DISCUSSION PAPER SERIES

IZA DP No. 5345

Racial Discrimination and Household Chores

Shoshana Grossbard
Jose Ignacio Gimenez-Nadal
Jose Alberto Molina

November 2010

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

Racial Discrimination and Household Chores

Shoshana Grossbard
San Diego State University,
CESifo and IZA

Jose Ignacio Gimenez-Nadal
University of Zaragoza
and CTUR (Oxford)

Jose Alberto Molina
University of Zaragoza
and IZA

Discussion Paper No. 5345
November 2010

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

IZA Discussion Paper No. 5345
November 2010

ABSTRACT

Racial Discrimination and Household Chores*

We make the novel argument that time spent on household chores can possibly reflect racial discrimination based on color. Our model, based on Becker's theory of allocation of time and his theory of marriage, recognizes that both intra-household bargaining and hedonic marriage markets operating with the help of an implicit price mechanism can lead to a premium for those who perform chores work in households and have lighter skin than their partners. Conversely, those with darker skin need to pay a compensating differential. To test our model, we design a 'race difference' scale that captures each partner's race and ranges between 2 and -2. Based on the American Time Use Survey 2003-2009 we find that for every unit bringing a couple closer to the case of a "White" respondent and a "Black" partner, the respondent reduces his or her weekly hours of chores work by 37 minutes. Marriage markets appear to be influenced by racial discrimination based on color.

JEL Classification: D13, I21, J12, J22

Keywords: time use, racial discrimination, household chores, compensating differentials

Corresponding author:

Shoshana Grossbard
Department of Economics
San Diego State University
San Diego, CA 92182-4485
USA
E-mail: shosh@mail.sdsu.edu

* This paper greatly benefits from the guidance offered by Gary Becker from whom the central ideas in this paper originated. We appreciate comments offered at the Annual Conference of the European Economic Association (2009) and at seminars at the University of Calgary, the University of Alberta in Edmonton, and the University of Nevada, Reno. Helpful advice from Jens Bonke, Joni Hersch, Valerie Lechene, Shoshana Neuman, Arjan Non, Elena Stancanelli, and Howard Yourow is also gratefully acknowledged. We thank the Spanish Ministry of Science (project ECO2008-01297) and the Ramon Areces Foundation for their financial support.

1. INTRODUCTION

Empirical evidence from labor markets supports the claim that there is racial discrimination in the U.S.A. (Bergmann 1971; Smith and Welch 1989; Altonji and Blank 1999; Darity, Dietrich, and Guilkey 2001; Goldsmith, Hamilton, and Darity 2007; Hersch 2008). Discrimination may be a manifestation of "colorism," defined as the allocation of privilege or disadvantage according to the lightness or darkness of one's skin (Burke 2008). Lower marriage rates and couple formation rates among Blacks in the U.S.A. may also be partially caused by racial discrimination (Spanier and Glick 1980; Hamilton, Goldsmith, and Darity 2009). In this paper, we make the novel argument that time spent on *household chores* is an additional possible indicator of racial discrimination. We present evidence suggesting that in the U.S.A. Blacks and other non-Whites in heterosexual couples are discriminated against in terms of their household production workload.

An analysis of the American Time Use Survey (ATUS) indicates that, when compared to their counterparts in same-race couples, respondents who are possible targets of discrimination in marriage markets work longer hours at household chores and respondents from more privileged groups supply fewer hours of household chores. More specifically, we design a 'race difference' scale that is based on each partner's race and takes values between 2 and – 2. For every unit bringing a couple closer to the case of a "White" respondent and a "Black" partner, the respondent reduces his or her weekly hours of chores work by 37 minutes. We also introduce a dummy *respondent lighter*, indicating that the respondent belongs to an ethnic group that tends to be lighter than others, and a dummy *respondent darker*. We find that women who are "lighter" than their husbands or partners work 1.44 hours a week less at chores than women in same-race couples. These findings are consistent with earlier findings on light-skin premium in the U.S.A.

Our model is built on a framework that recognizes two explanations for a link between racial discrimination and hours spent on household chores: i) bargaining over who performs the household labor after a couple is formed, and ii) selection into interracial versus same-race relationships. To the extent that the model relies on a bargaining mechanism, it shares common features with bargaining models such as Manser and Brown (1980) and McElroy and Horney (1981). These and other related economic models of marriage (including Chiappori 1988, Lundberg and Pollak 1993 and Apps and Rees 1997) were inspired by Becker's (1973) pioneering theory of marriage. However, these models are not as easy to

integrate with Becker's (1965) theory of allocation of time as Grossbard-Shechtman (1984), the basis for this time-use analysis.

Our study is part of a growing literature on allocation of time to household production (Bittman, England, Sayer, Folbre, and Matheson 2003; Kalenkoski, Ribar, and Stratton 2005, 2007; Aguiar and Hurst 2007; Connelly and Kimmel 2007, 2009; Bloemen and Stancanelli 2008). When using U.S. data, these studies have controlled for race, but they have not examined how time allocation by individuals who are in couple varies with a couple's racial composition.

Section 2 presents the conceptual framework that helps explain the results. Section 3 describes the data, variables, and methods. Section 4 presents the results, and our conclusions are described in Section 5.

2. HOUSEHOLD PRODUCTION AND PARTNER'S COLOR

Grossbard-Shechtman (1984) is a model of allocation of time that is inspired by two of Becker's path-breaking models: Becker's (1965) model of time allocation and Becker's (1973) theory of marriage. Becker (1965, see also Becker, Murphy, and Tamura 1990) posits a single household utility function and does not account for differences in individual preferences for leisure and work or possible intra-household conflicts over access to leisure time. In contrast, Grossbard-Shechtman (1984), bargaining models (Manser and Brown 1980; McElroy and Horney 1981; Lundberg and Pollak 1993), and consensus models (Chiappori 1988; Apps and Rees 1988, 1997) recognize that there may be conflicts regarding individual spouses' access to leisure.[1]

Bargaining and consensus models of household allocation are individualistic in the sense that they assume that individual household members each have their own utility function. However, most allocation of time models follow Becker (1965) in assuming that individual household members contribute *all* their resources of time and money to their household, and in that sense these models are collectivistic. Due to their combined assumptions of collectivized resources and individualistic utility functions, mechanisms by which households redistribute resources among their members are important ingredients of bargaining and consensus models. In contrast, marriage market models such as Becker (1973), Grossbard-Shechtman (1984), and Choo and Siow (2006) assume both individual

[1] There are some similarities between the models in Grossbard-Shechtman (1984) and Choo and Siow (2006).

utility functions and individual time and income constraints. Individuals in Becker (1973) rationally decide whether to join a household or not, considering the options as singles and what they expect to gain in marriage. Once they marry, it is implicitly assumed, as in Becker (1965), that they completely pool all their resources of time and money. Becker's married individuals are only concerned with their private interests when deciding whether to divorce or not (see Becker, Landes, and Michael 1977, and Becker 1981). This is just one example of lack of integration between various models of the family published by Becker.[2] In Grossbard-Shechtman (1984) individuals decide about forming households (or leaving them) and while in a household maintain their own resources of time and money.

Redistribution within the household is a function of a price mechanism, and so is allocation of time devoted to household chores, which includes activities such as cleaning and food preparation, contributing to the household's common good. As in labor market analysis, where wages facilitate cooperation between workers and firms as well as selection of workers into firms, Grossbard-Shechtman (1984) assumes that prices simultaneously guide partner selection in marriage and facilitate coordination between partners in couple households. All individuals participating in the same markets have either a supply of chores work, a demand for such work, or both. Individual supplies express willingness to perform chores for a partner's benefit at various prices. Individual demands express willingness to pay for a partner's chores work. It is often the case that individuals are both on the supply side and the demand side in their respective households. To the extent that some household members supply more chores work to the household than their partners they may be considered as their households' 'chores workers'.

Markets for marital chores work originate because individuals can possibly form couples with different partners, even if they already are in couple. Such markets establish the prices that guide coordination of chores work in individual couples. These prices or "compensations" reflect chores workers' power to threaten that they may stop producing what their partners consume. For instance, consider women of type "*i*" who perform chores for the benefit of men of type "*j*", implying that in this case men are on the demand side and women on the supply side. Hedonic markets originate for each *ij* type combination. In each market, equilibrium values y_{ij}, the equivalent of wages in labor markets, are established where demand and supply intersect. Likewise, male chores workers may earn compensations if they

[2] For a discussion of incompatibilities between a number of marriage models of Becker (1973, 1981), see Grossbard (2010).

perform chores for the benefit of their partners. These prices or compensations help individuals decide how much they supply chores work and how much they want their partners to supply such work.

Market values are expected to be a function of vectors of female characteristics Z_i and male characteristics Z_j that affect demand or supply of chores work:

(1) $y_{ij} = f(Z_i, Z_j)$ and (1') $y_{ji} = g(Z_i, Z_j)$

y_{ij} is the compensation received by woman *i* from man *j*, and y_{ji} is the compensation received by man *j* from woman *i*. A desirable characteristic Z_i or Z_j of a supplier of chores work is associated with higher demand by actual or potential spouses, leading to higher market value (see Grossbard-Shechtman 1984, 1993). In other words, the first derivative of $f(Z_i, Z_j)$ according to own characteristic Z_i and the first derivative of $g(Z_i, Z_j)$ according to own characteristic Z_j are positive: $\frac{\partial f(Z_i, Z_j)}{\partial Z_i} > 0$ and $\frac{\partial g(Z_i, Z_j)}{\partial Z_j} > 0$

Let us consider skin color as one of these *Z* factors. Colorism (discrimination against darker color) in marriage markets implies that relative to light-skinned individuals dark-skinned chores workers will get paid less by their partners, i.e. they *will obtain lower compensations y* for any given amount of work. This follows from demand and supply analysis: discrimination leads to lower demand given the supply. Conversely, we expect that, due to colorism, chores workers with lighter skin will obtain higher compensations *y* when in couple with dark-skinned chores workers than when in couple with light-skinned chores workers (light-skinned chores workers are in higher demand).

Likewise, negative characteristics of partners with a demand for chores work will also affect equilibrium compensations for chores work. We expect $\frac{\partial f(Z_i, Z_j)}{\partial Z_j} > 0$ and $\frac{\partial g(Z_i, Z_j)}{\partial Z_i} > 0$, where *Z* is a trait valued negatively in hedonic marriage markets. For example, if *Z* is dark skin and colorism prevails, a partner with dark skin is expected to pay a higher compensation. On the demand side, the difference between compensation *y* paid for chores work by a Black individual and the compensation paid by a comparable White individual amounts to a *Compensating Differential in Marriage* (CDM) (Grossbard-Shechtman 1983, 1984). Conversely, if *Z* means 'light skin' and light-skinned women working in chores discriminate against men's darker skin color, the market value *y* of light-

skinned women in couple with light-skinned men will be lower than if their partners or spouses are dark-skinned. In other words, dark-skinned men will pay CDMs to light-skinned women.

Instead of discrimination differentials taking the form of pay differentials for any given amount of chores work, these differentials can take the form of differentials in hours of chores work supplied at any given hourly compensation level. To the extent that colorism exists, and keeping compensations constant, Blacks are likely to supply more hours of household 'chores work' than comparable chores workers with lighter skin. CDMs related to colorism can also take the form of differentials in hours of chores work: at given compensation levels chores workers will work fewer hours if they are in couple with darker partners than when their partners are lighter-skinned.

In sum, we predict:

(1) Relative to chores workers belonging to high status racial groups, chores workers belonging to low status groups will work more hours in chores work in their households. To the extent that there is colorism in the U.S. and "Black" is associated with low status, it follows that when married to Whites, Blacks will work more hours in chores work than comparable Whites. Color differentials in hours of chores work may also be observed when comparing other groups typically differing in skin color, darker chores workers receiving lower compensations.

(2) Chores workers whose partners belong to a lower status group will work fewer hours in household production relative to chores workers with partners from groups with higher status. To the extent that there is colorism in the U.S. it follows that White chores workers married to Blacks will work fewer hours in chores work in their households relative to comparable chores workers married to Whites. More generally, differentials in hours of chores worked as a function of partners' skin color may be observed when holding the color of respondents' constant and moving along a color spectrum including different ethnic groups.

In the past, the testing of this theory has suffered from lack of data. Data was missing on both chores work and intra-marriage compensations for such work. The availability of time-use data opens new vistas for testing the Grossbard-Shechtman (1984) model of marriage and allocation of time, including the concept of CDM. The previous literature has tested for CDMs indirectly by examining the association between racial intermarriage and a

consequence of compensations for chores workers: their labor force participation. In the context of Israeli Jews "colored" was defined as being Sephardic rather than Ashkenazi (see Grossbard-Shechtman and Neuman 1988) and in Hawaii it meant being Hawaiian rather than Caucasian (see Grossbard-Shechtman and Fu 2002). Assuming that low-education women were chores workers in their respective households, both of these studies found evidence that colored women obtained lower *y* and that colored men paid CDMs when married to White (or Ashkenazi) women: Caucasian women married to Hawaiians and Ashkenazi women married to Sephardic men were found to be less likely to participate in the labor force than their "White" counterparts married to "White" (Caucasian in Hawaii and Ashkenazi in Israel) men. We now provide a direct test of the existence of compensating differentials in marriage (CDMs) "paid" by colored individuals married to chores workers.

3. THE DATA

We use the American Time Use Survey (ATUS), the first federally administered, continuous survey on time use in the United States, for the years 2003-2009. Respondents are randomly selected from a subset of households that have completed their eighth and final month of interviews for the Current Population Survey (CPS). They are interviewed (only once) about how they spent their time on the previous day.[3] Examples of studies using the ATUS include Kalenkoski et al. (2005, 2007), Hamermesh (2007), Connolly (2008), and Connelly and Kimmel (2009). A major limitation of the ATUS is that time diary information is collected only for the respondent and not for the spouse. Connelly and Kimmel (2009) have used Propensity Score Matching techniques to obtain time use information for the respondents' partners. We tried to apply this technique here, but found it of limited use for our purposes. It is also a problem that the ATUS does not have a panel data structure.

The Sample. For the sake of comparison with previous studies, and to minimize the role of time allocation decisions that have a strong inter-temporal component over the life cycle, such as education and retirement, we restricted our study to non-retired/non-student individual respondents between the ages of 21 and 65. Our results can thus be interpreted as being for working-age adults. All our respondents are in couples, some married and some cohabiting out-of-wedlock (cohabiting, for short). Respondents with less than 1440 minutes per day accounted for in their diaries were excluded.

[3] See Hamermesh, Frazis, and Stewart (2005) for a detailed description of the ATUS dataset.

Time Devoted to Household Chores. "Chores work" is defined as activities that generate opportunity costs, and individuals performing these activities have less time left for leisure or personal care. We took advantage of the more than 200 available activity codes to identify household production activities that are most fittingly categorized as "chores work" and are most likely to be compensated for by partners, husbands or wives. We capture an activity's degree of unpleasantness by examining its income and education elasticities. More specifically, we defined "chores" as activities that are negatively correlated with both years of schooling and earnings at a level below -0.01. This led to the selection of the following activities for our measure of "chores": *interior cleaning, laundry, grocery shopping, kitchen and food clean-up, travel related to housework, travel to/from the grocery store, and food and drink preparation*. Table 1 shows the activities (in bold) included in our definition of household chores and their elasticities.

'Household chores' include a limited list household production activities. In contrast, previous studies have focused on a wider range of household production. For example, Burda, Hamermesh, and Weil (2008) examined household production activities that can be outsourced, which includes activities with both negative and positive income and education elasticities. Friedberg and Webb (2006) and Aguiar and Hurst (2007) also considered a wider range of household production activities, including taking care of household and non-household members. Hersch's (2009) six-category classification, "daily housework", "maintenance and repair", "lawn and garden", "pet care", "household management", and "grocery and gas shopping" also includes activities we exclude. We exclude childcare from our definition of "chores work", as it tends to have positive income and education elasticities and a number of studies have reported that parents found spending time with their children among their more enjoyable activities (Juster and Stafford 1985; Robinson and Godbey 1997; Kahneman, Krueger, Schkade, Schwarz, and Stone 2004; Kahneman and Krueger 2006).

A number of authors have noted that many of the activities included in our definition of chores work tend to be performed by women more than by men. For example, Hersch (2009) shows that women spend a disproportionate amount of their total home production time on daily housework. Many of the tasks they perform have been called "female tasks" (as opposed to male tasks, see Cohen 1998, 2004). Also, Hersch and Stratton (2000) and Sevilla-Sanz, Gimenez-Nadal, and Fernandez (2010) show that women concentrate on routine and more time-intensive housework, such as cooking and cleaning, whereas men are more active in sporadic and less time-intensive tasks such as gardening and repairs. Since in the U.S. women

devote a disproportionally larger amount of time to household chores than men (15.45 versus 5.07 hours per week for women and men, respectively, according to our calculations) we expect to find that racial discrimination affects time devoted to household chores by women more than it affects this time used by men.

The way we define household chores is likely to affect the association between this variable and income. A negative relationship between income and time allocated to home production has previously been reported (Robinson and Godbey 1997; Aguiar and Hurst 2007). Due to our elimination of household activities with positive income elasticity, we are likely to find a smaller income effect than was found in these studies.

Race. We consider 3 racial categories: Black (defined as Black only), White (defined as White only), and Other. *Other* excludes *Black only*, *White only* and *White-Black* and includes: American Indian, Alaskan Native only, Asian only, Hawaiian/Pacific Islander only, White-American Indian, White-Asian, White-Hawaiian, Black-American Indian, Black-Asian, Black-Hawaiian, American Indian-Asian, Asian-Hawaiian, White-Black-American Indian, White-Black-Asian, White-American Indian-Asian, White-Asian-Hawaiian, White-Black-American Indian-Asian, and combinations of more than two races. We assume that "others" are in-between Blacks and Whites and assign the following race-related numerical scores to the various groups: "1" if the individual is Black, "0" if Other, and "- 1" if White. These values can possibly indicate colorism in marriage markets as Others tend to be darker than Whites but lighter than Blacks.

We then construct a first racial combination variable by subtracting the respondent's numerical score from the spouse's score. This "Race difference" variable takes the values -2, -1, 0, 1 and 2. Race difference = - 2 if the respondent is *Black* and the spouse (defined as partner, husband or wife) is *White (-1 – 1).* In this case it is most likely that the respondent is darker than the spouse. Race difference = - 1 if the respondent is Black and the spouse is *Other* or the respondent is *Other* and the spouse is *White.* In this case it is also likely that the respondent is darker than the spouse. Race difference = 0 if respondent and spouse have the same racial category. Race difference = 1 if the respondent is *White* and the spouse is *Other* or the respondent is Other and spouse is *Black,* two situations in which the respondent is likely to be lighter than the spouse. This racial difference variable takes its highest value when it is most likely that the respondent is lighter than the spouse, i.e. Race difference = 2 if the respondent is *White* and the spouse is *Black.*

Alternatively, we use two dummies: respondent lighter [than spouse] and respondent darker [than spouse]. The dummy "Respondent darker" takes the value 1 if the race difference is - 2 or -1, and the value "zero" otherwise. The dummy "Respondent lighter" equals 1 if the race difference is 1 or 2.

Other Controls. Becker's (1965) theory on time allocation establishes that the opportunity cost of the time devoted to household production is the hourly wage, and most of the empirical literature on time use emphasizes the impact of wages and income on time allocation (Kalenkoski et al. 2005, 2007; Friedberg and Webb 2006; Bloemen and Stancanelli 2008; Connelly and Kimmel 2009; Bloemen, Pasqua, and Stancanelli 2010). We use hourly wages of respondents and their partners if they are provided. If not provided, we use weekly earnings divided by total hours normally worked per week. For individuals who do not participate in the labor market we predict hourly wages with Heckman's (1979) Maximum Likelihood selection model (see Appendix). We compute the log of hourly wages to allow for non-linear effects.

We also control for the age of the respondent (and its square) and for whether the husband is substantially older than the wife. Given life expectancy differences between men and women, women have a much greater probability of becoming widows than men do widowers. Our dummy *Older Husband* takes value "1" if the husband is at least five years older than the wife, and "0" otherwise. A number of findings previously reported in the literature are consistent with a scenario whereby older men offer their wives higher material compensations: wives of older husbands are less likely to participate in the labor force (Grossbard-Shechtman and Neuman 1988) and more likely to control their bank account (Woolley 2003).[4] If compensations obtained by women increase with husband's relative age it is possible that where husbands are substantially older women perform fewer chores and men perform more chores.

We include the education level of respondents and their partners, measured as years of schooling, and household income. Higher income levels are expected to reduce time devoted to household chores, due to outsourcing of household production (see Bittman, Matheson, and Meagher 1999). We use Total Family Income, defined as the income of all family members during the last 12 months, including money from jobs, net income from business, farm or

[4] These articles define 'older husband' differently. Using their definition did not make much difference to the results.

rent, pensions, dividends, interest, Social Security payments, and any other money income received by family members who are 15 years of age or older. This variable ranges from less than $5,000 to $150,000, where each value of the variable represents the mid-point of the income interval. For instance, the value 2.5 represents the mid-point (divided by $1,000) of the first interval, defined as "less than $5,000".

We control for number of children in the household ages 0-4, 5-12, and 13-17. We expect a positive correlation between number of children and time devoted to household chores, with this correlation being higher for younger children. We also include a dummy variable to control for whether individuals are married (1) or cohabiting (0), and information on disability of the respondent and partner. The disabled are expected to participate less in household chores. Finally, we control for whether the respondent or the respondent's partner owns a farm or a business and for state of residence (50 dummy variables, state of reference is Wyoming). State of residence may reflect differences in the price of commodities, structural demands on time, or degree of racial discrimination. Higher compensating differentials may be observed in states where color discrimination is more prevalent.

In regressions including both male and female respondents, we also control for 'female' given that previous research has found large gender gaps in time devoted to household production activities (Gershuny 2000; Bianchi, Robinson, and Milkie 2006; Aguiar and Hurst 2007). We also include some interaction terms with 'female' to test whether selected variables have different effects for men and women.

Descriptive Evidence. Table 2.1 reports the number of same-race and interracial couples. The latter belong to one of the following six groups, where the first race is the respondent's and the second is the spouse's: White/Black, Black/White, White/ Other, Black/ Other, Other/ Black and Other/White. Out of 34,685 couples, 4.41% were interracial, which is consistent with the percentage of interracial couples in the U.S. (Kalmijn 1993; Spigner 1994; Qian 1997; Joyner and Kao 2005; Batson, Qian, and Lichter 2006). The total number of couples with respondents darker than their spouses is 753 and the total number of couples with respondents lighter than their spouses is 777.

Table 2.1 shows summary statistics for all respondents, and Table 2.2 presents those statistics separately for male (PANEL A) and female (PANEL B) respondents. In each table, the first column reports on all respondents, and columns (2) to (6) correspond to racial difference scores of - 2, - 1, 0, 1, and 2. Based on Table 2.2, we calculated the difference

between the mean value of household chores for individuals in same-race and different-race couples. The only statistically significant difference (at the 95% level) in mean hours of chores work is that black women in couple with white men devote more time to chores than women in same-race couples.

According to Column 1 the mean time devoted to household chores is 10.74 hours per week. This number is much higher for women than for men (15.45 and 5.07 respectively). 45.36% of the respondents are male, the mean age of respondents is 43.93 years, and in 23.47% of the couples the man is at least 5 years older than the woman. Regarding the (log of) hourly wage, respondents have higher (log) hourly wages than their partners (2.86 vs. 2.01 respectively), which corresponds to the higher education of respondents compared to their partners (14.07 vs. 13.99 years of education respectively). Mean total household income is around $65,500 and on average couples have 1.09 children (0.30 children under 5, 0.43 children between 5 and 11, and 0.36 children between 12 and 17). 93.10% of the couples are married (vs. cohabiting), 21.57% of the respondents have limited labor force participation (working 10 hours per week or less), and 3.78% of the respondents have a disability.

Interracial couples tend to have similar characteristics to those of same-race couples. A notable exception is that interracial couples are significantly less likely to be married: 93.41% of respondents in same-race couples, but only 87.61% of respondents in interracial couples, are married (also noted by Laumann, Gagnon, Michael, and Michaels 1994; Blackwell and Lichter 2000; Joyner and Kao 2005). We also find that, relative to same-race couples, a higher proportion of interracial couples include husbands at least 5 years older than their partners or spouses. Individuals tend to marry partners of similar educational background. This holds regardless of whether couples are interracial or not.

4. EMPIRICAL STRATEGY AND RESULTS

Methods. We aim at estimating the following equation for weekly hours devoted to chores by an individual i, t_i :

$$(3) \quad t_i = \alpha + \beta_1 X_{ij} + \beta_2 X_i + \beta_3 X_j + \beta_4 Z_i + \gamma Year_i + \alpha_1 S_i + \alpha_2 Day_i + \varepsilon_i ,$$

where X_{ij} is a variable indicating interracial couple and our principal variable of interest, X_i a vector of own characteristics other than race, X_j a vector of partners' characteristics other than race, Z_i a vector of household characteristics, *Year* stands for survey year, *S* stands for state of residence (ref.: Wyoming) and *Day* stands for the day of the week of the diarist (ref.: Friday).

We control for the day of the week because individuals may devote more time to household chores during the weekend, when they are less constrained by their labor force commitments. We cluster the error terms by survey to control for possible differences in sample design and errors across different surveys, and for year differences over the period, such as differences in unemployment rates.

The method of estimation is OLS. We obtain similar results if we use a double Tobit model (including right- and left-side censorship).

It is well-known that men and women have different allocation of time patterns, including different labor supply behavior. Therefore, we estimate separate models for men and women. However, since we have a small number of interracial couples, we start by pooling male and female respondents while including a control for gender. We then estimate regressions including interactions between gender and racial dummies and separate regressions for men and women.

It follows from our conceptual framework that, if there is racial discrimination against Blacks in U.S. marriage markets, Blacks will devote more time to household chores when they are in couple with White partners (X_{ij}= -2, where X_{ij} is measured by the race difference variable defined above) than when in couple with Black partners (X_{ij}= 0), and Whites will devote less time to household chores when in couple with Black partners (X_{ij}= 2) than when in couple with White partners (X_{ij}= 0). More generally, it follows from colorism that β_1 will be negative. In alternative models including dummies 'respondent darker' [than partner or spouse] and 'respondent lighter', we expect the coefficient of the former to be positive and of the latter to be negative.

Principal Results. Table 3 presents our results for the specifications that measure race combination of the partners or spouses as a difference ranging in value from - 2 (Black respondents in couple with White partners) to 2 (White respondents in couple with Black partners). This variable also takes values of 1, 0, and -1, as defined above. Columns 1 and 2 were estimated for all respondents, male or female. All respondents are heterosexual. Results for female respondents are found in Column 3. The difference between the first two columns is that column 2 also includes interactions between "female" and the following variables: "race of the respondent", "race difference", and "partner's wage".

We find that when men and women are pooled (column 1), an extra unit on our 'race difference' scale is associated with a reduction of .62 hours (or 37 minutes) of chores work

per week. This implies that the maximum gap between the hours of chores work of a Black respondent in couple with a White partner and the hours of chores work of a White respondent in couple with a Black partner is 2.5 hours per week. We thus found that the lighter the partner relative to the respondent, the more the respondent performs household chores. Put another way, the darker the respondent relative to the partner the more time the respondent spends on chores work.

Column 2 reveals that race difference has a statistically significant association with women's hours of chores work, but not with men's. Column 3, estimated on a sample of female respondents, indicates that a one-unit increase in this racial difference variable is associated with a decrease of 1.14 chores hours per week for women: the darker the 'husband' relative to the 'wife' the less time the wife spends performing chores (note that some couples are unmarried). Based on column 2, the effect of 'race difference' for women is a similar decrease of about 1.05 (- 1.00 - .05) hour.

Table 4 examines whether this racial difference effect is stronger for certain racial combinations than for others. Here we only report the race-related coefficients in three models, as we do in Table 3 (full results are available upon request). When all respondents are combined and no interaction term with 'female' is included (column 1), it appears that there is a penalty (more chores work) for being darker than one's spouse, that is to say, compared to same race couples, in couples with a respondent darker than his or her spouse or partner, the respondent works 1.26 hours a week more at household chores. This finding is significant at the 95% level. The benefit (less chores work) associated with being lighter is large but not statistically significant.

When interaction terms with 'female' are added in column 2, the 'respondent darker' variables remain large, but lose statistical significance, and there appears to be a statistically significant benefit (less chores work) for lighter women. The advantage of being lighter is also apparent in column 3 reporting a regression for female respondents. Even though the size of the coefficient 'respondent darker' is large (almost 2 extra hours comparing black women married to white men to same-race couples) and larger than that of 'respondent lighter', it is not statistically significant. The coefficient of 'respondent lighter', a decrease of 1.44 hours of chores work per week, is statistically significant at the 99 percent level. In other words, we find that compared to women in same-race couples (X_{ij}=0), *White* female respondents in couple with a *Black* partner (X_{ij}= 2), *Other* women in couple with *Black* partners (X_{ij}= 1), or *White* women in couple with *Other* partners (X_{ij} = 1) on average devote 1.44 hours per week

less to household chores.

We also find that, compared to women in same-race couples ($X_{i\ j}$= 0), *Black* female respondents in couple with *White* partners (X_{ij} = - 2), *Black* women in couple with *Other* partners (X_{ij} = - 1), or *Other* women in couple with *White* partner ($X_{\ ij}$= - 1) on average devote 2 hours more per week to household chores. This result is only significant at the 90% level. In part, the relatively weak significance of 'respondent darker' is due to the smaller numbers of couples consisting of Black women and White men (N = 39) relative to the number of couples consisting of White women and Black men (N = 149). The number of interracial couples with a race difference of + 1 does not differ widely from the number of cases with a race difference of - 1.

Other Results. Regression 1 in Table 3 also indicates that female respondents devoted 10 more hours per week less to household chores than male respondents, which is consistent with previous literature showing a large gender gap in time devoted to household production (Bittman et al. 2003; Bianchi et al. 2006; Aguiar and Hurst 2007; Connelly and Kimmel 2009; Hersch 2009; Sevilla-Sanz et al. 2010). From Table 3 it also appears that own age has an inverted U-shaped statistically significant effect on the time devoted to household chores (maximum at around 54 years of age), but 'older spouse' is insignificant, indicating that we do not find respondents in couple with older spouses benefiting in the form of less chores work. This holds for both male and female respondents.

Respondent's own hourly wage does not have a statistically significant relationship with time devoted to household chores. In contrast, partner's hourly wage is statistically significant in our regressions: each additional unit increases time devoted to household chores by 0.37 hours per week. This effect is smaller in the case of the female sample (0.29 hours per week). Column 2 reveals that the effect of partner's wage is significantly larger for men than for women. "Own wage" appears to involve both a substitution and an income effect, each effect going in a different direction, whereas "partner's wage" seems to reflect mostly a (positive) income effect.[5] In part, this is consistent with New Home Economics analyses such as Mincer (1963) and Becker (1965), who focused on wives' allocation of time and husbands' earnings and not on how wives' earnings affect husbands' allocation of time. We find that women's wage has more effect on men's allocation of time to chores work than men's wage has on women's amount of chores work.

[5] The difference between the effect of own wage and partner's wage could also be related to the way that we define household chores as activities with negative income and education elasticities.

Respondent's education is negatively related to time devoted to household chores: each additional year of education is associated with a decrease of 0.21 hours of chores work per week for men and women together, and of 0.54 hours per week for the female sample. We find no statistically significant relationship with partner's education in regressions 1 and 2, although for the female sample we find a statistically weak reduction of .09 hours per week per year of husband's education. We find a large (-1.45 hours) and statistically significant negative effect of disability for women, but not for men. Family income also has an impact: an increase of $10,000 reduces time devoted to household chores by 0.1 hours per week in the case of the combined sample, and by 0.2 hours per week in the case of the female sample.

The presence of children in the family is positively associated with time devoted to chores, and larger effects are found when children are young and for the female sample. An additional child under 5 is associated with an increase of 1 hour and 25 minutes for the combined sample, and of 2 hours and 20 minutes for the female sample (Table 3, column 3). Finally, we find that marriage is positively associated with time devoted to household chores: being married (vs. cohabiting) is associated with an increase of 50 minutes per week in time devoted to household chores for the combined sample (1 hour and 45 minutes per week for the female sample).

Robustness checks. Our first robustness check consists of estimating the same models reported in Tables 3 and 4, except that we use a broader definition of Black, including both responses of 'Black Only' and 'White-Black' in the category *Black*. Results are consistent with those we reported here and are available upon request.

Second, we estimated the exact same regressions reported in Tables 3 and 4 for respondents who don't participate in the labor force or work ten hours a week or less. These respondents are more likely to engage in household production. Removing all respondents working in the labor force for at least 10 hours causes a considerable reduction in sample size, from a total of 34,685 observations to a total of 7,763. As a result, we lost more men than women, for most men worked more than ten hours in the labor force. The number of female respondents with limited labor force employment is 6,205, in contrast to 19,040 female respondents included in Tables 3 and 4. These results, summarized in Table 5, indicate that a one point increase in our race difference indicator (let us say from 0 to 1) is associated with a reduction of chores work of two hours, when all men and women with limited labor force participation are included (Panel A, column 1). This is a much larger reduction than the one obtained in Table 3 (- 0.62 hours) estimated for all respondents regardless of LFP (labor force

participation) pattern. This makes sense, given that respondents with limited LFP work more at chores. The contrast between the estimates for the entire sample and those for respondents with limited LFP is not as sharp for women: a reduction of 2.18 hours for women with limited LFP versus a reduction of 1.14 hours per week for all women. Another difference between Tables 3 and 5 is that the respondent's race is no longer significant in a regression for women only, reflecting Black women's higher LFP rates relative to those of White women.

By removing respondents who work more than 10 hours a week in the labor force, we also get much larger effects of 'respondent darker'. Table 4 revealed that respondents darker than their spouse (using our simple -1, 0, 1 scale) worked 1.26 hours more at chores work a week. For women, this result was an extra 2 hours a week. From Table 5 (Panel B) it appears that darker respondents with limited LFP work almost 4 hours more at chores per week. This result holds for men at least as much as it does for women. For women, we obtain a large coefficient of 'respondent darker', but it is not significant statistically. The effect of 'respondent lighter' continues to be negative and significant, as it was in a similar regression reported in Table 4. The importance of these results has to be discounted in view of the small number of interracial couples in which respondents have limited LFP.

A third robustness check consists of estimating models for subsamples containing only Blacks and Whites, excluding Others. In this case (results available upon request) we still find that Black women work more (1.70 more hours per week) at chores when in couple with White men than when in same-race couples.

5. SUMMARY AND CONCLUSIONS

This study is the first to test whether there is racial discrimination in US marriage markets by studying the time devoted to chores work by respondents of the American Time Use Survey 2003-2009. We define chores work as household production associated with negative education and income elasticity. If there is discrimination against Blacks and other Non-Whites in marriage markets then relative to their counterparts in same-race couples Non-Whites in couple with Whites will perform more chores work, and Whites in couple with non-Whites will perform fewer chores.

We design a 'race difference' scale, indicating that the respondent is closer to "White" and/or the partner closer to "Black". Based on a sample of more than 30,000 male and female respondents, we find that an extra unit on our race difference scale is associated with a reduction of 37 minutes of chores work per week. This implies that the darker the partner

relative to the respondent the more the respondent performs household chores. We also use dummies as alternative measures of the racial composition of the couple and find that respondents who are darker than their partners (and spouses) are likely to perform more chores work in their household.

These effects are stronger when we only consider female respondents. Separate regressions for men do not indicate an association between race difference and hours of chores work. That the association between racial composition and household chores is stronger for women than for men is consistent with the fact that women devote more time to household chores.

Our principal finding can be interpreted in two ways: the darker the respondent relative to the partner, the more the respondent performs household chores; or the darker the partner relative to the respondent, the less the respondent performs household chores. If it is the latter, we have provided evidence of compensating differentials in marriage, a concept introduced in Grossbard-Shechtman (1984). Relative to their lighter counterparts, darker partners, who benefit from the chores work of the respondents, may compensate their lighter companions more generously for the work the companions contribute to the common good or for their own private benefit. A more generous compensation translates into fewer hours of chores work. Our findings reinforce those of Hamilton et al. (2009), who document how darker skin reduces the probability of marriage in the U.S.A. These compensating differentials could be caused by racial discrimination in the form of colorism. Such discrimination can also explain why *respondents* darker than their partners perform more chores work.

Our results can also be explained with bargaining theory: both partners may realize that the remarriage prospects of the *Black* partner are worse than those of the *White* partner, if other people discriminate, and non-racist individuals take advantage of their minority partners' lower threat points. Our framework, based on an integration of marriage market analysis and analysis of allocation of time, includes a bargaining explanation according to which partners bargain over the compensation for chores work "paid" by one partner and performed by the other. In addition, it includes an explanation based on selection into marriage. The premium for lighter skin that we observe could also be the result of couple formation patterns: some lighter partners match with darker partners who perform chores work at lower prices than alternative lighter partners would, and these prices are lower due to discrimination against minorities in hedonic markets for brides and grooms (or unmarried heterosexual partners). In this analysis we did not try to separate these two explanations by

estimating a selection bias. Further work in that direction would be valuable.

The analysis could also be improved if better data were available. It would be useful if we could control for unobserved heterogeneity of individuals in both time allocation and interracial decisions, which would be possible were panel data available. Unfortunately, the ATUS does not follow the same respondents over time. We also wished we could control for time devoted to household chores by the respondents' partners, but that information is also unavailable in the ATUS. Further studies are needed, especially for countries that, like the U.S.A., include ethnic groups who on average differ in color and where some colorism seems to be present.

REFERENCES

Aguiar, Mark. and E. Hurst. 2007. "Measuring Trends in Leisure: The Allocation of Time Over Five Decades." *Quarterly Journal of Economics* 122(3): 969-1007.

Altonji Joseph G., and Rebeca Blank. 1999. "Race and Gender in the Labor Market." in *Handbook of Labor Economics*, Vol 3C, O. Ashenfelter and D. Card (eds.), pp. 3143-3260, North Holland.

Apps, Patricia. F., and Ray Rees. 1988. "Taxation and the Household." *Journal of Public Economics* 35(3): 355-369.

_____. 1997. "Collective Labor Supply and Household Production." *Journal of Political Economy* 105(1): 178-190.

Batson, Christie D., Zhenchao Qian, and Daniel T. Lichter. 2006. "Interracial and Intraracial Patterns of Mate Selection Among America's Diverse Black Populations." *Journal of Marriage and Family* 68(3): 658-672.

Becker, Gary S. 1965. "A Theory of the Allocation of Time." *Economic Journal* 75(299): 493-517.

_____. 1973. "A theory of Marriage: Part I." *Journal of Political Economy* 81(4): 813-846.

_____. 1981. *A Treatise on the Family.* Cambridge. MA: Harvard University Press.

Becker, Gary S., Kevin M. Murphy, and Robert F. Tamura. 1990. "Human Capital, Fertility, and Economic Growth." *Journal of Political Economy* 98(5): S12–S37.

Becker, Gary S., Elisabeth M. Landes, and Robert T. Michael. 1977. “An Economic Analysis of Marital Instability.” *Journal of Political Economy* 85(6): 1141-1187.

Bergmann, Barbara. 1971. “The Effects on White Income of Discrimination in Employment.” *Journal of Political Economy* 79(2): 294-313.

Bianchi, Suzanne, John P. Robinson, and Melissa Milkie. 2006. *Changing Rhythms of American Family Life.* New York: Russel Sage Foundation.

Bittman, Michael, George Matheson, and Gabrielle Meagher. 1999. “The Changing Boundary Between Home and Market: Australian Trends in Outsourcing Domestic Labour.” *Work, Employment and Society* 13(2): 249-273.

Bittman, Michael, Paula England, Liana Sayer, Nance Folbre, and George Matheson. 2003. “When Does Gender Trump Money? Bargaining and Time in Household Work.” *American Journal of Sociology* 109(1): 186-214.

Blackwell, Debra L., and Daniel T. Lichter. 2000. “Mate Selection Among Married and Cohabiting Couples.” *Journal of Family Issues* 21(3): 275-302.

Bloemen, Hans, and Elena Stancanelli. 2008. “How Do Parents Allocate Time? The Effects of Wages and Income.” Discussion Paper no 3679, *Institute for the Study of Labor (IZA).*

Bloemen, Hans, Silvia Pasqua, and Elena Stancanelli. 2010. “An Empirical Analysis of the Time Allocation of Italian Couples: Are Italian Men Irresponsive,” *Review of Economics of the Household* 8(3): 345-369.

Burda, Michael, Daniel Hamermesh, and Philippe Weil. 2008. “The Distribution of Total Work in the U.S. and E.U.,” in *Working Hours and Job Sharing in the EU and USA: Are Europeans Lazy? or Americans Crazy?*, edited by T. Boeri, Michael Burda and Francis Kramarz. Oxford: Oxford University Press.

Burke, Meghan. 2008. “Colorism” in *International Encyclopedia of the Social Sciences, Vol.2* edited by William A. Darity Jr. Detroit: Thomson Gale.

Chiappori, Pierre-André. 1988. “Rational Household Labor Supply.” *Econometrica* 56(1): 63-90.

Choo, Eugene, and Aloysius Siow. 2006. “Who Marries Whom and Why.” *Journal of Political Economy* 114(1): 175-201.

Cohen, Philip N. 1998. “Replacing Housework in the Service Economy.” *Gender and Society*

12(2): 219-232.

Cohen, Philip N. 2004. “The Gender Division of Labor: ‘Keeping House’ and Occupational Segregation in the United States.” *Gender and Society* 18(2): 239-252.

Connelly, Rachel, and Jean Kimmel. 2007. “Determinants of Mothers’ Time Choices in the United States: Caregiving, Leisure, Home Production, and Paid Work” *Journal of Human Resources* 42(3): 643–681.

_____ 2009. “Spousal Influences on Parents' Non-Market Time Choices.” *Review of Economics of the Household* 7(4): 361-394.

Connolly, Marie. 2008. “Here Comes the Rain Again: Weather and the Intertemporal Substitution of Leisure.” *Journal of Labor Economics* 26(1): 73-100.

Darity, William A. Jr. 2001. “Persistent Advantage or Disadvantage? Evidence in Support of the Intergenerational Drag Hypothesis.” *The American Journal of Economics and Sociology* 60(2): 435-470.

Friedberg, Leora, and Anthony Webb. 2006. “The Chore Wars: Household Bargaining and Leisure Time,” *The Selected Works of Anthony Webb*, http://works.bepress.com/anthony_webb/subject_areas.html

Gershuny, Jonathan I. 2000. *Changing Times, Work and Leisure in Post Industrial Society*. Oxford University Press.

Goldsmith, Arthur, Darrick Hamilton, and William A. Darity Jr. 2007. “From Dark to Light: Skin Color and Wages Among African-Americans.” *Journal of Human Reso*urces 42(4): 701-738.

Grossbard-Shechtman, Amyra S. 1983. “A Market Approach to Intermarriage." *Papers in Jewish Demography*, Institute of Contemporary Jewry, Jerusalem.

_____. 1984. “A Theory of Allocation of Time in Markets for Labour and Marriage.” *Economic Journal* 94(376): 863-882.

Grossbard-Shechtman, Shoshana. 1993. *On the Economics of Marriage: A Theory of Marriage, Labor and Divorce*. Boulder: Westview Press.

Grossbard, Shoshana. 2010. “How “Chicagoan” are Gary Becker’s Economic Models of Marriage.” *Journal of History and Economic Thought* 32(3): 377-395.

Grossbard-Shechtman, Shoshana, and Xuanning Fu. 2002. “Women’s Labor Force

Participation and Status Exchanges in Intermarriage: A Model and Evidence from Hawaii." *Journal of Bioeconomics* 4(3): 241-268.

Grossbard-Shechtman, Amyra S., and Shoshana Neuman. 1988. "Women's Labor Supply and Marital Choice." *Journal of Political Economy* 96(6): 1294-1302.

Hamermesh, Daniel. 2007. "Time to Eat: Household Production under Increasing Income Inequality." *American Journal of Agricultural Economics* 89(4): 852-863.

Hamermesh, Daniel, Harley Frazis, and Jay Stewart. 2005. "Data Watch: The American Time Use Survey." *Journal of Economic Perspectives* 19(1): 221-232.

Hamilton, Darrick, Arthur Goldsmith, and William A. Darity Jr. 2009. "Shedding "Light" on Marriage: The Influence of Skin Shade on Marriage of Black Females." *Journal of Economic Behavior and Organization* 72(1): 30-50.

Heckman, James. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47(1): 153-161.

Hersch, Joni. 2008. "Profiling the New Immigrant Worker: The Effects of Skin Color and Height." *Journal of Labor Economics* 26(2): 345-386.

_____. 2009. "Home Production and Wages: Evidence from the American Time Use Survey." *Review of Economics of the Household* 7(2): 159-178.

Hersch, Joni, and Leslie Stratton. 2002. "Housework and Wages." *Journal of Human Resources* 37(1): 217–229.

Joyner, Kara, and Grace Kao. 2005. "Interracial Relationships and the Transition to Adulthood." *American Sociological Review* 70(4): 563-581.

Juster, F. Thomas, and Frank P. Stafford. 1985. *Time, Goods, and Well-Being.* Ann Arbor, MI: Institute for Social Research.

Kahneman, Daniel, Alan B. Krueger, David Schkade, Norbert Schwarz, and Arthur Stone. 2004. "A Survey Method for Characterizing Daily Life Experience: The Day Reconstruction Method." *Science* 306(5702): 1776-1780.

Kahneman, Daniel, and Alan B. Krueger. 2006. "Developments in the Measurement of Subjective Well-Being." *Journal of Economic Perspectives* 20(1): 3-24.

Kalenkoski, Charlenne, David Rivar and Leslie S. Stratton. 2005. "Parental Child Care in Single-Parent, Cohabiting, and Married Couples Families: Time-Diary Evidence from the

United Kingdom." *American Economic Review* 95(2): 194-198.

_____. 2007. "The Effect of Family Structure on Parents' Child Care Time in the United States and the United Kingdom." *Review of Economics of the Household* 5(4): 353-384.

Kalmijn, Matthijs. 1993. "Trends in Black/White Intermarriage." *Social Forces* 72(1): 119–46.

Laumann, Edward O., John H. Gagnon, Robert T. Michael, and Stuart Michaels. 1994. *The Social Organization of Sexuality*. Chicago: University of Chicago Press.

Lundberg, Shelly, and Robert A. Pollak. 1993. "Separate Sphere Bargaining and the Marriage Market." *Journal of Political Economy* 101(6): 988-1010.

Manser, Marilyn E., and Murray Brown. 1980. "Marriage and Household Decision-making: A Bargaining Analysis." *International Economic Review* 21(1): 31-44.

McElroy, Marjorie B., and Mary J. Horney. 1981. "Nash Bargained Household Decisions: Toward a Generalization of the Theory of Demand." *International Economic Review* 22(2): 333-349.

Mincer, Jacob. 1963. "Market Prices, Opportunity Cost, and Income Effects." in *Measurement in Economics: Studies in Mathematical Economics and Econometrics in Memory of Yehuda Grunfeld*, edited by C. Christ. Stanford, CA: Stanford University Press.

Qian, Zhenchao. 1997. "Breaking the Racial Barriers: Variations in Interracial Marriage Between 1980 and 1990." *Demography* 34(2): 263-276.

Robinson, John P., and Geoffrey Godbey. 1997. *Time for Life: The Surprising Ways Americans Use their Time.* Pennsylvania: Penn State University Press.

Sevilla-Sanz, Almudena, J. Ignacio Gimenez-Nadal, and Cristina Fernandez. 2010. "Gender Roles and the Household Division of Unpaid Work: Evidence from the Spanish Time Use Survey." *Feminist Economics*, forthcoming.

Smith, James P., and Finis R. Welch. 1989. "Black Economic Progress After Myrdal." *Journal of Economic Literature* 27(2): 519-64.

Spanier, Graham B., and Paul C. Glick. 1980. "Mate Selection Differentials Between Whites and Blacks in the United States." *Social Forces* 53(3): 707-725.

Spigner, Clarence. 1994. "Black/White Interracial Marriages: A Brief Overview of U.S.

Census Path, 1980-1987." in *The Black Family: Essays and Studies*, edited by R. Staples. Belmont, CA: Wadsworth Publishing.

Woolley, Frances. 2003. "Control Over Money in Marriage." in *Marriage and the Economy*, edited by Shoshana Grossbard-Shechtman. Cambridge: Cambridge University Press.

TABLE 1

Correlations Between Activities, Schooling, and Earnings and Our Definition of Chores

	Schooling		Earnings
Travel related to housework	**-0.086**	**Food and drink preparation**	**-0.0352**
Travel related to civic obligations & participation	-0.0752	**Interior cleaning**	**-0.0316**
Food and drink preparation	**-0.0719**	**Travel to/from the grocery store**	**-0.0315**
Interior cleaning	**-0.0716**	**Grocery shopping**	**-0.0312**
Using social services	-0.0703	Household & personal e-mail and messages	-0.0188
Travel to/from the grocery store	**-0.0607**	**Travel related to housework**	**-0.0164**
Waiting associated w/civic oblig. & participation	-0.0454	Travel to/from other store	-0.0134
Vehicle repair and maintenance (by self)	-0.0448	**Laundry**	**-0.0133**
Laundry	**-0.0397**	Travel related to using home main./repair/décor. svcs	-0.013
Grocery shopping	**-0.0287**	Picking up/dropping off household adult	-0.0122
Helping household adults	-0.0283	**Kitchen and food clean-up**	**-0.0117**
Socializing and communicating, n.e.c.	-0.0237	Waiting associated with caring for household adults	-0.0112
Providing medical care to household adult	-0.0221	Physical care for household adults	-0.0108
Kitchen and food clean-up	**-0.0205**	Using home maint/repair/décor/construction svcs	-0.01

This table lists some of the *household activities* comprising Groups 2 and 7 in the ATUS, as well as their corresponding *travel* times (Group 17). Correlations based on a sample of married or cohabiting respondents ages 21-65 from the ATUS 2003-2009. *Schooling* is measured in years of education, *Earnings* is measured in hourly-wage. Activities selected for our definition are **bolded**; activities with a correlation lower than -0.01 are not included in the table.

TABLE 2-1
Means and Frequencies for All Respondents

	(1)	(2)	(3)	(4)	(5)	(6)
	General	**Resp W-Prtnr B**	**Resp O-Prtnr B; Resp W-Prtnr O**	**Same Race**	**Resp B-Prtnr O; Resp O-Prtnr W**	**Resp B-Prtnr W**
Respondent's characteristics						
Household Chores	10.74	11.40	9.54	10.74	12.34	7.10
Male	45.36	22.74	51.47	45.36	38.25	74.83
Respondent's age	43.93	39.73	44.18	44.00	41.72	40.96
Respondent's education	14.07	13.84	14.44	14.05	14.56	13.93
Respondent's hourly wage	2.86	2.73	2.94	2.86	2.83	2.83
Respondent disabled	3.78	6.39	3.89	3.77	4.15	2.30
Respondent has limited LFP	21.57	22.65	20.68	21.50	26.80	16.22
Partner's characteristics						
Older spouse	23.47	26.97	23.62	23.34	27.03	35.10
Partner's education	13.99	13.61	14.20	13.97	14.51	14.16
Partner's hourly wage	2.01	1.94	1.85	2.01	2.06	2.04
Partner disabled	3.11	5.61	3.49	3.09	3.04	4.25
Household characteristics						
Household income	64.67	52.95	68.73	64.61	69.13	57.58
Number of children 0-4	0.30	0.35	0.28	0.30	0.30	0.31
Number of children 5-11	0.43	0.52	0.39	0.43	0.34	0.58
Number of children 12-17	0.36	0.29	0.35	0.36	0.29	0.39
Married (vs. cohabiting)	93.10	76.30	91.40	93.41	85.42	81.70
Family farm/business	12.09	8.54	14.17	12.11	11.36	6.26
Observations	34,685	192	585	33,155	586	167

Sample consists of married or cohabiting respondents aged 21-65 from the ATUS 2003-2009. "W" stands for "White", "B" stands for "Black". "O" stands for "Other". Column (3) refers to respondents who are either Other and their partners are Black, or respondents who are White and their partners are Other. Column (5) refers to respondents who are either Black and their partners are Other, or respondents who are Other and their partners are White. Time devoted to *Chores* is measured in hours per week. *Respondent's hourly wage* and *Partner's hourly wage* are measured as the logarithm of hourly wages, using predicted hourly wages for individuals not participating in the labor market (see Appendix A). *Household income* is measured as Total Family Income, defined as the income of all family members during the last 12 months, including money from jobs, net income from business, farm or rent, pensions, dividends, interest, Social Security payments, and any other money income received by family members who are 15 years of age or older, where each value of the variable represents the mid-point of the income interval divided by $1,000.

TABLE 2-2
Means and Frequencies for Male and Female Respondents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel A: Male						**Panel B: Female**					
	General	**Resp W-Prtnr B**	**Resp O-Prtnr B; Resp W-Prtnr O**	**Same Race**	**Resp B-Prtnr O; Resp O-Prtnr W**	**Resp B-Prtnr W**	**General**	**Resp W-Prtnr B**	**Resp O-Prtnr B; Resp W-Prtnr O**	**Same Race**	**Resp B-Prtnr O; Resp O-Prtnr W**	**Resp B-Prtnr W**
Individidual characteristics									**Female**		**Female**	**Female**
Household chores	5.07	3.96	5.58	5.04	6.24	5.66	15.45	13.59	13.74	15.48	16.12	11.39
Respondent's age	44.65	41.99	45.08	44.72	41.73	41.72	43.33	39.07	43.23	43.40	41.71	38.69
Respondent's education	14.08	14.09	14.58	14.06	14.59	13.73	14.06	13.77	14.29	14.04	14.55	14.51
Respondent's hourly wage	3.01	2.91	3.11	3.01	2.97	2.82	2.72	2.67	2.76	2.72	2.74	2.85
Respondent disabled	4.03	5.72	4.55	4.00	5.33	3.08	3.58	6.59	3.19	3.57	3.42	0.00
Respondent has limited LFP	10.69	14.35	10.28	10.66	9.93	16.09	30.59	25.10	31.72	30.50	37.24	16.59
Partner's characteristics												
Older spouse	23.70	29.22	28.17	23.45	27.72	35.92	23.28	26.31	18.80	23.24	26.61	32.66
Partner's education	14.03	14.47	14.37	14.02	14.38	14.24	13.95	13.35	14.02	13.94	14.59	13.92
Partner's hourly wage	1.79	1.68	1.65	1.79	1.88	1.88	2.19	2.02	2.05	2.19	2.18	2.51
Partner disabled	2.97	4.41	2.18	2.97	3.12	3.75	3.23	5.96	4.87	3.19	2.99	5.74
Household characteristics												
Household income	65.29	61.08	70.40	65.18	70.85	55.82	64.16	50.56	66.96	64.13	68.07	62.83
Number of children 0-4	0.30	0.20	0.27	0.30	0.30	0.34	0.29	0.40	0.29	0.29	0.30	0.22
Number of children 5-11	0.44	0.59	0.37	0.44	0.42	0.64	0.42	0.50	0.41	0.42	0.29	0.42
Number of children 12-17	0.36	0.14	0.32	0.37	0.31	0.35	0.36	0.33	0.39	0.36	0.28	0.52
Married (vs. cohabiting)	92.81	82.98	93.16	93.06	85.37	76.88	93.35	74.33	89.54	93.69	85.45	96.01
Family farm/business	9.00	10.13	12.17	8.96	9.35	4.66	14.66	8.08	16.29	14.72	12.60	11.04
Observations	15,645	43	291	14,959	224	128	19,040	149	294	18,196	362	39

Sample consists of married or cohabiting respondents aged 21-65 from the ATUS 2003-2009. "W" stands for "White", "B" stands for "Black". "N" stands for "Neutral". Other variables defined in Table 2.1. Columns (3) and (9) refer to respondents who are either Other and their partners are Black, or respondents who are White and their partners are Other. Columns (5) and (11) refer to respondents who are either Black and their partners are Other, or respondents who are Other and their partners are White.

TABLE 3
Regressions of Hours of Chores per Week

	(1)	(2)	(3)
Household chores	**All Respondents**	**All Respondents**	**All Females**
Race difference	-0.62***	-0.05	-1.14***
	(0.17)	(0.26)	(0.10)
Race difference*Female	-	-1.00***	-
	-	(0.24)	-
Respondent's characteristics			
Respondent's race	-0.24	0.20	-0.61*
	(0.18)	(0.12)	(0.27)
Female	10.13***	10.20***	-
	(0.20)	(0.43)	-
Respondent's race*Female	-	-0.82**	-
	-	(0.27)	-
Age respondent	0.36***	0.37***	0.60***
	(0.05)	(0.05)	(0.11)
Age respondent sq.	-0.33***	-0.34***	-0.54***
	(0.06)	(0.06)	(0.13)
Respondent's hourly wage	-0.34	-0.31	-0.03
	(0.21)	(0.21)	(0.24)
Respondent's education	-0.21***	-0.20***	-0.54***
	(0.04)	(0.04)	(0.06)
Respondent disabled	-0.19	-0.22	-1.45***
	(0.26)	(0.26)	(0.38)
Partner's characteristics			
Older spouse	0.30	-0.16	0.59
	(0.18)	(0.22)	(0.41)
Older spouse*Female	-	0.79	-
	-	(0.56)	-
Partner's hourly wage	0.37***	0.62***	0.29***
	(0.05)	(0.07)	(0.07)
Partner's hourly wage*Female	-	-0.46***	-
	-	(0.12)	-
Partner's education	-0.04	-0.05	-0.09*
	(0.03)	(0.04)	(0.04)
Partner disabled	-0.04	-0.12	-0.71
	(0.25)	(0.24)	(0.70)
Household characteristics			
Household income	-0.01*	-0.01*	-0.02*
	(0.01)	(0.01)	(0.01)
Number of children 0-4	1.42***	1.49***	2.35***
	(0.15)	(0.16)	(0.25)
Number of children 5-11	1.21***	1.24***	2.07***
	(0.13)	(0.13)	(0.20)
Number of children 12-17	1.04***	1.05***	1.78***
	(0.11)	(0.11)	(0.24)
Married (vs. cohabiting)	0.80**	0.80**	1.76***
	(0.26)	(0.26)	(0.31)
Family farm/business	0.42	0.26	0.73
	(0.33)	(0.31)	(0.53)
Constant	-3.78	-3.92	-0.74
	(3.10)	(2.94)	(2.50)
R-squared	0.175	0.176	0.065
Observations	34,685	34,685	19,040

Standard errors in parentheses. Sample consists of married or cohabiting respondents aged 21-65 from the ATUS 2003-2009. *Significant at the 90% level **Significant at the 95% level ***Significant at the 99% level.

TABLE 4
Regressions of Hours of Chores per Week and Race Combination Dummies

	(1)	(2)	(3)
Household chores	**All Respondents**	**All Respondents**	**All Females**
Respondent lighter	-0.53	0.83	-1.44***
	(0.31)	(0.55)	(0.28)
Respondent lighter*Female	-	-2.45**	-
	-	(0.66)	-
Respondent darker	1.26*	1.04	1.99*
	(0.64)	(0.57)	(0.83)
Respondent darker*Female	-	0.38	-
	-	(0.76)	-
Respondent's race	-0.27	0.12	-0.66**
	(0.18)	(0.13)	(0.27)
Respondent's race*Female	-	-0.76**	-
	-	(0.28)	-
R-squared	0.175	0.176	0.066
Observations	34,685	34,685	19,040

Standard errors in parentheses. Sample consists of married or cohabiting respondents aged 21-65 from the ATUS 2003-2009. *Significant at the 90% level **Significant at the 95% level ***Significant at the 99% level.

TABLE 5

Regressions of Hours of Chores per Week for Respondents with Limited Labor Force Participation

	(1)	(2)	(3)
Panel A			
	All Respondents	**All Respondents**	**Women**
Race difference	-2.02**	-1.65	-2.18**
	(0.59)	(1.02)	(0.61)
Race difference*Female	-	-0.53	-
	-	(1.04)	-
Respondent's race	-0.21	-0.16	-0.14
	(0.24)	(0.32)	(0.34)
Female	10.42***	11.57***	-
	(0.71)	(1.09)	-
Respondent's race*Female	-	-0.14	-
	-	(0.50)	-
R-squared	0.169	0.171	0.095
Observations	7,763	7,763	6,205
	(1)	(2)	(3)
Panel B			
	All Respondents	**All Respondents**	**Women**
Respondent lighter	-1.47	0.73	-1.88*
	(0.81)	(2.57)	(0.89)
Respondent lighter*Female	-	-2.79	-
	-	(2.74)	-
Respondent darker	3.95*	5.49**	3.87
	(1.63)	(2.11)	(2.13)
Respondent darker*Female	-	-1.84	-
	-	(3.65)	-
Respondent's race	-0.32	-0.30	-0.26
	(0.20)	(0.26)	(0.24)
Respondent's race*Female	-	-0.10	-
	-	(0.38)	-
R-squared	0.169	0.17	0.096
Observations	7,763	7,763	6,205

[1] Standard errors in parentheses. Sample consists of married or cohabiting respondents aged 21-65 from the ATUS 2003-2009. *Limited Labor Force Participation* is defined as working 10 hours or less per week in the labor market. *Significant at the 90% level **Significant at the 95% level ***Significant at the 99% level.

Appendix A: Heckman Estimates of Wages

Both the participation and wage equations include respondent's age (and its square), and dummy variables to control for year of the survey (ref.: 2009) and state of residence (ref.: Wyoming). While in our employment equation we include partner's age (and its square), number of children ages 0-4, 5-12 and 13-17) and regional unemployment rates (by year and state of residence) as identification variables, we include regional minimum wages (by year and state of residence) in our wage equation.

TABLE A1
Heckman's Model for Wages

	Men		Women	
	Hourly Wage	**Employment Equation**	**Hourly Wage**	**Employment Equation**
Respondent's age	1.54***	0.09***	0.92***	0.02*
	(0.10)	(0.01)	(0.15)	(0.01)
Respondent's age sq.	-1.63***	-0.10***	-0.90***	-0.03**
	(0.12)	(0.01)	(0.13)	(0.02)
Respondent's education	2.19***	0.14***	1.99***	0.08***
	(0.05)	(0.01)	(0.16)	(0.00)
Parnter's age	-	0.00	-	-0.02
	-	(0.01)	-	(0.01)
Partner's age sq.	-	0.01	-	0.01
	-	(0.01)	-	(0.01)
Number of children <5	-	0.02*	-	-0.42***
	-	(0.01)	-	(0.02)
Number of children 5-11	-	0.00	-	-0.24***
	-	(0.01)	-	(0.01)
Number of children 12-17	-	0.02	-	-0.07***
	-	(0.01)	-	(0.02)
Regional unemployment rate	-	-0.02*	-	0.00
	-	(0.01)	-	(0.02)
Regional minimum wage	0.42***	-	0.24	-
	(0.06)	-	(0.21)	-
Year 2003	-1.43***	-0.15**	-6.82	0.06
	(0.51)	(0.07)	(4.71)	(0.08)
Year 2004	-0.85	-0.13*	-6.19	-0.03
	(0.53)	(0.07)	(4.71)	(0.08)
Year 2005	0.38	-0.08	-5.61	0.04
	(0.56)	(0.07)	(4.76)	(0.09)
Year 2006	-0.20	-0.10	-5.57	0.04
	(0.57)	(0.08)	(4.66)	(0.10)
Year 2007	0.59	0.02	-4.92	0.07
	(0.54)	(0.08)	(4.58)	(0.10)
Year 2008	1.71***	0.05	-3.99	0.08
	(0.61)	(0.07)	(4.49)	(0.08)
Constant	-46.76***	-2.81***	-27.96***	-0.46
	(2.19)	(0.24)	(1.70)	(0.37)
Observations	15,673		19,269	
λ	14.48	(0.65)	-0.76	(1.21)

Standard errors in parentheses. Sample consists of married or cohabiting respondents aged 21-65 from the ATUS 2003-2009. We estimate a Maximum Likelihood Heckman selection model (e.g., Heckman [1979]) where both the participation and wage equations include respondent's age (and its square), and dummy variables to control for year of the survey (ref.: 2009) and state of residence (ref.: Wyoming). Employment equations include the partner's age (and its square), the age and number of children (number of children 0-4, 5-12 and 13-17) and regional unemployment rates (by year and state of residence) as identification variables. Regional minimum wages (by year and state of residence) are included in wage equations. *Significant at the 90% level **Significant at the 95% level ***Significant at the 99% level.