

The Decrease in Stock Ownership by Minority Households

Sherman D. Hanna and Suzanne Lindamood

White households are more likely to hold stock investments than minority households. Stock ownership rates of minorities generally increased between 1992 and 2001, but between 2001 and 2004 the rate decreased significantly for each minority group studied but did not significantly change for White households. Multivariate analyses showed that the predicted rates for White households did not significantly change, but Black, Hispanic, and other (mostly Asian) households had significantly lower predicted rates of stock ownership in 2004 than in 2001, indicating that factors other than those in the model accounted for the decrease in minority rates.

Key Words: racial/ethnic groups, risk tolerance, stock ownership, Survey of Consumer Finances

Black and Hispanic households have much lower net worth than White households, and the disparities have not decreased much during the past 20 years. In 2004, the ratios of net worth of non-Hispanic White households to the net worth of minority households were higher than the same ratios in 1995 (Bucks, Kennickell, & Moore, 2006), indicating no improvement in the relative position of minority households over that time period. It is possible that the lower risk tolerance of minority households and the lower likelihood for even middle and upper income minority households to invest in stocks and other high return investments might contribute to the lack of progress in narrowing the net worth gaps.

Owning high return assets such as stocks can significantly improve a household's net worth. White households historically have been much more likely to hold stocks than minority households. Some researchers have suggested, based on multivariate analysis controlling for income and other characteristics, that if Blacks had incomes similar to Whites, they would have similar rates of stock ownership (Gutter, Fox, & Montalto, 1999; Coleman, 2003). This possibility is supported by the increase in stock ownership that accompanied increasing incomes between 1995 and 2001, when stock ownership rates for minority households grew much more rapidly than for non-Hispanic White households (Aizcorbe, Kennickell, & Moore, 2003; Ken-

nickell, Starr-McCluer, & Sundén, 1997; Kennickell, Starr-McCluer, & Surette, 2000). However, this trend reversed and the rates of stock ownership among minority households dropped substantially between 2001 and 2004 while the ownership rate for non-Hispanic White households remained approximately the same (Bucks et al., 2006).

The wealth of minority groups is important in considering the wealth of U.S. households in the future. Non-Hispanic Whites are projected to be only 50% of the U.S. population by 2050 (U.S. Census Bureau, 2004). The proportion of Blacks is projected to increase slightly, but the proportions of Hispanics, Asians, and the general "other" category are projected to double between 2000 and 2050. Hispanics are projected to comprise 24% of the population.

The objective of this study was to analyze the causes of the 2001-2004 drop in stock ownership rates by racial/ethnic minority households in the United States. If the decreases were due to changes in risk tolerance, income, or other characteristics, there should be no change from 2001 to 2004 in the rates of stock ownership that the multivariate models predict for each minority group, holding these characteristics constant. However, if there are changes in predicted stock ownership rates for minority groups when these characteristics are held constant, we must conclude

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that the actual changes in stock ownership by minority households were due to changes in characteristics that were not controlled in the model.

Literature

Theoretical Issues on Racial/Ethnic Differences in Investments

High return investments require households to assume some risk, but owning high return investments can make it easier for households to be able to reach long term goals such as having a comfortable retirement. Gittleman and Wolff (2004) proposed that differences in the wealth of Black and White households at comparable age levels could be due to inheritance, savings, or higher rates of return on assets.

A difference in risk tolerance levels could contribute to different investment decisions, as higher risk tolerance should lead to greater willingness to invest in stocks. Barsky, Juster, Kimball and Shapiro (1997) found that Blacks and Hispanics had higher mean risk tolerance levels than White respondents. However, contrary to their findings, all studies based on the Survey of Consumer Finances (SCF) data have found Black and Hispanic respondents less willing to take some investment risk than White respondents. Most SCF studies have found significant differences among racial/ethnic groups even after controlling for the effects of other variables on investment risk tolerance (Yao, Gutter, & Hanna, 2005). Yao et al. discussed cultural and information availability issues as possibly related to differences in risk tolerance levels and suggested that financial companies may target minority households less frequently than White households when marketing investment products. Minority households might also have less trust in financial institutions than White households due to experiences with discrimination.

Using the 1998 SCF dataset, Coleman (2003) found that Blacks and Hispanics were more likely to choose the “no risk” response on the SCF risk tolerance question than White households that were similar in gender, marital status, education, age, and family size. However, when controlling for net worth, she found that Blacks were not significantly different from similar Whites in willingness to take some risk versus no risk, but that Hispanics were significantly different from Whites.

An investigation of other racial/ethnic groups can provide insights into the factors that affect investment choices. In addition to White, Black, and Hispanic, the public SCF

datasets include an “other” category comprised of Asian, Pacific Islander, Native Americans, and any choices not in the listed categories (Lindamood, Hanna, & Bi, 2007). Based on distributions in U.S. Census reports, it is likely that most of the respondents in the SCF “other” category are Asian or Pacific Islander.¹ Sharpe and Abdel-Ghany (2006) pointed out issues related to socioeconomic differences between Asian Americans and households with other racial identification, noting the diversity within the Asian-American group based on country of origin. In the 2000 Census, of those choosing Asian as their category, 69% were foreign-born, compared to 11% of the overall population. In contrast, 6% of Blacks, 40% of Hispanics of any race, and less than 4% of non-Hispanic Whites were foreign-born (Malone, Baluja, Contanzo, & Davis, 2003). Because many households in the SCF “other” category are likely to be foreign-born, it seems plausible that their investment choices will be different from those of White households.

Allocation between Risky and Non-Risky Investments

Portfolio theory in finance includes a focus on the risky asset proportion of investments, with the optimal proportion of risky assets for a household depending on its risk aversion level. The usual definition of risky assets in a discussion of portfolio choice includes stocks and direct business ownership (Gutter & Fontes, 2006; Gutter et al., 1999). Schooley and Worden (1996) reported an analysis of the risky asset proportion of total wealth using the 1989 SCF dataset. They found that White households had lower risky asset ratios than otherwise similar households with respondents in other racial/ethnic groups. However, that finding was in large part due to their deviation from the usual definition of “risky asset.” They employed an idiosyncratic definition of risky assets, which included human wealth as a risky asset, based on the idea that the cash flow from human wealth was uncertain. Thus, households with low levels of assets other than human wealth were considered to have a high proportion of risky assets simply because the value of their future earnings was included as a risky asset. Their definition that included human wealth is not consistent with the usual analysis of risky choices.

Several authors have focused on whether households hold risky assets instead of focusing on the ratio of risky assets to total assets. Gutter et al. (1999) found that Whites in 1995 were more likely to own risky assets than Blacks, and the risky asset ownership gap persisted even after controlling for other variables. When they also controlled for interaction terms between a dummy variable for Black

and other independent variables, race did not have a significant effect by itself, and only interaction terms involving race and household composition were significant. However, the interaction method used by Gutter et al. (1999) is not conclusive, as they did not report a test of multicollinearity. Therefore, it is not clear whether any particular effect in their study lacked significance because of a true lack of effect or because of a correlation with combinations of other variables (Kennedy, 1998, 184-193). Their interpretation of their findings from the interaction model is questionable, given the possibility of multicollinearity.

DeVaney, Anong, and Yang (2007) found that only 31% of Black households in 2004 owned retirement assets of any type, compared to 55% of White households. Xiao (1996) found that Whites in 1989 were more likely than otherwise similar Blacks, Hispanics, and those in other groups (including Asian Americans) to directly own stocks. Wang and Hanna (2007) found in their analysis of a combination of the 1992 to 2004 SCF datasets that Whites had higher stock ownership than Blacks, Hispanics and those in other groups, even after controlling for income, risk tolerance, business ownership, and other characteristics. Hanna and Lindamood (2007) found that Black and Hispanic stock ownership was significantly lower

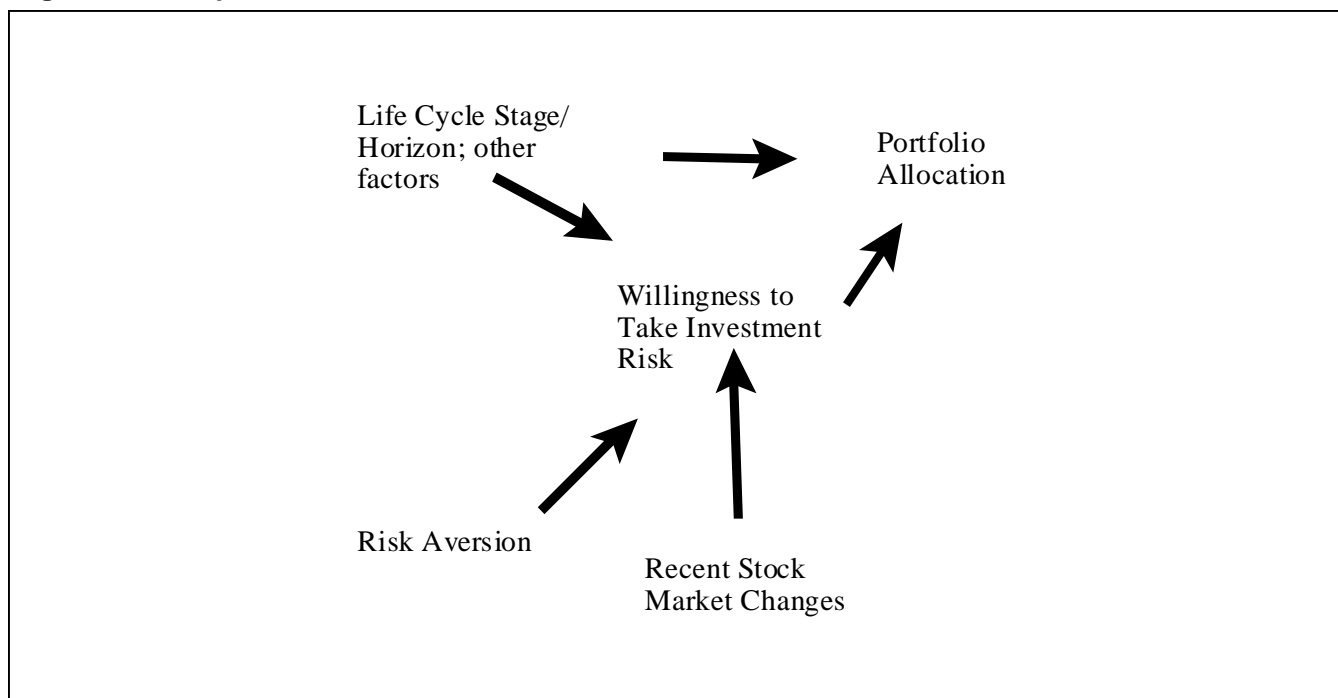
than White stock ownership and that predicted ownership decreased from 2001 to 2004. However, their use of step-wise logistic regression, which is a controversial approach (Hurvich & Tsai, 1990), made their conclusions suspect.

Gutter and Fontes (2006) found that of Black and White households that owned some risky assets in 2004, there was no significant difference between Blacks and Whites in the proportion of assets that were risky assets, controlling for net worth, income, and other characteristics. However, they found a significant difference between Hispanics and Whites in the ownership of risky assets, even after controlling for net worth, income, and other characteristics. Their findings suggest that whether a household owns risky assets is more important in describing racial differences than is the ratio of risky assets to total assets.

The Impact of Recent Events on Investment Choices

Yao, Hanna, and Lindamood (2004) analyzed changes in risk tolerance during the 1983-2001 period and discussed a conceptual model of willingness to take investment risk. We reproduced their model in Figure 1. They suggested that recent stock market changes and other economic changes might influence the willingness to take investment risk. They proposed that changes in risk tolerance were due to a recency effect, that people are more influenced

Figure 1. Conceptual Model of Investment Choices



Note. Based on Yao et al., 2004, Figure 1.

by recent events than by long term trends. In their model, recent changes would influence risk tolerance but not directly influence actual portfolio choices.

Another explanation for differences in stock investments might be “representativeness bias.” Grether (1980) found that inexperienced subjects tend to have representativeness bias, ignoring base-rate information. Camerer (1987) obtained similar results. If minority households are less experienced with the stock market than White households, it is possible that they will overreact to a stock market crash such as occurred in the 2000-2002 period. The Dow Jones Industrial Average was at 11,723 on January 14, 2000, and less than 22 months later, October 9, 2002, it was at 7,286, a decrease of 38% (retrieved from finance.yahoo.com on June 11, 2008). While this type of decrease is not that unusual in stock market history, it came at a point at which for the first time ever, a majority of U.S. households held stock investments, and many minority households had recently obtained stock investments, near the peak after the stock market boom of the 1990s. If minority households are more likely than White households to have representativeness bias, they would be more likely to withdraw from stock investments in response to a sharp decline in the market.

Expected Patterns of Risky Investments

Based on normative analyses, rational investors with typical patterns of human capital over their working lives initially should have most of their financial investment portfolios in risky assets such as stocks, and then as retirement approaches, start decreasing the risky allocation (Campbell & Viceira, 2002; Cocco, Gomes, & Maenhout, 2005). Homeowners might be more likely than renters to hold stocks (Cocco, 2005). More educated investors might be more familiar with stocks than less educated investors, and therefore more likely to own them, even after controlling for income (Huberman, 2001).

Haliassos and Bertaut (1995) explored a number of reasons why most households did not own stocks, including minimum investment requirements. Even though it is possible to start investing in a stock fund for a retirement account with very low amounts of money, it seems plausible that high income households will find it easier than low income households to invest in stocks because the time needed to investigate alternatives is more worthwhile if one is investing a large amount of money.

Gender influences investment choices because of the lower risk tolerance of females (Yao & Hanna, 2005), but it might also have an independent effect because of income expectation differences between males and females. Because of their longer life expectancy, stock investments might be more reasonable for females than for males. Having a child at home might make the investment horizon shorter, so it might plausibly be related to a lower chance of owning stocks (Wang & Hanna, 2007). Previous empirical studies have found that business ownership, age, risk tolerance, education, household composition, income, having financial assets at least equal to one month's income, and homeownership affect stock ownership (e.g., Wang & Hanna, 2007).

Research Overview

Stocks represent a good choice for a risky, high return asset for long-term investing. Most retirement assets are in financial assets, and stocks account for a majority of the funds of younger workers (Investment Company Institute, 2006), while publicly traded Real Estate Investment Trusts (REITS) have a total value of less than 2% of the total market capitalization of all U.S. stocks (National Association of Real Estate Investment Trusts, 2008; New York Stock Exchange, 2006). Even though investment in real estate may be a good alternative to stocks in terms of expected returns and the low correlation of real estate with stock investments (National Association of Real Estate Investment Trusts, 2007), most real estate investments represent very different issues and knowledge requirements for households compared to stock investments. Likewise, investment in a private business also may have a high expected return, but the decision to invest in one's own business represents a very different decision than the decision to invest in stock investments.

The decision of whether to own stocks represents a combination of choices including whether having investments is reasonable at a particular point in the lifecycle, for instance, for very young households (Cocco et al., 2005). It seems reasonable to assume that households with similar levels of risk tolerance, age, income, and other characteristics should have the same ownership rate of stocks, regardless of racial/ethnic identity. Controlling for these characteristics, if the rates of stock ownership are different for racial/ethnic groups, it means that something other than these characteristics account for the difference in ownership rates. Familiarity with financial markets may be important in the decision to invest in stocks.

Conceptual Model

Our focus was on whether the stock ownership rates of minority households decreased from 2001 to 2004. We used the conceptual model presented in Yao et al. (2004) and shown in Figure 1. Under that model, portfolio allocation decisions, including ownership of stock investments, were assumed to be based on lifecycle stage, income and other household characteristics, and willingness to take investment risks. Willingness to take investment risks was assumed to be related to household characteristics, risk aversion (assumed to be more stable than willingness to take investment risks as measured in the Survey of Consumer Finances) and recent economic changes, especially stock market changes. Analysis of this model might be ambiguous if a household's portfolio allocation is measured as the percent of assets held in stock investments, as price changes would change the allocation even if a household took no actions. However, we focused on stock ownership, as that seemed to be the most important difference between Whites and minority households (Gutter & Fontes, 2006).

If the Yao et al. model is valid, there should be no change in predicted stock ownership between 2001 and 2004 after controlling for willingness to take investment risk and household characteristics. Under that model, the stock market decline during the 2000-2002 period would lead to a decrease in the willingness to take investment risk, but would not have a separate impact on stock ownership, as the only impact of the decline should be on the willingness to take risk. Therefore, our hypotheses for each of the four racial/ethnic groups was that after controlling for changes in risk tolerance and household characteristics, stock ownership will not change between 2001 and 2004. If, however, minority households are more likely than White households to have representativeness bias, they will have a decrease in stock ownership while White households might not.

Methods

The Survey of Consumer Finances

We used data from the Survey of Consumer Finances (SCF), a survey of U.S. households that the Board of Governors of the Federal Reserve System sponsors every three years. The 2004 SCF survey is the most recent survey available to researchers. The SCF is particularly valuable for research concerning family finances due to the large amount of information it contains concerning income, assets, debts, and household characteristics (Bucks

et al., 2006). In our research, we used a combination of the 1992, 1995, 1998, 2001, and 2004 datasets for some of the descriptive analyses. Because the focus of our research was to examine factors related to the decrease in stock ownership between 2001 and 2004, we limited our multivariate analyses to the 2001 and 2004 datasets.

For all datasets included in this research, the SCF calculates any missing values using an estimating procedure that results in five complete datasets for each household. This method produces variances in analyses that are more similar to variances of actual distributions than other methods of estimating missing values. Each data set is called an implicate and the analysis must account for the five datasets by an accepted approach (Kennickell, 2006). Ignoring the implicate structure of the dataset can result in underestimates of variance, with some effects appearing to be significant when they really are not (Lindamood et al., 2007). We used the repeated-imputation inference (RII) method (Montalto & Sung, 1996) to combine the implicates for the means tests shown in Table 1 and the logistic regressions (logits) in Table 3 to correct for underestimation of variances due to imputation of missing data. Deaton (1997) suggested that use of endogenous weights could bias multivariate analyses, therefore, we did not use the weights in the logistic regressions.

Racial/Ethnic Category of the Respondent

For husband-wife and partner households, the SCF attempts to interview the more financially knowledgeable partner. The racial/ethnic category represents the self-identification of the respondent, which is not necessarily the category that other household members might choose. The SCF has no information on the racial/ethnic identification of other household members. For brevity, in some parts of our discussion we refer to household racial/ethnic status (e.g., White households,) rather than the more accurate term "households with a White respondent."

The SCF racial/ethnic variable² is based on the answer to the following question:

"Which of these categories do you feel best describe you?"

Following that question, a card is handed to the respondent that states:

Please list your strongest identification first:

White

Black; African American

Hispanic; Latino

Table 1. Changes in Stock Ownership Rates Over Previous Survey Year by Race/Ethnic Group

Survey year	Percent of households in each group directly and/or indirectly owning stocks							
	White	<i>p</i>	Black	<i>p</i>	Hispanic	<i>p</i>	Other/Asian	<i>p</i>
1992	43.2%		16.8%		11.5%		26.7%	
1995	45.1%	.001	19.5%	.034	24.5%	.001	38.9%	.001
1998	54.4%	.001	30.1%	.001	21.4%	.090	47.2%	.001
2001	57.5%	.001	34.2%	.004	28.0%	.001	51.7%	.107
2004	56.7%	.138	25.5%	.001	18.7%	.001	45.8%	.028

Note. Analysis of means tests for differences, 1992-2004. Significance levels (*p*) are for whether change in stock ownership rate for a group over previous survey year is significantly different from zero, based on 2-tail tests using RII procedure. Analyses exclude households that differ by race (X6809 for the 1998-2004 datasets, X5909 for the 1992-1995 datasets) across implicates.

For each year, all differences in ownership rates between racial/ethnic groups are significant at $p < .001$.

Asian

American Indian; Alaska Native; Native Hawaiian;

Other Pacific Islander

Other

Although the question shown above offers six racial/ethnic categories, the public dataset has a single category of “Other,” combining Asian, American Indian, Alaska Native, Native Hawaiian, Other Pacific Islander, and Other. In analyzing the four racial/ethnic groups in the public dataset (White, Black, Hispanic, and Other), we found that the SCF had coded some households as different racial/ethnic groups in different implicates. Thus a household could be coded “Other” in Implicate 3, but “Hispanic” in Implicate 1. Because of the importance of the racial/ethnic variable to our analysis, we deleted from the sample those households that did not have the same racial/ethnic identification in all five implicates. As discussed previously, we can infer from racial and Hispanic distributions from the 2000 U.S. Census that most households in the combined Other category have Asian or Pacific Islander respondents. The resulting sample sizes (all racial/ethnic groups combined) are 3,890 (1992), 4,283 (1995), 4,298 (1998), 4,429 (2001), and 4,506 (2004). For our primary descriptive analyses, we analyzed each racial/ethnic group separately for 1992, 1995, 1998, 2001, and 2004. In order to focus on the change after the stock market crash of 2000-2002, our multivariate analyses were based on the 2001 and 2004 samples, again analyzing each racial/ethnic group separately.

Independent Variables

In the multivariate analysis, we included as an independent variable the dichotomous variable of whether the survey year was 2001 or 2004. Other independent variables were

selected based on theoretical considerations of whether stock investments would be appropriate. We followed many of the specifications discussed in Wang and Hanna (2007) for operationalizing variables. Demographic and economic variables were related to lifecycle considerations, for instance, very young households might have debts and acquiring durable goods as salient goals, and therefore find stocks to be inappropriate investments. Demographic characteristics included age,³ education, gender of the respondent, presence of related children under age 19, and a series of dummy variables related to household type, with the reference category in the multivariate analyses being “married couple household.” Economic variables included homeownership, whether the household had business investments (other than publicly traded stocks), whether the household had investment real estate other than the personal residence, whether the household’s financial assets exceeded monthly income, and the natural log of net worth and household income. (For the log variables, the log of 0.01 was used if the actual amount was zero or negative.) Dummy variables for risk tolerance categories also were included.

Dependent Variable

The dependent variable was whether the household had any stock investments, directly or through mutual funds, including those in retirement accounts. The variable is dichotomous. Even though we refer to “stock ownership” in the results and discussion, a household that owned a mutual funds containing stocks was counted as a stock owner.

Descriptive Analyses

We analyzed the change in stock ownership rates by racial/ethnic group for the years 1992 to 2004 period by conduct-

ing means tests of the changes in each group's rate from one survey to the next. By this method, we can answer questions such as "was the change in the White stock ownership rate between 1992 and 1995 significantly different from zero?"

Multivariate Analyses

The dependent variable analyzed is dichotomous, as a household either had stock investments or not. Allison (1999, p. 5) described logistic regression as the optimal method for multivariate analysis of dichotomous dependent variables. One potential problem with regression techniques is that with many independent variables, multicollinearity from combinations of effects of some of those variables might result in variables that we expect to have significant effects on the dependent variable not being significant. If our main variables of interest have significant effects, then multicollinearity is not a problem. If a variable of interest does not have a significant effect, it is prudent to test for the condition. Allison (1999, pp. 48-51) suggested using the SAS test for tolerance and variance inflation, using the regression procedure with the dichotomous dependent variable.⁴ Our interest was in the effect

of the time trend variable, so if that was not significant, we used Allison's suggested tests for multicollinearity.

We can estimate predicted probabilities of stock ownership based on a transformation of the coefficients estimated in a logistic regression (Allison, 1999, p. 14). We used the method described in Wang and Hanna (2007).

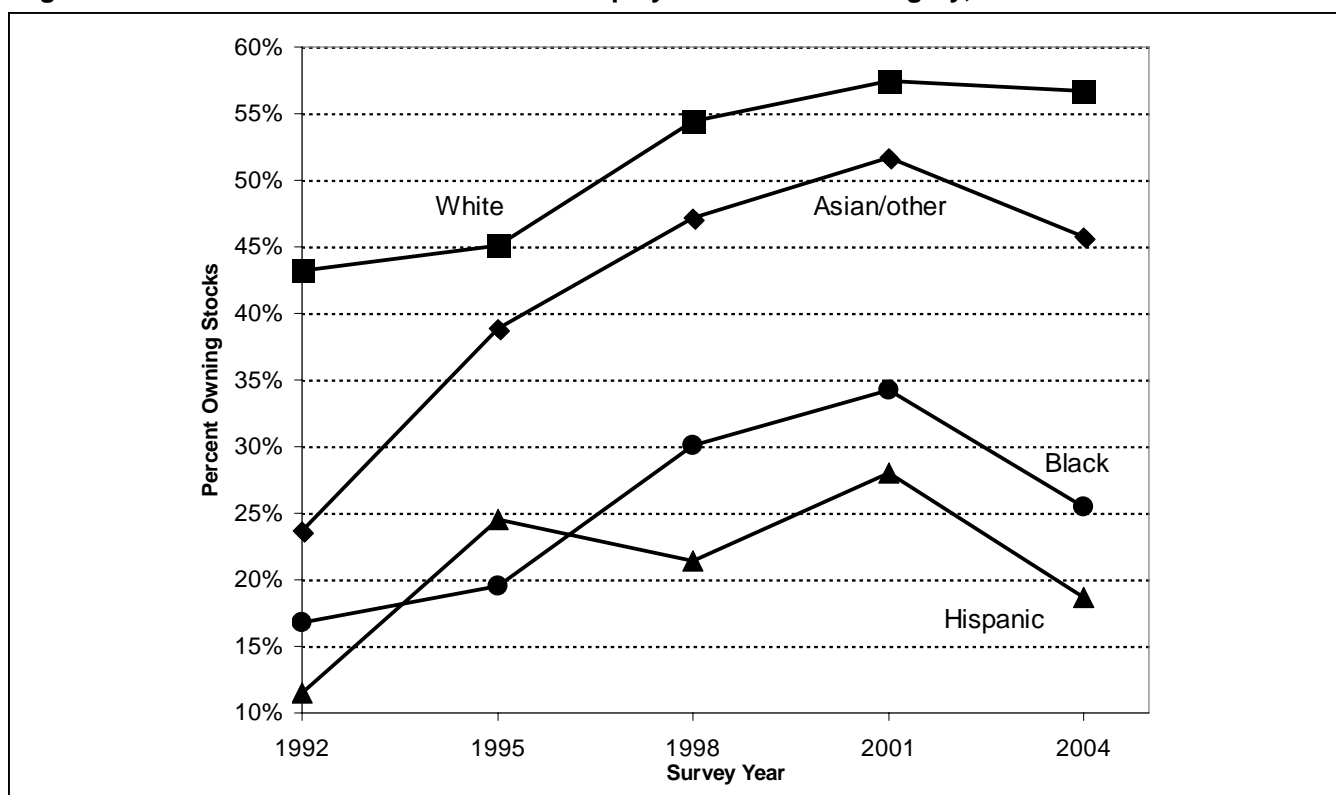
Results

Descriptive Analyses of the 1992-2004

Surveys of Consumer Finances

Table 1 and Figure 2 show stock ownership rates by year for each of the four racial/ethnic groups for the 1992-2004 Surveys of Consumer Finances (SCF). The significance levels in Table 1 indicate whether the changes in stock ownership rates were significantly different from one survey to the next for each racial/ethnic group. For instance, the increase in the stock ownership rate for White households from 43.2% in 1992 to 45.1% in 1995 was significantly different from zero, with a *P* value of less than 0.001. The White rate of stock ownership increased each period from 1992 to 2001, but the 2004 rate was not significantly different from the 2001 rate. The Black rate

Figure 2. Direct and/or Indirect Stock Ownership by Racial/Ethnic Category, 1992-2004 SCF



Created by authors based on weighted analyses of the 1992-2004 Surveys of Consumer Finances.

increased significantly each period until 2001, from a rate of 16.8% in 1992 to 34.2% in 2001, but then dropped significantly to 22.5% in 2004. The Hispanic rate increased significantly from 11.5% in 1992 to 24.5% in 1995, but then had a small and not statistically significant decrease to 21.4% in 1998, a significant increase to 28.0% in 2001, then dropped significantly to 18.7% in 2004. The Other (mostly Asian) stockownership rate increased significantly for each period from a rate of 26.7% in 1992 to 47.2% in 1998, had a smaller (not significant) increase to 51.7% in 2001, and then dropped significantly to 45.8% in 2004. For each survey year, the stock ownership rates of Blacks, Hispanics, and of the Other/Asian group were significantly lower than the White rate for that year.

Table 2 shows selected household characteristics for the four racial/ethnic groups in 2004. Households with White respondents had higher income, net worth, risk tolerance, and were more educated than households with Black or Hispanic respondents. The Other/Asian group had about the same mean household income level as White house-

holds but had lower mean income per person. White respondents were more likely to be willing to take some risk than were respondents in the Other/Asian group, but the two groups were close in their willingness to take above average or substantial risk.

Logistic Regression Results

Logistic regression (logit) was performed for each racial/ethnic group to analyze whether changes in stock ownership between 2001 and 2004 were significant after controlling for the effects of other variables in the logits. The results of four logits are shown in Table 3. The time trends, as indicated by the effect of the dummy variables for the 2004 survey, are similar to the descriptive results for the change from 2001 to 2004 (as previously discussed and shown in Table 1). These logit results suggest that even if risk tolerance, real income, ownership rates of other high return investments, and other household characteristics had remained the same, stock ownership rates for minority households would have decreased from 2001 to 2004, but the White rate would not have decreased signifi-

Table 2. Selected Household Characteristics by Racial/Ethnic Category, All Households, 2004

Variable	Mean, Median, or Percentage with Characteristic			
	White	Black	Hispanic	Other/ Asian
Respondent's age	50.4	47.2	41.8	45.3
<i>M</i> household size	2.4	2.4	3.4	3.1
<i>M</i> household income	79,938	39,040	39,475	79,982
<i>Mdn</i> household income	49,290	28,753	26,699	51,344
<i>M</i> income per person	36,930	19,964	13,935	28,727
<i>M</i> net worth	553,363	109,718	126,129	371,606
<i>Mdn</i> net worth	136,750	20,420	15,700	143,200
Have financial assets > 1 month's income	78.6%	53.5%	43.8%	75.7%
Have investment real estate other than personal residence	19.9%	12.3%	12.0%	19.6%
Have business asset other than publicly traded stock investments	13.5%	4.7%	4.0%	14.4%
Have any type of risky, high return investment	63.7%	32.7%	26.8%	60.5%
Own home	75.8%	50.1%	47.8%	57.5%
Unwilling to take risks with investments	36.5%	57.3%	65.2%	45.3%
Willing to take above average or substantial risk	20.5%	14.5%	15.2%	21.0%
Respondent has < high school degree	9.1%	20.4%	43.6%	5.0%
Respondent has college degree	41.5%	26.8%	11.9%	55.0%
Respondent female	53.5%	67.7%	52.5%	44.1%
Married couple household	54.5%	25.7%	50.1%	63.0%
Have related child < 19 at home	40.2%	47.8%	61.8%	56.9%
Weighted percent of households in category	73.6%	13.6%	9.2%	3.7%
Actual (unweighted) number of households	3,511	482	347	166

Note. Table created by authors, using five implicates of the 2004 Survey of Consumer Finances, excluding households that differ in racial/ethnic category (X6809) across implicates. All results are weighted except the actual number of households.

Table 3. Logistic Regressions of Stock Ownership, 2001-2004 by Racial/Ethnic Group

	White		Black		Hispanic		Other/Asian	
	Coeff.	p	Coeff.	p	Coeff.	p	Coeff.	p
Intercept	-6.8430	.0001	-9.2110	.0001	-16.9586	.0001	-9.6678	.0001
2004 survey (versus 2001)	-0.0494	.5136	-0.4835	.0225	-0.9115	.0031	-0.8021	.0386
Have real estate investment	0.3472	.0003	0.0375	.9035	0.0574	.8660	-0.2823	.5133
Have business investment	-0.2007	.0634	0.1294	.7683	-0.2303	.6294	-0.7363	.1130
Homeowner	0.3966	.0001	0.4800	.0493	0.4893	.1513	0.0107	.9886
Log (Income)	0.3095	.0001	0.4710	.0019	1.3516	.0001	0.4518	.0217
Log (Net worth)	0.0840	.0001	0.0298	.2381	-0.0381	.3309	0.1177	.0657
Have financial assets > 1 months income	2.5908	.0001	2.4306	.0001	1.9875	.0001	2.8764	.0001
Risk tolerance attitude.								
Reference category = unwilling to take risk								
Average risk tolerance	1.2341	.0001	1.0288	.0001	1.2772	.0001	1.9124	.0001
Above average risk tolerance	1.7316	.0001	1.0521	.0012	1.4575	.0004	1.6863	.0012
Substantial risk tolerance	1.3858	.0001	0.8593	.0419	1.0591	.0869	1.4625	.0777
Age of respondent	-0.0177	.0001	-0.0058	.5496	-0.0174	.2279	0.0026	.9080
Education of respondent.								
Reference category = less than high school degree								
High school degree	0.4154	.0127	0.9392	.0315	0.8357	.0648	0.5959	.5159
Some college	0.5696	.0010	1.3045	.0003	1.2389	.0050	0.1120	.8994
College degree	1.1816	.0001	1.6846	.0004	0.9539	.0336	0.7531	.3815
Household composition.								
Reference category = married couple								
Partner	-0.0982	.5724	0.0048	.9987	-0.2854	.5671	0.2378	.7864
Never married	-0.2469	.1001	0.0665	.8295	-0.1969	.7038	0.8589	.2555
Widow(er)	-0.1475	.6182	-0.7061	.1589	0.4973	.6639	0.7541	.4222
Divorced or separated	-0.2074	.0952	-0.3380	.2434	0.1910	.6968	1.0217	.1238
Related child < 19 at home	-0.0894	.3440	0.3056	.1952	0.1073	.7444	0.8870	.0346
Respondent female	0.0012	.9849	0.0001	.9949	0.0880	.7706	-0.6884	.0674
Concordance ratio	90.4%		89.8%		92.3%		90.6%	

Note. Coefficients significantly different from zero using 2-tail test shown in boldface.

Logistic regression analyses unweighted, based on all five implicates in combined 2001 and 2004 SCF datasets, using RII procedure.

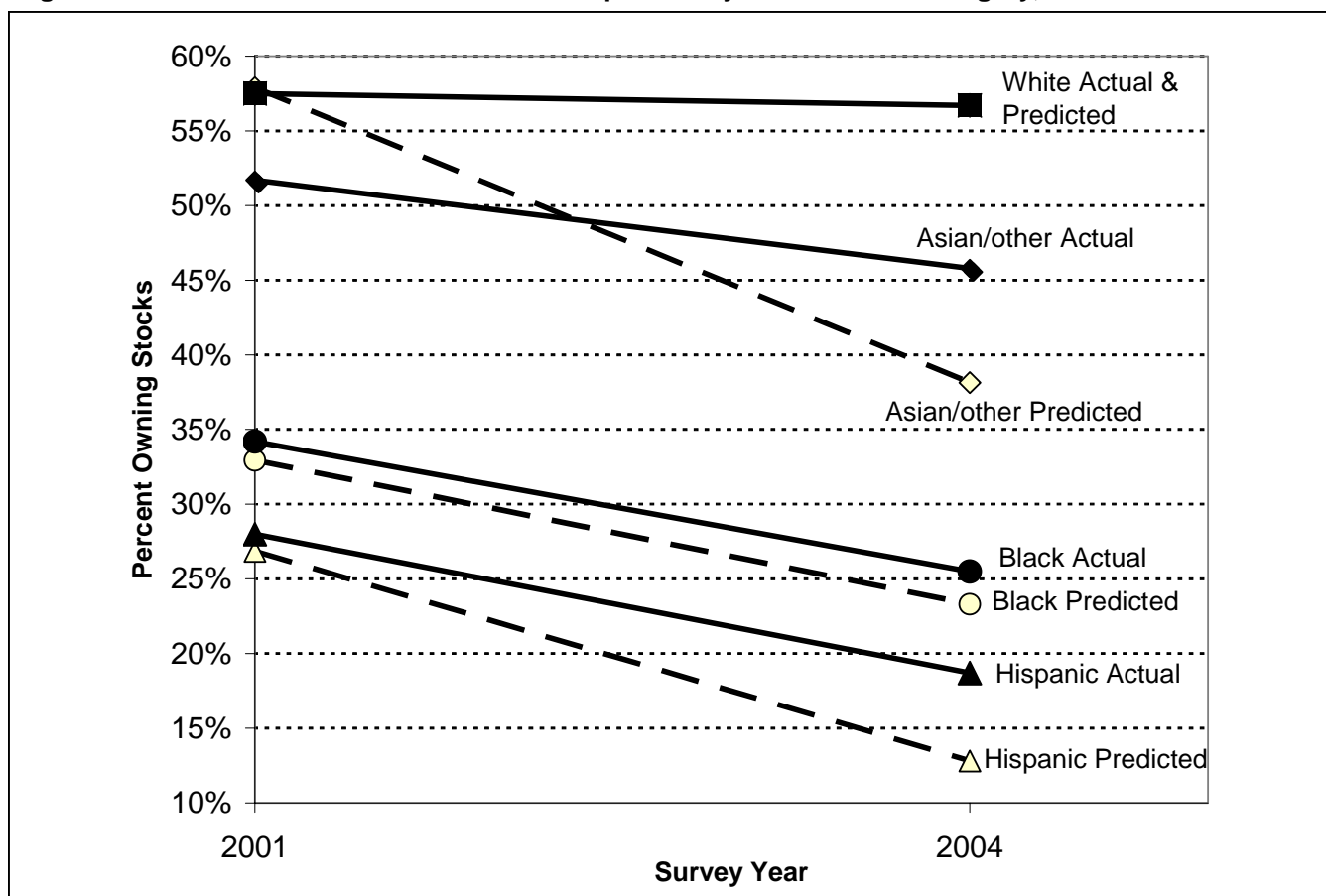
Concordance ratios indicate the percent of time the logit correctly predicts ownership status of households. The ratio for each racial/ethnic group is calculated as the average of the ratios obtained for each of the five implicates.

cantly. A test for multicollinearity for the White sample for the dummy variable for 2004 showed that the lack of significance was not due to multicollinearity.⁵ Figure 3 shows the predicted stock ownership rates for each racial/ethnic group for 2001 and 2004 based on the logit results in Table 3, and for comparison, the actual stock ownership rates for each group. For Black households, the drop in the predicted stock ownership rate was approximately the

same as the actual drop. For Hispanic and Asian/Other households, the decreases in the predicted stock ownership were much greater than the actual decreases.

Considering the variables in the logits that could account for these differences in the rates of stock ownership, there were no consistent, statistically significant patterns for the effect of having other high return investments. For White

Figure 3. Predicted and Actual Stock Ownership Rates by Racial/Ethnic Category, 2001-2004 SCF



Predicted rates based on logistic regressions shown in Table 3, at mean values of other variables.

households, having an investment in real property other than the personal residence was positively related to owning stocks, so real estate did not seem to be a substitute for stock investments. Having a business investment was negatively related to having stocks for White households, though the relationship was not significantly different from zero at the 0.05 level using a two-tail test. For Black, Hispanic, and Asian/other households, neither ownership of real estate as an investment nor business ownership had significant effects on stock ownership. Owning a home was significantly related to stock ownership for both White and for Black households. Predicted stock ownership increased significantly with income for each group and significantly with net worth for White households. Having financial assets that amounted to more than one month's income was significantly related to stock ownership for each group.

The predicted probability of stock ownership decreased with age for White households but not for Black, Hispanic, or Asian/other households.⁶ Stock ownership increased

with education for White and Black households and was higher for college educated Hispanics than for those without college, but the relationship between education and stock ownership was not significant for the Asian/Other group. Household composition variables and whether the respondent was female were not significantly related to stock ownership.

Conclusions

The stock ownership rates of minority groups dropped significantly between 2001 and 2004, and the decreases were significant even after statistically controlling for many characteristics that affect investments, such as risk tolerance, net worth, education, and income. This drop reversed the 1992-2001 trend of increasing rates of stock ownership among minority groups. We found that changes in risk tolerance and demographic and economic characteristics could not explain the drop, indicating that other reasons such as responding to current economic conditions, may have led to the decreased stock ownership. Minority groups in the United States have started investing

more recently than Whites. It is possible that due to less investment experience, a response to short term trends may have led these households to react more strongly to the stock market crash of 2000-2002.

Racial/Ethnic Differences in the Reaction to the Stock Market Crash of 2000-2002

People tend to invest in what is familiar (Huberman, 2001). Thus the prevalence of immigrants among Hispanic and Asian-American households and the poverty background of many Black households might have limited their comfort with investing in stocks. The comfort level might have increased in the 1990's with years of substantial investment gains, but it is possible that the degree of comfort by minority households was not as established as it was for White households.

Given the superiority of stocks over other financial investments for long-run investing goals, the substantial reduction in stock investing by Blacks and Hispanics is a problem. A major concern is the ability of households to meet longer term financial goals such as education for children and a comfortable retirement. Investing early in high-yield investments is widely recognized as important to building wealth. The lower stock ownership rates of minority households result in even wider wealth gaps than otherwise would occur if they had equal ownership rates for comparable income levels. While advances were made during the years 1992 – 2001, the drop in stock ownership rates of minority households from 2001 to 2004 indicates that ground is being lost.

The result that predicted White stock ownership did not decrease is consistent with our null hypothesis that controlling for changes in risk tolerance and other factors, stock ownership would not change. The fact that actual White stock ownership did not decrease significantly suggests that inertia or a comfort level based on a longer ownership history inhibited a reaction to short term losses. It is also consistent with the idea that White investors, being generally more experienced than minority investors, were less susceptible to representativeness bias (Grether, 1980). The result that predicted stock ownership by minority households decreased is consistent with representativeness bias and also suggests that the model shown in Figure 1 is not valid for minority households.

Financial education directed at all households, but especially Black, Hispanic, and other minority households, could improve the chances of households investing appro-

priately over longer horizons, thus helping achieve retirement and other financial goals. It is important that households understand the long-term nature of investments and how high-yield investments perform over the years when compared to other types of savings and investments. Financial counselors should pay particular attention to demonstrating to persons new to investing that investing is long term in nature with long term yields, and that households who do not react to short term fluctuations are better off in the long run. Holding high return investments over the long run is a significant contributor to wealth. As long as there are differences in the rate of stock ownership, it is not likely that the wealth gap will decrease significantly, even if equality of income is achieved. A decrease in the wealth gap in the U.S. will not occur until persons of equal income have similar investment patterns.

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Endnotes

¹In the 2000 Census, 97.6% of the respondents gave only one answer to the race question. Hispanic was not listed as one of the choices to that question (Grieco & Cassidy, 2001). Of those who gave one race, 77.0% listed White, 12.6% listed Black, 0.9% listed American Indian, 3.7%

listed Asian, 0.1% listed Pacific Islander, and 5.6% listed other. Most of the “other” group is Hispanic, based on the proportion of Hispanics who listed some racial group other than those listed. Therefore, we estimate that approximately 80% of the “other” group in the Survey of Consumer Finances might be Asian or Pacific Islander.

²Before the 2004 survey, the public SCF dataset contained only one racial/ethnic question, with White and Hispanic presented as separate, alternative categories (variable X6809). The 2004 SCF introduced a question that asked only about Hispanic status (variable X7004), in addition to X6809. The two racial/ethnic variables in the 2004 survey can be used to create four categories: non-Hispanic White, non-Hispanic Black, Hispanic (respondent chose Hispanic in one or both questions), and Other. The new coding possible in the 2004 SCF results in a higher proportion of Hispanics than the proportion based on the traditional racial/ethnic question, 11.2% compared to 9.2%. In this research, we used the one question classification in order to combine the 2004 dataset with datasets from earlier survey years for our analyses. Below are the descriptive results for 2004 using the new, combined racial/ethnic status categorization.

Stock Ownership by Race/Ethnic Category based on Combination of X6809 and X7004, 2004

	Distribution	Own stocks directly and/or indirectly	Significance level of difference from White non-Hispanic households
White non-Hispanic	71.9%	57.3%	
Black non-Hispanic	13.4%	25.6%	<0.001
Hispanic	11.1%	20.6%	<0.001
Non-Hispanic other, including Asian	3.6%	46.5%	<0.001

Based on authors’ calculations, weighted analyses of Surveys of Consumer Finances datasets, using RII technique with all implicates. Households that had different values for the racial/ethnic question across implicates were deleted.

³We also ran the logits with age and age squared, but with both terms included, neither term was significant in stock ownership logits that were otherwise identical to those in Table 3, with the exception of the Black-only logit (Endnote 6). The effects of the main variable of interest, the year dummy for 2004, were virtually unchanged when age squared was deleted from the analyses.

⁴We first tested a logistic regression with all racial/ethnic groups combined for 2001 and 2004, using interaction terms between racial/ethnic groups and the 2004 dummy. However, when we tested for multicollinearity, the variance estimate for each of the interaction terms was near the cutoff point suggested by Allison (1999) so we instead ran separate logistic regressions for each racial/ethnic group.

⁵We used the multicollinearity test suggested by Allison (1999) for the dummy variable for 2004 in the logit for White households, and the tolerance estimate of 0.98 was well above the 0.40 cutoff he suggested, and the variance inflation factor was only 1.02. Therefore, the lack of significance for the year variable in the White logit was probably not due to multicollinearity.

⁶For Black households, when both age and age squared were included in the logit, both terms were significant and the combined effect was that predicted stock investment ownership increased to age 45 and then decreased.

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