

The Financial Risk Tolerance of Blacks, Hispanics and Whites

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This article focuses on the effect of race and ethnicity on financial risk tolerance. Blacks and Hispanics are less likely to be willing to take some financial risk but more likely to be willing to take substantial financial risk than Whites, after controlling for the effects of other variables. Risk attitudes may affect investment behavior, so having an appropriate willingness to take financial risk is important in achieving investment goals. Government agencies and financial educators should target investor education on investments and financial risk to racial and ethnic groups in order to promote better choices for investing for financial goals.

Keywords: Financial Risk tolerance; Race; Ethnicity; Preferences; Survey of Consumer Finances

Introduction

Personal savings and investment behavior has become an increasingly important issue facing households in the U.S., as employers switch from defined benefit plans to defined contribution plans and many worry about the future Social Security payouts. As investment choices become ever more important in retirement well-being, differences between racial and ethnic groups in these choices may be important. Historically, Whites have had more financial wealth than minorities (Darity, 1999). In 1992, the mean net worth for White households was 2.9 times the mean net worth for non-White households, but in 2001, the mean net worth for White households was 4.2 times that of non-White households, so minorities actually lost ground relative to White households (Aizcorbe, Kennickell, & Moore, 2003, Table 3). Keister (2000) attributed some of this inequality between races to the composition of wealth because different assets provide different returns. Stocks have produced higher returns compared to other investments in the long run (Ibbotson Associates, 2003). Until recently, most U.S. households did not hold stocks (Haliassos & Bertaut 1995), and now a slim majority of (52%) of U.S. households own stocks directly or indirectly through mutual funds (Aizcorbe, et al., 2003).

Because Blacks and Hispanics are less likely than Whites to own stocks (Bertaut & Starr-McCluer 2000), it is likely that the wealth of Black and Hispanic households may grow at a slower rate than Whites. This would lead to a continuation of the inequality in the distribution of wealth. There are various constraints on ownership of risky assets, including low income, so it is difficult to predict future investment behavior from

past behavior. However, an attitudinal measure of financial risk tolerance may provide insights into future behavior.

Investment choices can make a huge difference in retirement adequacy. For instance, a 25-year-old worker contributing \$3,000 per year in constant dollars to an IRA for 40 years might accumulate over a million dollars with a stock fund and less than \$210,000 with a government bond fund.^a People with inappropriately low financial risk tolerance might suffer in retirement. On the other hand, investing too aggressively for short-term goals increases one's exposure to large losses. Previous research shows that demographic characteristics, economic characteristics, and expectations/opinions have significant effects on financial risk tolerance. We focus on the expressed risk tolerance of Hispanics and Blacks compared to Whites because of the implications of investment behavior for future wealth differences and the possible implications of this research to improving our understanding of effective financial education programs.

The purpose of this research is to examine the relationship between financial risk tolerance and race and ethnicity. The study uses multiple years of the Survey of Consumer Finances (SCF) in order to increase the sample size for the different racial and ethnic groups, allowing for more robust estimation of effects of race and ethnicity on financial risk tolerance. In addition, this study uses a cumulative logistic technique, which is more appropriate for the multi-level naturally ordered dependent variable and has not yet been used to examine the issue of race and ethnicity and financial risk tolerance.

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Background

This section reviews literature explaining the concept and measurement of financial risk tolerance and covers previous research focusing on the relationship between financial risk tolerance and race and ethnicity.

The Concept of Financial Risk Tolerance

The Arrow-Pratt theory of risk aversion includes measures of risk aversion in individual decision-making under risk. For rational decision makers, the proportion of wealth invested in risky assets will be lower for those with higher risk aversion (Pratt, 1964; Arrow, 1965). Some researchers have proposed that risk tolerance is the inverse of risk aversion (Brennan & Kraus 1976; Walls & Dyer 1996; Barsky, Juster, Kimball, & Shapiro 1997; Gron & Winton 2001). Grable (2000) stated that financial risk tolerance is “the maximum amount of uncertainty that someone is willing to accept when making a financial decision.” In this paper, financial risk tolerance is defined as the willingness to take financial risk.

Financial risk tolerance has been measured using several techniques. The techniques can be separated into measures based on observing risky behavior and measures using surveys to ask questions that gauge one’s willingness to assume risk in given situations (Hanna, Gutter, & Fan 2001; Hanna & Lindamood, 2004). Some studies infer financial risk tolerance from behavior such as ownership of risky assets or the ratio of risky assets to total wealth (Cohn, Lewellen, Lease, & Schlarbaum 1975; Friend & Blume, 1975; Fama & Schwert, 1977; Morin & Suarez, 1983; McInish, Ramaswami, & Srivastava, 1993; Schooley & Worden 1996). However, studies based on behavior often are influenced by self-selection bias and do not typically consider other factors that would prevent ownership such as financial constraints, discrimination or lack of exposure to information about financial markets. The Health and Retirement Survey posed hypothetical scenarios to obtain a measure of financial risk tolerance related to the economic concept of risk aversion (Barsky et al., 1997). Grable (2000) presented a combination of investment choices and subjective perceptions.

Financial Risk Tolerance and Race/Ethnicity

Several studies on financial risk tolerance have investigated the effect of race and ethnicity, but few have had a focus on the effect of race/ethnicity. These studies vary by the measurement of financial risk tolerance used. The majority of studies use observational measures based on asset ownership and the proportion of overall wealth allocated to risky investment assets such as stocks or small businesses. Regardless of the financial risk tolerance measurement, the consensus from previous studies is that White

households are more risk tolerant than otherwise similar non-White households.

Haliassos and Bertaut (1995) and Bertaut and Starr-McCluer (2000) used data from the SCF datasets to study the ownership of risky assets. They found that everything else being equal, Whites are more likely to own stocks than their otherwise similar non-White counterparts. Zhong and Xiao (1995) and Plath and Stevenson (2000) examined ownership of different investment assets. Zhong and Xiao found that all other things being equal, Whites have higher holdings of stock and bonds than non-Whites (including Hispanics, Blacks, and other races combined into one category). Plath and Stevenson found that Black households hold a higher proportion of low-yield financial assets and a lower proportion of stocks and bonds. Using the 1995 SCF, Gutter, Fox and Montalto (1999) studied racial differences in the probability of holding stocks and/or business assets. The authors found that White households are more likely to own risky assets than Black households, but the effect of race could be somewhat explained through race’s relationships to other determinants of financial risk tolerance, specifically the presence of children and household size, both indicators of life cycle stage. Coleman (2003) examined the percentage of net worth allocated to risky assets such as stocks, and found that the inclusion of net worth negates the effect of race, but not of Hispanic ethnicity, as Hispanics have a lower proportion of net worth allocated to risky assets.

Several studies have used subjective or situational measures of financial risk tolerance. Using the 1992 SCF, Sung and Hanna (1996) studied factors related to the SCF financial risk tolerance variable, coded as willing to take some risk versus not willing to take any risk. They found that Whites have higher financial risk tolerance than otherwise similar Hispanics and respondents of other races. Grable and Joo (1999) conducted a survey of 500 white-collar clerical workers to investigate the determinants of a financial risk tolerance measure. The authors found that financial risk tolerance is lower for Whites compared to non-Whites. Coleman (2003) compared categorizations of the SCF financial risk tolerance measure to actual investment behavior. According to Coleman (2003), Blacks and Hispanics are less likely to be willing to take high financial risks and are more likely to prefer to take no financial risks than otherwise similar Whites. However, the results differ when net worth is added to the model, as being Black does not have significant impact on willingness to take risk when controlling for net worth. However, Hispanics are more likely to be in the no risk category than Whites if net worth is controlled.

Preferences and Race/Ethnicity

The previous sections highlight the significance of race and ethnicity as a preference shifter. This section provides the rationale and meaning of race and ethnicity in studies of financial behavior. Race and ethnicity can be representative of both cultural influences and barriers to access in financial markets. In this study of preferences, race and ethnicity, when controlling for other factors, may be representative of an individual's culture. Henslin (2002) defined culture as "the language, beliefs, values, norms behaviors, and even material objects that are passed from one generation to the next." Semmes (1981) explained the important effect of culture on preferences and perceptions as well as the importance of history in Black culture. Haliassos and Bertaut (1995) discussed the possible influence of culture on investment choice. One implication is that Blacks and Whites may have different perceptions because of differences in the choices available as well as the cultural belief system used to guide these choices (Nobles, 1978; Sudarkasa, 1997). Burlew, Banks, McAdoo and Azibo (1992) suggested that a common goal among Blacks is to have a standard of living comparable to their peers, both Whites and Blacks. This goal might lead to a lower emphasis on savings. A common theme from literature on Hispanic culture has been that one does not show signs of weakness (Casa, Wagenheim, Banchemo, & Mendoza-Romero, 1994). Individuals whose values include an image of strength may be more willing to accept risk, as risk avoidance may be seen as a sign of weakness. The extent to which this or any cultural value influences preferences may relate to the level of acculturation or the changing of cultural values through exposure to a surrounding culture that an individual has experienced (Ogden, Ogden, & Schau, 2004). There is a large proportion within the Hispanic population with limited acculturation and likely less exposure to financial markets and concepts, as over half of the foreign born Hispanics in the US in 2002 had been in the US less than 12 years (Malone, Baluja, Costanzo, & Davis, 2003; Ramirez & de la Cruz, 2003).

Exposure to Financial Information and Race/Ethnicity

As mentioned previously, White households have a mean level of net worth 4.2 times as high as that of non-White households (Aizcorbe, et al., 2003). One possible outcome of a history of lower financial resources is that it is likely marketing of financial products has been targeted at Whites, so that members of minority groups have received less exposure to information about investments and are less likely to participate in financial markets. A report by the Association of Hispanic Advertising Agencies discussed the need for increased spending and resource allocation to reach the Hispanic population (2002) because past marketing efforts have underserved this

group. Most (57%) unbanked households are minorities, 23% of which stated their reason for not working with a bank as "do not like dealing with banks", which could mean that the unbanked households do not trust banks and therefore, do not want to take the risk to open a bank account.

The Present Study

Life cycle stage, financial status and other household demographics should influence the willingness to take financial risk (Campbell & Viceira, 2002). This study focuses on the willingness to take financial risk rather than portfolio allocation because financial risk tolerance may predict future financial behavior better than current portfolio allocation, especially for disadvantaged groups with no current investments. The SCF measure of willingness to take financial risk and the measures obtained from hypothetical scenarios are based on respondents' expectations instead of their behavior and so are more reasonable; because households that do not own investment assets can still select the level of financial risk tolerance that they would be most likely to take if they had money to invest.

Ogden et al. (2004) suggested that subculture, which may be represented by race or ethnicity, might impact preferences. Race and ethnicity is representative of the shared history and values of a group and, thus, should impact financial preferences. Differences in cultural values and socialization among different racial and ethnic groups might also influence preferences such as willingness to take risk (Dilworth-Anderson, Burton, & Johnson, 1993); thus, race and ethnicity should influence the willingness to take risk.

In this paper, financial risk tolerance is defined as the willingness to take financial risk. Risk aversion does have an inverse relationship with risk tolerance, but risk tolerance is also influenced by other factors such as market expectations and life cycle characteristics. We propose that race and ethnic status influence the willingness to take financial risk and thus portfolio choice directly and indirectly, as a moderating variable for other determinants. Figure 1 shows the proposed conceptual model. Risk aversion might be a stable preference. Barsky et al. (1997), Hanna et al. (2001) and Hanna and Lindamood (2004) used an age-independent set of hypothetical questions to measure risk aversion. Willingness to take financial risks should be related to both stable preferences and situational factors such as the life cycle stage. Expectations about the market should influence willingness to take risk. These expectations about the market might differ by race and ethnicity since exposure and use of information may differ by race and ethnicity; however, determining market expectations may be problematic.

It is possible that households with less stability from labor market earnings may be less willing to take risks with investments for short-term investments, but should be willing to take some risks for long-term investments. By controlling for employment status, income, age, and other variables, race and ethnic status might have effects only through market expectations.

Hypotheses: Effects of Race and Ethnicity

The cultural experiences, values, and socialization of minorities should impact their preferences. In particular, a history of less exposure to financial markets and financial information, greater labor force participation instability (Hsueh & Tienda, 1996), discrimination, having lower levels of wealth (Kennickell, Starr-McLuer, & Surette, 2000; Aizcorbe, et al., 2003) and differences in family composition are likely to make Hispanics and Blacks less willing to take financial risks. Therefore, it is expected that Whites have higher financial risk tolerance than other groups. Hispanics should have lower financial risk tolerance than Blacks because many Hispanics have a language barrier and for some, having families who have been in the United States a shorter time might make them less comfortable with financial investments. Some differences might be related to other factors such as education, income, and age, but if significant differences remain after controlling for these factors in multivariate analyses, the cultural explanation will be plausible.

Data and Methods

Data

This paper uses a combination of the 1983, 1989, 1992, 1995, 1998, and 2001 Survey of Consumer Finances (SCF) datasets.^b Weights were computed and provided for use by the Federal Reserve in the datasets for each observation to adjust for systematic differences in response rates by demographic groups, as well as to adjust for the sample design. The descriptive analyses reported in this article are weighted by the authors, but the multivariate analyses are not.^c

All SCF datasets except for the 1983 SCF contain five implicates.^d All five implicates for the 1989, 1992, 1995, 1998 and 2001 datasets plus the 1983 dataset are pooled together. This article excludes same sex couples and same sex partners that live together, because such households are identified only in the 1992, 1995, 1998, and 2001 datasets, plus one such household in 1989. This article also excludes households categorized as a racial and ethnic group listed as "Other" in the public dataset. (See discussion in 'Independent Variables'.) The total sample size used in the analyses is 23,243.

Variables

Dependent Variable The dependent variable used in this study is based on the response to the SCF's financial risk tolerance question. The question is as follows (Kennickell, 2001):

"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"

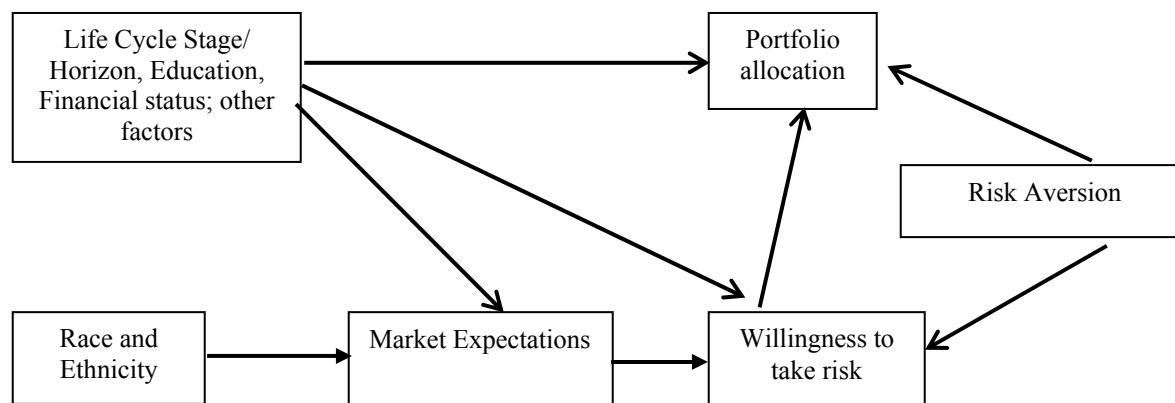
This study uses responses to create two additional financial risk tolerance categories, high risk and some risk. High risk includes substantial and above average SCF financial risk tolerance. Some risk includes the substantial, above average, and average SCF financial risk tolerance. The two new variables as well as substantial risk served as the dummy dependent variables are in the cumulative logistic regression analysis, which will be discussed in statistical methods.

Independent Variables In addition to race and ethnicity, other independent variables, including demographic characteristics, financial characteristics, and opinions/attitudes, are used to control for other possible influences on financial risk tolerance. All independent variables are categorical variables.

The analyses in this article use the race and ethnicity, age, gender, education, employment status, and health condition variables of the actual respondent, not the household head. For the public datasets, the race and ethnicity variable includes four categories: White, Black, Hispanic/Latino, and other races. The determination of race and ethnicity has varied over the years, especially for the other race and ethnicity categories, as discussed in the Appendix. The groups included in the other race and ethnicity category in the public dataset are very diverse.

The SCF public use datasets combine those Asian, American Indian, Alaska Natives, Native Hawaiian, and Pacific Islanders householders with the "other" category. This catchall category represents a very diverse set of peoples with different cultures. Considering the diversity of groups being categorized as "other" by the SCF, it is impossible to determine the cultural backgrounds of such households. In limiting the study to Hispanics, Blacks, and Whites, the relationship of race and ethnicity can be better examined.

Figure 1
Conceptual Relationship of Race and Ethnicity on Risk Preferences and Portfolio Behavior



Demographic variables included: age, education, race and ethnicity, household type, presence of related children, employment status, and home ownership.

Economic variables included whether monetary assets exceed three months' income, level of non-financial assets, and level of income. Household incomes and amount of non-financial assets are inflation-adjusted by multiplying the ratio of the Consumer Price Index in 2000 to the Consumer Price Index in the year before the interview.

The opinion/attitude variables included whether the respondent expected to receive substantial inheritance or transfer of assets in the future and self-perceived health condition.

Statistical Methods

Cross-tabulations of financial risk tolerance levels and race and ethnicity groups were performed to examine the percent distribution across the risk categories for different race and ethnicity groups; and one-tailed z-tests were calculated to examine the significance of the differences between all race and ethnicity groups.

A cumulative logit model is used in this analysis. The model allows the independent variables to have different effects on risk preference. The cumulative logit model examines the effects of explanatory variables on the probability for households to choose some risk versus no risk, high risk (including substantial and above average risk) versus low risk (average or no risk), and substantial risk only versus

lower levels of risk. Cumulative logistic regression is a better fit for this study since the SCF financial risk tolerance has a natural order. It also allows for distinction between different levels of risk tolerance, an advantage over previous studies using binary logistic models (Sung & Hanna, 1996) and multinomial models (Shaw, 1996; Sundén & Surette, 1998).

Table 1
Percent Indicating Each Level of Financial Risk Tolerance by Race and Ethnicity

	Whites	Blacks	Hispanics
None*+‡	40.6%	57.0%	63.9%
Average*+‡	40.6%	28.5%	20.5%
Above Average*+	14.8%	9.7%	9.5%
Substantial*+‡	4.0%	4.8%	6.1%
High*+‡	18.8%	14.5%	15.6%
Some*+‡	59.4%	43.0%	36.1%
Number of Households	18,628	3,029	1,586

Weighted results, using RII technique, with 1983, 1989, 1992, 1995, 1998 and 2001 Survey of Consumer Finances.

Note: one-tailed z--tests are performed to test the significance of the differences between the race and ethnicity groups.

* Results significantly different for Whites and Hispanics, at the .05 level or better.

+ Results significantly different for Whites and Blacks, at the .05 level or better.

‡ Results significantly different for Hispanics and Blacks, at the .05 level or better.

Table 2
Hypothesis Tests, Effect of Race and Ethnicity on
Financial Risk Tolerance

Financial Risk tolerance levels	Z-tests results	Logit results
Substantial	Not accepted: Hispanics = Blacks > Whites	Not accepted: Hispanics = Blacks > Whites
High	Partially Accepted: Whites > Hispanics = Blacks	Not accepted: Hispanics = Blacks = Whites
Some	Accepted: Whites > Blacks > Hispanics	Accepted: Whites > Blacks > Hispanics

>: Significantly greater at the .05 level or better
 =: Not significantly different at the .05 level

Results

Table 1 shows the descriptive statistics of financial risk tolerance levels by race and ethnicity. White respondents are significantly more likely to be willing to take some risk (59%) than are Blacks (43%), who are significantly more likely to be willing to take some risk than Hispanics (36%). However, the pattern is reversed for willingness to take substantial risk, with only 4% of Whites but 5% of Blacks and 6% of Hispanics willing to take substantial risk. The hypotheses are confirmed for substantial risk. Table 2 summarizes the hypothesis tests. Based on the z-tests, Whites are significantly more likely than Blacks, and Blacks are significantly more likely than Hispanics to be willing to take some financial risks. For substantial risk, the results are the opposite of the hypotheses, as Whites are significantly less likely than Blacks and Hispanics to be willing to take substantial financial risks; and the difference between Hispanics and Blacks is not significant. For high risk, the hypothesis that Whites are more likely to be willing to take risks than the other two groups is confirmed, but Hispanics are as willing to take high risks as Blacks.

Logistic Results

The odds ratios from the logistic regressions (Table 3) indicate the relative effect at the mean values of other variables on the likelihood of the level of risk. Blacks are only 84% as likely, and Hispanics are only 53% as likely as otherwise similar Whites to be willing to take some risk. However, Blacks are 1.3 times as likely, and Hispanics are 1.4 times as likely as otherwise similar Whites to be willing to take substantial risk. The significance levels shown for most variables in Table 3 are only in comparison to the reference categories, which for race/ethnic group is White. Separate tests

were run to test the significance of financial risk tolerance differences between Blacks and Hispanics, and the results are summarized in Table 2. Controlling for everything else in the model, the difference between Blacks and Hispanics is not significant for willingness to take substantial risk or in willingness to take high risk. Blacks are significantly more likely than Hispanics to be willing to take some risk.

On average, a year of age is associated with about a 2% decrease in the chance of being willing to take some, high, or substantial risk. Married females are significantly less likely to be willing to take risk at any of the three levels than otherwise similar married males. Unmarried males are more likely than otherwise similar married males to be willing to take substantial and high risk. Income, non-financial asset levels, and being self-employed generally have significant positive effects on the willingness to take financial risk. Education, which is likely to be related to familiarity with financial markets, has no significant relationships with having substantial financial risk tolerance, but has positive relationships with having high and some financial risk tolerance.

Interaction terms between race and ethnicity and survey years were also tested for significance. The results show that the effect of race and ethnic group on financial risk tolerance did not change over the years.^e

Discussion

The conceptual model, illustrated in Figure 1, highlights the determinants of willingness to take financial risk. For example, it shows the ties from life cycle characteristics, education, financial resources and others to willingness to take risk as well as risk aversion (Table 3.) The model does not explicitly control for previous experience with financial investments, but the lack of a relationship with being willing to take substantial risk for either education or income suggests that greater knowledge does not increase the willingness to take substantial risks. Therefore the positive relationship between having minority status and being willing to take substantial risks may be due to either differences in culture, as previously discussed, or market expectations.

The reversal of the effect of being Black or Hispanic on risk tolerance, with these groups being less likely to be willing to take some risk but more likely to be willing to take substantial risk, was found in both the bivariate results (Table 1) and the multivariate results (Table 3). Therefore, it is unlikely that the results are the result of statistical quirks in the multivariate analyses.^g

Table 3
Cumulative Logistic Analysis of the Likelihood of Being in a Higher Financial Risk Tolerance Level

Parameter	Substantial risk		High risk		Some risk	
	Coefficient	Odds ratio	Coefficient	Odds ratio	Coefficient	Odds ratio
Intercept	-3.4405***		-2.7949***		-0.9076***	
Race/Ethnic background: reference category = White						
Black	0.2779**	1.32	0.0606	1.06	-0.1800***	0.84
Hispanic	0.3236*	1.38	0.0123	1.01	-0.6284***	0.53
Age	-0.0162***	0.98	-0.0223***	0.98	-0.0213***	0.98
Education: reference category = high school diploma						
Less than a high school diploma	-0.1428	0.87	-0.1654*	0.85	-0.4777***	0.62
Some college	0.0560	1.06	0.3022***	1.35	0.4676***	1.60
Bachelor's degree and above	0.1219	1.13	0.7144***	2.04	1.0513***	2.86
Household composition/gender: reference category = married males						
Married females	-0.3112***	0.73	-0.5425***	0.58	-0.5524***	0.58
Unmarried females	-0.1098	0.90	-0.4200***	0.66	-0.6120***	0.54
Unmarried males	0.4086***	1.50	0.2100***	1.23	-0.0163	0.98
Presence of related children under age 18	-0.0359	0.96	-0.0264	0.97	-0.1236**	0.88
Monetary assets >= 3 times monthly income	0.0645	1.07	0.0913*	1.10	0.4327***	1.54
Log (non-financial assets)	0.0362***	1.04	0.0455***	1.05	0.0439***	1.04
Log (annual household income)	0.0953***	1.10	0.1545***	1.17	0.1697***	1.18
Employment status: reference category = Salary earners						
Self-employed	0.6677***	1.95	0.3567***	1.43	0.3737***	1.45
Not working	0.0911	1.10	-0.0089	0.99	0.0568	1.06
Retired	-0.1136	0.89	-0.1266	0.88	-0.1575**	0.85
Homeowners: reference category = renters						
Expect to receive substantial inheritance or transfer of assets in the future	-0.0482	0.95	0.1465***	1.16	0.2216***	1.25
Health: reference category = good health						
Excellent health	0.1354*	1.15	0.1376***	1.15	0.0653	1.07
Fair health	0.0650	1.07	-0.0991	0.91	-0.3056***	0.74
Poor health	0.1917	1.21	-0.0103	0.99	-0.6127***	0.54
Year of survey: reference category = 1983						
Year 1989	-0.4065***	0.67	-0.3526***	0.70	-0.0892	0.91
Year 1992	-0.4307***	0.65	-0.1261*	0.88	-0.1599**	0.85
Year 1995	-0.4002***	0.67	0.1012	1.11	0.1247*	1.13
Year 1998	-0.2326*	0.79	0.4047***	1.50	0.3812***	1.46
Year 2001	-0.3150***	0.73	0.3285***	1.39	0.2835***	1.33
Concordance	66.7%		74.3%		80.7%	
Chi-square test of the likelihood ratio	2082.16	<.0001	14119.56	<.0001	28478.60	<.0001

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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

The model illustrates the importance that culture, represented by race and ethnic status, has on the financial decision making process. Culture provides a context in which information is framed and preferences are formed. The conceptual model ties the willingness to take risk to portfolio allocation, which in turn will impact the growth rate of wealth and overall wealth accumulation. Wealth accumulation is one of the keys to achieving financial security for households. Households unwilling to take investment risks at all or unwilling to take appropriate levels of risk may not participate in investment markets at all. If they do participate, they may invest too conservatively for their situation. If there is an inequality in the dissemination of information, this inequality would likely impact willingness to take risk and subsequently portfolio behavior.

As implied by Figure 1, race and ethnic status is related to the willingness to take financial risk (financial risk tolerance), although since information about market expectations and risk aversion is not available, the relationship is not clear. Hispanics and Blacks are less likely than Whites to state that they are willing to take some risk in investments. After controlling for other factors, Whites are more likely to be willing to take some risk than the other two groups. This finding is consistent with the hypothesis and previous research findings (Sung & Hanna, 1996; Gutter, et al., 1999; Plath & Stevenson, 2000; Haliassos & Bertaut, 1995). One possible explanation is that Whites are more exposed to financial information from social marketing, media, and financial services than are minority groups. As expected, Blacks are more willing to take some risks than Hispanics, which could be related to differences in the level of acculturation for the two subcultures. Compared to Blacks, Hispanics are more likely to be foreign born and have been in the country for a relatively short period of time, which may imply there would be strong language barriers and limited exposure to financial concepts. This lack of familiarity would likely discourage willingness to accept some financial risk.

Contrary to our hypothesis, Whites are significantly less likely than Blacks and Hispanics to be willing to take substantial risk, controlling for other factors. There is not a significant difference between Hispanics and Blacks in willingness to take substantial risk, and there are no significant differences between the three groups in willingness to take high financial risk, controlling for other factors.

Whites are more likely than those in the other two groups to be willing to take some risk, but less likely to be willing to take substantial risk. There are several possible explanations for this inconsistent pattern. One

reason may be related to the cultural role of Machismo. Male Hispanics may state a willingness to assume substantial risk as part of bravado. In an effort to determine if the effect of gender and marital status differed by race and ethnicity, interaction terms of race and ethnicity and gender and marital status of the respondent were added to the cumulative logit model.^f None of these terms were found to be significant. Therefore, unless female Hispanics are influenced by Machismo, this explanation is not very plausible.

The finding that Hispanics may tend to be at the extremes of the financial risk tolerance measure could be related to the large diversity of backgrounds within the Hispanic category, as the true relationship of ethnicity on preferences can be understood only with more detailed information about background (Ogden, et al., 2004). Unfortunately, the SCF datasets do not include information about country of origin, family financial history, and exposure to financial information such as sources of investment risk, so we cannot assess the plausibility of this explanation. The background diversity explanation also does not seem especially plausible in explaining the inconsistent pattern for Blacks.

It is possible that some Hispanics and Blacks have a strong desire to catch up in terms of standard of living. This desire may make some more willing to accept substantial risk to get ahead. However, this pattern poses dangers, as investment scams always work by persuading unsophisticated people of the possibility of substantial gains. However an additional consideration is that many will find themselves with little to lose. Therefore conceptually the willingness to take risk to get ahead may seem palatable to one who realistically has little at stake.

Low participation in financial markets may explain why Blacks and Hispanics are less likely than Whites to be willing to take some financial risk. The majority of households (57%) classified as unbanked are non-White or Hispanic (Aizcorbe, et al., 2003). It is also possible that Blacks and Hispanics are less likely to be willing to take some financial risk because of their labor force instability. Hsueh and Tienda (1996) found that Blacks and Hispanics have greater labor force instability than Whites. However, for long-term goals such as retirement, everyone should be willing to take some risk in order to have a reasonable return. Furthermore, the greater willingness to take substantial risk is not consistent with an explanation based on labor force instability.

The lack of consistency of the effect of race and ethnicity on substantial versus some financial risk tolerance suggests that government agencies and

financial educators should target investor education to minority groups. Employers can educate their employees by periodically holding educational seminars on retirement plans, investments, and financial risk, and should consider making special efforts to attract minority employees to seminars. This way, minorities not reached by the government or financial planners will have one more opportunity to hear about investments and the associated risks. If race/ethnicity is representative of cultural differences, then financial education programming that is more culturally relevant may be needed. Education may also need to address fears and beliefs about trusting firms with financial assets. The realities and history of discrimination can be a barrier to taking action or trusting different information sources. The financial services industry should continue to increase the diversity of its work force, as mistrust may reduce the likelihood of minorities from taking advantage of financial advice.

This paper is the first research to report a significant difference in the SCF financial risk tolerance measure between Hispanics and Blacks. This study is also the first to report the reversal of race and ethnic effects for some risk versus substantial risk. The large sample size obtained by combining samples from different years allows for more robust estimates from small effects. Given that the overall rate of substantial risk is less than 5%, it is reasonable that the effect was not observed previously. Further research into the reversal of effects is needed, as it might indicate both overly conservative and overly risky investment strategies among minority households.

As Keister (2000) suggested, the inequality of wealth is an unresolved issue. Even though reducing the inequality of income between racial and ethnic groups will be needed to reduce the inequality of wealth, investment choices will also play an important role in reducing wealth inequality. The result of lower willingness to take some risk for Hispanics and Blacks compared to otherwise similar Whites suggests that reductions of income inequality will not be sufficient to achieve substantial reductions in wealth inequality without changes in portfolio allocations. At the same time, the result that Hispanics and Blacks are more likely to be willing to take substantial risks than otherwise similar Whites suggests that minorities might be susceptible to investment scams. Clearly, financial education targeted at minority groups is needed.

Appendix

The race and ethnicity question varied over the survey years. The most recent version (1998 and 2001) was:

“Which of these categories do you feel best describe you?”

Then a card was shown that had:

Please list your strongest identification first:

White

Black; African American

Hispanic; Latino

Asian

American Indian; Alaska Native; Native Hawaiian;

Other Pacific Islander

Other

In 1998 and 2001, the respondent was asked to give all race and ethnicity answers that apply. The answers were coded in the order they were given. In the public dataset, there were only two pieces of information: the respondent's first answer to the race and ethnicity question; and whether there were more answers given to the question (yes or no, without identifying which ones were given). If the first response was Asian, American Indian, Alaska Native, Native Hawaiian, Other Pacific Islander, or Other, then on the public dataset the coding is Other.

In 1995, the question was:

Are you Native American, Asian, Hispanic, black, white, or another race?

The interviewer showed a card that had:

Native American/Eskimo/Aleut

Asian or Pacific Islander

Hispanic

Black or African-American

White

Other

Only the first response of the race and ethnicity question was coded. If the first response was Asian or Pacific Islander, Native American/Eskimo/Aleut, or Other, then in the public dataset the coding is “Other”.

In 1992, the question was:

Are you American Indian, Asian, Hispanic, black, white, or another race?

The interviewer showed a card that had:

American Indian/Eskimo/Aleut

Asian

Hispanic

Black or African-American

White

Other

Only the first response of the race and ethnicity question was coded. If the first response was American Indian/Eskimo/Aleut, Asian, or Other, then in the public dataset the coding is “Other”.

In 1989, the question was:

Are you American Indian, Asian, Hispanic, black, white, or another race?

- American Indian/Eskimo/Aleut
- Asian
- Hispanic
- Black
- White
- Other

Only the first response of the race and ethnicity question was coded. If the first response was American Indian/Eskimo/Aleut, Asian, or Other, then in the public dataset the coding is “Other”.

In 1983, the interviewers were instructed to categorize respondents into one of the following groups:

- Caucasian except Hispanic
- Black except Hispanic
- Hispanic
- American Indian or Alaskan Native
- Asian or Pacific Islander

The codebook indicated that “variable is the observed race of the survey respondent.” It is not clear how interviewers were instructed to obtain the information if they could not judge by observation.

Endnotes

- a. Assume contributions to either a large stock index fund or an intermediate government bond fund. Based on the arithmetic mean inflation-adjusted return from 1926 to 2002 for large stocks (9.0%) and for government intermediate bonds (2.6%) the stock fund would accumulate to \$1,013,649 and the bond fund would accumulate to 206,753 (calculations by authors based on Ibbotson Associates, 2003, page 113).
- b. Some of the methodology follows the discussion in Yao, Hanna, and Lindamood (2004); for more detail see that article.
- c. As Deaton (1997, pp. 66-73) suggests, weighting regression analyses when the weights are endogenous is suspect for hypotheses testing.
- d. In 1983, the Federal Reserve assigned one value to each missing value of a variable in 1983. Starting in 1989, missing values were imputed using a multiple imputation method that resulted in five complete data sets, or implicates, for each year. The “repeated-imputation inference” (RII) method results in a dataset with estimated variances that

more closely represent the true variances than would be obtained by using just one implicate (Kennickell & Woodburn, 1999), and is used for all analyses in this article.

- e. Results available from first author.
- f. Results available from first author.
- g. Based on comments by reviewers, we tried different specifications of some of the independent variables, as we had originally used sets of dummy variables for age, income, and level of non-financial assets. The effects of the Black and Hispanic variables on risk tolerance remained virtually the same when we replaced the dummy variables by continuous variables.

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