

Do We Invest Less Time In Children? Trends In Parental Time in Canada Since The 1970s*

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Abstract

This paper examines trends in parental time in Canada since the 1970s. Despite the time pressures to which today's families are confronted, parents appear to be devoting more time to children than they did some 30 years ago. They have increased time devoted to specific childcare activities, and have also increased time spent with children. These results are in line with studies carried out in the United States and Britain. Results presented in this paper also suggest a decrease over time in the differences between fathers and mothers in time devoted to children. Mothers continue to devote more time to childcare than fathers, but the gender gap has been reduced. Finally, results suggest that parents with higher levels of education devote more time to childcare than parents with lower levels of education. The difference is especially large between fathers with high levels of education and fathers with lower levels of education.

Introduction

The time devoted by parents to their children is a major form of investment: an investment that is strongly linked with children's well-being and development. Time spent by parents with children, including parent-child shared activities, has been shown to have a positive impact on children's development (Büchel and Duncan 1998; Furstenberg, Morgan, and Allison 1987; Cooksey and Fondell 1996). Yet, the time pressures to which today's families are confronted would suggest that parents are devoting less time to their children, as compared to some 20 or 30 years ago. The expressions "time crunch," "time poor," "time squeeze", and "time famine" have routinely been used in the popular and academic press to characterize today's families (Bunting 2000; Gershuny 2000; Daly 2000; Clarkberg undated).¹

Time use data from the United States and other countries suggests however exactly the opposite. Between 1965 and 1998, time devoted by married fathers to childcare has increased from 0.4 hour to 1.0 hour per day, while time devoted by married mothers has increased from 1.7

1. For a summary of the controversy concerning the trends in parental time in the United States involving William Mattox and John Robinson, see Whitman 1996. Interestingly, some 20 years earlier, trends in leisure time also became the subject of much controversy, see: Linder (1970) and Hirschman (1973).

to 1.8 hours (Bianchi 2000). Evidence obtained on the basis of children's diaries, rather than parents' diaries, comes also to a similar conclusion. A comparison of 1981 and 1997 American data suggests that children are not spending less time with parents. In the case of two-parent families, today's children are in fact spending substantially more time with their parents than in 1981 (Sandberg and Hofferth 2001). Time use data from the United Kingdom suggests similar trends. Between 1961 and 1999, time spent on childcare by mothers has increased from 0.7 hour per day to 1.7, while for fathers it has increased from 0.2 hour per day to 0.8 hour (Fisher, McCulloch and Gershuny 1999).

Evidence from other countries is more limited, and, in some cases, even suggests an opposite trend. Gershuny (2000) employs time-use data from more than 20 countries and suggests that time spent on childcare activities by men and women decreased between 1960 and 1984, but that it has increased since then. On the other hand, research by Klevmarcken and Stafford (1999) suggests that time spent by parents with their children has decreased in Sweden between 1984 and 1993.

In this paper, we contribute to this literature by examining historical trends in parental time in Canada. Extending the work of Bianchi (2000), we ask the question of how much more, or less, time are today's parents devoting to their children as compared to parents some 30 years ago. These trends are difficult to predict theoretically. While the increase in women's labor force participation since the 1960s suggests a reduction in the time available for children (and for other non-work activities), reductions in family size and the overall increase in education suggest an increase in time devoted to each child.

This paper represents our initial attempt at measuring trends in the time devoted by parents to their children, thereafter referred to as parental time. To do so, we rely on five time use surveys collected in Canada between 1971 and 1998. These surveys collected data on parents' allocation of time to various activities, including childcare activities, as well as time spent with children. These surveys allow us to estimate parental time by gender, labor force status, family type, and education level. They also allow detailed estimates by type of childcare activities.

The paper is divided into four sections. In Section 1 we review the literature on parental time. We discuss the evidence related to historical trends in parental time, and discuss the links between parental time and various determinants of parental time including parents' education and mother's labor force status. Section 2 introduces our theoretical framework, taking as a starting point the quality-quantity argument in classical family economics theory. Section 3 presents our data and methods and Section 4 our results.

Literature

The observed increase in time devoted to children by parents in the United States and the United Kingdom is somewhat surprising given the large and sustained increase in female labor force participation since the 1960s (United Nations 2000). The increase in parental time may be even more surprising considering that as a result of the increase in female labor force participation, children are indeed spending today more time in preschools or school programs than in the past (Hofferth and Sandberg 2000). However, this increase in time spent by children in structured settings does not appear to have come at the expense of time spent with parents.

Parents appear to be preserving the time that they spend with their children by ‘taxing’ other activities, including sleep (Hill and Stafford 1985). A similar process was observed by Bittman (1999) on the basis of Australian data. Bittman writes: “it is noteworthy that parents’ increasing use of child care centers has been accompanied by increases in the time both mothers and fathers spend in face-to-face activities with their children” (p. 11). Other findings corroborate this result. Research based on the 1992 Australian time use survey reveals that while employed parents devote less time to childcare than non-employed parents, the difference in time devoted to childcare between the two groups is much less than the difference in time devoted to work. In 1992, employed parents devoted 2.1 hours per day on childcare as compared to 3.0 for non-employed parents (Miller and Mulvey 2000). If these results, observed on the basis of cross-sectional data, were also valid longitudinally, they would suggest that the increase in female labor force participation and in dual-earner families have not led to a major decline in parental time.

Estimates from a longer time-series suggest however a different conclusion. Analyses by Bryant and Zick (1996) for the United States suggest that time spent by parents on childcare has remained relatively stable between 1924 and 1981, but that it is instead time spent per child that has significantly increased. For married mothers, time spent on childcare per child increased from 0.6 hour per day in 1924-31 to 1.0 hour in 1981, while for married fathers, it increased from 0.2 hour in 1975 (earliest year available) to 0.3 in 1981. Unfortunately, no such long time-series is available in other countries.

As to gender differences in parental time, mothers continue to devote more time to childcare than fathers. Results for the United States suggest however that the gender gap has been substantially reduced. While the ratio of married fathers’ to married mothers’ hours spent

on childcare was 0.24 in 1965, it was 0.55 in 1998 (Bianchi 2000). Data from Sweden for the period 1984 to 1993 also suggests that men and women have become more alike in both market work and household work, including childcare activities (Hallberg and Klevmarken 2000). In Britain, estimates of parental time suggest that fathers' share of total parental time has increased from about 12 percent in 1961 to 30 percent in 1999 (Fisher, McCulloch, and Gershuny 1999).

With regard to differences in parental time by socio-economic level, numerous studies have confirmed that more educated parents tend to devote more time to childcare, and to provide a richer variety of caring activities (Hill and Stafford 1973, 1985; Leibowitz 1974; Gronau 1977).² Similarly, studies have confirmed that mothers from higher socioeconomic groups were devoting significantly more time to preschool childcare as were mothers from lower socioeconomic groups (Hill and Stafford 1973). Estimates for British fathers go however counter to those observed in the United States. In 1999, professional fathers in Britain were devoting the least time to childcare (about 30 minutes per day), while fathers in manual occupations were devoting the most time to childcare (about 50 minutes per day) (Fisher, McCulloch, and Gershuny 1999).

Most of the above results come from studies carried out in the United States or Britain. This situation is partly due to the availability of a long series of time use surveys in these two countries.³ Whether or not these results hold for other countries is unclear. As mentioned above, Gershuny (2000) examined historical trends in childcare and other activities in twenty industrialized countries since the 1960s, but no detailed analysis by country was provided.

2. Surprisingly, such an educational differential was however not found in Sweden (Hallberg and Klevmarken 2000).

3. Other industrialized countries have carried nation-wide surveys since the 1960s. Not all these surveys are however currently available in the multinational time use archive. For details, see the web page of the Multinational Time Use Study: <http://www.iser.essex.ac.uk/mtus/index.php>.

Instead, all countries were merged into a single regression model. In this paper we provide estimates of parental time since the early 1970s using Canadian data. Building on earlier work, and especially the American results by Bianchi (2000), we ask four main questions: (1) What has been the trend in parental time in Canada since the early 1970s? And how has the increase in parental time (if any) been ‘financed’? (2) What type of childcare activities have most benefited from an increase (if any) in parental time? (3) What has been the trend in the gender gap, that is, in the difference between the time that mothers and fathers devote to childcare? And (4) What have been the trends in parental time by education level? We thus go beyond the current literature by examining both the ‘quantitative investment’ into children (measured by the number of hours devoted to childcare) and the ‘qualitative investment’ into children (measured by the type of childcare activities). The paper also provides estimates of parental time based on different types of indicators in order to broaden our understanding of how parents devote time to their children, and how they manage to preserve time for children.

Theoretical Framework

The quality-quantity tradeoff in the demand for children is central to the economic theory of the family (Becker and Lewis 1973; Becker and Tomes 1976; Willis 1987).⁴ Parents, it is argued, may decide to have fewer children, but to have children of higher “quality” by devoting more resources to fewer children. In one version of this theory, parental resources are restricted to financial resources. Parents who aim at “quality” consequently spend more on their children. They may, for instance, send their children to private school, may hire a private tutor, or may pay for extracurricular lessons such as music lessons. The resources devoted to children may

4. The classic reference in the theory of time allocation is Becker (1965). However, Becker’s fertility theory provides us with a better framework to examine parenting time.

however also be understood in terms of time. In the previous examples, parents were spending more money by paying “experts” to devote their time to children. Parents may also invest more of their own time to children in order to increase their children’s “quality.”⁵ Of course, other factors may also influence children’s development and achievement, including levels of income, access to resources (such as other relatives), and so on. In this paper, we confine our discussion to parental time itself and leave aside the issue of the investment impact of time spent with children, as well as the monetary resources devoted to children.⁶

From the onset, we should draw a distinction between changes in the overall parental time that are due to compositional or structural effects (i.e. changes in the structure of the population) and changes that are due to behavioral effects (i.e. changes in parenting style and in time investment into children). In terms of compositional effects, several economic and demographic changes may be expected to have affected parental time. There is first the decrease in fertility. As discussed above, from a quantity-quality argument, the decrease in fertility observed from the 1960s may be expected to have led to an increase in parental time. This causal relationship between fertility and parental time is, however, not so simple because reduced family size did not take place in isolation. The decades since the 1960s were also characterized by a major increase in women’s labor force participation: a trend that has likely reduced the time available by mothers for their children.⁷ From a joint household perspective, it is likely that fathers’ have reacted to this situation by increasing their own time with children.⁸

5. And just like the quantity-quality tradeoff, parents are also confronted to a time–money tradeoff: a tradeoff involving allocating time to work versus time to their children, and allocating time to their own children versus paying others to devote their time to their children.

6. For more on this topic see Bainbridge and Garfinkel (2000).

7. Mothers’ participation in the labor force may also have increased monetary resources that could be devoted to children. However, as mentioned earlier, we are not focusing on monetary resources in this paper.

8. For a discussion of the gender division of labor from an economic perspective, see Cigno (1991).

Other factors may have also influenced trends in parental time. As mentioned earlier, more educated parents tend to devote more time to childcare. They may do so because they aim at children's of higher "quality" or because they are more aware of the positive impact of parent-child shared activities on children's development. As a result of the increase in the average education level of the population, we may therefore expect an increase in parental time.

Just like education, higher income parents may also be expected to devote a higher number of hours devoted to childcare. Trends in families' income since the 1960s may therefore have also affected trends in parental time. The impact may however have varied by family type as a result of differential income trends. While the real income of dual-earner families in the United States, as in several other countries, has increased since the 1960s, the income of other types of families has declined or stagnated. In particular, single parent families are economically worse off than are dual parent families in most industrialized countries (Smeeding, Rainwater, and Burtless 2000 and forthcoming; Rainwater and Smeeding 2000).

Age of parents at children's birth is another factor that may affect parental time. There is evidence that middle-age husbands devote more time to housework than do younger husbands (South and Spitze 1994). It is however unclear if the same phenomenon is observed for childcare. If this were the case, the rapid increase since the 1960s in the age at entry into parenthood would suggest an increase in parental time, especially for fathers (everything else being equal).

Finally, there is the increasing instability of families: a factor that may also have affected trends over time in parental time—at least at the aggregate level. For instance, recent studies suggest that stepfathers may not have the same level of commitment to their non-biological

children than biological fathers (McLanahan and Sandefur 1994). Whether this difference in the level of commitment is translated into a lower number of hours devoted to children is unknown.⁹ The lower level of commitment nevertheless suggests that the increase in the proportion of blended families may have resulted in an overall decrease in time spent by fathers on childcare (since a higher proportion of them are stepfathers than in the past).

The net effect of these compositional changes is difficult to assess. On the one hand, the decline in family size, the increase in parental education levels, the increase in the age at entry into parenthood, and the increase in income for the average dual-earner family, can all be expected to have increased parental time over time – at least in two-parent families. On the other hand, the increase in female labor force participation, the increase in family instability, and the rise in the proportion of blended families, may be expected to have decreased parental time over time.¹⁰

In addition to the above compositional effects, changes in parenting styles (i.e. behavioral effects) may also have affected the trends in parental time. The switch from quality to quantity in the classical economic fertility theory suggests such a behavioral effect. Unfortunately, we have very little information on individual preferences for time investment into children, versus other activities, and little information on the related changes over time. Similarly, we know little about changes in societal norms that may have affected time investment into children. If we knew for instance that today's parents were expected to spend more time interacting with their children (for instance reading to or playing with their children), then we could expect this factor to have had a positive impact on parental time. This, in fact, may be the case for fathers, who may be

9. The Canadian 1998 data distinguishes biological and step-parents and will allow estimates of the respective time devoted to childcare.

socially expected to contribute more to housework and to be devoting more time to their children than in the past (especially since their spouses are also participating in the labor market).

The net effect of these compositional and behavioral effects is difficult to predict.¹¹ As noted earlier, it is possible that parents may have indeed compensated for the increase in female labor force participation by ‘taxing’ other activities in order to be preserve the time that they spend with their children. If this were the case, parental time may have been unaffected by the increase in female labor force participation. As pointed above, there is evidence that parental time in the United States has increased over time, but that it has decreased in Sweden. The results presented below are a first attempt at shedding light on the net impact of these different forces, and at distinguishing trends in different types of parental time.

Data and Methods

In this paper, we rely on time diaries to estimate parental time. We used surveys carried out in Canada in 1971, 1981, 1986, 1992, and 1998. All these five surveys used the same instrument to capture people’s allocation of time, namely the 24-hour diary. Diaries have been shown to provide more accurate estimates of people’s allocation of time, as compared to other survey techniques, such as recall questions about time spent on specific activities during a fixed period of time, for example the previous week or month (Robinson and Godbey 1997).¹² All

10. Trends in the quality of childcare facilities may also have affected parental time. If the quality of such facilities had increased, we could expect parents to be more likely to outsource their time to such facilities.

11. Sandberg and Hofferth (2001) use a decomposition technique to estimate the respective effects of changes in the composition of the population and changes in behavior to explain the overall changes in children’s time spent with parents in the United States between 1981 and 1997. They conclude that changes in behavior translated into an increase in children’s time spent with parents, and by far outweigh the decrease associated with compositional changes.

12. Robinson and Godbey (1997) make this observation for all types of activities, rather than specifically for childcare activities.

these surveys, but the first one, collected data from a national sample of respondents. The 1971 survey, on the other hand, collected data from a regional sample. Comparisons of mean patterns of time use for respondents from the same region and the rest of Canada in the 1981 survey suggested however very small differences, especially with regard to time spent on childcare (results not shown here).¹³ Other differences across the surveys may however affect their degree of comparability. This includes the different response rates (especially the lower response rate in 1981), and the fact that the 1971, 1981, and 1986 surveys collected data from selected months, as compared to the 1992 and 1998 surveys for which the data collection was spread over the 12 months of the year.¹⁴ Details on these surveys appear in Table 1.

[Table 1 about here]

On the basis of these surveys, we provide estimates of time spent on five main categories of activities: (1) Paid work and education; (2) Housework; (3) Childcare; (4) Leisure; and (5) Personal activities (including sleeping and eating). The sum of these activities is equal to 24 hours. These categories of activities encompass only primary activities, that is, the main activity that is carried out at any time during the day. In the Canadian surveys, other simultaneous activities (i.e. secondary activities) were collected only in 1971 and 1981 and are not reported in this paper. The estimates of parental time based on the ‘childcare’ category, as referred to above, are therefore based on primary activities only. It is however well-known that estimates of

13 . The 1971 sample was drawn from the Halifax area. Details may be found in: Elliott, Harvey, and Procos (1976). Despite the fact that the patterns of time use of Halifax residents in 1981 appear to be in line with the Canadian average in 1981, there is of course the possibility that this may not have been the case in 1971, and that we are therefore basing our time series on a non-representative starting point. While this remains a possibility, the trends observed in Canada between 1971 and 1981 appear in line with later trends, and are also in line with the trends observed in the United States.

14. The 1971 survey collected data between October 1971 and May 1972, the 1981 survey collected data between September and November 1981, while the 1986 survey collected data between November and December.

parental time based on primary activities only under-estimate the total time devoted by parents to childcare as a large fraction of childcare activities are carried out in parallel to other activities. For this reason, we provide two additional estimates of childcare.

The first estimate is also derived from the respondents' diaries and is based on the information about with whom was each of the activity carried out. We singled out 'time spent with children' to provide an alternative estimate of parental time. This estimate is significantly higher than the estimate based on primary activities as it captures activities –also reported as primary activities--- but that were not declared as being childcare related. Going shopping with one's child is a good example. The second estimate is specific to the Canadian surveys and refers to a series of questions on childcare that were asked to respondents as part of a general questionnaire in addition to the diary itself. Respondents were asked at what time the first child woke up in the morning, and at what time the last child fell asleep at night. Respondents were also asked to recall every spell of childcare activities in between these two events. Typically, we are finding that the estimates of parental time based on these series of questions exceed the estimates based on 'with whom'. This is not surprising as these spells of childcare activities are not necessary confined to the primary activity unlike the time diary.

These three estimates of parental time (based on primary activities, time spent with children, and childcare episodes) thus provide us with a large range, and reflect the methodological difficulties associated with the quantification of parental time. These three estimates most likely also capture qualitative differences in the nature of parental time. In particular, we can expect childcare activities that are reported as primary activities (our

It should be noted that the 1965 American data on which was based Bianchi's (2000) analysis was also restricted to selected months.

conservative estimate of parental time) to be capturing activities that involve the maximum amount of parent-child interaction --- otherwise parents would have reported the activity as something else than childcare.¹⁵

In the analysis, we provide estimates of parental time for two-parents and one-parent families. We also provide estimates by labor force status of the respondents. We restrict the analysis to families with at least one child under the age of five. We selected the ‘under five’ category simply because it likely corresponds to a period of high childcare demand. We however did not restrict the analysis to only parents with children under the age of 5 to avoid the problem of too small number of cases.

Our method of analysis is relatively simple as we computed the mean number of hours per day devoted to childcare for our three estimates of parental time. These estimates are daily averages and are weighted to ensure an equal representation of every day of the week.

Empirical Results

Our analysis follows the four questions asked at the beginning of the paper: (1) What has been the trend in parental time in Canada since the early 1970s? And how has the increase in parental time (if any) been ‘financed’? (2) What type of childcare activities have most benefited from an increase (if any) in parental time? (3) What has been the trend in the gender gap, that is,

15. We do not formally test this assumption in this paper. In fact, some forms of non-childcare activities may also involve a high level of parent-child interaction. Going shopping with a child would be an example.

in the difference between the time that mothers and fathers devote to childcare? And (4) What have been the trends in parental time by education level?

Trends in parental time

We first examine trends in parental time based on primary activities. Results appear in Figure 1 and Table 2. Estimates are provided for married parents and lone-mothers, and for parents by employment status. Contrary to popular belief that today's parents devote less time to children, data suggests exactly the opposite trend. Time devoted to childcare has increased for all sub-groups of parents. For married fathers, time devoted to childcare increased from 0.6 hours per day in 1971 to 1.5 hours in 1998, while for married mothers, time devoted to childcare increased from 2.5 hours per day in 1971 to 3.0 hours in 1998. In Canada, as in other industrialized countries, the labor force participation of women has substantially increased since the 1960s/70s. But this increase in women's labor force participation has not been translated into a decrease in time devoted to childcare. In fact, when we examine separately full-time employed mothers and non-employed mothers, we find that the time devoted to childcare has increased for both groups of mothers. For sure non-employed mothers devote more time to childcare than full-time employed mothers, but the difference in time devoted to childcare (about 1.5 hours) is much lower than the difference in time devoted to paid work.

An increase in time devoted to childcare was also observed for lone-mothers. Time devoted to childcare by all lone-mothers (all labor force status combined) is lower than the comparable figures for married mothers who are non-employed but higher than those for married mothers who are full-time employed. However, when we distinguish lone-mothers' labor force status, lone-mothers appear to be devoting slightly less time to childcare than married mothers of

similar labor force status. For lone-mothers, the absence of a spouse with whom to share housework may be preventing them from devoting more time to childcare.

[Figure 1 and Table 2 about here]

The above results are based on primary activities only. As mentioned earlier, we however know that childcare is often carried out as a simultaneous activity, and that primary activities provide a very conservative estimates of parental time. The Canadian time use surveys of 1986, 1992, and 1998 unfortunately did not record secondary activities. However, information of with whom were the primary activities carried out were recorded in all surveys, and thus allows the computation of an estimate of parental time based on ‘time spent with children’. In addition, the 1992 and 1998 surveys asked a series of questions about childcare episodes to respondents, and provide a third way of estimating parental time. Results appear in Figure 2 and Table 3. As expected, the two alternative measures suggest much higher estimates of parental time than those restricted to primary activities, about three times higher. As discussed in the ‘Data and method’ section, these estimates capture time spent with children on child-related activities, as well as time spent with children on activities that were not recorded as being childcare related.

In line with results based on primary activities only, time spent with children has also increased over time. For married fathers, time spent with children has increased from 1.4 hours per day in 1981 to 4.3 hours in 1998.¹⁶ For married mothers who are full-time employed, the increase was from 3.2 hours per day in 1971 to 5.9 hours in 1998. Not surprisingly, time spent with children by non-employed mothers is very high. It increased from 5.9 hours per day in 1981

16. At the time of writing this paper, the 1971 data was not available to compute this type of estimate.

to 9.6 in 1998. Estimates for lone-mothers are similar to those for married mothers, and have also increased over time.

[Figure 2 and Table 3 about here]

The results for the third estimate of parental time, based on childcare episodes, are mixed. They show an increase in parental time for married fathers, but not for mothers. If we recall, these estimates are based on a series of questions that asked the respondents about each childcare episode from the time the first child woke up to the time the last child went to bed. No information was recorded about the nature of these childcare episodes, only information about their duration. This third estimate is therefore likely to be less reliable than the two other ones.

In view of the increase in parental time, it is interesting to ask the question of how have parents 'financed' the additional time devoted to children. To answer this question, we go back to data on primary activities and examine the allocation of time to five categories of activities: paid work and education, housework, childcare, leisure, and personal activities. Results appear in Table 4. They suggest that parents have increased time devoted to childcare by reorganizing their time in various ways. For employed men, the data suggests that the increase in time devoted to childcare has been financed through a reduction in time devoted to paid work (since 1986), and through a reduction in time devoted to personal activities (of 2 hours per day since 1971). However, we should note that the increase in time devoted to childcare has also been accompanied by an increase in time devoted to leisure, since 1986. For married employed mothers, the increase in time devoted to childcare appears to have been financed almost solely through a reduction of time devoted to personal activities. Overall, economically active parents

appear therefore to have cut mainly on their own personal activities in order to devote more time to children.

The results for the other sub-groups of parents are slightly different. For non-employed married mothers, the increase in time devoted to childcare appears to have been financed by a reduction in time devoted to housework and personal activities, while for lone-mothers the increase in time devoted to childcare appears to have been financed by a reduction in leisure time and personal activities (because of small number of cases the results for lone-mothers show less systematic trends).

[Table 4 about here]

Trends in specific types of childcare activities

Most studies of parental time group all childcare activities into a single category. However, if there have been behavioral changes in parenting and in time investment into children, as suggested above, it is possible that some activities may have benefited from an increase in parental time more than others. In particular, if parents have been emphasizing ‘quality’ time with children, we may expect activities that involve a high level of interaction between parents and children, such as playing, to have most benefited from the increase in parental time. An alternative explanation provided in the literature is that the move to suburbs, together with an increase in perceived street dangers, may have prompted parents to spend more time ‘ferrying’ children to school, friends’ homes, etc (Robinson and Godbey 1997; Hillman 1990).

In order to address this issue, we went back to the original datasets, and examined the trends in the separate categories of childcare activities. Results appear in Table 5. They are

restricted to 1986, 1992, and 1998 as no sufficient details on the type of childcare activities were recorded in the 1971 and 1981 surveys. Results suggest that time spent on playing with children and baby-care have both benefited from a systematic increase since 1986. On the other hand, time spent helping children and time spent on general childcare have not increased. Similarly, and contrary to what was suggested in the literature, time spent on traveling with children has not increased (with the exception of lone-mothers). Finally, time spent reading to children represents a small fraction of total time spent with children and has not increased since 1986.

[Table 5 about here]

Trends in the gender difference

We have already examined differences in time devoted to childcare by fathers and mothers in the above tables and figures. As pointed out, both fathers and mothers have increased time devoted to childcare. However, fathers have done so to a greater extent –at least on the basis of primary activities – so that the gender gap has been quite substantially reduced. While the time devoted to childcare by married fathers in 1971 represented about 36 percent of the time devoted to childcare by married mothers full-time employed, by 1998 this ratio had increased to 62 percent.

Because mothers and fathers are likely to devote more time to childcare during weekends than weekdays, we were interested to see if fathers’ increase in parental time had come from a general increase in parental time observed throughout the week, or if it had been confined to weekends. To address this issue, we re-computed the estimates of parental time based on primary

activities by distinguishing weekdays and weekends.¹⁷ Results appear in Table 6. In addition to the mean time devoted to childcare, we also report the participation rate, defined as the percentage of respondents who reported at least one spell of childcare activity during the diary day.

[Table 6 about here]

Results show that both the mean time and participation rates have increased over time. They have increased for both fathers and mothers, and for both weekdays and weekends. The results for participation rate are particularly interesting as they reveal a large increase in the proportion of fathers who participate in childcare. Their participation rates are still lower than those for mothers, but they have substantially increased. While only 51 percent of fathers reported any childcare activities in 1971 (weekly average), this figure had reached 72 percent in 1998. Interestingly, the participation rates of fathers during weekdays and weekends are relatively the same and have both increased over time. The increase is however stronger in the case of weekdays. With regard to mean time devoted to childcare, as expected parents devote more time to such an activity during weekends than weekdays. The exception is married non-employed mothers for which time devoted to childcare has been lower during weekends than weekdays since 1981. Presumably, non-employed mothers are allowed a small relief during weekends when their respective spouses take over some of the childcare activities.

17. We are aware that a non-negligible fraction of parents work during weekends, and we intend to devote more attention to the impact of work arrangements on parental time in a forthcoming paper. See also the discussion in Presser (1989).

Since fathers appear to have greatly increased their participation in, and time spent on, childcare, we wanted to push the analysis one step further. In particular we were interested in possible gender differences in the time spent with children in terms of whether or not the spouse was present. Because the question on ‘with whom’ activities were carried out allowed multiple responses, we were able to compute two distinct categories: time spent with children, no spouse present and time spent with the child, spouse present. Results of this analysis appear in Table 7.

[Table 7 about here]

Results suggest that fathers are much less likely than mothers to spend time with children while their spouse is absent (or at least not sharing the activity with them). In 1998, the time that fathers spent time with children while their spouse was absent represented 42 percent of the total time spent with children. Conversely, employed married mothers spent more than half of their total time with children while their spouse was absent (61 percent). In 1998, the comparable figure for non-employed mothers was 69 percent. What is however particularly interesting is that fathers’ share of ‘alone with children’ out of the total time spent with children has also substantially increased since 1986, from 0.30 to 0.42. Once again, fathers have not reached parity with mothers in the quantity of time devoted to childcare and in the nature of childcare, but they are becoming more alike.

Trends by education levels

Finally, we examine trends in parental time by education levels. For the purpose of the analysis, we consider three groups: low education (no high school diploma), medium education (high

school diploma) and high education (post-secondary degree). Results appear in Table 8. The information is unfortunately missing in several cells in the table because of the small number of cases. In line with other studies, we find that parents with a higher level of education spend more time on childcare than parents with lower levels of education. This applies to all sub-groups of parents considered in Table 8, with the exception of married women full-time employed (in 1986 and 1992) and lone-mothers (in 1992). Furthermore, the increase over time in parental time appears to be larger for parents with higher levels of education, as compared to lower levels of education. This increase is relatively small for married mothers, but is substantial in the case of married fathers. While the time devoted to childcare by fathers with a low level of education has slightly declined between 1986 and 1998 (by 0.2 hour per day), it has increased by 0.6 hours per day for fathers with a high level of education during the same period. A similar trend was observed for mothers but on a smaller scale. Overall, thus, the differences in parental time by education levels appear to have increased over time. All parents have increased the time that they devote to childcare, but the increase was largest in the case of parents with a high level of education.

[Table 8 about here]

Conclusion

Time spent by parents on their own children does not enter traditional measures of productivity nor is it factored in national accounts. Yet, it is a major form of investment into children, and one that appears to have increased since the 1970s. Despite the increase in

women's labor force participation, and despite the time pressures from work, today's parents appear to be devoting more time to childcare and to be spending more time with their children than they were 30 years ago.

Results presented in this paper suggest four additional conclusions:

1. Work does not appear to impinge on the investment that parents are making in children—at least not directly. Parents appear to be preserving their time with children, mainly by reducing time on their personal activities (including sleep). Work may however have the consequence of lowering the “taste” for children because it comes at the expense of more parental time;
2. Activities that involve a higher degree of parent-child interactions, such as playing, appear to have mostly driven the overall increase in time spent on childcare.
3. Both mothers and fathers have increased their time investment in children. Fathers still devote less time to childcare than mothers, but the gender difference has narrowed.
4. The patterns of time use appear to suggest a growing level of inequality by education with more educated parents investing increasing shares of time in their children (and parents having few children in order to maximize the investment). The children of less educated parents may consequently be losing out, not because parents are investing less but because they are not investing MORE time to their children.

Proponents of the time-famine thesis may be right in that today's parents are hurried and under significant time pressure. But despite these pressures, parents have managed to preserve time devoted to children and have even increased time devoted to children. For sure, employed mothers do indeed spend less time on childcare than housewives --- but the difference is much less than the difference in the number of hours of paid work. For working mothers, the expression 'second shift' seems indeed to apply (Hochschild 1989). What is however particularly interesting is that both employed mothers and housewives have increased the time that they spent with children. These trends suggest some major behavioral changes in the population: changes that have resulted in more time being devoted to children and not less.

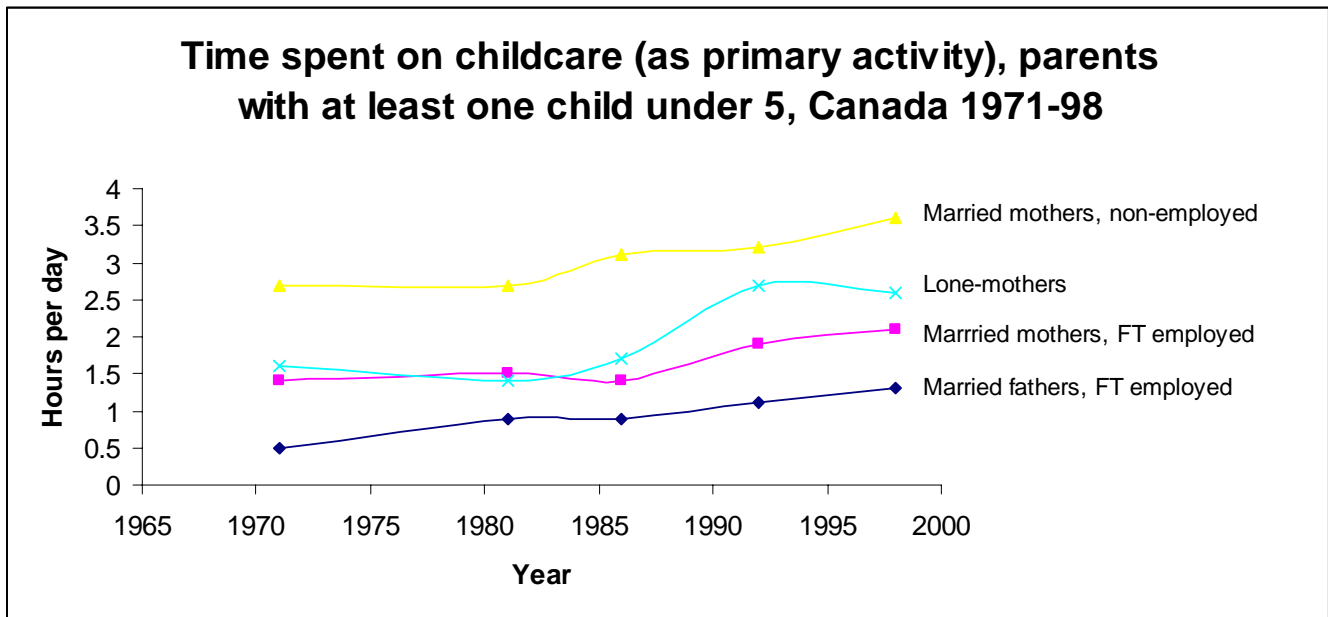
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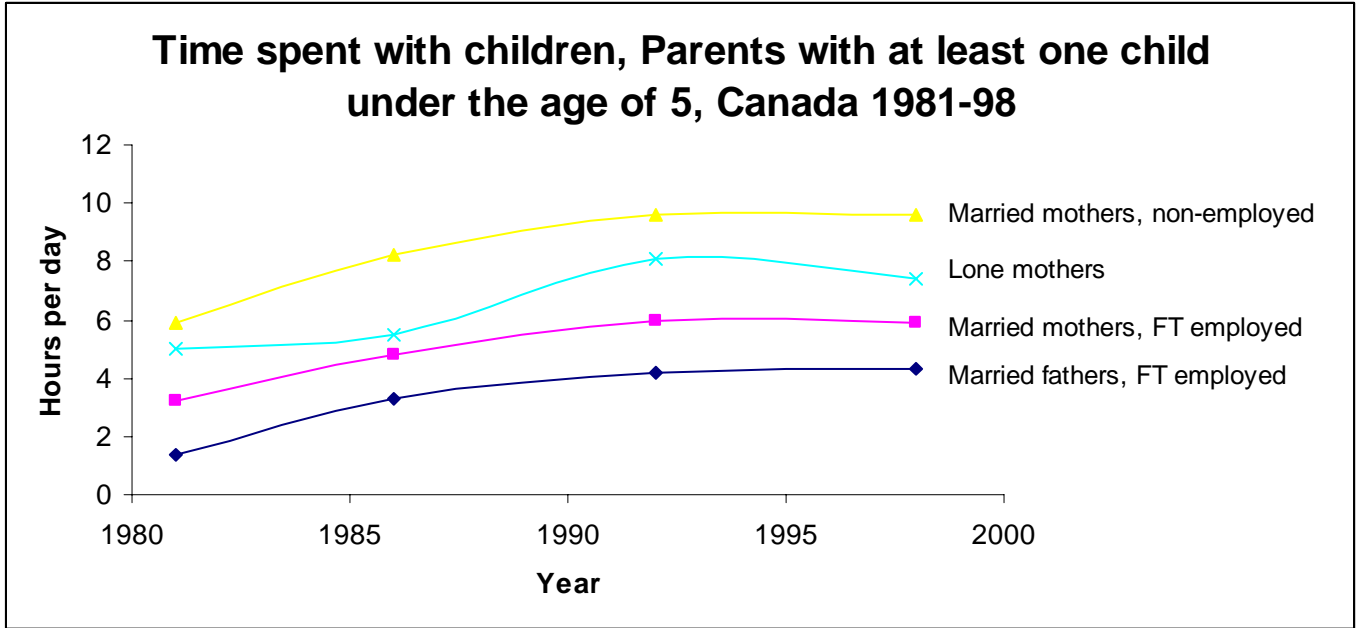
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Figure 1:



Source: Computed by the authors based on the original datasets.

Figure 2:



Source: Computed by the authors based on the original datasets.

Table 1. Technical details on the Canadian surveys

	Year				
	1971	1981	1986	1992	1998
Age	18 to 64	15+	15+	15+	15+
Number of cases	2,141	2,686	9,946	9,815	10,749
Response rate (in percent)	72	46	80	77	78
Type of diary	1-day	1-day	1-day	1-day	1-day
Survey period	1 month	1 month	2 months	12 months	12 months

Source: Fisher (2000)

Table 2. Patterns of time use for parents with at least one child under the age of 5 (respondents 20 to 49 years old), CANADA (hours per day)^{1,2} --- primary activities only

Gender and marital status	Labor force Status ³	1971	1981	1986	1992	1998
		Married fathers	All	0.6	0.8	0.9
	Full-time	0.5	0.9	0.9	1.1	1.3
Married mothers	All	2.5	2.4	2.5	2.7	3.0
	Full-time	1.4	1.5	1.4	1.9	2.1
	Un/Non-employed	2.7	2.7	3.1	3.2	3.6
Single-mothers	All	1.6	1.4	1.7	2.7	2.6
	Full-time	N/a	N/a	1.0	1.7	1.9
	Un/Non-employed	N/a	N/a	2.4	3.6	2.9

N/a: too few cases

Notes:

- 1- Daily average based on the 7 days of the week
- 2- All results based on weighted data
- 3- Full-time employed: defined as 30 hours of work per week or more; Un/Non-employed: including unemployed, looking for work and housewife

Table 3. Estimates of parental time based on three different indicators for parents with at least one child under the age of 5 (respondents 20 to 49 years), CANADA (hours per day)^{1,2}

Sub-group	Year	Primary Activity Only	Childcare Episode ³	Time Spent with Children
Married men, FT	1981	0.9	---	1.4
	1986	0.9	---	3.3
	1992	1.1	4.0	4.2
	1998	1.3	5.2	4.3
Married women, FT	1981	1.5	---	3.2
	1986	1.4	---	4.8
	1992	1.9	7.4	6.0
	1998	2.1	6.5	5.9
Married women, NE	1981	2.7	---	5.9
	1986	3.1	---	8.2
	1992	3.2	12.0	9.6
	1998	3.6	11.1	9.6
Lone mothers – All ⁴	1981	1.4	---	5.0
	1986	1.7	---	5.5
	1992	2.7	9.8	8.1
	1998	2.6	7.9	7.4
Lone mother, FT	1981	N/a	---	4.4
	1986	1.0	---	3.0
	1992	1.7	7.1	5.8
	1998	1.9	N/a	5.8
Lone mother, NE	1981	N/a	---	5.9
	1986	2.4	---	7.4
	1992	3.6	11.4	9.4
	1998	2.9	10.7	8.6

FT=full-time employed defined as 30 hours of work per week or more; NE=non-employed, including unemployed, looking for work and housewife; n/a: too few cases

Notes:

- 1- Daily average based on the 7 days of the week
- 2- All results based on weighted data
- 3- The related series of questions were asked only in 1992 and 1998
- 4- All labor force statuses combined

Table 4. Patterns of time use for parents with at least one child under the age of 5 (respondents 20 to 49 years old), CANADA (hours per day)^{1,2} – based on primary activity only

Sub-group	Year	Paid Work & Education	Housework	Childcare	Leisure	Personal	Total	N cases
Married fathers FT	1971	6.6	1.2	0.5	4.6	11.0	24.0	146
	1981	6.0	1.6	0.9	5.1	10.4	24.0	170
	1986	8.5	1.5	0.9	3.7	9.4	24.0	465
	1992	7.0	2.1	1.1	4.6	9.3	24.0	526
	1998	6.9	2.2	1.3	4.5	9.1	24.0	434
Married mothers FT	1971	6.1	2.7	1.4	3.2	10.6	24.0	28
	1981	5.6	2.1	1.5	3.9	10.8	24.0	51
	1986	5.6	3.3	1.4	3.5	10.2	24.0	178
	1992	6.0	3.1	1.9	3.7	9.3	24.0	167
	1998	5.9	3.0	2.1	3.4	9.6	24.0	153
Married mothers NE	1971	0.1	5.3	2.7	5.1	10.8	24.0	156
	1981	0.2	4.2	2.7	6.0	10.8	24.0	134
	1986	0.7	5.2	3.1	4.2	10.7	24.0	283
	1992	0.5	4.8	3.2	5.1	10.4	24.0	372
	1998	0.7	4.7	3.6	5.0	10.0	24.0	280
Single mothers All ³	1971	N/a	N/a	N/a	N/a	N/a	N/a	7
	1981	3.8	2.8	1.4	5.2	10.7	24.0	27
	1986	3.5	3.3	1.7	4.7	10.8	24.0	55
	1992	2.1	3.5	2.7	5.8	9.8	24.0	74
	1998	2.6	3.7	2.6	4.9	10.1	24.0	91
Single mothers FT	1971	N/a	N/a	N/a	N/a	N/a	N/a	3
	1981	N/a	N/a	N/a	N/a	N/a	N/a	15
	1986	6.6	2.3	1.0	3.7	10.4	24.0	24
	1992	4.6	2.7	1.7	5.2	9.8	24.0	24
	1998	6.5	3.0	1.9	3.2	9.4	24.0	24
Single mothers NE	1971	N/a	N/a	N/a	N/a	N/a	N/a	2
	1981	N/a	N/a	N/a	N/a	N/a	N/a	7
	1986	1.0	4.1	2.4	5.4	11.1	24.0	30
	1992	0.4	4.1	3.6	6.1	9.8	24.0	42
	1998	0.8	4.1	2.9	6.1	10.2	24.0	50

FT=full-time employed defined as 30 hours of work per week or more; NE=non-employed, including unemployed, looking for work and housewife; n/a: too few cases

Notes: 1- Daily average based on the 7 days of the week; 2- All results based on weighted data; 3- All labor force statuses combined.

Table 5. Estimates of parental time for parents with at least one child under the age of 5 by type of activity (estimates based on primary activity only), respondents 20 to 49 years old, CANADA (hours per day)^{1,2} --- based on primary activity only

Sub-group	Year	General childcare	Reading/in conversation	Playing	Helping/teaching/reprimanding	Medical care	Baby care	Other childcare	Travel with children	Total Childcare ⁴	N cases
Married fathers, FT	1986	0.3	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.9	457
	1992	0.2	0.0	0.4	0.0	0.0	0.3	0.0	0.1	1.2	526
	1998	0.3	0.0	0.5	0.1	0.1	0.4	0.0	0.1	1.4	434
Married mothers, FT	1986	0.5	0.1	0.2	0.0	0.0	0.5	0.0	0.2	1.6	178
	1992	0.4	0.1	0.5	0.1	0.1	0.8	0.0	0.1	2.0	167
	1998	0.6	0.1	0.5	0.1	0.1	0.7	0.0	0.2	2.3	153
Married mothers, NE	1986	1.1	0.2	0.5	0.1	0.1	1.2	0.0	0.2	3.3	279
	1992	0.6	0.2	0.8	0.1	0.0	1.4	0.0	0.1	3.3	372
	1998	0.6	0.1	0.9	0.2	0.0	1.6	0.1	0.2	3.8	280
Lone mothers – All ³	1986	0.5	0.2	0.3	0.1	0.0	0.5	0.0	0.1	1.8	55
	1992	0.6	0.2	0.6	0.0	0.2	1.1	0.0	0.1	2.8	74
	1998	0.5	0.1	0.6	0.1	0.0	1.3	0.0	0.3	2.9	91
Lone mothers, FT	1986	0.3	0.2	0.1	0.1	0.0	0.2	0.1	0.1	1.1	24
	1992	0.3	0.1	0.4	0.1	0.0	0.8	0.0	0.1	1.8	24
	1998	0.4	0.1	0.5	0.1	0.1	0.7	0.0	0.4	2.3	24
Lone mothers, NE	1986	0.7	0.2	0.5	0.1	0.1	0.8	0.0	0.1	2.5	30
	1992	0.7	0.2	0.9	0.0	0.3	1.4	0.1	0.1	3.7	42
	1998	0.5	0.1	0.6	0.2	0.0	1.4	0.0	0.2	3.1	50

FT=full-time employed defined as 30 hours of work per week or more; NE=non-employed, including unemployed, looking for work and housewife; n/a: too few cases

Notes:

- 1- Daily average based on the 7 days of the week
- 2- All results based on weighted data
- 3- All labor force statuses combined
- 4- The total differs from that presented in other table since in this case it includes travel with children

Table 6. Time spent on childcare and participation in childcare for parents with at least one child under the age of 5 (respondents 20 to 49 years old), CANADA --- based on primary activity only^{1,2}

Sub-group	Year	All Days			Weekdays			Weekends		
		Mean Time ³	Participation Rate ⁴	N cases	Mean Time	Participation Rate	N cases	Mean Time	Participation Rate	N cases
Married fathers FT	1971	0.5	0.51	146	0.5	0.50	107	0.8	0.54	39
	1981	0.9	0.63	170	0.8	0.57	120	1.0	0.76	50
	1986	0.9	0.52	465	0.8	0.51	379	1.4	0.57	86
	1992	1.1	0.66	526	0.9	0.66	388	1.6	0.69	139
	1998	1.3	0.72	434	1.2	0.73	287	1.7	0.69	147
Married Mothers, FT	1971	1.4	0.98	28	1.3	0.97	22	N/a	N/a	6
	1981	1.5	0.94	51	1.4	0.95	39	N/a	N/a	12
	1986	1.4	0.82	178	1.3	0.82	128	1.8	0.81	51
	1992	1.9	0.91	167	1.7	0.91	120	2.3	0.90	47
	1998	2.1	0.95	153	2.2	0.97	100	1.8	0.90	53
Married Mothers, NE	1971	2.7	0.98	156	2.6	0.97	113	2.9	1.00	43
	1981	2.7	0.96	134	2.9	0.98	105	1.9	0.92	30
	1986	3.1	0.95	283	3.3	0.96	215	2.5	0.91	68
	1992	3.2	0.97	372	3.2	0.98	257	3.0	0.94	115
	1998	3.6	0.99	280	3.8	1.00	199	3.1	0.97	81.3
Single mothers ⁵	1971	N/a	N/a	7	N/a	N/a	3	N/a	N/a	4
	1981	1.4	0.91	27	N/a	N/a	17	N/a	N/a	10
	1986	1.7	0.82	55	1.5	0.76	38	N/a	N/a	16
	1992	2.7	0.90	74	2.7	0.94	49	2.8	0.84	25
	1998	2.6	0.97	91	2.6	0.97	69	2.7	0.97	22

FT=full-time employed defined as 30 hours of work per week or more; NE=non-employed, including unemployed, looking for work and housewife; n/a: too few cases

Notes:

- 1- Daily average based on the 7 days of the week
- 2- All results based on weighted data
- 3- Mean time in hours per day
- 4- Fraction of people who did at least 1 minute of the specified activity on the diary day
- 5- All labor force statuses combined

Table 7. Estimates of time spent with children by presence or absence of the spouse for parents with at least one child under the age of 5 (respondents 20 to 49 years), CANADA (hours per day)^{1,2,3}

Sub-group	Year	With children, No spouse present	With children, spouse present	Total time spent with children	Proportion of time spent with child, no spouse present (as per total)
Married fathers, FT	1981 ⁴	1.2	---	---	---
	1986	1.0	2.3	3.3	.30
	1992	1.3	2.9	4.2	.31
	1998	1.8	2.5	4.3	.42
Married mothers, FT	1981	2.4	---	---	---
	1986	2.6	2.1	4.7	.55
	1992	3.2	2.8	6.0	.53
	1998	3.6	2.3	5.9	.61
Married mothers, NE	1981	5.1	---	---	---
	1986	5.6	2.6	8.2	.68
	1992	6.1	3.3	9.4	.65
	1998	6.6	3.0	9.6	.69

FT=full-time employed defined as 30 hours of work per week or more; NE=non-employed, including unemployed, looking for work and housewife; n/a: too few cases

Notes:

- 1- Daily average based on the 7 days of the week
- 2- All results based on weighted data
- 3- Based on the questions with whom were the activities carried out (multiple answers allowed with the exception of 1981)
- 4- We were able to estimate total spent with children in Table 5 because we did not need to distinguish between no spouse present and spouse present. This information is available in 1981 but is not comparable to the other years because no multiple answers were allowed. Instead the information in the data refers to the total spent with children across primary and simultaneous activities.

Table 8. Estimates of parental time by education level for parents with at least one child under the age of 5 (respondents 20 to 49 years), CANADA (hours per day)^{1,2,3} --- based on primary activity only

Sub-group	Year	Low	Medium	High
Married fathers, FT	1981	N/a	0.8	0.9
	1986	0.9	0.8	0.9
	1992	0.7	0.9	1.4
	1998	0.7	1.1	1.7
Married mothers, FT	1981	N/a	1.2	1.8
	1986	0.5	1.7	1.4
	1992	N/a	2.1	1.8
	1998	N/a	1.6	2.3
Married mothers, NE	1981	N/a	2.7	2.7
	1986	2.9	3.1	3.5
	1992	2.7	3.1	3.3
	1998	3.3	3.5	3.7
Lone mothers – All	1981	N/a	N/a	N/a
	1986	N/a	1.1	N/a
	1992	3.2	2.4	3.0
	1998	N/a	2.6	2.6

FT=full-time employed defined as 30 hours of work per week or more; NE=non-employed, including unemployed, looking for work and housewife; n/a: too few cases

Notes:

- 1- Daily average based on the 7 days of the week
- 2- All results based on weighted data
- 3- Low education (no high school diploma), medium education (high school diploma), high education (post-secondary degree)