

The Characteristics of Online Investors

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Using survey data, we explore the characteristics of Japanese online investors. Our main findings are as follows. First, young men are more likely to engage in online trading. Second, employed investors trade online more frequently, implying that proximity to the information network of the workplace affects investor decisions to trade online. Third, we do not find that investors who are more satisfied with their past returns tend to invest online more often. Thus, the self-attribution bias is not supported for Japanese online traders. Finally, Japanese online investors prefer capital gains, do not prefer low-volatility stocks, refer to chart data when making investing decisions more frequently, and tend to choose stocks to buy and sell on their own. These characteristics of Japanese online investors are consistent with those of overconfident investors.

The advent of online trading is one of the most notable recent changes in the stock markets. In the U.S., there were reportedly more than 20 million online brokerage accounts in 2001, up from just 1.5 million in 1996.¹ In Japan, which lagged the U.S. in its use, the increase in online trading has also been dramatic. The increase began in 1999, along with the liberalization of commissions for security trading.² For the six months ending in September 2002, it is estimated that online trading accounted for 52% of all retail stock trading value.³

This paper explores the characteristics of Japanese online investors. The recent increase in online investors has led to an increased interest in examining their attitudes and motives as a way to further understand market movements.

To be able to investigate individual investor tendencies, however, we need detailed data on their trading patterns and preferences. And although there is a paucity of such data, we do have access to survey data from Dr. Mizuno, a Japanese finance researcher, who conducted a study in 2001 with the Financial Media Company. His survey includes information about individual investor preferences and attitudes, as well as frequency of Internet usage for investments.

Several earlier studies have investigated who engages in online trading and what characteristics such traders have using U.S. data (Barber and Odean [2002], Choi, Laibson, and Metrick [2002]). These

studies found that young men are more likely to use the Internet for investing, and that online investors tend to increase turnover and decrease their performance after switching to online trading. Using Japanese data, we can test the universality of these characteristics. Because Japanese are generally thought of as more conservative or modest than Americans, a comparison of U.S. and Japanese online investor characteristics would be meaningful.

Research concerning online investors frequently focuses on the phenomenon of overconfidence. Overconfidence occurs when people believe their predictions about random events like stock returns are more precise than they really are. Earlier U.S. studies have found that online investors experience increased turnover and decreased performance after switching to online trading, two common traits of overconfident investors. Using the survey data, we examine whether the characteristics of Japanese online investors are consistent with those of overconfident investors.

Our main findings are as follows. First, young men are more likely to invest online, which is consistent with U.S. studies. Second, investors trade more frequently online when they are at work. This means that investors away from the information network of the workplace may be less likely to engage in online trading.

Third, we do not find that investors who are more satisfied with their past returns are more likely to invest online. This evidence does not support the self-attribution bias for Japanese online traders, which is inconsistent with U.S. results (Barber and Odean [2002]), but is consistent with Daniel, Hirshleifer, and Subrahmanyam [1998] and Kitayama, Takagi, and Matsumoto [1995].

Finally, the characteristics of Japanese online investors are different from those of traditional investors.

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Specifically, Japanese online investors prefer higher capital gains, choose low-volatility stocks less often, use chart data more frequently, and are more likely to choose stocks to buy and sell themselves. In other words, they are more active, more speculative, and more confident. These characteristics of Japanese online investors are also consistent with those of overconfident investors.

Data Description

In 2001, Dr. Mizuno conducted a survey on the behavioral principles of Japanese individual investors in cooperation with the Financial Media Company, the publisher of *Japanese Investor*, one of the most important Japanese quarterly journals for individual investors. *Japanese Investor* has a circulation of approximately 10,000. The Financial Media Company mailed the questionnaire at the end of April 2001 to 2,800 individual investors randomly selected from *Japanese Investor* subscribers. The subscribers who received the questionnaire were asked to mail it back to the Financial Media Company from April 30-May 14, 2001. During this period, 1,068 responses were received (a 38% response rate).

This survey is extremely valuable, since it is so difficult to obtain large sample data about the preferences and attitudes of Japanese individual investors. We will refer to the survey as MF survey hereafter.

Table 1 gives the survey results for the entire sample in the third column. Panel A gives demographic data on the respondents. Approximately 88% were male. This figure is higher than that in Barber and Odean [2001a] (77.2%), and is attributable to the subscriber structure of *Japanese Investor*.

Panel A of Table 1 also describes the occupation status of the respondents. We define a respondent who answered “no occupation” or “housewife” as an investor with no occupation. About 40% are classified this way.

The mean age of all respondents was about fifty-five, which is relatively close to Barber and Odean [2001a] (51.6), and the Omega company investigated in Choi, Laibson, and Metrick [2002] (52.8). The average investment career is eighteen years, and its percentiles of twenty-fifth and fiftieth are seven and fifteen years, respectively (not reported). This figure suggests that our sample consists mainly of investors with relatively long investment careers, which may be attributable to the fact that our sample selection method is based on subscribers of an investment journal.

Panel B summarizes the respondents’ answers to each question. The survey asked: “Do you use the Internet for investing?” The response choices were (1) *frequently use*, (2) *sometimes use*, and (3) *never*. About

half the respondents frequently or sometimes use online trading.

The next question asked which form of return, capital gains or dividends, is preferred. This was designed to reveal the level of speculativeness among Japanese investors. The response choices were (1) *dividend*, (2) *capital gains*, and (3) *indifferent*. Table 1 shows that, again, roughly half the respondents prefer capital gains over dividends.

The MF survey then asked “Which stock would you prefer, a high- or a low-volatility stock, provided their expected returns were the same?” This question is intended to reveal risk tolerance. The responses were (1) *high-volatility stock*, (2) *low-volatility stock*, and (3) *indifferent*. Approximately 33% chose (1) *high-volatility stock*, and approximately 50% chose (3) *indifferent*. This result may be surprising, since Japanese investors are generally considered more conservative and highly risk-averse.

To explore whether Japanese investors rely on chart analysis, which usually produces no excess returns in the semi-strong form of efficient markets, the MF survey asked: “Do you refer to past stock price movements (charts) in choosing stocks to buy and sell?” Table 1 indicates that almost all the respondents use chart analysis.

The next question is “How do you pick stocks to buy and sell?” This was designed to analyze how heavily Japanese investors rely on their own abilities to gather and analyze securities information. The responses were (1) *by myself*, (2) *by consulting with specialists like financial institution staff and financial planners*, and (3) *mainly use a buy-and-hold strategy*. Surprisingly, about 75% answered (1) *by myself*. This may be because our sample consists of more experienced and eager individual investors.

The MF survey next asked: “Are you satisfied with your past returns from stocks?” and “Are you satisfied with your past returns from mutual funds?” It is striking that only 33% answered (1) *satisfied* or (2) *somewhat satisfied* about stocks, and only 11% answered (1) or (2) about mutual funds. We interpret this surprisingly low figure as reflecting the recent serious downturn in Japanese stock prices.

As described earlier, the mean (median) of an investment career is eighteen (fifteen) years. During the fifteen years prior to 2001, the Japanese stock market experienced both tremendous gains and tremendous losses. The Tokyo Stock Exchange Price Index (TOPIX) climbed from 1,324.26 in 1986, to 2,177.96 in 1989, and then dropped to 1,195.10 by 2001. Therefore, Japanese investors with less than ten years of investment experience, roughly 30% of our sample, are likely to have lost money during their entire investment careers. Investors with fifteen years’ experience are likely to feel unsatisfied because they lost money during the latter half of their whole investment careers.

Table 1
Survey results

Entire sample										Group A		Group B		Group C		Chi-square statistic
Number		%		Number		%		Number		%		Number		%		
Gender	Male	905	87.80%	293	90.71%	161	86.10%	439	86.42%							
	Female	126	12.22%	30	9.29%	26	13.90%	69	13.58%							
	Total	1031	100.02%	323	100.00%	187	100.00%	508	100.00%						4.27	
Occupation	Employed	567	60.45%	235	78.07%	125	71.84%	207	44.71%							
	No occupation	371	39.55%	66	21.93%	49	28.16%	256	55.29%							
	Total	938	60.45%	301	78.07%	174	71.84%	463	44.71%						96.53 ***	
Age		Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation							
		54.33	14.84	46.04	13.28	50.83	14.24	60.91	12.83							
	Number of respondents	988		310		181		485								
Length of investment experience		18.07	13.40	12.78	10.90	16.10	11.88	22.38	14.03							
	Number of respondents	999		317		184		486								

Panel B: Answer to main questions

Questions	Answer	Number	%	Number	%	Number	%	Number	%	Chi-square statistic
Do you use the Internet for investments?	(1) frequently use	327	31.66%							
	(2) sometimes use	193	18.68%							
	(3) Never	513	49.66%							
	Total	1033	100.00%							
Which form of return do you prefer, dividends or capital gains?	(1) dividends	397	38.36%	103	31.79%	71	37.17%	218	42.91%	
	(2) capital gains	515	49.76%	178	54.94%	95	49.74%	237	46.65%	
	(3) indifferent	123	11.88%	43	13.27%	25	13.09%	53	10.43%	
	Total	1035	100.00%	103	100.00%	71	100.00%	218	100.00%	10.86 **

Table 1 (Continued)

Questions	Answer	Entire sample		Group A		Group B		Group C		Chi-square statistic
		Number	%	Number	%	Number	%	Number	%	
Would you prefer a high- or low-volatility stock, provided their expected returns were the same?	(1) high-volatility stocks	355	34.27%	102	31.29%	61	32.11%	186	36.61%	
	(2) low-volatility stocks	235	22.68%	49	15.03%	47	24.74%	136	26.77%	
	(3) indifferent	446	43.05%	175	53.68%	82	43.16%	186	36.61%	
	Total	1036	100.00%	326	100.00%	190	100.00%	508	100.00%	
Do you refer to past stock price movements (charts) in picking stocks to buy and sell?	(1) refer very much	448	43.37%	199	61.42%	63	32.98%	179	35.38%	27.82 ***
	(2) refer very little	544	52.66%	121	37.35%	125	65.45%	293	57.91%	
	(3) not at all	41	3.97%	4	1.23%	3	1.57%	34	6.72%	
	Total	1033	100.00%	324	100.00%	191	100.00%	506	100.00%	
How do you pick stocks to buy and sell?	(1) by myself	769	76.21%	278	87.97%	147	81.22%	338	72.22%	77.92 ***
	(2) by consulting with specialists	204	20.22%	28	8.86%	27	14.92%	113	24.15%	
	(3) mainly take buy-and-hold	36	3.57%	10	3.16%	7	3.87%	17	3.63%	
	Total	1009	100.00%	316	100.00%	181	100.00%	468	100.00%	
Are you satisfied with your past returns from stocks?	(1) satisfied	77	7.47%	25	7.81%	16	8.38%	34	6.71%	32.04 ***
	(2) somewhat satisfied	284	27.55%	94	29.38%	53	27.75%	135	26.63%	
	(3) somewhat unsatisfied	320	31.04%	98	30.63%	61	31.94%	158	31.16%	
	(4) Unsatisfied	350	33.95%	103	32.19%	61	31.94%	180	35.50%	
	Total	1031	100.00%	320	100.00%	191	100.00%	507	100.00%	2.25
Are you satisfied with your past returns from mutual funds?	(1) satisfied	14	1.55%	4	1.45%	5	2.89%	5	1.12%	6.98
	(2) somewhat satisfied	86	9.49%	28	10.14%	17	9.83%	41	9.17%	
	(3) somewhat unsatisfied	240	26.49%	79	28.62%	52	30.06%	107	23.94%	
	(4) Unsatisfied	566	62.47%	165	59.78%	99	57.23%	294	65.77%	
	Total	906	100.00%	276	100.00%	173	100.00%	447	100.00%	

Group A: respondents who frequently use online trading.

Group B: respondents who sometimes use online trading.

Group C: respondents who have never used online trading.

Who Tends to Invest Online in Japan?

Using the self-reported data, this section explores who is likely to engage in online investing in Japan. Investigating U.S. individual investors, Barber and Odean [2002] and Choi, Laibson, and Metrick [2002] found that young men are more likely to use online trading. Choi, Laibson, and Metrick [2002] also argued that the information network of the workplace affects the decision to go online, which implies that retired and terminated participants of 401(k) plans may be less likely to use the web.

Univariate Analysis

We divided the respondents into three groups, A, B, and C. Respondents who frequently use online trading were placed into Group A. Those who sometimes use online trading were placed into Group B, and those who never use it in Group C.

The three right-hand columns in Table 1 describe the demographic characteristics and answers to each of the questions for Groups A, B, and C, respectively. They also give the results of chi-square statistics that test whether the answer distribution is uniform across the three groups for each of the questions.

Panel A shows there are more men in Group A (90.7%) than in Groups B and C (86.1% and 86.4%). However, the significance level of the chi-square is marginal.

The percentage of respondents with no occupation seems clearly different among the three groups. Approximately 80% in Group A are employed; only 45% in Group C are employed. The chi-square statistic is statistically significant here at the 1% level.

It is clear that younger respondents have a higher frequency of online trading. The average age for Groups A and B is 46.0 and 50.8, respectively; for Group C it is 60.9. Likewise, the longer a respondent's investment experience, the lower the frequency of online trading. The mean length of investment experience is 12.8 and 16.1 years for Groups A and B, respectively; the respondents in Group C have over twenty years of investment experience on average.

The right-hand three columns of Panel B show answer distributions about each questionnaire for Groups A, B, and C, respectively. We are primarily interested in the degree of satisfaction with past investments. Barber and Odean [2002] found that those who switch to online trading perform well prior to going online. Because return data for each respondent is not available, however, we cannot conduct the same test as Barber and Odean [2002]. Instead, we use self-reported data on the degree of respondent satisfaction.

Panel B does not appear to present a clear relationship between degree of satisfaction with past returns and frequency of online trading. The percentage of re-

spondents who answered "satisfied" or "somewhat satisfied" with their past returns from stocks is about 37% for Group A, 36% for Group B, and 33% for Group C. The chi-square statistic is insignificant. Likewise, the percentage of respondents who answered "satisfied" or "somewhat satisfied" with their past mutual fund returns is about 12% for Group A, slightly higher than for Group C (10%), but lower than for Group B (13%). The chi-square statistic is insignificant again.

Overall, the univariate analysis finds that young and less experienced investors who are employed trade online more frequently. We do not find that investors who are more satisfied with their past returns tend to be more frequent online traders.

Logistic Regression Result

We next conduct logistic regressions whose dependent variable is an online trader dummy. The online trader dummy has a value of 1 if a respondent frequently or sometimes engages in online trading (respondents from Groups A or B), and 0 for never having used it (respondents from Group C).

The independent variables are as follows. The dummy for gender has a value of 1 for male respondents, and 0 for female respondents. Age and length of investment career are also included as independent variables. The no occupation dummy is a binary variable with a value of 1 if a respondent answered "no occupation" or "housewife," and 0 otherwise. Finally, three dummy variables, "satisfied," "somewhat satisfied," and "somewhat unsatisfied" with past returns are added. If a respondent answered "satisfied with past returns," the dummy takes a value of 1 and the other two dummies have a value of 0.

The logistic regression results are given in Table 2. The three dummy variables in Model 1 indicate the degree of respondent satisfaction with past returns from stocks, and Model (3) represents satisfaction with mutual funds.

Table 2 shows the gender dummy has positive and significant coefficients in both models. This suggests that men have a higher probability of trading online when controlling for the effects of age, occupation status, and degree of satisfaction with past returns. This evidence is consistent with previous U.S. findings.

Age has negative and significant coefficients in both models. Together with the univariate analysis findings, this suggests that younger generations trade online more frequently, consistent with Barber and Odean's [2002] and Choi, Laibson, and Metrick's [2002] results for U.S. investors.

The coefficients of the investment career are all negative. However, their significance levels are marginal. Therefore, we do not find evidence of a positive relationship between length of investment career and frequency of online investing when controlling for the ef-

Table 2

Logistic regression results of the determinants of going online

The dependent variable is the online trader dummy which takes on a value of one if a responder sometimes uses online trading and zero if he/she has never used it.

	Model 1	
Constant	3.25 (8.15)	***
Gender dummy (male=1, female=0)	0.51 (2.07)	**
Age	-6.33E-02 (-7.82)	***
Length of investment experience	-7.88E-03 (-1.05)	
No occupation dummy	-0.36 (-1.91)	*
Satisfied with past returns	1.19E-02	
from stocks (model 1) or mutual funds (model 2)	(0.04)	
Somewhat satisfied with past returns	0.28	
from stocks (model 1) or mutual funds (model 2)	(1.45)	
Somewhat unsatisfied with past returns	-1.26E-02	
from stocks (model 1) or mutual funds (model 2)	(-0.07)	
Chi-square	216.27	***
Log likelihood	-517.62	
Pseudo-R squared	0.17	
Number of observations	903	

***, **, *: significant at the 1%, 5%, and 10% level, respectively.

T-statistics are shown in the parentheses.

fects of age, occupation status, and degree of satisfaction with past returns.

The no occupation dummy has systematically negative coefficients, which are statistically significant in Model 1, consistent with the univariate analysis findings. This implies that investors away from the information network of the workplace are less likely to engage in online trading in Japan. Together with Choi, Laibson, and Metrick's [2002] evidence, we conclude that the workplace affects investor decisions to trade online, both in the U.S. and in Japan. Given that online trading in 401(k) plans by participants of the same company is expected to be affected more highly by the information network of the workplace, we believe our research shows broad evidence of its effect on online trading.

Finally, no dummy variables indicating degree of respondent satisfaction with past returns have significant coefficients. Along with the univariate analysis, we fail to find evidence that the degree of investor satisfaction with past returns affects frequency of online trading.

Barber and Odean [2002] investigated returns data for U.S. online investors, and found that past returns are positively associated with investor frequency of online trading. They also found that investors who have

had positive investment experiences are more likely to invest online. This evidence suggests that successful investors may become overconfident through the self-attribution bias, which refers to the psychological phenomenon of attributing success to one's own abilities, even when it is clearly caused by external factors. Thus these type of investors may be more motivated to trade online.

However, our evidence suggests that the self-attribution bias is not evident for Japanese online investors. Kitayama, Takagi, and Matsumoto [1995] found that the self-attribution bias is less evident in Japan. Daniel, Hirshleifer, and Subrahmanyam [1998] pointed out that, due to the lack of the self-attribution bias, short-term momentum and long-term return reversals are not observed in Japan. Thus, our finding can be attributed to the fact that Japanese investors tend to be less susceptible to this bias.⁴

Characteristics of Japanese Online Traders

We now focus on Japanese online investor preferences for 1) capital gains versus dividends, 2) volatil-

Table 3
Logistic regression results of the respondents' characteristics

	Model 1		Model 2		Model 3	
Dependent variable (all dependent variables are binary ones)	1 if a respondent prefers capital gains and 0 otherwise		1 If a respondent prefers low-volatility stocks and 0 otherwise		1 if a respondent refers to charts very much and 0 otherwise	
Constant	-0.65	*	-1.07	**	-1.09	***
	(-1.83)		(-2.55)		(-2.94)	
Online trader dummy	0.31	**	-0.44	**	0.67	***
	(2.12)		(-2.51)		(4.45)	
Gender	0.15		-0.15		0.47	**
	(0.75)		(-0.62)		(2.19)	
Age	0.01		0.01		0.00	
	(1.22)		(1.11)		(0.64)	
Length of investment experience	-1.86E-03		-0.01	*	-0.01	
	(-0.29)		(-1.91)		(-1.27)	
Chi-squared	5.73		11.99		33.13	
Log likelihood	-654.92		-501.80		-631.84	
Pseud R-squared	0.04		0.01		0.03	
Number of observations	949		949		947	

***, **, *: significant at the 1%, 5%, and 10% level, respectively.

T-statistics are shown in the parentheses.

ity, 3) chart analysis for investment information, and 4) method of stock selection.

Preference for Capital Gains Over Dividends

Table 1 shows that the proportion of respondents who preferred dividends over capital gains is higher for Group C (42.9%) than for Groups A (31.8%) and B (37.2%). The fraction of respondents who prefer capital gains is higher for Group A (54.9%) than for Groups B (49.7%) and C (46.7%). The chi-square statistic is significant at the 5% level. These figures show that online traders prefer capital gains over dividends, suggesting they are more active and more speculative.

We also conduct a logistic regression of a dummy variable that takes a value of 1 if a respondent prefers capital gains, and 0 otherwise. The online trader dummy and some demographic variables are adopted as independent variables. Model 1 in Table 3 finds that the online trader dummy has a positive and significant coefficient, suggesting that online traders tend to be more active and more speculative after controlling for respondent gender, age, and length of investment experience.

Risk Tolerance

Investor risk tolerance is represented by preference for volatility. Table 1 shows that the percentage of Group A respondents with a preference for low-volatility stocks is about 15%, much lower than for Groups B and C (24.7% and 26.8%, respectively). Also, the percentage of respondents who are indifferent between low- and high-volatility stocks is much higher for Group A (63.7%) than for Groups B (43.2%) and C (36.6%). These figures imply that online investors are less risk-averse than non-online investors. The chi-square statistic is statistically significant at the 1% level.

Model 2 in Table 3 presents the result of a logistic regression for the dummy variable with a value of 1 if a respondent prefers low-volatility stocks, and 0 otherwise. The online trader dummy has a negative and significant coefficient, suggesting that online traders are more risk-tolerant.

Referring to Charts

The degree of using past stock price movements (charts) to choose stocks represents an important in-

vestor characteristic. Table 1 clearly shows that Group A has a much higher proportion of respondents who use charts frequently (61.4%) than Groups B and C (33.0% and 35.4%, respectively). The proportion of respondents who do not refer to charts at all is much higher for Group C (6.7%) than for Groups A and B (1.2% and 1.6%, respectively). The chi-square statistic is statistically significant at the 1% level.

Likewise, the logistic regression, using a dummy variable with a value of 1 if a respondent refers to charts very much and 0 otherwise, finds the online trader dummy has a positive and significant coefficient (Model 3 in Table 3). These results indicate that online traders tend to use charts more often, implying that online traders desire access to vast quantities of real-time information on security price movements. This investment style is also consistent with the tendency of online traders to be less risk-averse and prefer capital gains.

Method of Choosing Stocks

Finally, we compare the method of choosing stocks among the three groups. Table 1 shows that the fraction of respondents who chose stocks on their own increases as the frequency of online trading increases. The percentages are about 88.0% for Group A, 81.2% for Group B, and 72.2% for Group C. On the other hand, the fraction of respondents who choose stocks by consulting with specialists is much higher for Group C (24.2%) than for Groups A and B (8.9% and 14.9%, respectively). The chi-square statistic is statistically significant.

We also conduct a logistic regression for the dummy variable with a value of 1 if respondents primarily choose stocks on their own, and 0 otherwise. The regression result, shown in Model 4 of Table 3, shows that the online trader dummy has a positive and statistically significant coefficient. This suggests that online investors are more likely to rely on their own judgments when valuing stocks.

Overall, Japanese online investors have different characteristics than traditional investors. They are more likely to prefer capital gains, less likely to prefer low-volatility stocks, more likely to use past price (chart) data, and tend to choose stocks themselves. In other words, they are more active, speculative, and confident.

Discussion

Previous research has argued that online investors exhibit overconfidence. It is critical to consider whether the characteristics of Japanese online investors are consistent with those of overconfident investors. Such an analysis would contribute to the universality of results found in earlier U.S. works.

Investor Overconfidence

Overconfidence means that people believe their predictions about random events like stock returns are more precise than they actually are. Odean [1998] showed that online investors trade more actively and speculatively than rational investors, and, as a result, they may lower their expected utilities.

Since online trading decreases transaction costs per trade and increases ease of trading, it may be highly appealing to overconfident investors. Moreover, once investors trade online, they may become more overconfident. A series of psychological studies have found that people tend to become overconfident when they are given more information (illusion of knowledge). Since online trading gives investors access to less costly and vast quantities of information, it may make them more overconfident.

Moreover, online trading is likely to delude investors via the illusion of control, the phenomenon whereby people believe their personal involvement improves the probability of a favorable outcome. Larger [1975] found that choice, task familiarity, competition, and active involvement lead to the illusion of control. Of these key factors, active involvement is offered by online trading, because investors can place their orders themselves.

Barber and Odean [2002] reported that investors trade more actively, more speculatively, and less profitably after first engaging in online trading than before. Choi, Laibson, and Metrick [2002] showed that turnover in 401(k) accounts increased by 50% after starting to trade online.

Japanese Online Investors and Overconfidence

Note that we cannot analyze whether Japanese online investors are overconfident in the same way as U.S. studies. The lack of data in Japan does not allow us to test whether online investor performance is inferior to traditional investor performance, or whether online investors increased turnover or performed worse after starting to trade online. Nevertheless, we believe our self-reported data suggest that the characteristics of Japanese online investors are consistent with those of overconfident investors for the following reasons.

First, our data show that Japanese online investors tend to choose stocks on their own. The illusion of control often means that people expect their personal involvement to increase the probability of a favorable outcome. The illusion of control may be consistent with the behavioral pattern of overconfident investors.

Second, the evidence that Japanese online traders prefer capital gains over dividends suggests they are more active and more speculative. This implies that Japanese online traders have higher turnovers than

traditional investors. The fact that the turnover of the Japanese stock market has increased since 1999, when online trading began to expand, reinforces this inference.⁵

Third, Japanese online investors are less risk-averse, and prefer low-volatility stocks less than non-online investors. Previous studies showed that overconfident investors reduce their perception of risk and may become overly risk-tolerant because they believe the probability of success is higher than it really is. Thus, our finding is consistent with the finding of risk tolerance for overconfident investors.

Finally, Japanese online investors are found to frequently use chart analysis to obtain past price data. This evidence leads us to conjecture that online investors tend to have access to vast quantities of real-time information on their desktops. This may lead to the illusion of knowledge, a characteristic typical of overconfident investors.

Moreover, it is well-known that analyzing past price movements cannot produce excess returns in a semi-strong efficient market. Thus, the finding of a heavy reliance on chart data implies that Japanese online investors are more likely to perform below the market, although we cannot directly compare their performance with market returns. This inference is reinforced by the result of a survey conducted by *Nikkei Money* in 2002, another major Japanese investment journal. The survey found that just 31% of Japanese online investors profit from their investments. If their raw returns are not higher than the market's, they must ultimately lose money, because trading more frequently means paying more commissions.

In sum, the characteristics of Japanese online investors are consistent with those of overconfident investors, except that the self-attribution bias is not evident.

Concluding Remarks

Using the survey data, we study the characteristics of Japanese online investors. We summarize our main findings as follows. First, young men are more likely to engage in online trading, which is consistent with previous U.S. studies.

Second, employed investors are more likely to engage in online trading. Investors away from the information network of a workplace are less likely to join online trading. This evidence, consistent with Choi, Laibson, and Metrick [2002], presents more broad evidence of how the information network of a workplace affects online trading.

Third, we do not find that investors who are more satisfied with their past returns are more likely to trade online. This evidence, which does not support the self-attribution bias for Japanese online investors, is in-

consistent with the result for U.S. online investors (Barber and Odean [2002]), but is consistent with Kitayama, Takagi, and Matsumoto [1995] and Daniel, Hirshleifer, and Subrahmanyam [1998].

Finally, Japanese online investors have different characteristics than investors who have never invested online. They prefer capital gains, higher-volatility stocks, use chart analysis more frequently, and tend to choose stocks to buy and sell on their own. In other words, they are more active, more speculative, and more confident.

We believe this research takes an important step forward in exploring the characteristics of Japanese online investors.

Notes

1. See the web site of the *Wall Street Journal* (<http://investing.wsj.com/stocks.html>).
2. Prior to the liberalization, the commission rate was fixed at 1.15% for trades with a value of less than 1 million yen (about U.S. \$9,000).
3. See the *Nihon Keizai Shimbun*, February 12, 2002.
4. The long-term slump of recent Japanese stock prices can be another cause for this finding. During the 1990s, the Japanese stock market declined, losing about one-half its value from its peak. We consider it difficult for investors who beat the market but still bore losses to be overconfident.
5. A similar view was described in the *Nihon Keizai Shimbun* on February 2, 2002.

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