Does Household Work Matter Anymore?
Comparisons of Household Production and the Distribution of Income in the United States in 1965-66 and 2003

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Introduction

Since the path-breaking work of Becker (1965), economists have recognized that households enhance their access to goods and services by spending time doing both housework and paid, market work.[1]   Today, there is no doubt that time spent by household members, cooking meals, laundering clothing, gardening, etc. enhances their economic well-being. Yet, researchers who have looked at trends in housework have found that American women's time spent in housework activities has declined over much of the past century while American men's housework time has risen modestly (Bryant, 1996; Robinson and Godbey, 1997). Bryant (1996) estimates that time spent in housework by married women fell from an average of 7.35 hours per day in the mid 1920s to 6.31 hours per day in 1967-68. Robinson and Godbey (1997) conclude that between 1965 and 1985, the time that all adult women, regardless of marital status, spent in core housework declined from an average of 26.9 hours per week in 1965 to 18.7 hours per week in 1985. At the same time, they estimate that men's housework time rose from an average of 6.5 hours per week to 9.4 hours per week. What does this shift in time allocation imply for Americans' economic well-being?

Economists define economic well-being conceptually to be the household's access to goods and services.   Empirically, it is almost always measured by money income. While money income provides a fairly accurate indicator of access to goods and services that can be purchased in the marketplace, it fails to measure access to goods and services that are a result of household production. Such an omission means that empirical estimates of household economic well-being based solely on money income are biased if money income and household production are correlated.

To date, four studies have examined the impact of adding the value of household production to money income to arrive at a more complete measure of the distribution of household economic well-being (Aslaksen and Koren, 1996; Bonke, 1992; Bryant and Zick, 1985; Zick and Bryant, 1990). The conclusions of these studies are somewhat mixed. For instance, Aslaksen and Koren (1996) find that the inclusion of the value of household production time reduces economic inequality both across and within specific household types (e.g., couples

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[1] Home economists recognized the economic value of housework much earlier than economists. For example, see Wilson (1929) Warren (1940) and Wiegand (1954).

with children) in Norway. In contrast, Zick and Bryant (1990) report that the inclusion of the value of household production has virtually no impact on the distribution of household economic well-being in the United States in 1975. All four papers present cross-sectional pictures of how household production affects the distribution of full income at specific points in time.

In this paper, we will examine how demographic and economic factors can help us understand trends in housework time and what they imply for trends in the distribution of income in the United States. Using time-diary data, we will estimate how adults' housework time influenced households' real access to goods and services at two points in time, 1965-66 and 2003. Particular attention will be given to assessing the impact of housework on economic inequality as measured by Lorenz Curves and Gini ratios. Based on these estimates, we will decompose the changes over time that we observe into those attributable to (1) demographic shifts in marital status, ethnicity, and presence/absence of children, and (2) economic shifts in the costs of market alternatives and the distribution of household *money* income. By using data from 1965-66 and 2003, we will be able to assess change over a period of time where the United States experienced considerable demographic change.[2]

Methodological Issues

The methodological issues associated with using time diary data to measure household production time are well known. A key issue is the categorization of activities under the heading of productive time. Many researchers (Bryant, Zick, and Kim, 1992; Chadeau, 1992 Gauger and Walker, 1980) use Margaret Reid's (1934) criteria for including activities – that is, that the activities must produce goods and services that could have been provided by some other economic unit. This leads researchers to define home production time as time spent in meal preparation and clean up, cleaning the house, laundry and care of clothing, shopping, repair and maintenance of dwellings, care of infants, children, or adults, gardening, pet care, bookkeeping related to household management, and travel related to any of these activities. More recently, Ironmonger (1996) has argued that travel related to paid work and time spent in educational activities are also productive uses of time. And, Robinson and Godbey (1997) separate "core housework" from childcare and the U.S. Bureau of Labor Statistics (2004) separates household activities (i.e., what they term housework, lawn and garden care, and food preparation and cleanup) from both shopping and care of household and non-household members. In our analyses, we will use a definition of housework consistent with Reid's criterion because we are interested in those activities that could have been purchased in the marketplace if a household member had not spent time doing them (e.g., an individual can care for his/her children or s/he can pay someone else to provide such care, but one cannot pay someone else to replace him/her in the classroom).

A second key choice to be made centers on how we measure the economic value of the time spent in household production activities. Both opportunity cost and replacement cost measures have been used in past research and the advantages and disadvantages of each estimation method are well known (Bonke, 1992; Chadeau, 1992; Chiswick, 1982; Ferber and Birnbaum, 1980; Ironmonger, 1996; Quah, 1987; Zick and Bryant, 1990, 1983). We elect to use

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[2] For example, in 1965, 64% of American women were currently married. By 2003, this figure had declined to 57% (U.S. Bureau of the Census, 1966 and 2004-2005).

replacement cost estimates, as measured by the median hourly wage rate for employed housekeepers, because we want to assess the value of housework time in terms of what it would have cost the household if these services had to be purchased.

Analysis Plan

Our analyses will begin by estimating time spent in household work and its economic value for time-diary survey respondents drawn from: (1) the 2003 American Time Use Survey (ATUS-2003) (N=20,720), and (2) the Americans' Use of Time, 1965-1966 (AUT-1965-66) (N=1,241)[3] The ATUS-2003 data and associated documentation are publically available through the Bureau of Labor Statistics web site. The AUT-1965-66 and its associated documentation are available from the Inter-University Consortium for Political and Social Research at the University of Michigan. Data on wages at both points in time will be taken from the Annual Social and Economic Supplement to the March Current Population Survey available from Unicon. All analyses will be weighted using the appropriate sampling weights.

In our analyses, we will estimate housework tobit equations (to allow for censoring at 0 in reported housework time) for respondents in each data set. These equations will be used to predict annual time spent in housework. The economic value of housework time will be assessed based on the median hourly wage for employed housekeepers generated from the March Social and Economic Supplements for the corresponding years. Following the approach of Bonke (1992), we will use these equations to generate the economic value of adults' household production time for households in the two surveys. We will then examine how the distribution of after-tax household income varies when we add in the value of home production time. We will assess changes in the income distribution using income Lorenz Curves, and Gini Coefficients.

The structure of the time-diary data sets present several analysis issues when measuring the distributional effects of household production. First, we cannot estimate households' imputed rent from durable goods (e.g., cars, computers, washers, dryers) that likely enhance a household's access to home produced goods and services (Ironmonger, 1996; Landefeld and McCulla, 2000) because the data sets contain precious little information on the household's capital equipment holdings. Second, while the AUT-1965-66 contains information on secondary time spent in housework, the ATUS-2003 does not.[4] Thus, we cannot include secondary housework time in our estimates. Both of these data constraints serve to make our estimates of the value of household production conservative. Third, only one adult in each household is selected to complete the 24-hour time diary in the case of both surveys. In households with more than one adult, this would lead to an underestimation of the total household production time. We will follow the imputation methods used by Bonke (1992) to remedy this issue. Finally, all three surveys gathered only one, 24-hour diary per respondent. Past research using diary data suggests

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[3] Data from Americans' Time Use, 1985 time-diary survey are not included in this analysis because the public-release version of this survey does not contain information on the respondent's race/ethnicity.

[4] The ATUS-2003 does contain information on secondary time spent in childcare activities but it has no other secondary time use information.

that housework time varies across weekend days and weekdays (e.g., Bryant and Zick, 1996; Zick and Bryant, 1996). We will control for weekend/weekday observations in our analysis and use the resulting multivariate tobit parameters to generate synthetic week estimates of housework time.

Preliminary Results

To illustrate the analysis approach that will be taken in the paper, Table 1 provides preliminary estimates of the mean annual dollar value of housework by income level for various marital status and race/ethnicity groups. These estimates were generated using data from the ATUS-2003 following the estimation scheme outlined above. They reveal some interesting patterns.

Focus first on the married couples. On an absolute level, the mean economic value of housework done by wives and husbands in married-couple households is rather consistent across income and race/ethnicity groups. For Hispanic married couples, the mean is $21,149 per year, while the corresponding means for whites and blacks are $20,724 and $17,046, respectively. Yet, housework appears to almost double the access to goods and services, on average, for low-income married couples (i.e., annual incomes less than $25,000) while increasing the access to goods and services for high-income couples by less than 30%. This suggests that while time spent in housework may have declined over the past century, housework time remains an important vehicle for enhancing low-income, married couples' economic well-being in 2003.

Now, turn to the single households. The mean dollar value of their household work is less than half that of their married-couple counterparts in the same race/ethnicity/income groups. In addition, the mean annual dollar value of housework done by males is consistently less than their female counterparts' and the gap is particularly large in the case of black and Hispanic singles. While these findings may be intuitive, the fact that housework also serves to help equalize lower-income, single individuals' access to goods and services, is more surprising. Indeed, the figures presented in Table 1 suggests that the economic value of housework serves to enhance the average low-income, single female's access to goods and services by approximately one-third while for similarly low-income single males, the figure is about one-fifth. In contrast, the corresponding estimates for those single females and single males with household incomes of $75,000 or more are approximately 8-10% and 4-6%, respectively.

Table 1 reveals that in 2003, housework helped somewhat to narrow the income distribution gap between the rich and the poor in the United States. This is true regardless of race/ethnicity or marital status. At the same time, Table 1 reveals substantial differences in the economic contributions of housework by marital status and modest differences by race/ethnicity.

Did housework have a similar "leveling effect" on economic well-being in the mid 1960s? Is part of any difference that we observe between 1965-66 and 2003 attributable to the concurrent shifts in the demographic composition of America that took place over this 38-year period? Similarly, what role did changes in the cost of replacing housework and the shifting money income distribution play in explaining observed differences? To answer these questions, in our complete paper we will first generate Lorenz Curves and Gini coefficients for both years based on our samples. Then we will examine how these income distribution summary statistics change when we impose the demographic and economic characteristics of the mid 1960s on the 2003 data, and vice versa.

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Table 1. Estimates of Mean Annual Value of Housework Done by Adults in the United States in 2003

Annual Income	Full Sample	Married Couples			Single Females			Single Males		
		White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
<$25,000	$11,787	$20,540	$16,797	$21,440	$8,618	$7,520	$9,705	$5,602	$3,226	$4,113
$25,000-$49,999	$14,636	$20,552	$17,499	$21,383	$8,071	$7,134	$8,682	$5,169	$3,346	$4,069
$50,000-$74,999	$15,651	$20,624	$16,624	$20,686	$7,220	$7,126	$8,888	$4,386	$2,989	$4,386
>$75,000	$16,033	$20,966	$17,039	$20,283	$6,209	$5,705	$7,760	$4,260	$2,885	$3,290
Grand Mean	$14,556	$20,724	$17,046	$21,149	$7,764	$7,211	$9,167	$4,852	$3,207	$4,032
N	16,822	7,793	595	1,116	3,096	920	501	2,003	421	377

Note: Estimates of time spent in housework were generated from regressions based on the 2003 American Time Use Survey (ATUS) data. Independent variables in the housework equation included seasonal dummies, a weekend dummy, regional dummies, an urban/rural dummy, whether or not the respondent was foreign born, respondent's age and age-squared, respondent's education, number of children under age 18 in the home, number of children under age 6 in the home, a dummy measuring whether or not the respondent was enrolled in school, and a dummy measuring whether or not the respondent was retired. Separate equations were estimated for the nine gender, marital status, and race/ethnicity groups. ATUS respondents were excluded from the analysis if: (1) their race/ethnicity was something other than white non-Hispanic, black non-Hispanic, or Hispanic (N=894), (2) they identified themselves as cohabitating (N=715) or (3) information on their household income was missing (N=2289). Coefficients from these equations were used to predict housework time for respondents and spouses if present and synthetic weeks of housework time were generated using Bonke's (1992) approach.

Replacement cost estimates of an hour of housework time were generated from the Annual Social and Economic Supplement to the March 2004 Current Population Survey. Our sample was restricted to those respondents who identified their primary occupation as "maid or housekeeper." The top and bottom one percent of the sample was eliminated to reduce the influence of outliers. In the final sample (N=1,120), the median 2003 hourly wage rate was estimated to be $7.36/hr. This estimate was used to assess the hourly value of housework time for ATUS respondents.