

THE EFFECT OF GENDER AND MARITAL STATUS ON FINANCIAL RISK TOLERANCE

Rui Yao, Ph.D.
South Dakota State University

Sherman D. Hanna, Ph.D.
Ohio State University

ABSTRACT

This article focuses on the effect of gender and marital status on financial risk tolerance. Most previous studies have compared single males to single females, but this study also differentiates married males from married females. Risk tolerance is highest for single males, followed by married males, then unmarried females, then married females.

Introduction

Bajtelsmit and Bernasek (1996) asked the question, "Why do women invest differently than men?" They presented evidence that women tend to have lower risk tolerance, and therefore lower return portfolios than men in the long run. However, Ho, Milevsky, and Robinson (1994) concluded that women should have riskier portfolios than men because they have longer life expectancies, assuming identical preferences. Most studies analyzing financial risk tolerance by gender, either inferring it based on portfolio allocations, or using some direct measure of attitude toward financial risk, have found that women are less risk tolerant than men, even though objectively they should tolerate a riskier portfolio.

Risk tolerance is important because it affects a household's portfolio decisions, which are crucial in achieving long term financial goals. If risk tolerance is based on a rational, informed evaluation, then the portfolio will be appropriate; otherwise, inappropriate levels of risk tolerance might lead to problems. For instance, households with very low risk tolerance in their long term investing may have difficulty in achieving an adequate retirement and reaching other goals. Households with very low risk tolerance may experience opportunity losses from not investing in stocks. Households with extremely

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high risk tolerance in short term investing may incur unnecessary losses in wealth. Previous research has shown how households form attitudes toward risk and what factors impact their risk-tolerance level. Demographic characteristics, economic characteristics, and expectations/opinions were found to have significant effects on financial risk tolerance.

Background

Researchers have been measuring risk tolerance for a number of years. There are two major methods to measure risk tolerance – assessing risky behavior and using surveys to ask questions related to risk tolerance (Hanna, Gutter, & Fan, 2001).

Horvath and Zuckerman (1993) suggested that one's biological, demographic and socioeconomic characteristics, together with his/her psychological makeup affects one's risk tolerance. Malkiel (1996) suggested that an individual's risk tolerance is related to his/her household situation, lifecycle stage, and subjective factors. Mitra (1995) discussed factors that were related to individuals' risk tolerance, which included years until retirement, knowledge, sophistication, income, and net worth.

Previous research is consistent in concluding that males are more risk tolerant than females (e.g., Guiso, Jappelli, & Terlizzese, 1996; Sung & Hanna, 1996; Bajtelsmit & VanDerhei, 1997; Powell & Ansic, 1997; Jianakoplos & Bernasek, 1998; Hariharan, Chapman, & Domian 2000; Hartog, Ferrer-I-Carbonell, & Jonker, 2002). Bajtelsmit, Bernasek and Jianakoplos (1999) used the 1989 SCF and studied gender differences in defined contribution pension decisions. They concluded that holding everything else constant women were less risk tolerant than men in the portfolio allocation in their defined contribution pension. Using the 1992 Health and Retirement Survey (HRS) data, Hariharan et al. (2000) investigated the behavior of investors nearing retirement. By studying the proportion of financial assets invested in stocks and bonds, they found that women were more likely to invest in risk-free securities than men, which indicated that women were less risk tolerant than men. Embrey and Fox (1997) investigated the gender difference in investment decision-making for a sample of single men and single women in the 1995 SCF dataset. By using Tobit analysis, the authors found that men were more risk tolerant than women in that they invest in riskier assets.

Sundén and Surette (1998) used the 1992 and 1995 Survey of Consumer Finances datasets and studied gender differences in asset allocation in retirement plans (mostly invested in stocks, mostly invested in bonds, and whether have a Defined Contribution retirement plan). They concluded that gender interacts with marital status and has an effect on households' investment choices. They found that compared with single men, single women and married men were less likely to allocate their assets to "mostly stocks", which indicates more financial risk.

Previous research results are not consistent on whether married couples are more or less risk tolerant than singles. Cohn, Lewellen, Lease, and Schlarbaum (1975) found that married individuals allocate a smaller proportion of wealth to risky assets. Guiso et al. (1996), Gutter, Fox, and Montalto (1999), and Hartog, et al. (2002) found married individuals were less risk tolerant than singles. Hinz, McCarthy, and Turner (1997) studied participants' portfolio investment decisions in the federal government's Thrift Savings Plan (TSP) and found that individuals who were married invested less aggressively than single individuals, therefore, married couples were less risk tolerant. However, Gutter (2000) found that unmarried males have a higher ratio of risky assets to net worth and unmarried females have a lower ratio than married couples. Sung and Hanna (1996) found that single females have lower risk tolerance than couples, and couples have lower risk tolerance than single males.

Although previous research results show that women are less risk tolerant than men and some suggest married individuals are less risk tolerant than unmarried ones, according to a rational prescriptive economic model, women and married people should tolerate higher financial risk in order to accumulate enough resource to fund their longer lives. Based on the rational model, three hypotheses are formed.

Hypotheses: Effects of Gender and Marital Status

If people behave according to a rational economic model, and if there are no systematic differences in risk aversion between men and women, then women should tolerate more risk in investment portfolios because of their longer life expectancies (Ho et al., 1994). Similarly, married couples have longer life expectancies than single people of the same age, so married couples should tolerate more investment risk than single people.

1. There are no differences in risk tolerance between married men and married women (assuming the respondent for couple households answers based on the preferences of both partners.)¹
2. Unmarried female respondents are more risk tolerant than unmarried male respondents;
3. Married respondents are more risk tolerant than unmarried respondents.

¹ Although the SCF risk-tolerance question implies a joint risk tolerance between the husband and wife, with the wording specifying "financial risk that you and your (spouse/partner) are willing to take...", married females may be different from married males based on gender differences. Therefore, in this study, we separated married males from married females in order to examine whether the gender difference on risk tolerance exist in married couples.

Empirical Methodology

Data

The dataset used in this paper was the combination of the 1983, 1989, 1992, 1995, 1998, and 2001 SCF datasets. The SCF is a triennial survey sponsored by the Federal Reserve Board with the cooperation of the Department of Treasury. This survey provides detailed information on households' financial situation, especially information from their balance sheet. This survey also has information about households' demographic characteristics, their expectations and attitudes. The 1986 SCF did not ask the risk-tolerance question and was not included in this study. Same sex couples and same sex partners that live together are excluded from this research because such households are not identified in the 1983 datasets and there is only three such household in 1989. The total sample size used in the analyses was 24,047.

Variables

Dependent Variables. Three dependent variables were developed from the risk-tolerance question in the Surveys of Consumer Finances (SCF), which is based on a survey question related to risk tolerance. It is a measure of the households' risk perception/attitude. The question had four choices: substantial, above average, average, and no financial risk tolerance. In the codebook for the 2001 Survey of Consumer Finances (Kennickell, 2003), the risk-tolerance question is:

Which of the statements on this page comes closest to the amount of financial risk that you and your (spouse/partner) are willing to take when you save or make investments?

1. *take substantial financial risks expecting to earn substantial returns
2. *take above average financial risks expecting to earn above average returns
3. *take average financial risks expecting to earn average returns
4. *not willing to take any financial risks.

In this study, three dependent variables were created from the above responses: SUBSTANTIAL RISK; HIGH RISK (substantial together with above average financial risk); and SOME RISK (substantial risk, above average risk and average risk). The Appendix shows the definition of each dependent variable.

The financial risk-tolerance variable used in the Surveys of Consumer Finances (SCF) is based on a relatively simple question, and has been asked in the large national SCF surveys sponsored by the Federal Reserve

Board since 1983. Grable and Lytton (2001) and Hanna et al. (2001) discussed some of the limitations of the measure, which is that the measure is not necessarily closely linked to the economic concept of risk aversion, but may be considered an attitude. Grable and Lytton (2001) suggested that this measure "might reflect investment choice, attitudes or experience." The SCF risk-tolerance measure may be a useful indicator of intentions in investing, and may be superior to measures of risk tolerance based on actual portfolio allocation, since many households have no investment assets. For all of the surveys except 1983², the risk-tolerance question included only the four choices described above.

Independent Variables. The independent variables included demographic characteristics, economic characteristics, and opinions/attitudes, all of which are categorical variables³. The analysis focuses on the information provided by the interviewee related to the household's willingness to take financial risk, the variables for age, education, and gender captures the characteristics of the individual who actually participated in the interview.

Demographic variables included: age, education, race/ethnicity, household type (married/partnered males, married/partnered females, unmarried females, and unmarried males), and presence of related child(ren). In multivariate analyses, married couples/partners male respondents served as the reference category.

Economic variables included: whether monetary assets exceed three months' income, level of non-financial assets, level of income, employment status, and whether homeowner or renter. Household incomes and amount of non-financial assets were adjusted for inflation by multiplying the ratio of the Consumer Price Index in 2000 to the Consumer Price Index in the income year.

Opinion/attitude variables included: whether expect to receive substantial inheritance or transfer of assets in the future and self-perceived health condition.

Statistical Methods

In this study, a cross-tabulation of risk-tolerance levels and gender/marital status was conducted to examine the percent distribution of risk tolerance across different gender/marital status categories. One-tailed z-tests were conducted to investigate whether the differences between married and

² The 1983 SCF also included NA (66 cases) and DK (do not know, 28 cases). Most of the responses counted as NA in the 1983 SCF were probably based on failure to answer the question; therefore we assumed that those respondents would probably not be willing to take any risk in investments. There is little change in the results when these cases are left out of the analyses.

³ See Appendix for a more detailed description of the independent variables.

unmarried and males and females were significant. A p-value of .05 or lower was considered as significant.

A cumulative logit model was used in this analysis. This model takes the natural order of a dependent variable into account by examining the choices of some risk versus no risk, high risk versus average and lower risk, and substantial risk versus lower levels of risk. The model also allows any one of the independent variables to have different effects on the different levels of risk choice.

In order to test for significant differences between other gender/marital status groups, separate cumulative logits with different gender/marital status categories as the reference category were run in order to examine the significance of the difference between each pair of gender/marital status categories in the effect on risk tolerance. The repeated-imputation inference (RII) technique⁴ was used in the cumulative logit analysis to obtain the coefficients, standard deviations, and log odds.

Results

Risk Tolerance by Gender and Marital Status

Table 1 shows the descriptive statistics of gender and marital status by risk-tolerance levels, including the same categories as the cumulative logit: substantial risk versus lower risk levels; high risk versus lower levels; and some risk versus no risk. In this table, data are pooled across all survey years.

The z-test results show that the first hypothesis, no difference in risk tolerance between married men and married women, and the second hypothesis, unmarried female respondents would be more risk tolerant than unmarried male respondents, were rejected. Controlling for marital status only, males were consistently more likely than females to take substantial risk, high risk, and some risk. For example, married males were significantly more likely than married females to take high financial risk (23.4% vs. 15.0%) and some financial risk (65.9% vs. 55.0%); and unmarried males were more than twice as likely as unmarried females to take substantial risk (7.4% vs. 3.7%). The third hypothesis that married respondents should be more risk tolerant than unmarried respondents was only accepted for some of the comparisons. Among married males, 65.9% were willing to take some risk and only 61.9% of unmarried males were willing to take the same amount of risk. For females, more than half of the married females were willing to take high risk, and only 40.8% of unmarried females were willing to take such risk. However, married males were significantly less likely to take substantial risk than unmarried males (4.5% vs. 7.4%).

⁴ See Montalto and Sung (1996) for more details about this technique.

Logistic Results

Cumulative logistic results were based on a combination of the 1983, 1989, 1992, 1995, 1998, and 2001 datasets. The estimates are shown in Table 2. Most variables were highly significant. A summary of the results from the hypotheses tests is provided in Table 3.

Gender/Marital Status: Substantial Risk vs. Lower Risk. As shown in Table 3, unmarried males were the most likely to take substantial financial risk, followed by married males. Married females and unmarried females had the lowest level of substantial risk tolerance. Holding everything else constant, married females were 0.8 times as likely, while unmarried males were 1.6 times as likely, as married male respondents to take substantial financial risk (Table 2). Married males were significantly more likely to have substantial risk tolerance than married females.

Gender/Marital Status: High Risk vs. Average Risk and Below. Holding everything else constant, unmarried males were the most likely to take high financial risk, followed by married males, and then by unmarried females. Married females were the least likely to take high risk. Table 2 shows that controlling for everything else, unmarried males were 1.4 times as likely as married males to take such financial risk. Married male respondents were 1.7 times as likely as otherwise similar married females to take high risk. Unmarried females were 1.2 times as otherwise similar married females to take high risk. Compared with otherwise similar unmarried female respondents, unmarried males were almost twice as likely to take high risk. All of the differences between gender/marital status categories in substantial/above average risk tolerance were significant (Table 3).

Gender/Marital Status: Some Risk vs. No Risk. Similar to the findings in the previous section, Tables 2 and 3 show that holding everything else constant, unmarried males were the most likely to take some financial risk, followed by married males, and then by unmarried females. Married females were the least likely to take some risk.

Effects of Other Variables

In the logit model (Table 2) other variables with significant effects included age, education, race, and financial characteristics such as income and the level of non-financial assets. There were also some changes during the period 1983-2001, similar to those discussed by Yao, Hanna and Lindamood (2004). The effect of age was generally negative, for instance, a respondent age 75 or above was only 24% as likely to have some risk tolerance as an otherwise similar respondent with an age between 30 and 34. Risk tolerance generally increased with education and income, except for substantial compared to lower levels.

Discussion

Logit results and z-test results were consistent in that males were more risk tolerant than females, regardless of their marital status (Table 3). Based on the actual patterns of risk tolerance, not controlling for other variables, unmarried females had the lowest risk tolerance, except for substantial risk tolerance, where they had the same risk tolerance as married females (Table 3). However, after controlling for the effect of other variables such as age and income in the cumulative logit models, married females had the lowest risk tolerance (Table 3). In general, controlling for other variables, married individuals were less likely to be willing to take financial risk than unmarried ones, and males were more likely to be willing to take risk than females, with unmarried males being the most risk tolerant, followed by married males, then unmarried females, and married females.

On average, females live longer than males. Therefore, all other things equal, females need to accumulate more wealth to finance retirement needs, and should take more financial risk in order to obtain higher returns (Ho et al., 1994). The results suggest that females should learn more about investments and financial risk so that they would be willing to take an appropriate level of financial risk.

The hypotheses were:

1. There would be no difference in risk tolerance between married men and married women (assuming complete joint optimization for the household);
2. Unmarried female respondents would be more risk tolerant than unmarried male respondents;
3. Married respondents should be more risk tolerant than unmarried respondents.

Hypotheses 1, 2, and 3 were not accepted for most of the levels of risk tolerance analyzed in the cumulative logits (Tables 2 and 3). Married females had significantly lower risk tolerance than the other three categories for some risk and for high risk, contrary to Hypotheses 1 and 3; were as likely as unmarried females to take substantial risk, contrary to Hypothesis 3; and were less likely than unmarried males to take substantial risk, contrary to Hypothesis 2. For all three levels in the cumulative logit, married females had significantly lower risk tolerance than married males, contrary to Hypothesis 1. Only with substantial risk were some of the differences not significant. In general, the results were the opposite of the hypotheses.

Married males and females may react differently to financial risks than their unmarried counterparts. Married males and unmarried males apparently react differently to risks than their female counterparts. It is plausible that risk-tolerance differences between men and women have a genetic basis. Controlling for everything else including marital status, males

were more risk tolerant. For example, unmarried males were 1.6 times as likely as otherwise similar married males to be willing to take substantial financial risk. Within the married couples group, married males were 1.3 times as likely as otherwise similar married females to be willing to take substantial financial risk.

Logistic results showed that unmarried males were the most likely to be willing to take high risk. Married males were the next most likely to be willing to take such level of risk. Married females were the least likely to be willing to take such risk. These results were consistent with findings of most previous research on gender effect on risk tolerance (e.g. Bajtelsmit & Bernasek, 1996; Bajtelsmit et al., 1999; Bajtelsmit & VanDerhei, 1997; Guiso et al., 1996; Hariharan et al., 2000; Hartog et al., 2002; Jianakoplos & Bernasek, 1998; Powell & Ansic, 1997; Sung & Hanna, 1996). The results were also consistent with previous research on the effect of marital status on risk tolerance (e.g. Cohn et al., 1975; Guiso et al., 1996; Gutter et al., 1999; Hartog et al., 2002; Hinz et al., 1997).

For all three logit models, married males were less likely to be willing to take financial risk than unmarried males, and males were more likely to be willing to take risk than females. Unmarried males were the most risk tolerant, followed by married males, then by unmarried females. Married females were the least likely ones to be willing to take financial risk.

On average, females live longer than males. Therefore, everything else being the same, females need to accumulate more wealth to finance retirement needs, and thus need to take more financial risk in order to obtain higher returns. The results suggest that females should learn more about investments and financial risk so that they would be willing to take an appropriate level of financial risk.

Summary

Using all SCF cross-sectional surveys between 1983 and 2001, with a total of 24,037 households, this paper is the first study to analyze gender/marital status differences in risk tolerance over an 18-year period.

When answering the SCF risk-tolerance question, the respondents in married-couple households did not necessarily consider what risk-tolerance level their spouse would have and then make a choice based on their joint preference. Therefore, the gender of the respondent may make a difference in risk tolerance. This study is unique in differentiating by gender of the respondent in married couple households. Results from the use of the switch variable for married couples show significant differences in risk tolerance between married males and married females, introducing potential complexities into the analysis of the portfolio allocation decisions of married couple households.

Implications

Risk tolerance impacts portfolios of households, which directly affect an individual's ability to accumulate retirement resources and realize other financial goals. Understanding factors that have effects on risk tolerance is essential in terms of financial planning. Risk tolerance varies by demographic characteristics, based on differences in genetic factors (i.e., men versus women), socialization, and culture. Risk tolerance should be different for people with different objective situations (e.g., older people might be less risk tolerant than younger people).

If differences in risk tolerance, as measured by the SCF risk-tolerance question, are based largely on socialization and education, unmarried women need to be educated to take appropriate risks to reach financial goals and maintain an adequate level of living in retirement. Some financial planners may give more conservative advice to women (Bajtelsmit & Bernasek, 1996), which may seem reasonable given the results reported in this paper. However, based on an objective economic analysis, women should take more financial risk than men to finance their longer life.

Although clients should ultimately decide whether they would like to take a certain level of financial risk, as a fiduciary of the client, a financial planner has the duty to act in the client's best interest – to evaluate the client's situation and make appropriate recommendations. It is the job of financial planners to educate clients (especially unmarried females) who choose inappropriate investments with low financial risk about their need to take more risk; and to educate male clients who have inappropriate investments with high risk about the importance of preserving wealth. While taking too much financial risk may result in unnecessary substantial loss of wealth, giving up the opportunity to gain potential investment returns to avoid financial risk increases the risk of not being able to realize financial goals.

The differences between married men and married women should be investigated in more depth. It seems likely that preferences are not averaged between men and women who are married. In a married household, as some will argue, it might be true that the husband invests aggressively, but the wife invests conservatively and result in an appropriate combined risk level. However, this should be achieved through adequate communication between the husband and the wife, rather than as the result of separate individual preferences. If it is the case that the conservative wife is making the major investment decision for the household, the couple may be giving up good opportunities to reap high investment return. Similarly, if the aggressive husband is making all investment decisions, the household may be exposed to too much financial risk and may not be able to accumulate adequate wealth to achieve their financial goals.

If there were not systematic differences between men who are married and men who are not married, we would expect to find the result that married men had lower risk tolerance than unmarried men, assuming they answered the SCF risk-tolerance question taking their wives' preferences into account, which in fact was the finding (Table 3). However, we should also expect that married women would have higher risk tolerance than unmarried women, if they took their husbands' preferences into account, but the result obtained in this paper is the opposite. Financial planners should encourage their married clients to communicate with the spouse and understand long-term implications of risk-taking approaches in investing before making decisions on financial planning.

Again, financial planners should educate clients about the undesired outcome of taking an inappropriate level of financial risk. Just as too much financial risk-taking can invite difficulty of preserving wealth for short-term goals; too little risk-taking may work adversely toward achieving high returns to realize long-term financial goals.

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Table 1
Percent Risk Tolerance Level by Gender/Marital Status

	Married Males	Married Females	Unmarried Males	Unmarried Females
Substantial Risk Tolerance ¹²³	4.5%	3.7%	7.4%	3.7%
High Risk Tolerance ¹²³⁴	23.4%	15.0%	24.7%	11.8%
Some Risk Tolerance ¹²³⁴	65.9%	55.0%	61.9%	40.8%
Number of Households	9,393	6,536	3,013	5,105

Weighted results.

Source: 1983, 1989, 1992, 1995, 1998 and 2001 Survey of Consumer Finances

¹ Results significantly different for married males and married females, at the 0.01 level or better.

² Results significantly different for unmarried males and unmarried females, at the 0.01 level or better.

³ Results significantly different for married males and unmarried males, at the 0.01 level or better.

⁴ Results significantly different for married females and unmarried females, at the 0.01 level or better.

Table 2
Cumulative Logistic Analysis of the Likelihood of Being in a Higher Risk Tolerance Level

Parameter	Substantial Risk		High Risk		Some risk	
	coefficient	odds ratio	coefficient	odds ratio	coefficient	odds ratio
Intercept	-2.2619‡		-1.1744‡		0.9676‡	
Demographic Characteristics						
Household composition/gender: reference category = married males						
Married females	-0.2665†	0.766	-0.5218‡	0.593	-0.5064‡	0.603
Unmarried males	0.4784‡	1.613	0.2997‡	1.350	0.1671†	1.182
Unmarried females	-0.0888	0.915	-0.2987‡	0.742	-0.3561‡	0.700
Age: reference category = 30 to 34						
Less than 30	-0.0438	0.957	0.1677*	1.183	0.1607*	1.174
35 to 39	-0.3950†	0.674	-0.1075	0.898	-0.1597*	0.852
40 to 44	-0.3513†	0.704	-0.1754*	0.839	-0.2309†	0.794
45 to 49	-0.5096‡	0.601	-0.4392‡	0.645	-0.3430‡	0.710
50 to 54	-0.7115‡	0.491	-0.4803‡	0.619	-0.3932‡	0.675
55 to 59	-0.6530‡	0.520	-0.5382‡	0.584	-0.4228‡	0.655
60 to 64	-0.6598‡	0.517	-0.7722‡	0.462	-0.6928‡	0.500
65 to 69	-0.8243‡	0.439	-0.9053‡	0.404	-0.8430‡	0.430
70 to 74	-0.9513‡	0.386	-1.1734‡	0.309	-1.0041‡	0.366
75 and above	-1.1696‡	0.310	-1.3798‡	0.252	-1.4229‡	0.241
Education: reference category = high school diploma						
Less than a high school diploma	-0.1318	0.877	-0.1318	0.877	-0.4007‡	0.670
Some college	0.0402	1.041	0.2632‡	1.301	0.3818‡	1.465

Race/Ethnic background: reference category = White						
Blacks	0.2236*	1.251	0.0117	1.012	-0.2275‡	0.797
Hispanics	0.3015*	1.352	-0.0032	0.997	-0.6273‡	0.534
Other race (Asian, etc.)	0.0214	1.022	-0.1630	0.850	-0.5495‡	0.577
Presence of related children under age 18	-0.0204	0.980	-0.0477	0.953	-0.1078*	0.898
Economic Characteristics						
Monetary assets >= 3 times monthly income	-0.0131	0.987	0.0310	1.031	0.4155‡	1.515
Level of non-financial assets: reference category = Non-financial assets between \$150,000 to \$499,999						
Non-financial assets <\$50,000	-0.2342	0.791	-0.3934‡	0.675	-0.4949‡	0.610
Non-financial assets = \$50,000 to \$149,999	-0.1114	0.895	-0.2285‡	0.796	-0.2756‡	0.759
Non-financial assets = \$500,000 to \$999,999	0.3208*	1.378	0.2197†	1.246	0.3492‡	1.418
Non-financial assets >=\$1,000,000	1.0977‡	2.997	0.6329‡	1.883	0.5264‡	1.693
Annual household income year before survey: reference category = \$25,000 to \$49,999						
Income less than \$10,000	0.0800	1.083	-0.1136	0.893	-0.5224‡	0.593
Income between \$10,000 and \$24,999	-0.0179	0.982	-0.1523*	0.859	-0.3330‡	0.717
Income between \$50,000 and \$99,999	0.0341	1.035	0.3176‡	1.374	0.4205‡	1.523
Income more than or equal to \$100,000	0.0086	1.009	0.5792‡	1.785	0.8350‡	2.305
Employment status: reference category = Salary earners						
Self-employed	0.3785‡	1.460	0.1610‡	1.175	0.1267*	1.135
Not working	-0.0760	0.927	-0.1106	0.895	0.0137	1.014
Retired	-0.1746	0.840	-0.0624	0.939	-0.0036	0.996
Homeowners: reference category = renters	-0.1496	0.861	-0.1268	0.881	-0.0834	0.920
Opinions/Attitudes						
Expect to receive substantial inheritance or transfer of assets in the future	0.1932‡	1.213	-0.0489	0.952	0.1249†	1.133
Health: reference category = good health						
Excellent health	0.0826	1.086	0.0786*	1.082	-0.0130	0.987
Fair health	0.0921	1.097	-0.0482	0.953	-0.2392‡	0.787
Poor health	0.1552	1.168	-0.0041	0.996	-0.5357‡	0.585

Year of Survey

Year of survey: reference category = 1983

Year 1989	-0.4915‡	0.612	-0.4187‡	0.658	-0.1560†	0.856
Year 1992	-0.5232‡	0.593	-0.1881†	0.829	-0.2101‡	0.811
Year 1995	-0.4573‡	0.633	0.0557	1.057	0.0767	1.080
Year 1998	-0.2916†	0.747	0.3471‡	1.415	0.3034‡	1.354
Year 2001	-0.3758‡	0.687	0.2744‡	1.316	0.2026‡	1.225
Concordance	69.6%		75.1%		81.5%	
Chi-square test of the likelihood ratio	2843.2321	<.0001	15809.7003	<.0001	31843.4216	<.0001

Note: * p<0.05, † p<0.01, ‡ p<0.001

Analysis of 1983, 1989, 1992, 1995, 1998 and 2001 Surveys of Consumer Finances; multivariate analyses are unweighted, using RII technique.

Table 3
Hypothesis tests, Effect of Race/Ethnicity on Risk Tolerance

Risk Tolerance Levels	z-tests Results	Logit Results
Substantial Risk Tolerance	Not Accepted: MM<UM, MF=UF, MM>MF, UM>UF	Not accepted: UM>MM>MF, UM>UF, MF=UF
High Risk Tolerance	Partially Accepted: MM=UM, MF>UF, MM>MF, UM>UF	Not accepted: UM>MM>UF>MF
Some Risk Tolerance	Partially Accepted: MM>UM, MF>UF, MM>MF, UM>UF	Not Accepted: UM>MM>UF>MF

>: significantly greater at 0.05 level or better

=: not significantly different at 0.05 level

MM: Married Males

MF: Married Females

UM: Unmarried Males

UF: Unmarried Females

Appendix: Measurement of Variables

Dependent Variables

Substantial Risk Tolerance = 1 if SCF risk tolerance question response = substantial, 0 otherwise (above average, average, or no risk)

High Risk Tolerance = 1 if SCF risk tolerance question response = substantial or above average, 0 otherwise (average or no risk)

Some Risk Tolerance = 1 if SCF risk tolerance question response = substantial, above average, or average, 0 otherwise (no risk)

Demographic Variables

Age

Less than 30: = 1 if respondent falls into this age group; 0 otherwise.

*30 to 34: = 1 if respondent falls into this age group; 0 otherwise.

35 to 39: = 1 if respondent falls into this age group; 0 otherwise.

40 to 44: = 1 if respondent falls into this age group; 0 otherwise.

45 to 49: = 1 if respondent falls into this age group; 0 otherwise.

50 to 54: = 1 if respondent falls into this age group; 0 otherwise.

55 to 59: = 1 if respondent falls into this age group; 0 otherwise.

60 to 64: = 1 if respondent falls into this age group; 0 otherwise.

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- 65 to 69: = 1 if respondent falls into this age group; 0 otherwise.
 70 to 74: = 1 if respondent falls into this age group; 0 otherwise.
 75 and above: = 1 if respondent falls into this age group; 0 otherwise.

Education

- Less than a high school diploma: = 1 if respondent did not finish high school; 0 otherwise.
 *High school diploma: = 1 if respondent has a high school diploma and no further education; 0 otherwise.
 Some college: = 1 if respondent had some college education but did not obtain a degree; 0 otherwise.
 Bachelor's degree and above: = 1 if respondent has a bachelor's degree or more education; 0 otherwise.

Race/Ethnicity

- *White: = 1 if respondent describes himself or herself as White; 0 otherwise.
 Black: = 1 if respondent describes himself or herself as Black; 0 otherwise.
 Hispanic: = 1 if respondent describes himself or herself as Hispanic; 0 otherwise.
 Other: = 1 if respondent describes himself or herself as of other race/ethnicity than White, Black, or Hispanic; 0 otherwise.

Household type

- *Married Males: = 1 if respondent is married or living with a partner and a male; 0 otherwise.
 Married Females: = 1 if respondent is married or living with a partner and a female; 0 otherwise.
 Unmarried Males: = 1 if respondent is a male and is currently neither married (separated, divorced, widowed, or never married) nor in a partner relationship with a female; 0 otherwise.
 Unmarried Females: = 1 if respondent is a female and is currently neither married (separated, divorced, widowed, or never married) nor in a partner relationship with a male; 0 otherwise.

- Presence of related child(ren) under age 18: = 1 if respondent has such child(ren); 0 otherwise.

Economic Variables

Monetary assets exceeded three months' income: = 1 if household's monetary asset is no less than three months' income; 0 otherwise.

Level of non-financial assets

Less than \$50,000: = 1 if household's non-financial asset is less than \$50,000; 0 otherwise.

\$50,000 to \$149,999: = 1 if household's non-financial asset is between \$50,000 and \$149,999;

0 otherwise.

*\$150,000 to \$499,999: = 1 if household's non-financial asset is between \$150,000 and \$499,999;

0 otherwise.

\$500,000 to \$999,999: = 1 if household's non-financial asset is between \$500,000 and \$999,999;

0 otherwise.

\$1,000,000 and above: = 1 if household's non-financial asset is \$1,000,000 or above;

0 otherwise.

Level of income

Less than \$10,000: = 1 if household's income is less than \$10,000; 0 otherwise.

\$10,000 to \$24,999: = 1 if household's income is between \$10,000 and \$24,999; 0 otherwise.

*\$25,000 to \$49,999: = 1 if household's income is between \$25,000 and \$49,999; 0 otherwise.

\$50,000 to \$99,999: = 1 if household's income is between \$50,000 and \$99,999; 0 otherwise.

\$100,000 and above: = 1 if household's income is \$100,000 or above; 0 otherwise.

Employment status

*Salary Earners: = 1 if respondent is working for someone other than his or herself; 0 otherwise.

Self-employed: = 1 if respondent is self-employed; 0 otherwise.

Not Working: = 1 if respondent is currently not working but not retired; 0 otherwise.

Retired: = 1 if respondent is retired; 0 otherwise.

Homeowner: = 1 if household owns a home; 0 otherwise.

Opinion/Attitude Variables

Expect to receive inheritance or transfer of assets: = 1 if household expects to receive a substantial amount of inheritance or asset transfer in the future; 0 otherwise.

Self-perceived health condition

Excellent Health: = 1 if respondent perceives his or herself in excellent health; 0 otherwise.

*Good Health: = 1 if respondent perceives his or herself in good health; 0 otherwise.

Fair Health: = 1 if respondent perceives his or herself in fair health; 0 otherwise.

Poor Health: = 1 if respondent perceives his or herself in poor health; 0 otherwise

* reference category.

Contact Information: Rui Yao, Ph.D., Assistant Professor, Human Development, Consumer & Family Sciences Department, Box 2275A, NFA 311, South Dakota State University, Brookings, SD 57006; Phone: (605) 688-5009; Fax: (605) 688-4888; E-mail: rui.yao@sdstate.edu

Sherman D. Hanna, Professor, Ohio State University, Consumer Sciences Department, 1787 Neil Avenue, Columbus, OH 43210-1290; Phone: (614) 292-4584; Fax: (603) 457-6577; E-mail: hanna.1@osu.edu.