

# 배우자간 의사결정력에 따른 노부모로의 시간자원 이전\*

## Time Resource Transfers of Married Couples to Their Parents on Decision-Making Power

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### <Abstract>

This paper investigates whether intra-household bargaining power affects couples' caregiving decisions during instances of competing parental demands for assistance. The primary focus is on examining how partners' bargaining power influences the relative allocation of time resources between parents and parents-in-law, assuming that children prefer to transfer caregiving resources toward their own parents over their parents-in-law. The findings in this study reject the bargaining theory that couple's parental care behavior results from a bargaining process between the husband and the wife. More specifically, the results did not clearly show that children prefer to transfer caregiving resources toward their own parents over their parents-in-law. Decision-making power, measured by final decision-making authority, also failed to affect the relative care transfers.

본 연구는 노인부양에 관한 부부간 의사결정 과정에서 부양의 주체인 여성 배우자의 의사결정 파워가 실제 노인부양참여를 위한 결정에 어떤 역할을 하고 있는지 알아보기 위하여 미국내 중고령층을 대상으로 한 2002년 HRS(Health and Retirement Study) 자료를 사용하여 실증분석하였다. 또한 이 연구에서는 배우자 양쪽의 부모로부터 동시에 부양의 역할이 요구되었을 때 부부간 교섭력(Bargaining Power)을 대표할 수 있는 여성의 경제력과 교육수준이 부양결정에 어떤 영향을 미치는지를 다항 로짓 분석(Multinomial Logit) 분석을 사용하여 검증하였다. 분석결과는 부부의 노부모 부양결정은 부부간 교섭력 보다는 양쪽 부모의 상대적 건강상태, 재정상태, 그리고 간호를 위한 대체 인적자원의 여부등에 의존하는 것으로 밝혀졌다. 또한 남성과는 다르게, 여성의 연령과 노동참여

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\* 본 논문은 박사학위 청구논문의 일부임

는 여성 자신의 노부모 부양결정에 결코 부적 영향을 주지 않았으며, 또한 양쪽 부모로부터 동시에 부양참여가 요구되었을때 성인자녀가족의 부양결정은 같은 조건이라면 여성배우자쪽 부모의 부양에 보다 더 적극적으로 반응하는 것으로 밝혀졌다.

**주제어(Key Words):** 의사결정력(decision-making power), 교섭력(bargaining power), 시간이전(time transfer), 노인부양(elderly care)

## I. INTRODUCTION

Advances in life expectancy due to life-style changes, modern medicine, and technological innovation have created a recent increase in the number of elderly Americans. Census Bureau projections indicate that the population of older persons will grow dramatically between 1997 and 2050, especially, as the baby boom generation reaches age 65 (Couch, Daly, & Wolf, 1999). As the elderly population increases, there is some debate about how to care for these individuals when their health deteriorates. Increasing costs of institutional care result in additional demand for informal care, and thus the provision of services by family members or friends has quickly become an important type of caregiving for the disabled elderly.

However, changes in demographic and socioeconomic trends have made it more difficult for adult children to provide the level of care their parents need. Over the past generation, women have assumed a much larger role in the labor market. The shift from the household to the workforce has limited the amount of time women have to devote to other responsibilities such as caring for their frail parents (Johnson & La Sasso, 2000). Also, because of declining fertility rates, elderly people have less opportunities to receive financial or personal care assistance from their fewer children (Shuey & Hardy, 2003). Given these trends, households of adult children must juggle a more complicated decision-making process in order to provide care for their elderly parents.

Parental care responsibilities, especially in the case of married couples, are often spread amongst the entire family. Therefore, many couples find themselves being at least partially responsible for both sets of their parents. Competing demands from older parents on children's resources influence the assistance decisions made by

these caregivers. Their decisions require the consideration of multiple potential benefactors (Soldo & Hill, 1995). Thus, the decision-making process of married couples with elderly care responsibilities needs to be understood in more of an extended framework. It is necessary to explain why a particular household member opts to focus more resources on one parent, or one set of parents, than another.

Pollack, Pezzin, and Shone(2007) suggested that caregiving decisions are not made only considering the side of the disabled family member. They believed family members providing assistance share the financial consequences of caregiving decisions, which may lead to strategic behavior. Conflicts may arise between couples when considering the various financial or physical implications associated with different caregiving options (i.e., type and amount of assistance, which set of parents receive assistance, or who provides assistance). Thus, the assistance provided to elderly parents would often be the product of joint decisions between family members with different preferences under family budget or time constraints.

A bargaining model of household behavior permits both partners to have different preferences in spending their household resources, while a unitary model assumes a common preference function that an altruistic dictator makes on behalf of the entire household (Lundberg & Pollak, 1993; Lundberg, Startz, & Stillman, 2003; McElroy & Horney, 1981; Quisumbing & Maluccio, 2003). The behavior of adult children is governed not only by their ability to provide care and the relative need of their parents, but also by preferences toward specific parents. Husbands and wives might try to allocate their resources toward preferred parents, in most cases their own parents. Thus, in the bargaining model, the decisions of adult children's resource transfers to parents

are considered as the result of a bargaining process between husband and wife with heterogeneous preferences (Lyons, Neelakantan, Fava, & Scherpf, 2007).

The goal of this study is to examine how families adjust their time resources in situations of competing demands for parental assistance. Specifically, this paper tests whether the partner with more bargaining power significantly and positively influences relative allocation of time resources toward his/her own parents, using data from the 2000 Health and Retirement Study (HRS). The variables of earning and education (human capital) are included to estimate the effect of bargaining power. Also, the HRS has a unique question identifying the final decision-maker by asking, "When it comes to making major family decisions, who has the final say?" This research includes this variable in analysis considering decision-making power as revealing some consequence of bargaining power within the household. That is, partners with greater bargaining power would have a greater influence on the household's final decisions, thereby possibly better realizing his/her personal preferences (Dobbelsteen & Kooreman, 1997).

This study is meaningful in two respects. First, this research empirically examines the appropriateness of a bargaining model in explaining inter-household resource transfer decisions. As the U.S. population continues to age, adult children's assistance will undoubtedly become an ever more important alternative to formal care. U.S. long-term care policy has focused on ways to encourage families to increase the level of informal care they provide to their aging parents and to minimize the costs associated with institutional care (e.g., nursing homes). Many states already provide benefits to caregivers, such as subsidies for home care, cash transfers, or tax credits. However, policies that are designed based on a unitary model may not yield efficient results, as resources within a unitary household model are pooled together for the entire household's consumption. When pooling resources, the unitary household model ignores the identity of the individual public transfer recipient (Quisumbing & Maluccio 2003). Therefore,

understanding the household resource allocation system offers significant welfare gains, through efficiently targeting public policy to the correct individuals, for both providers and receipts of elderly care.

Second, adult daughters within the family network have been shown to disproportionately take on the main caregiving role for elderly parents, which is negatively associated with physical and emotional well-being (George & Gwyther, 1986; Lee & Porteous, 2002; White-Means, 1993). Stoller(1983) showed how the provision of elder care differed between sons and daughters. She found that women's employment did not have a significant impact on the caregiving provided to older parents, while son's labor force status reduced the level of assistance by 22.9 hours per month. Also, Couch, Daly, and Wolf(1999) found that time devoted to parents responded negatively to the wage rates of unmarried adult children and married men but did not decreased with married women's wages. Moreover, they reported that even in situations where married women increased their labor market participation, the amount of time spent on elder care diminished much less than the extra hours these women worked.<sup>1)</sup> However, although previous research has shown that strong patterns for elder care exist between men and women, little is known about the role that gender plays in the actual decision-making process regarding assistance transfers (Shuey & Hardy, 2003). This research provides significant insight into the decision-making trends associated with elder care, with a particular focus on their inter-family effects.

## II. BACKGROUND

Some literature demonstrated the importance of daughters in a caregiving role within a context of unequal assistance allocations between parents and parents-in-law, where transfers are given substantially more to the wife's, rather than the husband's, parents. Merrill's research (1993) used the 1982 Informal Caregiver's Survey to test the contributions of daughters-

1) They investigated a model estimating the allocation of household resources according to four demands: time for labor market work, time for housework, time transfer to parents and money transfer to parents.

in-law, relative to that of daughters, in the care of elderly parents (in-law). She concluded that daughters-in-law helped their own parents more than their parents-in-law. The findings showed that daughters-in-law provided, on average, 6 fewer hours of care per week to their parents-in-law than to their own parents. In addition, 85% of parental caregivers are daughters, whereas only 15% are daughters-in-law.

Shuey and Hardy(2003) studied how couples organize assistance transfers to aging parents. They found that couples were more responsive to the needs of the wife's parents and were less likely to exclude her parents from care even under circumstances where multiple elderly parents needed care. They suggested blood relationship preference in caregiving as a potential key to understanding the causes of variations in adult children's relative allocations between parents and parents-in-law. In other words, they proposed that assistance may be primarily organized around the blood ties of active participants, traditionally women, in planning or providing care. This argument simply states that most people prefer to transfer to their own parents rather than to their parents-in-law. Also, it implies the possibility of preference heterogeneity between husbands and wives in resource distribution for parental care.

Existing studies concerning elderly caregiving have mainly focused on intergenerational interaction between parents and adult children in an extended household framework (Bernheim, Shleifer, & Summers, 1985; Cox & Rank, 1992; Pezzin & Schone, 1999, 2002; Sloan, Zhang, & Wang, 2002). These researches have generally concentrated on exploring the determinants or motivations for resource transfers. Those studies assumed that family members (husbands and wives) within the household of adult children have common preferences for their parental caregiving. Little work has analyzed the decision-making process or interactions between partners who share elderly caregiving responsibilities. Recently, Pollack(2007) created a study that modeled interactions among adult children within a game theoretic framework in an attempt to analyze intrahousehold allocations to parents. However, his

study was limited to cases of an unpartnered parent with unmarried children to avoid analytical complications.

The unitary household model, based on Becker's household theory from the 1960s, depicts households as unified entities in which all resources are pooled across members and households behave as though they are single individuals (Becker, 1974). It is assumed that all household members share common preferences or that there is a single altruistic dictator within the household who makes the final decision about the distribution of resources for the entire household.<sup>2)</sup> According to this model, conflicts between spouses that may arise due to different preferences about household resource allocations do not play a significant role in the decision-making process.

The bargaining model approach, contrary to the unitary setup, allows for different preferences among individual household members. In the bargaining model, the household's decision-making processes is considered a cooperative negotiation, in which husbands and wives with conflicting interests use credible threats to influence the debate toward their own preferences (McElroy & Horney, 1981; Lundberg & Pollak, 1993). Thus, household outcomes are affected by the relative power of the husband and the wife, while each person attempts to maximize his/her individual utility function. Household resources are spent toward the preferences of the partner who has greater bargaining power. Also, spouses with lower bargaining power are left with no alternative options but to follow their spouse's decisions.

Bargaining models require empirical variables that create plausible measurements of household bargaining. Traditionally, individual bargaining power measures have focused on control over economic resources, including current earned and unearned income, assets, and inheritance. These economic resource variables have acted as an alternative for a direct measure of bargaining power, which have generally been unavailable (Lyons et al., 2007; Quisumbing & Maluccio, 2003). However, variables used in earlier studies were arguably endogenous as a proxy measure for bargaining power. There exists an inherent difference between hourly and

2) The unitary model is also called the common preferences model or the altruistic model.

salaried work. Simply because a spouse chooses to allocate additional time to the labor market, thus increasing his/her earnings at the expense of household production, does not necessarily translate into higher bargaining power. In general, salaried spouses wield greater bargaining power, as salaried work usually produces higher earnings. Also, Pollak(2005) point out that the connection between earnings and bargaining power is ambiguous, as labor earnings at the bargaining equilibrium may differ from earnings at the threat point: in the divorce threat models, hours allocated to market work while married may differ from hours allocated to market work after a divorce.

The more recent literature on intrafamily allocations has emphasized spouse-specific nonlabor income because it is thought to avoid endogeneity problems in the sense that it does not reflect labor supply decisions (McElroy & Horney, 1988; Lim, Winter-Nelson, & Arends-Kuening, 2007). Nonetheless, nonlabor income may be affected by previous labor supply decisions, thus it does not clearly avoid endogeneity issues. Although bargaining power is an elusive concept, Quisumbing and Maluccio(2000, 2003) argue that valid proxy measures should reflect bargaining power while avoiding endogeneity. They suggest a variety of proxies for bargaining power that have been used in the literature: control over assets, accumulation of human capital (skills, knowledge, and education), establishment of social capital (membership in organizations), and attitudinal factors (self-esteem, self-confidence, and emotional satisfaction).

Inter-household resource allocation decisions are obtained as the solutions to the husband and the wife's maximization problems. In this procedure, the information about who has the power to make final decisions between the spouses from the HRS might reveal some consequence of bargaining power, in that the partner with greater bargaining power shows his/her influence in the decision-making process (Dobbelsteen & Kooreman, 1997). The decision-making power variable in the HRS, which is included in the estimation of adult children's time resource transfers in a bargaining power context, is discussed in more detail in the following section.

### III. DECISION-MAKING POWER

The HRS asked respondents about decision-making power in the following manner:

"When it comes to making major family decisions, who has the final say- you or your (husband/wife/partner)? By 'major family decisions' we mean things like when to retire, where to live, or how much money to spend on a major purchase."

The relationship between decision-making power and bargaining power needs to be carefully considered. Prior literature discussed two different aspects of decision-making within an economic framework (Dobbelsteen & Kooreman, 1997; Elder & Rudolph, 2003; Friedberg & Webb, 2006). One perspective is a specialization of household production activities. In this approach, the partner who controls household decision-making does not necessarily have more power in the relationship. The partner with the lower opportunity costs would become the decision-maker for the efficient division of household tasks. It is reasonable to believe that the partner with higher wages devotes less time to the decision-making process. An alternative viewpoint is that decision-making power results from bargaining power. The partners with greater bargaining power can affect the consumption of the household's resources toward their preference during final household decisions. Thus, the partner with greater bargaining power has a larger chance of being perceived as the household decision-maker (Elder & Rudolph, 2003).

Previous literature has already examined the determinants of the household decision-making process to create a more descriptive model of household behavior (Dobbelsteen & Kooreman, 1997; Elder & Rudolph, 2003; Friedberg & Webb, 2006). Dobbelsteen and Kooreman(1997) used a question from the British Household Panel Survey related to 'the final say in big financial decisions' as one of the dependent variables to investigate how the financial management of households relates to various household characteristics. Within the bargaining framework, they assumed that if he/she has more power, the partner has the final say. The central explanatory variables in their estimations were both partners' wage rates and their education levels. The signs

of these variables in their results lend credence to the bargaining model. As the education and wage level of the female partner increases, so does the probability that she has the final say in making major financial decisions.

Elder and Rudolph(2003) and Friedberg and Webb(2006) empirically tested what set of factors were important in determining household decision-makers using the HRS decision-making variable. Elder and Rudolph(2003) analyzed 4,297 married couples from the HRS in 1992. Their statistical results analyzed the probability of female respondents being perceived as the decision-maker according to explanatory variables such as wage, education, retirement, and person's health. They found that final decisions were performed by the partner who was financially knowledgeable, more educated, and had a higher wage. These results support the perspective that decision-making power is significantly related to bargaining power.

Friedberg and Webb(2006) interpreted the distribution of spousal decision-making power as directly revealing whose preferences were reflected more in household choices. Thus, they considered the answer to whether the husband or wife has decision-making power in the HRS as an observed variable to who has bargaining power. They used this variable to analyze the determinants of bargaining power and its impact on household outcomes. As a result, they found that decision-making power was influenced by variables that were plausibly related to threat points (like spouse-specific earnings). Based on the significance of their results, it seems that if one spouse has more power he/she is delegated as the decision-maker.

This study uses the decision-making power variable in the analysis to estimate adult children's time assistance for elderly parents in relation to bargaining power. As two papers have previously examined the interaction between bargaining power determinants and the distribution of decision-making power in the HRS, it was not tested again in this study. It is assumed that decision-making power is a consequence of bargaining power. Based on this assumption, adult children's time resource

allocations are assumed to be affected according to which spouse's preference or opinion is reflected more in decision-making.

## IV. ANALYSIS

### 1. Theoretical Framework

Assuming adult children's assistance decisions for their parents are a bargaining process, children's households would maximize a 'Nash social welfare function,' which is the product of the difference between individual's utility level (represented as  $U^h$  for husband's and  $U^w$  for wife's) and their threat point ( $V^h$  and  $V^w$ ).

$$N = [U^h(X_h, Z_h, Z_w; \beta_h) - V^h(P_1, P_2, I_h)][U^w(X_w, Z_w, Z_h; \beta_w) - V^w(P_1, P_2, I_w)] \quad (1)$$

subject to the budget constraint:

$$X_h + X_w + Z_h P_1 + Z_w P_2 = I_h + I_w \quad (2)$$

$X_h$  and  $X_w$  are vectors of private goods consumed by the husband and wife, and  $Z_h$  and  $Z_w$  are vectors of the husband's and the wife's home produced goods such as caregiving provided for parent's physical health or welfare. It is assumed that the prices of  $X_h$  and  $X_w$  are equal and normalized to one.  $P_1$  and  $P_2$  are the relative prices of the public goods including the price of time for the husband and the wife. Both the husband and the wife's utility functions depend on their preference,  $\beta_h$  and  $\beta_w$ . These preferences affect whose parents they want to support and what types of assistance they choose to provide. We assume children prefer to provide more assistance toward their own parent. Also, children might consider money transfers to help their parents purchase for formal care. The direct money transfers from children to parents are included as a factor of private goods, which are vectors of  $X_h$  and  $X_w$ .  $I_h$  and  $I_w$  are the income received by the husband and the wife, respectively.<sup>3)</sup>

3) In the HRS, the information on non-labor income from assets or capital (i.e., business income, gross rent or interest income) is not in a spouse specific manner while earned income is available at this disaggregate level. Only non-labor income, such as pension or annuity, social

This yields the demand functions:

$$X_i^* = g^{xi}(P_1, P_2, I_h, I_w), \quad i = h, w \quad (3)$$

$$Z_i^* = g^{zi}(P_1, P_2, I_h, I_w), \quad i = h, w \quad (4)$$

With Nash bargaining, the equilibrium values,  $X_i$  and  $Z_i$  depend on the threat point or reservation utility,  $V^i$ . The threat point tracks the utility an individual would receive in the case of a divorce, or a reversion to noncooperative equilibrium within marriage. Thus, optimal household allocations depend on prices and earned income for each spouse. Based on this demand function, a rejection of the equality of the income effect implies that a common preference model does not appropriately explain the resource transfers decision from the children's household to their parents.

**2. Empirical Model**

This research applies time transfer behavior of couples with surviving parents on both the wife and husband's sides to the bargaining model. The empirical model is specified to estimate whether couple's transfer patterns to elderly parents differ according to inter-household bargaining power. <Table 1> shows the distribution of couples with a surviving parent on both sides according to money and time assistance to their parents. Of the 547

couples included in the final sample, only 19 couples gave monetary assistance to both the husband and the wife's parents. Thus, the estimation results for the flow of monetary assistance are not described in the results section due to the lack of reliability in the obtained results because of the small sample. This model focuses on time assistance in relation to transfer behavior to elderly parents.

The dependent variable is used to capture whose parent(s) a couple provides time assistance to when they have surviving parents on both the wife and husband's sides. Their transfer behavior falls into one of four mutually exclusive choices: 1. "parents on both sides", 2. "only the husband's parents", 3. "only the wife's parents", and 4. "parents on neither side". Thus, a multinomial logit model is used to estimate these transfer patterns. This decision encompasses the bargaining power variables, decision-making variable, parents' characteristics, and adult children's characteristics on both the individual and household levels. More specifically, the structural equation for modeling time transfer decisions of the households ( $Y_j$ ) is expressed as follows:

$$Y_j = \beta_0 + \beta_1\pi_D + \beta_2\pi_w + \beta_3\pi_h + \beta_4\pi_w + \beta_5\pi_h + \beta_6\pi_{hh} + \epsilon, \quad j = 1, 2, 3, 4 \quad (5)$$

<Table 1> Assistance Transfers of Money and Time to Aging Parents (HRS 2000, N = 547).

	%	N
<i>Money: adult children's households transfer to</i>		
Both husband and wife's parents	3.47	19
Only wife's parents	10.24	56
Only husband's parents	9.69	53
Neither of husband or wife's parents	76.60	419
Total	100.00	547
<i>Time: adult children's couple transfer time to</i>		
Both husband and wife's parents	13.16	72
Only wife's parents	21.02	115
Only husband's parents	13.71	75
Neither of husband or wife's parents	52.10	285
Total	100.00	547

Note: Percentages may not sum to 100% due to rounding. Also, data has not been weighted. Raw numbers are reported.

security income, social security retirement, and unemployment compensation are available at the spouse specific level. All of the available unearned income data are related to previous labor supply decisions. Although many arguments exist on treating these income variables as exogenous, the control of financial resource is inevitable factors in estimating bargaining power of a spouse within marriage. This study used the sum of available unearned and earned income to create each person's total income as a measurement of bargaining power.

where  $\pi_D$  is a vector of variables related to bargaining power (including a decision-making power variable),  $\pi_{P_w}$  represents the characteristics of the wife's parents in a household, and  $\pi_{P_h}$  represents the characteristics of the husband's parents. The model also controls for the individual characteristics of the husband and wife by  $\pi_h$  and  $\pi_w$ , respectively. The individual household characteristics such as race and household's total wealth are represented by  $\pi_{inh}$ .

The primary focus in this analysis is given to the coefficient,  $\beta_1$ , on bargaining power variables. If household's time transfer decisions are influenced by partner's bargaining power, their time assistance is weighted toward the parent of spouse who has more power. That is, the sign of  $\beta_1$  would be a positive in the category including the parent of spouse who has more power.

To estimate the model using multinomial logit specifications, a Hausmann test was performed to evaluate the independence of irrelevant alternatives (IIA) assumption. The Hausmann test failed to reject the hypothesis of equality between the coefficients of the full model and the coefficients of the model excluding each alternative. This result demonstrates the appropriateness of the IIA assumption in relation to the data used in this analysis.

Additionally, it is important to note that the HRS includes an oversampling of African Americans and Hispanics. Thus, adjustments need to be made to match the HRS data to estimated population totals. For this reason, the data were weighted to yield unbiased estimates within the population parameters and adjusted for heteroscedasticity.<sup>4)</sup>

## V. DATA

This study utilizes data from the Health and Retirement Study (HRS) in 2000. The HRS represents individuals over 50 years of age and their spouses. It was first conducted in 1992 on a national cohort of persons

aged 51-61 and their spouses, and it collects new data on its respondents every two years. The HRS is ideal for addressing issues of time assistance, in that middle-aged children comprise the majority of assistance providers to their elderly parents (White-Means & Hong, 2001; McGarry & Schoeni, 1995). The data contains a wide variety of information on time transfer to upstream and downstream generations, as well as information on health, wealth, demographics, and retirement for 19,580 individuals in 13,214 households.

Our sample includes only HRS respondents who report themselves as married or partnered with at least one living parent for both partners. Of the 6,584 households that were partnered, 799 households had at least one living parent on both the husband and wife's sides, thus they were selected as the research sample. Next, 132 households with divorced parents on either side or with same-sex couples were eliminated to avoid complexity within the analyses. Also, 116 households were dropped due to missing survey information in key areas (i.e., decision making, demographic information, and care needs of parents). Finally, one household was dropped because of an unusual income level that appeared to be an outlier within the data set. As a result, this study's final sample size consisted of 547 households of married or partnered couples, all of which had at least one living parent on both partners' sides.

## VI. MEASURES

### 1. Dependent Variables

The dependent variable measuring time assistance was defined as help offered by respondents and their spouses to their parents (and/or parents-in-law) totaling 100 hours or more during the previous two years. The HRS describes time transfers using two stages. Initially, one family respondent from each household was asked whether he/she (or his/her spouse) transferred help to their parents (and/or parents-in-law) totaling 100 hours

4) All standard errors needed to be adjusted for sample clustering and stratification within the sample to avoid biasness, as standard errors are based on the assumption of simple random sampling. However, it is currently not possible to simultaneously complete these adjustments. In this study, robust standard errors are used to properly handle clustering. As a result of this technique, the standard errors may be smaller than when controlling for the effects of both stratification and clustering.



<Table 2> Who Makes Decision? (2000 HRS, N = 547)

Husband's response	Wife's response			Totals
	Husband	Equally	Wife	
Husband	<b>95 (17.3%)</b>	56 (10.2%)	22 (4.0%)	173 ( 31.5%)
Equally	69 (12.7%)	<b>223 (40.9%)</b>	25 (4.5%)	317 ( 58.2%)
Wife	32 ( 5.8%)	15 ( 2.7%)	<b>10 (1.8%)</b>	57 ( 10.4%)
Totals	196 (35.8%)	294 (53.8%)	57 (10.4%)	547 (100.0%)

Note: Percentages may not sum to 100% due to rounding. Also, data has not been weighted. Raw numbers are reported.

or more during the previous two years. Then, if the transfers given surpassed the 100 hours cut off point, the recipients of the help were identified.<sup>5)</sup>

**2. Independent variables**

1) Decision-making variables

All respondents from coupled or married households in the HRS answered decision-making questions. Respondents reported who had the final say within the household when making major family decisions. The HRS grouped respondents' answers into three categories: the husband makes the decisions, both equally make the decisions, and the wife makes the decisions. <Table 2> presents the responses for each spouse based on their own beliefs concerning inter-household decision-making power. The cells along the diagonal show the cases in which husbands and wives agreed regarding the household decision-maker. In the table, 60% of couples agreed on who was the decision maker. Among the couples who agreed, only 1.8% of the households reported the wife as the decision-maker, 17.3% of these households reported the husband as the decision-maker, and 40.9% agreed that they equally made decisions. It is difficult to analyze all of the husband and the wife's responses because of the small number of observations in certain categories, especially for the couples who agreed that the wife was the final decision-maker. In coupled households within the HRS, the designated family respondent answered most questions about the family, including queries concerning

in-laws. As 97% of the family respondents in our sample were female, we felt the wife's responses more accurately depicted actual inter-household decision making. Thus, this study used the wife's decision-maker response as the indicator that revealed the distribution of inter-household decision-making power. The wife's response variables took one of three possible values: zero if the wife reported that the husband was the primary decision-maker, one if she reported decisions were made equally, and two if she reported that she was the primary decision-maker (see Table 3).<sup>6)</sup>

2) Bargaining power variables

*Earnings.* The HRS provides earned income amounts for individual household members. Also, some unearned income information, such as pension or annuity, social security income, social security retirement, and unemployment compensation, which are related to previous labor supply decisions, are recorded at the spouse-specific level. However, non-labor income from assets or capital (i.e., business income, gross rent or interest income) is not available at such a disaggregate level.

Recall that the use of men's and women's labor income as a measure of bargaining power is controversial because of endogeneity problems with labor supply decisions. Several studies, including Horney and McElroy (1988), have examined the effects of non-labor income when explaining bargaining power. However, non-labor income cannot completely immunize the endogeneity problem, in that its level would also be affected by previous labor supply

5) The HRS reported two kinds of time assistance: basic activities and other assistance. Basic activities focus on aspects of daily living like dressing, eating, and bathing, while the other activities' category covers household chores, errands, transportation, etc. We merged these two separate types of assistance into one general time transfer category.

6) We also tested our econometric model with only husband's response about decision-maker. The results were not qualitatively different from those of analysis using wife's responses.

(Table 3) Definition of Variables

Variables	Definition
<u>Decision-Making Variables<sup>a</sup></u>	
Husband	“When it comes to making major family decisions, who makes final decision?” 1 if husband is decision-maker.
Equally	1 if husband and wife are equal.
Wife	1 if wife is decision-maker.
<u>Bargaining Power Variables</u>	
Wife’s income ratio	Wife’s income/total income
Total income <sup>b</sup>	The sum of wife’s earned and unearned income + the sum of husband’s earned and unearned income.
Wife’s education (years)	Wife’s education in years.
Wife’s educ – Husband’s educ	Difference of years of education between wife and husband.
<u>Parents and Parents-in-law Variables</u>	
P <sub>w</sub> _Age <sup>c</sup>	Age of wife’s parent(s).
P <sub>h</sub> _Age <sup>c</sup>	Age of husband’s parent(s).
P <sub>w</sub> _care need for ADLs <sup>d</sup>	1 if anyone of wife’s parents needs help for ADLs.
P <sub>h</sub> _care need for ADLs	1 if anyone of husband’s parents needs help for ADLs.
P <sub>w</sub> _The presence of spouse	1 if wife’s parents are married.
P <sub>h</sub> _The presence of spouse	1 if husband’s parents are married.
P <sub>w</sub> _Financial situation	
Better	1 if wife’s parent(s) is better off than couple’s household.
Same	1 if wife’s parent(s) is the same as couple’s household.
Worse	1 if wife’s parent(s) is worse off than couple’s household.
P <sub>h</sub> _Financial situation	
Better	1 if husband’s parent(s) is better off than couple’s household.
Same	1 if husband’s parent(s) is the same as couple’s household.
Worse	1 if husband’s parent(s) is worse off than couple’s household.
P <sub>w</sub> _living near couples	1 if wife’s parent(s) lives with couple or within 10 miles.
P <sub>h</sub> _living near couples	1 if husband’s parent(s) lives with couple or within 10 miles.
<u>Husband and Wife’s Variables</u>	
Wife’s age	Wife’s age in 2000.
Wife’s age – Husband’s age	Difference in age between wife and husband.
Both wife and husband employed	1 if both wife and husband are currently employed
Only wife employed	1 if only wife is currently employed.
Only husband is employed	1 if only husband is currently employed.
Neither employed	1 if neither husband nor wife is currently employed.
Wife’s siblings	Number of wife’s siblings.
Husband’s siblings	Number of husband’s siblings.
Wife’s marital history	1 if wife has never been divorced.
Husband’s marital history	1 if husband has never been divorced.
Wife’s health <sub>poor</sub> or fair	1 if wife is in poor or fair health: self-reported health status (excellent, very good, good, fair, poor).
Husband’s health <sub>poor</sub> or fair	1 if husband is in poor or fair health: self-reported health status (excellent, very good, good, fair, poor).
<u>Household characteristics</u>	
White	1 if wife’s race-ethnicity is white.
Household total wealth <sup>e</sup>	Household’s total net wealth/10,000.

a. The wife’s opinion was used in the analysis.

b. In the HRS, individual’s earned income is the sum of wage/salary income, bonuses/overtime pay/commissions/tips, 2<sup>nd</sup> job or military reserve earnings, professional practice or trade income. Individual’s unearned income is the sum of pension or annuity, social security income, social security retirement, and unemployment compensation.

c. Average age of parents if they have spouse.

d. Activities of daily living (ADLs) — the basic activities of caring for oneself: eating, dressing, and bathing.

e. Total wealth is defined as the sum of financial asset (IRA, stock, savings, CD, and bonds) and non-financial asset (real estate including house, vehicles, and business) less all debt.

decisions (Thomas, 1995). Nevertheless, labor income and non-labor income are still used as important proxies to explain bargaining power due to their strong implications about inter-household resource controls and the ease of accessing these measures for empirical tests. This study controls for total household income as defined by the sum of earned and unearned income for both spouses. In addition, the study also includes in the analysis a control for bargaining power based on the wife's share of total household income to reflect the effect of an individual's relative income. The wife's income is defined as the sum of her earned and unearned income.

*Education.* Education measures are included to capture the couple's aggregate human capital. Bargaining power may be related to the ability to negotiate with the other spouse in favor of one's own interests. Friedberg and Webb(2006) suggested that "the 'savvier' spouse is more likely to make major decisions." Higher educated spouses might have a better ability to negotiate with one's partner in order to realize his/her own preference. This study uses the wife's education and the difference in education between the wife and the husband as proxies that may be correlated with credible threat points.

### 3) Parents' characteristics

To account for parental characteristics, this study creates separate variables for the wife's and the husband's parents ( $P_w$  and  $P_h$ , respectively). Variables included in the parents' characteristics consist of information describing their age, need for assistance (ADLs), marital status, financial status, and their living proximity to respondents.<sup>7)</sup> A detailed list of the variables and their definitions are provided in <Table 3>. If both parents (father and mother) on either side are still living and married, parental age represents the average age of the two parents. Similarly, with respect to parents' assistance needs for ADLs, in cases in which both parents are alive, it equals one if at least one of them needs help, and zero if no parent needs assistance. The intensity of parental health care needs is an important explanatory variable in research related to adult children's time assistance. Previous researches have examined how

parental care needs affected the amount of transfers, and showed it had a positive association with parents' care needs (Altonji, Hayashi, & Kotlikoff, 1996; Brown, 2003; Sloan et al., 2002). Also, parents' marital status implies whether they have alternative resource for assistance as spouses oftentimes play significant roles as caregivers.

Parental wealth captures the parents' ability to hire a caregiver from the outside market for their health care but also can serve as a proxy for compensation (bequest) possibility from parents on children's time transfers. That is, parents' higher bequeathable wealth could be used as an instrument to receive more services from their children (Slone & Norton, 1997). Also, such parent's financial situation might contribute a spouse as their child to give more bargaining power in decision-making process. Unfortunately, the HRS data does not include precise financial information for parents. Instead, designated family respondents reported parents' relative financial situations in relation to their own household, describing them as either better, the same, or worse. Parents' proximity to their children's house is included to capture accessibility or strong kinship ties.

### 4) Adult children's individual characteristics

In examining attributes of the adult children, the effects of the husband's and the wife's characteristics are distinguished in estimation. Analysis includes variables of age, employment, number of siblings, marital history, and health status. The 'the number of siblings' variable attempts to capture the presence of other potential helpers for their parents. Also, the husband's and the wife's marital history may reflect kinship ties that might be associated with a spouse's parent. For example, in the case of a first marriage, a long-term relationship between parents-in-law and child-in-law as family members might neutralize the child-in-law's natural inclination toward his/her biological parents. Thus, children in first marriages might have indifference of caregiving responsibility between their own parents and parents-in-law compared to those that remarry.

### 5) Adult children's household characteristics

7) Activities of daily living (ADLs) — caring for the basic activities of caring like eating, dressing, and bathing.

With respect to race, many previous researchers have found that blacks have more available extended family support and that whites use more days of nursing home care than non-whites (Burton et al., 1995; Cox, 1993).

Thus, race is included to capture cultural differences that might affect time transfer decisions. In this research, 96.3% of the sample reported that the husband and wife were of the same race. Of the 547 couples, 468 were

(Table 4) Descriptive Statistics for Transfer Behavior of Time Assistance by Couples with Surviving Parents on Both Sides (HRS 2000, N = 547).

Variables (Mean/percentage)	Both P	Only P <sub>w</sub>	Only P <sub>h</sub>	None	All
	n = 72 (13.16%)	n = 115 (21.02%)	N = 75 (13.71%)	n = 285 (52.10%)	n = 547 (100%)
<i>Decision-Making Variables</i>					
Who makes final decisions (Wife's opinion)					
Husband makes final decisions	42.01	29.80	33.32	36.28	35.20 (%)
Decisions made equally	53.03	57.93	62.44	51.99	54.86 (%)
Wife makes final decisions	4.95	12.27	4.23	11.71	9.94 (%)
<i>Bargaining Power Variables</i>					
Wife's income/1000	19.57	19.67	19.38	18.92	19.22
Husband's income/1000	46.96	44.15	51.05	46.53	46.73
Wife's education (years)	13.62	13.07	14.20	13.13	13.33
Husband's education (years)	13.78	13.31	14.10	13.25	13.45-
<i>Parents and Parents-in-law Variables</i>					
P <sub>w</sub> _Age	82.16	81.32	78.22	78.32	79.40
P <sub>h</sub> _Age	86.09	82.69	84.17	81.72	82.81
Both P <sub>w</sub> and P <sub>h</sub> need care for ADLs	14.25	6.91	4.23	4.10	5.94(%)
Only P <sub>w</sub> need care for ADLs	16.53	23.01	14.13	11.57	14.93(%)
Only P <sub>h</sub> need care for ADLs	14.52	17.03	30.63	15.26	17.74(%)
Neither of P <sub>w</sub> and P <sub>h</sub> need care for ADLs	54.69	53.03	51.00	69.05	61.37(%)
P <sub>w</sub> _The presence of spouse	16.98	23.16	47.58	45.40	37.60 (%)
P <sub>h</sub> _The presence of spouse	14.64	38.50	23.05	29.62	28.72 (%)
P <sub>w</sub> _living near couples	54.91	57.82	20.99	24.27	34.56 (%)
P <sub>h</sub> _living near couples	38.22	24.72	14.56	11.12	17.76 (%)
P <sub>w</sub> _Financial situation relative to couple					
Better	27.01	26.86	38.62	33.41	32.00 (%)
Same	15.87	26.26	24.98	26.71	25.05 (%)
Worse	57.11	46.86	36.39	39.86	42.93 (%)
P <sub>h</sub> _Financial situation relative to couple					
Better	25.19	28.55	26.63	29.65	28.44 (%)
Same	24.10	28.00	31.48	26.94	27.47 (%)
Worse	50.70	43.44	41.88	43.39	44.08 (%)
<i>Husband and Wife's Personal Variables</i>					
Wife's age	55.23	54.59	52.72	51.97	53.02
Husband's age	58.99	56.97	56.95	56.81	57.13
Both wife and husband employed	36.37	54.55	45.98	56.04	51.89 (%)
Only wife employed	17.34	12.66	15.32	13.33	13.96 (%)
Only husband employed	24.80	23.42	22.75	21.72	22.60 (%)
Neither employed	21.47	9.35	15.93	8.90	11.53 (%)
Wife's siblings	2.52	2.71	3.12	3.13	2.97 (%)
Husband's siblings	2.47	2.93	2.43	2.78	2.72 (%)
Wife has never been divorced	72.28	68.49	73.79	71.01	71.04 (%)
Husband has never been divorced	64.99	65.35	69.48	61.66	63.96 (%)
Wife's health_poor or fair	13.57	17.43	6.46	11.59	12.34 (%)
Husband's health_poor or fair	19.30	18.32	20.29	12.33	15.57 (%)
<i>Household level Variables</i>					
White	95.19	93.36	96.22	86.04	90.14 (%)
Household total wealth/1000	487.61	422.34	420.06	439.68	439.09

Note: Data have been weighted.

White, 51 were African American, and 8 were other. We coded mixed-race couples according to the wife's race, in that women have typically been found to be the elderly caregivers. Total household wealth is defined as the sum of financial assets (real estate including house, vehicles and business) and non-financial assets (IRA, stock, savings, CD, and bonds) less all debt.

## VII. RESULTS

### 1. Descriptive Statistics

Based on <Table 4>, adult children played an important role in time assistance for American elderly. In 2000, 47.89 percent of the entire sample supported at least one side of their elderly parents or parents-in-law with time. Approximately, 13.16 percent of the sample transferred time to both the husband's and the wife's parents, 21.02 percent only transferred to the wife's parents, 13.71 percent only transferred to the husband's parents, and 52.10 percent transferred to neither set of parents.

<Table 4> provides insight into the relationship between time transfer decision by adult children and their bargaining power. More than half of the wives responded she and her husband made equally their major family decisions (54.86%). Also, in general, the wife perceived the husband as the decision-maker more often than themselves (35.20% compared to 9.94%). When looking according to transfer patterns, the wife seemed more likely to perceive themselves as the major decision-maker when their households transferred assistance to only their own parents. For example, 12.27% of wives who reported themselves as the decision-maker provided time transfers only to their own parents while merely 4.23% of wives who claimed decision-making authority gave time transfers only to their parents-in-law. Alternatively, the proportion of wives who report their husbands as the final decision-maker was larger in the group of households that transferred assistance to only the husband's parents than in the group that transferred to only the wife's parents

(33.32% compared to 29.80%).

Education as a measure of bargaining power proved little informative. Husband and the wife's average years of education in the sample were almost equal across the categories. Income, on the other hand, appeared to be more descriptive.<sup>8)</sup> The wife's average income was approximately \$19,220, while the husband's was about \$46,730. Comparing the average income according to each category, the husband's income was largest in households that only transferred to the husband's parents. Similarly, the wife's income was largest in households that transferred only to wife's parents; although the income differences among time transfer patterns were small.

Parents' age seemed to increase couples' assistance transfers. The average ages of the wife's parents were higher in two categories - to all parents (82.16) and only to her own parents (81.32) - than the other options. This finding implies that the older the age of the wife's parents, the more likely the couple was to transfer assistance to the options including wife's parents. The age of the husbands' parents followed the same trend.

Couples' time transfer decisions followed parents' care needs. <Table 4> demonstrates that parents who needed care were more likely to receive assistance from adult children. The average proportion of couples providing transfers shifted toward whichever parents actually needed care. Therefore, in the case of both parents requiring care, couples were most likely to provide caregiving to all parents. This general trend was consistent when only one side of parents had care needs or when no parents required care (see the bold percentages in Table 4).

Time assistance decreased when a parent had a living spouse. In the case where the wife's parents still had a spouse, couples gave more assistance to the categories that excluded the wife's parents: 47.58% only to the husband's parents and 55.40% to none of the parents, compared with 16.98% for both parents and 23.16% only to the wife's parents. For proximity of parents to children, on average, more couples lived close to the

8) In Table 4, statistics for income variables are reported at spouse-specific level while the analysis control for the total household income and the wife's share of it to reflect the effect of an individual's relative income.

wife's parents. The proportion of assistance transfer toward the wife's parents was notable when couples lived near the wife's parents, but the converse failed to hold true in relation to transfers according to the proximity of the husband's parents. Parents' financial

situation, relative to the couples, did not show a consistent assistance trend.

The wife's average age in the sample was 53.02 years old, while the husband's average age was 57.13. The ages of adult children who transferred assistance seem to be

(Table 5) Multimomial Logit : Transfer Behavior of Time Assistance by Couples with Surviving Parents on Both sides. (Outcome 'transfer to none of husband and wife's parents' is the comparison Group)

Variables (Mean/percentage)	Both P		Only P <sub>w</sub>		Only P <sub>h</sub>	
	Coef.	Robust Std.Err	Coef.	Robust Std.Err	Coef.	Robust Std.Err
<i>Decision-Making Variables</i>						
Who makes final decisions(Wife's opinion)						
Decisions made equally	-0.337	(0.400)	0.132***	(0.008)	-0.356	(0.118)
Wife makes final decisions	-1.078**	(0.430)	0.155	(0.100)	-1.250	(1.214)
<i>Bargaining Power Variables</i>						
Wife's income/total income	-0.424	(0.737)	0.434	(1.118)	-0.445	(1.323)
Total income/10,000	-0.007	(0.039)	-0.016	(0.011)	-0.026	(0.029)
Wife's education (years)	0.191***	(0.048)	0.046	(0.061)	0.350***	(0.018)
Wife's educ - Husband's educ	-0.052***	(0.018)	-0.001	(0.009)	-0.022	(0.013)
<i>Parents and Parents-in-law Variables</i>						
P <sub>w</sub> Age	0.054	(0.072)	0.035***	(0.004)	-0.053	(0.042)
P <sub>h</sub> Age	0.133***	(0.029)	0.036***	(0.002)	0.089***	(0.008)
Both P <sub>w</sub> and P <sub>h</sub> care need for ADLs	0.858	(0.759)	0.717***	(0.088)	0.121	(0.944)
Only P <sub>w</sub> care need for ADLs	0.369**	(0.667)	0.714	(0.507)	0.614	(0.483)
Only P <sub>h</sub> care need for ADLs	-0.335***	(0.022)	0.213	(0.959)	0.922***	(0.049)
P <sub>w</sub> The presence of spouse	-1.033	(0.744)	-0.852**	(0.367)	0.289***	(0.077)
P <sub>h</sub> The presence of spouse	-0.683***	(0.043)	0.501	(0.393)	-0.470***	(0.089)
P <sub>w</sub> living near couples	1.154***	(0.343)	1.610***	(0.267)	-0.524	(0.700)
P <sub>h</sub> living near couples	0.769**	(0.355)	-0.197	(0.646)	0.744	(0.553)
P <sub>w</sub> Financial situation relative to children						
Better	-0.462	(0.432)	-0.178	(0.596)	0.072	(0.193)
Same	-0.930***	(0.260)	0.081	(0.907)	0.073	(0.120)
P <sub>h</sub> Financial situation relative to children						
Better	0.030	(0.134)	-0.095	(0.328)	0.097	(0.142)
Same	-0.040	(0.596)	-0.104	(0.741)	0.712**	(0.357)
<i>Husband and Wife's Personal Variables</i>						
Wife's age	-0.021	(0.084)	0.034***	(0.000)	0.022***	(0.005)
Husband's age	-0.047	(0.038)	-0.047	(0.056)	-0.071*	(0.052)
Both wife and husband employed	-0.783***	(0.284)	0.441	(0.267)	-1.190	(0.744)
Only wife employed	-0.213***	(0.004)	0.218	(0.743)	-0.740	(0.810)
Only husband employed	0.267	(0.414)	0.625	(0.186)	-0.561***	(0.134)
Wife's siblings(#)	0.012	(0.062)	0.061	(0.120)	0.159***	(0.018)
Husband's siblings(#)	0.007	(0.014)	0.018	(0.046)	-0.039	(0.062)
Wife has never been divorced	-0.366	(0.590)	-0.216	(0.511)	-0.572**	(0.231)
Husband has never been divorced	0.412	(0.454)	0.091	(0.037)	0.871*	(0.479)
Wife's health_poor or fair	0.133	(0.791)	0.249**	(0.136)	0.753	(0.464)
Husband's health_poor or fair	-0.435	(0.355)	0.469	(0.746)	1.203***	(0.426)
<i>Household level Variables</i>						
White	0.903	(0.722)	0.725***	(0.242)	2.318***	(0.513)
Wealth	-0.002***	(0.000)	0.000	(0.002)	-0.002***	(0.000)
Constant	-15.986***	(0.848)	-8.223	(5.397)	-8.575***	(1.579)
Log pseudolikelihood	-518.87197					
Number of Households	547					

Note: Maximum likelihood estimates are weighted and adjusted for heteroscedasticity. Omitted categories include:...

\* $p < 0.10$  \*\* $p < 0.05$  \*\*\* $p < 0.01$

positively related to the ages of their parents. The average ages of the wife and the husbands' parents were the oldest in the category that both sets of parents received assistance. Also, in case that the children transferred to none of parents, children were younger than average age of whole sample as parents' age tended to be younger in same category. For employment, 51.89% of the households reported that both the husband and the wife were currently working, while 13.96% reported that only the wife was working and 22.60% reported that only the husband was working. When both the husband and the wife were employed, their proportion was the highest for the no assistance category (56.04%) and the lowest on giving assistance to both sets of parents, which is not surprising considering the negative relationship between labor market participation and time assistance. With respect to the number of siblings, husbands and wives with a greater number of siblings were less likely to report transfers toward their own parents. Adult children's average total wealth equaled \$439,089 and those transferring assistance to all parents had greater average wealth.

The health condition of adult children might be another important factor affecting their bargaining power, especially for time assistance decisions requiring extensive physical exertion. However, it is interesting to note that the proportion of both husbands and wives with fair or poor health is the largest in the category of households who transferred time only to their own parent. In the next section, we examine the extent to which the regression results support these preliminary statistics.

**2. Multinomial Logit Analysis**

We present the results from the multinomial logit model, which predicts the pattern of couples' time transfers to their parents, in <Table 5>. This table examines the effect of multiple variables on the assistance behavior of couples with surviving parents on both sides. In this analysis, the comparison group is the couples who transferred no time to their parents. The variables discussed in this section include: inter-household bargaining power approximations, parental characteristics, couples' individual characteristics, and general household information.

1) The impact of decision-making power variables

The female's response about decision-making power had important effects on couple's assistance transfer decision. <Table 5> shows that couple's transfers behavior differed dependent upon who had household authority. In comparison to households with wives who perceived husbands as the final decision-maker, households where the wife responded both spouses had equal decision-making power were significantly more likely to transfer their assistance only to the wife's parents and less likely to transfer only to the husband's parents. Also, when the wife responded that she had the final decision-making authority, the likelihood of transfers to their own parents increased while the likelihood of transfer to husband's parents decreased. Assuming that decision-making authority reveals the distribution of power within the household, and that power holders prefer providing assistance to their own parents, this result supports general bargaining power theory. That is, the relative allocation of a couple's time resources between parents and parents-in-laws seems to reflect who has a greater influence on the decision-making process.

The odds of transferring to both sets of parents decreased when the female responded that she had at least equal decision-making authority to husband. Particularly, the coefficient was statistically significant on the households that the female made the final say in household decision-making.

2) The impact of bargaining power variables

With respect to earnings power, wife's income ratio of total household income had also important implications for household time resource allocations although the coefficients unfortunately failed to provide statistical significance. As the wife's share of total household income increased, the odds of providing time assistance to only her own parents increased while the odds of assisting only her husband's parents decreased. For time assistance decisions, this study assumed that children prefer to transfer more resources toward their own parents than toward their parents-in-law. Thus, this result supports bargaining power theory in that the wife's contributions to the household's total earnings

seem to give her more power to realize her preference in decision-making process for parental assistance. The effect of total income after controlling for the wife's share of total income had a negative effect on all categories.

<Table 5> also shows that the wife's education generally has a positive sign on transfers to all parental categories: to both parents, only the husband's parents, and only the wife's parents. The effect of wife's education was statistically significant on giving assistance to parents on both sides and to parents only on the husband's side. However, as the gap between the husband and wife's education levels increased, the pattern of time transfers to parents exhibited differing signs. In cases where the wife had more education than the husband, the likelihood of providing time assistance decreased to all categories. These findings fail to show the predicted effect of a difference in educational attainment, as individuals with more education did not translate their increased bargaining power into a higher propensity to assisting their own parents. This could be because the results were based on very small differences in education between spouses in the sample (see Table 4).

### 3) The impact of parents' characteristics

As predicted from descriptive statistics, we found assistance to parents was highly responsive to parental age. In particular, the age of the wife's parents increased the odds of assisting both sides of the parents and only the wife's parents, relative to helping none of the parents. Conversely, the odds of assisting only the husband's parents decreased with the wife's parents' age. The husband's parents' age related positively to all three assistance patterns. In other words, the age of husband's parents did not affect negatively the odds of assisting to parents on the wife's side, which was different result from the effect of wife's parent's age on assisting the husband's parents.

In general, parental care need for ADLs positively influenced the odds of couples' assistance transfers. Couples were more likely to transfer their assistance to options including parents who needed care. When the wife's parents needed care for ADLs, the odds of couples' transfers to both sides of their parents or to only the wife's parents increased. Similarly, husband's

parents' care need significantly influenced the odds of couples transferring only to the husband's parents.

Also, couple's time transfers were negatively associated with currently married parents. In the case that a parent on either the wife or the husband's side had a spouse, the couples increased their likelihood of transferring time assistance toward the parent(s) on the other side. More specifically, if the wife's parent had a spouse, the only positive coefficient was on the category transferring to the husband's parents. The presence of a spouse of the husband's parents was also negatively associated with the propensity to provide assistance to the husband's parents. Adult children appeared to adjust their time transfer downward in the presence of a current spouse for either set of parents.

Parental proximity was an important predictor of the tendency of couples to provide time assistance to their elderly parents. It seemed that couples were more likely to assist proximate parents, with a strong statistical significance for the wife's parents. If the wife's parents lived near the couple, the odds of assisting the wife's parents significantly increased. With same logic, when the couple lived close by to the husband's parents, the coefficients were positive on the transfer decisions including the husband's parents: 'to both husband and wife's parents' and 'only to husband's parents'.

With respect to the variables related to the parents' financial situations, the results did not show a consistent trend. Though this result is ambiguous to interpret, it seems that parents' financial resources did not linked closely to children's time resource transfer. When the wife's parents had better financial situation than couples, the odds of assisting only the wife's parents had a negative sign. However, couples' assistance to parents on the husband's side increased when the financial status of his parents was relatively better than couples.

### 4) The impact of adult children's characteristics

Adult children's individual characteristics also affected parental time assistance. Households with older husbands were less likely to transfer time to elderly parents. However, it is noteworthy that while husband's age had negative effects on all transfer categories, wife's age still had significantly positive effects on transferring



to either side of the wife's or husband's parents. Also, wife's employment and husband's employment reduced the likelihood of assisting all parents and only the husband's parents. However, their employment surprisingly failed to reduce the likelihood of support for only the wife's parents although insignificant. These findings on age and employment are consistent with previous research on the importance of daughter in elderly care. Furthermore, this result might be evidence that confirms recent research findings that when couples had competing demands from multiple elderly parents on their limited time, they were more likely to meet the needs of parents on the wife's side than on the husband's side (Couch et al., 1999; Shuey & Hardy, 2003)).

In general, additional siblings allowed for decreases in the likelihood of time transfers to elderly parents. As the number of one of the spouse's sibling increased, couple's assistance usually focused on the parents of the other spouse. Specifically, as the number of the wife's siblings increased, the odds that the couple would transfer their time only toward the wife's parents decreased but the odds of transfer toward the husband's parents significantly increase. Although the overall coefficients were not significant, similar results were found when the number of the husband's siblings increased. These results imply that the availability of alternative assistance lightened the couple's parental assistance responsibilities.

The effect of the husband and the wife's marital history had opposing signs on the odds of assistance for all categories. The wife was less likely to support all parents, only her parents, or only her husband's parents when she was currently in her first marriage. Conversely the husband's first marriage had positive effects on all categories. These effects were statistically significant when examining assistance to only the husband's parents. While it is difficult to exactly interpret these results, the findings suggest that marriage status in relation to bargaining power may have an effect on couple's decisions about time transfer. Given that the wife is typically responsible for the majority of time assistance provided to elderly parents, these results show that women have greater bargaining power within their first marriage. Following that logic, the ability of women to reduce the likelihood of providing time transfers to

parents correlates with their increased power from staying in their first marriage. The opposite holds true for husbands; they manage to demand greater assistance, usually provided by the wife, when they are currently in their first marriage.

Health status also failed to provide a clear picture of time transfers to elderly parents. Surprisingly, couples with wives in poor health significantly increased their likelihood of assisting only the wife's parents. Equally unpredicted, couples with husband's in poor health significantly increased the odds of transferring time to only the husband's parents. These unexpected results possibly occurred because poor health may have allowed individuals to opt out of the labor market, giving them additional time to assist elderly parents.

Household characteristics factored into couples' time transfer decisions. White couples were more likely than non-white couples to assist parents. While all of the coefficients associated with white couples were positive, race had a particularly strong significant effect on the likelihood of assisting the husband's parents. Household wealth had a positive effect on the odds of providing time assistance to only the wife's parents while it was negatively related to assistance for all parents or only the husband's parents. This result could be explained in coherence with the effect of the wife's income. Assumed that the bigger household wealth implies due to contribution by wife's income or bequest, couple's time allocation decisions for parents within such households would more likely reflect time transfer toward the wife's parents with greater bargaining power of woman.

## VIII. CONCLUSION AND LIMITATIONS

This study tested whether inter-household bargaining power affected couples' time assistance decisions for parents. In particular, we examined if partners' bargaining power influenced the relative allocation of resources towards his/her own parents in situations of competing parental demands for assistance. To measure bargaining power, we used two variables from the 2000 HRS, relative income and education between spouses;

both of which are commonly found in the inter-household allocation literature. Also, this study used a spousal final decision-making power variable under the assumption that it revealed the distribution of bargaining power within the household.

The multivariate regression led to three general conclusions, the first of which weakly supports the hypothesis that the allocation of assistance to parents by couples results from a bargaining process between the husband and the wife. Household parental assistance behaviors with time varied as wife's income power in household. The increase of the wife's contribution to total income positively affected the odds of the couple providing time assistance to only her own parents, and negatively affected the odds of giving assistance to only the husband's parents. Assuming that children prefer to transfer time resources toward their own parents over their parents-in-law, this result was consistent with bargaining theory. However, the coefficients showed statistically insignificant signs. Decision-making power had different effects dependent upon who had final decision-making authority. When the wife reported that she had the decision making authority, the couple was more likely to transfer assistance only to the wife's parents and less likely to transfer only to the husband's parents. These findings implies that a common preference model does not appropriate in explaining time transfer behavior from the children's household to their parents in that their time resource allocation had different effects according to income received by individual and the spouse' decision-making power. With respect to education, the effect of the difference in educational attainment between spouses did not provide empirical support for bargaining theory. However, the variation in education between the husband and wife was fairly small within the HRS. Therefore, we should be careful when interpreting these results as evidence that individual education did not affect spousal bargaining power in time transfer decisions for elderly parents.

Second, the results from this study suggest that couples' time assistance decisions were influenced more by the severity of parents' care needs rather than their financial condition relative to their parents. In general, children had a greater likelihood of transferring to

parents (or parents-in-law) who were older, in need of care, or lived nearby. Also, if one spouse had a greater number of siblings, or if a parent currently had a spouse, the couple's assistance usually focused on the other spouse's parents. These results suggest that the availability of alternative helpers attenuated the couple's parental assistance responsibilities. Previous literature has sometimes used parents' financial condition as another determinant for measuring bargaining power, as adult children who expect large future inheritances from their parents may have higher threat points. However, the effect that the parents' relative financial state had on their adult children's time transfer decisions was inconclusive in this study.

Third, couples with parents living on both sides were more likely to respond to demand of the wife's parents in their time assistance decisions. All forms of the husband and the wife's employment had negative effects on assistance for the husband's parents, but surprisingly did not reduce the likelihood of support for the wife's parents. Also, although the husband's age had a negative effect on all categories, the wife's age still had a significantly positive effect on transfers to only her parents. These findings provide further support for previous research which has shown that adult daughters are major caregivers for their elderly parents.

Several important implications for time transfer decisions to elderly parents stem from these findings. Although previous studies have emphasized the role of gender in the provision of assistance to elderly parents, few have focused on how gender has influenced the decision-making process. This study contributes to the understanding of the female's role on assistance decisions for their parents (and parents-in-law). It provides significant targeting information for financial planners who advise families about elder care decision or market long-term care insurance. Also, the female's income power on time transfers had different effects for her own parents and for spouse' parents. These findings suggest that government programs that subsidize increased informal caregiving might have different impacts depending on the gender of the adult children. With the recent increases in the number of aging people, along with general decreases in fertility rates, some

elderly parents might not have available daughter as helper for themselves in the future. Thus, further research needs to capture how the future shortage of daughters will affect the patterns of informal family care.

While this study provided important insight for the research related to household's time transfer decisions for older Americans, it is important that a few key limitations are acknowledged. First, this study did not denote how spouse-specific contributions in actual time transfers toward elderly parents were distributed between the wife and the husband. Resolving this question may help clarify what a role the spouse's bargaining power plays in the share of assistance responsibility for elderly parents. Focusing on this topic would provide more meaningful understanding for gender-specific differences in elderly care role.

Second, the HRS includes a measure for the more "financially knowledgeable" spouse. We excluded this variable from our study of time assistance, but it might be highly correlated to bargaining power in a different decision-making context; especially concerning the monetary assistance provided to elderly parents. Thus, a clearer distinction between a threat point and financial knowledge as a measure of bargaining power is needed to further advance this research.

Finally, another important unexamined aspect of this study surrounds changes in the dynamics of inter-household decision-making power over time. When the HRS was first implemented in 1992, the study asked the decision-making question to all respondents who participated in the initial wave. Then, every two years, the HRS added information about decision-making power only for newly added respondents to the survey or those who had not previously answered this question. Thus, we needed to construct our independent decision-making variable by retrospectively going through the 1992 to 2000 survey years to see when the respondent answered the decision-making question. This study therefore assumed that decision-making power remained constant within the household over time. However, this might not be the case – it may vary over time as circumstances and events change within the household. Also, since decision-making power was self-reported and somewhat subjective, there is concern

about measurement error, especially since a significant number of couples disagreed on the primary decision-maker. Unfortunately, this problem could not be further addressed in this study due to data limitations.

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접 수 일 : 2010년 3월 2일

심사시작일 : 2010년 3월 4일

게재확정일 : 2010년 4월 16일