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ABSTRACT

Moms' Time—Married or Not*

Using time-diary data from the U.S. and six wealthy European countries, I demonstrate that non-partnered mothers spend slightly less time performing childcare, but much less time in other household activities than partnered mothers. Unpartnered mothers' total work time—paid work and household production—is slightly less than partnered women's. In the U.S. but not elsewhere they watch more television and engage in fewer other leisure activities. These differences are independent of any differences in age, race/ethnicity, ages and numbers of children, and household incomes. Non-partnered mothers feel slightly more pressured for time and much less satisfied with their lives. Analyses using the NLSY79 show that mothers whose partners left the home in the past two years became more depressed than those whose marriages remained intact. Coupled with evidence that husbands spend substantial time in childcare and with their children, the results suggest that children of non-partnered mothers receive much less parental care—perhaps 40 percent less—than other children; and most of what they receive is from mothers who are less satisfied with their lives.

JEL Classification: J22, J12, I31

Keywords: time use, marital status, life satisfaction, time stress, depression

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I. Introduction and the Problem

Nearly one-third of American mothers with children under age eighteen in their household do not have a partner living with them. An immense amount of research has considered how single motherhood or divorce affects the mothers' offspring (e.g., Ermisch and Francesconi, 2001; Björklund and Sundström, 2006; Amato *et al*., 2015). Some studies (Corak, 2000; Lang and Zagorsky, 2000) examine exogenous shocks to family structure (death of a parent, typically the father) and find mixed impacts on children's outcomes as adults in response this fortunately rare cause of changes in children's household status. A substantial amount of research has examined how mothers spend their non-market time (and how it differs from fathers' non-market time), including Hallberg and Klevmarken (2003) and Genadek and Hill (2019); and some have analyzed how this differs by mothers' marital status (Kimmel and Connelly, 2007). Still other studies have analyzed the relationship between mothers' happiness and their marital status (Stack and Eshleman, 1998; Lee and Ono, 2012; Hank and Wagner, 2013; Perini and Sironi, 2016); and one study (Ifcher and Zarghamee, 2014) looked at trends in differences in happiness between single and partnered mothers.

While much research has examined pairs among the issues involving marital status, time allocation and mothers' feelings, none has examined all three issues together. None has studied how differences in the allocation of time by marital status alter mothers' happiness. Also, no research has considered how mothers' use of time affects their feelings of time being scarce and how these feelings relate to the presence or absence of a partner in the household. In this study I combine analyses of all three of these issues, doing so chiefly using data from the United States. Because there is no reason to assume that the behavior suggested by American findings is representative of behavior anywhere else, I also examine many of the questions using data from six European countries: France, the United Kingdom, Italy, Germany, the Netherlands and Spain. The goal is thus to integrate research on issues of time use, marital status, how children are treated in households that differ by mother's marital status, and how these affect mothers' feelings about time scarcity and their satisfaction with life.

With these goals in mind, Section II describes patterns of marital status among American women and details demographic differences among women who differ by marital status. Section III describes the American Time Use Survey (ATUS) data, including patterns of time use among mothers who recently married and those whose husband recently left the household. Section IV studies how and whether time use differs among these groups, whose demographic characteristics also differ, and it examines whether this American behavior is observed elsewhere by comparing women of differing marital status with children in the household in time-use samples from wealthy European countries. Section V examines differences by marital status in time spent in childcare, focusing on the different types of activities that mothers do with their children and on how these differ by children's ages and mothers' educational attainment. In Section VI I examine how non-married mothers differ in the people with whom they spend their time compared to married mothers, while Section VII studies how feelings—about being pressed for time or about their life satisfaction—differ between these two groups. Finally, because marital status may be related to women's underlying unobservable characteristics, Section VIII uses longitudinal American data to examine how mothers' mental health changes with changes in marital status.

II. The Demographics of American Mothers

Throughout this study I divide American women into four groups: Married with spouse present; never married; divorced; and other (which includes those who are widowed, married but whose spouse is absent, and those who are married but separated).[1] In some of the work I aggregate the last three groups—all women who do not have a partner present—into a single group. I include only women who have at least one child under 18 in their household, whether it is their biological child, a step-child or a foster child. I base the initial look at the demographics of these women on the American Community Survey (ACS) 2013-17. During these years, this survey provided a sample of about 3.6 million women with children at home,

[1]In this sample separated women account for 49 percent of this miscellaneous group, women whose spouse is absent are 34 percent and widows are 17 percent. All the calculations using the ACS are based on the sampling weights in the public-use data sets.

more than enough to note statistically significant and often economically important differences among mothers who differ by marital status.

Figure 1 presents the number of children under age eighteen, and the number under age five, in each five-year age range from 25 through 54 by marital status (the four groups of women). Except among women ages 25-29, married women with spouse present have more children in their household than other mothers; and in all age groups they have more pre-school children. Not surprisingly the number of pre-school children drops off with age in all the marital groups, while the total number begins dropping only after ages 35-39.

While married women with spouse present and children in the household account for about 68 percent of the mothers in the ACS sample, as shown at the bottom of Table 1, they account for only 44 percent of mothers ages 25-29, which rises to 75 percent at ages 45-49. In the youngest group of mothers, non-Hispanic whites account for only 53 percent of the women, which rises steadily to 63 percent at ages 50-54. There are only small age differences in educational attainment by age, with 56 percent of mothers ages 25-29 having at least one year of college, rising to 63 percent of mothers ages 45-49, falling back to 57 percent among mothers 50-54.

The four groups of mothers differ greatly, however, by race/ethnicity and educational attainment. 50 percent of the nonmarried mothers are African-American or Hispanic, but only 24 percent of mothers with spouse present are. Only 22 percent of the former group have a college degree or more, but 46 percent of the latter group are at last college graduates. Clearly demographic characteristics differ by marital status and by age group of mothers; and because the number and ages of children differ too, as Figure 1 shows, it is crucial in examining mothers' time use to account for as many demographic differences as the data allow.

III. Time Use Among American Mothers

The basic data used in what follows come from the ATUS 2003-18, provided by Hofferth *et al.* (2018), and described in detail by Hamermesh *et al.* (2005). Because the ATUS is based on diaries kept by respondents who had been included in the 8th-month outgoing rotation groups of the Current Population Survey (CPS), we can link women's marital status in the ATUS to their marital status in their fourth month

in the CPS, somewhere between 14 and 17 months before the date for which they completed the ATUS time diary.[2] Linking these data allows classifying mothers into two sub-groups: Those currently married with spouse present who were not married with spouse present in the 4th month of their appearance in the CPS (new husband), and those currently not married with spouse present who stated that a husband was present in their 4th-month interview (husband left).

There are 40,952 women ages 25-54 with children under age 18 in the household in the ATUS samples from 2003-18. Not all these women have information on their marital status at the 4th CPS month. For those who do, we can examine the transition probabilities across the four marital statuses over the year between the 4th and 8th CPS months. The transition matrix is shown in Table 1. The central feature is the remarkable stability of these women's marital status over each twelve-month period. Only among women in the Other Married category do more than ten percent change their status each year, with almost all these changes involving getting back together with the spouse or divorcing him. Among married mothers ages 25-54 who are present in both CPS months, fewer than two percent change status from one year to the next.

The bottom two rows of Table 1 show the representation by marital status of mothers with children present, first in the ATUS, then in the ACS. Note that in the former survey married women with spouse present are more heavily represented, not surprising since they must have been in the CPS for all eight interviews. (These women's marital status and presumably location are more stable than those of women in the other categories, so that Census enumerators are better able to track them.) This greater stability is reflected even more strongly in the sample used here, the 27,910 women who were included in the ATUS and for whom a 4th-month CPS interview was available (to allow construction of indicators of a husband entering or leaving the household).[3] 75 percent are married with spouse present. The reductions in the other three categories are spread roughly proportionally among them.

[2]Fourteen percent of the time diaries were completed 2 months after the woman's final CPS interview, 71 percent after 3 months, nearly 14 percent after 4 months and nearly 1 percent after 5 months.

[3]Also excluded are the 0.28 percent of women in the age range with children in the household who list their spouse's sex as female.

We know (Abraham *et al.*, 2006) that respondents included in the ATUS are not observationally different from those who were asked to complete a diary (were in their 8th CPS month). While we necessarily use the reduced sample of women throughout the analysis in this study, all the estimates in the central Table 3 of this study are nearly identical if we exclude the transition variables (new husband or husband left) and estimate the equations over the larger sample.

On a typical ATUS diary day the average respondent reports spending time in only five percent of the more than 400 ATUS categories. Information at this level of disaggregation is not interpretable or easily usable. I therefore aggregate the categories into six major divisions: Market work; home production; sleep; other personal care; TV-watching, and other leisure activities.[4] The fixed 1440 minutes per day, an attractive feature of time diaries that constrains respondents' information about their activities, mean that there are only five independent aggregates of time use. Later in the study I disaggregate home production, with one of the sub-aggregates being childcare.

Table 2 presents the means and their standard errors of time spent in various activities on a representative day by women in each of the four marital categories.[5] Sleep constitutes by far the largest component of these women's time, with married women with spouse present sleeping roughly one hour less per week than divorced women and three hours less than never-married women. They watch less television per week than other women, a shortfall of four hours from never-married women, but spend more time in other leisure activities, nearly one hour more than divorced women and two hours more than never-married women. The four groups differ little in the time spent in other personal activities.

One major difference among the groups is in time spent in paid work, with married women with spouse present doing less paid work than other mothers, a difference averaging over seven hours per week

[4]The ATUS data are from the IPUMS website https://www.atusdata.org/atus/ . The time listed as being spent in "other activities" was pro-rated across these six major activities in proportion to the amounts of time spent in each. Educational activities were treated as other leisure in this group of women who are past the usual school-attending age. A complete discussion of the nature of these aggregates is in Hamermesh (2019).

[5]These statistics are all based on the ATUS sampling weights. They thus represent the time spent on the average day by the average woman of each marital status. These descriptive statistics look very similar in the larger sample that includes women whose 4th and 8th-month CPS interviews could not be matched.

from divorced women. The most interesting difference is in their average time in home production. Married mothers spend over seven hours per week more than women in the miscellaneous other-married category in household activities, and nearly ten hours more than divorced women. All of these differences are highly significant statistically.

IV. Mothers' Time Use

The differences in the average time spent in different activities among mothers classified by marital status are suggestive, but they fail to account for the demographic differences by marital status based on the ACS that were discussed above. To make these adjustments I use the ATUS data to estimate:

(1) $T_{ij} = \alpha_{j0} + \alpha_{jS}S_i + \alpha_{jN}I\{\text{New Husband}\}_i + \alpha_{jL}I\{\text{Husband Left}\}_i + F(X_i)$, j = 1,…5,

where i is an observation; the T_j are the time-use categories. (I exclude other leisure activities from this system, since for them each estimated α_k is the negative of the sum of estimates for the other five categories, although I do present separate estimates for other leisure for completeness.) S is a vector of indicators of marital status, and the α are parameters to be estimated.

The X represent demographic characteristics, including vectors of indicators for each five-year age interval 25-54, for educational attainment (high school, some college, college, masters or doctorate); racial/ethnic identity—four groups, with white non-Hispanic excluded; metropolitan status, major Census region, and indicators of day of the week, month, and year when the time-diary was kept. Most important, each equation also includes the number of children under age 18 in the household, and indicators for the presence of a child under age 1, ages 1 to 2, 3 to 5, 6 to 12 and 13 to 17.[6]

A. General Estimates for the U.S.

The estimates of the α_{jS} listed in Table 3 roughly corroborate the differences in time use by marital status shown in Table 2.[7] Divorced women are most different from married women with spouse present,

[6]Detailed geographic information, including state of residence, is also available, but including indicators for each state would, given the relative paucity of women who changed marital status in the year preceding their ATUS diary, eliminate much of the sampling variation.

[7]The parameters are estimated using the STATA command *sureg* to allow testing of cross-equation restrictions.

doing much more paid work and much less home production.[8] Their other personal and leisure activities are less than those of married women, their sleep and TV-watching are more. Although the estimated coefficients are statistically significantly different in most cases across each pair within the three non-married groups, the crucial thing to note is how similar the use of time is across these fairly broadly defined three groups, and how different it is from that of married women with a spouse present.

One sub-group of non-married mothers uses time differently from the others—widows. They account for only four percent of non-married mothers ages 25-54 in the sample, but they show statistically significant differences in the time they spend on various activities compared to other non-married mothers. They exhibit much more home production time than others; indeed, they differ only minutely (five minutes less per day) in this dimension from married mothers. They make up for this extra time by working and sleeping less than the other non-married mothers. Overall, except in their leisure time widows behave more like women with a husband present than do divorcees, separated mothers or those whose spouse is absent.[9]

None of the estimated α_{jN} or α_{jL} is significantly nonzero; and the vectors are also not significantly jointly nonzero, even at the ten-percent level of significance. The time use of women whose husband left within the past year or who got married within the past year differs little from that of women whose marital status had not changed recently. Implicitly, mothers' time use adjusts quite rapidly to a change in marital status.

Not shown in Table 3 are the estimated impacts of the vectors of indicators of the presence of children in different age categories. Their effects are, however, exactly what would be expected given the vast amount of existing research on women's labor supply. The negative impact on work time of children diminishes monotonically as the children are older, becoming more negative if there are more children at home given their age distribution. The exact opposite is true for time spent in home production (on which

[8]Similar regressions using a shorter ATUS data set, fewer controls and not accounting for changes in marital status (Pepin *et al*., 2018) finds somewhat smaller differences by marital status in time spent in home production.

[9]Hamermesh *et al.* (2020) discuss the time use of older widows, a group whose marital status only very rarely changes, as compared to married older women.

I focus later). There is essentially no impact on sleep time of having children of different ages, except that having a child under age 1 decreases daily sleep by 15 minutes (as any new mother will attest). The same is true for other personal activities. Mothers' TV-watching is lower if there is any child under age 13 at home, independent of the age of that young child; the impact of children on mothers' other leisure activities is large and negative (25 minutes per day), but only if there is a newborn or toddler at home.[10]

Also not shown are the estimated impacts of different levels of educational attainment, but the results are unsurprising. Market work increases, other things equal, with additional education, while home production decreases. Sleep decreases monotonically with education, as shown by Biddle and Hamermesh (1990), as does time spent watching television. Other leisure time increases slightly with extra education, as does other personal time.

While I have included long vectors of available covariates, unobservable measures might, if they could be included, alter the estimated impacts of marital status on mothers' time use. To examine this possibility, I estimate how highly correlated with the variables of interest (the three indicators of marital status) a set of excluded variables would have to be to vitiate the inferences about the effects of marital status on time use (thus measuring the δ proposed by Oster, 2019).[11] For all three indicators of marital status the estimates of δ far exceed unity, suggesting that unobservables would need to be more highly correlated with the indicators of marital status than are the observable covariates to render the estimated impacts of marital status statistically insignificant. That is especially true for market work, home production and other leisure activities.

In the ACS the household incomes of mothers ages 25-54 averaged only 63 percent of those of married mothers with spouse present. Given the complementarity of income and time in household

[10]While the ATUS only obtains time diaries from one person per household, we can look at time use by men who are married to women in the age range 25-54 and who have children at home. These men average 267 minutes per day in home production, of which 82 minutes are spent in childcare.

[11]Given the insignificant impacts of the recent departure or addition of a husband from/to the household, I exclude this calculation for those variables.

production, it makes sense to re-estimate the models in (1) using the 94 percent of women in the ATUS sub-sample for whom data on family income are available. Higher household incomes do significantly raise the amount of time spent on other personal activities and reduce the time spent watching television. Their inclusion in the model also increases the differences between non-married respondents and mothers with spouse present, although qualitatively the differences are unchanged. The increase in differences in work time across the groups is spread out over the other five categories of time use, so that the changes in the estimates in those equations are proportionately much smaller.

In nine of sixteen years in the ATUS samples the respondents rated their overall health on a five-point scale (excellent through poor). In the sample underlying the estimates in Table 3, 35 percent of married mothers rate their health as only good, fair or poor (the three lowest categories), while 52 percent of others rate it this low. Since ill-health leads otherwise identical individuals to sleep more and watch more television (Hamermesh, 2019, Ch. 7), including a vector of indicators of self-rated health might alter our inferences about the effect of marital status on the allocation of time. Re-specifications of the model in (1) do show that TV-watching and sleep both increase monotonically as mother's self-rated health worsens. These effects reduce the absolute values of the estimated α_{jS} in these equations but do not qualitatively alter the inferences from Table 3.[12]

B. Replications for Six European Countries

As a check on the generality of responses of time use to differences in marital status, we can estimate models like (1) using data from France, the U.K., Italy, Germany, the Netherlands and Spain, wealthy European countries for which enough time diaries were completed in recent surveys to allow meaningful comparisons of time use by mothers' marital status. For France I use the 2009-10 *Enquête Emploi du Temps*; for the U.K. the 2014-15 United Kingdom Time Use Survey; for Italy the 2002 *Indagine*

[12]While the usable samples of mothers in each of the four groups by marital status are fairly large, in light of the smaller sample sizes in the other data sets used here I re-estimated the six equations with only one indicator of marital status, not married, thus combining the three groups of mothers without a spouse present. The estimated impacts of this indicator are very close to being weighted averages (by their representation in the sample used in Table 3) of the estimates shown there.

Multiscopo sulle Famiglie: *Uso del Tempo*; for Germany the *Zeitverwendungserhebung*, 2012-13; for the Netherlands its 2000 and 2005 surveys, and for Spain surveys from 2008-10. Italy is an especially interesting example, since on average Italian women engage in much more home production than women in other rich countries (Burda *et al.*, 2008) despite having fewer young children at home.

Because these surveys have many fewer respondents than the ATUS, and because respondents were not in some prior survey, we cannot distinguish newly partnered or newly non-partnered mothers from others. Similarly, their smaller sizes make it difficult to distinguish among non-partnered mothers with different marital statuses, so that we only compare behavior of partnered to non-partnered mothers. Also, it is crucial to note that the methods of collecting time diaries and the categorizations of activities differ among these six surveys and from those in the ATUS. Any estimates are thus not strictly comparable across countries; rather, they are presented to see whether the same general patterns demonstrated by the results in Table 3 are discernable in other rich countries.

For all six countries I estimate models based on Equation (1) describing paid work, home production, sleep, other personal activities, TV-watching and other leisure activities, restricting the samples to mothers ages 25-54 with children in the household. Also included in the models are indicators of age (each quinquennium from ages 25-54 in each country); of educational attainment; of immigrant status (for France, Germany and the Netherlands); and indicators of day of the week, month of the year (quarter in Germany, and not for the Netherlands), and year (except Italy). The data sets differ in their classifications of children's ages, with the French data giving the numbers of children ages 0-2, 3-5 or 6-17; the U.K. data providing information on the numbers of children ages 0-4, 5-10, 11-15 or 16-19; the Italian data including numbers of children ages 0-5, 6-13 or 14-17; the German data giving the number ages 0-5, 6-12 or 13-17, and also the number under age 10, and the Dutch and Spanish data using categories ages 0 to 4, 5 to 12 and

13 to 17.[13] For each country its unique vector of information on ages/numbers of children is included in the estimates.

Because the French, British and Spanish surveys obtain two daily diaries for each respondent, the German survey obtains three and the Dutch surveys seven, standard errors of the parameters are clustered on the respondents in those countries; and sampling weights are used throughout. The estimates are thus designed to be as closely comparable to those in Table 3 as allowed by the inherent differences among the surveys, both in the covariates that are available and in how basic activities are classified.

Table 4 provides the results of estimating these models (only the parameter estimates on the indicator for non-partnered women) and lists the mean time spent in each activity by partnered women. In all six countries non-partnered mothers spend less time in home production than partnered mothers, with the differences being generally significant statistically and similar on average in size to the estimate for the U.S. Many of the other differences are not statistically significant, and the signs of the effect of partnership status on the other uses of time differ across the six countries. Essentially, the shortfall in home production time of non-partnered mothers is made up by their spending more time engaged in a variety of different activities. The main finding here is the remarkable similarity to the American results on home production.

In Burda *et al*. (2013) we proposed the iso-work hypothesis—that in rich predominantly non-Catholic countries men and women on average engage in roughly equal amounts of total work—market work and home production. This hypothesis is supported even comparing total work by marital status. Adding the coefficients for the adjusted impact of marital/partnership status shown in Columns (1) and (2) of Tables 3 and 4, we see that iso-work is almost present among mothers who differ by partnership status. Averaging across all seven countries (the U.S. and the six European Countries), married/partnered women work in total only thirteen minutes per day (about 1-1/2 hours per week) more than otherwise identical non-

[13]The Italian data set also includes the number of "children" ages 18-24 or 25+ in the household. Relatively few respondents report "children" at home in these categories. Because of that, and not wanting to focus on *mammoni*, I do not include these indicators in the estimates.

married/partnered mothers with children at home, with only Italy exhibiting more total work by non-partnered mothers.

V. Disaggregating the Impact of Mothers' Marital Status on Childcare

With the largest absolute differences between non-partnered and other women being in time spent in home production, it is worth looking at these further. In terms of policy, childcare is the most interesting component of home production time, so for both reasons I focus on it here. I disaggregate home production activities into childcare and non-childcare time, with the latter consisting of the broad categories of such household activities as shopping, food preparation and clean-up, and a diverse variety of other activities, and present results for various components of childcare time in the ATUS. The differences in non-childcare time can be inferred by comparing the estimates in Column (2) of Table 3 to those in Column (1) of Table 5. The latter shows estimates of the determinants of total time spent in childcare, with the same covariates that were included in the equations presented in Table 3, and it also shows the mean amount of time spent by married mothers in childcare.

The results in Table 3 demonstrated that married mothers spend about 40 minutes more per day in household production than otherwise identical other mothers (same age, education, children of same age, etc.), about 12 percent more time. But, as Column (1) of Table 5 shows, very little of this additional time arises because they spend more time in childcare: Their additional childcare time is only six percent more than that of otherwise identical single mothers.[14] Most of the additional time that married mothers spend in home production stems from their greater time spent in other activities, including an adjusted (for differences in covariates) excess of 15 minutes (20 percent) in food preparation and grocery shopping.[15]

[14]This difference is mostly due to non-married mothers' spending more time in market work. If we account for that fact, the difference between married and non-married mothers drops by two-thirds.

[15]The additional time that married mothers spend in childcare stems from both their greater likelihood of reporting childcare activities on a given day (greater incidence) and the conditionally greater amount of time on these activities (greater intensity).

As noted above, husbands of mothers ages 25-54 spend 82 minutes per day in childcare activities in their household, about 80 percent of that of married mothers. Together with the slight amount of additional time in childcare by married women, this suggests that children of married mothers receive over 3 hours per day of care from their parents, compared to about 1-1/2 hours per day that children receive from their single mothers.[16]

The estimates of the impacts of the indicators of children's ages on childcare time are unsurprising, with mothers spending monotonically less time in childcare as their children age. Interestingly, however, non-married mothers' time in childcare differs little from that of other mothers with a teenager present; the largest shortfalls arise with children ages 3 to 12. The estimates also only weakly corroborate those of Ramey and Ramey (2010), which have been examined many times by others (e.g., Amuedo-Dorantes and Sevilla, 2014; and Rokicki and McGovern, 2020, using longitudinal data): College-educated mothers spend only a little more time in childcare activities than do other mothers.

Moving to the components of childcare activities, Columns (2)-(4) of Table 5 disaggregate them into educational activities, taking care of children's health, and others. As the estimates show, there are no significant differences by mothers' marital status in time spent in children's education or health activities. The results do, however, suggest that when a husband enters the home, the mother spends less time in these activities, and when he leaves the home, she spends more time in them. Implicitly, adding (losing) a spouse relaxes (tightens) the mother's burden in these two crucial activities. Given these results, the estimates in Column (4) look very much like those in Column (1).

The results on childcare compared to total home production time in the other six countries used in this study corroborate those for the U.S. With the same specifications as in Table 4, but with childcare time as the dependent variable, in the U.K. less childcare time accounts for some of the shortfall in time spent in

[16]It is unlikely that this deficit is mostly made up by care from other relatives: Divorced or separated men report only 7 minutes per day in childcare outside their household. The ATUS does not report whether a woman had grandchildren for whom she cares; but women ages 45+ in the ATUS report only 10 minutes per day caring for children outside their own household.

home production, and in Spain it accounts for most of it. But in France, Italy, Germany and the Netherlands the time devoted to childcare adjusted for differences in the covariates is the same by marital status.

VI. Moms' Time with Whom?

One of the major purposes of the institution of marriage is to allow individuals to spend time together, taking advantage of both the specialization in home production that togetherness allows and the complementarities in the utility derived from the joint consumption of leisure and other time (Becker, 1973). Spouses do spend more time together than randomly-matched pairs of different-sex adults (Hamermesh, 2002). When one spouse (a husband) is no longer present, the non-married mother has to reallocate her time to activities with other people who might provide some jointness in production and/or consumption of the time, or simply spend it alone.

The ATUS asks respondents to list who was present during each activity, although not for some activities which account for much of the day (particularly sleep and other personal activities). The information is collected in over twenty categories of relationship, ranging from spouse through more distant relatives, various types of other people, co-workers standing in various relationships to the respondent and being alone. I collapse this information into four categories: Time alone; with children living at home; with friends; and with other people, including other (non-spouse, non-child) relatives. I do not examine the time that married women report being with their spouse or that non-married women report as being with an unmarried partner non-resident. Adding time spent in the four categories analyzed here, married women with spouse present report spending 715 minutes in these four categories on a representative day, and non-married women report 750 daily minutes.

Figure 2 graphs the distributions of time in the four aggregated categories for each of the four groups of mothers in the data. Unsurprisingly given the evidence in the previous section, what stands out is the additional time that married mothers spend with their children, with the majority of the time shifted from being with other relatives or other people.

The upper panel of Table 6 lists estimates of the impact of being a non-married mother on choices about with whom time is spent compared to those of married women. Included in these regressions are all

the covariates underlying the estimates in Tables 3 and 5, and the total amount of time that the respondent reports spending in these four categories. The results show that married mothers spend more time with their children, even adjusting for the numbers and ages of those children and a large variety of mothers' demographic characteristics, corroborating the differences in reported time spent in different activities shown in the previous section. This difference comes especially out of time reported being spent with other people, a decrease of nearly one-third, with time alone decreasing by five percent and time with friends by only three percent. Even if we account for how mothers use time, especially for the extra market work engaged in by non-married mothers, most of the estimated additional time with children reported by married mothers compared to non-married mothers remains.[17]

The U.K. data allow replicating the American results (although in those data the age categories of time with children do not quite match the children's ages, which introduces some errors into the estimates).[18] Moreover, unlike in the U.S. data, all time can be accounted for—no activities are excluded from the accounting of "who with." Also, because the classifications differ, I aggregate time into three categories—alone, with kids, and with non-partner others, excluding, as in the analysis of the U.S. data, time spent with spouse or partner.

Holding the same vectors of demographics constant as were used in the estimates presented in Table 4, and accounting for the total time in these three categories, the bottom panel of Table 6 presents the adjusted differences in "who with" between partnered and non-partnered mothers. The bottom row shows partnered mothers' average time alone or with various others. As expected from differences in the **amounts** of time in home production shown in Section IV, non-partnered mothers spend less time with their children than partnered mothers, a difference stemming entirely from the greater time that they spend alone. There is almost no difference from partnered mothers in the amount of time that they spend with others outside

[17]Estimating these equations jointly with the equations describing the amounts of time spent in each activity hardly alters the results reported here.

[18]Children are classified as being between ages 0-4, 5-10, 11-15 and 16-19, while the identities of those with whom the mother spends time are "child 0-7," "other person, including child 8+," and "other person outside household."

the household. Moreover, in percentage terms the lesser time spent with children is close to that the U.S. data—about twenty percent compared to sixteen percent less in the U.S.

VII. Moms' Feelings—and their Relation to Time Use

A. Time Stress

We know (Hamermesh, 2019, Ch. 11) that time constraints are more binding as incomes are higher, consistent with the notion that spending (increasingly abundant) income requires using time (which does not increase with income). Non-married mothers' incomes are lower than those of married mothers, but so too is their spending. It is thus unclear whether the absence of a spouse/partner makes otherwise identical women feel more or less pressured for time.

The ATUS offers no help with this question—feelings of time pressure are not elicited—so that we cannot distinguish feelings of time stress among mothers who differ by marital status. The French, U.K., Italian, German and Dutch time-use data, however, all provide information on the degree of time stress that respondents feel. Because the U.K. survey only asks whether the respondent felt rushed or not, we collapse the scales in the other four data sets into indicator variables, with unity in the French data if the woman says she feels any stress about time, in the Italian data if she is in the highest two of four categories of stress, in the German data if she does not disagree with the feeling of being under some time pressure and in the Dutch data if she indicates that she sometimes or often feels rushed.

The upper panel in Table 7 reports the estimates of the impacts of not having a partner present on a mother stating that she feels rushed for time.[19] The same covariates are included that underlay the estimates reported in Table 4. Only in Italy is there a significant difference by marital status in mothers' feelings of being pressured for time. There is some evidence from the U.K., Germany and the Netherlands that non-partnered mothers feel more time pressure, with the opposite effect only in France. Remembering that numbers and ages of children are held constant, the difference cannot be due to the difference in the ages of children by partnership status. So too, it is not due to differences in how the mothers allocate their

[19]All the results (not the U.K., since respondents only have two choices) are slightly more positive if we estimate the equations over all choices using an ordered probit estimator.

time across the activities examined in Table 4: Accounting for those differences, the estimates in Table 7 for France, the U.K., Germany and the Netherlands become more positive, while the large positive effect for Italy drops only slightly. Finally, with greater household income mothers are typically more stressed, as the theory predicts; but the differences in time stress by marital status change very slightly.

Taken together, the results suggest that, accounting for differences in demographic characteristics, how time is used and household incomes, there is some evidence that non-partnered mothers are slightly more stressed for time than those with partners. One explanation might be similar to that provided for the excess time stress felt by women compared to men (Hamermesh and Lee, 2007): Non-partnered mothers may be "juggling more balls"—doing more different things and bearing more different responsibilities, thus incurring "costs" of switching between activities, than those mothers with a partner present.

B. Life Satisfaction—"So Happy Together"[20]

While the German, Dutch and Spanish data do not offer information on the respondents' feelings of life satisfaction or on their happiness, the ATUS, French, U.K. and Italian data sets all provide this information. We can thus compare the determinants of life satisfaction to those of time stress in three of the six European data sets, and we can examine the former for the U.S. In the 2012 and 2013 waves of the ATUS and in the French data respondents rated their life satisfaction on a 10 (best possible life) to 0 (worst possible life) scale—a so-called Cantril ladder. I rescale this variable into an indicator equaling 1 if the person gives a rating of 7 or higher. The U.K. time-use data set asked respondents to rate their life satisfaction on a 7 to 1 scale, which I aggregate into an indicator equaling 1 if the respondent answers "6" or "7" on this question, 0 if not. The Italian data offer respondents four choices, which I collapse by having the two most positive responses indicating the woman is happy with her life, the two lowest indicating that she is not.[21] These choices provide indicators whose average ranges from 0.57 to 0.85.

[20]The Turtles, 1967.

[21]I do not consider emotions experienced while engaging in different activities, information which does exist in some waves of the ATUS and which was examined in the context of childcare by Connelly and Kimmel (2015).

The estimates of the impact of marital status in regressions describing this indicator of life satisfaction are shown in the bottom panel of Table 7. For all four countries the same vectors of covariates that have been used throughout are included. If there is no spouse/partner in the household, the mother is significantly less satisfied with her life—by 16, 43, 23 and 16 percentage points in the U.S., France, U.K. and Italy respectively. There is a very large difference in this measure by partnership status in all four countries. (The effects of being non-partnered are even more significant statistically in ordered probits describing the entire range of responses to the questions about life satisfaction.[22]) While feeling only slightly more rushed for time than partnered mothers, non-partnered mothers are much less likely to be satisfied with their lives. This difference is essentially unrelated to how they allocate their time across different activities—the results hardly change if the mother's time allocation is included in the estimating equations.

VIII. Accounting for Unobservable Heterogeneity

The analyses thus far have all been based on cross-section data. Large numbers of covariates have been accounted for, and tests for the possibility that unobservable covariates are confounding the results suggest that they are not. Nonetheless, unobservable heterogeneity, which may be correlated with marital status and with the outcomes of time use, with whom time is spent, feelings of time scarcity and life satisfaction, may be biasing the findings throughout. Sadly, there are no longitudinal time diaries that have more than a few observations in which mothers have changed their marital status.[23] We thus cannot examine the robustness to this potential problem of the findings on differences in time use by marital status. We can, however, examine how a mother's feelings change when her marital status changes, as sufficient longitudinal information exists for this purpose.

[22]None of the estimated coefficients changes by more than ten percent when the women's allocation of time across the six categories of time use is added to the equation; when her household income is added; or when indicators of her self-reported health are added.

[23]The 1975-81 American study (Juster *et al*., https://www.icpsr.umich.edu/web/ICPSR/studies/9054,) interviewed a random sample of 620 people in its 1981 wave, far too few to draw useful inferences about changing time use among mothers whose marital status differs. A similarly small sample in the U.K. is discussed by Gershuny (2003).

The National Longitudinal Survey of Youth 1979 (NLSY79) has followed women (and men) ages 14-24 for 40 years, obtaining information from now biennial interviews on a large variety of issues. In 1992 and 1994 a battery of questions about the respondents' feelings was asked, eliciting responses about problems of poor appetite, difficulty concentrating on tasks, feeling depressed, feeling that things took extra effort, being a restless sleeper, feeling sad and feeling unable to get going in the morning. The survey obtained answers to each question on a scale of 0, rarely/none of the time, 1 day per week; 1, some/a little of the time, 1-2 days per week; 2, occasionally/moderate amount of the time, 3-4 days per week; and 3, most/all of the time, 5-7 days per week. These responses were added to comprise a 22-point scale (ratings of 0 through 21) which I summarize here as describing depression, with higher scores indicating the respondent is more depressed.

I restrict the sample to women who had at least one child (biological, foster or step-) in the home in both years and who provided answers on the depression scale in both years. These restrictions yielded a sample of 3,038 women ages 29-37 in 1994, when these mothers reported having on average 1.98 children at home.[24] Among mothers who were married when observed in 1992 seven percent reported a different marital status in 1994, with all but a handful having divorced or separated.[25] Six percent of those observed as married in 1994 were not married in 1992. Over one-half of the sub-sample reported a depression score averaging 4 or less in 1992; and of these nearly 3/4 had scores this low in 1994. Eighty percent of the mothers had the same number of children in the home in both years, while four percent lost a child (for various reasons) and sixteen percent added a child.

Table 8 reports the results of estimating versions of the autoregression:

$$(2)\quad D_{i94} = \alpha_0 + \alpha_1 D_{i92} + \alpha_2 MARRBOTH_i + \alpha_N I\{\text{New husband}\}_i + \alpha_L I\{\text{Husband left}\}_i + \beta_N I\{\text{New child}\}_i + \\ + \beta_L I\{\text{Child left}\}_i ,$$

[24]Throughout this analysis I use NLSY79 sampling weights from 1993, the intermediate year between the observations on the depression scale.

[25]The two-year transition probability of seven percent exceeds that implied by the transition matrix in Table 1 (three percent) partly because the NLSY79 sample used is younger than the CPS sample.

where D is the 22-point composite depression score, MARRBOTH is an indicator for mothers who were married in both years, and the I are indicators of change in marital or child status. The mean depression score in 1994 of mothers who were married in both years is listed in the bottom row.

The first column reports the simple autoregression with an indicator for mothers who were married in both 1992 and 1994, the second adds the indicators of changes in marital status, and the third also adds the indicators of changes in the numbers of children present. There is unsurprisingly tremendous persistence in the depression score. Those who remain married in both years are less depressed in 1994, given their level of depression in 1992, than are mothers who remain unmarried in both years. The estimates in Column (2) show that becoming married reduces depression only very slightly compared to its level in 1992. Becoming separated, divorced or widowed greatly increases a mother's feelings of depression, raising the score by 0.67 standard deviations of the depression scores in the entire sample. We can reject the hypothesis that changes in marital status are unimportant in altering feelings of depression, $p < 0.001$.

Given changes in marital status, the results in Column (3) demonstrate that a child entering the household reduces mothers' depression by about a statistically significant 0.09 standard deviations. When a child leaves the household mothers' depression score rises by 0.10 standard deviations. The indicators of changes in the number of children in the home are jointly statistically significant ($p = 0.04$). The overwhelming majority of cases with I{Child left}=1 arise when an older child leaves the home. In the very few cases (7 of the 3,038 sample respondents) for which the number of children decreases because of a child's death between 1992 and 1994, the child's death raises the depression index by a highly significant 1.37 standard deviations.[26]

[26]The tremendous skewness in D means that least-squares estimates are not appropriate for estimating (2); I use them for simplicity of interpretation. Even a Poisson estimator is inappropriate, as the D appear to be under-dispersed compared to a pure Poisson process. Nonetheless, re-estimating (2) using the appropriate negative binomial estimator does not qualitatively change the inferences: Having a spouse leave the household greatly increases the mother's feelings of depression

IX. Conclusions and Implications

Divorce and separation of mothers from their partners is a very common occurrence in most modern societies. How it affects the ways that mothers use their time and, in particular, the amount of attention that their children receive, is of central interest to drawing inferences about women's well-being and its effects on children's development. Using data from the U.S., France, the U.K., Italy, Germany, Spain and the Netherlands, I have shown that mothers without a partner present spend less time in home production activities, with some of the decline accounted for by lesser time in childcare. They feel slightly more rushed for time than partnered mothers and are substantially less satisfied with their lives. Part of these latter differences by marital status results from how the absence of a partner alters the way that mothers spend time; but the majority arises from the partner's absence *per se*.

The results suggest that children of non-partnered mothers not only receive less parental time than others. The attention that they do obtain is from mothers who feel more stressed for time and who are less satisfied with their lives, a concatenation of time and possible interest that may on average disadvantage their children even more. Overall, our findings imply the need for even more attention and concern to the difficulties facing children in single-parent households. With non-married mothers in the U.S. being disproportionately less-educated and more likely to be from minority groups than married mothers, this conclusion takes on special importance.

The biggest lacuna in the analyses stems from the absence of a sufficiently large longitudinal time-use survey to account for the way that unobservable heterogeneity may be biasing the inferences about how changes in marital status alter the ways that mothers use time. The similarity in the results about feelings of life satisfaction in the cross-section data used here and those from the longitudinal data about feelings of depression suggest that heterogeneity may not be a serious problem in the findings about time use. But without longitudinal time-use data this encouraging analogy is merely a suggestion.

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Table 1. Transition Matrix across Marital Statuses, CPS Months 4 to 8, ATUS 2003-18, Mothers Ages 25-54 with Children in the Household, and Percent in Category (percent distributions)

	Year t			
	Married Spouse Present	**Never Married**	**Divorced**	**Other[a]**
Year t-1[b]				
Married Spouse Present	98.6	0.2	0.4	0.8
Never Married	4.5	93.6	0.6	1.3
Divorced	3.2	1.0	94.2	1.6
Other	4.3	1.6	5.8	88.3
Percent Distribution Year t[c]	71.2	13.7	9.2	5.9
Percent Distribution Year t[d]	67.5	17.9	9.2	5.4

[a]Other includes married spouse absent, widowed, separated.
[b]Only mothers with information at Waves 4 and 8 of CPS.
[c]ATUS 2003-18, all present in Wave 8 of CPS.
[d]ACS2013-17.

Table 2. Descriptive Statistics, Time Use Categories, Mothers Ages 25-54 with Children Under 18 in the Household, by Marital Status, Representative Day in the ATUS 2003-18 (minutes/day), N=27,710*

Group:	Paid Work	+ Home production	= Total work	Sleep	Other personal	TV-watching	Other leisure
Married, spouse present (N = 19,754)	209.59 (1.83)	342.10 (1.50)	551.69 (1.56)	509.20 (9.35)	117.61 (0.53)	102.64 (0.80)	158.90 (1.15)
Never married (N = 3,168)	231.35 (4.72)	271.64 (3.51)	502.99 (4.29)	535.36 (2.70)	112.16 (1.59)	146.43 (2.76)	143.09 (2.97)
Divorced (N = 3,091)	274.50 (4.90)	259.61 (3.42)	534.11 (4.26)	516.13 (2.57)	113.92 (1.39)	124.28 (2.62)	151.59 (2.99)
Other (N = 1,697)	238.71 (6.53)	280.10 (4.84)	518.81 (5.95)	529.29 (3.59)	114.19 (2.23)	130.09 (3.68)	147.66 (3.89)

*Standard errors in parentheses below means. The totals by category differ very slightly from 1440 due to rounding.

Table 3. Estimates of the Effects of Differences in Marital Status on Time Use, Mothers Ages 25-54 with Children Under 18 in the Household, by Marital Status, Representative Day in the ATUS 2003-18 (minutes/day), N=27,710*

	Paid work	Home production	Sleep	Other personal	TV-watching	Other leisure
Ind. var.:						
Never married	19.42	-31.29	9.99	-3.96	18.67	-12.83
	(5.04)	(4.16)	(2.53)	(1.63)	(2.55)	(3.36)
Divorced	52.79	-46.81	6.72	-5.00	7.98	-15.70
	(5.29)	(4.37)	(2.65)	(1.71)	(2.68)	(3.52)
Other	35.93	-36.83	10.67	-3.01	7.94	-14.72
	(6.82)	(5.63)	(3.42)	(2.21)	(3.45)	(4.55)
New husband	6.16	-15.09	5.51	-0.93	9.23	-4.89
	(9.77)	(8.07)	(4.90)	(3.17)	(4.95)	(6.51)
Husband just left	1.62	-5.61	-5.06	-3.07	-5.54	17.65
	(14.43)	(11.92)	(7.23)	(4.68)	(7.30)	(9.62)
R^2	0.185	0.137	0.107	0.026	0.084	0.078

*Additional covariates are numbers of children, vectors of presence of children in each age category, age ranges of mother, racial/ethnic identity, metropolitan status, region, day of week, month of year, and year, and an indicator of immigrant status. Married women spouse present are the excluded category. Standard errors in parentheses.

Table 4. Estimates of the Effects of Differences in Partnered Status on Time Use, Mothers Ages 25-54, France 2009-10, U.K. 2014-15, Italy 2002, Germany 2012-13, Netherlands 2000 and 2005, Spain 2008-10 (minutes/day)*

	Work	Home production	Sleep	Other personal	TV-watching	Other leisure
Ind. Var.:			**FRANCE**			
Not partnered	-4.07	-18.70	-7.46	-3.67	27.30	6.71
	(18.00)	(12.73)	(9.02)	(7.31)	(10.07)	(10.06)
R^2	0.252	0..194	0.104	0.106	0.141	0.184
Mean among partnered	194.86	299.63	487.39	185.92	108.90	163.45
N Diaries Partnered/Not	2,114/457					
			U.K.			
Not partnered	-6.72	-36.68	23.77	6.38	3.97	9.26
	(12.04)	(11.21)	(8.03)	(5.90)	(6.68)	(8.84)
R^2	0.176	0.155	0.114	0.057	0.129	0.080
Mean among partnered	140.73	369.88	510.81	143.89	110.22	164.80
N Diaries Partnered/Not	1,879/588					
			ITALY			
Not partnered	63.55	-38.66	-1.16	-1.83	-11.16	-10.75
	(7.09)	(6.17)	(2.59)	(2.03)	(2.09)	(3.78)
R^2	0.166	0.144	0.082	0.082	0.056	0.180
Mean among partnered	119.72	453.80	485.16	83.91	73.98	223.44
N Diaries Partnered/Not	3,187/2,758					
			GERMANY			
Not partnered	28.88	-33.55	-0.92	-4.18	-6.47	16.24
	(10.66)	(9.18)	(5.38)	(3.40)	(5.18)	(8.15)
R^2	0.216	0.126	0.172	0.046	0.095	0.121
Mean among partnered	145.60	348.35	497.05	153.50	95.04	200.46
N Diaries Partnered/Not	3,006/955					

Table 4, cont.

			NETHERLANDS			
Not partnered	21.19	-15.94	1.67	6.51	-13.00	0.52
	(17.14)	(14.29)	(9.37)	(5.97)	(8.08)	(10.49)
R^2	0.134	0.113	0.122	0.012	0.067	0.115
Mean among partnered	141.02	426.22	502.62	89.41	82.40	198.55
N Diaries Partnered/Not	3,909/512					
			SPAIN			
Not partnered	-13.00	-21.42	10.72	1.44	-3.04	25.30
	(12.52)	(9.73)	(5.06)	(2.64)	(4.82)	(6.72)
R^2	0.184	0.049	0.143	0.066	0.087	0.100
Mean among partnered	273.90	358.94	489.56	94.33	103.50	120.07
N Diaries Partnered/Not	5,883/622					

*Based on the *Enquête Emploi du Temps*, 2009-10, the United Kingdom Time Use Survey, 2014-15, *Indagine Multiscopo sulle Famiglie*: *Uso del Tempo*, 2002, the *Zeitverwendungserhebung*, 2012-13, and the harmonized Dutch and Spanish files. Each equation includes indicators for the number of each in each of various age intervals; for five-year age intervals of mothers 30-34 through 50-54 (25-29 is the excluded category); educational attainment, immigrant status (France, Germany and the Netherlands) and indicators of the day of the week, month of the year (except the Netherlands), and year (except Italy). Partnered women are the excluded category. All estimates are based on sampling weights, and standard errors are clustered on individuals (except Italy).

Table 5. Estimates of the Impact of Marital Status on Childcare, Mothers Ages 25-54 with Children Under 18 in Household, by Marital Status, Representative Day in the ATUS 2003-18 (minutes/day), N=27,710*

Dep. Var.:	Total childcare	Child Education	Child health	Child other
Ind. Var.:				
Never married	-4.35	-1.24	-0.51	-2.59
	(2.13)	(0.67)	(0.51)	(1.92)
Divorced	-10.27	-1.59	-0.64	-8.04
	(2.23)	(0.70)	(0.53)	(2.01)
Other	-5.29	-0.80	0.42	-4.91
	(2.88)	(0.91)	(0.69)	(2.60)
New husband	0.07	-2.60	0.28	2.38
	(4.13)	(1.30)	(0.98)	(3.72)
Husband just left	-6.05	0.25	1.84	-8.14
	(6.09)	(1.92)	(1.45)	(5.55)
R^2	0.285	0.079	0.008	0.311
Means (S.E.)				
Married women	102.97	10.48	3.11	89.39
	(0.86)	(0.25)	(0.17)	(0.79)

*Estimates are from equations including all covariates used in the equations in Table 3. Standard errors in parentheses.

Table 6. Effects of Marital Status on Choice of Whom Time is Spent With, Mothers Ages 25-54 with Children in the Household, by Marital Status, Representative Day, ATUS 2003-18, U.K. 2014-15 (minutes/day)*

	WHO WITH			
	Alone	**With kids**	**Friends**	**Other relatives, other people**
Ind. var.:		**U.S.**		
Never married	18.64	-58.67	9.40	30.63
	(3.66)	(4.22)	(1.42)	(3.76)
Divorced	7.31	-62.84	13.70	41.83
	(3.84)	(4.43)	(1.49)	(3.95)
Other	9.77	-62.86	4.23	48.86
	(4.81)	(5.54)	(1.87)	(4.94)
R^2	0.206	0.402	0.025	0.271
Mean married spouse present	210.73	376.52	19.73	108.32
		U.K.		
	Alone	**With kids**	**With non-partner others**	
Not partnered	131.55	-133.61	4.23	
	(35.32)	(44.94)	(1.87)	
R^2	0.130	0.714	0.025	
Mean partnered	212.17	645.56	222.42	

*Additional covariates in the U.S. estimates are vectors of numbers of children, presence of children in each age category, age ranges of mother 30-34 through 50-54 (25-29 is the excluded category); racial/ethnic identity, metropolitan status, region and immigrant status (U.S. only); day of week, month of year, and year. Also included is the total amount of time the woman lists as time spent in these categories. Married women spouse present (partnered women) are the excluded category in the U.S. (U.K.) estimates. Standard errors in parentheses (clustered on individuals in the U.K. estimates).

Table 7. Mothers' Feelings, ATUS 2012-13, France 2009-10, U.K. 2014-15, Italy 2002, Germany 2012-13, Netherlands 2000 and 2005*

	U.S.*	France**	U.K.**	Italy**	Germany**	Netherlands
Dep. Var.			**Rushed*** **			
Not partnered		-0.038	0.024	0.191	0.032	0.086
		(0.040)	(0.036)	(0.014)	(0.019)	(0.076)
R^2		0.112	0.065	0.054	0.023	0.034
N =		2,563	2,386	5,945	3,937	2,874
Mean among partnered		0.397	0.316	0.175	0.306	0.619
Dep. Var.	**Upper-2/3 of Life Satisfaction*** **					
Not (married) partnered	-0.162	-0.430	-0.233	-0.160		
	(0.023)	(0.125)	(0.053)	(0.014)		
R^2	0.072	0.524	0.149	0.045		
N =	888	227	1,122	5,945		
Mean among married (partnered)	0.570	0.760	0.717	0.849		

*Standard errors in parentheses here and in the other estimates in this table. Additional covariates are vectors of age ranges, racial/ethnic identity, metropolitan status, region, day of week, month of year, and year, and an indicator of immigrant status. Married women are the excluded category.

**Based on the *Enquête Emploi du Temps*, 2009-10, the United Kingdom Time Use Survey, 2014-15, *Indagine Multiscopo sulle Famiglie*: *Uso del Tempo*, 2002, the *Zeitverwendungserhebung*, 2012-13 and the harmonized time-use files for the Netherlands 2000 and 2005. Each equation includes indicators for five-year age intervals 25-54, educational attainment, immigrant status (France, Germany and the Netherlands), and indicators of the day of the week, month of the year (except the Netherlands), and year (except Italy). Partnered women are the excluded category.

***All estimates are based on sampling weights. Each equation includes indicators for numbers of children, presence of children in each age category, five-year age intervals of mothers, educational attainment, immigrant status (U.S. and France), and indicators of the month of the year. Married (partnered) women are the excluded category.

Table 8. Autoregressions of the Effects of Differences in Marital Status on Depression, Mothers Ages 29-37 with Children in the Household, NLSY79. 1992 and 1994, Dep. Var. Is Score on the 22-Point Index of Depression in 1994 (N = 3,038)*

	(1)	(2)	(3)
Ind. var.:			
22-point index 1992	0.442 (0.025)	0.427 (0.025)	0.425 (0.024)
Not married both years	0.774 (0.196)	1.004 (0.195)	0.953 (0.196)
New husband	--------	0.211 (0.453)	0.223 (0.451)
Husband just left	--------	2.992 (0.572)	2.946 (0.577)
Child entered household	--------	--------	-0.417 (0.214)
Child left household	--------	--------	0.456 (0.459)
R^2	0.193	0.214	0.216
Mean score mothers 1994	3.694 (0.093)		

*Standard errors in parentheses.

Figure 1. Number of Children Under 18 or Under 5, by Marital Status, ACS 2013-17.

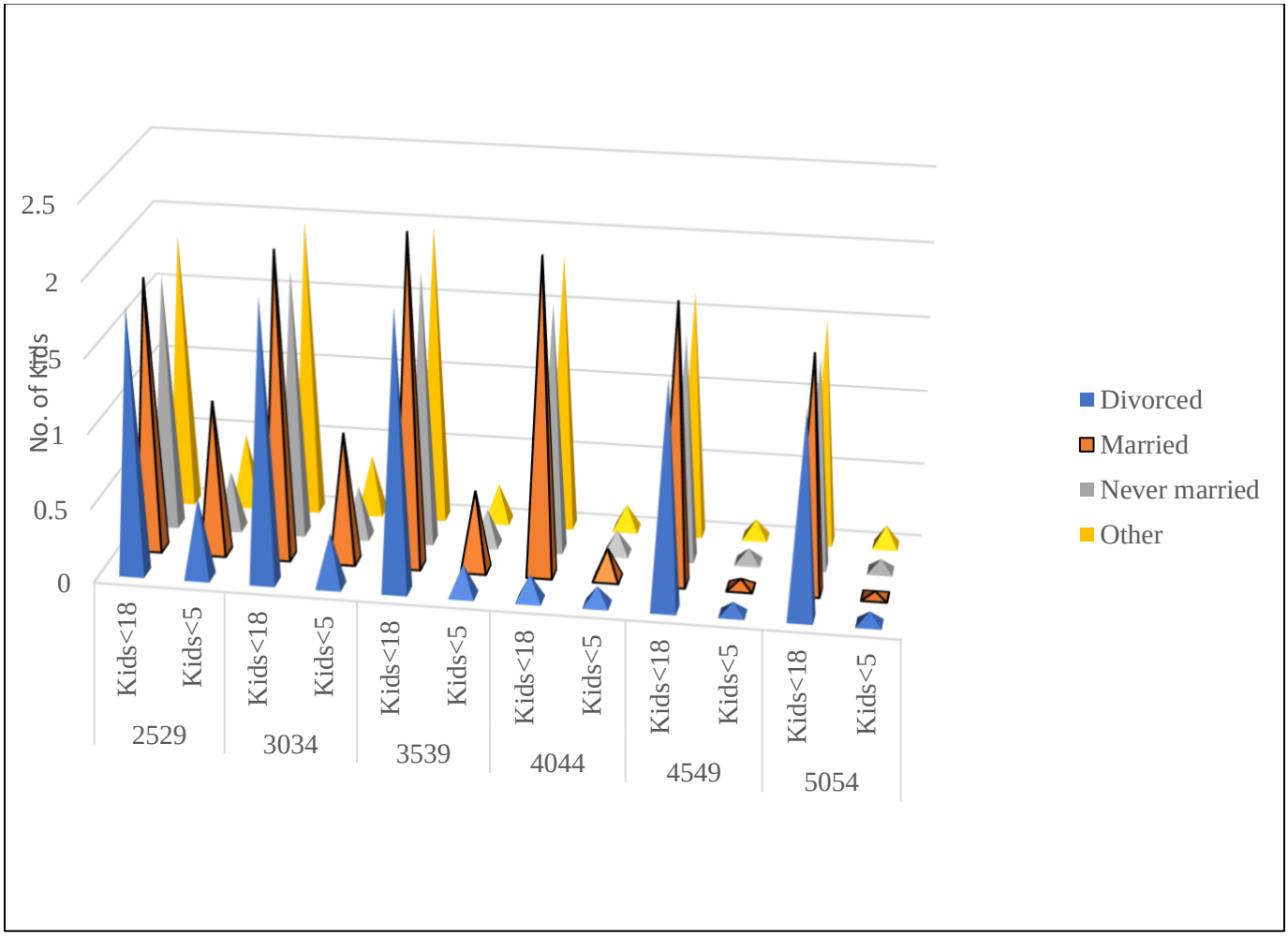

Figure 2. Mothers' Time Alone or with Various Others, Married, Never Married, Divorced and Other, Representative Day in the ATUS 2003-18 (minutes/day), N=27,710