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Abstract

Using the Panel Study of Income Dynamics, we document that, controlling for observable characteristics, household investors' likelihood of entering the stock market within the next five years is about 30 percent higher if their parents or children had entered the stock market during the previous five years. Because even family members who live far away from each other tend to communicate frequently, despite the fact that interactions among people living close geographically have declined with the rise of alternative social channels, we argue that these findings highlight the significance of information sharing regarding household financial decisions. In addition, focusing on the sequential patterns of stock market entry, we explicitly take into account the time needed for information to be shared and disseminated among family members. Our finding that one member's entry positively influences future entries of other family members at distinct stages of the life cycle allows us to largely rule out the hypothesis that the observed correlations in stock market entries are primarily caused by common preferences shared by family members. Furthermore, because we do not find similar sequential patterns in stock market exits, our results do not support the hypothesis of herding behavior.

Keywords: Information sharing, Stock market participation, Extended families.

JEL Classification: D14, D83, G11.

1 Introduction

Recent research on household investment and portfolio choices highlights that investors often must make financial decisions based on limited knowledge and incomplete information. For example, Lusardi and Mitchell (2009) show that households with less financial knowledge are prepared less well for retirement. Lusardi, Mitchell and Curto (2009) document that financial literacy is low among the young people surveyed in the 1997 National Longitudinal Survey of Youth. Such limitations have substantial effects on household finance. For example, the lack of stock investment knowledge and experience may have effectively deterred many household investors from holding stocks and, consequently, may have kept the equity market participation rate low. In general, financial education and improved access to information should facilitate more efficient and economical investment decisions. In particular, households that have access to stock market information shared by other investors should, on average, be more likely to own stocks.

This paper tests this hypothesis by examining whether the stock investment knowledge and experience acquired by extended family members in the past can influence one's own stock market participation decisions in the future. We find that investors whose parents or children had entered stock markets in the previous five years are, on average, about 30 percent more likely to enter stock markets themselves in the next five years. Notably, even investors older than 65 years, often found to have lower stock ownership than younger investors, are significantly influenced by their children's past stock investment.[1] Moreover, investors whose siblings had entered stock markets before are also slightly more likely to invest in stocks in the future, although to a much less significant extent. We interpret our findings as evidence suggesting that investment knowledge and experience are shared among extended family members, especially among parents and children, and that such information sharing plays an instrumental role in inducing nonparticipating members to

[1]The literature on stock ownership among older households is extensive but provides somewhat mixed evidence. For example, among others, Heaton and Lucas (2000) and Agnew, Balduzzi and Sunden (2003) find that age has a negative effect on stock ownership or equity exposure. In contrast, Poterba and Samwick (1995) and Ameriks and Zeldes (2004) find little evidence that older investors invest less in stocks. See Ameriks and Zeldes (2004) for a comprehensive review of the related empirical evidence.

begin investing in stocks.

In principle, households have various channels through which to collect investment-related knowledge and information. Previous studies have emphasized the importance of learning and acquiring information via social interactions, especially through word-of-mouth communication. Most of these studies have focused on the location or community effects—communication among investors within the neighborhood where they reside. For example, Hong, Kubik and Stein (2004) find that senior households that interact more with their neighbors or go to church are more likely to invest in stocks. Similarly, Guiso, Sapienza and Zingales (2004) document that households living in high-social-capital areas, measured using data on electoral and blood donation participation, tend to invest more in stocks. Although statistically robust and conceptually appealing, this literature faces one major challenge. It has not established a concrete causal relationship between social interactions and stock market participation. The primary concern is that people who live and interact with each other in the same neighborhood are likely to be intrinsically similar and therefore share common investment strategies in the first place. In other words, because households are not randomly assigned to communities, the stock ownership correlation revealed in these studies can be driven by a third (potentially unobservable) factor that induces households to also live in the same community.

To circumvent the concern associated with endogenous sorting and matching, Brown, Ivković, Smith and Weisbenner (2008), henceforth BISW, take an instrument variables (IV) approach.[2] Specifically, they focus on the stock ownership of investors who were born in the same community as they live now (the native residents). The average stock ownership of this community is instrumented with the average ownership of the birth states of residents who moved to this community from other states. BISW argue that their IV choice is valid because, first, as Guiso, Sapienza and Zingales (2004) have argued, the social capital of one's birthplace has long-lasting effects on one's future economic decisions, which will in turn affect the average stock ownership of the community to which one moves; and, second, "there is no reason why one's own stock market participation decision should be influenced

[2]We also refer readers to BISW for a more comprehensive review of the related literature.

directly by the ownership rates in these other states except through their effects on one's neighbors."[3] Applying this IV strategy to administrative tax records, BISW find that if the community-wide average equity market participation rate rises 10 percentage points, the likelihood of investing in stocks by the community's native residents increases about 4 percentage points.

This paper adopts an alternative route to circumvent identification problems associated with endogenous sorting and matching. We focus on information sharing among investors who are connected for a purely exogenous reason—namely, they belong to the same extended family. As children grow up and move out to form their own households, members who belong to the same extended family must make their own, but still potentially interrelated, financial decisions. In the remainder of this paper, we will use the term "family" to refer to "extended family," which, in our data set, typically consists of several households. Also, for the purpose of clarity, we will use the term "investor" to refer to a person whose investment decision is subject to the influence of information shared by other family members.[4]

Although information sharing within a household is generally more frequent and efficient than that within a family, we do not pursue the former for three reasons. First, because investment decisions are typically made in a coordinated manner within a household, it is very difficult to identify to what extent information sharing between household members—most importantly, between husbands and wives—facilitates stock investment. Second, most household survey data do not separately record investment behaviors of husbands and wives. Third, unlike families, which are tied by exogenous biological relationships, most households are formed through marriage. As similar people tend to reside in the same neighborhood, married couples are more likely to share similar preferences, which brings back the endogenous matching concerns.

Extensive studies have exploited the intergenerational relationship, the family relationship that is also the focus of this paper. Most notably, Solon (1992) studies intergenerational income mobility, while Charles and Hurst (2003) examine intergenerational

[3]BISW (2008), p.1512.

[4]Of course, the "investor" also acts as other investors' "family member" in other periods in our data.

wealth correlation. More recently, Charles, Danziger, Li and Schoeni (2007) focus on intergenerational correlations of consumption, which is more closely related to households wellbeing. In addition, closely related to our paper, Chiteji and Stafford (1999) document that the likelihood of owning transaction accounts and stocks for households headed by young adults is positively influenced by their parents' ownership of such assets. Finally, BISW also detect some intergenerational correlation of stock ownership. However, because of the limitation of the tax record data they use, they achieve only some suggestive results and do not examine the sequential patterns of stock market entry.

Our analysis extends the previous studies on several dimensions. First, unlike the existing intergenerational relationship literature that squarely focuses on the transmission of knowledge and information through a one-way channel—from parents to children—we examine both the influence of parents on children and the influence of children on parents. We also study potential information sharing among siblings, which has attracted some attention recently. For example, Lusardi (2003) reports that people learn a great deal about planning for retirement from their older siblings. Second, although members belong to the same family for exogenous reasons, because they are connected genetically and lived together for a long time, members can share similar preferences, which in turn may lead to similar investment behavior. Hence, the correlation of stock ownership at any given point of time per se is not necessarily caused by information sharing. Interestingly, Charles and Hurst (2003) show that the raw parent-child correlation of stock ownership vanishes when controlling for income.

To more accurately identify the information sharing effect, this paper examines the sequential correlations of the stock market entries and exits of different family members instead of the static contemporaneous correlation of stock ownership. This identification strategy has two advantages. First, if indeed similar preferences shared by family members are the primary factor driving stock ownership correlations, arguably they will enter the market at similar stages of their respective life cycles, respectively. However, the sequential correlation we identify implies that the entry of one family member will positively affect

the entry decision of another member at a very different stage of the life cycle.[5] Second, our analysis explicitly takes into account the time needed for knowledge and information regarding stock investment to be accumulated, shared, and disseminated. One's stock market entry is unlikely to instantaneously affect one's family members' investment decisions.

Specifically, consider two individuals, A and B, who belong to the same family. Both A and B do not own any stocks at time t. Suppose that member A subsequently enters the stock market sometime between times t and $t+1$ for exogenous reasons. If the knowledge and information barriers preventing an investor from owning stocks can be overcome with the help of information shared by other family members, we should expect the likelihood of member B entering the stock market after $t+1$ to be higher, with other factors held constant. The only identification assumption required is that the factors influencing member A's investment decisions between times t and $t+1$ are not correlated with member B's decisions made after $t+1$. Because in our empirical analysis t and $t+1$ are separated by as many as five years, we argue that this assumption is a rather weak one.

How do we further confirm that the sequential correlation of stock market entries within a family is due to information sharing instead of some herding behavior? The distinction between the two is that if information sharing is the dominant force, investor B makes an informed decision to enter the stock market based on the know-how he learned from investor A. In contrast, if herding behavior dominates, then investor B's entry does not necessarily reflect his increased knowledge and better information about stock investment. His entry mainly reflects that his private information was dominated by the observation of A's entry. To address this concern, we further examine the dynamics of stock market exits among family members. For exits, we do not find a similar sequential correlation to what we find for entries, an indication that the entry correlation indeed most likely reveals the contribution of information sharing rather than herding (unless we can established that herding behavior is prescribed solely to market entries, not to exits).

[5]For example, the entry of an adult child in his thirties increases the probability that his parents, who are in their sixties or older. will enter the stock market.

2 Data

Like most of the previous studies of intergenerational relationships, this paper uses data from the Panel Study of Income Dynamics (PSID), a nationwide longitudinal household survey conducted by the Institute for Social Research at the University of Michigan. The survey was conducted annually from 1968 to 1997 and biennially after 1997. The unique feature of the PSID is that it follows and surveys not only the households originally included in the sample stratified in the late 1960s but also the split-out households formed by grown children and separated spouses. Consequently, the sample size of the PSID has risen since its first wave. As of the 2005 wave of the PSID public release, slightly more than 8,000 households had been surveyed.

As for the family relationships that we examined, we focused on an investor's parents, children, and siblings. In principle, the PSID also allowed us to study information sharing between grandparents and grandchildren. We did not pursue this relationship because the sample size was uncomfortably small.[6]

The primary source for identifying each of these family relationships is the PSID 2005 parent identification file. We restricted the parent-child relationship to birth mother and birth father.[7] The mother and father of a child needed to be identified separately because they might not have belonged to the same household any longer if they had divorced. The sibling, including half-sibling, relationship was established among the children who had the same birth mother or birth father. Throughout the entire sample construction, we restricted the sample individuals to those who had been either a household head or a head's wife in any of the seven years when information on stock market participation was collected by the PSID. We then associated each of these people with the personal identifiers of their mothers, fathers, children, and siblings whenever applicable.[8]

Upon completion of the associations establishing family relationships, our sample con-

[6]To be sure, at the person level, we could identify thousands of grandparent-grandchild pairs. However, the majority of the grandchildren were still too young to form their own households and to make independent stock investment decisions.

[7]Including foster and adoptive parents and children caused no material changes in the results.

[8]Again, for such associations to be made, those family members must have been either a household head or the wife of a head themselves in any of the seven waves.

tained more than 13,600 individuals who belonged to more than 2,500 extended families. As summarized in table 1, the family structures contained in the PSID data are quite rich and extensive. For example, nearly 60 percent of the individuals in our sample can be associated with their birth mothers, and 42 percent can be associated with their birth fathers.[9] Meanwhile, 47 percent of the individuals in our sample can be associated with their first grown-up child, 27 percent can be associated with their second grown-up child, and so on. Finally, about 50 percent of the sample individuals can be associated with at least one of their adult siblings, 34 percent with at least two, and so on.[10]

In addition to extensive income, employment, and demographic information that has been collected regularly, the PSID gathers information about household wealth holdings. A wealth module was added to the main survey every five years between 1984 and 1999 and was included in every wave since 2001, which, in total, yields seven waves of wealth data covering more than 20 years. Specifically, in 1984, 1989, and 1994, the PSID asked whether the household held any stocks either directly or indirectly through mutual funds, investment trusts, or individual retirement accounts (IRAs). From 1999, the question was changed to exclude "stocks in employer-based pensions or IRAs."

To validate the accuracy of the PSID stock ownership information and to assess the discrepancy caused by the definitional change introduced in 1999, we present snapshot statistics in table 2 for each of the seven waves and contrast them with the statistics calculated using the Survey of Consumer Finances (SCF). All statistics are weighted using the weights provided by each survey. The SCF is a nationally representative cross-sectional survey of household wealth and finances conducted by the Federal Reserve Board and is widely believed to be the best source of information about household finances in the United States. Because the SCF collects detailed information about various forms of stock holdings, we can benchmark the PSID statistics before and after the definitional change regarding stock holdings.[11] One challenge of comparing the two surveys is that the SCF

[9]The percentages were calculated at the person level, not the household or family level.

[10]The fraction of people with siblings appears to be high because a family with N grown-up siblings will show up N times in our data.

[11]Specifically, the SCF separately collects information on directly held stocks as well as on stocks held in mutual funds, annuities, trusts, pensions, and IRAs. It is possible to compute the stock ownership that

is a triennial survey that was not always in the field during the same year as the PSID. We linearly interpolated the SCF statistics when the SCF year did not match the PSID year.[12]

As table 2 shows, the PSID stock ownership statistics track their SCF counterparts very well, with all discrepancies smaller than 2 percentage points. For example, in 1989, the broadly defined PSID stock ownership was 30.6 percent, and its SCF counterpart was 31.8 percent; in 2005, the narrowly defined PSID stock ownership was 26.6 percent, and its SCF counterpart was 28.6 percent. In addition, the SCF statistics indicate that between 1999 and 2005, the broadly defined stock ownership is typically 20 percentage points higher than the narrowly defined stock ownership. Therefore, if the PSID had kept the original definition, stock ownership should have risen at least 10 percentage points between 1994 and 1999, rather than declining 9 percentage points, as shown in the table.

Although the PSID wealth data were collected only every five years before 1999, this data limitation is not extremely restrictive because in our research design we wanted to allow a sufficient amount of time for knowledge accumulation and information sharing. Accordingly, in our baseline analysis, we focused on the correlation of equity market entries among family members over two adjacent five-year periods. We examined stock ownership changes over the periods 1984-89, 1989-94, 1994-99, and 1999-2005, with the last one being a six-year interval. In an extension, we also examined the three two-year intervals between 1999 and 2005. Table 3 presents the percentage of households that entered and exited stock markets in the four five-year time intervals (unconditional on previous stock ownership). The entry statistics conditional on *not* being a stock owner previously and the exit statistics conditional on being a stock owner previously are shown in the underneath parentheses. Regarding the unconditional statistics, in the late 1980s and early 1990s, more households entered stock markets than exited stock markets by a significant margin. Because of the definitional change, the entry statistic between 1994 and 1999 is downward biased, whereas the exit statistic is upward biased. From 1999 to 2005, an about equal number of households entered and exited stock markets. The conditional statistics exhibit

matches either the wider or the narrower definition used by the PSID.

[12]For example, the SCF statistics for 2003 were calculated as $1/3 \times SCF_{2001} + 2/3 \times SCF_{2004}$.

similar trends of entry and exit. However, the conditional exit ratio is significantly higher than the conditional entry ratio because historically stock investors have been outnumbered by non-investors.

Next, we defined a dummy variable $entry^{i}_{t,\,t^{+1}} = 1$ if the investor i's household had entered stock markets between t and t^{+1}, and 0 otherwise, where $[t,\ t^{+1}]$ corresponded to each of the three intervals—1989-94, 1994-99 and 1999-2005. Likewise, we defined three dummy variables—$entry^{i,\,p}_{t^{-1},\,t}$, indicating if either investor i's father's *or* mother's household had entered stock markets;[13] $entry^{i,\,c}_{t^{-1},\,t}$, indicating if *at least* one of investor i's children's households had entered stock markets; and $entry^{i,\,s}_{t^{-1},\,t}$, indicating if *at least* one of investor i's siblings' households had entered stock markets. All three dummies refer to entry between times t^{-1} and t, which correspond to each of the three five-year intervals—1984-89, 1989-94 and 1994-99, respectively. Table 4 summarizes the four dummies in the sample pooling all waves, conditional on the investor not being a stock owner at time t. Nearly 6 percent of the investors in our sample saw their parents enter stock markets in the previous five years. The percentage is even higher—8.5 percent and 11.0 percent respectively—for the investor's children and siblings entering stock markets in the past five years. We defined a similar set of dummies for exiting the stock market: in our sample, the fraction of investors whose parents, children, and siblings exited the stock market in the previous five years is 6.0 percent, 5.8 percent, and 8.0 percent, respectively.

Finally, we restrict the sample to households whose heads were at least 25 years old, though we did not impose maximum age restrictions in our baseline analysis because we were particularly interested in exploring the extent to which parents' investment decisions are influenced by their children's actions. Conceivably, parents are likely to be quite old when their children are able to make independent investment decisions. Table 5 presents selected sample summary statistics of demographic variables that will be used in our econometric analysis. The percentage of unmarried households and households with education below high school appears to be higher than what are typically reported in other analyses using the PSID data, which often impose some maximum age limit. The senior people in

[13]This specification was relevant if mother and father were divorced.

our sample are more likely to be widowed and to have lower educational attainment.

3 Logistic Analysis

We estimated the following logistic model:

$$entry^{i}_{t,\,t^{+1}} = \mathbf{1}(\Psi^{i}_{t,\,t^{+1}} > 0), \tag{1}$$

where $\mathbf{1}()$ is an indicator function that is equal to 1 if the value of the Ψ function is greater than zero. The Ψ function is defined as

$$\Psi^{i}_{t,\,t^{+1}} = \alpha + \beta^{p} entry^{i,\,p}_{t^{-1},\,t} + \beta^{c} entry^{i,\,c}_{t^{-1},\,t} + \beta^{s} entry^{i,\,s}_{t^{-1},\,t} + \zeta Z^{i}_{t} + \eta Wave_{t} + u^{i}_{t}. \tag{2}$$

In equation (2), Z is a vector of the investor's demographic and economic characteristics, whereas $Wave_t$ is a vector of survey wave dummies to capture the aggregate trend in stock market participation as well as wave-specific measurement errors caused by the 1999 change in the stock holding definition. We followed Mankiw and Zeldes (1991) and let the vector of control variables, Z, include investors' educational attainment and labor income quartiles (with the retired households, which typically have zero or extremely low labor income, being the omitted group) in addition to the standard demographic characteristics, such as an age polynomial, race, and marital status.

Table 6 reports the main results, with standard errors and implied odds ratios shown in parentheses and brackets, respectively. The logistic model was estimated after restricting the sample to investors that did not own any stocks in wave t. We first focus on columns (1) through (3), which present results for the five-year intervals. We note that most of the control variables are tightly estimated and are consistent with our expectations and with what previous studies have reported. The estimated coefficients suggest that better-educated households, white households, and households with higher labor income are more likely to enter stock markets. However, marital status does not appear to have a significant effect on entering stock markets.

Now we focus on the coefficients of family members' lagged stock market entries. We find that the point estimates of the $entry^{i,\,p}$, $entry^{i,\,c}$, and $entry^{i,\,s}$ coefficients are all

positive, suggesting that if an investor's other family members had entered stock markets in the previous five years, the probability of the investor's entering stock markets in the subsequent several years would be higher. In particular, the influence among parents and children is the most pronounced and significant. The odds ratios suggest that if the investor's parents or children had entered stock markets in the previous five years, the investor's likelihood of investing in stocks in the subsequent five or six years would be 30 to 35 percent higher than that of a comparable investor who did not have the advantage of sharing information with family members. Given our finding that the conditional mean likelihood of entry within five-year intervals was about 16 percentage points, the contribution of information sharing is hence roughly 5 percentage points, largely consistent with BISW's estimate acquired with administrative data. Information sharing among siblings, however, appears to be less pronounced. The point estimate of $entry^{i,\,s}$—0.07—though positive, is much smaller than those of $entry^{i,\,p}$ and $entry^{i,\,c}$ and is not statistically significant. This result is somewhat surprising because, first, there is no evidence suggesting that information sharing among siblings is less frequent and less intense than that among parents and children; and, second, given that siblings are typically at similar life cycle stages, one might expect that the so-called peer-effect would make information sharing among siblings more effective. Indeed, as discussed earlier, Lusardi (2003) shows that people learn from their older siblings regarding retirement planning.

Interestingly, we also find that information provided by their children significantly boosts the stock ownership of the senior investors. When we restrict the sample to those younger than 65 years, we find that the coefficient of $entry^{i,\,c}$ estimated using the restricted sample is appreciably smaller—0.15 (not shown) versus 0.30 reported in column (1) of table 6—and becomes statistically insignificant. There could be two reasons for the muted effects in the age-restricted sample. First, in our sample, most parents whose children ever entered stock markets are older than 65. Second, because children whose parents are younger than 65 are usually quite young themselves, we speculate that these children's investment experience may not have much of an influence on their parents.

Columns (4) through (6) of the table present results for the two-year intervals (1999-

2001, 2001-03 and 2003-05). One advantage of this sample is that no change in the stock ownership definition occurred during these periods. We find some suggestive evidence indicating that information flowing to senior people may need more time to take effect. We find that the coefficient of $entry^{i,\,p}$, which measures the influence of parents on children, becomes large —0.33 versus 0.28—and remains highly statistically significant. However, the coefficient of $entry^{i,\,c}$, which measures the influence of children on parents, becomes a very small negative number and is statistically insignificant. One possible reason for these results is that older people are better at accumulating knowledge and experience, whereas younger people are more inclined and able to learn from others. Two years can be enough time for new parental stock investors to pass along their knowledge and experience to their children. However, the reversed flow of information may need more time to have an appreciable effect. Furthermore, the coefficient of $entry^{i,\,s}$, measuring the effect of siblings' previous stock market entries, remains insignificant.[14]

Finally, we examined whether decisions to exit stock markets made by one's family members also make one more likely to exit stock markets in the ensuing years. The answer is no. As shown in table 7, regardless of whether we use the five-year or two-year intervals, none of the estimated coefficients of $exit^{i,\,p}$, $exit^{i,\,c}$, and $exit^{i,\,s}$ are positive and statistically significant. These estimated coefficients are either very small positive numbers that are highly statistically insignificant or negative numbers that are somewhat larger in absolute value.[15] This finding is reassuring because if the correlations we report in table 6 were caused by herding behavior instead of information sharing, one would expect that an investor's exit from stock markets would be followed by the exits of other family members. However, we have not found any evidence supporting such a hypothesis in table 7.

4 Concluding Remarks

Social interaction is one of the most important channels through which households acquire knowledge and information about investment. The revolutionary progress of information

[14]The point estimate of $entry^{i,\,s}$ in the sample for two-year intervals becomes negative.

[15]The only marginally significant coefficient is $exit^{i,\,p}$ in column (1), but the sign is negative. Taken at face value, the result suggests that parents' exits in fact promote children's entering stock markets.

technology has made the Internet one of the major communication channels, arguably squeezing out the time typical households spend in talking to their neighbors, fellow churchgoers, and colleagues. Consequently, the role of location intimacy as an instrument of social communication may have been weakened.

This paper exploits a different channel of social interaction—namely, the communication among extended family members, which is less likely to be affected by technological progress. Our analysis suggests that information sharing among family members plays a significant role in influencing investor's decisions regarding stock market participation. We find that if an investors' parents or children entered stock markets in the previous five years, the investor is 30 to 35 percent more likely to start investing in stocks during the subsequent five or six years. Distinct from most of the existing studies of intergenerational economic ties, our exercise indicates that information sharing is a two-way street—not only can children's investment decisions be influenced by their parents' action, but also parents' investment decisions can be influenced by taken by their children's actions. Furthermore, our finding that the similar sequential correlation cannot be detected regarding stock market exits favors the hypothesis of information sharing over the competing alternative hypothesis of herding behavior.

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Table 1: Composition of the extended families

Birth mother		59.7%	Birth father		42.1%
1st child	2nd child	3th child	4th child	5th child	Additional children
47.1 %	27.2 %	13.7 %	6.9%	3.3 %	1.8 %
1st sibling	2nd sibling	3th sibling	4th sibling	5th sibling	Additional siblings
50.3 %	33.8 %	21.1 %	12.5%	7.8 %	4.5 %

Note: The percentage indicates the fraction of sample household heads and spouses that can be matched to their extended family members who were also sample heads and spouses since 1984.
Source: Panel Study of Income Dynamics.

Table 2: Equity market participation rates in the SCF and the PSID

	1984	1989	1994	1999	2001	2003	2005
PSID	27.1%	30.6%	37.2%	28.1%	32.2%	29.0%	26.6%
SCF (including pensions and IRAs)	NA	31.8%	39.2%	50.0%	52.3%	50.9%	50.5%
SCF (excluding pensions and IRAs)	NA	21.0%	22.8%	30.0%	31.5%	30.4%	28.6%

Note: The PSID stock ownership definition changed in 1999. Stocks held in pensions and Individual Retirement Accounts were include in 1984, 1989, and 1994 but were excluded after 1999. SCF Survey of Consumer Finances. PSID Panel Study of Income Dynamics. NA Not Available.

Table 3: Equity market entries and exits

Enter stock markets	1984 - 1989	1989 - 1994	1994 - 1999	1999 - 2005
Unconditional	13.3%	15.4%	8.8%	9.1%
Conditional	(18.7%)	(22.8%)	(15.0%)	(12.9%)
Exit stock markets	1984 - 1989	1989 - 1994	1994 - 1999	1999 - 2005
Unconditional	8.7%	8.1%	17.3%	10.6%
Conditional	(30.0%)	(24.9%)	(41.5%)	(35.7%)

Note: The unconditional statistics show the percentage of households entering/exiting stock markets out of the whole sample. The conditional statistics show the percentage of households that did not own/did own stocks at the beginning year of the interval.
Source: Panel Study of Income Dynamics.

Table 4: Equity market entries and exits of the investor and other family members

$entry^{i}_{t,\,t+1}$	$entry^{i,\,p}_{t-1,\,t}$	$entry^{i,\,c}_{t-1,\,t}$	$entry^{i,\,s}_{t-1,\,t}$	$exit^{i}_{t,\,t+1}$	$exit^{i,\,p}_{t-1,\,t}$	$exit^{i,\,c}_{t-1,\,t}$	$exit^{i,\,s}_{t-1,\,t}$
11.3%	5.8%	8.5%	11.0%	11.8%	6.0%	5.8%	8.0%

Source: Panel Study of Income Dynamics.

Table 5: Summary statistics of demographic characteristics

Age	White	Married	Below high school	High school	Some college	College
45.0	79.7%	61.2%	29.6%	29.6%	25.1%	16.0%

Source: Panel Study of Income Dynamics.

Table 6: Logistic regression: Equity market entries

	5-year interval			2-year interval		
Variable	Coefficient	Std. error	Odds ratio	Coefficient	Std. error	Odds ratio
	(1)	(2)	(3)	(4)	(5)	(6)
$entry^{i,\,p}$	0.275**	(0.124)	[1.317]	0.325**	(0.179)	[1.384]
$entry^{i,\,c}$	0.302**	(0.145)	[1.353]	−0.009	(0.207)	[0.992]
$entry^{i,\,s}$	0.066	(0.096)	[1.069]	−0.064	(0.158)	[0.938]
age	−0.030**	(0.014)	[0.971]	−0.009	(0.015)	[0.991]
$age^2/100$	0.036***	(0.014)	[1.037]	0.022*	(0.014)	[1.022]
highschool	0.360***	(0.092)	[1.438]	0.366**	(0.118)	[1.443]
somecollege	0.793***	(0.089)	[2.209]	0.720***	(0.119)	[2.055]
college	1.246***	(0.096)	[3.477]	0.964***	(0.124)	[2.621]
married	0.005	(0.071)	[1.005]	0.024	(0.092)	[1.024]
white	1.070***	(0.072)	[2.916]	0.886***	(0.089)	[2.426]
*quartile*1	0.032	(0.136)	[1.033]	−0.408	(0.174)	[0.665]
*quartile*2	0.419**	(0.129)	[1.521]	0.200**	(0.154)	[1.221]
*quartile*3	0.811***	(0.127)	[2.249]	0.513***	(0.152)	[1.670]
*quartile*4	1.308***	(0.132)	[3.700]	0.919***	(0.156)	[2.507]
*wave*1994	−0.509***	(0.074)	[0.601]			
*wave*1999	−0.624***	(0.071)	[0.536]			
*wave*2001				0.143*	(0.075)	[1.153]
Memo	N = 11,892	Pseudo R^2 = 0.133		N = 9,999	Pseudo R^2 = 0.083	

*, **, *** indicate the coefficient estimated is statistically significant at 90%, 95% and 99%, respectively.

Table 7: Logistic regression: Equity markets exits

	5-year interval			2-year interval		
Variable	Coefficient	Std. error	Odds ratio	Coefficient	Std. error	Odds ratio
	(1)	(2)	(3)	(4)	(5)	(6)
$exit^{i,\,p}$	−0.193	(0.146)	[0.824]	0.235	(0.174)	[1.265]
$exit^{i,\,c}$	0.035	(0.161)	[1.035]	−0.304	(0.201)	[0.738]
$exit^{i,\,s}$	−0.125	(0.123)	[0.883]	0.086	(0.139)	[1.090]
age	−0.018	(0.016)	[0.982]	−0.029*	(0.017)	[0.971]
$age^2/100$	0.0070	(0.016)	[1.007]	0.013	(0.016)	[1.013]
highschool	0.071	(0.109)	[1.074]	−0.010	(0.130)	[0.990]
somecollege	−0.068	(0.106)	[0.934]	−0.026	(0.128)	[0.974]
college	−0.627***	(0.104)	[0.534]	−0.403***	(0.123)	[0.668]
married	−0.042	(0.085)	[0.959]	−0.209**	(0.096)	[0.811]
white	−0.782***	(0.099)	[0.458]	−0.603***	(0.102)	[0.547]
*quartile*1	0.077	(0.163)	[1.080]	0.215	(0.177)	[1.240]
*quartile*2	0.419***	(0.151)	[1.521]	−0.008	(0.173)	[0.992]
*quartile*3	0.169	(0.138)	[1.184]	0.057	(0.159)	[1.059]
*quartile*4	−0.331**	(0.132)	[0.718]	−0.408***	(0.155)	[0.665]
*wave*1994	0.732***	(0.083)	[2.080]			
*wave*1999	0.526***	(0.089)	[1.693]			
*wave*2001				0.031	(0.080)	[1.031]
Memo	N = 4,202	Pseudo R^2 = 0.067		N = 2,953	Pseudo R^2 = 0.041	

*, ** and *** indicate the coefficient estimated is statistically significant at 90%, 95% and 99%, respectively.