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More Evidence of Home Bias

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Summary

Field surveys conducted in the autumn of 2003 and 2005 on Japanese institutional investors showed that they held relatively optimistic views for their domestic stock market than for the foreign stock market. Their one-year expected returns for the Nikkei Stock Average were on average much higher than those for the Dow Jones Industrial Average. Such home bias seems to be consistent with a cognitive bias hypothesis, where information asymmetry and selection bias of information combine to result in optimistic expectations for domestic markets for which domestic investors have more information. There is also a possibility that investors behaved like positive feedback traders since the Japanese stock market happened to be very bullish around the two survey periods. Older and more experienced investors tended to show stronger home bias in the 2005 survey.

Introduction

Although Thaler[1999] predicts that there will be only one Finance, where behavioral factors are normally considered in building any finance models, two separate paradigms in describing how securities are priced appear to exist. The New Finance, or Behavioral Finance, suggests that assorted cognitive factors do matter in the process of pricing securities. Various types of anomalies have been detected and used to show how Traditional Finance, based on fully rational investors, has limitations in explaining how securities are priced. One such anomaly is home bias (French and Poterba[1991]), where investors tend to heavily over-invest in their domestic assets although International CAPM suggests that they hold portfolios with the same asset allocations within their international market portfolio.

French and Poterba[1991] concludes that investors should have much higher expectations for their domestic asset returns than foreign ones in order to reconcile such home bias. Consequently, there emerges the natural question of why investors tend to hold more optimistic views of their home markets. One of the clues for such a

question may be the fact that investors typically have more information for their domestic markets than for foreign markets.

More than half a century ago, Simon[1955] introduced the idea of limited rationality, rather than global rationality as assumed by von Neumann and Morgenstern[1944], in the decision-making process. Simon[1955] suggested that any decision-making models be constructed in a manner consistent with actual human abilities. One of the aspects of limited rationality is the selection bias of information. When there is both good and bad information, people tend to select favorable sets of information, and make decisions based on that. For example, when an investor has purchased a stock and there is both good and bad information, they tend to focus on good information and therefore conclude that they have made a good decision. On the other hand, when investors have just sold a stock, they tend to focus more on the bad information and then conclude that their decision to sell the stock was a good one.

Since investors typically hope to see their portfolio value increase consistently, they may have a strong incentive to focus on positive information. If such is the case, having more information, including both good and bad for domestic markets, may cause investors to hold higher expectations for their domestic assets.

In this paper, the author tried to directly estimate expected returns for domestic and foreign markets retained by Japanese institutional investors, based on the results of field studies conducted in 2003 and 2005. As a result, Japanese institutional investors generally seem to have higher one-year expected returns for their home markets. During both periods, when field studies were conducted, Japanese stock markets happened to be very bullish. So, there is a possibility that Japanese investors just behaved like positive feedback traders, who tended to have optimistic views when past markets were bullish (De Long, Shleifer, Summers, and Waldmann[1990]). The author then discussed upon the underlying factors for observed optimistic expectations of Japanese institutional investors for their home markets.

The rest of this paper is composed of the following sections. In the succeeding section, the author summarizes the literature related to home bias and behavioral finance. In Section 2, an outline of our survey and its major results regarding home bias by Japanese institutional investors is shown. In Section 3, the relationship between the investment strategies of respondents and the extent of their home bias is observed. In Section 4, the relationship between the home-biasness and other attributes of respondents is analyzed. Finally, this paper is concluded in Section 5.

1. Survey of Literature

A. Home Bias

There is a voluminous amount of both empirical and theoretical works regarding the topic of home bias. A portion of such survey results is available in Lewis[1999], Karolyi and Stulz[2003], and Solnik[2006].

The existence of home bias itself has been reported in various countries. According to Kho, Stulz, and Warnock[2006] and Solnik[2006], the home bias ratio, defined by the equation (1), for the U.S. investors was on average 0.75 as of the end of 2003, while the aggregate ratio for the other countries was 0.83 (0.89 for Japanese, 0.65 for British, and 0.32 for Dutch investors). Regarding the U.S. investors, actual holding of foreign stocks was on average 13.8%, only around a quarter of the 54.3% share of foreign stocks in the world stock market portfolio. As shown above, home bias is ubiquitous among international investors, in particular when their home markets are large enough.

$$HBR = 1 - \frac{\omega_i}{\omega_M} \qquad \cdots (1)$$

HBR : home bias ratio

ω_i : weight of foreign stocks in the investors' portfolio

ω_M : weight of foreign stocks in the world market portfolio

$HBR = 0$: no home bias

　　　　1 : perfect home bias (no foreign assets held)

Assuming that investors are as a whole rational enough that the International CAPM is applicable, we may have to conclude that investors generally have optimistic expectations regarding their home markets in order to reconcile their strong preference for domestic assets.

In the seminal work of French and Poterba[1991], the authors showed that U.S., Japanese, and U.K. investors tended to heavily hold domestic stocks as of the end of 1989 and estimated implied expected returns for each market, based on 1975-89 data. As shown in the Table 1, investors in each country seem to have higher expected returns for their home markets. The premiums ranged from 100 to 580 basis points. Jeske[2001] derived similar empirical results for 11 countries using 1991-2000 data, where the premiums ranged from around 150 basis points for the U.S. stock market through around 1,500 basis points for the Italian stock market (Table 2).

Regarding underlying factors for the prevailing home bias among international

investors, several alternative explanations have been presented. Some of them are consistent with the assumption of investor rationality (traditional explanations), while others are related to the behavioral nature of investors (behavioral explanations).

Earlier researchers considered the possibility that physical, or explicit, barriers for the transactions of foreign assets might lead to home bias by preventing investors from trading these assets freely. Regulatory restrictions such as limits for foreign ownership in many countries, higher transaction costs, and difficulty in hedging risk for exchange rate fluctuations are included among such barriers. These barriers, however, have been significantly reduced due to the recent globalization of international money markets. In spite of this trend, there is little evidence that home bias has alleviated. There are also a few empirical works showing the difficulty in explaining reasons for home bias by physical barriers alone (Glassman and Riddick[2001] and Ahearne, Griever, and Warnock[2004]).

Another explanation consistent with investor rationality is information asymmetry. It is generally easier for investors to obtain information for their home markets. As a result, even fully rational investors would be willing to over-invest in domestic assets for which they have better information, since they have a better chance of making money. Gehrig[1993] derived a simple model to show that more precise information for home markets naturally leads to home bias.

There are mixed results, however, as to whether better information actually leads to better performance.

Coval and Moskowitz[1999, 2001] show that U.S. mutual fund managers tend to prefer firms whose headquarters are located more closely to their own offices, and that these nearby firms have outperformed and contributed to improving their total returns. They assume that improved monitoring capabilities and access to private information might lead to such results. Ivković and Weisbenner[2005] examined investment results of U.S. discount brokers from 1991 through 1996 and found that they tended to more willingly engage local firms, earning excess returns from their local investments. These empirical results suggest that both institutional and individual investors may be able to get better information about local firms and trade them more efficiently. Hau[2001] analyzed the performance of 756 European equity traders using the same system, in trading 11 German blue-chip stocks, and found that German-based traders showed significantly better results than those in non-German-speaking locations.

On the other hand, there are empirical works with the opposite results; foreign investors outperformed local investors in some countries. Grinblatt and Keloharju[2000] reported their empirical works on 16 stocks listed on the Helsinki

Stock Exchange. Based on 1995-96 period returns, they calculated six-month returns for domestic and foreign investors, respectively, and found that the former generally underperformed the latter. Karolyi[2002] also shows that Japanese investors underperformed foreign investors in trading Japanese stocks during the Asian financial crisis.

As shown above, traditional explanations alone do not seem to have enough power to fully clarify what leads to the universality of home bias. So, some kind of behavioral factors may have to be considered in order to deal with this anomaly. In Solnik[2006], relative optimism, perceived competence, and regret aversion are mentioned as possible sources for behavioral explanations.

Shiller, Kon-Ya, and Tsutsui[1996] collected survey data from 1989 through 1994 from Japanese and U.S. institutional investors by sending questionnaires, and found that investors in each country tended to have more optimistic views for their own markets (Table 3). Strong and Xu[2003] analyzed the Merrill Lynch Fund Manager Survey data, and detected that U.S., U.K., European and Japanese investors tended to return more optimistic forecasts for their own home markets. On the other hand, Kilka and Weber[2000] conducted a field survey at the University of Mannheim and Ohio State University in 1996 and examined subjective competence in predicting returns of German and U.S. stock markets using students attending graduate level investment courses. Participants of each group showed stronger subjective competence for their own markets. These students also revealed subjective probability distributions of expected returns, which were less diverse and more optimistic for their home markets. Finally, Solnik[2006] presented a model involving regret aversion as a source of home bias. Here, regret aversion refers to the behavioral nature of investors to feel more regret when foreign stocks underperformed domestic stocks and then hold less foreign stock than the optimal level in order to avoid feelings of regret. Based on this model, Solnik[2006] calibrated the degree of regret aversion, consistent with actual home bias.

As mentioned in Solnik[2006], these behavioral approaches involve difficulty in conducting direct examinations due to the lack of behavioral data, in spite of their superior intuitive accountability.

B. Behavioral Finance

Traditional finance theories, represented by the two parameter approach (Markowitz[1952]) and CAPM (Sharpe[1964], Lintner[1965], Black[1972]), derived from the Expected Utility Theory (von Neumann and Morgenstern[1944]), where

decision makers can specify their optimal holdings by maximizing their expected utilities among all of the possible alternative investment opportunities. Simon[1955] argued against this model since this model was based on a strict, or "global," rationality of decision makers. Since actual human beings have only "limited" rationality, the author suggested that any decision-making models reflect actual computational and prediction abilities of decision makers.

Later, assorted experimental and empirical works demonstrated that actual human activities lack global rationality. Imprecision of memory (Loftus and Palmer[1974]), bias of information sets on which decision makers use (Hastorf and Cantril[1954]), and lack of independence in making judgments (Festinger and Carlsmith[1959] and Hirshleifer and Shumway[2003]), are included among such works[1]. Related to the second example, Bem[1972] proposed the Attribution Theory, where people tend to attribute their success or failure to their own abilities or exogenous factors. Based on this theory and natural human overconfidence, Daniel, Hirshleifer, and Subrahmanyam[1998] derived a simple model to explain the short-term momentum and long-term mean reversion of asset-pricing anomalies at the same time. The authors assumed it to be the case where "noisy" private and public information is available and investors outweigh the importance of private information. Here, noisy information refers to any information with some randomness or with a certain expected value and some dispersion. Thus, noisy information typically involves both positive and negative aspects. This model additionally assumed that noisy private information arrives before noisy public information, as shown in Figure 1. For example, when a typical investor has purchased a stock based on any favorable private information, he or she tends to focus on the positive aspects of the (noisy) public information. Daniel, Hirshleifer, and Subrahmanyam[1998] showed that asset prices tend to overshoot beyond rational expected prices due to such investor's irrationality at an earlier stage, producing momentum effects, and ultimately revert to the fair price level when conclusive public information such as the final accounting numbers prevails in the market, producing mean reversions.

Basic frameworks of behavioral finance[2] were established in the 1970s by Amos Tversky and Daniel Kahneman, who extended the intuition of Simon[1955]. The seminal paper of Tversky and Kahneman[1974][3] introduced an idea of heuristics, or

[1] Plous[1993] provided a good summary for these experiments.
[2] A comprehensive survey of behavioral finance is available in Barberis and Thaler[2003] and how to apply the behavioral finance for practical problems is discussed in Shefrin[2000]. Also, important papers related to behavioral finance have been compiled in Thaler[1993, 2005].
[3] Tversky and Kahneman[1974] and related earlier works are complied in Kahneman, Slovic, and Tversky[1982].

rule of thumb, in human decision making. The authors indicated that limited rationality and time constraints cause people to make decisions intuitively with limited information sets since they have to make too many decisions within a limited time. They suggest that such intuitive decisions tend to be efficient in many cases, but may sometimes be systematically and seriously biased. They presented representative heuristics, availability heuristics, and anchoring as examples of heuristics, and showed how these decisions could be biased. Later, Kahneman and Tversly[1979] proposed the Prospect Theory as an alternative decision-making model for the Expected Utility Theory. The Prospect Theory is derived from various experiments with selection problems and includes a unique value function and weighing function.

2. Data and Results

We conducted field surveys on Japanese institutional investors in 2003 and 2005 in order to evaluate how rationally they make investment decisions. Survey participants were selected among large institutional domestic investors including trust banks, investment advisory companies, and mutual fund investment companies. For fairly comprehensive questionnaires, 464 and 283 investors responded, respectively for each survey[4].

Survey questions included one-year forecasts for the Nikkei Stock Average (NSA) and the Dow Jones Industrial Average (DJIA). Specifically, participants were asked to fill in the index levels on the date of forecasts (base indices), 90% confidence levels of upper and lower limits, and their point estimates. The last item was included only in the 2005 survey. By dividing the averages of both sides of confidence levels by base indices (minus one), we estimated expected returns for domestic and foreign stock markets by Japanese institutional investors. For the 2005 survey, we also calculated one-year forecasted returns more directly from their point estimates and base indices. For the purpose of comparison, we used only responses from survey participants who showed forecasts for both indices.

Table 4 shows the results of our estimation. Regarding the 2003 survey, average and median forecasted returns for the NSA were 7.94% and 5.61%, respectively, while the actual annual return of this index for the corresponding (forecast) period was 2.76%. These figures imply that respondents were too optimistic; both the average and median

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[4] For 2003 survey, insurance companies were included among respondents and there were 24 responses.   In Japan, however, insurance companies themselves do not usually make investment decisions, but their subsidiary investment companies typically do.   As a result, we excluded insurance companies from our 2005 survey.   For the purpose of comparison, 24 responses from insurance companies for the 2003 survey have been eliminated in our analysis.

of their forecasts were more than twice the actual returns of the NSA. On the other hand, average and median forecasted returns for the DJIA were 3.22% and 2.59%, respectively, fairly close to its actual annual return of 3.30%. According to these results, we may conclude that Japanese institutional investors on average held somewhat overly optimistic views around the survey period for their domestic market than for the foreign market. Such results are consistent with Shiller, Kon-Ya, and Tsutsui[1996] (Table 3).

Similar results were shown for the 2005 survey. For both survey 1, based on the averages of upper and lower limits, and survey 2, based on point estimates, Japanese investors held more optimistic expectations for their home market, although both Japanese and U.S. stock markets turned out to be extremely bullish for around a year after the 2005 survey; the NSA and DJIA increased by 12.06% and 13.93%, respectively, through the year from November 2005, where average index numbers for each month based on daily closing prices were used in calculating actual returns. Generally, Japanese investors showed higher expected returns for their home market and the difference of expected returns were statistically significant for all of the surveys.

If Japanese institutional investors were fully rational as the traditional finance theory assumes, their forecasts are expected to have been unbiased. However, they tended to show overly optimistic expectations for their home market in both case of comparing forecasts for the two markets directly, for which the NSA forecast minus the DJIA forecast, and comparing overestimated values, for which the NSA overestimation minus the DJIA overestimation.

From these results, it is probable that Japanese institutional investors were subject to some kind of cognitive bias. We would like to obtain more insight regarding the underlying factors for the optimism of Japanese institutional investors.

3. Investment Strategy and Expectations

It seems that Japanese institutional investors generally hold fairly optimistic views on their domestic stock markets, as shown in the previous section. This kind of home bias could be derived from at least two behavioral sources. First, investors generally have more information for their domestic markets. In addition, we would be able to assume that they tend to focus on favorable information for the market since most of them would like to see stock prices go up. These factors may combine to result in investors' optimistic expectations for their home markets. Second, our two surveys happened to be conducted during the periods where Japanese stock markets were bullish, as shown in Figure 2. Most survey participants answered their market

forecasts in October 2003 and November 2005, respectively.　Before each of the survey periods, the Nikkei Stock Average increased very rapidly and significantly.　Under these circumstances, it is possible that Japanese investors behaved as if they were positive feedback traders, as shown in De Long, Shleifer, Summers, and Waldmann[1990]; i.e. they may just have expected that Japanese stock markets will continue to be bullish for the time being.

It is difficult to distinguish what is the most effective among assorted possible sources of optimism by Japanese institutional investors regarding their home market. Both of the factors described above are plausible, and there also may be other factors behind the assumed home bias.

Among the questionnaires, survey participants were asked to reveal their main investment strategies by filling in their composition of momentum, contrarian, buy and hold, and other strategies.　We classified each participant based on the maximum percentage of alternative investment strategies[5].　It is noteworthy that contrarian investors, whose investment strategies are based on the assumption that bearish markets follow bullish ones, also generally showed optimistic views with a statistically significant manner even under the bullish domestic market environments. Contrarian investors may have personally optimistic views even under bullish market conditions.　However, the fact that Japanese institutional investors generally held optimistic views regardless of their investment strategies may suggest that some kinds of sentiment did exist among Japanese investors and affected the expected-return generating process around the survey periods.

4. Attributes of Survey Participants and Home Bias

Finally, the relationship between various attributes of the respondents and the size of home bias is analyzed.　Generally speaking, senior fund managers may be expected to have more precise forecasting abilities than junior fund managers due to their accumulated experience and knowledge.　So, under this assumption, older, more experienced, and more senior-level fund managers are expected to show less home bias than younger, less experienced, and more junior-level ones.　On the other hand, fund managers may be more heavily subject to cognitive biases as discussed in earlier sections, as they become senior and accumulate more information and experience.　As a result, the relationship between the size of home bias and such attributes as age, professional experience (working years in asset management business), and current

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[5] If a participant answered 60% momentum and 40% contrarian, we classified this participant as a "momentum investor."　On the other hand, if another participant answered 50% momentum and 50% buy and hold, we classified this participant as "other investor."

position (level of seniority) cannot be decided on an a priori basis.

Regarding academic background, we may expect that survey participants with higher educational level show fewer biases in the market forecast.

Finally, the relationship between gender and subjectivity of bias is one of the many interesting topics in behavioral finance. For example, there is a field survey that shows male investors seem to be more overconfident about their forecasting abilities than female investors (Barber and Odean[1999, 2001]). As a result, male participants may be more subject to cognitive bias in our analysis.

Table 5 shows the results regarding the relationship between participants' attributes and the size of their home bias.

First, male participants were more subject to home bias than female participants although the sample number of the latter was very small. Regarding the 2003 survey, male participants showed larger home bias, defined by the average one-year forecast for the Nikkei Stock Average minus the average one-year forecast for the Dow Jones Industrial Average, of 4.82 %, which is statistically significant at the level of 1% (t=8.84), while female participants showed much smaller home bias of 1.45%, which is statistically insignificant (t=1.21). The hypothesis that male participants held more biased forecasts on average than female ones was supported at the statistical significance of 5% (t=2.55).

Second, the relationship between home bias and such attributes as age, professional experience, and current position was more obscure. In the 2003 survey, home bias was significant unanimously for all sub-sectors of participants. The size of home bias and their statistical significance were similarly large for each classification. As for the 2005 survey, however, older respondents and those with longer professional experience showed on average larger home biases. In the 2005 survey 2, using point estimates of forecast, participants older than 36 were subject to more home biases than younger participants with a statistical significance of 10% (t=1.67), although the difference was not statistically significant in the 2005 survey 1, using the average of upper and lower confidence level of 90%. The relationship between home bias and professional experience was more significant. Survey participants with professional experience longer than 10 years were subject to more home biases on average than those with less than 10 years of professional experience. The difference was statistically significant at the level of 10% and 5%, respectively, for 2005 survey 1 (t=1.79) and survey 2 (t=2.00). We may understand that the efficiency and cognitive-bias factors were balanced for senior fund managers in 2003 survey, but cognitive-bias factors were stronger in the 2005 survey.

Finally, survey participants with academic backgrounds of a graduate level showed relatively smaller home bias for both surveys, but the difference was very small with no statistical significance.

5. Conclusion

There are many empirical works to show that investors tend to invest in their home country markets too heavily than expected by the international CAPM, and this phenomenon is called "home bias." This kind of ubiquitous bias seems to be derived from the fact that investors tend to hold relatively optimistic views for their home markets. This paper adds evidence concerning Japanese institutional investors, who showed generally higher one-year expected returns for the Nikkei Stock Average (NSA) than for the Dow Jones Industrial Average (DJIA), based on field survey results in autumns of 2003 and 2005.

During both of the survey periods, Japanese stock markets happened to be very bullish with the NSA having increased more than 10% annually when questionnaires were sent. So, there seemed to be a possibility that survey participants reacted just as positive feedback, or momentum, traders, who expect prices to go on rising during bullish market conditions. It is noteworthy that contrarian investors, whose investment strategies are based on the assumption that bearish markets follow bullish ones, also showed optimistic views for their domestic market even under such environments. So, it is probable that some kinds of sentiment affected expected-return generating process around survey periods.

This paper presented the hypothesis of another cognitive bias, where the combination of information asymmetry and selective bias of information would lead to optimistic views for domestic markets. First, investors typically have more information for their home markets than for their foreign markets. In particular, Japanese and English are quite different languages. So, information asymmetry could be larger for Japanese investors. Asymmetric information means that domestic investors know both favorable and unfavorable information sets. As a result, this factor does not automatically lead to optimistic domestic views. However, if human beings, including investors, prefer to focus on favorable aspects more willingly, as modeled by Daniel, Hirshleifer, and Subrahmanyam[1998], the combined effect of information asymmetry and such selection bias could result in systematically optimistic views for home markets.

As investors accumulate experience, they are generally expected to make better decisions. However, with more experience and information, these senior investors

might be more subject to cognitive bias, as described above. Reflecting this kind of trade-off, the relationship between the seniority of investors and the size of home bias cannot be forecasted on an a priori basis. Regarding the 2003 survey, there was no significant relationship between the size of home bias and such attributes of respondents such as age, working experience and current position. However, older and more experienced fund managers showed significantly lower home bias in the 2005 survey. The latter results are consistent with the above hypothesis that information asymmetry and selection bias of information lead to optimistic views on home markets, which are more familiar and where more information is available.

There was an additional result showing that the home bias of male respondents was much larger than female respondents in the 2003 survey, although enough responses were not available from female respondents in the 2005 survey.

There were only two survey periods and both of them were coincidentally in bullish market environments. So, any general conclusions may not be derived from the empirical results of this paper. In addition, analysis based on questionnaires could have omitted other important factors, related to optimism in expectations for future markets. As a result, further research in different market conditions and interviews of fund managers should contribute to deepening the understanding the process of market expectations, and in particular underlying factors for home bias. However, these efforts are to be left for future research topics.

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Table 1   Evidence of Home Bias (1)

Market	Investor		
	U.S. (%)	Japan (%)	U.K. (%)
U.S.	5.5 (--)	3.1 (+3.5)	4.4 (+5.2)
Japan	3.2 (+2.3)	6.6 (--)	3.8 (+5.8)
U.K.	4.5 (+1.0)	3.8 (+2.8)	9.6 (--)

Source: French and Poterba[1991] Table 2

Note: Expected returns for U.S., Japanese, and U.K. stock markets needed to justify observed portfolio weights by U.S., Japanese and U.K. investors, as of the end of December 1989.   For example, U.S. investors are assumed to hold expected returns of 5.5% and 3.2%, respectively, for the U.S. and Japanese stock markets in order to reconcile heavier holding of domestic stocks by U.S. investors, and leading to a home bias of 2.3% for their home market relative to the Japanese stock market.

Table 2   Evidence of Home Bias (2)

Country	Perceived Excess Return		Home Bias
	Domestic Equity (%)	Foreign Equity (%)	(%)
Australia	3.21	-1.77	4.98
Canada	3.18	-0.65	3.83
France	2.66	-0.94	3.60
Germany	3.14	-1.39	4.53
Italy	11.83	-2.83	14.66
Japan	7.01	-2.78	9.79
Netherlands	1.47	-0.98	2.45
Spain	6.97	-0.58	7.55
Sweden	7.27	0.00	7.27
U.K.	1.09	-1.20	2.29
U.S.	0.60	-0.88	1.48

Source: Jeske[2001] Table 1

Note: Based on observed portfolio weights and value-weighed international market portfolio weights, perceived excess real returns for domestic equity and foreign equity markets are estimated, based on annualized monthly real returns for 1991 through 2000.   The difference between domestic excess returns and foreign excess returns is defined to be home bias.

Table 3   Evidence of Home Bias (3)

	NSA Forecast		DJIA Forecast	
	Japanese（%）	U.S.（%）	Japanese（%）	U.S.（%）
1989 II	9.49	-7.67	8.48	3.49
1990 I	10.84	-9.14	12.57	-0.26
II	8.22	-8.76	4.28	1.65
1991 I	19.33	0.94	11.26	6.17
II	18.36	-2.52	8.55	7.82
1992 I	20.85	0.33	3.41	6.51
II	27.69	6.47	0.89	4.49
1993 I	14.08	3.22	0.35	2.01
II	15.85	1.02	0.83	0.56
1994 I	16.27	1.34	0.88	2.75

Source: Shiller, Kon-Ya, and Tsutsui[1996] Table 1
Note: Questionnaires were sent to Japanese and U.S. institutional investors, and mean one-year expected returns are calculated for Nikkei Stock Average (NSA) and Dow Jones Industrial Average (DJIA), respectively, for investors of each country.

Table 4 Expected Returns for Domestic and Foreign Markets
by Japanese Institutional Investors

|		Nikkei Stock Average			Dow Jones Industrial Average			Home Bias				n
		Forecast (%)	Actual (%)	Overestimation (%)	Forecast (%)	Actual (%)	Overestimation (%)	Forecast (%)		Overestimation (%)		
2003 Survey												
All	average	7.94	2.76	5.18	3.22	3.30	-0.08	4.72	8.89 ***	5.26	9.91 ***	392
	median	5.61	2.76	2.85	2.59	3.30	-0.71	2.59	8.56 ***	3.13	9.72 ***	
Momentum	average	10.93	2.76	8.17	4.47	3.30	1.17	6.46	4.68 ***	7.00	5.07 ***	57
	median	10.20	2.76	7.44	4.20	3.30	0.90	5.89	4.44 ***	6.43	4.72 ***	
Contrarian	average	7.44	2.76	4.68	1.90	3.30	-1.40	5.54	3.39 ***	6.08	3.72 ***	61
	median	4.96	2.76	2.20	2.59	3.30	-0.71	1.68	3.48 ***	2.22	4.07 ***	
Buy & Hold	average	6.91	2.76	4.15	3.78	3.30	0.48	3.14	4.53 ***	3.67	5.31 ***	133
	median	4.29	2.76	1.53	2.60	3.30	-0.70	2.38	4.24 ***	2.92	5.00 ***	
Others	average	7.92	2.76	5.16	2.77	3.30	-0.53	5.15	5.35 ***	5.69	5.91 ***	141
	median	5.22	2.76	2.46	1.64	3.30	-1.66	2.63	5.03 ***	3.17	5.66 ***	
2005 Survey 1												
All	average	6.60	12.06	-5.46	2.28	13.93	-11.65	4.32	7.12 ***	6.19	10.20 ***	188
	median	5.84	12.06	-6.22	1.70	13.93	-12.23	3.11	6.41 ***	4.98	8.84 ***	
Momentum	average	4.21	12.06	-7.85	1.12	13.93	-12.81	3.09	2.13 **	4.96	3.41 ***	31
	median	4.52	12.06	-7.54	1.18	13.93	-12.75	2.47	2.16 **	4.34	3.12 ***	
Contrarian	average	4.60	12.06	-7.46	1.19	13.93	-12.74	3.41	2.68 **	5.28	4.15 ***	37
	median	4.34	12.06	-7.72	1.18	13.93	-12.75	1.58	2.27 **	3.45	3.87 ***	
Buy & Hold	average	9.10	12.06	-2.96	3.86	13.93	-10.07	5.24	4.13 ***	7.11	5.60 ***	54
	median	7.92	12.06	-4.14	2.99	13.93	-10.94	4.53	3.72 ***	6.40	4.68 ***	
Others	average	6.80	12.06	-5.26	2.15	13.93	-11.78	4.65	4.78 ***	6.52	6.70 ***	66
	median	5.42	12.06	-6.64	2.39	13.93	-11.54	2.73	4.08 ***	4.60	5.71 ***	
2005 Survey 2												
All	average	8.28	12.06	-3.78	2.73	13.93	-11.20	5.56	8.39 ***	7.42	11.21 ***	190
	median	8.02	12.06	-4.04	2.80	13.93	-11.13	3.59	7.43 ***	5.46	9.37 ***	
Momentum	average	6.52	12.06	-5.54	1.40	13.93	-12.53	5.12	3.03 ***	6.99	4.14 ***	32
	median	6.55	12.06	-5.51	2.29	13.93	-11.64	3.39	2.67 **	5.26	3.52 ***	
Contrarian	average	6.59	12.06	-5.47	1.13	13.93	-12.80	5.46	3.73 ***	7.33	5.01 ***	38
	median	7.30	12.06	-4.76	1.12	13.93	-12.81	2.64	3.42 ***	4.51	4.47 ***	
Buy & Hold	average	10.16	12.06	-1.90	4.75	13.93	-9.18	5.41	3.96 ***	7.28	5.33 ***	54
	median	9.79	12.06	-2.27	4.30	13.93	-9.63	5.00	3.67 ***	6.87	4.42 ***	
Others	average	8.57	12.06	-3.49	2.63	13.93	-11.30	5.94	5.77 ***	7.81	7.58 ***	66
	median	6.49	12.06	-5.57	2.86	13.93	-11.07	3.81	4.70 ***	5.68	6.16 ***	

Note: The 2003 survey and 2005 survey 1 were based on the averages of upper and lower limits of expectation, while the 2005 survey 2 was based on point estimates.   Forecast returns were one-year expected returns starting from the survey periods, while actual returns were actual one-year index returns; for 2003 survey, actual returns were calculated by dividing average October 2004 indices by average October 2003 indices (minus 1); for 2005 survey, actual returns were calculated by dividing average November 2006 indices by average November 2005 indices (minus 1) since most of the questionnaires for the 2003 survey and 2005 survey were collected around the middle of October 2003 and November 2005, respectively.   Figures on the overestimation are forecasted returns minus actual returns.   The "n" represents numbers of observations.   Home biases are expected returns for the Nikkei Stock Average minus those for the Dow Jones Industrial Average; the "forecast" column represents differences of forecasted returns for the two indices while the "overestimation" column represents differences of "overestimation" for both indices.   Regarding statistical tests, Student's t test was used for averages, while Wilcoxon's z test was used for medians.   The *** represents significance at the level of 1%, while the ** represents significance at the level of 5% for both of the tests.

Table 5 Attributes of Respondents and Home Bias

	2003					2005 Survey 1					2005 Survey 2				
	NSA (%)	DJIA (%)	Home Bias (%)		n	NSA (%)	DJIA (%)	Home Bias (%)		n	NSA (%)	DJIA (%)	Home Bias (%)		n
All	7.94	3.22	4.72	8.89 ***	392	6.60	2.28	4.32	7.12 ***	188	8.28	2.73	5.56	8.39 ***	190
Gender															
Male	7.93	3.11	4.82	8.84 ***	380	6.60	2.27	4.33	7.10 ***	187	8.32	2.77	5.55	8.30 ***	188
Female	8.20	6.75	1.45	1.21	12	6.57	4.46	2.11	-- --	1	5.00	-0.98	5.98	1.54	2
Age															
- 35 years old	7.16	2.32	4.84	5.14 ***	112	4.09	1.56	2.52	2.08 **	32	4.05	0.74	3.31	2.33 **	34
36 - 40	8.03	3.60	4.43	6.25 ***	180	7.97	3.10	4.87	4.68 ***	79	9.99	3.84	6.15	5.71 ***	78
41 -	8.65	3.54	5.11	4.03 ***	100	5.89	1.54	4.35	4.97 ***	72	8.07	2.26	5.81	5.71 ***	73
Professional Experience															
- 6 years	9.30	3.97	5.32	4.49 ***	77	4.75	2.74	2.01	1.49	24	6.04	3.12	2.92	1.78	25
7 - 9	6.85	2.74	4.11	3.36 ***	70	4.73	1.79	2.95	1.58	20	5.25	1.56	3.68	1.95	21
10 - 12	5.46	2.18	3.27	2.74 ***	80	7.24	1.26	5.98	4.22 ***	32	9.86	1.66	8.20	4.83 ***	32
13 - 15	9.08	3.23	5.84	6.30 ***	102	7.22	2.24	4.98	3.43 ***	41	8.17	2.43	5.74	4.12 ***	40
16 -	8.82	4.15	4.68	3.00 ***	63	6.90	2.78	4.13	4.21 ***	70	9.09	3.60	5.49	5.01 ***	71
Current Position															
Fund Manager	7.85	2.41	5.44	7.42 ***	230	5.93	1.66	4.27	4.31 ***	83	6.94	1.79	5.16	4.99 ***	84
Senior Fund Manager	8.19	3.89	4.31	3.91 ***	75	5.74	1.86	3.87	3.95 ***	52	7.60	2.35	5.26	4.76 ***	52
Chief Fund Manager	7.40	3.77	3.64	3.54 ***	70	8.11	2.99	5.12	3.78 ***	42	10.89	4.00	6.89	4.36 ***	43
Educational Level															
bachelor	8.16	3.35	4.80	7.86 ***	320	6.45	2.02	4.44	6.69 ***	156	8.10	2.47	5.63	7.84 ***	158
graduate	6.99	2.65	4.34	4.38 ***	72	7.53	3.64	3.89	2.48 **	31	9.45	4.13	5.32	3.00 ***	31

Note: Averages of home biases, or one-year forecasts for the Nikkei Stock Average (NSA) minus one-year forecasts for the Dow Jones Industrial Average (DJIA), are calculated for each sub-group classified by attributes of survey participants. The 2003 survey and 2005 survey 1 were based on the averages of upper and lower limits of expectation, while the 2005 survey 2 was based on point estimates. The *** represents significance at the level of 1%, while the ** represents significance at the level of 5% with the Student's t test.

**Figure 1   Assumption of Daniel, Hirshleifer, and Subrahmanyam[1998] Model**
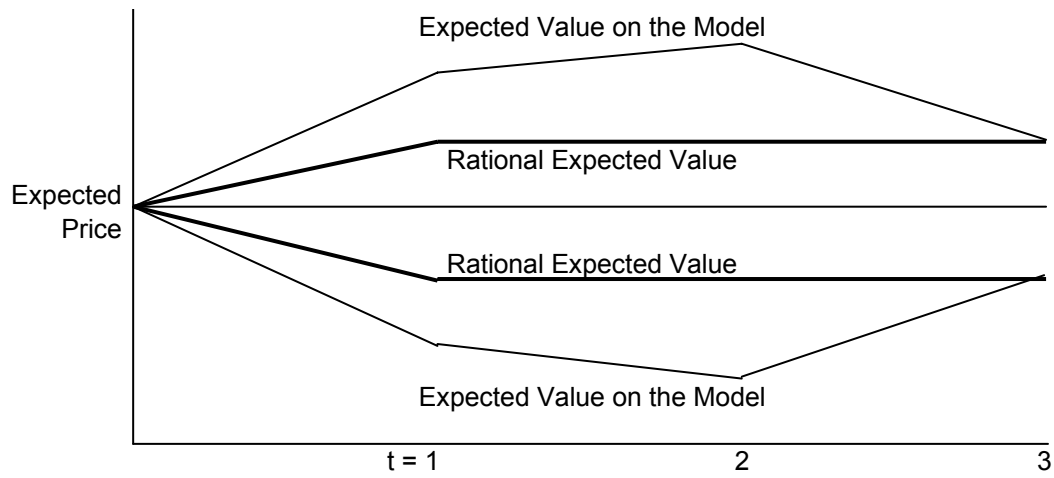
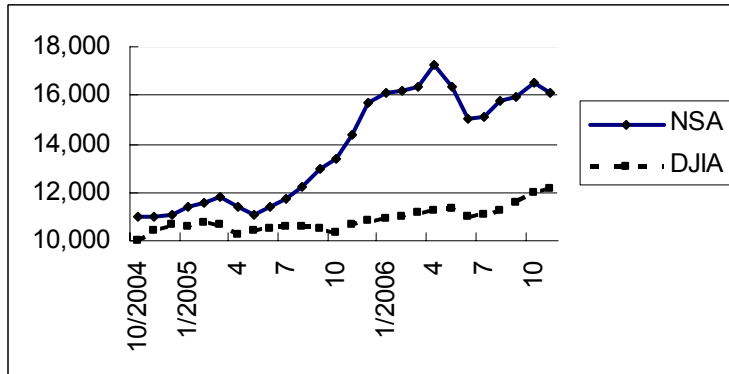Source: Daniel, Hirshlerfer, and Subrahmanyam[1998] Figure 1
Note: Noisy private information arrives at t=1, noisy public information arrives at t=2, and conclusive public information arrives at t=3.

**Figure 2   Actual Movement of Nikkei Stock Average and
Dow Jones Industrial Average Surrounding Survey Periods**

(1) Around the 2003 Survey
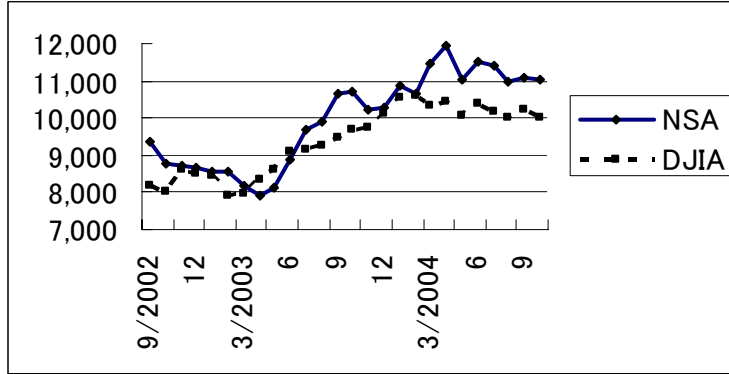
(2) Around the 2005 Survey

Note: Monthly averages of Nikkei Stock Average (NSA) and Dow Jones Industrial Average (DJIA) based on daily closing values. Charts from one year before through one year after survey periods, October 2003 for the 2003 survey and November 2005 for the 2005 survey are shown.