FINANCIAL SERVICES REVIEW

Financial Services Review 12 (2003) 293–308

Who makes the financial decisions in the households of older Americans?

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Accepted 29 September 2003

Abstract

Household decision making is at the heart of economic activity; yet very little is known about the actual process. Traditionally, economic modeling of households has treated the decision making process as equivalent to having one person make the decisions. Dissatisfaction with this approach has led to the development of models that imply that the decisions are the product of a bargaining process within the household. We analyze data from the Health and Retirement Survey (HRS) to examine financial decision making within the households of older Americans. Our results are generally consistent with the bargaining model of household behavior.

JEL classification: D13; D14

Keywords: Household decision making; Financial decision making; HRS; Ordered probit

1. Introduction

Financial planning is a complicated process designed to maximize the well being of the clients. To be better equipped to serve the needs of married clients, a financial planner should

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understand the decision process within the family unit. This paper focuses on this decision making process and empirically analyzes surveys from 4,297 married couples in the first wave of the Health and Retirement Survey (HRS) to examine the determinants of the financial decision making process within the households of older Americans. The HRS provides useful information regarding the decision making process by posing a question to each partner: "When it comes to making major family decisions, who has the final say—you or your partner?" Examples of "major family decisions" given in the question are "when to retire, where to live or how much money to spend on a major purchase."

The economic literature on household decision making provides a framework for studying how these decisions are made. One approach, termed the unitary model, is based upon an extension of the standard model of consumer behavior. This treatment focuses on the relative costs of decision making in the household. If the household is seen as a utility maximizing unit, decision making should be performed by the household member who has the lowest opportunity cost and greatest expertise. A more recent approach focuses on the possibility that the decisions made in the household are the product of a bargaining process that occurs within the household. The bargaining model implies that the partner with the greater power and financial knowledge should have more influence over the decisions.

The nature of the "who has the final say" question in the HRS allows us to test directly which of the two models is most descriptive of the intrahousehold behavior of those in the survey. Both models imply that variables that reflect decision-making ability—such as education—should be positively related to being thought to have decision-making authority. On the other hand, some variables such as the individual's wage should have a different impact in the two models. In the unitary model, the partner with the lower wage would have the lower opportunity cost and, therefore, should be the decision-maker. Wages should be negatively related to being thought to be the decision-maker. In contrast, the bargaining model associates a higher wage with greater power and therefore, that partner is more likely to be the decision-maker. Thus, wages should be positively related to being thought to make the decisions.

Our statistical results are consistent with bargaining based theory of household decision making. We find that financial decisions are thought to be more likely to be made by the male when the male is financially knowledgeable, has more education and has a higher wage. Just as consistently, the female is thought to play a bigger role as she is financially knowledgeable, is better educated and has a higher wage. These results hold true for both the males' and females' opinions whether we look at the entire sample or the subset consisting of those households where the partners agree about who makes decisions.

2. Literature review

The issue of how decisions are made within the household is of interest to a wide range of academic researchers. Because our primary focus is on the financial elements of this decision making, we concentrate on the work on this topic in economics. Economists are interested in modeling household behavior to assess the impact of various policies on household decisions and a substantial literature on the decision making process has developed within a larger body of work focusing on the economics of the family. This body of research encompasses a wide range of inquiry, beyond that of financial decision making. For example, studies examine marriage and marriage markets as well as decisions about divorce. Other work in the area focuses on fertility, investments in children, gift giving and wealth bequests both intra- and intergenerational. The seminal work in this area was done by Nobel prize-winning economist Gary Becker (1981). See Bergstrom (1995) for an excellent survey of this literature.

Our focus is intrahousehold financial decision making and how these decisions arise. The literature on this topic has developed along two distinct lines. One approach is an extension of standard consumer decision theory, while an alternative treatment of these issues applies the principles developed in bargaining theory.

2.1. Unitary model

Most conventional economic analysis of household behavior ignores these issues completely, assuming, for convenience, that there is a single utility function for a household. This treatment is generally referred to as a "unitary" model of the household. It is widely recognized that this is an unsatisfactory position, and attempts to extend consumer decision theory to incorporate the decision making process have focused on the circumstances where it is feasible to treat household decisions as being the product of a single utility function. What can be concluded from these analyses is that there will be an optimal allocation of the decision making process within the household; hence, making decisions, like other household production decisions, will lead to maximal utility.

Without going through the formal derivation of this model, the basic structure of this approach posits a household (joint) utility function as being function of consumption goods and leisure. A very nice presentation of such a model can be found in Dobbelsteen and Kooreman (1997), and our presentation borrows from their modeling of this problem. Optimal decision making involves the allocation of time by each partner to income earning work, to household production (in this case, financial decision making) and to leisure. Household production cuts into income-earning activities and, therefore, reduces the size of the bundle of consumption goods. The lower the opportunity costs in terms of income foregone, the more of that person's time should be devoted to household production activities. Thus, the allocations of time to household production activities will be related to whether a partner works (or is retired) as well as the wage level of each partner. A spouse who is not working clearly has a lower opportunity cost. Similarly, higher wages for one spouse should imply that this partner is less likely to carry out the financial decision making.

In addition, the level of decision-making abilities of a partner should affect the time allocated to this type of production; greater skills increase the likelihood of financial decision making. If the requisite skills for making decisions are relatively unequally allocated, then one person may be deemed to be the sole decision maker—a benevolent or (as it is sometimes referred to) Becker dictator. Alternatively, if there is more equality of these skills, then there may not be a single decision-maker and decisions may be made jointly.

We use two measures of decision making ability: education and the self-designation as the "financially knowledgeable" partner. If the level of education is a general proxy for decision-making skills, the higher a partner's education, the more likely that partner will be perceived as making the decision. As part of the HRS, each household must designate one respondent as the "financially knowledgeable" partner. This designation is a direct measure of the couples' perception of their relative financial decision making ability. The financially knowledgeable partner should be more likely to be perceived as the decision-maker.

The unitary model is based upon the assertion that households have a single objective function, the household treats all resources equally and the source of that income and the influence on the decisions that are made are independent of the how much each spouse contributes to that pool. Variables that reflect the source of income should not have an impact on who makes decisions.

2.2. *Bargaining model*

A growing amount of empirical research implies that this kind of pooling does not occur; rather, decisions about the allocation of household resources occur on a different basis, one that is amenable to analysis via bargaining theory. The seminal works in this area are by Nash (1950) and Rubenstein (1982). Bargaining theory has many applications, including a number of applications to marriage. For example, Manser and Brown (1980) and McElroy and Horney (1981) use a Nash bargaining framework in the analysis to determine how gains from the marriage may be distributed. More recently, Browning (1995); Browning, Bourguignon, Chiappori, and Lechene (1994); Browning and Chiappori (1998); and Lundberg, Pollak, and Wales (1997) have studied the allocation of financial resources within the family.

The bargaining approach is more appealing—plausible, perhaps—because the outcomes are the product of negotiation rather than the (even benign) dictatorial choices of one family member. In this context, the model allows household members to have different utility functions with different preferences. The decision process can be seen as either a noncooperative or a cooperative process. In the noncooperative framework, each spouse will maximize his or her utility given the behavior of the other partner. In other words, the outcome would be a Nash equilibrium. In this context, the result would be determined by each partner's wages as well as nonlabor income.

In a cooperative framework, we can recast the ideas described above in terms of their impact on the relative bargaining power possessed by each household member. In general, the work that has been done from this perspective uses the outcomes—the utility levels that would result from a noncooperative process as a default position—a "threat point." It is possible for the partners to reach a different, cooperative outcome that is the result of an agreement between the two partners. The work in this literature has moved into an examination of the process within the household, and this approach has been called a "collective model." Examples of this work include Browning and Chiappori (1998) and Browning and Lechene (2001). A useful survey that places the collective approach in context is found in Vermeulen (2002).

In the cooperative framework, the possible outcomes would be the set of Pareto Optimal allocations. The most familiar approach to this is to use the Nash bargaining solution (Nash, 1950). The amount of bargaining power—and thus, the threat point—arises from how much income the family member brings into the marriage and their decision-making skills (in the form of financial knowledgeability, their education, and so on).

2.3. Implications of the unitary model versus the bargaining model

While the expected impact of the partners' decision-making ability in the bargaining model is the same as in the unitary model, there are clear differences in the implications of the two models with respect to the relationship between each partner's wage, nonlabor income and retirement status and the influence that they have on financial decision making.

In the unitary model, higher wages indicate higher opportunity cost and so would reduce the likelihood that a partner would be the decision-maker. In the bargaining model, higher wages would imply just the opposite relationship—higher wages increase that partner's bargaining power and the influence that they would have on the decisions. In the unitary model, higher nonlabor income to one partner should have no effect since all income is pooled and allocated based on a household utility function. In the bargaining model, an increase in income attributed to one partner would increase that partner's power, and thus, increase the chance that that partner is perceived as the decision maker.

The impact of being retired is less clear-cut than the impact of wages on the perception of decision-making authority. In the unitary model, it was argued that being retired might lower the opportunity cost of spending time on financial decisions and, thus, increase the chances of being thought of as the decision make. In the bargaining model, if being employed and earning income is seen as a source of power in the household, being retired could be interpreted as having less power. If being retired means having less power then retirement should decrease the chance of being thought the decision-maker.

3. Data and methodology

The data for this study is the first wave of the HRS. The National Institute on Aging (NIA) is the sponsoring organization for the HRS and the data are collected by the Institute for Social Research at the University of Michigan. More recently, the Rand Institute has reorganized this data to make cross-year analysis more accessible. Our sample was taken from this reorganization of the survey data. Juster and Suzman (1995) provide a useful introduction to the HRS. Current information about the data collection process and the data itself can be downloaded from the Institute for Social Research Web site: http://www.umich.edu/~hrswww/.

The survey was administered in 1992 and gathers 1991 data. To be "age-eligible" for the survey, an individual had to be between the age of 51 and 61 in 1991. Partners of age-eligible respondents were surveyed, so some younger and older individuals are also included in the data. The questions in the survey include a wide range of information including income, wealth, employment, job history, demographic background, health status, and familial relationships.

Some of the data such as the value of assets and liabilities, income from investments and housing information is collected on a household basis while other data such as demographic

Table 1
Who makes decisions? Male vs. female responses

Male Opinions	Female Opinions			
Who makes major decisions?	Male	Equally	Female	Totals
Male	**766 (17.8%)**	387 (9.0%)	153 (3.6%)	1306 (30.4%)
Equally	485 (11.3%)	**1723 (40.1%)**	277 (6.4%)	2485 (57.8%)
Female	97 (2.2%)	166 (3.9%)	**243 (5.6%)**	506 (11.7%)
Totals	1348 (31.4%)	2276 (53.0%)	673 (15.7%)	4297 (100%)

Note: Percentages do not total to 100% because of rounding.

and employment information is collected on an individual basis. As part of employment information, earnings and hours worked are collected on an individual basis. Variables like total household income combine information for the household (income from investments) with information for the partners (earnings and pension income).

Many individuals in the sample are not working and, therefore, do not have an observable wage. To prevent exclusion of these individuals from the sample (and perhaps imparting a bias in the selection of observations), we use the Heckman approach to impute a wage for the members of the sample who do not have a value for the wage measure. Separate estimates for males and females are carried out for the wage equation. The procedure involves first estimating a probit model for the full set of males (females) as to whether they are working and thus have an observed wage, and then the second stage estimates a wage equation for the set of individuals who do have an observable wage. This approach controls for the presence of selection bias.

While we do carry out a number of estimates that examine individual responses, our primary unit of analysis is the household. Of the 10,223 partnered individuals in the survey, 9,632 answered the questions about decision making. After excluding those individuals whose partner does not respond to the "who makes decisions" question, we have 8,594 individuals and 4,297 households in our final sample.

Each partner can respond to the "who makes decisions" item in one of three ways: "I make the decision," "we equally make the decision," or "my partner makes the decision." In Table 1, the 4,297 responses represent both partners' answers to the questions and reflect only the respondent's perception. The responses are cross- tabulated by a partner's gender, so we have a measure of the male's opinion (MOPIN) and female's opinion (FOPIN). The cells in bold (upper-left to lower-right diagonal) are the households where the partners agreed. Either one partner said, "I make the decision" and the other partner said, "My partner makes the decision" or both said "we equally make the decision." Interestingly, only 63.5% of the households agree. (The large number of households where the partners disagreed on who make the decision is intriguing. We attempted to explain whether partners would agree based on a variety of demographic and socioeconomic variables but found that few were significant.)

The fact that in 36.5% of the households the partners do not agree about who makes decisions leads us to define a third "opinion" variable. JOPIN is based on the joint opinion of the partners in the subset of households where the partners agree. Each of these variables can take on one of three possible values: zero (0) if the response is that the male makes the decision, one (1) if decisions are joint, and two (2) if the female makes the decisions. Thus, if MOPIN takes on a value of 2, the male partner responds that the female makes the financial decisions. If JOPIN takes on a value of 1, both partners agree that the decisions are jointly made.

Our choice of explanatory variables to include in our empirical model is based on our discussion of the unitary and bargaining models. In both the unitary and bargaining models, the financial decision making ability of each of the partners, the wages of the partners and their retirement status are expected to be important. The source of household income should be irrelevant in the unitary model but important in determining relative power in the bargaining model. In line with Browning and Lechene (2001) and Dobbelsteen and Kooreman (1997), we have also included demographic variables to reflect possible differences in the household's dynamics. Complete definitions and descriptive statistics for all of the variables that we use are presented in Table 2.

The decision-making ability of each of the partners is proxied by that partner's level of education measured in years as well as the couple's designation of one of them as the financially knowledgeable partner. MED/FED is the male/female level of educational attainment in years. Both of the models would imply that as the male's (female's) educational attainment increases, the chance of the male (female) being thought to be the decision maker increases. MKNOW is a dummy variable that takes on a value of one if the male is the financially knowledgeable partner and zero otherwise. If MKNOW is one so that the male is the financially knowledgeable partner, it is more likely that the male is perceived as the decision-maker.

Several variables should allow us to discriminate between the two models. Turning first to the impact of the individual's wage, the unitary model implies that there should be a negative relationship between decision making and the individual's wage (reflecting the higher opportunity costs); the bargaining approach implies just the opposite. Retirement status may also help us to discriminate between the two models. The unitary model would imply that being retired should increase the chance that the retired partner is the decision-maker while the bargaining model would imply that being retired would decrease the chance of being thought the decision-maker.

Finally, the HRS reports male and female pension income (MPENINC and FPENINC) and male and female earnings so that the source of part of household income is observable; however, the wage rate and earnings are so closely related that we did not include earnings in the equation. In the unitary model, wages are a better measure of the opportunity cost of spending time in financial decision making than annual earnings. In the bargaining model, the wage rate is a reasonable measure of earning power and, therefore, the power in the household. Male and female pension income is less closely related to wages and both are included in the equation. As pension income increases, the recipient's power in the household should increase; thus, an increase in female (male) pension income should be positively related to the female (male) being perceived as the decision maker.

Race, age, health status, whether the partners have ever been divorced, the number of children, total household income, and nonlabor income have been used along with education, wages, pension income, and working-status to reflect potential differences in households.

TABLE 2
Variable Definitions and Descriptive Statistics

Variable Name#	Variable Definition	Mean (Standard Deviation)
WHITE	Binary variable that takes on a value of one if the respondent household is white and zero otherwise.	.775 (.417)
NUMCHILD	This is the number of children in the household.	3.52 (2.11)
MHLTH/ FHLTH	A binary variable based upon the coded response to the question, "Would you say that your health is excellent, very good, good, fair or poor?" If answer is Excellent, Very good or Good = 1; If answer is Fair or Poor = 0	Male: .797 (.402) Female: .812 (.382)
MAGE/FAGE	Number of years of age.	Male: 57.1 (5.43) Female: 53.0 (5.91)
MED/FED	Educational attainment, in years.	Male: 12.1 (3.49) Female: 12.1 (2.88)
MDIV/FDIV	Binary variable indicating whether male (female) had ever been divorced. Value is set to one if individual had been divorced and zero otherwise.	Male: .193 (.394) Female: .268 (.443)
MRET/FRET	A binary variable coded one if the male (female) is retired and zero if he/she is not.	Male: .209 (.406) Female: .119 (.324)
HHINC	Total household income from all sources including earned income, investment income, pensions and transfers payments. Statistical estimates use log form of variable.	$53,350 (50764)
NLINC	Non-labor income for household excludes earned income and pensions. Statistical estimates use log form of variable.	9851 ($29452)
MWAGE/ FWAGE	Hourly wage for male (female). Means and standard deviation based on nonmissing wage imputations in HRS sample. Nonmissing wages for males based on sample of n = 3922 observations; for females, based upon n = 3122 observations.* Statistical estimate uses log form of variable.	Male: $19.44 ($395.0) Female: $7.03 ($13.03)
MPENINC/ FPENINC	Annual pension income for males (females). This variable is measured in thousands of dollars.	Male: $2.262 ($6.763) Female: $0.291 ($2.237)
MOPIN-Male /FOPIN-Female	Coded response to the question, "When it comes to making major family decisions, who has the final say – you or your partner?" Male = 0; Equally = 1; Female = 2	Males: .8138 (.622) Females: .8429 (.668)
MKNOW	A binary variable coded one if the male is the financially knowledgeable partner and zero if he is not.	.654 (.476)
AGREE	Binary variable that takes on the value of one if the husband and wife agree concerning who makes the decisions and zero otherwise.	.636 (.481)

#M in variable name indicates value for males, F indicates value for females.
*[note: the standard deviation for males is extraordinarily high due to a small number of very high hourly wage values for these individuals. All of the estimates include these observations but omission of these observations from the estimates has virtually no effect on the results, so these observations were not excluded from the analysis.]

The respondent's race, WHITE, is coded as one if white and zero otherwise. Male and female age is included (MAGE, FAGE) and is simply the age in years for the male (female). Health condition is assessed using a binary variable based upon a self-reported categorical scale of health status. In this case, the variable is set equal to one if the person's health is good or excellent, and is zero otherwise, for both males (MHLTH) and females (FHLTH). In addition, some other factors may affect the decision process. One is the number of children in the household (NUMCHILD) and another is whether the male (female) had ever been divorced (MDIV, FDIV, respectively). Total household income along with nonlabor income for the household are included. Nonlabor income as used here excludes both earnings and pension income but includes income from investments.

4. Empirical estimates of decision-making

4.1. Ordered probit model

To model the factors that affect the opinions of who makes financial decisions (MOPIN/FOPIN/JOPIN), we use an ordered probit technique. [See Zavoina and McElvey (1975) for a discussion of ordered probit.] The opinion variables take on a value of zero if the respondent says the male makes the decision, one if the respondent indicates the decisions are joint and two if the respondent says the female makes the decision. The responses are categorical and the values have meaning in terms of the amount of decision making that is done by the female. Thus, a positive coefficient in the model would indicate that an increase in the explanatory variable would increase the probability that the respondent has stated the female makes decisions.

Although the significance and the direction of the impact of the variables can be tested in the probit equation, the impact of the individual variables in the ordered probit model cannot be measured by simply looking at the size of the independent variables. The marginal effects are changes in the probability of being in each group for a change in an independent variable with other independent variables included in the model at their mean. The sum of those changes is equal to zero—an increase in the probability of being in one group must imply a decrease in the probability of being in another group.

4.2. Statistical results

The estimated coefficients along with the asymptotic t-statistics from the ordered probit model are found in Table 3. In this table, we show three sets of results; first, the decision variable based upon the male's opinion (MOPIN), second, the estimates based upon the female's opinion (FOPIN), and then estimates on a subset of the sample, in the case where both partners agree as to the decision maker in the household (JOPIN). The signs and asymptotic t-statistics in the equations allow us to identify the direction of the effects and determine which variables are significant but the marginal effects indicate the magnitude of the impact of each variable on the probability of being in a specific category or group. These marginal effects are presented in Table 4.

The first two columns of Table 3 contain the expected signs for the variables reflecting decision making ability, wages and retirement status in the unitary and bargaining models.

Table 3
Ordered Probit Estimates of Decision Making

	Expected Sign in the Unitary Model	Expected Sign in the Bargaining Model	MOPIN	FOPIN	JOPIN*
Constant			.2115 (0.832)	.9089 (3.621)	.1949 (0.601)
MED	-	-	-.0239 (3.510)***	-.0157 (2.314)**	-.0237 (2.745)***
FED	+	+	.0322 (3.882)***	.0223 (2.595)***	.0422 (3.878)***
MKNOW	-	-	-.4249 (10.116)***	-.4575 (10.944)***	-.5496 (9.941)***
LOGMWAGE	+	-	-.0549 (2.100)**	-.0774 (3.044)***	-.1090 (3.252)***
LOGFWAGE	-	+	.0748 (1.694)*	.1599 (3.592)***	.2188 (3.640)***
MRET	-	+	.1541 (2.769)***	.1149 (2.103)**	.1995 (2.809)***
FRET	+	-	.0369 (0.598)	-.0324 (0.535)	.0206 (0.269)
MPENINC	Not important	-	-.2*E-05 (0.590)	-.2*E-05 (0.739)	-.2*E-05 (0.434)
FPENINC	Not important	+	.4*E-05 (0.429)	.00001 (1.216)	.00001 (0.824)
LOGHHINC			.0004 (1.826)*	.0005 (1.731)*	.0005 (1.407)
LOGNLINC			-.00008 (2.092)**	-.0001 (3.188)***	-.0002 (3.451)***
FDIV			.0329 (0.703)	.1226 (2.685)***	.0945 (1.588)
MDIV			.0354 (0.611)	.0131 (0.229)	.0789 (1.050)
NUMCHILD			-.0004 (0.046)	-.0145 (1.689)*	-.0178 (1.597)
WHITE			.1179 (2.603)***	-.1571 (3.487)***	.0383 (0.637)
MAGE			.0027 (0.681)	-.0032 (0.834)	.0014 (0.275)
FAGE			.0032 (0.914)	-.0008 (0.248)	.0042 (0.919)
MHLTH			-.0154 (0.343)	-.0067 (0.149)	-.0402 (0.695)
FHLTH			-.0032 (0.590)	.0012 (0.025)	-.0046 (0.076)
Mu			1.757 (59.630)	1.556 (57.071)	2.050 (48.020)
Chi Squared			215.03	268.42	234.09
No. observations			4297	4297	2732

*These are estimates of who makes important financial decisions when both partners agree as to which partner it is. (Asymptotic t-statistics in parentheses; ***; **; * indicate statistical significance at the 1%, 5% and 10% levels, respectively.)

Briefly, in both of the models, higher levels of female (male) education would mean that it is more (less) likely that the female will make decisions so the expected sign is positive (negative). If the male is financially knowledgeable, he is more likely to be seen as the decision-maker and the expected sign is negative.

The expected wage, retirement status and pension income coefficients are different for the two models. In the unitary model, a higher wage for the female (male) decreases the chance

Table 4
Marginal Effects in the Decision Estimates

Panel A. MOPIN Estimates

Variable	MOPIN = 0 Male	MOPIN=1 Equally	MOPIN=2 Female
Constant	-0.0733	0.0335	0.0398
MED	0.0083	-0.0038	-0.0045
FED	-0.0112	0.0051	0.0061
MKNOW	0.1472	-0.0673	-0.0799
LOGMWAGE	0.0190	-0.0087	-0.0103
LOGFWAGE	-0.0259	0.0119	0.0141
MRET	-0.0534	0.0244	0.0290
FRET	-0.0128	0.0058	0.0069
MPENINC	0.0000	0.0000	0.0000
FPENINC	0.0000	0.0000	0.0000
LOGHHINC	-0.0001	0.0001	0.0001
LOGNLINC	0.0000	0.0000	0.0000
FDIV	-0.0114	0.0052	0.0062
MDIV	-0.0123	0.0056	0.0067
NUMCHILD	0.0001	-0.0001	-0.0001
WHITE	-0.0409	0.0187	0.0222
MAGE	-0.0009	0.0004	0.0005
FAGE	-0.0011	0.0005	0.0006
MHLTH	0.0053	-0.0024	-0.0029
FHLTH	0.0011	-0.0005	-0.0006

Panel B. FOPIN Estimates

Variable	FOPIN = 0 Male	FOPIN=1 Equally	FOPIN=2 Female
Constant	-0.3189	0.1098	0.2091
MED	0.0055	-0.0019	-0.0036
FED	-0.0078	0.0027	0.0051
MKNOW	0.1605	-0.0553	-0.1052
LOGMWAGE	0.0272	-0.0093	-0.0178
LOGFWAGE	-0.0561	0.0193	0.0368
MRET	-0.0403	0.0139	0.0264
FRET	0.0114	-0.0039	-0.0075
MPENINC	0.0000	0.0000	0.0000
FPENINC	0.0000	0.0000	0.0000
LOGHHINC	-0.0002	0.0001	0.0001
LOGNLINC	0.0000	0.0000	0.0000
FDIV	-0.0430	0.0148	0.0282
MDIV	-0.0046	0.0016	0.0030
NUMCHILD	0.0051	-0.0017	-0.0033
WHITE	0.0551	-0.0190	-0.0361
MAGE	0.0011	-0.0004	-0.0007
FAGE	0.0003	-0.0001	-0.0002
MHLTH	0.0024	-0.0008	-0.0015
FHLTH	-0.0004	0.0001	0.0003

Panel C. JOPIN Estimates

Variable	JOPIN = 0 Male	JOPIN=1 Equally	JOPIN=2 Female
Constant	-0.0642	0.0363	0.0279
MED	0.0078	-0.0044	-0.0034
FED	-0.0139	0.0079	0.0060
MKNOW	0.1811	-0.1024	-0.0787
LOGMWAGE	0.0359	-0.0203	-0.0156
LOGFWAGE	-0.0721	0.0408	0.0313
MRET	-0.0657	0.0372	0.0286
FRET	-0.0068	0.0038	0.0029
MPENINC	0.0000	0.0000	0.0000
FPENINC	0.0000	0.0000	0.0000
LOGHHINC	-0.0002	0.0001	0.0001
LOGNLINC	0.0001	0.0000	0.0000
FDIV	-0.0311	0.0176	0.0135
MDIV	-0.0260	0.0147	0.0113
NUMCHILD	0.0059	-0.0033	-0.0025
WHITE	-0.0126	0.0071	0.0055
MAGE	-0.0005	0.0003	0.0002
FAGE	-0.0014	0.0008	0.0006
MHLTH	0.0132	-0.0075	-0.0058
FHLTH	0.0015	-0.0009	-0.0007

that she (he) will be the decision maker so the expected sign is negative (positive). In the bargaining model, higher female (male) wages increase the female's (male's) power and should, therefore, increase the probability that she (he) is perceived as the decision-maker so the coefficient should be positive (negative). In the unitary model, if the male (female) is retired, he (she) should have more time available so he (she) is more likely to be the decision maker and the expected sign is negative (positive). In the bargaining model, if the male (female) is retired, this may indicate a loss in power and, therefore, decrease the probability that he (she) is perceived as the decision maker so the coefficient should be positive (negative). Information on the source of income, such as from pension income, should not be relevant in the case of the unitary model, but the coefficient should be negative (positive) for the male's (female's) pension income if power is related to the income brought to the household.

As can be seen in Table 3, the results for all three versions of the model are generally consistent—particularly so for the variables that arise specifically from the theoretical discussion. We will discuss the variables associated with the two models first and then look at other socioeconomic and demographic variables. Because the results are consistent, for ease of exposition we will focus on the male's opinion (MOPIN) and point out any differences in the other equations.

The variables reflecting decision making ability are significant and have the expected sign in all three equations. If the male has more education, he is more likely to be identified as the decision-maker by both the male and female. Similarly for the female, as her education increases she is more likely to be identified as the decision-maker. If the male is identified as the financially knowledgeable partner, he is more likely to be identified as the decision-maker.

The coefficients of the wage variables are consistent with the bargaining model rather than the unitary model. As the female's wage increases, she is more likely to be identified as the decision-maker and as the male's wage increases, he is more likely to be identified as the decision-maker. The coefficients of the male's retirement status variables are consistent with the bargaining model. If the male is retired, he is less likely to be identified as the decision-maker. The female's retirement status, on the other hand, is never significant.

The remaining variable that could discriminate between the two models, the pension income associated with each partner, carries signs that are consistent with the bargaining model, but the coefficients are not statistically significant in any of the models. The fact that it was never significant is consistent with the predictions of the unitary model; however, the insignificance of the male and female pension income variables could be related to the relatively small percentage of the sample that is retired (21% of males and 12% of females).

The marginal effects in Table 4 reinforce the discussion of the probit coefficients. For example, MKNOW (the male being the financially knowledgeable partner) increases the probability that the male will be the decision-maker but decreases the probabilities of joint or female decision making. Based upon the values shown there, for the estimate based on the male's opinion, when the male is financially knowledgeable it increases the "male decides" category by almost 15%. Similarly, when the estimate of the female's opinion is considered, there is a greater than 16% increase in the "male decides" category resulting when the male is the financially knowledgeable partner, and it is even stronger in the estimates where they agree (18%). Another measure that shows the impact of relative bargaining power is outside income that a partner brings into the household. Neither the male nor the female pension income measures are statistically significant in any specification of the model, and this carries through to the marginal effects, where the values for both male and female pension income are effectively zero.

In addition to the variables used to discriminate between the two models, variables representing household and individual characteristics are included in the model. Total household income and the household's nonlabor income affect the probability of being perceived as the decision-maker differently. Note that these income amounts are measured at the household level, rather than an individual level. Higher overall household income is associated with an increased role for the female in the decision making, and this is consistent across all of the estimates, though the coefficient on this variable is only weakly significant in any case. Nonlabor income seems to have just the opposite effect, and this variable is strongly significant. Higher levels of nonlabor income are related to an increased role of the male in the decision making process, and again, this result holds across all of the estimates.

Other household characteristics play varying roles in affecting the judgment about who makes decisions. Age, for both partners, is not statistically significant. Neither is the health status of either partner. Divorce has an asymmetric impact and is not consistent across the estimates. Divorce of either partner is not statistically significant in the male estimates, but whether the female has been previously divorced is strongly related to an increase in the role of the female in the decision making process for the estimates of females' opinions. It is also positively related to an increased role for the female for the estimates where the partners agree, though it is not statistically significant at conventional levels in these results. The presence of children in the household also has an asymmetric impact. The number of children is not statistically significant in the estimates for males, but for the female estimates and for the estimates where the partners agree, more children increase the impact of the male on the decision making process, though once again, the coefficients are only weakly significant at best. From the standpoint of bargaining power, it may be that children are seen as weakening the standing of the female in the household. Perhaps the most variance across the estimates relates to the race of the household. For the estimates of the male's opinion, being white is associated with a perception that the female has a greater role in the decision making process, while just the opposite result is seen in the estimates for females, yet in the estimates where the partners agree, race is not statistically significant.

While the focus of our paper is on the test of the unitary and bargaining theories of household decision-making, our results have some interesting implications concerning the need for financial education for women. The results are clear that higher levels of education or expertise and higher wages lead to a stronger perception of being the decision-maker. On average, women are less likely to be thought the financially knowledgeable partner and have lower wages so they do not tend to view themselves or to be viewed by their partner as the financial decision-maker. Yet, with the current high divorce rates and the longer life expectancy of women, many married women are likely to find themselves making financial decisions on their own. Women need to be educated to be able to make good financial decisions. The fact that the female's probability of thinking that she is the financial decision maker increases for divorced women seems to indicate that the experience of becoming single through divorce leads to a change in the female's perception of how financial decisions are made in the household.

5. Summary and conclusions

A significant amount of economic theory assumes that there is a single utility function underlying the choices made by a household. Certainly this makes the problem tractable, but if there is not a single decision-maker in the household and the decisions are the product of a different process, conclusions about behavior can be erroneous. The economics literature has addressed this by beginning to incorporate a bargaining process into the analysis of these issues, yielding a more realistic depiction of the procedure by which decisions are produced by a family.

This study has attempted to focus on these questions through an analysis of the Health and Retirement Survey (HRS). The HRS is useful for this purpose because the survey specifically asks questions of respondents about the decision making process. Based upon the responses to these questions, we analyze a sample of households, and statistically address what set of factors are important in determining who makes significant household decisions, based upon the opinions of the household members. Our results in these estimates are largely consistent with the implications of household bargaining models.

Individual partner's opinions about who makes the decisions are related to the bargaining power that this partner brings into the relationship. Our measures of bargaining power include the person's wage and the partner's wage, education of each partner and which partner is believed to be financially knowledgeable. The results show that the belief that one makes the decision is significantly related to the variables that indicate bargaining power within the household, and are consistent across the estimates for both males and females. An additional measure that may reflect bargaining power is retirement status, and in particular, for the male in the household. The findings show that when the male is retired, it increases the role for the female in the decision making process, a result that is present for estimates based on the opinions of both males and female. Income variables (measured at the household level) work in an interesting way—as overall income goes up, females are more likely to have a greater role in decisions, as nonlabor income rises, just the opposite is the case. This again holds for the estimates for the opinions of both partners.

This work represents a useful effort at understanding the decision making process. Although our evidence cannot be considered conclusive, there is consistency with the implications of the bargaining models. In future research, we need to focus on trying to better understand the bargaining process—what determines agreement between the partners—to be able to make more definitive statements. It is also important to try to assess what effect this process has on the actions of these households. For example, do these factors systematically affect the type of assets accumulated by these households, are they more successful in their choices and how does the outcome of this process affect the overall well being of the household. These questions can be addressed in future research.

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