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# **Work, Rest, and Play: Exploring Trends in Time Allocation in Canada and the United States**

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# **WORK, REST, AND PLAY: EXPLORING TRENDS IN TIME ALLOCATION IN CANADA AND THE UNITED STATES\***

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We control for demographic changes to document trends in the allocation of time using time diary data for Canada (1986 to 2005) and the United States (1985 to 2005). We find that (1) in 2005, average weekly hours spent on market work is higher in Canada than in the U.S. (37.29 vs. 33.29) , (2) between 1986 and 2005 market work increased by an average of 3.75 hours per week in Canada, but in the U.S it remained relatively stable, and (3) over the sample period, leisure time increased in the U.S., but fell in Canada. In addition, the least educated enjoy more leisure relative to the most highly educated in both countries but this inequality is narrowing for Canadian men.

Keywords: Market Work, Home Production, Leisure, Time Use  
JEL codes: D13, J22, O57

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## I. INTRODUCTION

Individuals can allocate their time endowment amongst a wide range of competing activities. These competing activities fall generally into one of four main categories: market work, non-market work (or household production), leisure, and personal care (e.g. sleep).<sup>1</sup> To date, a great deal of emphasis has been placed on exploring the allocation of time to market work leaving a detailed analysis of time spent on other activities relatively sparse. However, how time is apportioned to activities outside of market work and how the apportionment changes over time and across countries has implications for economic policy and welfare. In particular, time allocation influences the relative price of goods and services and, hence influences the distribution of income (Juster and Stafford [1991]). Furthermore, differences in time allocation across countries can not only help explain variations in economic growth, but can also elucidate the influence of institutional structures and public policy on individual and family time allocation decisions.

Recently, a detailed and rigorous analysis of trends in time allocation in the United States over the last four decades has become available. Aguiar and Hurst [2007] analyse trends in market work, non-market work, and leisure with time use data spanning 1965 to 2003. Their study is groundbreaking on three fronts. First, they report four alternate measures of leisure. Second, they report and analyse the time spent on leisure by levels of educational attainment across both men and women. Third, and probably most important, rather than report unconditional means they report trends in time use controlling for demographic changes based on age, gender, parental status, and level of educational attainment across the entire population.<sup>2</sup> Complementing this analysis, they also assess the influence of changing demographics on the overall unconditional mean change in time use using the Blinder Oaxaca decomposition. They

find that the time allocated to market work has remained relatively stable in the United States, but time allocated to leisure increased dramatically. The changing patterns of time use has been such that, the time allocated to market work by men decreased to support an increase in time spent on leisure, whereas women allocated more time to both work and leisure supported by a decline in the time spent on non-market work. They also document a growing inequality in the time spent on leisure whereby the least educated (less than high school) increasingly spend more time on leisure than the highly educated (university trained). In addition, they find that changing demographics has had a role in influencing the time allocated to market work but its effect on other time use categories has been relatively insignificant.

Why control for and analyse the effect of demographic changes on trends in time use? Demographic changes in tandem with changes in social and tax policies, economic conditions, preferences (individual and household), and the opportunity costs of competing activities, among other factors, all influence the allocation of time. Since World War II, significant demographic changes have taken place in both the U.S. and Canada as elsewhere in advanced capitalist economies. These changes include higher levels of educational attainment, the decline in single-earner families, lower levels of fertility, higher levels of immigration, and an aging population. At the same time, there has been economic development and growth. One of the significant results of these changes has been the dramatic rise in the labour force participation of women. In addition, in most of these countries and in particular Canada, there have been significant changes in the structure and level of taxes, social assistance, childcare benefits, maternity and parental level benefits, employment insurance, and pension plans. These developments have contributed to changes in preferences for and the opportunity costs associated with the allocation of time to various activities. For policy purposes, it is important to disentangle how much of the change in

the use of time is linked to changing demographics and how much is because of policy changes and other factors.<sup>3</sup> By controlling for demographic changes, we are taking the first step in disentangling the impact of demographic, policy, and economic changes on the allocation of time.

The purpose of this paper is to build on the contribution of Aguiar and Hurst [2007] and thereby add to our knowledge of the allocation of time in two aspects. First, using Canadian data from 1986 to 2005, we analyse trends in the allocation of time to leisure, market work, and non-market work (including childcare). As in Aguiar and Hurst [2007], we control for demographic changes, report a variety of measures of leisure, and examine the relationship between educational attainment and time spent on leisure. Second, the results are compared with those obtained for the U.S. over a similar period, 1985 to 2005. Our sample in both countries is the non-retired and non-student population aged 20 to 64. To our knowledge, this is the first such analysis that has been conducted using Canadian time use data. In addition, we are not aware of any work that compares detailed time use by Canadians to their American counterparts, other than studies that compare time spent on market work. More broadly, the trends in time use controlling for demographic changes will aid in future work that will provide policy prescriptions based on how time has been allocated differently in Canada and the United States. In particular, the set of broad facts that we document on the allocation of time in both countries reflect differences in culture, preferences, economic conditions, institutions, policy, and systems of taxation among other factors.

In sum, our main results are as follows. First, we find that after controlling for demographic changes, Canadians work more hours per week than Americans in 2005 (37.29 vs. 33.43). In addition, the hours spent on market work has increased in Canada (3.75 hours per

week) but has remained relatively stable in the United States. The dynamics have been such that Canadian men have increased time spent on market work by 1.57 hours per week while American men have decreased their average weekly hours by 3.32. On the other hand, Canadian and American women have increased the time spent on market work (5.89 and 3.47 hours per week respectively). Second, the time spent on non-market work is about the same in the U.S. and Canada in 2005. However over the period Canadian men increased their hours spent on non-market work, 1.70 hours per week, while the time American men spent on this activity fell marginally (0.72 hours per week). Further, while women in both countries reduced the time spent on non-market work they still spend about double the time on this activity compared to their male counterparts. Third, the time spent on leisure defined in a variety of ways has either trended downwards or remained relatively stable in Canada. In contrast, in the U.S., leisure has generally trended upwards. Fourth, we find that a leisure inequality exists in both countries, whereby the least educated spend more time on leisure compared to the highly educated. This inequality in leisure is growing among women and men in United States. In Canada, the inequality in leisure is growing for Canadian women but narrowing for Canadian men. Fifth, we find that there is a role for changing demographics and changes in the allocation of time within demographic groups in explaining the overall unconditional change in market work, non-market work and leisure in Canada.

The rest of this paper is as follows. In section II, we discuss the data and the methodology. In section III, we present the trends in time use. In section IV, we report the Blinder Oaxaca decomposition for market work, non-market work and one leisure measure for Canada. A summary and suggestions for future research conclude.

## II. DATA AND METHODOLOGY

### II.A. Data

The data used in this paper come from time use budget surveys. Time use data are generally well suited for analysing changing patterns of time spent on a wide variety of activities. First, the time use data are rich in demographic information such as sex, age, parental status, marital status, and level of educational attainment. Second, other surveys, such as the Survey of Labour and Income Dynamics (SLID) in Canada and the Panel Study of Income Dynamics (PSID) in the U.S., do not offer the level of detail on activities outside of market work. Finally, surveys like the SLID or PSID tend to provide less accurate measure of the use of time compared to time diary data (Robinson and Godbey, [1999]). In particular, these surveys typically ask the respondent estimate the number of hours spent in an activity in some previous reference period. The problem with this is that respondents tend to recall the period when the activity was most prominent, and thus overestimating the amount of time spent on the activity (Juster and Stafford, [1991]).

The Canadian time use data were obtained from the General Social Surveys (GSS). The GSS is conducted annually and focuses on various aspects of Canadian life. Trends in time use were examined in 1986, 1992, 1998, and 2005.<sup>4</sup> The survey is conducted by telephone and the target population in each survey is the non-institutionalized population aged 15 and over living in one of the ten provinces.<sup>5</sup> The GSS includes survey weights that adjust for the approximately 2% of the target population without a home phone, the age and sex distribution of the population, and so that each day of the week was equally represented. The sample sizes in each survey were, 9,946 in 1986, 8,996 in 1992, 10,749 in 1998 and 19,597 in 2005.<sup>6</sup> The U.S. data were obtained from time use surveys conducted in 1985 and 1992-1994 by the Survey Research Centre at the

University of Maryland and in 2003 and 2005 by the Bureau of Labour Statistics. Following Aguiar and Hurst, we treat the 1992-1994 survey as year 1993 given that the median respondent was in 1993. Surveys are conducted by telephone interview and are nationally representative with respect to households with a phone. Survey sample weights within each U.S. survey ensure that each day of the week was equally representative and that age and sex distribution were taken into account. The sample sizes for the U.S data are 4,939 in 1985, 9,383 in 1993, 20,720 in 2003 and 13,038 in 2005.<sup>7</sup>

The sample in this paper will be the working age population to aged 20 to 64, excluding retirees and students whose time allocation decisions are likely to be significantly influenced by the acquisition of human capital. Our sample also excludes individuals who did not report their level of educational attainment, and whose time diary did not sum to a complete day.<sup>8</sup> The working age population has a significant bearing on the determination of economic growth and distribution of national income by virtue that they supply the most labour hours to the market. The study of their time allocation decisions is thus of some importance.

Time diaries are collected in minutes per day, so we first convert to hours per seven-day week by multiplying by seven and dividing by sixty. We thus report the average weekly hours spent on each activity of interest per working age adult. The main results are presented in tables 1 to 11. Appendix tables A2 to A4 report the statistical significance of the difference in each major time use category in the U.S. and Canada in 2005.

## II.B. Methodology

To estimate trends in time use conditional on demographics we apply the fixed weight procedure used by Aguiar and Hurst [2007] for each country<sup>9</sup>. First, we pool the time use data



and adjust the survey weights so that each day of the week and survey is represented equally. Second, demographic cells are created for each activity based on age (20-29, 30-39, 40-49, 50-59, 60-64), gender (male or female), parental status (whether at least one child under the age of 19 is present in the home or not) and level of education (less than high school, high school, some college or at least university graduate). This yields 72 demographic cells for each survey year from which we calculate 72 demographic cell means.<sup>10</sup> The demographic weight associated with each demographic cell is the percentage of the pooled sample (compilation of all surveys in a particular country) that is within each demographic cell. From this we calculate the mean weekly hours spent on an activity adjusted for demographics as the demographically weighted average of the cell means for that activity.

We report the conditional mean time spent on market work, non-market work, and leisure, including their subcategories, for Canada and the United States across both sexes and with respect to levels of educational attainment. There are many ways in which to discuss the trends in time. Our approach will be present the results for each time use activity by comparing average hours per week controlling for demographics spent in 2005 for Canada and in 2005 in the United States across the entire population and then across men and women. This is then followed by a discussion the conditional change in the average weekly hours over the approximately two decades in each country.

We conclude by examining how much of the unconditional change in the average hours per week from 1986 to 2005 can be explained by evolving demographics and the portion explainable by changes in the allocation of time within demographic groups in Canada. We do this by reporting a Blinder Oaxaca decomposition of for market work, non-market work, and leisure for the Canadian population as a whole and then for men and women. Following, Aguiar

and Hurst [2007] the methodology of the decomposition is briefly as follows. Let  $Y_{it}$  be the vector of average hours per week spent on activity  $i$  by demographic groups in survey  $t$  and  $W_{it}$  the demographic weights in survey  $t$ . Then the unconditional average time spent on an activity adjusted by  $W_{it}$  is simply  $W_{it}Y_{it}$ . So the unconditional mean change in hours per week for an activity from 1986 to 2005 can be written as  $W_{i2005}Y_{i2005} - W_{i1986}Y_{i1986}$  which can be decomposed as  $(W_{i2005} - W_{i1986})Y_{i2005} + (Y_{i2005} - Y_{i1986})W_{i1986}$ . The term  $(W_{i2005} - W_{i1986})Y_{i2005}$  is the part of the total unconditional mean change due to changes in the demographic weights between 1986 and 2005 evaluated at the 2005 cell means. The term  $(Y_{i2005} - Y_{i1986})W_{i1986}$  is the portion of the unconditional change that is a result of changes within demographic groups between 1986 and 2005 evaluated at the 1986 demographic weights.

Alternately, unconditional mean change in hours per week in an activity from 1986 to 2005 can be decomposed as  $(W_{i2005} - W_{i1986})Y_{i1986} + (Y_{i2005} - Y_{i1986})W_{i2005}$ . The term  $(W_{i2005} - W_{i1986})Y_{i1986}$  is the part of the total unconditional change due to changes in the demographic weights between 1986 and 2005 evaluated at the 1986 cell means. The term  $(Y_{i2005} - Y_{i1986})W_{i2005}$  is the portion of the unconditional change that is a result of changes within demographic groups between 1986 and 2005 evaluated at the 2005 demographic weights. We report and discuss both decompositions.

### **III. THE ALLOCATION OF TIME**

#### III. A. Market Work

We first report total market work which is the sum of the time spent on all activities related to paid employment. This includes job search, overtime work, and work related activities

such as, travelling to and from work, commute during work, breaks and idle time, eating and snacks, and other uncodeable work activities. Next we report core market work defined as the sum of time spent on work at the main job, other jobs, and overtime time spent searching for job search and waiting time before or after work. Finally we report the time spent travelling to and from work. Table 1 reports these results for the entire population and by gender for Canada and the United States.

In 2005, Canadians spent an average of 37.29 hours per week on market work while Americans spent 33.43 hours per week (table 1 panel A row 1). This is a difference of almost 4 hours per week is statistically significant.<sup>11</sup> However, in 2005 the time spent on core market work (panel A table 1 row 2) was indistinguishable in the two countries (31.48 in Canada vs. 30.12 hours per week in the U.S.). Work related activities accounted for an average of 6.04 hours per week in Canada and 2.85 hours per week in the U.S. in 2005, a difference that is statistically significant. Further, we note that time spent travelling to and from work was 3.37 hours per week in Canada in 2005 compared to 2.60 hours in the U.S. (table 1 panel A row 3). The additional time spent on work related activities by Canadians is thus responsible for the larger difference between market work and core market work in Canada relative to America. That is, while Canadians work more than Americans do, part of that arises because Canadians spent more hours per week travelling to and from work, idling at work, and taking breaks at work.<sup>12</sup>

Weekly market work hours by gender are reported in panels B and C of table 1. From table 1 panel B row 1 and 2, Canadian men in 2005 spent an average of 45.15 on total market work and 38.12 hours per week on core market work. The comparative figures for American men are 39.67 and 36.11 hours per week. The cross country difference in total market work and core market work in 2005 are also statistically significant. While there are significant differences

in the average hours spent on market work for men in the U.S. and Canada, the time spent on market work is similar for women in both countries. In Canada in 2005 women spent an average of 29.57 and 24.95 hours per week on market and core market work respectively (table 1 panel C row 1 and 2). While, women in the U.S. spent 27.84 and 25.50 hours per week on market and core market work in 2005. Cross country difference in market work time for women are not statistically significant.

Table 1 also allows us to examine trends in market work time across both countries. From panel B, in Canada, from 1986 to 2005, men increased core market work by 2.53 hours per week while market work trended up by 1.57 (not statistically significant). In contrast, American men decreased time spent on market work by 3.32 while core market work fell slightly by 0.62 hours per week. From panel C of table 1, Canadian women increased market and core market work hours per week by 5.89 and 5.33 respectively. Similarly, American women spent 3.47 hours more per week on market work and 4.75 more hours per week on core market work.

Given the trends in market work documented so far, it is also instructive to examine whether the differences in hours worked is being driven by cross country differences in those who report positive work hours working (participants) and those who report zero hours worked (non participants) on the diary day. For example, we would expect that if more individuals reported zero hours spent on market work in the US than in Canada then, all else constant, this should contribute to a higher average hours spent on market work in Canada. Table 2 reports the percentage of individuals from the sample used in our analysis, from each survey year and for all survey years, reporting positive number of hours worked in the U.S. and Canada on the diary day. The trends reveal that in all years Canada has a smaller percentage of individuals reporting a positive number of hours worked. For example in panel A of table 2, participation in market

work activities in Canada was 76.26% in 2005 while in the U.S. it was 80.84%. In panel B, we note that for men in Canada the participation in 2005 was 86.60% while in the U.S. the number was 88.92%. The comparative figures for Canadian and American women are 67.98% and 74.70% respectively.

One can go even further by examining if the trends in market work documented for all individuals from our sample in Canada and the U.S. is also true for participants in market work only. These results are reported in table 3 and are in line with the trends documented earlier. For example, from panels A and B row 1, working individuals in Canada worked 47.48 hours per week compared to 40.53 hours per week in the U.S in 2005. This is a difference of almost 7 hours per week and is statistically significant. Further in 2005, working Canadian men spent approximately 6 more hours per week than working American men on market work (panels B and C row 1). Similarly, Canadian women spent about 7 hours more than their female counterparts in 2005. Interestingly Canadian women working women spent about the same amount of time as American men on market work (43.20 vs. 44.55 hours per week). Even in the face of a higher number of participants in market work in America, controlling for demographic changes Canadians work on average more hours per week per working age adult.<sup>13</sup>

### III. B. Non-Market Work and Childcare

Non-market work (home production) includes all the time spent on activities related to unpaid work but excluding own medical care. We separate out and examine 3 subcategories of non-market work: time spent on core-non market work, shopping for goods and services, and childcare activities. Core non-market work primarily involves do-it-your self-activities that plausibly have close substitutes in the goods and services market. These activities include meal

preparation, home maintenance, and routine housework such as laundry and ironing, etc. Time spent obtaining goods and services involve everyday shopping for goods, and shopping for personal and professional services (excluding medical care). Childcare is the sum of time spent on primary, recreational and educational childcare activities. Results are reported in table 4.

From panel A table 4 row 3, time devoted by all individuals to non-market work plus childcare was about the same in 2005 in Canada and the U.S. (23.46 vs. 22.76 hours per week). However, in 2005 Canadians spent 11.34 hours per week on core non-market work while Americans spent 8.05 hours per week (panel A table 4 row 5). In addition, Canadians spent marginally less time shopping for goods and services in 2005 than Americans (4.93 vs. 5.16 hours per week). When it comes to childcare, Americans and Canadians spend about the same amount of time in 2005 (4.58 vs. 5.00 hours per week).

The trends in time use in the aggregate are also indicative of trends in time use across gender. These results for men and women are reported in panels B and C of table 4 respectively. We note that Canadian and American men spent about the same time on non-market work and on shopping for goods and services in 2005 (panel B row 6). In 2005, Men in Canada spent an average of 13.62 hours per week on non-market work activities of which 3.76 were devoted to obtaining goods and services. Similarly in 2005, American men spent 13.16 hours per week on non-market work and 4.02 hours obtaining goods and services. At the same time in 2005, Canadian and American men and spent about the same time on childcare (2.76 vs. 3.13 hours per week). The key difference in home production activities is the amount of time spent on core non-market work, Canadians spent 7.38 hours per week which is almost double the time spent by American men in 2005.

Table 4 panel C confirms that women continue to bear most of the burden of labour within the household. Canadian women spent 30.40 hour per week in 2005 on non-market work and childcare, which is almost double the time devoted by Canadian men. Similarly, American women spent an average of 28.56 hours per week on non-market work and childcare in 2005, which is again almost double the time spent by American men. The time spent on core non-market work again represents the major difference in time use for Canadian and American women. American women in 2005 spent an average of 12.13 hours per week on core non-market work; this is approximately 3 hours per week less than their Canadian counterparts.

We now turn our attention to the trends in non-market work and childcare. We limit our discussion to differences across men and women. From table 4 panel B, we note that Canadian men increased non-market work by 1.70 hours per week but decreased time spent obtaining goods and services by 1.19 hours per week. At the same time core non-market work increased by 1.52 hours per week for men in Canada. On the other hand, for American men, the time spent on non-market work, core non-market work and on shopping for goods and services declined marginally. With respect to time spent on childcare, men in Canada spent 0.97 hours more per week over the period (not statistically significant). On the other hand American men spent 1.62 hours more per week in 2005 relative to 1985.

From, table 4 panel C, unlike men, time spent on non-market fell sharply for women in the U.S. by -4.77 hours per week and in Canada trended downwards by -1.25 hours per week (the latter not statistically significant). These trends reflect reduction in the time spent on core non-market for women across both countries (1.82 in Canada and 4.07 in the U.S.). The time spent shopping for goods and services declined 1.03 hours per week for Canadian women and

declined 0.89 hours per week for American women. On the other hand, childcare trended up by 1.22 and 1.64 hours per week for women in Canada and the U.S. respectively.

### III. C. Total Work and Childcare

Total work is the sum of non-market work and market work. We limit our discussion to trends across gender. The average weekly hours for Canadian and American men and women are shown in table 4 panels B and C row 2. Consistent with the results so far, in 2005 Canadian men spent more time in total work more than American men (58.77 vs. 52.83 hours per week). Similarly, Canadian women spent more time on total work than American women (53.61 vs. 49.71 hours per week). Total work increased by 3.26 and 4.63 hours per week for Canadian men and women respectively. In contrast, total work declined for American men and women by 4.45 and 1.31 hours per week respectively. Adding the time spent on childcare to total work we find that the Canadian men spent 5.58 more hours per week than American men in 2005. While Canadian spent 3.57 hours per week more than American women in that same year.

### III. D. Leisure

The most common definition of leisure is that it is the complement of the set of activities that are usually required to be performing during the day, such as market work, non-market work and childcare. A more narrow measure would be to define leisure as the set of activities that yield direct utility such as, gardening and pet care, socializing, entertaining, active, recreation, watching television among other related activities. Leisure can be also be defined as an individual's perception of the quality of the activity experience rather than the duration of the activity itself (see Wilson [1980]). Given the lack of consensus of a definition for leisure, we



follow Aguiar and Hurst [2007] and define four alternate measures. Leisure measure 1 is the sum of time spent on entertainment and social activities, sports, hobbies, gardening and pet care, media and communication, and relaxation activities. Leisure measure 2 is the sum leisure measure 1, private activities (such as sex) and personal care activities such as eating, and personal bathing. Leisure measure 3 is the sum of leisure measure two and time spent on childcare activities. The final measure, leisure measure 4 is the time available after time to total work (market work and non-market work) has been expended.

The time spent in leisure is reported in table 5 for Canada and the United States. In leisure measure 1 to 3, Americans in 2005 spend slightly more time than Canadians in that year. In the narrowest measure, leisure 1, Canadians spent an average of 33.08 hours per week while American spent 34.45. However, in the broadest leisure category, leisure 4, Americans spent 116.19 hours per week, which is 5.37 hours more than the time spent by Canadians. The fact that Americans enjoy more leisure in this time use category than Canadians is consistent with the trends over the two decades for market and non market work documented above.

The time spent on leisure measures 1 and 2, remained relatively stable while leisure measure 3 declined by 1.03 hours per week Canada. However, leisure 4, the residual of total work, declined by 3.96 hours per week in Canada. In the U.S., leisure measures 1 to 3 were relatively stable while leisure measure 4 increased by 2.60 hours per week. Similar trends are documented in panel B and C for men and women respectively. In Canada leisure measures 1 to 3 were relatively stable while leisure 4 declined by 3.27 hours per week for men. In contrast leisure measure 3 and 4 increased by 2.72 and 4.05 hours per week respectively for American men. Women in Canada spent 4.63 fewer hours per week on leisure 4 while American women increased the time spent on leisure 4 by 1.31 hours per week.

The trends so far reported potentially mask changes in how time is allocated to various activities within leisure. We decompose and report some of the major activity subcomponents of leisure 2 and leisure 4 for Canada for men and women in tables 6, 7 and 8.<sup>14</sup> From table 6 and 7, men and women increased time spent sleeping and napping by 1.78 and 1.53 hours per week respectively. Personal care declined by 3.36 and 3.81 hours per week for men and women respectively. In terms of watching television, men decreased their hours by 1.63 per week while women had a modest decline of 0.49 hours per week (statistically insignificant). Men and women increased gardening and pet care by 1.3 and 1.42 hours per week respectively. With respect to hobbies men increased their average weekly hours by 1.61 while women have reduced the time they spent by 0.73 hours per week. Both men and women spent less time reading per week (decline of 1.91 and 1.27 hours respectively) while the time they spent eating (meals away from market work) declined by 2.65 and 2.70 hours per week respectively.

Time spent on active sports increased by 0.33 hours per week for men and by 0.38 hours per week for women. At the same time, the time spent on all sporting activities increased by 0.93 and 1.29 for men and women respectively. In addition, walking and hiking increased for both men and women (0.38 and 0.54 hours per week respectively). From the 1992 time use survey onwards respondents were asked to report time spent on the computer for general use and surfing the net and composing e-mails. This time use category is a subcomponent of the time spent on games. From the 1986 to 2005, the time spent on games increased by 1.40 and 0.39 hours per week for men and women respectively. However, a part of this change is because from 1992 to 2005 time spent on computer usage increased by an average of 1.51 hours per week for men and 1.01 hours per week for women.

Leisure measure 4 has had the most dramatic decline in Canada and this is true for both men and women. Leisure 4 is the residual of total work and includes leisure 3 (entertainment and recreational activities, sports active and passive, personal care and childcare) and what we call civic- medical care (civic oriented, voluntary and religious activities, own medical care, care to other adults, education and other uncodeable non-work activities including time gaps). We separate out and add together subcomponents of civic-medical care and report trends in table 8. We did not report individual subcomponents because of their relatively small economic magnitudes. From table 8 we note that civic-medical care activities declined by 2.38 and 2.93 hours per week for men and women respectively. These changes represent over fifty percent of the overall decline in leisure 4 for men and women.

### III.E. Education and Market Work

Trends in market work by gender and educational attainment are shown in tables 9 and 10 for Canada and U.S. respectively. From table 9 panel A, for men in Canada, we observe that hours worked is positively related with the level of educational attainment. For example, the least educated men in 1986 worked 10.25 hours less than the mostly highly educated (row 1 column 5). However, over the last two decades the gap in hours worked between the least educated and the highly educated men in Canada has declined. In 2005, least educated men worked only 3.75 hours per week less than highly educated men (row 4 column 5). Following from this trend, over the two decades the change in market work hours is negatively related to level of educational attainment. In 2005, the least educated increased market hours by 4.73 hours per week (row 5 column 1), while the mostly highly educated decreased time spent in market work by only 1.77 hours per week (row 5 column 4).

In the U.S., for men, the relationship between educational attainment and hours worked is not as clear as in Canada. From table 10, in 1985, highly educated spent the least time on market work, 41.81 hours per week (row 1 column), while those men who had some college level education worked the highest number of hours, 45.58 hours per week (table 10). However, by, 2005 this trend was reversed with the highly educated men working 45.30 hours per week (row 5 column 4) and now the least educated men working 35.01 hours per week (row 1 column 1). We also see that from 1985 to 2005, hours worked decreased with level of educational attainment for men in the United States. Therefore, while highly educated men increased their weekly market hours by 3.48 hours per week, row5 column 4, least educated men reduced their hours by 7.37 hours per week, row 5 column 1.

We now turn our attention to how market work has evolved with respect to women with different levels of educational attainment in both countries. In Canada, market work increases with educational attainment for women (table 9 panel D). Women of all educational attainment levels increased market work hours from 1986 to 2005, with the least educated having the smallest increase, 3.58 hours per week (row 5 column 1), and women with a high school diploma having the largest increase, 8.15 hours per week (row 5 column 2). While this has occurred, the gap between the hours worked by the least educated and the most highly educated has not narrowed. In 1986, women who were university graduates worked 12.05 more hours per week, row 1 column 5, than those who did not complete high school while in 2005 they worked 13.74 more hours per week, row 5 column 5, than this group of least educated women.

Similar to Canada, the time devoted to market work increases with the level of educational attainment among American women (table 10 panel D). In addition from 1985 to 2005 in the rate in increase in hours worked was positively related to educational attainment. For

example, for the least educated women market work hours increased by 0.25 hours per week, row 1 column 1, while highly educated women increased market work hours by 6.38 hours per week (row 5 column 4). This is further reflected in that the fact that difference between highly educated and least educated women in the U.S. increased from 8.69 (row 1 column 5) to 14.82 (row 5 column 5) hours per week over the period.

### III.F. Education and Non-Market Work

In Canada, men of all educational attainment increased their weekly hours spent on non-market work (table 9 panel B). In 1986 least educated men spent 0.44 hours fewer per week than highly educated men (row 1 column 5). However, by 2005 least educated men spent 15.03 hours per week on non-market work, which is 1.76 more hours than highly educated men (row 1 columns 1 and 5 respectively). From table 10 panel B, in the U.S. there is no clear linear relationship between non-market work and educational attainment. However, on average highly educated American men spent more time non-market work than least educated American men. For example in 2005, the least educated men spent 11.65 hours per week on non-market work while the highly educated men spent 12.92 hours per week (row 4 columns 1 and 4 respectively).

From table 10 panel E we have trends in non-market for women in Canada. We observe that non-market work decreases with educational attainment. However, from 1986 to 2005 the time spent on non-market work decreased with the level of educational attainment. In 1986 least educated women spent 10.04 more hours per week than highly educated women did, but by 2005, this difference was 6.47 hours per week (rows 1 and 4 column 5 respectively) In all educational categories, the time devoted to non-market work fell except for university educated

women who increased the time spent on non-market work by 0.45 hours per week (row 5 column 4). The trend in the U.S. is similar to that in Canada. These trend are documented in panel E of table 10. For American women non-market work generally diminishes with educational attainment. In 2005, highly educated American women spent 20.70 hours in non-market work, which is 4.86 hours less than the time devoted by least educated women (row 1 column 4 and 5 respectively). However, as in Canada, American women of all educational level devoted less time to non-market work in 2005 compared to 1986 (row 5 columns 1 to 4).

### III.G. Education and Leisure

In this section, we characterize how educational attainment has evolved with respect to our second leisure measure, which encompasses time spent on gardening and pet care, social and recreational activities, and personal care. In this section, we characterize how educational attainment has evolved with respect to our second leisure measure, which encompasses time spent on gardening and pet care, social and recreational activities, and personal care.

For men in Canada, table 9 panel C, leisure decreases with educational attainment for men (row 1 to 4 and column 5). Highly educated men spent 10.06 hours per week less on leisure than least educated men in 1986 (row 1 column 5). However, by 2005 this difference was to 6.47 hours per week (row 4 column 5). In fact, of the four educational groups, highly educated men increased leisure by 2.62 hours per week while leisure declined for all other educational categories with men with some college training experiencing the largest decline in leisure of 2.02 hours per week (row 5 column 3). Thus while there is an inequality in leisure to the extent the least educated spend more time on leisure this gap is narrowing. In the U.S., leisure time spent by men also decreases with educational attainment (table 10 panel C). In addition, the leisure

increase over time and is negatively related to educational attainment. We observe that by 2005 the least educated had increased leisure by 6.68 hours per week while the highly educated had in fact decreased time spent in leisure by 4.88 hours per week (row 5 column 1 and 4 respectively). In contrast to the results for Canada, there is an inequality in leisure for men in U.S. but the inequality is increasing over time.<sup>15</sup>

For women in Canada, the time spent on leisure decreases with the level of educational attainment (table 9 panel F). In 1986, least educated women enjoyed 8.14 more leisure hours than highly educated women did but, by 2005, that difference was 10.05 hours per week (rows 1 and 5 column 5 respectively). Over time least educated women increased leisure time by 1.88 hours per week (row 5 column 1). High school and college-trained women saw their leisure time fall by 2.57, row 5 column 2, and 3.37, row 5 column 3, hours per week, while leisure time for university educated women remained stable. The net result of these trends is that there is an inequality in leisure and this has grown over time for women in Canada.

Similar to trends reported so far, the time spent by American women on leisure generally increase with educational attainment (table 10 panel F). In 1985, least educated women spent 7.44 more hours on leisure than highly educated women (row 1 column 5). Over time this gap has widened even though women of all levels of educational attainment have decreased time spent on leisure, the largest decline has been among university women (decline of 4.03 hours per week). Thus, similar to the trends for American men and Canadian women there is an inequality in the time spent on leisure by American women and this inequality is increasing over time.

#### **IV. BLINDER OAXACA DECOMPOSITION OF THE UNCONDITIONAL CHANGE**

In this section, we analyse the extent to which changes in demographics contribute to mean unconditional changes in market work, non-market work, and leisure 2 in Canada. We use the Blinder Oaxaca decomposition using the methodology outlined in section II.B and report the two alternate decompositions of the change in the unconditional mean weekly hours between 1986 and 2005. Table 11 reports these results.

##### IV. A. All Individuals

Panel A is the decomposition for all individuals evaluated at 2005 cell means and 1986 demographic weights, while panel B is the decomposition evaluated at the 2005 demographic weights and 1986 cell means. The first column is the total unconditional change, the second is the change due to changes in demographics, and the third column is the change due to shifts in the time allocation within demographic groups. From panels A and B, row 1 column 2, for market work, changes in demographics account for 2 to 2.26 hours per week to the overall unconditional change of 5.84 hours per week. This leaves 3.84 to 3.58 hours per week of the unconditional change explainable by changes in the allocation of time within demographic groups. These changes are consistent with a more educated and older workforce in addition to the fact they are choosing to spend more time on market work. The unconditional change in non-market work has changed modestly and there is relatively little role for changing demographics and the allocation of time within demographic groups. On the hand, the unconditional change in leisure 2 over the period fell by 2.04 hours per week with evolving demographics accounting for -0.91 to -1.27 hours of this change (row 3, column 2 of panel A and B). At the same time,



changes in the time allocation to leisure activities within demographic groups ranged from -1.07 to -0.77 hours per week.

#### IV. B. Men

Panel C of table 11 reports the decomposition for men evaluated at 2005 cell means and 1986 demographic weights while panel D is the decomposition evaluated at the 2005 demographic weights and 1986 cell means. From panel C and D the unconditional change in market work increased by 2.75 hours per week from 1986 to 2005. Of this 0.29 to 2.12 is because of changing demographics (panels C and D column 2 and row 1 respectively). The change of 0.29 is the effect of evolving demographics on the unconditional change evaluated at 2005 cell means. On the other hand, the change of 2.12 represents how much of the unconditional change between 1986 and 2005 using 1986 cell means is a result of shifts in demographics over time. The fact that unconditional change evaluated at the 1986 cell means is 2.12 compared to 0.29 at 2005 cell means reflects that the differences in the time allocated to market work across demographic groups was larger in 1986 compared in 2005 (see discussion on education and market work above for men in Canada). These changes also reflect the fact that the population is becoming more educated, older and having fewer children.

In panels C and D column 3 and row 1, we note that market work has increased by 2.46 to 0.63 hours per week because of increases in the time allocated to market work within each demographic cell. Now, the 2.46 hours per week indicates that within demographic groups more time is allocated to market work in 2005 compared to 1986, which accounted for 0.63 hours per week of the unconditional change due to time allocation. Thus, in addition to the increase in the relative weight of more educated and older population, these individuals are also working more

hours per week. With respect to non-market work for men, changing demographics add 0.39 to 0.22 hours per week. While time allocations within demographic groups add 1.66 to 1.83 to the unconditional change which was 2.05 hours per week. Shifts in demographics have thus had a very modest role in explaining trends in non-market work. The time spent on leisure 2 for men declined by 1.66 hours per week. Of this decline -0.65 to -1.71 hours per week is a result of changing demographics, while -1.01 to 0.05 is a result of decreases in the allocation of time to leisure 2 within demographic cells. The -1.01 represents that all demographic groups allocated less time to leisure in 2005 compared to 1986, which represented 0.05 of the unconditional change due to time allocation.

#### IV. C. Women

Turning our attention now to women, we note that demographic changes are relative more significant in explaining the overall unconditional change in time use from 1986 to 2005. The unconditional change in average weekly hours spent on market work increased by 8.47 hours per week for women. Of this, changing demographics contributes to 3.32 to 1.93 hours per week (panels E and F, row 1 column 2). The 3.32 is the evaluation at the 2005 cell means and 1986 demographic weights and the 1.93 at the 1986 cell means and 2005 demographic weights. The 3.32 reflects that the fact that the differences between demographic groups in the time allocated to market work is larger in 2005 compared to 1986 (see education and market work for women above). Changes in the allocation within demographic groups contributed 6.54 to 5.15 hours per week to the overall unconditional change.

The unconditional change in non-market work for women was -2.41 hours per week (panel E row 3 column 1). The portion of this change due to changing demographics over time

ranged from -3.39 to -0.67 hours per week. The relative larger change of -3.39 reflects that in 1986 the difference in the time devoted to non-market work among demographic groups was larger compared to 2005. This is consistent with the trends documented on educational attainment and market work for women in Canada above. At the same time, the portion of the unconditional change resulting from changes in the allocation of time ranged from -1.74 to 0.98 hours per week. The figure of -1.74 reflects a decrease in time allocated to non-market work in 2005 women in each demographic group.

With respect to leisure 2, women spent an average of 2.4 fewer hours per week in 2005 as compared to 1986. Of this unconditional change, -1.27 to -0.81 is a result of changing demographics. The contribution of changes in time allocation within demographic groups to the overall unconditional change increased from -1.59 hours per week when evaluated at the 2005 cell means and 1986 demographic weights to -1.13 hours per week at that 1986 cell means and 2005 demographic weights.

## **V. CONCLUSION AND DISCUSSION**

In this paper, we document the allocation of time in Canada (1986 to 2005) and contrast it with the situation in the United States over a similar period (1985 to 2005). We discuss time use trends at the end of the period in each country and then analyse trends over time. We depart from most of the existing literature by reporting how market work, non-market work, and leisure has evolved adjusting for demographic changes based on age, gender, level of educational attainment, and fertility. To the best of our knowledge our paper is the first that we are aware of, that compares trends in the allocation of time in Canada and the U.S. in this manner. Our approach mirrors that of a recent study on the U.S. by Aguiar and Hurst [2007].

A number of interesting facts emerge in trends in the average weekly hours across leisure, market work, and non-market per working age adult in Canada and the United States. We document five set five broad set of facts. First Canadians have increased the time devoted to market work whereas the time allocated in the United States has remained relatively stable. However, while the time spent by Canadian men on market work has trended up 1.57(not significant) hours per week the time spent by American men has trended decreased by 3.32 hours per week. At the same time by 2005 Canadian men work more hours per week than American men (45.15 vs. 39.67). Both Canadian women and American women have increased market work hours (5.89 vs. 3.47). However, Canadian and American women work about the same number of hours per week. Second, women and men in Canada spent about the same time on non-market work and childcare in 2005 as their counterparts in the America. In addition, the time allocated by women to non-market work is about double that of men in each country. At the same time American women and men in 2005 spent less time on core non-market work than their counterparts in Canada in that year.

Third, compared to Canadians, Americans enjoy more rest and play after obligatory work, that is leisure measure 4 is higher by almost 4 hours the U.S. at the end of the two decades. At the same time, leisure measure 4 has declined for Canadian men and women while it has increased for their counterparts in America. Furthermore, we find that the trends in leisure measures in Canada mask changes in the allocation of time within activities over the two decades. For example from 1986 to 2005, Canadian men and women spent less time on personal care and reading but slept more and increased time spent walking and hiking. In addition, Canadians devoted less time in 2005 to civic, voluntary, own medical care, care of other adults and religious activities in compared to 1986.

Fourth, we find that an inequality in leisure exist for Canada and the United States, whereby the least educated in each country spent the most time in leisure. This inequality is growing for American men and women while it is narrowing for men in Canada but growing for Canadian women. Fifth, the Blinder Oaxaca decomposition of market work, non-market work and leisure reveals that there is a role for changing demographics and changes in the allocation of time within demographic groups in explaining overall unconditional change in average weekly hours spent on these activities in Canada.

We have not attempted to explain the trends in the allocation of time that we document for Canada and the United States. The five broad set of facts we document are a starting point to just such an analysis. How time is allocated has a direct bearing on every aspect of human life and thus on the welfare of society as a whole. Three related questions are now open for future research: (1) what are the factors that have led to differences, once controlling for demographics, in the allocation of time in Canada and the United States? (2) Why are Americans working fewer hours per week than Canadians and (3) what policy prescriptions can follow? Answering these questions will be task of our future research. In addition, we will also compare the trends in market work documented in the Canadian Labour Force Survey and American Current Population Survey data<sup>16</sup>.

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**TABLE I**  
**Hours Per Week Market Work**

	CANADA					UNITED STATES				
	Panel A: All Individuals									
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market Work	33.54	34.31	35.56	37.29	3.75**	33.17	33.95	33.07	33.43	0.26
Core Market Work	27.54	28.49	29.74	31.48	3.94***	28.31	30.72	30.12	30.52	2.21
Work Related	6.29	6.07	6.47	6.04	-0.25	4.87	3.23	2.62	2.85	-2.02***
Commute to/from work	2.88	2.75	2.98	3.37	0.48***	NR	3.14	2.31	2.60	-0.55***
Sample Size	7,013	6,137	7,021	12,902		3,187	5,373	15,119	9,575	
	Panel B: Men									
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market Work	43.58	42.58	44.09	45.15	1.57	42.99	42.42	40.13	39.67	-3.32**
Core Market Work	35.59	35.46	36.53	38.12	2.53**	36.73	38.39	36.36	36.11	-0.62
Work Related	8.34	7.45	8.08	7.31	-1.08***	6.26	4.04	3.31	3.48	-2.78***
Commute to/from Work	3.80	3.39	3.65	4.08	0.28	NR	3.93	2.96	3.20	-0.73***
Sample Size	3,148	2,821	3,283	5,737		1,430	2,493	6,706	4,215	
	Panel C: Women									
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market Work	23.68	26.19	27.76	29.57	5.89***	24.36	26.35	26.74	27.84	3.47**
Core Market Work	19.62	21.62	23.07	24.95	5.33***	20.75	23.85	24.52	25.50	4.75***
Work Related	4.21	4.68	4.88	4.79	0.58	3.61	2.51	2.00	2.29	-1.32***
Commute to/from work	1.98	2.1	2.32	2.67	0.69	NR	2.43	1.73	2.05	-0.38**
Sample Size	3,148	2,821	3,283	5,737		1,757	2,880	8,413	5,360	

**Canada:** *Market work:* total time spent in employed work and work related activities. *Core Market Work:* work for pay at main job/other jobs, job search, overtime work unpaid work in business or farm, & waiting delays at work. *Commute to/from work:* travel to and from work. *Work Related:* idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities.

**US:** *Market Work:* total of all work activities. *Core Market Work:* work for pay at main job, other jobs, looking for work, unpaid work in a business or farm, applying for unemployment benefits, other income generating activities & waiting delays at work. *Commute to/from work:* travel to and from work. *Work Related:* idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities. **NR** not recorded as a separate category in 1985 survey so change in commute time calculated as 2005-1993 for U.S. \* \*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE II**  
**Percent of the Sample Used in Analysis Participating in Market Work**

Panel A: All Individuals				
CANADA				
1986	1992	1998	2005	1986 to 2005
66.49	70.07	74.99	76.26	72.77
UNITED STATES				
1985	1993	2003	2005	1985 to 2005
76.91	83.45	80.78	80.84	80.82
Panel B: Men				
CANADA				
1986	1992	1998	2005	1986 to 2005
83.13	84.62	85.84	86.60	85.53
UNITED STATES				
1985	1993	2003	2005	1985 to 2005
88.95	91.14	88.34	88.64	88.92
Panel C: Women				
CANADA				
1986	1992	1998	2005	1986 to 2005
52.94	57.69	65.46	67.98	62.36
UNITED STATES				
1985	1993	2003	2005	1985 to 2005
67.1	76.81	74.75	74.70	74.31

An individual is designated a participant of an activity if a positive number of hours is reported on the diary day. Our sample is the non-retired non-student population aged 20 to 64.



**TABLE III**  
**Hours Per Week: Market Work- Working Individuals Only**

CANADA						UNITED STATES				
Panel A: All Individuals										
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market Work	44.98	45.37	45.22	47.48	2.50**	41.53	41.46	40.47	40.53	-1.00
Core Market Work	37.05	37.77	37.53	40.13	3.08***	35.47	37.56	36.97	37.10	1.63
Work Related	8.22	7.62	8.00	7.47	-0.76***	6.06	3.90	3.15	3.39	-2.67***
Commute to/from work	3.80	3.56	3.79	4.26	0.45***	NR	3.79	2.86	3.16	-0.62***
Sample Size	4,663	4,300	5,625	9,839		2,451	4,407	12,213	7,740	
Panel B: Men										
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market Work	48.91	48.26	48.86	50.56	1.64	47.13	46.39	45.24	44.55	-2.58**
Core Market Work	40.10	40.32	40.47	42.72	2.62**	40.34	42.00	41.09	40.61	0.27
Work Related	9.18	7.96	8.75	7.96	-1.21***	6.79	4.39	3.70	3.88	-2.91***
Commute to/from Work	4.18	3.76	4.07	4.54	0.36*	NR	4.27	3.37	3.60	-0.66***
Sample Size	2,617	2,387	2,818	4,968		1,272	2,217	5,924	3,736	
Panel C: Women										
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market Work	39.51	41.35	40.15	43.20	3.69***	35.40	36.05	35.23	36.13	0.73
Core Market Work	32.81	34.23	33.45	36.53	3.72***	30.13	32.69	32.44	33.25	3.12**
Work Related	6.91	7.15	6.97	6.79	-0.12	5.27	3.37	2.55	2.86	-2.41***
Commute to/from work	3.28	3.28	3.41	3.86	0.59	NR	3.28	2.29	2.69	-0.59***
Sample Size	2,046	1,913	2,447	4,871		1,179	2,190	6,289	4,004	

**Canada:** *Market work:* total time spent in employed work and work related activities. *Core Market Work:* work for pay at main job/other jobs, job search, overtime work unpaid work in business or farm, & waiting delays at work. *Commute to/from work:* travel to and from work. *Work Related:* idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities.

**US:** *Market Work:* total of all work activities. *Core Market Work:* work for pay at main job, other jobs, looking for work, unpaid work in a business or farm, applying for unemployment benefits, other income generating activities & waiting delays at work. *Commute to/from work:* travel to and from work. *Work Related:* idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities. **NR.:** not recorded as a separate category in 1985 survey so change in commute time calculated as 2005-1993 for U.S. \* \*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE IV**  
**Hours Per Week: Non-market Work ,Childcare, and Total Work (non market + market)**

	CANADA					UNITED STATES				
	Panel A: All Individuals									
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market +Non Market Work+ Childcare	55.69	57.56	60.06	60.75	5.06***	57.16	54.96	55.89	56.19	-0.97
Market +Non Market Work	52.22	53.8	55.75	56.17	3.95***	53.79	52.00	50.89	51.19	-2.60**
Non Market Work+ Childcare	22.15	23.27	24.2	23.46	1.31	23.99	21.00	22.81	22.76	-1.23
Childcare	3.48	3.78	4.31	4.58	1.10	3.37	2.96	5.00	5.00	1.63**
Non Market Work	18.67	19.49	19.9	18.88	0.21	20.62	18.05	17.82	17.76	-2.86**
Core Non Market Work	11.5	11.77	11.84	11.34	-0.16	10.37	8.31	7.93	8.05	-2.32**
Shopping for Goods/Services	6.04	5.03	5.37	4.93	-1.11***	5.92	5.23	5.33	5.16	-0.76**
Sample Size	7,013	6,137	7,021	12,902		3,187	5,373	15,119	9,575	7,013
	Panel B: Men									
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market +Non Market Work+ Childcare	57.3	58.28	61.17	61.54	4.24**	58.38	56.36	56.39	55.96	-2.42
Market +Non Market Work	55.51	56.03	58.39	58.77	3.26**	56.88	54.93	53.45	52.83	-4.45***
Non Market Work+ Childcare	13.72	15.7	17.08	16.39	2.67**	15.39	13.93	16.26	16.29	0.90
Childcare	1.79	2.25	2.78	2.76	0.97	1.50	1.43	2.94	3.13	1.62***
Non Market Work	11.92	13.45	14.30	13.62	1.70**	13.88	12.51	13.32	13.16	-0.72
Core Non Market work	5.86	6.29	7.32	7.38	1.52***	3.88	2.91	3.34	3.51	-0.37
Shopping for Goods/Services	4.95	4.02	4.34	3.76	-1.19**	4.64	3.84	4.37	4.02	-0.03
Sample Size	3,148	2,821	3,283	5,737		1,430	2,493	6,706	4,215	

Core non-market work: domestic work, meal preparation home maintenance etc. Shopping for Goods/Services: everyday shopping for goods, personal and professional services. Non market work: sum of all non-market work activities. Total work: sum of non-market work and market work. Childcare: sum of primary childcare recreational childcare and educational childcare.

\*\*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE IV (continued)**  
**Hours Per Week: Non-market Work, Childcare, and Total Work (non market + market)**

	CANADA					UNITED STATES				
	Panel C: Women									
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Market +Non Market Work+ Childcare	54.11	56.9	58.97	59.97	5.86***	56.06	53.70	55.42	56.40	0.34
Market +Non Market Work	48.98	51.61	53.16	53.61	4.63***	51.02	49.37	48.59	49.71	-1.31
Non Market Work+ Childcare	30.43	30.71	31.21	30.40	-0.03	31.69	27.34	28.70	28.56	-3.13*
Childcare	5.13	5.29	5.80	6.35	1.22	5.04	4.3	6.85	6.68	1.64
Non market Work	25.3	25.42	25.4	24.05	-1.25	26.65	23.02	21.84	21.88	-4.77***
Core Non market work	17.05	17.17	16.29	15.23	-1.82	16.20	13.16	12.05	12.13	-4.07**
Shopping for goods/Services	7.12	6.02	3.38	6.09	-1.03**	7.06	6.48	6.17	6.18	-0.88***
Sample Size	3,148	2,821	3,283	5,737		1,757	2,880	8,413	5,360	

Core non-market work: domestic work, meal preparation home maintenance etc. Shopping for Goods/Services: everyday shopping for goods, personal and professional services. Non market work: sum of all non-market work activities. Total work: sum of non-market work and market work. Childcare: sum of primary childcare recreational childcare and educational childcare.

\*\*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE V**  
**Hours Per Week: Leisure**

	CANADA					UNITED STATES				
Panel A: All Individuals										
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Leisure 1	32.98	35.58	35.31	33.08	0.10	35.02	37.26	35.01	34.45	-0.57
Leisure 2	106.82	107.99	106.42	105.79	-1.03**	107.80	109.60	107.17	107.28	-0.52
Leisure 3	110.3	111.78	110.72	110.37	0.07*	111.17	112.56	112.17	112.27	1.10
Leisure 4	115.78	114.2	112.25	111.82	-3.96***	114.21	116.00	117.11	116.81	2.60**
Sample Size	7,013	6,137	7,021	12,902		3,187	5,373	15,119	9,575	
Panel B: Men										
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Leisure 1	33.97	37.57	36.51	34.23	0.26	35.67	37.97	37.09	36.51	0.84
Leisure 2	106.04	108.24	105.97	105.49	-0.55	107.34	108.53	107.42	108.44	1.10
Leisure 3	107.84	110.49	108.75	108.26	0.42	108.85	109.96	110.36	11.57	2.72*
Leisure 4	112.49	111.97	109.61	109.22	-3.27***	111.12	113.07	114.54	115.17	4.05***
Sample Size	3,148	2,821	3,283	5737		1,430	2,493	6,706	4,215	
Panel C: Women										
Activity	1986	1992	1998	2005	change 2005-1986	1985	1993	2003	2005	change 2005-1985
Leisure 1	32.01	33.63	34.11	31.94	-0.07	34.44	36.62	33.15	32.60	-1.84
Leisure 2	107.59	107.75	106.85	106.08	-1.51	108.21	110.56	106.93	106.22	-1.99
Leisure 3	112.72	113.04	112.66	112.44	-0.28	113.26	114.88	113.79	112.91	-0.35
Leisure 4	119.02	116.39	114.84	114.39	-4.63***	116.98	118.62	119.41	118.29	1.31*
Sample Size	3,865	3,316	3,738	7,165		1,757	2,880	8,413	5,360	

*Leisure 1:* entertainment social activities, sports and hobbies, media and communication relaxation activities gardening and pet care.

*Leisure 2:* leisure 1 & personal care activities including sleep but excluding own medical care and care to other adults.

*Leisure 3:* Leisure 2 & childcare.

*Leisure 4:* complement of time spent on market and non-mark work.

\*\*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE VI**  
**Hours Per Week: Leisure 2 by Major Activity Categories-Canada**

Men					
Activity	1986	1992	1998	2005	change 2005-1986
Leisure 2	106.04	108.23	105.97	105.49	-0.55
Active Sports	1.40	1.59	1.89	1.73	0.33*
All Sports	2.15	3.08	3.35	3.08	0.93***
Computer Use	NR	0.20	0.79	1.71	1.51***
Eating	9.83	8.83	7.40	7.18	-2.65***
Entertainment	0.88	0.72	0.79	0.93	0.05
Games	0.60	1.03	1.43	2.00	1.40***
Garden pet care	0.29	2.00	1.64	1.59	1.30***
Hobbies	1.90	2.35	2.51	3.51	1.61***
Night sleep	54.40	53.92	54.11	56.47	2.07***
Night sleep & Naps	55.55	54.87	55.29	57.33	1.78***
Personal care	17.07	15.10	13.76	13.44	-3.63***
Personal care & Night Sleep & Naps	72.25	69.97	69.30	70.77	-1.48***
Reading	3.19	2.76	1.96	1.28	-1.91***
Socializing	6.19	6.69	7.43	6.83	0.64
Television watching	15.52	15.62	14.47	13.89	-1.63*
Walk, Hiking, Running & Jogging	0.37	0.87	0.88	0.75	0.38***

*Active Sports*: physical exercise, golf, swimming, skiing, rowing, other sports. *All Sports*: active sports, hunting, fishing camping, walking, jogging, *Hobbies*: hobbies done mainly for pleasure sale or exchange, domestic home crafts etc. *Games*: computer use, puzzle board, arcade games, video games, compute games. **NR.**: not recorded in 1986 survey so change in computer use calculated as 2005-1992. \*\*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE VII**  
**Hours Per Week: Leisure 2 by Major Activity Categories-Canada**

Women					
Activity	1986	1992	1998	2005	change 2005-1986
Leisure 2	107.59	107.74	106.85	106.08	-1.51
Active Sports	0.72	0.82	1.03	1.10	0.38***
All Sports	1.18	1.95	2.44	2.47	1.29***
Computer Use	NR	0.07	0.37	1.08	1.01***
Eating	10.03	8.82	7.37	7.33	-2.70***
Entertainment	0.75	0.70	0.86	0.85	0.10
Games	0.65	1.13	0.97	1.04	0.39***
Garden pet care	0.24	1.01	1.56	1.66	1.42***
Hobbies	3.16	3.06	2.47	2.42	-0.74**
Night sleep	56.29	56.63	56.2	57.69	1.40***
Night sleep & Naps	57.41	57.19	57.43	58.94	1.53***
Personal care	18.61	16.25	1.64	14.80	-3.81***
Personal care & Night Sleep & Naps	76.08	73.44	72.08	73.74	-2.34***
Reading	3.12	3.21	2.52	1.85	-1.27***
Socializing	6.92	7.57	8.10	7.31	0.39
Television watching	12.65	12.00	12.00	12.16	-0.49
Walk, Hiking, Running & Jogging	0.41	0.86	0.97	0.95	0.54***

*Active Sports*: physical exercise, golf, swimming, skiing, rowing, other sports. *All Sports*: active sports, hunting, fishing camping, walking, jogging, *Hobbies*: hobbies done mainly for pleasure sale or exchange, domestic home crafts etc. *Games*: computer use, puzzle board, arcade games, video games, compute games. **NR.**: not recorded in 1986 survey so change in computer use calculated as 2005-1992. \*\*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE VIII**  
**Hours Per Week: Civic-Medical Care (subcomponent of leisure 4)-Canada**

	1986	1992	1998	2005	change 2005-1986
Men	4.94	3.49	2.50	2.56	-2.38***
Women	6.54	4.36	3.74	3.61	-2.93***

*Civic-Medical Care*: time spent on civic, religious, voluntary and activities own medical care, care to other adults, and education. Included in this aggregation is residual activity code, which includes uncodeable time gaps and missing, or refused time. Excluding residual time does not alter the trends reported. \*\*\*/\*\*/\* indicate significance at the 1%/5%/10% levels respectively

**TABLE IX**  
**Hours Per Week: Market Non-Market Work & Leisure By Educational Attainment Canada**

	(1) Not High School	(2) High School	(3) Some College	(4) University	(5) Change (4) – (1)
<b>Men</b>					
<i>Panel A: Market Work</i>					
1986	38.13	42.53	44.38	48.38	10.25
1992	38.92	43.83	43.14	44.20	5.28
1998	40.33	46.37	43.93	46.33	6.00
2005	42.86	45.29	45.54	46.61	3.75
Change 2005-1986	4.73	2.76	1.16	-1.77	
<i>Panel B: Non-Market Work</i>					
1986	11.99	11.22	11.92	12.43	0.44
1992	13.75	13.31	13.78	12.66	-1.09
1998	14.93	13.97	14.08	14.31	-0.62
2005	15.03	11.33	14.04	13.27	-1.76
Change 2005-1986	3.04	0.11	2.12	0.84	
<i>Panel C: Leisure 2</i>					
1986	110.20	108.85	105.79	100.14	-10.06
1992	112.63	108.38	107.22	105.58	-7.05
1998	110.87	105.23	105.84	101.92	-8.95
2005	109.23	108.16	103.77	102.76	-6.47
Change 2005-1986	-0.97	-0.69	-2.02	2.62	
<b>Women</b>					
<i>Panel D: Market Work</i>					
1986	17.48	20.46	25.58	29.53	12.05
1992	17.52	24.23	28.43	32.77	15.25
1998	20.62	28.01	28.80	33.07	12.45
2005	21.06	28.61	31.88	34.80	13.74
Change 2005-1986	3.58	8.15	6.30	5.27	
<i>Panel E: Non-Market Work</i>					
1986	30.36	27.60	23.99	20.32	-10.04
1992	28.62	27.07	24.69	21.81	-6.81
1998	28.42	26.47	25.02	21.81	-6.61
2005	27.81	23.84	23.74	20.77	-7.04
Change 2005-1986	-2.55	-3.76	-0.25	0.45	
<i>Panel F: Leisure 2</i>					
1986	111.17	109.31	107.08	103.03	-8.14
1992	115.11	109.04	105.19	103.99	-11.12
1998	113.16	105.94	105.75	103.24	-9.92
2005	113.05	106.74	103.71	103.00	-10.05
Change 2005-1986	1.88	-2.57	-3.37	-0.03	

*Not High School*: did not complete high school. *High School*: Completed Secondary education. *Some college*: community college, some university and other category. *University*: Completed at least a bachelor's degree.

**TABLE X**  
**Hours Per Week: Market Non-Market Work & Leisure By Educational Attainment- United States**

	(1) Not High School	(2) High School	(3) Some College	(4) University	(5) Change (4) – (1)
<b>Men</b>					
<i>Panel A: Market Work</i>					
1985	42.38	42.48	45.58	41.81	-0.57
1993	42.13	41.77	36.55	45.52	3.39
2003	32.37	39.10	39.25	44.88	12.51
2005	35.01	37.24	38.28	45.30	10.29
Change 2005-1985	-7.37	-5.24	-7.29	3.48	
<i>Panel B: Non-Market Work</i>					
1985	13.09	13.21	13.98	14.89	1.80
1993	11.92	12.95	13.91	11.13	-0.79
2003	12.33	13.35	13.10	13.84	1.51
2005	11.65	13.21	14.14	12.92	1.27
Change 2005-1985	-1.44	0.00	0.14	-1.97	
<i>Panel C: Leisure 2</i>					
1985	109.38	108.20	105.62	106.92	-2.46
1993	112.55	109.40	108.50	106.05	-6.50
2003	117.34	109.70	106.30	101.93	-15.41
2005	116.06	112.25	107.33	102.04	-14.02
Change 2003-1985	6.68	4.05	1.71	-4.88	
<b>Women</b>					
<i>Panel D: Market Work</i>					
1985	17.71	23.97	25.45	26.40	8.69
1993	18.24	23.21	27.64	32.41	14.17
2003	16.10	25.05	28.53	31.36	15.26
2005	17.96	25.90	29.32	32.78	14.82
Change 2005-1985	0.25	1.93	3.87	6.38	
<i>Panel E: Non-Market Work</i>					
1985	29.09	27.36	26.66	24.78	-4.31
1993	24.93	25.05	22.73	19.86	-5.07
2003	25.76	22.66	20.21	20.80	-4.96
2005	25.56	22.58	20.64	20.70	-4.86
Change 2005-1985	-3.53	-4.78	-6.02	-4.08	
<i>Panel F: Leisure 2</i>					
1985	113.34	109.18	107.21	105.90	-7.44
1993	117.55	112.15	107.25	108.90	-8.65
2003	113.48	109.06	105.35	103.09	-9.58
2005	112.22	108.65	104.98	101.87	-10.35
Change 2005-1985	-1.12	0.10	-2.23	-4.03	

*Not High School*: did not complete high school. *High School*: Completed Secondary education. *Some college*: community college, some university and other category. *University*: Completed at least a bachelor's degree.



**TABLE XI**  
**Decomposition of Unconditional Changes in Hours Per week-Canada**

<b>All Individuals</b>			
<i>Panel A: Decomposition Evaluated at 1986 Demographic Weights and 2005 cell means</i>			
	unconditional change 2005 –1986	change due to demographics	change due to difference in cell means
Market Work	5.84	2.00	3.84
Non-Market Work	-0.34	-0.26	-0.08
Leisure Measure 2	-2.04	-0.97	-1.07
<i>Panel B: Decomposition Evaluated at 2005 Demographic Weights and 1986 cell means</i>			
	unconditional change 2005 –1986	change due to demographics	change due to difference in cell means
Market Work	5.84	2.26	3.58
Non-Market Work	-0.34	-0.77	0.43
Leisure Measure 2	-2.04	-1.27	-0.77
<b>Men</b>			
<i>Panel C: Decomposition Evaluated at 1986 Demographic Weights and 2005 cell means</i>			
	unconditional change 2005 –1986	change due to demographics	change due to difference in cell means
Market Work	2.75	0.29	2.46
Non-Market Work	2.05	0.39	1.66
Leisure Measure 2	-1.66	-0.65	-1.01
<i>Panel D: Decomposition Evaluated at 2005 Demographic Weights and 1986 cell means</i>			
	unconditional change 2005 –1986	change due to demographics	change due to difference in cell means
Market Work	2.75	2.12	0.63
Non-Market Work	2.05	0.22	1.83
Leisure Measure 2	-1.66	-1.71	0.05
<b>Women</b>			
<i>Panel E: Decomposition Evaluated at 1986 Demographic Weights and 2005 cell means</i>			
	unconditional change 2005 –1986	change due to demographics	change due to difference in cell means
Market Work	8.47	3.32	5.15
Non-Market Work	-2.41	-0.67	-1.74
Leisure Measure 2	-2.40	-1.27	-1.13
<i>Panel F: Decomposition Evaluated at 2005 Demographic Weights and 1986 cell means</i>			
	unconditional change 2005 –1986	change due to demographics	change due to difference in cell means
Market Work	8.47	1.93	6.54
Non-Market Work	-2.41	-3.39	0.98
Leisure Measure 2	-2.40	-0.81	-1.59

Blinder Oaxaca decomposition of unconditional change in hours per week. The first column reports the unconditional change. The second column reported the change due to demographics changes over time evaluated at 2005 and 1986 cell means. The third column reports changes in the unconditional men due to changes within demographic groups evaluated at the 1986 and 2005 demographic composition respectively.

**APPENDIX TABLE AI**  
**Time Use Category Descriptions**

Activity	Description/Composition of some activities included
Market Work	Total time spent in employed work and work related activities such as job search, overtime work unpaid work in business or farm, & waiting delays at work. travel to and from work, idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities.
Core Market Work	Core Market Work: work for pay at main job, other jobs, looking for work, unpaid work in a business or farm, applying for unemployment benefits, other income generating activities & waiting delays at work.
Non Market Work	cooking and washing up, housekeeping, maintenance and repair (indoor and outdoor) shopping for goods and services (excluding medical care), gardening and pet care, household administration, other household work
Core Non-Market Work	cooking and washing up, housekeeping, maintenance and repair (indoor and outdoor)
Obtaining goods	everyday shopping for goods, personal and professional services (excluding medical care)
Childcare	baby care, putting children to bed, unpaid babysitting, medical care of children, play with children, reading and talking, teaching and reprimanding
Total work	non market work & market work
Leisure 1	entertainment, social activities, sports and hobbies, play, media and communication relaxation activities, reading, garden and pet care, computer use, hunting fishing, walking hiking, coaching (excluded for the U.S.)
Leisure 2	Leisure 1 & personal care activities such as wshing dressing night sleep, incidental sleep, relaxing, thinking, resting etc.
Leisure 3	Leisure_2 & childcare activities
Leisure 4	Total time available in a day- total work
Total child care	Play with children Helping teaching, reprimanding, recreational child
Personal care	Sex, eating, sleeping essential, naps, meals at home or restaurant
Civic and voluntary activities	Professional union meetings, religious meetings, political activities, child youth and family organizations, medical care household adults, personal care household adults, care for disabled or ill, travel related to civic & voluntary activities,
Education	Full time classes other classes, leisure and special interest classes , special lectures occasional

**APPENDIX TABLE AII**  
**Difference in Average Market Hours Per week in the United States and Canada in 2005**

	Working and Non Working Individuals		Working Individuals Only	
	<b>All Individuals</b>		<b>All Individuals</b>	
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference	U.S. <i>minus</i> Canada in 2005	p-value of difference
Market Work	-3.860	0.020	-6.950	<0.01
Core Market Work	-0.965	0.501	-3.030	0.001
Work Related	-3.189	0.000	-4.080	<0.01
Commute to/from work	-0.772	0.000	-1.090	<0.01
	<b>Men</b>		<b>Men</b>	
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference	U.S. <i>minus</i> Canada in 2005	p-value of difference
Market Work	-5.481	0.000	-6.011	<0.01
Core Market Work	-2.014	0.092	-2.108	0.032
Work Related	-3.830	0.000	-4.082	<0.01
Commute to/from work	-0.881	0.000	-0.937	<0.01
	<b>Women</b>		<b>Women</b>	
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference	U.S. <i>minus</i> Canada in 2005	p-value of difference
Market Work	-1.728	0.375	-7.074	<0.01
Core Market Work	0.547	0.740	-3.280	<0.01
Work Related	-2.498	0.000	-3.933	<0.01
Commute to/from work	-6.139	0.005	-1.174	<0.01

**Canada:** *Market work:* total time spent in employed work and work related activities. *Core Market Work:* work for pay at main job/other jobs, job search, overtime work unpaid work in business or farm, & waiting delays at work. *Commute to/from work:* travel to and from work. *Work Related:* idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities.

**US:** *Market Work:* total of all work activities. *Core Market Work:* work for pay at main job, other jobs, looking for work, unpaid work in a business or farm, applying for unemployment benefits, other income generating activities & waiting delays at work. *Commute to/from work:* travel to and from work. *Work Related:* idle time before/after work, job search, eating at work, breaks, travel to/from work, commute during work & other uncodeable work activities.

**APPENDIX TABLE AIII**

**Difference in Average Hours Per week Non market Work Childcare and Total Work (non market + market) in the United States and Canada in 2005**

<b>All Individuals</b>		
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference
Market +Non Market Work+ Childcare	-4.559	<0.01
Market +Non Market Work	-4.982	<0.01
Non Market Work+ Childcare	-0.699	0.679
Childcare	0.423	0.674
Non Market Work	-1.122	0.274
Core Non Market Work	-3.280	<0.01
Shopping for Goods/Services	0.227	0.381
<b>Men</b>		
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference
Market +Non Market Work+ Childcare	-5.581	<0.01
Market +Non Market Work	-5.940	<0.01
Non Market Work+ Childcare	-0.990	0.926
Childcare	0.360	0.666
Non Market Work	-0.459	0.480
Core Non Market Work	-3.869	<0.01
Shopping for Goods/Services	0.264	0.253
<b>Women</b>		
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference
Market +Non Market Work+ Childcare	-3.575	0.034
Market +Non Market Work	-3.899	<0.01
Non Market Work+ Childcare	-1.846	0.427
Childcare	0.324	0.851
Non Market Work	-2.170	0.049
Core Non Market Work	-3.105	<0.01
Shopping for Goods/Services	0.092	0.734

Core non-market work: domestic work, meal preparation home maintenance etc. Shopping for Goods/Services: everyday shopping for goods, personal and professional services. Non market work: sum of all non-market work activities. Total work: sum of non-market work and market work. Childcare: sum of primary childcare recreational childcare and educational childcare.

**APPENDIX TABLE AIV**  
**Difference in Average Leisure Hours Per week in the United States and Canada in 2005**

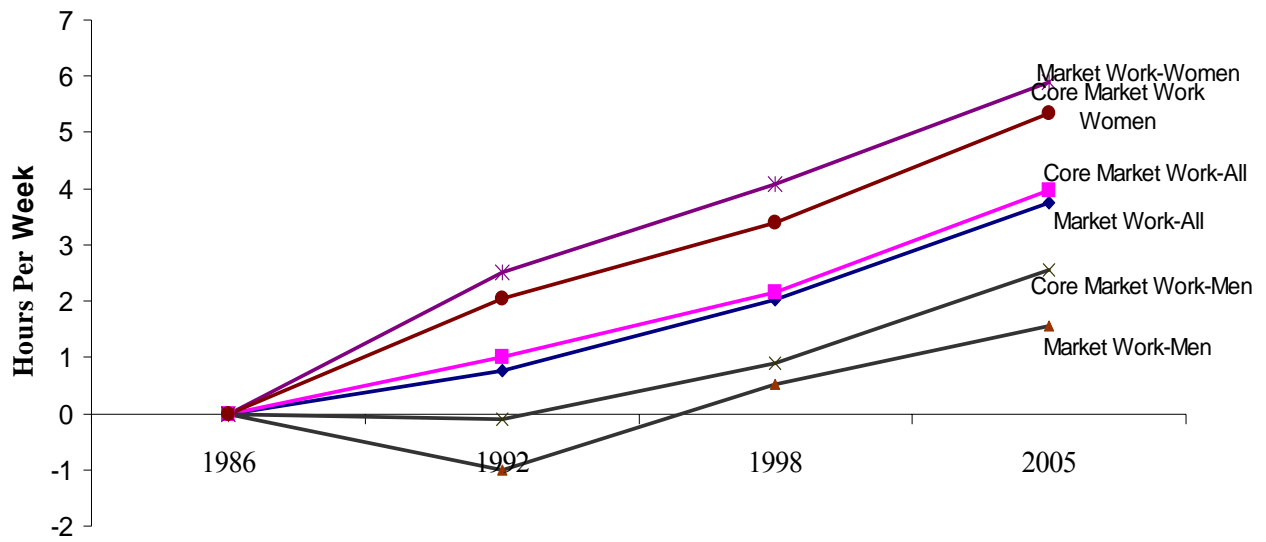
<b>All Individuals</b>		
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference
Leisure 1	1.368	0.157
Leisure 2	1.487	0.210
Leisure 3	1.910	0.061
Leisure 4	4.982	<0.01
<b>Men</b>		
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference
Leisure 1	2.279	0.117
Leisure 2	2.960	0.112
Leisure 3	3.319	0.019
Leisure 4	5.940	<0.01
<b>Women</b>		
Activity	U.S. <i>minus</i> Canada in 2005	p-value of difference
Leisure 1	0.651	0.586
Leisure 2	0.140	0.929
Leisure 3	0.464	0.740
Leisure 4	3.898	<0.01

*Leisure 1*: entertainment social activities, sports and hobbies, media and communication relaxation activities gardening and pet care.

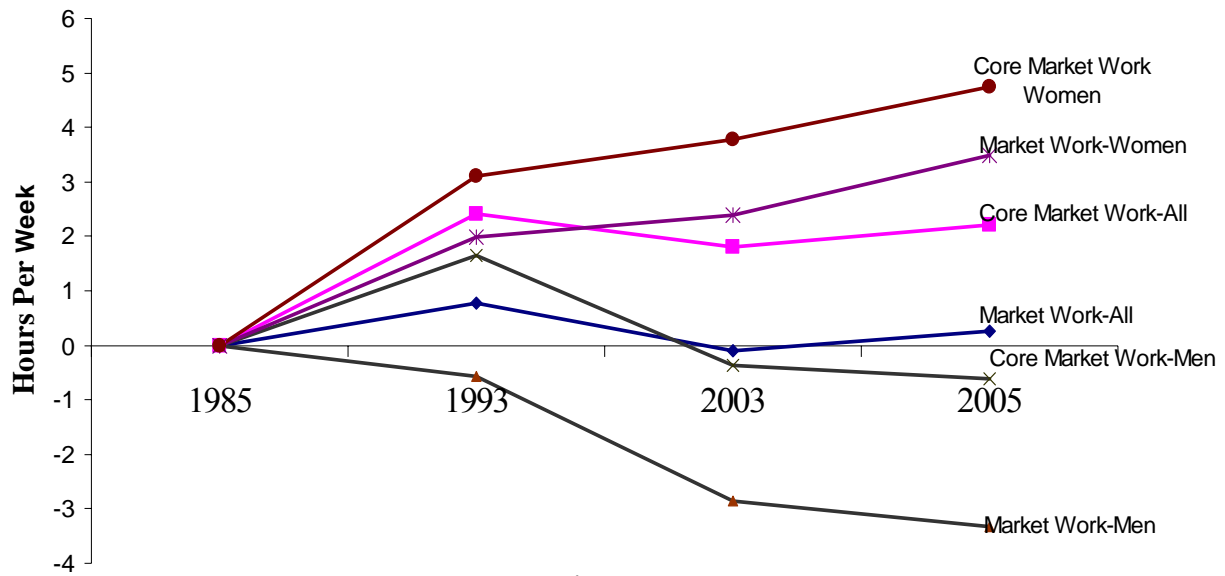
*Leisure 2*: leisure 1 & personal care activities including sleep but excluding own medical care and care to other adults.

*Leisure 3*: *Leisure 2* & childcare.

*Leisure 4*: complement of time spent on market and non-market work.



**Figure I**  
**Market and Core Market Work-Deviations from 1985 Hours per Week**  
**Canada**



**Figure II**  
**Market and Core Market Work-Deviations from 1985 Hours per Week**  
**United States**

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<sup>1</sup> A fifth category is the time spent acquiring human capital but this time use category is not explored in this paper.

<sup>2</sup> Much of the existing literature on allocation of time report trends in time use without controlling for demographic changes. We refer to such estimates as unconditional time use averages.

<sup>3</sup> For example, Fuess [2006] evaluates the success of the Japanese government's 1991 policy initiative to increase leisure time spent for leisure. Controlling for age, and labor market variables he finds that from 1986 to 2001 both men and women have not experienced an increase in leisure overall.

<sup>4</sup> Two earlier Canadian time use surveys were available; 1971/72 Dimensions of Metropolitan Activity and the 1981 Canadian Time Use Pilot Study. However, these were only available at level of aggregation of time use categories that thus was not suitable for this paper.

<sup>5</sup> The survey excludes residents of Yukon, the Northwest Territories, and Nunavut.

<sup>6</sup> Prior to 1999, the target sample size for the GSS was approximately 10,000 persons. This was increased in 1999 to 25,000 to allow for the analysis on small population groups such as disabled persons, visible minorities and seniors.

<sup>7</sup> Time use surveys from different countries are by and large comparable especially in aggregate categories such as market non market work, childcare and leisure. A well known compilation of international time use diary data is the Multination Time Use Survey. In documenting the allocation of time, we strove to measure the same activities in both countries by carefully reviewing the data dictionary from each survey in the U.S. and Canada. We generally found that the level of time use aggregation are largely the same in both Canada and the United States rendering most our aggregate activity measures the same in both countries. Slight differences exist in some subcategories of activities but this is unavoidably due to the level of aggregation within each survey across countries and over time. We make note of such differences when necessary.

<sup>8</sup> In Aguiar and Hurst (2007), the U.S sample is restricted to individuals aged 21 to 65. The 1986 survey does not allow for a similar age range for Canada. However, the results using age range 20 to 64 for the U.S are almost identical to those reported in Aguiar and Hurst (2007). In addition, including or excluding students and retirees does not alter the results significantly.

<sup>9</sup> Running the standard OLS with control variables produced similar results to those reported in Tables I through X. OLS however does not allow us to obtain demographically adjusted means with respect to the entire population.

<sup>10</sup> Given the small sample size of the age group 60 to 64, no demographic category is created for parental status for this age group.

<sup>11</sup> Appendices table AII to AIV reports the cross country differences in major time use categories in 2005.

<sup>12</sup> The cross country difference in work related activities and time spent traveling to and from work is significant at less than the 1% level.

<sup>13</sup> Further due to differences in the level of time use aggregation across countries, market work in the US includes hobbies done for sale. This is not included under market work for Canada but is lumped together with hobbies done for sale or pleasure (leisure).

<sup>14</sup> A similar decomposition is provided in Aguiar and Hurst [2007].

<sup>15</sup> This result mirrors the findings of Aguiar and Hurst [2007].

<sup>16</sup> Our preliminary analysis of this data reflects similar trends in market work for U.S. and Canada.