HERDING BEHAVIOR IN STUDENT MANAGED INVESTMENT FUNDS: IDENTIFICATION, IMPACT AND REDUCTION

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ABSTRACT

Student Managed Investment Funds (SMIFs) have grown in number; unfortunately, there has been little research on the efficacy of these funds. We fill this gap by exploring the potential consequences of student investment management. We find that investment decisions are often impacted by herding behavior, which results in underperformance. We further examine characteristics that influence the likelihood of herding, finding that pre-existing knowledge of the company under consideration, as well as amplified time constraints, increase the probability that herding occurs. In contrast, we find that increased education, both general and targeted behavioral education, reduces the likelihood (and impact) of herding.

INTRODUCTION

In an attempt to prepare students for the "real world," many universities have developed hands-on activities, such as student managed investment funds (SMIFs). While the primary goal is generally to provide practical training, a related benefit is the positive impact such activities have on fundraising and marketing, particularly in cases where fund performance is especially good. Given the rise in popularity and importance of such programs, it is surprising that very little research exists surrounding their efficacy (either internal or external).

We suspect, similar to our own situation, that while returns are important, the focus of these programs is primarily educational, often viewing the educational component as being a detractor to fund performance. However, we believe that there is actually an overlap between these areas, as increased education (particularly certain types) should, in fact, improve the investment selection process. With this in mind, one particular aspect we consider is the incidence (and potential reduction) of herding among student investment managers.

Prior literature (see next section) documents the existence and impact of herding among investors. Herding is essentially "going with the crowd." Thus, investors end up trading more based on emotion than objective evidence. The result is that performance, in the form of portfolio return, is often reduced. Given the social environment of a classroom, combined with the aspect of investing real money (for the first time in most cases), we believe that student funds

may be a fertile environment for such a bias to occur. Thus, we examine the actual decisions made by student investment management teams over the course of multiple years. We document the effect of herding, but, more importantly for SMIF advisors, we identify ways to reduce the behavior and thereby potentially improve the security selection process and, potentially, fund performance.

We find that the student investment managers do exhibit herding in many decisions and that the result, particularly in situations where it tends to be most pronounced, is a reduction in investment returns. We further explore what characteristics increase (or decrease) the likelihood of herding within the context of a specific investment decision. We find that general familiarity, as opposed to specific research, with the investment being considered increases the likelihood that herding will occur, as does the existence of significant time constraints. In contrast, it appears that the presence of group members with higher education levels and/or targeted education in the field of behavioral finance decreases the likelihood that herding occurs.

Our results suggest specific actions SMIF advisors can take to mitigate the potentially negative influence of herding. For example, advisors could limit the number of trades that are allowed on a given day, thereby setting aside sufficient time for discussion of each trade. Further, requiring student teams to send out recommendations prior to meeting for discussion will provide a richer and more objective dialog by enhancing the variance of opinion. Lastly, including some readings or discussion on behavioral finance may help students recognize, and therefore overcome, potential biases, particularly as they relate to herding behavior. While these actions are all rather easy to employ, we believe the results will be valuable (both in learning and in investment return) for SMIF participants.

HERDING

Although we may like to think otherwise, it is safe to assume that almost every decision we make is influenced, at various levels and to differing degrees, by someone else. While the influence may be small on many choices, it is definitely more pronounced in environments where groups are used to make key decisions. Thus, one general setting where external influence may be most evident is in the field of investment management, and specifically in student managed investment funds.

Given the constant state of evolution in the world of finance and investments, it has become imperative that managers be able to evaluate not only more investment securities, but also increasingly complex ones. Thus, it is no surprise that management of investment funds has quickly shifted from individual managers to a team-based approach. For example, Bliss, Potter, and Schwartz (2006) report that, as of 2003, over 60% of mutual funds were managed by teams, up from just 30% in 1992. Thus, understanding the dynamics of group decision making in this framework has become more critical. As such, to prepare students for the “real world,” it seems

that most student managed funds have followed suit, organizing the management of the funds under a team construct.

The advantage of a team approach, particularly in complex decision environment, is well documented (Shaw, 1981). Some of the advantages include the broader variety of knowledge inputs (Campion, Medsker, and Higgs, 1993), and the greater absorptive capacity of the group (Cohen and Leventhal, 1990). However, it is the potentially negative outcomes that we aim to address in the present study. In particular, we are concerned with the impact of herding, which we rather simply define as "going along with the crowd." Similar to groupthink (see Janis, 1972), it is characterized by group members that accept the work of others without adequately challenging or vetting the idea. When it occurs in an investment context, herding implies that individual investors have a stronger propensity to make a given investment (or not) simply because they know that other investors are taking similar action.

Welch (2000) finds that herding behavior is prevalent among security analysts, as subsequent investment recommendations are more likely to follow those that have been previously released by other analysts. Further, Banerjee (1992) finds that herding becomes especially pronounced in environments where outcomes are highly uncertain, which is an apt description of the field of investments. Taken to extremes, Welch (1992) and Hirshleifer and Teoh (2003) suggest herding is further amplified by an informational cascade, as investors ignore private information and simply "go with the flow." Stated differently, even if an investor's own beliefs or opinions are counter to the consensus, when they learn that their peers favor something, they tend to follow the herd and justify the decision by reasoning that the opinion of the majority must be correct.

In the work on groupthink by Janis (1972), this phenomenon is referred to as self-censorship and is one of eight symptoms indicative of the presence of groupthink. By "going with the flow," group members that self censor dissenting opinions add to the levels of groupthink because the rest of the group views their silence as unanimity. This silence further reinforces the group's belief in the correctness of its decision. The effect of these phenomena is likely to influence decisions such as whether to participate in the market, what securities to trade, and whether to buy or sell.

The negative impact of this behavioral influence is noted by Nofsinger (2008), who suggests that moving with the herd magnifies the psychological biases associated with investing and results in a reduction in investment returns. In addition, Daniel and Titman (2006) find that the negative investment performance associated with herding may likely be driven by overreaction (investors bidding prices too high) and reversal (a subsequent market correction that establishes a more representative value).

Although herding has traditionally been associated with broad market movements, it may become readily apparent within the group dynamic as well, particularly when teams (student or practitioner) are assigned different focus areas. For example, within an investment team, different individuals or subgroups may be assigned the lead in various market sectors (e.g.,

financials, industrials, etc.). So, although the group as a whole is responsible for the final decision, each individual or subgroup is considered to be an expert in his or her respective area. With this in mind, Larson, Sargis, and Bauman (2004) find that when a group has a set of common knowledge (i.e., general market information), but one faction has an additional set (i.e., focus on a particular sector), the group tends to follow the faction with the greater knowledge (i.e., herding / groupthink). Similarly, Quiamzade and L'Huillier (2009) illustrate that the herding instinct may also be driven by a first-mover who may be considered an expert in the particular area under consideration.

To examine herding, prior studies have taken two differing approaches. First, some studies, such as Welch (2000), have concentrated on the cross-sectional impact of recommendations across analysts at different firms. While this gives insight into the general market impact, it does not focus on the specific group dynamic that we are concerned with in the present study. Second, and to a smaller extent, the remaining studies have primarily conducted experiments that were designed to replicate a realistic group environment. This approach was necessitated by the fact that it is extremely difficult to gain inside access to a real-world investment management team.

While our study, similar to the second approach, concentrates on a within-group decision framework, it improves on this method by studying actual investment decisions of a group of university students who are managing a sizeable portion of the school's endowment. Thus, although the students are not yet investment professionals, the situation provides a rather close proxy for the actual behavior we would observe in the "real world." So, while our primary focus is on improving the structure of SMIFs, we also believe that our results may have implications for industry practitioners as well.

OBSERVATIONAL SETTING AND THE PRESENCE OF HERDING

As identified just above, we investigate the impact of herding in the management of a real-dollar (approximately $1 million) student managed investment portfolio. We begin our analysis at the inception of the SMIF, which was Fall 2007, and we conclude with the Spring 2009 section. This timeframe provides us with four distinct groups (i.e., semesters) of student managers and approximately seventy-six unique investment recommendations to evaluate.

Each semester a new group of approximately 12-15 students (either senior undergraduate finance majors or graduate (i.e., MBA) students) take responsibility for managing the fund. When the semester begins, the students are divided into teams of roughly three students, and each team is subsequently assigned oversight of designated sectors, such as financials and consumer staples, within the S&P500 index. Whenever a team wishes to make a trade in one of their respective sectors, they must present a recommendation (written and oral) to the entire class. The class then votes by a raise of hands on the merits of the trade, with a two-thirds majority required for approval. While the exact structure and percentages may differ across

SMIFs or with that of a "real-world" investment committee, we believe there is significant overlap, such that we can offer insights for both SMIF advisors and industry practitioners.

For each trade, we record the percentage of students who vote to approve the recommendation. We also document the characteristics of the company under consideration, and, in addition, we identify other control information, such as whether the company is associated with a pre-existing position (for example, carried over from a prior semester). At the end of each semester we further match group information (such as grades) to each of the recommendations. With this information, we attempt to identify whether the students exhibit herding behavior and, if they do, to what extent it impacts investment performance. Moreover, the information we collect enables us to address what particular factors may increase or decrease the likelihood that herding occurs.

To begin our analysis, we consider whether herding is prevalent. To do so, we first identify those recommendations that receive 100% approval. While it is possible that unanimous acceptance is indicative of the best possible investment choice (at least in the minds of the student managers), the large number of investment securities available in the market, combined with the subjective nature of company selection, suggests that unanimous approval, in the absence of herding, would be relatively uncommon. Thus, we believe that a prevalence of undisputed votes would be indicative of herding behavior within the group(s).

After segmenting the recommendations, we find that 40 of the 76 trades (or 53%) received unanimous approval. Further, only seven trades were rejected (i.e., did not receive the required two-thirds majority). We believe that this approval distribution is indicative of herd-like behavior, which is further strengthened by anecdotal evidence, as students often commented that they were unlikely to disagree with the recommendation because the team presenting the trade should be the experts in that particular sector. This thought echoes the findings of Larson, Sargis, and Bauman (2004) and Quiamzade and L'Huillier (2009) discussed above.

As an informal test of our measurement approach, in a subsequent semester we experimented with voting by paper ballot rather than show of hands. We find that this approach significantly reduces the incidence of unanimous approval (29% vs. 53% above), as well as the overall approval rate. While informal, we believe this observation lends support for our measurement approach, i.e., coding unanimous approval as "herding." We also believe that paper ballots may be a useful tactic for advisors to employ should they find that herd behavior is particularly pronounced in their student funds.

THE IMPACT OF HERDING

Prior studies suggest that herding behavior is detrimental to investment performance. Much of this is attributed to the loss of information that occurs when an observer documents someone's action, but does not know whether this person is taking the action because it is

believed to be the optimal choice, or whether the person is disregarding his signal and simply deciding to follow others.

To examine the potential impact of herding in our context, we calculate the return of each investment for the three-month and one-year periods after it is recommended. We choose to concentrate on these shorter time periods to match the timeframes within which the students operate, as well as to correspond to the nature of the herding behavior itself, e.g., see Daniel and Titman (2006). We report average returns, segmented by approval level (i.e., 100% versus all other), in Table 1, as well as the *t*-statistic from a difference of means test between the two segments.

Table 1: Return Comparison

Panel A: All Trades

	3-Month Returns (%)				12-Month Returns (%)			
Vote %	n	Gross	Excess	Alpha	n	Gross	Excess	Alpha
100%	40	-5.27	2.58	2.22	40	-37.64	-4.40	-1.97
<100%	36	-3.41	3.84	4.28	36	-36.61	1.30	4.80
Difference	4	-1.86	-1.26	-2.06	4	-1.03	-5.70	-6.77
t-statistic	na	-1.30	-1.50	-1.71	na	-0.13	-1.56	-1.90

Panel B: Excluding Rejected Trades

	3-Month Returns (%)				12-Month Returns (%)			
Vote %	n	Gross	Excess	Alpha	n	Gross	Excess	Alpha
100%	40	-5.27	2.58	2.22	40	-37.64	-4.40	-1.97
<100%	29	-3.00	4.82	5.54	29	-29.34	7.65	10.69
Difference	11	-2.27	-2.24	-3.32	11	-8.30	-12.05	-12.66
t-statistic	na	-1.49	-1.71	-1.97	na	-1.70	-1.89	-2.19

Panel A provides the results for all recommendations, while Panel B excludes the seven trades that were rejected. For returns, we report three different measures. First, *Gross* is the gross percentage return (percentage change in price plus dividend yield) from inception to three months (or one year) later. For all segmentations and time periods, the average gross return of trades receiving 100% approval is lower (more negative) than those that do not; however, the significance level is small, which may be expected given the volatility of the stock market during the period under consideration. Nonetheless, consistent with previous research, our results suggest that herding behavior (as proxied by unanimous approval) may indeed have a detrimental impact on investment performance.

It is possible that time period clustering could impact our results. For example, if one group (i.e., semester) of students were particularly impacted by herding and the market happened to decline that semester, our results would appear to indicate a negative impact from herding when it was simply a market-driven (i.e., time period sensitive) decline. Thus, we also calculate *Excess*, which is the return of the investment less the corresponding return of the S&P500 for the same time period. This approach adjusts for differences in market returns over time. With this adjustment the significance levels actually increase, suggesting that herding has a more negative impact than the simple gross returns would suggest.

Lastly, we examine *Alpha*, which is similar to *Excess*; however, it also adjusts for the level of market risk inherent in a particular security. For example, if a group approves the purchase of a highly volatile stock, it would be expected to decline (increase) more than the market if the market were in fact falling (rising). So, we adjust for this inherent volatility using a standard market model and repeat the comparison. Again, we find that this adjustment further strengthens our results that suggest herding (i.e., unanimous, unchallenged approval) is detrimental to long-term investment performance.

A valid question would be: why would 100% approval be associated with worse performance as compared to a less than 100% approval? Or, stated differently: if the trade is approved, why does it matter whether it is at the 100% level or the 75% level? The likely answer is that those trades that are approved at less than 100% are associated with a more intense discussion and scrutiny of the recommendation, although we are not suggesting what the best level of dissent might be. Rather, we are contending that transactions receiving less than 100% approval are often amended to reflect, among other things, different order types (for example, market versus limit orders) or entry points (in either timing or price). So, although approval still occurs, it is done so with adjustments that are often necessary to get agreement at the required level. Our results above suggest that these alterations, which are primarily a consequence of the discussion engendered by "dissension," improve investment performance relative to those trades where "blind" acceptance (i.e., herding) occurs.

CAUSES AND CONSTRAINTS OF HERDING

Given that herding appears to be detrimental to performance, the obvious question of importance becomes what causes (or curtails) herding behavior. Thus, we turn our attention to this issue by furthering our examination of the underlying characteristics associated with each investment recommendation. We rely on prior studies to identify potential behavioral biases that may be associated (either positively or negatively) with herding.

Hirshleifer and Teoh (2003) identify one particularly prevalent type of herding that is based on reputation (i.e., reputational herding). Specifically, individuals, in order to maintain status within the group, converge their decisions/behavior toward that of the other group members, particularly those that are viewed as having the highest standing. As a proxy for status,

we consider the average presentation grade (*Grade*) of the group making the recommendation, expecting a positive relation between group grade and the probability of herding.

In addition to other group members, decision makers may be influenced by people that are outside the group, particularly if they are viewed as experts. For example, Sandler and Raghavan (1996) find that investors tend to follow the actions of Warren Buffett. Hirshleifer and Teoh (2003) further explore the issue of observational influence (or, the endorsement effect), finding that it may create a general herding instinct. Similar to practicing investment managers, the students in the groups were exposed to CEOs, CFOs and Vice-Presidents of Investor Relations from firms in the S&P500 (e.g., Simon Property Group, Cummins, Bristol-Myers, Lilly, etc.). In each case, the student investment managers subsequently voted whether to include the stock of the related company in the investment portfolio. If observational influence holds with these "experts," we would expect recommendations associated with outside speakers (*Speaker*) to have an increased likelihood of acceptance.

Pohl (2006) examines the recognition heuristic, finding that individuals are more likely to choose a recognized object over an unrecognized one. Paxton and Cote (2000) suggest this type of behavior is consistent with the transferring of knowledge from one decision to another (i.e., analogical reasoning). While most studies on this issue have been outside the area of finance, the behavior has been previously noted among investors. For example, Lakonishok, Shleifer, and Vishny (1994) and Chen, Kim, Nofsinger and Rui (2007) find that investors often confuse a good company with a good investment, in that investors are more likely to purchase stock in those firms with which they are most familiar (i.e., representativeness or familiarity). To explore this behavioral bias, we identify firms in the sample that have been listed in *Fortune* magazine's list of America's most admired companies (*CoRep*), hypothesizing that students are more familiar with these firms and thus more likely to accept these particular investment recommendations without dissension (i.e., more likely to herd).

Since we all have limited time and/or limited cognitive ability, we often resort to simple heuristics to make decisions. Daniel, Hirshleifer, and Teoh (2002) find that the use of such rules of thumb (and the resulting herding behavior it engenders) is even more pronounced when time is compressed. Thus, we conjecture that when the student managers must deal with an excess (*Excess)* number of trades on a given day, for which there is a defined period of time, the limits to their attention will prevent meaningful discussion, thereby resulting in an increase probability of herding.

The status quo bias (or endowment effect) suggests that people have a tendency to keep what has been given to them even if they would not otherwise pay the current value to purchase it. Samuelson and Zeckhauser (1988) and Nofsinger (2008) find that this action is not necessarily because owners overstate the value of the object, but rather they feel pain in giving up the object (i.e., an emotional attachment). This particular bias may be similar to Fennama and Perkins' (2007) finding that people tend to use sunk costs in decision making. These particular influences may be relevant to the current study as investment managers often inherent pre-existing positions

or must decide whether to re-enter a position that was previously held. Thus, we denote trades that correspond to this situation (*Existing*), hypothesizing that these trades will be easier to get approved and, correspondingly, be increasingly associated with herding behavior.

Nofsinger (2008) states, "Psychological biases inhibit one's ability to make good investment decisions. By learning about your psychological biases, you can overcome them and increase your wealth." While this refers specifically to education of biases, more formal education may also increase one's confidence and the ability to interact with others. So, we consider the potential impact of two aspects of education (formal business education and targeted behavioral finance education), hypothesizing that both will reduce herding. Thus, we identify each group (i.e., semester) of students that were either (1) graduate level MBA students (*MBA)* and/or (2) assigned to read the book *Psychology of Investing* (*Psych*).

Lastly, we examine whether students are influenced by the bias associated with a lack of knowledge. Specifically, it is possible that at the inception of the semester, students are unwilling to give a conflicting opinion due to their inexperience and perceived lack of knowledge on the particular subject at hand. If this bias does impact the trading behavior, we would expect herding behavior to decline over time. Thus, we create the variable *FirstHalf*, which identifies if the trade occurred during the first half of the semester.

As a preliminary analysis, for each of the variables (and associated biases) just defined, we calculate the average values segmented by those trades receiving unanimous approval, which we previously suggest is indicative of herding behavior. We also test the difference between these average values, and we report these statistics in Table 2.

Table 2: Decision Characteristics Comparison

	100%	<100%	*t*-statistic
Grade	0.90	0.90	0.23
Speaker	0.05	0.06	-0.11
CoRep	0.13	0.05	2.06
Excess	0.43	0.31	2.08
Existing	0.23	0.11	2.33
MBA	0.28	0.42	-2.29
Psych	0.55	0.58	-1.01
FirstHalf	0.38	0.36	1.12

We find that the average grade of the student group making the presentation is insignificantly different between the two segments, suggesting that it is unrelated to herding behavior. This is in contrast to our expectation of reputational herding. However, while *Grade* is an objective measure that could play a role in reputation, Petty and Wegener (1998) show that the influence of highly esteemed group members may be due more to their personal

characteristics (which are difficult to define and measure) rather than actual content provided, which *Grade* may be measuring. Thus, while we cannot associate grades with herding, we are also unwilling to rule out reputational herding in total, as it may simply be an issue of a poor proxy measure.

Similarly, we find that the presence of an outside "expert" speaker is insignificantly related to a trade being unanimously accepted. One possible explanation is that, while the speaker may be influential and considered to be an expert, s/he may not necessarily be viewed as independent since they are a representative of the company under consideration. Therefore, they may lose their credibility. Thus, similar to reputational herding, we are unable to find evidence of observational influence, but we are unwilling to completely rule out this impact as it may be an issue with our proxy rather than a reflection of the underlying behavior.

Consistent with our expectations, we find that company reputation is significantly related to herding behavior, with companies on the list being more likely to pass unanimously. We also find that days on which excess trade activity occurs are associated with a higher probability of unanimous acceptance. We view this as being consistent with our hypothesis associated with limits to attention. In addition, we find that existing positions are positively related to herding behavior, which we view as being consistent with the status quo bias defined above.

Turning to the education variables, we find that both have a negative relation, as increased education is associated with reduced herding. However, only the MBA variable is significant. The final variable, *FirstHalf*, is insignificant, suggesting that student managers do not change their herding behavior over the course of the semester.

While these simple univariate tests provide some interesting results, it is possible that there is overlap between the variables. For example, if outside speakers were more prevalent in MBA sections, then their impact could be offset by the participants' education level. Thus, it is possible that the significance levels (or lack thereof) that we report may not be completely representative of the underlying relationships. So, to more fully control for these potentially overlapping influences, we further our examination using a multiple variable framework. Specifically, we consider the following model:

$$Dep = \alpha + \beta_1 Grade + \beta_2 Speaker + \beta_3 CoRep + \beta_4 Excess + \beta_5 Existing + \beta_6 MBA + \beta_7 Psych + \beta_8 FirstHalf + \varepsilon \quad (1)$$

where we define the dependent variable in two different ways. First, we consider a binary approach similar to Tables 1 and 2, where we segment those with unanimous acceptance (*Dep* = 1) versus all others (*Dep* = 0). As such, we employ a logistic regression for this analysis. Second, to add some robustness to our results, we consider a typical continuous variable that simply represents the percentage of students voting to accept a transaction, using a linear

regression to estimate the relationships. All other variables are as previously defined. We report the results of this analysis in Table 3.

Table 3: Regression Results		
	[1] Logistic	[2] Linear
Intercept	-2.79 (.0534)	0.48 (.5915)
Grade	0.02 (.8542)	0.00 (.7089)
Speaker	0.35 (.7433)	-0.03 (.7345)
CoRep	0.59 (.1455)	0.18 (.0706)
Excess	0.95 (.1239)	0.04 (.1208)
Existing	0.92 (.0915)	0.11 (.0560)
MBA	-1.42 (.0754)	-0.14 (.0903)
Psych	-1.27 (.0756)	-0.10 (.1141)
FirstHalf	0.39 (.5233)	0.04 (.6486)
n	76	76
% Concordant / R^2	71.4	.2338

Consistent with our results in Table 2, we find that *Grade, Speaker*, and *FirstHalf* are all insignificantly related to the likelihood that a recommendation is approved by a higher percentage of the student managers. Also consistent with our previous findings, we find that *CoRep* is positively related to acceptance, although it is only nominally significant in the logistic regression. Similarly, we find that time constraints, as proxied by *Excess*, are also positively related to herding, albeit at the 12 percent level. However, these nominal levels likely still indicate a pronounced relationship as we do not have an extremely large data set from which to draw conclusions, thereby reducing our degrees of freedom and associated significance.

The next two variables exhibit an even stronger relationship to acceptance, with *Existing* being positively and *MBA* being negatively related to herding, both at the 10 percent level. Each of these is also consistent with our previous results, indicating that the investment managers are prone to status quo bias, but that increased education level may offset this (and other) behavioral influences. In contrast to our prior results, we find that *Psych* is, in fact, significantly (again at approximately the 10 percent level) related to herding behavior. The negative relationship

suggests that educating participants on the potential influence of behavioral biases reduces the likelihood that biases (herding in this particular case) will surface. This result is consistent with the findings of Nikiforow (2010), who documents the impact of behavioral finance training on the actions of fund managers.

CONCLUSION

We are influenced by those around us, particularly when we are a member of a team or other interdependent group. Moreover, our desire to be accepted by our peers often results in decisions that are based more on emotion than objective evidence. While this herding instinct has been extensively studied in the psychology literature (with associated causes documented), and even in the area of sports (Hardy, Eys, and Carron, 2005), it has received nominal attention as it relates to the area of finance, and specifically to student managed investment teams. This issue, however, is becoming increasingly important due to the general movement away from individual investment managers to a team-based approach, as well as with the increasing number of SMIFs.

To fill this gap, we examine whether student investment managers operating within a team-based structure are impacted by herding instincts common to the general population. Consistent with prior studies examining broad market influences, we find that these students do appear to herd within the group context as well, as a disproportionate number of investment recommendations receive unanimous approval. Further, we find that the recommendations associated with herding are also more likely to have a lower subsequent return, on both a gross and market adjusted basis.

With the herding instinct documented, the primary issue becomes identifying which factors or characteristics exaggerate or reduce the behavior. Our results suggest that student investment managers are influenced by the familiarity bias and are therefore more likely to accept investments in companies with which they are more familiar. Further, we find that status quo bias, which may also be related to familiarity, induces students to add to positions that they already have (or have had in the recent past). Moreover, it appears that time constraints further exaggerate biases and thus the likelihood that herding behavior will occur. Fortunately, we find that there are ways to reduce the impact of behavioral bias and that this primarily comes through education, whether it be general education or targeted behavioral learning.

Our results provide meaningful insights for advisors who are creating or currently overseeing student managed funds, as well as for practitioner investment managers operating under a group construct. First, while many investors may avoid delaying decisions for fear of missing potential investment returns, we find that this type of implicit time constraint may actually result in worse decisions, thereby negating any added return earned in the short run. Thus, we suggest that advisors/managers be sure to provide adequate time for discussion (and dissension) surrounding proposed investments. Second, our findings suggest that organizations should support increased education for group members, both general education and behavioral-

specific instruction. In the context of SMIFs, we believe this can be achieved by having a set of required readings on general behavioral biases. We have found *The Psychology of Investing* by Nofsinger (2008) to be a good choice.

Third, the presence of vigorous discussion about decisions is highly valuable. Steps should be taken by advisors/managers to ensure that discussion takes place by using such techniques as assigning a devil's advocate. Finally, groups must recognize the importance of objective criteria in making decisions as this may help to overcome the subjectivity associated with the herding instinct. Highlighting which criteria are subjective and which are objective will help the decision team understand its biases. Implementing such features may help to improve the investment performance of the teams and better prepare them for life as "real world" investment managers.

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