.31 | - | -0.95 | (0.35) |
| **Canada** | 108.63 | 108.88 | 106.63 | - | -2.00 | (0.00) |
| **Finland** | 108.37 | 110.23 | 114.21 | - | 5.84 | (0.00) |
| **France** | 107.22 | - | 108.27 | - | 1.05 | (0.06) |
| **The Netherlands** | 120.18 | 118.07 | 116.54 | 115.53 | -4.65 | (0.00) |
| **Norway** | 109.52 | 111.67 | 109.90 | 108.06 | -1.46 | (0.03) |
| **The United Kingdom** | 116.01 | 115.87 | 114.10 | 113.85 | -2.16 | (0.00) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure Measure 4* is measured in hours per week. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France.

# APPENDIX D: Results for Working Individuals

**Table D1. Trends in *Leisure* inequality, working individuals (men and women)**

| Leisure (hours per week) | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s |
|---|---|---|---|---|
| **Panel A: Gini Index** | | | | |
| **Australia** | 12.920 | 14.000 | 14.150 | - |
| **Canada** | 13.010 | 14.310 | 15.500 | - |
| **Finland** | 13.050 | 13.800 | 13.760 | - |
| **France** | 13.330 | - | 13.550 | - |
| **The Netherlands** | 6.510 | 6.950 | 7.520 | 13.670 |
| **Norway** | 13.170 | 13.210 | 13.710 | 14.420 |
| **The United Kingdom** | 11.700 | 12.500 | 14.020 | 13.600 |
| **Panel B: 90th/10th** | | | | |
| **Australia** | 1.872 | 1.915 | 1.938 | - |
| **Canada** | 1.939 | 1.976 | 2.117 | - |
| **Finland** | 1.826 | 1.882 | 1.913 | - |
| **France** | 1.919 | - | 1.881 | - |
| **The Netherlands** | 1.313 | 1.305 | 1.325 | 1.921 |
| **Norway** | 1.977 | 1.911 | 1.867 | 1.938 |
| **The United Kingdom** | 1.720 | 1.809 | 1.956 | 1.912 |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of leisure. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. Gini index is multiplied by 100.

**Table D2. Inequality in *Leisure* over the period, low and highly-educated working individuals (men and women)**

| Leisure (hours per week) | | DECADE 1970s | DECADE 1980s | DECADE 1990s | DECADE 2000s | Diff. $T_i$-1970's | $Diff_{low} - Diff_{high}$ |
|---|---|---|---|---|---|---|---|
| | | **Panel A: Men** | | | | | |
| **Australia** | **Less than high-school** | 104.69 | 101.24 | 105.50 | - | 0.81 | -0.32 |
| | **Some college and college grads** | 102.95 | 101.12 | 104.08 | - | 1.13 | (0.89) |
| **Canada** | **Less than high-school** | 104.27 | 104.18 | 106.03 | - | 1.76 | 3.18 |
| | **Some college and college grads** | 104.28 | 102.56 | 102.86 | - | -1.42 | (0.04) |
| **Finland** | **Less than high-school** | 108.24 | 106.79 | 115.99 | - | 7.75 | 1.79 |
| | **Some college and college grads** | 109.37 | 108.96 | 115.33 | - | 5.96 | (0.38) |
| **France** | **Less than high-school** | 113.00 | - | 109.26 | - | -3.74 | 1.11 |
| | **Some college and college grads** | 112.11 | - | 107.26 | - | -4.85 | (0.40) |
| **The Netherlands** | **Less than high-school** | 114.87 | 112.15 | 110.08 | 109.45 | -5.42 | 1.95 |
| | **Some college and college grads** | 113.16 | 109.88 | 106.83 | 105.79 | -7.37 | (0.13) |
| **Norway** | **Less than high-school** | - | 111.18 | 107.72 | 103.29 | -7.89 | -2.58 |
| | **Some college and college grads** | - | 109.89 | 108.19 | 104.58 | -5.31 | (0.33) |
| **The United Kingdom** | **Less than high-school** | 111.86 | 108.66 | 110.32 | 110.91 | -0.95 | -0.49 |
| | **Some college and college grads** | 113.55 | 108.69 | 110.37 | 113.09 | -0.46 | (0.72) |
| | | **Panel B: Women** | | | | | |
| **Australia** | **Less than high-school** | 103.72 | 106.65 | 106.24 | - | 2.52 | 4.01 |
| | **Some college and college grads** | 104.96 | 102.61 | 103.47 | - | -1.49 | (0.28) |
| **Canada** | **Less than high-school** | 100.25 | 100.73 | 100.62 | - | 0.37 | 2.00 |
| | **Some college and college grads** | 102.59 | 101.48 | 100.96 | - | -1.63 | (0.53) |
| **Finland** | **Less than high-school** | 102.69 | 105.36 | 112.58 | - | 9.89 | 1.85 |
| | **Some college and college grads** | 105.70 | 106.91 | 113.74 | - | 8.04 | (0.32) |
| **France** | **Less than high-school** | 101.21 | - | 102.87 | - | 1.66 | 5.34 |
| | **Some college and college grads** | 106.04 | - | 102.36 | - | -3.68 | (0.07) |
| **The Netherlands** | **Less than high-school** | 114.42 | 114.25 | 113.48 | 113.66 | -0.76 | 5.77 |
| | **Some college and college grads** | 115.90 | 110.45 | 111.10 | 109.37 | -6.53 | (0.01) |
| **Norway** | **Less than high-school** | - | 108.26 | 108.54 | 111.14 | 2.88 | 4.96 |
| | **Some college and college grads** | - | 107.68 | 105.41 | 105.60 | -2.08 | (0.06) |
| **The United Kingdom** | **Less than high-school** | 109.48 | 109.24 | 110.30 | 114.34 | 4.86 | 2.05 |
| | **Some college and college grads** | 108.54 | 104.55 | 111.79 | 111.35 | 2.81 | (0.92) |

The sample is restricted to include non-retired/non-student individuals between the ages of 21 and 65 (inclusive), see Appendix Table A1 for a description of the surveys included. *Leisure* is measured in hours per week, see Table Appendix A2 for a list of activities included in our definition of leisure. Demographic weighting proposed by Katz and Murphy (1992) and used by Aguiar and Hurst (2007) are used to ensure a constant representation of types of individuals and days of the week. $T_i$ is *Decade 2000's* for the Netherlands, Norway and the United Kingdom, and *Decade 1990's* for Australia, Canada, Finland and France. $Diff_{low} - Diff_{high}$ indicates the difference in the change in leisure between individuals with less than high school (<12 years of schooling), and individuals with some college/college graduates (>12 years of schooling) over the relevant period, p-value of such difference in parentheses.