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Evidence from the ATUS & Implications

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## Time Spent in Household Management: Evidence from the ATUS & Implications

### Abstract

To date, time use studies largely focus on the amount of time that family members spend on household tasks such as washing dishes, paying bills, and cutting the lawn. The "missing ingredient" is time spent in household management. Household management is much more than "paying bills." It refers to the process by which family members determine the quality and quantity of various goods and services to be provided, by whom, and how adequate provision will be monitored. Using newly available data from the American Time Use Survey (ATUS), this study investigates time spent in household management, broadly defined, and describes the challenges of measuring time spent in this function. One implication of our findings is that efforts to value household management using time use data and appropriate wage rates will substantially underestimate the value of this function.

Households purchase or produce a range of goods and services including meals, clean clothes, gardening, bill paying, and child care. In time use studies, the amounts of time that family members spend on these tasks are measured (e.g. Marini and Shelton, 1993; Bianchi et al. 2000; Sayer, 2005). The “missing ingredient,” as recognized in earlier empirical work by Mederer (1993), is the process by which a family determines the quality and quantity of various goods and services to be provided, by whom, and how adequate provision will be monitored. That is, household management constitutes much more than a pure record-keeping function such as “paying bills,” Rather, household management plays an over-arching role in all of household production.

The conceptualization of household management described here was recognized as early as 1861 in Isabella Beeton’s “The Book of Household Management.” She wrote: “AS WITH THE COMMANDER OF AN ARMY, or the leader of any enterprise, so it is with the mistress of a house.” Similarly, in *Bridenstine v. Iowa City Electric Railway Company* (1917) the Iowa Supreme Court, ruling on how damages should be determined in the death of a homemaker, said that juries should provide:

fair consideration of all the evidence tending to show the condition, capacity and efficiency of the deceased in the discharge of her domestic duties, not only as a laborer performing menial service, but also as the housewife and head and administrator of the internal affairs of her home.

The critical function of household manager is also recognized in the commercial marketplace of 2007. Firms and individuals offer such services under the occupational title of “Personal Assistant,” “Personal Concierge Service,” or Professional Organizer.” These firms advertise the time savings that can be realized by hiring an outside person to perform household managerial functions as making travel arrangements, event planning,

filing, scheduling a painter, and finding a dog kennel. The presence of a national organization, the National Association of Professional Organizers, is an indicator of the maturation of this industry. Full-time organizers appear to earn anywhere from \$25,000-\$120,000 per year, though some specific services are available at an hourly rate at \$30-\$50 an hour (Bick, 2006; Buntic, 2007).

In this study we lay out the case for why household management plays an overarching role in household production and hence why its full value should not be neglected in efforts by economists to value nonmarket activity. Next, we investigate what can be learned about the household management function from newly available data from the American Time Use Survey (ATUS). These data provide the first-ever nationally-representative estimates of time spent in household management, broadly defined. While these data provide the richest information available on household management, they nevertheless provide a very conservative estimate of time in this function, as illustrated in the empirical analysis. A final question discussed is whether time use data can be usefully employed to provide a value for the function of household management.

### **Defining Household Management**

A family can be viewed as a production unit, akin to a firm that functions in the commercial marketplace (Becker, 1981). From this perspective, a household manager combines household inputs to provide household outputs. Household management involves a determination of which services will be provided in-house by family members and which services are going to be purchased from the commercial marketplace. As described by a leading textbook in the field of management (Robbins and DeCenzo, 2005), the management process entails several steps: planning (defining goals and how to

achieve them), organizing (identifying set of tasks to be done and by whom), leading (motivating and resolving conflicts), and controlling (monitoring).

To our knowledge, Mederer (1993) is the first empirical paper to operationalize the distinction between time spent in the household managerial function from performing household tasks in an empirical time use analysis. She defines household tasks as those that are performed on behalf of household members (cooking and laundry) and activities required to keep up the household itself (cleaning, yard work, paying bills). Household management activities, what she refers to as “transactional” activities, refers to time allocated to planning meals; getting things ready for the next day; scheduling appointments for household members and for household services and repairs, and the broad category of making “money decisions.” Recent work by Folbre and Yoon (2005) on valuing child care also provides an important “departure” from standard time use studies that focus on production tasks. They explicitly recognize the value of management activities performed in households on behalf of children, such as organizing and planning for children, in addition to time spent in primary and supervisory activities. Taken together, the aforementioned sources suggest that time use activities in household management includes planning, organizing, monitoring, and obtaining purchased household and child care services, in addition to taking care of financial affairs.

It is important to consider who performs the managerial function within a given household. Obviously, in a one-person household, the household management function exclusively resides with the single individual, and there are no opportunities for specialization. In a two (or more) person household, the household management function is more complex because the adults have to establish spheres of responsibility,

and potentially coordinate their activities. Quite possibly, in “traditional” married couple families, where the husband is the primary (or sole) breadwinner, husbands and wives may have separate spheres of management responsibility, just as they do regarding tasks. In such couples, not all that much coordination is likely needed regarding the management function. In contrast, in dual-earner couples, which is now the dominant paradigm for married couples in the U.S, careful coordination is arguably vital to adequately manage limited family time in families with children. Indeed, Hoschchild (1997) refers to the management function as a “third shift” faced by dual-earners juggling paid work and family (see also, Daly 2002).

Household management also entails a within-household monitoring function. In multiple-person households, the mere fact that tasks have been assigned by the household manager(s), does not guarantee that they will be performed, especially when the assigned household production workers are minors in the family. In fact, some degree of monitoring is required by all households, single- or multiple-person, to the extent they purchase commercial services. For instance, those purchasing housecleaning services must look out for theft and breakage, and parents must regularly “check in” with child care providers.

Given the previous discussion, the ideal data set needed to investigate time spent in the household management function should include 1) detailed information on this set of activities; and 2) information on time use from multiple persons in the household (most critically, household adults) to fully analyze the intrahousehold allocation of management time. In the next section we examine the usefulness of available data sets in light of these considerations.

## **Measuring Time Spent in Household Management**

Time use surveys prior to the American Time Survey (ATUS), whether based on a time diary or direct question format, provide only limited information on time spent in the household management function. For instance, the Panel Study of Income Dynamics (PSID), which is the basis for much analysis of gender differences in housework, asks respondents (and, on occasion, their spouses) a very broad, direct question: “About how much time do you spend on housework in the average week—I mean time spent cooking, cleaning and other work around the house?” Responses may or may not include time spent in the household management function since it is not part of the example. Moreover, with such a general question, respondents’ perceptions of what constitutes “housework” likely differ considerably. The National Survey of Families and Households (NSFH) takes a slightly more nuanced approach and asks direct questions about nine specific household tasks, including laundry, cleaning house, and paying bills. While one might regard paying bills as part of the management function, this activity constitutes only a small part of this set of activities.

Time diary methods are generally regarded as the superior method for obtaining information on time use, though again, prior surveys have incompletely captured time spent on household management. In a time diary survey, respondents are asked to report on their activities, within specific intervals of time, over a recent period (e.g. the prior 24 hours). Well-known time diary surveys include those conducted by the University of Michigan (1965, 1975, 1981-82) and subsequently by the University of Maryland (1985, 1992-94, 1995, 1997-98). These survey data are coded using the categories set forth by Szalai (1972). Among Szalai’s 96 detailed codes is code 19, which includes “dealing

with bills and various other papers.” Recent research by Bianchi et al. (2001), for instance, which uses data from the 1965, 1975, 1985, and 1995 surveys, report information on this very narrow category separately and includes it as part of total household time.

The richest data set on information on time spent in household management in the U.S., where management is more fully defined as in the previous section, is the American Time Use Survey (ATUS), conducted by the Bureau of Labor Statistics. This ongoing survey, initiated in 2003, provides information on time spent over the course of a 24 hour period in a wide array of primary activities. One randomly selected individual (age 15+) is interviewed from selected households completing the 8<sup>th</sup> month of the Current Population Survey. The ATUS coding scheme, which most closely follows the scheme used in the 1997 Australian Survey, includes a much finer level of detail than Szalai’s scheme (Shelley, 2005): It has 17 major categories (coded with 2 digits), 105 second tier activities (coded with 4 digits), and 438 third tier activities (coded with 6 digits). The first tier category of Household Activities (02) includes 2<sup>nd</sup> tier activities such as Housework (0201) and Food and Drink Prep (0202), and also, of key relevance, the category of Household Management (0209).

Within Household Management, third tier categories include financial management, household personal planning and organization, household security, personal mail and personal e-mail. In published reports the Bureau of Labor Statistics excludes household and personal mail and e-mail in calculating time spent in Household Management and the larger category of Household Activities (02) (US Bureau of Labor Statistics, 2006). For comparison purposes, we similarly exclude these categories from



our narrowest measure of Household Management, referred to as “ATUSmanage,” and the measure of broad Household Activities called “ALLHH.”

The household management activities captured in the ATUS are far more extensive than those contained in ATUSmanage as recognized in *The Dollar Value of a Day* (also called, DVD, Expectancy Data, 2005), a publication produced for use by forensic economists. Forensic economists are those called upon to estimate the dollar value of household services that are lost because of personal injuries and wrongful deaths. In this publication, household management is defined as the categories in ATUSmanage *plus* Managing Household and Personal Mail and Messages (020304), Using Paid Child Care Services (0801), Using Banking and other Financial Services (0802), Using Legal Services (0803), Activities related to Real Estate (0806), and Using Social Services (100102). For comparison purposes with DVD, we replicate their measure and refer to it as “DVDmanage.”

Even still, there are arguably additional categories detailed in the ATUS survey that fall under the purview of household management not captured in *The Dollar Value of a Day*. Thus, we further construct a third measure, termed “ExpandedDVD.” This measure includes DVDmanage plus Organizing and Planning for HH Children and HH Adults (codes 030108 and 030502), Comparison Shopping (code 0702), Purchasing Household Services (09), and Calls related to Purchasing HH Services and Child-Related Services (within code 16). DVDmanage and ExpandedDVD are both subcategories of a broader set of activities needed to run a family which we term here “FAMILYCARE” activities. FAMILYCARE includes time spent on all household activities (ALLHH), as defined earlier, plus time spent shopping and caring for household family members, and

the associated management time. See Appendix A for detailed definitions for all five measures.

Despite the usefulness of the ATUS in better identifying management activities than in past U.S. surveys, these data nevertheless provide a conservative estimate of time spent managing the household for two reasons. First, the ATUS asks about primary activities only. Thus, it will miss secondary management tasks. For instance, an individual who is scheduling appointments on the phone while loading the dishwasher may report “loading the dishwasher” as the primary activity. The focus on primary activities is perhaps even more problematic in calculating time spent in household management for paid workers, to the extent that they “organize their lives” at the (remote or home) office. The ATUS would capture the primary activity, “at paid employment” but completely miss time at work spent surfing the internet to plan vacations or time spent on the phone scheduling home repairs or interviewing nannies. And with the advent of cell phones, individuals may be driving around and scheduling their appointments at the same time (see also, National Research Council , 2005, p. 49). A second difficulty in fully capturing time spent in management is that this activity, albeit important, is often done throughout the day in very small blocks of time. Like any activity of short duration, it may not be counted and/or may be forgotten. In other instances, you need a large block of time, such as when managing financial affairs. Thus, it is not all too surprising that individuals either report spending zero minutes on this activity on a given interview day, or as much as an hour.

Another limitation of the ATUS data, which is characteristic of the majority of time use surveys, is that they provide information on just one respondent per household,

thereby yielding no information on the very important question raised in the previous section regarding how management time (or time in tasks) is shared within multiple-person (e.g. married-couple) households, or how much total time is spent on household management (or tasks) in multiple-person households (Winkler, 2002). Instead, we use these data to draw inferences about the intrahousehold allocation of time in married-couple households by comparing mean time spent in management and household tasks of husbands and wives in specific types of couples, such as those that are highly-educated or dual-earner.<sup>1 2</sup>

### **ATUS Evidence on Time Spent in Household Management**

In this section we analyze data on time spent in household management from the 2003 and 2004 ATUS surveys to gauge the sensitivity of estimates obtained to the definition used and to identify key correlates. The primary sample consists of any adult respondent in the ATUS who is age 18 and over and is 1) the reference person of their household; or 2) the spouse of the reference person; or 3) an unmarried partner of the reference person. The sample thereby excludes 19 year olds who live in their parents' household, as well as married persons who head subfamilies living in the household of

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<sup>1</sup> Alternatively, Connelly and Kimmel (2007) utilize a matching process to produce “synthetic couples,” thereby permitting a comparison of time usage on a given interview day of a matched wife and husband. This approach is not without its drawbacks, including the issue of whether the interview day is representative of the two partner’s time use patterns, especially for tasks that are performed irregularly.

<sup>2</sup> In addition, concerns about nonresponse bias in the ATUS have been raised in light of the fact that response rates are under 60 percent vs. over 90 percent for the Current Population Survey (see Abraham et al. 2005; O’Neil and Sincavage, 2004). As discussed by Abraham et al. (2005), the direction of the effect of nonresponse bias could go either way. On the one hand, busy people (e.g. those working more hours or with greater education) may be less likely to respond, but on the other hand, those that are less “socially integrated” (e.g. those not in the labor force, never-married or separated, or renters) may also be less likely to respond. Abraham et al. (2005) finds empirical support for the second hypothesis, but not the first. Nonetheless, after reweighting the data to adjust for observed correlates with nonresponse rates, they do not find that time use estimates are very different. As they observe, their findings do not rule out the possibility of nonresponse bias, but simply that it is not correlated with observable factors. The descriptive figures reported here are adjusted using ATUS survey weights but no additional adjustments are made.

another family. The total sample size is 30,032 (ATUS 2003 and 2004 surveys combined). For each ATUS respondent, we have 1) time diary data, termed “ATUS diary”; 2) data on usual hours worked and other variables from the set of CPS questions administered at the time of the time diary, referred to as “ATUS-CPS”; and 3) data on usual hours worked and educational attainment from the linked CPS survey administered 2-5 months prior, referred to as “linked CPS.”

The ATUS survey is conducted so that one half of respondents report on weekends and the other half report on weekdays. Respondents report time use in increments of minutes per day. Here we convert data from minutes into hours and calculate average weekly hours using information for all respondents. The advantage of studying average weekly hours is that this is the standard unit of time in analyses of time spent in paid work and housework. The weekly averages are weighted using ATUS survey weights.

The top of Table 1 provides information on the key variable of interest, average hours per week in household management activities using the three alternative definitions: 1) ATUSmanage; 2) DVDmanage; and 3) ExpandedDVD, as defined earlier and in Appendix A. For comparison purposes, Table 1 also provides means for time spent in all household activities (ALLHH) and in family care (FAMILYCARE), both including associated management time. The most striking, but perhaps not unexpected finding, is that average weekly hours spent in household management is quite low, even when broadly defined, as compared to time spent in other household activities. As reported in Table 1, adults spend 1.04 hours per week in household management based on the narrowest measure, ATUSmanage, which largely reflects time spent in financial

management, and as much as 1.64 hours per week when measured using the broadest measure analyzed here, ExpandedDVD. As shown in Tables 1 and 2, weekly average hours are considerably larger among those who report spending at least some time in these activities, around 5.7 to a little over 6 hours per week, depending on the measure considered.

As discussed earlier, the additional categories captured in ExpandedDVD such as procuring household or child care services or taking care of mail may not fully capture time spent in these activities. These activities tend to be accomplished in very small blocks of time or performed as a secondary activity; in either case they would be missed by the survey. Nonetheless, as Table 2 shows, the patterns of time use by presence of a child and by adult's age are what would be expected. For instance, time spent organizing for a child is over five times as high for a woman with a pre-school age child as for any adult. Similarly, time spent managing financial affairs, as reflected in ATUSmanage, is higher for older as compared with younger Americans. This pattern is in part because older Americans are likely to have more financial affairs to manage, but perhaps even more importantly, because they have more available time to do so. A close look at the data also shows that for older cohorts, greater time is spent on purchasing household services. This may be due to greater income or increased difficulties involved in undertaking some specific activities oneself such as cleaning gutters or shoveling snow.

Table 2 further reveals that time spent in household management varies substantially by education. Highly-educated women (those with four years of college or more) spend nearly twice as much time in management, regardless of definition, as less-educated women (those with high school or less). A similar pattern is found for men,

though not displayed in Table 2. One explanation is that highly-educated individuals have more valuable assets to manage and/or superior management skills that they can put to this task. In addition, while household management activities such as financial planning for retirement can be partially outsourced, there is a need for sophisticated monitoring of the outsourced management activities. For instance, it is fairly easy to determine whether the laundry has been done, the floor has been scrubbed, and the lawn has been cut. It is less easy to determine whether a financial planner who was retained to plan family assets for retirement has done so in a manner consistent with the wishes of the couple who have hired the financial planner. The positive relationship between education and time in management identified in this descriptive table (and confirmed in subsequent regression analysis in Table 3) is particularly telling for two reasons. First, more highly-educated individuals tend to use time-saving technology such as on-line banking (Kolodinsky, Hogarth and Hilgert, 2004). Second, with the same financial assets, more highly-educated individuals would also be expected to be more efficient managers of time, given the higher opportunity cost for uses of their time.

Table 2 also reveals that employed women spend quite a bit less time in management, as well as all household activities. This finding may be a result of the fact that employed women (and men) have less available time for nonmarket activities. The low amounts of time reported may also result from the fact that workers are particularly time-constrained and hence more likely to multi-task, with management being a secondary activity.

Time spent in household management also differs by marital status in raw cross-tabulations. As shown in Table 1, single persons spend more time in management as a

proportion of all time spent in household activities (ALLHH) or the broader category of family care (FAMILYCARE) than married persons. The proportion of time spent in management is 10-11% for single women and 8.9-9.6% for single men as compared to 5.5-6% for married women and 7.1-8.2% for married men. Most likely, single individuals must spend more time in management than married persons since they have no opportunities for household specialization. Nevertheless, single women devote *absolutely* more time to both management and all family care activities than single men, evidence of a gendered pattern in time allocation of home activities.

The patterns identified in the cross-tabulations presented in Tables 1 and 2 hold, with a few exceptions, in OLS and Tobit regressions of time spent in household management, as shown in Table 3.<sup>3</sup> In these models, the individual is the unit of analysis and time is measured as minutes per day. Consistent with the descriptive findings, results from these models show that controlling for other sociodemographic factors, time in household management has a positive significant relationship with education and age, and a significant negative relationship with employment status. The one important exception is that once other factors are accounted for, including employment status, time spent in household management is not statistically different by marital status for women or men.

The remaining analysis provides insight into how married couples allocate their time. As noted earlier, the ATUS does not provide time use information on *both* spouses, which is a limiting factor. However, it is possible to compare *average* time use for

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<sup>3</sup> Tobit and OLS coefficients have the same signs, but the magnitude of the coefficients cannot be directly compared. Marginal effects for OLS are given by the coefficients (B). When Tobit estimation is used, marginal effects for continuous variables, such as age, can be calculated using the following formula: (B x PDF(BX/sigma)). For discrete variables, the formula is more complicated as discussed in Woolridge, 2006, pp. 597-602.)

husbands and wives by linking together the ATUS survey, which provides detailed time use information on one individual (spouse) per household with the earlier CPS survey, which provides detailed demographic information on both spouses. Using this approach, we compare average time use of husbands and wives by joint educational attainment, by age cohort, and for the subset of dual-earners.<sup>4</sup> Throughout this analysis, we limit the sample to couples where both spouses are age 20 or more (to exclude teen couples) and where they are the primary family in the household. Table 4 compares the average time use pattern for husbands and wives. As column 3 shows, at the means, time spent in household management is more equally divided among spouses (the ratio ranges between 1.26 to 1.31) as compared with time spent in all household activities (ALLHH) or the broader category of FAMILY CARE (1.72-1.75).

Tables 5 – 7 next compare time spent in household management for married couples by joint educational attainment, age cohort, and for the subset of dual-earners by the presence of a preschool-age child. The findings confirm the earlier patterns identified in Table 2. Table 5 shows that high-ed couples (where both spouses completed college or more) spend twice as much time in household management as their less-educated counterparts (where both spouses completed high school or less). Not only do high-ed couples spend absolutely more time in household management, they also spend more time as a proportion of total household activities. For instance, wives in high-ed couples spend 7.4% of all time in household activities (ALLHH) in management, while the

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<sup>4</sup> Alternatively, Connelly and Kimmel (2007) utilize a matching process to produce “synthetic couples,” thereby permitting a comparison of time usage on a given interview day of a matched wife and husband. This approach is not without its drawbacks, including the issue of whether the interview day is representative of the two partner’s time use patterns, especially for tasks that are done irregularly.



comparable figure for wives in low-ed families is just 3.3%. Table 6 goes on to show that time spent in household management is also higher for older couples. Notably, aggregate time in household management differs little for couples ages 35-54 or those ages 55 and older (thereby including a large fraction of retirees) but management time is much lower for younger cohorts, as shown earlier in Table 2.

Table 7 provides information on time spent in household management by husbands and wives in dual-earner couples. Interestingly, this table shows that dual-earner wives and husbands spend less time in management, both absolutely and relative to total time in household and family care activities when a pre-school child is present. One possible explanation for the (unexpected) lack of increase in management time when a preschool age child is present is that management may be a secondary activity to time spent in child care activities, and hence may not be captured.

Finally, Table 8 provides information on the extent to which wives in dual-earner families bear a larger burden of what Hoschchild (1997) referred to as the “third shift” -- the time spent in management to get tasks done. The ratio of wives’ to husbands’ time in management is 1.19-1.3, and somewhat more when a preschool age child is present, 1.31-1.49. While wives spend more time in management than husbands, time spent in management activities is more equally divided among spouses than time spent in all household or family activities. For all household activities, the gender ratio is closer to 1.57-1.64.

### **Implications for Valuing Household Management**

The standard method used to value household production activities like house cleaning and lawn care is to multiply time spent in the activity, using a survey like the

ATUS, by a relevant commercial wage rate for the activity. To the limited extent that a value of household management has been calculated, this has also been the chosen approach. Landefeld, Fraumeni and Vojtech (2005), who seek to calculate a value of GDP that includes the value of nonmarket activities, provides one example. Using the ATUS, they calculate time spent in management as ATUSmanage (also including household mail and e-mail messages). For this measure, they estimate around one hour per week of time in this activity. In valuing this specific category, they use a quality-adjusted “specialist” wage rate for business and professional services of \$13 per hour.<sup>5</sup> A similar approach was also adopted in the *Dollar Value of a Day* publication produced for forensic economists (Expectancy Data, 2005).<sup>6</sup> Using data from the ATUS, this publication arrives at a value for household management by multiplying time spent on household management (defined as DVDmanage) by a weighted wage rate based on commercial management services of approximately \$12 per hour.

The method used in Landefeld et al. (2005) and DVD arguably provide a substantially understated lower bound on the value of household management. It is an understated value principally because many household management activities are

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<sup>5</sup>This figure is the \$17.46 reported in Appendix 2 multiplied by .75 to reflect the authors’ assumption that the quality of this task is not as high as if performed by a specialist. Readers should keep in mind that Landefeld et al.’s objective is to calculate the total value of all primary time spent in nonmarket household activities, and so for their purposes, how each subcategory, such as household management, is defined is not all that critical.

<sup>6</sup> U.S. courts have long held that household services, broadly defined, can be reasonably included as an element in damages resulting from a personal injury or wrongful death, though most studies neglect this factor (Ireland, 1997). One example is provided in the decision of the U.S. Supreme Court in a very early decision under the Federal Employer’s Liability Act (FELA), the case of *Michigan Central Railroad Company v. Vreeland*, 227 U.S. 59 (1913). The Supreme Court held that a broad interpretation of household services is in order when calculating damages, but that the calculations must be based on some standard and must not include emotional losses, but only pecuniary losses of the surviving spouse. Under the *Vreeland* decision, the loss of household services may be recoverable if they meet two criteria: (1) the service must be valuable even if provided by a stranger (third party); and (2) the service must have a market equivalent in the commercial market (Ireland, 1997). Household management meets these “tests.”

performed as secondary activities. That is, much of household management is akin to an ongoing thought process rather than an activity performed during specific periods of time such as cooking or cleaning. An adult may be organizing, planning, monitoring or coordinating families activities “in the background” while driving from place to place, loading the dishwasher, or cutting the grass.

Another important attribute of household management which is not adequately captured in the ATUS is the “on call” function. While most household management functions can be performed when convenient, a household manager may be called upon to use their skills during emergencies or near-emergencies. For instance, family assets may be threatened by an unexpected event, or a storm may cause damage to a house, necessitating a quick decision. Child care similarly has an “on call” function (see Folbre and Yoon, 2005). If a child gets sick, a parent may need to provide immediate comfort and take him/her to the emergency room. Another similarity between child care and household management is that both activities are highly personalized in nature, though they can be purchased in the private market, with varying degrees of substitutability. Despite the similarities, there are also crucial differences between child care and household management which arguably make valuation of household management more complex. First, much of what is generally counted as “child care” consists of specific tasks, such as giving a bath or providing a meal, rather than management per se, and is more likely to be captured as a primary activity.<sup>7</sup> Second, the ATUS explicitly captures time spent in what researchers refer to as “secondary,” “passive” or supervisory child care. Thus much of the “on call” function for child care is likely captured in ATUS time

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<sup>7</sup> As noted earlier, Folbre and Yoon (2005) define child care very broadly to include some management-related activities. Nevertheless, time devoted to this activity is very small in comparison to time in tasks.

aggregates but this is not true for household management. For this reason, in their recent research on valuing unpaid child care, Folbre and Yoon (2005) are able to more fully capture time spent in child care than is possible for household management.<sup>8</sup>

An alternative to valuing the household management using time use data and an incremental approach is to look for a shadow price for the household management function as a whole. As of 2006, a full-time household manager earned anywhere from \$25,000-\$120,000 per year (Bick, 2006; Buntic, 2007). This estimate is far higher than if one were to multiply measured management time in the ATUS of approximately 1- 1 1/2 hours per week times the commercial wage rate for business and professional services of \$12 -\$13 assumed in earlier studies. However, such a method would significantly overstate the value of household management per se because individuals hired for this occupation are likely to simultaneously or sequentially perform other tasks in the household. Thus, while we can identify conceptual upper and lower bounds, how to best measure the value of household management remains an unresolved question.

## **Conclusion**

In this study we pointed to the critical role of household management in household production and used newly available data from the American Time Use Survey (ATUS) to investigate time spent in this function. While data from the ATUS are the most detailed available on this topic, they nevertheless yield extremely conservative estimates of time spent in this function. Time spent planning, monitoring, and coordinating are not one-time events in the day, but are ongoing over the course of the

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<sup>8</sup> To overcome the problem of double-counting, they only count supervisory/secondary child care in their total child care measure if there is no concurrent primary child care or housework activity.

whole day. Even when the broadest measure of household management is considered, the ATUS survey only captures about 1 1/2 hours per week in this function. The findings of this study suggest caution for studies that seek to value household management using time use surveys, even from a detailed source such as the American Time Use Survey.

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Table 1. Average Hours Per Week Spent in Household Management Activities, Comparison of Measures, 2003-2004 ATUS

	All, age 18+	Women, age 18+	Men, age 18+	Single-Person HH		Married Households	
				Women, Age 20+	Men Age 20+	Women, age 20+	Men age 20+
<b>ATUSmanage</b>							
Total Hours	1.04	1.18	0.88	1.49	0.86	1.17	0.91
% with Hrs>0	16.9%	19.1%	14.4%	20.8%	14.1%	19.4%	14.9%
Hrs Hrs >0	6.15	6.16	6.14	6.12	6.15	6.06	6.12
Total Hours/Total ALLHH	7.3%	6.7%	8.4%	10.1%	8.9%	6.0%	8.2%
<b>DVDmanage</b>							
Total Hours	1.45	1.63	1.23	2.17	1.27	1.59	1.26
% with Hrs>0	26.1%	29.6%	22.2%	34.8%	23.2%	29.1%	22.6%
Hrs Hrs >0	5.59	5.58	5.62	5.66	5.59	5.54	5.66
<b>ExpandedDVD</b>							
Total Hours	1.64	1.86	1.38	2.41	1.43	1.85	1.40
% with Hrs>0	29.0%	33.3%	22.2%	37.3%	25.0%	33.2%	24.6%
Hrs Hrs >0	5.69	5.65	5.74	5.76	5.80	5.63	5.76
Total Hours/Total FAMILYCARE	6.6%	6.1%	7.5%	11.3%	9.6%	5.5%	7.1%
<b>ALLHH (All Household Activities)</b>							
Total Hours	14.31	17.64	10.53	14.82	9.66	19.36	11.06
% with Hrs>0	78.9%	88.4%	68.1%	83.7%	69.7%	90.9%	68.4%
Hrs Hrs >0	18.14	19.96	15.44	16.11	13.90	21.30	16.11
<b>FAMILYCARE (ALLHH+ Shop + HH Care)</b>							
Total Hours	24.72	30.31	18.36	21.40	14.96	33.74	19.62
% with Hrs>0	88.7%	94.6%	82.0%	89.6%	79.9%	96.3%	83.1%
Hrs Hrs >0	27.87	32.06	22.36	23.59	18.73	35.05	23.59
<b>ATUS Paid Work</b>							
Total Hours	24.82	19.49	30.90	16.47	25.62	19.05	31.95
% with Hrs>0	46.1%	39.1%	54.2%	31.7%	45.1%	38.9%	56.1%
Total Sample Size	30,032	17,199	12,833	4,183	2,729	9,674	8,753

Note: Participation figures are for given interview day.

Definitions are provided in Appendix A.



Table 2. Average Weekly Hours in Detailed Categories of Household Activities, For Selected Groups

	Females, Age 18+								
	Age 18+	Age 18-34	Age 55+	Low-Ed	High-Ed	Emp.	Not Emp.	w/Pre-K Child	w/No Child
ExpandedDVD	1.630	1.039	2.174	1.426	2.413	1.527	2.334	1.519	2.090
ATUSmanage	1.040	0.649	1.320	0.890	1.510	0.98	1.452	0.896	1.344
HH& Personal Mail	0.230	0.093	0.427	0.249	0.362	0.186	0.439	0.141	0.387
Purchasing HH Services	0.146	0.074	0.227	0.111	0.191	0.132	0.179	0.133	0.164
Purchasing CC Services	0.006	0.020	0.000	0.002	0.015	0.012	0.004	0.041	0.000
Banking&Legal & RE	0.119	0.108	0.131	0.087	0.162	0.112	0.119	0.091	0.116
Obtaining Social Services	0.002	0.003	0.001	0.004	0.000	0.000	0.006	0.012	0.001
Org. & Planning for Children	0.025	0.050	0.001	0.034	0.049	0.039	0.042	0.129	0.000
Org. & Planning for Adults	0.013	0.010	0.008	0.009	0.020	0.014	0.018	0.008	0.019
Calls to CC& HH Providers	0.045	0.030	0.047	0.035	0.102	0.047	0.071	0.071	0.059
Comparison Shopping	0.007	0.003	0.001	0.004	0.003	0.004	0.003	0.004	0.004
ALLHH	14.310	24.564	24.027	30.666	30.724	26.32	35.970	45.177	24.493
Sample Size	30,032	6,236	10,340	7,224	5,015	10,149	7,050	3,458	9,522

Note: Components may not sum to total due to rounding.

Low-ed if completed high school or less; high-ed if completed four years of college or more. Adults with some college omitted.

Table 3. Estimated OLS and Tobit Models of Time Spent in Household Management for Full Sample, Stratified by Gender

	Variable Means		Dependent Variable = Minutes per Day in HH Management			
	Female	Male	OLS		Tobit	
			Female	Male	Female	Male
Age	44.46	42.74	0.18 *** (.02)	0.14 *** (.03)	0.71 *** (.07)	0.79 *** (.10)
< HS (1=yes)	0.19	0.21	-6.39 *** (1.05)	-3.03 *** (1.04)	-30.89 *** (3.13)	-21.5 *** (4.22)
Some College (1=yes)	0.26	0.23	5.17 *** (0.87)	1.95 *** (.9)	17.87 *** (2.37)	13.94 *** (3.38)
4 Yrs of College (1=yes)	0.16	0.16	9.32 *** (1.00)	6.97 *** (.98)	31.66 *** (2.67)	32.34 *** (3.57)
> 4 Yrs of College (1=yes)	0.08	0.09	10.61 *** (1.24)	9.58 *** (1.14)	35.08 *** (3.25)	41.35 *** (4.02)
Employed (1=yes)	0.58	0.71	-4.92 *** (.74)	-4.28 *** (.81)	-8.41 *** (2.02)	-10.1 *** (3.06)
Married (1= yes)	0.53	0.57	-0.57 (.70)	0.22 (.82)	-2.61 (1.90)	-1.50 (3.01)
Cohabit (1= yes)	0.04	0.04	-0.33 (1.88)	0.93 (1.79)	1.63 (5.2)	-0.97 (6.91)
Weekend Interview (1=yes)	0.28	0.28	-1.71 *** (.65)	-0.69 (.74)	-17.21 *** (1.79)	-14.8 *** (2.41)
Summer Interview (1=yes)	0.25	.25	-1.14 * (.75)	-.64 (.75)	* (2.06)	1.06 (2.78)
Preschool Child Present (1=yes)	0.16	0.14	-0.85 (1.06)	0.34 (1.08)	5.41 * (2.92)	6.32 (4.01)
Older Child Only Present (1=yes)	0.28	0.27	-0.41 (.87)	-0.16 (.87)	6.80 *** (2.39)	3.20 (3.27)
Constant			8.82 *** (1.76)	5.57 *** (1.66)	-87.14 *** (5.07)	-124 *** (6.7)
Sigma					99.28 (1.00)	108.35 (.39)
R-squared			.02	.02		
F			36.04	23.99		
Log Likelihood					-42807	-24790
Sample size	19518	15175	19518	15175	19518	15175

Notes: Dependent variable is measured as minutes in DVDmanage.  
Omitted education category is HS only; omitted child category is no child present.  
Variable means are weighted; regressions are unweighted.  
Standard errors of coefficient estimates are in parentheses.  
\* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level.

Table 4. Characteristics and Time Use Estimates for Husbands and Wives, ages 20+

	Wives	Husbands	Ratio of Wives' to Husbands' Time Use
<b>Average Characteristics</b>			
Age (ATUS-CPS)	47.48	49.20	NA
Education (Linked CPS)^a			NA
< HS	0.10	0.12	NA
HS only	0.34	31.00	NA
Some College	0.26	0.23	NA
College or more	0.30	0.33	NA
Usual Hours (ATUS-CPS)	20.94	33.45	NA
Usual Hours (Linked CPS)	19.78	30.03	NA
Emp Status (ATUS-CPS)^b	0.60	0.76	NA
Emp Status (Linked CPS)^b	0.59	0.76	NA
Wage (ATUS-CPS)	17.74	22.36	NA
Wage (Linked CPS)	16.87	21.87	NA
<b>Average Hrs/Week (from ATUS Diary)</b>			
ATUSmanage	1.17	0.91	1.29
DVDmanage	1.60	1.27	1.26
ExpandedDVD	1.85	1.41	1.31
ALLHH	19.40	11.07	1.75
FAMILYCARE	33.81	19.62	1.72
Paid Work	19.04	31.96	0.60
sample size	9607	8713	

Notes: Figures weighted using ATUS survey weights.

ATUS-CPS refers to CPS-type questions administered at time of ATUS survey. Linked CPS refers to questions asked in the main CPS survey 2-5 months prior to the ATUS survey.

^aEducation is a categorical variable, where categories sum to 1. Figures provided are proportions.

^bEmployment Status is a categorical variable. Figure provided is a proportion.

Table 5. Comparisons of Time Spent in Household Management, Married Couples, by Joint Educational Level

	All	Both High-Ed	Both Low-Ed	Wife High-Ed, Husb Low-Ed	Wife Low-Ed, Husb High-Ed	Ratio of Both High-Ed to Both Low-Ed
<b>Wives' Time Use (Hrs/Week)</b>						
ATUSmanage	1.17	1.66	0.72	1.46	1.25	2.31
DVDmanage	1.6	2.27	1.02	1.92	1.82	2.23
ExpandedDVD	1.85	2.67	1.18	2.22	2.4	2.26
ALLHH	19.4	17.48	21.85	18.16	20.26	0.80
FAMILYCARE	33.81	36.05	33.93	33.5	33.7	1.06
Paid Work	19.04	21.32	14.9	23.17	15.17	1.43
Ratio, ATUSmanage/ALLHH	6.0%	9.5%	3.3%	8.0%	6.2%	
Ratio, ExpandedDVD/FAMILY CARE	5.5%	7.4%	3.5%	6.6%	7.1%	
Sample size	9607	2273	2545	341	407	
<b>Husbands' Time Use (Hrs/Week)</b>						
ATUSmanage	0.91	1.13	0.56	1.47	2.02	2.02
DVDmanage	1.27	1.52	0.94	2.01	2.43	1.62
ExpandedDVD	1.41	1.7	1.02	2.14	2.62	1.67
ALLHH	11.07	9.86	11.54	13.87	12.3	0.85
FAMILYCARE	19.62	20.13	18.49	22.64	20.61	1.09
Paid Work	31.96	38.01	27.17	31.66	28.56	1.40
Ratio, ATUSmanage/ALLHH	8.2%	11.5%	4.9%	10.6%	16.4%	
Ratio, ExpandedDVD/FAMILY CARE	7.2%	8.4%	5.5%	9.5%	12.7%	
Sample size	8713	2103	2279	326	418	

High-ed refers to four years of college education or more. Low-ed refers to high school education or less. Couples where a partner has some college are omitted.

Table 6. Comparisons of Time Spent in Household Management, Married Couples, by Age Group

	All (1)	Both age 20-34 (2)	Both age 35 - 54 (3)	Both age 55+ (4)	Ratio of column (2) to column (3) (5)	Ratio of column (2) to column (4) (6)
<b>Wives' Time Use (Hrs/Week)</b>						
ATUSmanage	1.17	0.74	1.33	1.36	0.56	0.54
DVDmanage	1.6	0.99	1.73	1.95	0.57	0.51
ExpandedDVD	1.85	1.24	1.99	2.19	0.62	0.57
ALLHH	19.4	15.82	19.04	22	0.83	0.72
FAMILYCARE	33.81	36.89	34.77	30.54	1.06	1.21
Paid Work	19.04	20.12	23.71	9.77	0.85	2.06
Ratio, ATUSmanage/ALLHH	6.0%	4.7%	7.0%	6.2%		
Ratio, ExpandedDVD/FAMILY CARE	5.5%	3.4%	5.7%	7.2%		
Sample size	9607	1563	3976	2562		
<b>Husbands' Time Use (Hrs/Week)</b>						
ATUSmanage	0.91	0.47	0.96	1.2	0.49	0.39
DVDmanage	1.27	0.72	1.22	1.77	0.59	0.41
ExpandedDVD	1.41	0.75	1.32	2.01	0.57	0.37
ALLHH	11.07	8.16	10.68	13.37	0.76	0.61
FAMILYCARE	19.62	19.08	19.39	20.07	0.98	0.95
Paid Work	31.96	41.21	39.09	15.31	1.05	2.69
Ratio, ATUSmanage/ALLHH	8.2%	5.8%	9.0%	9.0%		
Ratio, ExpandedDVD/FAMILY CARE	7.2%	3.9%	6.8%	10.0%		
Sample size	8713	1332	3560	2361		13.095

Table 7. Comparisons of Time Spent in Household Management, Dual-Earners, by Presence of Child

	Dual-Earner Couples			Ratio of w/ Pre-K child to No Children
	All	Pre-K Child Present	No Children	
<b>Wives' Time Use (Hrs/Week)</b>				
ATUSmanage	0.99	0.95	1.02	0.93
DVDmanage	1.32	1.26	1.35	0.93
ExpandedDVD	1.57	1.55	1.62	0.96
ALLHH	15.48	15.54	14.74	1.05
FAMILYCARE	29.50	40.71	22.28	1.83
Paid Work	31.86	27.43	34.17	0.80
Ratio, ATUSmanage/ALLHH	6.4%	6.1%	6.9%	
Ratio, ExpandedDVD/FAMILY CARE	5.3%	3.8%	7.3%	
Sample size	5073	1369	1861	
<b>Husbands' Time Use (Hrs/Week)</b>				
ATUSmanage	0.78	0.72	0.83	0.87
DVDmanage	1.11	0.96	1.24	0.77
ExpandedDVD	1.21	1.04	1.39	0.75
ALLHH	9.84	9.62	9.94	0.97
FAMILYCARE	17.99	23.75	14.88	1.60
Paid Work	42.08	41.31	42.16	0.98
Ratio, ATUSmanage/ALLHH	7.9%	7.5%	8.4%	
Ratio, ExpandedDVD/FAMILY CARE	6.7%	4.4%	9.3%	
Sample size	4445	1244	1653	

Table 8. Gender Ratio, Wives' to Husbands' Time Use, Dual-Earner Couples

	Dual-Earner Couples		
	All	Pre-K Child Present	No Child Present
ATUSmanage	1.27	1.32	1.23
DVDmanage	1.19	1.31	1.09
ExpandedDVD	1.30	1.49	1.17
ALLHH	1.57	1.62	1.48
FAMILYCARE	1.64	1.71	1.50

Notes: Figures calculated from Table 7.

Appendix A. Codes from 2003-2004 ATUS

Measure	Verbal Definition	ATUS Codes
ATUS Household Management (ATUSmanage)	Financial Management, Household and Personal Organizing and Planning, Home Security, HH Management, NEC. (Excludes HH & Personal Mail & Messages as well as HH& Personal E-mail)	020901-020999 (except 020903 and 020304)
DVD Household Management (DVDmanage)	ATUS measure plus: HH & Personal Mail & Messages, purchases of child care, banking, legal, real estate, and social services. Also includes HH activities, NEC.	ATUS codes plus 020304, 029999, 080101-080399, 080601-080699, 100102, plus 029999.
Expanded DVD Measure (ExpandedDVD)	DVD measure plus: Org. & Planning for Children, Org. & Planning for Adults, Purchasing HH Services, Calls to Child Care and HH Service Providers, Comparison Shopping. Excludes HH activities, NEC.	DVD codes plus 030108, 030502, 070201-070299, 090101-099999, 160104-160106, 160108 less 029999.
All Household Activities (ALLHH)	Household act. as reported in ATUS published tables. Thus, includes associated travel time but omits HH & Personal Mail and E-Mail.	020000-020902,020905,020999,029999,170201-170299.
Family Care (FAMILYCARE)	Housework, Shopping, and Caring for HH members, including associated travel and management time.	ALLHH codes plus 070000-099999, 100101-100199,100301-100302, 100399, 100400-100999, 170700-170799, 170800-170899, 170900-171003, or 171099, 030100-039999, 170300-170399.
Paid Work	Time spent on primary and secondary jobs.	050100-050200.