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Why Do Fund Managers Identify and Share Profitable Ideas?

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Abstract

We study data from an organization in which fund managers privately share and discuss detailed investment recommendations. Buy recommendations generate positive abnormal returns, and sell recommendations result in negative abnormal returns. In the context of these results, we explore an important economic question: Why do skilled investors share profitable ideas with others? Evidence suggests that the managers in our sample share to receive feedback on their ideas and to attract additional arbitrageur capital to the securities they recommend in order to correct mispricings.

I. Introduction

Fundamentals-based investors play a key role in the price discovery process. A professional investor's job is to research a firm's management, business, and future prospects to determine if the company's market valuation is different from its intrinsic value. If the investor believes a security to be mispriced, the investor will trade that security accordingly, thereby driving the price toward the security's intrinsic value. This logic is the basis for the market-efficiency hypothesis (see Friedman (1953)), and it suggests that investors in possession of valuable private information will take full advantage of the information themselves until prices reflect intrinsic values (see Grossman and Stiglitz (1980)).

In contrast to this view of market efficiency, investors have been known to freely share their private information with others. For example, traders frequently make others aware of their positions, a practice Wall Street refers to as "talking your book." In addition, traders are known not only to publicize their positions but

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also to disclose private information regarding the investment theses behind those positions. To date, little work has been dedicated to addressing a basic underlying question related to these behaviors: Why would an investor rationally share valuable private information with others?

In this article, we address this important economic question by examining a group of specialized market participants (predominantly small hedge fund managers) who share detailed buy and sell recommendations on the private Web site ValueInvestorsClub.com (VIC). Specifically, we develop a conceptual framework that describes conditions under which sharing information is economically rational. This conceptual framework provides several empirical predictions, which we then test using data from VIC.

Our conceptual framework follows two lines of reasoning to explain why VIC members rationally share valuable stock recommendations with one another. The first, which we label the *awareness-sharing hypothesis*, suggests that investors share valuable private information about stock recommendations because they do not have sufficient capital to push prices to fundamental value. The basic premise of the awareness-sharing hypothesis is that sharing entices other investors to trade in the stock, which pushes prices to fundamental value and causes the investors' trading profits to be greater than their profits if they did not share. Sharing is beneficial because it speeds the price-discovery process, making it less likely that the arbitrageur is subject to noise-trader risk.

The awareness-sharing hypothesis predicts that investors will take a position in a stock before sharing information with others to maximize expected trading profits. Furthermore, sharing valuable information will induce other investors to act on the shared information by trading the stock. We test these predictions by examining abnormal trading volume and show that it increases in the days leading up to and the days immediately surrounding when the VIC report is released. In addition, the VIC Web site allows members to rate the quality of the recommendations posted to the Web site. We use these ratings to show that the increase in trading volume is most pronounced for highly rated ideas. These results suggest that the best ideas, as assessed by VIC member ratings, generate the most trading.

Although these results suggest that other investors appear to be responding to the recommendation posted on VIC, we also examine changes in institutional ownership and short interest before and after VIC buy and sell recommendations, respectively. These tests are important because institutional ownership and short interest are likely to represent the trading behavior of sophisticated VIC investors. We document an increase in the percentage of shares held by institutions (short interest) after VIC buy (sell) recommendations. Furthermore, the changes to institutional ownership and short interest are most striking for VIC recommendations that are rated highly by the site's membership. As a whole, the increase in trading activity documented by our volume, institutional ownership, and short-interest tests suggests that sharing high-quality ideas spurs others to act.

The second line of reasoning we follow to explain why sharing private information is economically rational relies on a model from Stein (2008), which proposes that fund managers share private information with one another in order to receive feedback that increases the value of their investment ideas. We refer to this line of reasoning as the *collaboration-sharing hypothesis*. The obvious

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prediction from this hypothesis is that investors who share receive valuable feedback on their ideas. The model also predicts that the most valuable ideas are shared among smaller groups of investors. We find evidence consistent with both predictions. Namely, VIC members receive constructive feedback on the ideas they post, and VIC members limit the extent of sharing when ideas are perceived to be particularly valuable as measured by the ratings assigned to the recommendations.

In addition to the results supporting the awareness- and collaboration-sharing hypotheses, we show that the buy and sell recommendations posted to VIC generate significant abnormal returns. We also find evidence that highly rated buy and sell recommendations generate better returns than poorly rated recommendations. These return results are important because they provide concrete evidence that VIC members identify and share valuable private information.

The results and the conclusions we draw are subject to caveats. First, because of data restrictions, we are unable to observe VIC members' actual trades, making it possible that the changes in volume we observe surrounding the reports being posted are being driven by other events. Second, we only document an association between the timing of the VIC reports and changes in institutional ownership and short interest, but many of the same factors that cause VIC members to issue their reports may be associated with mispricing in general, which could lead sophisticated investors to change their positions in VIC stocks independent of the VIC recommendations. This observation is consistent with Veldkamp's (2011) discussion of economic agents behaving similarly not because of coordination considerations but because of correlated information, which in this case includes information that indicates a stock is mispriced. We attempt to mitigate this concern by matching VIC firms to other firms that are likely to be mispriced and that do not experience a VIC recommendation. Finally, our tests addressing the collaboration-sharing hypothesis are largely descriptive. Future research can attempt to establish the importance of collaboration in explaining sharing behavior in financial markets.

Our article contributes to a burgeoning literature on investors' strategic information disclosures. Two articles in this literature are particularly relevant for our study. Ljungqvist and Qian (2014) examine how novice, capital-constrained arbitrageurs act to correct mispricing by sharing negative information about overvalued stocks with other investors. Specifically, the authors identify a group of specialized investment firms that take short positions in overvalued stocks and then publish damaging information about those stocks. The authors argue that sharing in this setting occurs because the investment firms do not have enough capital to move prices and because further short selling is prohibitively expensive. Accordingly, the investment firms share the reports with the market to induce current shareholders to sell their shares and drive price to fundamental value. The article's empirical tests are consistent with these arguments. Our article is similar to Ljungqvist and Qian's (2014), but there are important differences. We examine both buy and sell recommendations, whereas they examine only sell recommendations. In addition, investors in our setting share their information in a private network among other sophisticated investors who have been vetted by VIC. This is important because VIC investors are better able to assess the quality of the information compared with the average investor.

Kovbasyuk and Pagano (2014) develop a theoretical model that explains why investors "advertise" or share arbitrage opportunities. An important assumption underlying their model that is also an important part of the awareness-sharing hypothesis is that investors who share information do not have enough capital to push prices to fundamental value. The need for sharing in their model is driven by the fact that information about mispricing is costly to collect, which is consistent with our setting in which VIC members expend resources to identify mispriced stocks and then "advertise" these mispricings to other investors.

The article proceeds as follows: In Section II, we discuss the details of the awareness-sharing and collaboration-sharing hypotheses as motives for information sharing. Section III describes the data from ValueInvestorsClub.com and our other data sources. Section IV documents the value of the recommendations posted on VIC. Section V provides the main evidence of the article regarding why investors share information. Section VI concludes.

II. A Framework for Information Sharing

In this section, we discuss the awareness-sharing hypothesis and the collaboration-sharing hypothesis, which explain why investors share information with one another.

A. The Awareness-Sharing Hypothesis

To motivate the conditions under which an investor would rationally share valuable private information, we build on a model developed by Shleifer and Vishny (1997). The model consists of 3 periods and includes noise traders (De Long, Shleifer, Summers, and Waldmann (1990)), arbitrage-fund investors, and arbitrageurs. At $t=1$, an arbitrageur identifies an asset for which the price is lower than the intrinsic value (i.e., the asset is undervalued) and invests accordingly.[1] The model assumes that the arbitrageur has limited resources to invest, which could be because he or she has taken a capacity position in the stock or because holding costs cause the manager to limit the arbitrageur's position (Pontiff (2006)). Thus, prices do not reflect fundamental value at $t=1$. At $t=2$, noise traders, who trade erratically and without regard for intrinsic values, further depress the stock price, creating a dilemma for the arbitrageur. Without more capital to counteract the noise-trader effects, the arbitrageur experiences mark-to-market losses, causing investors to withdraw their capital at precisely the time when the arbitrageur's expected trading profits are the greatest. Investors withdraw capital because the arbitrageur is assumed not to have the ability to signal to investors that his or her poor performance is due to bad luck and not to lack of skill. At $t=3$, the intrinsic value of the asset becomes known to all, and the market price perfectly reflects it.

The awareness-sharing hypothesis posits that investors can counteract the effects of the noise traders by sharing their private information with other investors at $t=2$. Sharing is consistent with the model of Dow and Gorton (1994), who show that arbitrageurs will only make investments at $t=1$ if the probability of an informed trader subsequently entering the market is high enough. If the

[1] The logic that follows also applies to an investor who identifies an asset that is overvalued. In the Shleifer and Vishny (1997) model, the cost of an arbitrageur obtaining information is exogenous.

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probability is too low, arbitrageurs will not take a position because the price may not be supported in subsequent periods and will thus expose them to noise-trader risk. We argue that arbitrageurs can endogenously increase the chances of future arbitrageurs coming into the market by sharing their private information to ensure that prices reach fundamental value. Arbitrageurs will share information with other investors who have sufficient capital to move prices to fundamental value and who are sophisticated enough to understand the arguments behind the arbitrageur's investment thesis.[2]

To illustrate the intuition of the awareness-sharing hypothesis, consider the following example. Suppose an arbitrageur identifies stock XYZ as undervalued relative to fundamentals. The manager is confident in her analysis of XYZ, and she decides to invest all her investors' capital into this idea (or she invests up to a firm-mandated position risk limit). However, even after the manager has exhausted her buying power, XYZ is still undervalued by a sizable margin. The manager is extremely confident she will profit once XYZ reaches intrinsic value, but she is concerned that her position will be highly volatile and that noise traders may drive the price further away from intrinsic value over the next period and cause her investors to liquidate their position at the end of the period when she posts a loss. To curb liquidation risk, the manager shares her private information with a group of sophisticated investors, who then recognize that the stock is severely undervalued. The manager hopes that sharing verifiable and valuable information will cause other fund managers to counteract the noise traders' negative price effects, thus allowing her to post a better return figure for her investors.

The main empirical predictions from the awareness-sharing hypothesis in the context of VIC are as follows. First, VIC members are likely to have limited access to capital. Second, VIC members will take positions in stocks before sharing their private information with other investors. This behavior ensures that VIC managers maximize their profits for a given trade and is consistent with the time line from our previous discussion. Third, VIC members observing buy and sell recommendations posted to the Web site will trade accordingly. As described in the introduction, VIC members can rate the recommendations posted to the Web site. Using these ratings as a measure of the quality of the information contained in a given recommendation, we predict that the highest-quality recommendations should trigger the most trading activity. Evidence consistent with this prediction solidifies the validity of the awareness-sharing hypothesis.

B. The Collaboration-Sharing Hypothesis

The collaboration-sharing hypothesis provides another explanation for why investors share their private information with others. Stein (2008) develops a theory that shows that an asset manager will share an idea if it gives the manager access to constructive feedback that will make his or her idea more valuable. More specifically, consider a fund manager who develops a promising investment

[2] Our framework assumes that the cost of disseminating the information to others is negligible and does not have a material impact on the investor's decision to share or on the investor's profits. This is consistent with theoretical models that discuss the low cost of replicating information (see Veldkamp (2006)) and with the VIC setting in which an analyst simply posts a recommendation on the Web site for others to view it.

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thesis, but because his information set is incomplete, his idea is not worth much. However, if the fund manager shares his thesis with another fund manager who then provides feedback, the investment thesis will become more valuable. As long as this give-and-take relationship is valuable for both parties involved, information exchange will occur between competitors. Stein's theory provides two basic predictions: Managers will share ideas in situations in which they receive constructive feedback, and the most valuable ideas will remain localized within a small group.[3]

III. Data

A. Value Investors Club

Our primary data come from a private Internet community called ValueInvestorsClub.com. VIC is a Web site restricted to 250 professional investors who share investment ideas with one another, rate others' ideas, and participate in discussion of the ideas by adding comments. To become a member of the club, applicants submit an investment idea that is evaluated by VIC management to determine if the member has significant stock-picking ability. Once admitted, members are required to share investment ideas and to rate other members' ideas to maintain access to the Web site. Furthermore, members are encouraged to post comments and questions on investment ideas. The identities of VIC members are not disclosed to the general public nor to the other members of the site. Because membership data are confidential, we are unable to provide a statistical summary of VIC member characteristics.[4]

B. Data Description

We analyze all investment reports submitted to VIC from the time of the club's founding on Jan. 1, 2000, through Dec. 31, 2011. Reports containing what ultimately prove to be poor recommendations are not deleted from the Web site, and therefore our database does not suffer from an ex post selection bias. In total, we examine 4,911 investment submissions. Report length ranges from several hundred to a few thousand words. Investment ideas are wide-ranging with respect to the security type, the trading location of the asset, and the complexity of the strategy employed. For each investment report analyzed, we record various data: date and time of submission, symbol, price at time of submission, market(s) traded, security(s) traded, and strategy recommended (buy, sell, or buy–sell[5]).

[3]In addition to the awareness-sharing and collaboration-sharing hypotheses, VIC members may share ideas to signal their skill or to garner direct monetary benefits. With respect to signaling, there is no reason to think VIC members benefit from highlighting their skill to the marketplace because the VIC organization requires anonymity, which makes signaling ineffective. Investors would only share for direct monetary benefits if the value of a monetary award for the information is greater than the expected costs of sharing the information and losing out on a profitable trading opportunity. Twice each month, $5,000 is awarded to the best idea submitted to VIC. In the context of the asset management business, the potential for a $5,000 award is likely negligible with respect to a manager's incentive to share a profitable investment opportunity.

[4]Details of the Web site are available from the authors. Interested readers can also explore the Web site ValueInvestorsClub.com.

[5]Buy–sell recommendations are also known as pair trades.

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Table 1 presents a summary of the sample's descriptive characteristics. Most of the VIC recommendations are for U.S. assets (4,155 of 4,911 total reports), and the majority of these U.S. recommendations are for common stocks. Across all asset types and market locations, buy recommendations are the most common.

We analyze only U.S. exchange-traded buy and sell common stock recommendations with sufficient data from the Center for Research in Security Prices (CRSP)/Compustat. We do not analyze U.S. common equity investment recommendations that have payoffs one could consider nonlinear or inappropriate to analyze with linear factor asset-pricing models because they could bias our results (Fung and Hsieh (2000), (2001)). Specifically, we eliminate all recommendations classified as merger arbitrage, stub arbitrage, pair trade, liquidation, and long/short pair-trade recommendations, along with non-common-equity ideas such as options or preferred stock. Of the 4,911 observations in the original sample, 3,220 reports remain after imposing these selection criteria. For these 3,220 reports, we match the recommendation to accounting and stock return data from CRSP/Compustat. We require the firm being recommended to have return data for at least 1 month following the posting date and further require the firm to have

TABLE 1
Recommendation Summary Data

Table 1 reports descriptive characteristics for investment recommendations submitted to ValueInvestorsClub.com (VIC) from Jan. 1, 2000, through Dec. 31, 2011. Panel A reports where assets are traded and the asset type recommended. Panel B reports the number of each buy, sell, and buy–sell recommendation by the type of asset. Panel C reports the number of each buy, sell, and buy–sell recommendation by trading location.

Panel A. Asset Type and Trading Location

Market	Common Stock	Bonds	Preferred Stock	Convertible Securities	Warrants	Options	Other	Total
United States	3,908	68	50	19	12	17	81	4,155
Canada	259	2	2	1	0	0	3	267
United Kingdom–Europe	262	9	4	1	0	0	1	277
Japan	31	0	0	0	0	0	2	33
Hong Kong	38	0	0	0	0	0	0	38
Korea	21	0	0	0	0	0	0	21
Other	117	1	0	0	0	0	2	120
Total	4,636	80	56	21	12	17	89	4,911

Panel B. Recommendation by Asset Type

Recommendation	Common Stock	Bonds	Preferred Stock	Convertible Securities	Warrants	Options	Other	Total
Buy	4,093	73	46	21	12	13	17	4,275
Sell	503	2	3	0	0	3	7	518
Buy–Sell	40	5	7	0	0	1	65	118
Total	4,636	80	56	21	12	17	89	4,911

Panel C. Recommendation and Market Location

Recommendation	United States	Canada	United Kingdom–Europe	Japan	Hong Kong	Korea	Other	Total
Buy	3,573	258	256	29	33	20	106	4,275
Sell	484	5	14	3	3	0	9	518
Buy–Sell	98	4	7	1	2	1	5	118
Total	4,155	267	277	33	38	21	120	4,911

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market value of equity in the month preceding the recommendation. These data restrictions leave us with a total of 3,175 reports to analyze.

Table 2 tabulates descriptive statistics for the buy and sell recommendations used in our tests. MVE is the market value of equity in thousands of dollars at the end of the month prior to the recommendation month. BM is the book value of equity scaled by MVE. Data on book value of equity are taken from Compustat using data from the firm's most recent annual report.[6] PAST1_RETURN is the buy-and-hold return during the 1 month preceding the recommendation month, and PAST12_RETURN is the buy-and-hold return during the 12 months preceding the recommendation month excluding month $t-1$. ILLIQUIDITY is the Amihud (2002) measure of illiquidity, defined as the average ratio of the daily absolute return to the dollar trading volume, measured over a 12-month period prior to the VIC recommendation.

Buy recommendations are typically small (median market capitalization is $385 million), with a tilt toward "value" (median book-to-market ratio is 0.63). For sell recommendations, VIC members bet on larger firms, as median market capitalization is $854 million. However, the firms recommended as sells are still small in terms of the distribution of all publicly listed firms: A market capitalization of $854 million would place a firm in the Russell 2000 small cap index for every year in the sample. The median book-to-market ratio (0.32) for sell recommendations is smaller than the corresponding median for buy recommendations. Buy-recommendation stocks are more illiquid than sell-recommendation stocks, which is not surprising, given that these firms' market capitalizations are smaller.

TABLE 2
Recommendation Summary Statistics

Table 2 reports summary statistics for ValueInvestorsClub.com (VIC) buy and sell recommendations submitted from Jan. 1, 2000 to Dec. 31, 2011. The sample consists of all firms that have at least 1 monthly return observation and data for MVE in the month preceding the recommendation. MVE is the market value of equity in thousands of dollars at the end of the month prior to the recommendation month. BM is the book value of equity scaled by MVE. PAST1_RETURN is the buy-and-hold return during the 1 month preceding the recommendation month, and PAST12_RETURN is the buy-and-hold return during the 12 months preceding the recommendation month, excluding month $t-1$. ILLIQUIDITY is the Amihud (2002) measure of illiquidity, defined as the average ratio of the daily absolute return to the dollar trading volume, measured over 12 months preceding the recommendation month. RATING is the average rating (on a scale of 1 to 10) assigned to a recommendation by VIC members.

Variables	*N*	Mean	Median	Std. Dev.	Min.	Q1	Q3	Max.
Panel A. Buy Recommendation Characteristics								
MVE	2,761	4,540,835	385,205	21,509,543	845	115,854	1,730,550	350,760,253
BM	2,717	1.118	0.626	4.567	−9.406	0.341	1.121	149.405
PAST1_RETURN	2,728	−0.011	−0.011	0.159	−0.781	−0.085	0.061	1.768
PAST12_RETURN	2,704	0.100	0.000	0.678	−0.969	−0.252	0.254	8.324
ILLIQUIDITY	2,760	1.267	0.010	11.077	0.000	0.001	0.113	381.905
RATING	2,355	5.020	5.100	0.730	1.300	4.600	5.500	7.500
Panel B. Sell Recommendation Characteristics								
MVE	414	3,265,551	854,657	10,585,317	7,195	353,032	2,056,566	159,614,765
BM	404	0.581	0.325	1.862	−15.660	0.126	0.665	20.265
PAST1_RETURN	410	0.039	0.017	0.192	−0.515	−0.058	0.105	1.286
PAST12_RETURN	403	0.471	0.143	1.396	−0.964	−0.168	0.591	17.139
ILLIQUIDITY	414	0.318	0.004	4.085	0.000	0.001	0.014	78.935
RATING	365	5.270	5.400	0.744	2.600	4.900	5.800	6.900

[6]For Compustat data, we require the recommendation date to follow the fiscal year-end by at least 90 days.

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With respect to momentum, buy recommendations are generally poor recent performers relative to sell-recommended firms. The median PAST1_RETURN is −1.1% for buy recommendations and 1.7% for sell recommendations. The median PAST12_RETURN is 0.0% for buy recommendations and 14.3% for sell recommendations. Table 2 also presents summary statistics for the ratings assigned to recommendations by VIC members. Of note is the fact that not all recommendations are rated. Figure 1 shows the number of buy and sell recommendations across the sample years. The number of buy reports issued each year grew steadily until 2007, then declined in 2008 and 2009. The decline could be a result of the economic slowdown during the same time period. Consistent with this, the number of sell recommendations issued grew steadily in 2008 and 2009.

IV. Performance Analysis

In this section, we examine the performance of VIC recommendations to show that the information shared by VIC members is valuable. VIC members often state in their recommendation thesis that their ideas should be considered long-term investments and not short-term trades.[7] We measure the long-term performance of the VIC recommendations by performing detailed calculations on investment periods ranging from 1 to 3 years. We incorporate CRSP delisting return data using the technique of Beaver, McNichols, and Price (2007). For recommendations that become event firms intra-month, we incorporate the "stub" return for the recommendation by compounding daily returns from the day after the recommendation is posted until the end of the month.

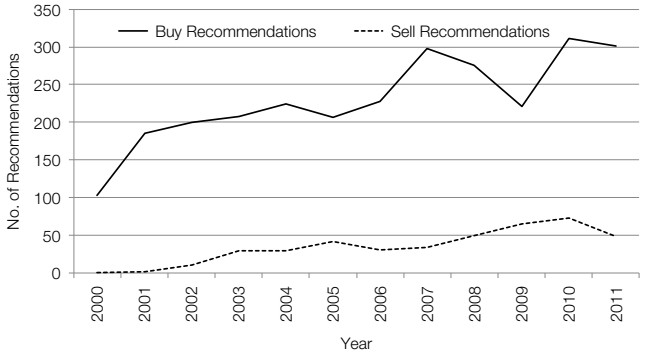
A. Calendar-Time Portfolio Regressions

We analyze the data using the calendar-time portfolio regression approach because of the statistical problems inherent in long-run buy-and-hold abnormal

FIGURE 1

Number of Buy and Sell Recommendations by Year

Figure 1 displays the number of buy and sell recommendations posted to ValueInvestorsClub.com for each year in the sample.



[7]We base this on a reading of all 4,911 reports submitted to ValueInvestorsClub.com.

returns, as discussed by Mitchell and Stafford (2000) and Fama (1998).[8] This procedure involves forming portfolios consisting of all firms that were recommended in the current month t and within the last x months (x is the length of the holding period). We then calculate the monthly returns to the event-firm portfolio in excess of the risk-free rate and regress this variable on a variety of linear asset-pricing models, which include the following variables: MKT (excess value-weighted market index return), SMB (small minus big), HML (high book-to-market minus low book-to-market), and MOM (high momentum minus low momentum).[9]

The estimated alphas from our calendar-time portfolio regressions are presented in Table 3. The estimates in Table 3 represent the mean monthly abnormal return over the calendar-time horizon for all recommendations and for recommendations separated on New York Stock Exchange (NYSE) size break points. The alpha estimates for the buy recommendations as a group are positive and statistically significant for both equal-weighted and value-weighted portfolios. The estimates degrade with time horizon, suggesting that the information in VIC recommendations is incorporated into prices over time. The alpha estimates for buy recommendations based on size quintiles reveal that alphas are statistically significant for the first 4 NYSE size quintiles but not for the largest firms in the sample.

TABLE 3

Calendar-Time Portfolio Regressions by New York Stock Exchange (NYSE) Size Break Points

Table 3 reports calendar-time portfolio regression alphas to ValueInvestorsClub.com (VIC) buy and sell recommendations submitted from Jan. 1, 2000 to Dec. 31, 2011. At the beginning of every calendar month, all event firms are assigned to 1 of 5 quintiles based on NYSE size break points. Each month, the quintile portfolios consist of all firms that were recommended in month t and within the last x months (x is the length of the holding period). Portfolios are rebalanced monthly. The independent variables are the monthly excess market index returns and returns from the Fama–French (1993) factors and the Carhart (1997) momentum factor. Alphas are in monthly percentages, and p-values are shown in parentheses. * indicates statistical significance at the 5% level.

	Panel A. Buy Recommendations						*Panel B. Sell Recommendations*					
	Equal-Weighted Portfolio			Value-Weighted Portfolio			Equal-Weighted Portfolio			Value-Weighted Portfolio		
Size Portfolio	1-Year	2-Year	3-Year	1-Year	2-Year	3-Year	1-Year	2-Year	3-Year	1-Year	2-Year	3-Year
All	0.78%*	0.62%*	0.54%*	0.61%*	0.49%*	0.40%*	−1.44%*	−1.07%*	−0.92%*	−0.03%	0.02%	−0.13%
	(0.000)	(0.000)	(0.000)	(0.005)	(0.008)	(0.027)	(0.000)	(0.000)	(0.000)	(0.948)	(0.952)	(0.622)
1	0.73%*	0.55%*	0.48%*	0.76%*	0.52%*	0.45%*	−3.29%*	−2.28%*	−1.71%*	−3.16%*	−1.96%*	−1.46%*
(small)	(0.001)	(0.012)	(0.027)	(0.000)	(0.009)	(0.025)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
2	0.94%*	0.70%*	0.53%*	1.03%*	0.73%*	0.69%*	−0.59%	−0.36%	−0.31%	−0.42%	−0.30%	0.01%
	(0.001)	(0.003)	(0.024)	(0.000)	(0.004)	(0.004)	(0.265)	(0.289)	(0.340)	(0.446)	(0.382)	(0.962)
3	0.91%*	0.76%*	0.79%*	0.78%*	0.59%*	0.70%*	−0.46%	−0.50%	−0.94%*	−0.44%	−0.54%	−0.55%
	(0.001)	(0.001)	(0.000)	(0.003)	(0.005)	(0.001)	(0.464)	(0.242)	(0.014)	(0.436)	(0.148)	(0.087)
4	0.79%*	0.71%*	0.60%*	0.73%*	0.80%*	0.70%*	0.05%	−0.33%	−0.09%	0.22%	−0.04%	0.08%
	(0.002)	(0.001)	(0.002)	(0.004)	(0.001)	(0.002)	(0.945)	(0.420)	(0.815)	(0.774)	(0.927)	(0.854)
5	0.39%	0.43%	0.33%	0.47%	0.39%	0.25%	0.56%	0.06%	−0.07%	0.54%	0.34%	0.11%
(large)	(0.152)	(0.065)	(0.148)	(0.099)	(0.093)	(0.234)	(0.550)	(0.917)	(0.871)	(0.500)	(0.492)	(0.785)
1–5	0.34%	0.12%	0.15%	0.29%	0.14%	0.20%	3.85%*	2.33%*	1.63%*	3.71%*	2.29%*	1.57%*
	(0.246)	(0.656)	(0.581)	(0.357)	(0.616)	(0.446)	(0.001)	(0.003)	(0.013)	(0.001)	(0.002)	(0.010)

[8]The mean 1-year characteristic portfolio adjusted buy-and-hold abnormal return (BHAR) for the buy (sell) recommendations in our sample is 13.3% (−6.18%). BHARs increase (decrease) across ratings quintiles for buy (sell) recommendations consistent with the calendar-time portfolio results presented in Table 4. Complete BHAR results are available from the authors.

[9]See Fama and French (1993) and Carhart (1997). Factors obtained from Kenneth French's Web site, http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

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We test whether the returns in the smallest and largest size quintiles are statistically different from one another by creating a portfolio that buys the firms in the smallest size quintile and sells firms in the largest size quintile (labeled "1–5" in Table 3). However, we find no evidence of a statistically different alpha between the smallest and largest firms. Overall, the evidence with respect to buy recommendations in Table 3 suggests that VIC members have stock-picking skills for all but the largest firms in the sample.

Moving to the results for sell recommendations, we observe that alpha estimates are negative and significant for equal-weighted portfolios but are generally not significant for value-weighted portfolios. This result demonstrates a strong size effect for sell recommendations. We confirm this statistically and find that returns to the smallest size quintile of sell recommendations are more negative than those in the largest quintile, as shown by the alpha estimates for a portfolio that shorts firms in the smallest size portfolio and buys those firms in the largest size quintile (labeled "1–5" in Table 3). In summary, VIC members appear to be able to identify small, overpriced stocks.[10]

B. Performance and VIC Ratings

As discussed in the Introduction, when a report is posted to VIC, members are given the opportunity to rate the idea on a scale of 1 (bad) to 10 (good). Ratings are recorded if 5 or more members rate the idea, and the rating period is open for only 2 weeks to ensure members do not rate ideas based on ex post performance.[11] Since 2007, which is when data on the time of rating became available, 60% of ratings were submitted within 72 hours of posting.[12] The club's guidance to the community regarding how ratings should be assigned is that ratings should be objective and based on the expected performance of the investment thesis. Moreover, to encourage active participation, the club requires that members rate at least 20 ideas per year. The club also requests that extremely high (9 or 10) or extremely low (1 or 2) ratings be accompanied by specific commentary about the investment thesis in the discussion section associated with the recommendation.

For our tests on ratings, we exclude the first 2 weeks of return data because a VIC rating could be endogenously determined should an idea perform exceptionally well during the 2-week rating period after submission, inducing members to rate it very highly. We also perform all of our empirical tests on ratings with the inclusion of the 2-week rating period and find slightly stronger results.

To assess whether ratings can predict future performance, we run calendar-time portfolio regressions after dividing our sample universe into 5 ratings

[10]By construction, calendar-time portfolios contain differing numbers of securities over time. The portfolios start with a few firms and slowly build over time. As a robustness test, we create restricted-weight portfolios following Savor and Lu (2009), who restrict each stock's weight in a portfolio to a maximum of 25%. We conduct this analysis because portfolios may be dominated by a single recommendation that is a magnitude larger than the other recommendations in the calendar-time portfolio. We also calculate results using weighted least squares (WLS) calendar-time portfolio regressions by weighting observations by the market capitalization of the portfolios. Results using these different methodologies provide similar inferences to those in Table 3.

[11]VIC management provides no explicit indication of why VIC records ratings only if 5 or more members rate the idea, but we speculate that it minimizes skewness caused by 1 or 2 extreme ratings.

[12]Per e-mail correspondence with VIC management.

quintiles based on the distribution of ratings in our sample. The estimated alphas from our calendar-time portfolio regressions are presented in Table 4. Alpha estimates increase roughly monotonically across ratings quintiles, but the buy recommendations in the top 2 ratings quintiles appear to generate the strongest positive returns. Specifically, the 1-year equal-weighted portfolio alphas for the recommendations in the fourth and fifth ratings quintiles are 0.96% and 1.23% per month, respectively. The difference in alphas between the lowest- and highest-rated buy recommendations is statistically significant for the equal-weighted portfolio returns. The value-weighted portfolio returns for buy recommendations in Table 4 show that firms in the second-highest ratings quintile generate significant abnormal returns, but those firms in the highest ratings quintile do not. The difference in returns in the highest ratings quintile across the equal- and value-weighted returns suggests that small firms in the highest ratings quintile generate the most positive returns. We confirm this in untabulated analysis; the 1-year value-weighted portfolio return for firms with a market value of equity below (above) the portfolio median is 1.28% (0.67%) per month.

On the short side, the evidence is similar to the buy recommendation results. For example, the lowest-rated 1-year equal-weighted portfolio has a positive but insignificant alpha of 0.27% a month, whereas the highest-rated sell ideas have a statistically significant alpha of −2.09% a month. The difference in returns between the lowest- and highest-rated stocks is significant for both equal- and value-weighted portfolios. Overall, the evidence in Table 4 suggests that the VIC community has the capability to assess the relative quality of ideas submitted to the organization.

TABLE 4

Calendar-Time Portfolio Regressions by Ratings

Table 4 reports calendar-time portfolio regression alphas to ValueInvestorsClub.com (VIC) buy and sell recommendations submitted from Jan. 1, 2000 to Dec. 31, 2011. The samples consist of all firms that have at least 1 monthly return observation and a rating. At the beginning of every calendar month, all event firms are assigned to 1 of 5 quintiles based on their rating. Each month, the quintile portfolios consist of all firms that were recommended in month t and within the last x months (x is the length of the holding period). Portfolios are rebalanced monthly. The independent variables are the monthly excess market index returns and returns from the Fama–French (1993) factors and the Carhart (1997) momentum factor. Alphas are in monthly percentages, and p-values are shown in parentheses. * indicates statistical significance at the 5% level.

	Panel A. Buy Recommendations						*Panel B. Sell Recommendations*					
	Equal-Weighted Portfolio			Value-Weighted Portfolio			Equal-Weighted Portfolio			Value-Weighted Portfolio		
Rating Portfolio	1-Year	2-Year	3-Year	1-Year	2-Year	3-Year	1-Year	2-Year	3-Year	1-Year	2-Year	3-Year
All	0.56%*	0.42%*	0.36%*	0.44%*	0.26%	0.16%	−1.07%*	−0.88%*	−0.78%*	0.34%	0.18%	0.03%
	(0.000)	(0.003)	(0.010)	(0.025)	(0.080)	(0.210)	(0.000)	(0.000)	(0.000)	(0.450)	(0.590)	(0.919)
1 (low rating)	−0.22%	−0.05%	−0.18%	0.18%	0.18%	0.06%	0.27%	−0.10%	0.07%	0.43%	0.15%	0.14%
	(0.396)	(0.797)	(0.373)	(0.622)	(0.594)	(0.860)	(0.672)	(0.856)	(0.898)	(0.539)	(0.769)	(0.748)
2	0.48%*	0.17%	0.09%	0.09%	0.01%	0.01%	−0.29%	−0.40%	−0.28%	−0.69%	−0.22%	−0.49%
	(0.047)	(0.410)	(0.657)	(0.746)	(0.972)	(0.981)	(0.669)	(0.446)	(0.552)	(0.312)	(0.649)	(0.282)
3	0.49%*	0.43%*	0.45%*	0.44%	0.21%	0.25%	0.46%	−0.26%	−0.34%	2.58%*	0.95%	1.33%
	(0.030)	(0.041)	(0.019)	(0.109)	(0.316)	(0.205)	(0.433)	(0.577)	(0.391)	(0.003)	(0.231)	(0.062)
4	0.96%*	0.68%*	0.67%*	0.94%*	0.66%*	0.60%*	−1.59%*	−1.46%*	−1.13%*	−0.30%	−0.63%	−0.64%
	(0.000)	(0.000)	(0.000)	(0.004)	(0.025)	(0.034)	(0.003)	(0.000)	(0.001)	(0.634)	(0.163)	(0.115)
5 (high rating)	1.23%*	0.68%*	0.49%*	0.69%	0.44%	0.25%	−2.09%*	−1.39%*	−1.33%*	−1.64%*	−1.35%*	−1.08%*
	(0.000)	(0.001)	(0.008)	(0.054)	(0.092)	(0.280)	(0.000)	(0.000)	(0.000)	(0.004)	(0.003)	(0.004)
5–1	1.45%*	0.73%*	0.67%*	0.51%	0.26%	0.19%	2.36%*	1.29%*	1.40%*	2.07%*	1.50%*	1.22%*
	(0.000)	(0.003)	(0.005)	(0.263)	(0.526)	(0.621)	(0.006)	(0.043)	(0.019)	(0.013)	(0.017)	(0.030)

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V. Empirical Tests of the Awareness-Sharing and Collaboration-Sharing Hypotheses

We now describe our tests of the awareness-sharing and collaboration-sharing hypotheses.

A. Awareness-Sharing Hypothesis

We make three empirical predictions based on the awareness-sharing hypothesis. First, VIC members are likely to have limited access to capital. Because we do not know VIC members' identities, we cannot test this prediction directly. However, VIC management disclosed to us that the majority of the members are hedge fund managers with between $50 and $250 million in assets under management. Although this is only a broad summary statistic, these values are consistent with a group of arbitrageurs with limited access to capital compared with significant players in the money management industry.

Second, VIC members will take positions in stocks before sharing their private information with other investors. To investigate this prediction, we examine aggregate abnormal trading activity in the days leading up to the VIC recommendation being posted on the Web site. Although this analysis does not isolate VIC members' specific trades, we hope to identify an increase in the level of trading activity before the report is posted, consistent with VIC members initiating positions in a stock before they share the recommendation on VIC.

Third, VIC members should buy stocks recommended as buys and short stocks recommended as sells. To test this prediction, we also utilize aggregate abnormal trading activity in the days immediately surrounding the date the recommendation is posted to VIC and expect to find increased trading activity after the report is posted. As additional tests, we determine if institutional ownership and short interest increase after a VIC recommendation. As with aggregate trading activity, we do not observe the actual trades of VIC members in these tests, but institutional ownership is more likely to pick up the activity of VIC members than generic trading given that VIC members are predominantly fund managers. Furthermore, shorting stocks is also likely to reflect VIC member trading because it is generally done by sophisticated investors.

We also use the ratings assigned to VIC reports as a proxy for the quality of the information contained in the recommendations. The better the information in the recommendation, the more convincing and persuasive it will be to other VIC members. Accordingly, for the tests just described, we also examine whether highly rated recommendations experience greater abnormal daily trading activity and larger changes in institutional ownership and short interest than poorly rated recommendations.

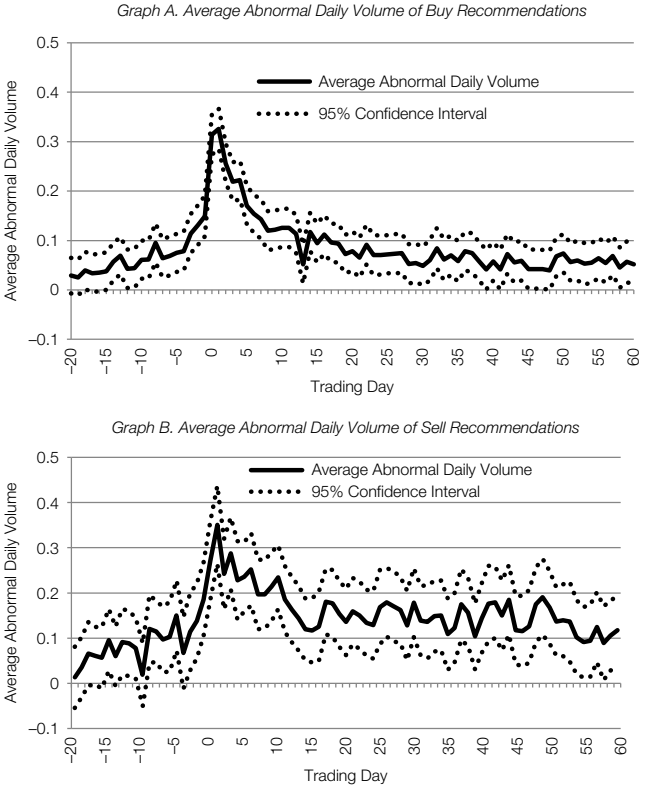
1. Trading Volume

We calculate daily abnormal trading volume following Campbell and Wasley (1996) in order to observe whether VIC members initiate positions before recommending a stock and whether VIC reports are successful in spurring trading activity by other arbitrageurs. Volume is defined as the natural log transformation of the number of shares traded divided by the total number of shares outstanding.

Abnormal trading volume is calculated as the volume on a given trading day less the average daily trading volume in a 3-month period preceding a recommendation being posted on VIC starting on day −80 and ending on day −21. Graphs A and B of Figure 2 plot average abnormal daily volume surrounding VIC buy and sell recommendations, respectively. These graphs document that trading activity increases in the days leading up to the VIC report, spikes when the report is issued, and then stays relatively high for several days after the report. To show the abnormal trading activity in more detail, Table 5 presents average abnormal daily volume for days $t = -5$ to $t = +5$. For both types of recommendations, the volume is abnormally high in the few days before the report is issued. This is consistent with VIC members building their positions in a stock before issuing a report.[13]

FIGURE 2
Abnormal Daily Volume

Figure 2 plots abnormal daily volume in the days surrounding a report being posted to ValueInvestorsClub.com (VIC). We calculate daily abnormal trading volume following Campbell and Wasley (1996). Volume is calculated as the natural log transformation of the number of shares traded divided by the total number of shares outstanding. Abnormal trading volume is calculated as the volume on a given trading day less the average daily trading volume in a 3-month period preceding a recommendation being posted on VIC starting on day −80 and ending on day −20. The dotted lines capture the 95% confidence intervals for daily abnormal volume.



[13]This could also be a result of the VIC members sharing this information with others before posting the report to VIC.

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TABLE 5

Average Daily Abnormal Volume Surrounding VIC Recommendations

Table 5 reports average daily abnormal volume in the days surrounding a report being posted to ValueInvestorsClub.com (VIC). We calculate daily abnormal trading volume following Campbell and Wasley (1996). Volume is calculated as the natural log transformation of the number of shares traded divided by the total number of shares outstanding. Abnormal trading volume is calculated as the volume on a given trading day less the average daily trading volume in a 3-month period preceding a recommendation being posted on VIC starting on day −80 and ending on day −20. *p*-values are shown in parentheses. * indicates statistical significance at the 5% level.

Rating Portfolio	Trading Day										
	−5	−4	−3	−2	−1	0	1	2	3	4	5
Panel A. Buy Recommendations											
All	0.075*	0.079*	0.114*	0.131*	0.149*	0.314*	0.325*	0.256*	0.219*	0.222*	0.170*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
1 (low rating)	0.026	−0.010	0.048	0.057	0.113*	0.206*	0.188*	0.125*	0.156*	0.199*	0.104*
	(0.496)	(0.801)	(0.215)	(0.138)	(0.003)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.007)
5 (high rating)	0.154*	0.108*	0.141*	0.183*	0.295*	0.496*	0.586*	0.480*	0.415*	0.424*	0.292*
	(0.004)	(0.043)	(0.009)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
5–1	0.128	0.118	0.093	0.126	0.183*	0.290*	0.399*	0.355*	0.259*	0.225*	0.188*
	(0.065)	(0.084)	(0.163)	(0.060)	(0.013)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.008)
Panel B. Sell Recommendations											
All	0.150*	0.067	0.114*	0.138*	0.186*	0.271*	0.351*	0.242*	0.287*	0.228*	0.236*
	(0.002)	(0.161)	(0.017)	(0.004)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
1 (low rating)	0.052	−0.012	0.054	0.083	0.178	0.222	0.362*	0.225	0.311*	0.114	0.244*
	(0.666)	(0.921)	(0.653)	(0.490)	(0.137)	(0.063)	(0.002)	(0.060)	(0.009)	(0.340)	(0.041)
5 (high rating)	0.228*	0.177*	0.215*	0.323*	0.214*	0.508*	0.562*	0.457*	0.538*	0.472*	0.386*
	(0.004)	(0.025)	(0.007)	(0.000)	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
5–1	0.176	0.189	0.161	0.240	0.036	0.286	0.200	0.231	0.227	0.358*	0.142
	(0.235)	(0.177)	(0.252)	(0.101)	(0.801)	(0.085)	(0.192)	(0.091)	(0.115)	(0.008)	(0.307)

For buy recommendations in the period immediately surrounding the report date, abnormal volume increases from 0.149 on day $t=-1$ to 0.314 on day $t=0$ and to 0.325 on day $t=+1$. Abnormal volume declines steadily thereafter. The pattern is similar for sell recommendations, but the increase in daily trading volume appears to persist longer than it does for buy recommendations. These results suggest that VIC members initiate positions in a stock before a recommendation is posted and that VIC reports induce others to trade in the recommended stocks, consistent with the awareness-sharing hypothesis. However, these results are only suggestive of this interpretation, and as discussed earlier, we are unable to track the trading of specific VIC members.

To further examine abnormal trading behavior, we also examine differences in abnormal trading volume between recommendations that are rated poorly (the lowest ratings quintile) and for those rated highly (the highest ratings quintile), because the ideas seen by VIC members as the most valuable should induce more trading than other ideas.[14] Consistent with this idea, we document in Table 5 that the increase in abnormal trading volume for highly rated recommendations after the report is posted is larger than that for poorly rated recommendations. However, the difference in abnormal trading volume is statistically significant only for buy recommendations. The results in Table 5 also suggest that abnormal trading

[14]For brevity, we report statistics for VIC firms only in the highest and lowest quintiles of ratings.

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activity before a report is posted is higher for highly rated recommendations than for poorly rated ones, but the differences are not significant.

2. Institutional Ownership

We use quarterly institutional ownership data from the Thomson Reuters Institutional (13F) Holdings database to determine how ownership changes after a VIC buy recommendation is posted to the Web site. Because holdings data are only available on a quarterly basis, we observe the institutional ownership for each firm in the sample in the quarter in which the recommendation is made, as well as the quarters prior to and the quarters after the recommendation. We calculate the change from quarter $q-1$ to quarter $q+1$ and the change from quarter $q-2$ to $q+2$ to capture any effect the VIC recommendations have on institutional ownership. We calculate the change in the number of institutions holding positions in VIC buy recommendations (NUM_INST) before and after an event. We also aggregate holdings across institutions for a given quarter to calculate total institutional ownership as a percentage of total shares outstanding (PCT_HELD) for each firm quarter. Examining NUM_INST for a given firm allows us to provide insight into whether new institutions are initiating positions in the stock. Examining PCT_HELD picks up new institutions buying shares and also captures institutions that increase their position in the stock.

One of the challenges introduced by examining changes in *quarterly* data is that it makes the possibility that other factors are driving any documented change in institutional ownership more likely than if we were using institutional ownership measured at the daily level. Specifically, factors that lead to a firm being mispriced could also lead institutions to change their ownership levels in that firm. These changes may occur independent of a VIC recommendation. To address this issue, we implement a difference-in-differences design that compares the change in institutional ownership at VIC firms to the change in institutional ownership for a sample of propensity-score-matched firms. The propensity-score analysis matches a non-VIC firm to a VIC buy firm using a probit regression that uses as the dependent variable an indicator set to 1 for firm-month observations with a VIC buy report, and 0 otherwise.[15] The independent firm-level variables that indicate mispricing include the past 3-month return, the natural log of market value of equity, the natural log of 1 plus the Amihud (2002) measure of illiquidity, the standard deviation of daily returns measured over the prior year, the book-to-market ratio, the natural log of the number of sell-side analysts covering the firm, the percentage of shares held by institutions, 2-digit Standard Industrial Classification (SIC) industry fixed effects, and month fixed effects. The propensity-score analysis results in a sample of 2,549 VIC firms being matched to 2,549 non-VIC firms. The sample of VIC firms is smaller than our original sample of 2,761 because not all firms have the data for the variables listed previously. We then require VIC firms and their matches to have data in the quarters surrounding the VIC report, which further reduces the number of firms we examine.

Panel A (Panel B) of Table 6 presents means of NUM_INST (PCT_HELD) before and after a VIC report and the change in these variables for the sample of

[15] Matched sample firms are chosen without replacement using a caliper of 0.0001.

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TABLE 6

Difference-in-Differences Analysis of Institutional Ownership around VIC Buy Recommendations

Table 6 reports a difference-in-differences analysis of ValueInvestorsClub.com (VIC) buy recommendations. We use propensity-score matching to match a non-VIC firm to each VIC buy-recommendation firm. We then examine institutional ownership for the VIC firms and the matched firms in the quarters before and after the VIC firm is recommended on the Web site. Panel A presents an analysis of the number of institutions holding shares in a given firm; Panel B presents an analysis of the percentage of shares held by institutions. *p*-values are shown in parentheses for the differences in institutional ownership before and after the VIC recommendation and between VIC and non-VIC matched firms. * indicates statistical significance at the 5% level.

			$q-1$ to $q+1$					$q-2$ to $q+2$			
			$q-1$	$q+1$				$q-2$	$q+2$		
Firm		N	(a)	(b)	(b)–(a)	*p*-Value	N	(a)	(b)	(b)–(a)	*p*-Value
Panel A. Number of Institutions Holding Shares (NUM_INST)											
All Firms											
(i)	Matched firm	2,105	128.33	131.69	3.36*	(0.00)	2,034	127.76	134.03	6.26*	(0.00)
(ii)	VIC firm	2,133	141.93	142.96	1.03	(0.07)	2,098	144.84	146.30	1.46	(0.08)
(ii)–(i)			13.60*	11.27*	−2.33*	(0.00)		17.08*	12.27*	−4.81*	(0.00)
p-value			(0.01)	(0.04)				(0.00)	(0.03)		(0.00)
Low Rating											
(i)	Matched firm	384	141.18	142.82	1.63	(0.19)	376	142.00	147.18	5.18*	(0.00)
(ii)	VIC firm	376	153.41	149.34	−4.07*	(0.01)	367	152.48	146.64	−5.84*	(0.00)
(ii)–(i)			12.22	6.52	−5.70*	(0.00)		10.48	−0.54	−11.02*	(0.00)
p-value			(0.33)	(0.60)				(0.40)	(0.97)		
High Rating											
(i)	Matched firm	331	130.60	131.91	1.30	(0.21)	316	133.28	138.28	5.01*	(0.00)
(ii)	VIC firm	325	117.18	119.24	2.06	(0.18)	320	127.74	134.34	6.60*	(0.00)
(ii)–(i)			−13.42	−12.67	0.75	(0.68)		−5.53	−3.94	1.59	(0.52)
p-value			(0.29)	(0.32)				(0.69)	(0.78)		
Panel B. Percentage of Shares Held by Institutions (PCT_HELD)											
All Firms											
(i)	Matched firm	2,105	53.10%	54.27%	1.17%*	(0.00)	2,034	53.49%	55.30%	1.81%*	(0.00)
(ii)	VIC firm	2,133	57.24%	58.16%	0.92%*	(0.00)	2,098	56.82%	58.75%	1.92%*	(0.00)
(ii)–(i)			4.14%*	3.89%*	−0.25%	(0.49)		3.33%*	3.45%*	0.12%	(0.80)
p-value			(0.00)	(0.00)				(0.00)	(0.00)		
Low Rating											
(i)	Matched firm	384	56.68%	56.67%	−0.01%	(0.98)	376	56.62%	57.82%	1.20%*	(0.04)
(ii)	VIC firm	376	63.08%	62.83%	−0.25%	(0.71)	367	62.84%	62.66%	−0.18%	(0.83)
(ii)–(i)			6.40%*	6.16%*	−0.24%	(0.77)		6.22%*	4.83%*	−1.39%	(0.18)
p-value			(0.01)	(0.01)				(0.01)	(0.04)		
High Rating											
(i)	Matched firm	331	52.63%	53.01%	0.38%	(0.45)	316	53.58%	54.34%	0.77%	(0.42)
(ii)	VIC firm	325	54.72%	56.79%	2.07%*	(0.01)	320	54.11%	58.12%	4.01%*	(0.00)
(ii)–(i)			2.09%	3.78%	1.70%	(0.07)		0.53%	3.78%	3.25%*	(0.01)
p-value			(0.39)	(0.11)				(0.83)	(0.13)		

VIC firms and their matches. Panel A shows that the average NUM_INST for VIC firms in the quarter before the report is 141.93 and in the quarter after is 142.96, for a modest increase of 1.03. This difference is not statistically significant. Interestingly, the VIC-matched firms have a lower average NUM_INST in $q-1$ and $q+1$ compared with VIC firms, but these firms experience a larger increase in NUM_INST. The difference in the change in NUM_INST between the VIC firms and their matches is 2.33, which is statistically significant. Expanding the window in which NUM_INST is measured presents an even starker difference between the 2 groups of firms: matched firms experience an average increase in NUM_INST of 6.26, whereas VIC firms experience an average increase of 1.46. Again, the difference is statistically significant. These results show only weak evidence that the

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number of institutions increases after a VIC report. Furthermore, the results are surprising because they indicate that institutions are attracted to mispriced firms and that VIC firms do not attract as much attention as other mispriced firms.

We now turn to Panel B of Table 6, which documents the levels and changes in PCT_HELD. As with NUM_INST, VIC firms have larger values of PCT_HELD relative to their matches both before and after the VIC report.[16] Both VIC firms and their matches experience a statistically significant increase in PCT_HELD, but the difference between these changes is not significant. Thus, the VIC event does not appear to induce institutions to purchase more shares in the firm relative to other mispriced firms. When we expand the time frame to include the 2 quarters before and after a VIC event, VIC firms experience a larger increase in PCT_HELD than their matched counterparts (1.92% vs. 1.81%), but the difference is not significant.

The results in Panels A and B of Table 6 for the entire sample of VIC firms and their matches provide little evidence that sharing VIC recommendations induces other informed investors to purchase shares in the stock. To further explore the effect of VIC recommendations on institutional ownership, we explore whether ratings are an important factor in determining which VIC recommendations attract institutional interest relative to their matches. In the lowest ratings quintile, VIC firms actually experience a decline in NUM_INST in both the 2-quarter and 4-quarter windows, whereas matched firms experience an increase in NUM_INST. Thus, poorly rated VIC recommendations induce institutions to exit their positions in the recommended stock. PCT_HELD also declines for VIC firms in the lowest ratings quintile, but the decline is modest (−0.25% in the 2-quarter window) and is not statistically lower than the change in PCT_HELD experienced by the matched firms.

In the highest ratings quintile, VIC firms experience increases in NUM_INST of 2.06 and 6.60 in the 2-quarter and 4-quarter windows, respectively. These increases are larger than those experienced by the matched firms, but differences between VIC firms and their matches are not significant. PCT_HELD also increases for VIC firms from 54.11% 2 quarters before the VIC report to 58.12% 2 quarters after the event, an increase of 4.01%. This increase is statistically larger than the 0.77% increase experienced by the matched firms. These results demonstrate that sharing good recommendations on VIC is an effective way to get others to buy shares in a particular stock to push the price to fundamental value. Interestingly, this appears to be largely a result of existing institutions buying more shares in the recommended stocks and not a result of institutions initiating positions in those stocks. A strategy resembling a "pump-and-dump," or talking up stocks that are low quality, is ineffective and could end up causing investors to exit a position.

[16]The differences in PCT_HELD between VIC firms and their matches before the recommendation is posted suggests that the propensity-score-matching approach has not achieved covariate balance with respect to the level of prior institutional ownership. To address issues of covariate balance, Armstrong, Jagolinzer, and Larcker (2010) recommend estimating a regression of the outcome (the change in PCT_HELD) as a function of the treatment and the control variables used in the propensity-score model. Using this approach, we still document that PCT_HELD increases for the VIC buy recommendations that are rated the highest.

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3. Short-Interest Tests

We now examine short interest in stocks recommended as sells on VIC. Short-interest data are available on a monthly basis, so we examine the data 2 months before and after the VIC sell recommendation. As with our analysis of institutional ownership of VIC buy recommendations, we utilize propensity-score matching to obtain a sample that includes firms that are also likely to be mispriced but that do not receive a VIC recommendation. The propensity-score analysis matches a non-VIC firm observation to a firm recommended as a sell on VIC, using a probit regression that uses an indicator variable set to 1 for firm-month observations with a VIC sell report (0 otherwise) as the dependent variable. The independent firm-level variables are the same as those used to identify matches for VIC buy recommendations, with one exception: Instead of using PCT_HELD, we include the level of short interest (PCT_SHORT) in the month prior to the VIC recommendation. The propensity-score analysis results in a sample of 353 VIC sell firms and a corresponding number of non-VIC firms. As is the case with VIC buy firms, the sample of VIC sell firms in this analysis is smaller than our original sample of 414 because not all firms have the data for the variables used in the propensity-score probit model. We also require VIC firms and their matches to have short-interest data in the months surrounding the VIC sell report.

Table 7 presents average values of PCT_SHORT for VIC sell firms and their matches. Firms that are the target of a VIC sell report have a mean PCT_SHORT of approximately 10% in the month before the report is issued, which is very similar to the mean PCT_SHORT for the sample of matched firms. One month following the VIC report, PCT_SHORT increases to 11.14%, for a total increase of 1.24%

TABLE 7

Difference-in-Differences Analysis of Short Interest around VIC Sell Recommendations

Table 7 reports a difference-in-differences analysis of short interest (PCT_SHORT) around ValueInvestorsClub.com (VIC) sell recommendations. We use propensity-score matching to match a non-VIC firm to each VIC sell-recommendation firm. We then examine short interest for the VIC firms and the matched firms in the quarters before and after the VIC firm is recommended on the Web site. Short interest is the number of shares sold short scaled by total shares outstanding. *p*-values are shown in parentheses for the differences in short interest before and after the VIC recommendation and between VIC and non-VIC matched firms, and * indicates statistical significance at the 5% level.

			Dependent Variable: Short Interest (PCT_SHORT)								
			m−1 to *m*+1					*m*−2 to *m*+2			
	Firms	*N*	*m*−1 (a)	*m*+1 (b)	(b)–(a)	*p*-Value	*N*	*m*−2 (a)	*m*+2 (b)	(b)–(a)	*p*-Value
All Firms											
(i)	Matched firm	348	10.18%	9.90%	−0.28%	(0.23)	342	9.96%	9.83%	−0.12%	(0.66)
(ii)	VIC firm	350	9.90%	11.14%	1.24%*	(0.00)	345	9.59%	11.82%	2.23%*	(0.00)
(ii)–(i)			−0.28%	1.24%	1.52%*	(0.00)		−0.37%	1.98%*	2.35%*	(0.00)
p-value			(0.71)	(0.10)				(0.63)	(0.01)		
Low Rating											
(i)	Matched firm	47	8.48%	7.88%	−0.59%	(0.22)	45	8.41%	7.87%	−0.54%	(0.30)
(ii)	VIC Firm	46	8.88%	9.36%	0.49%	(0.23)	45	8.74%	9.18%	0.44%	(0.43)
(ii)–(i)			0.40%	1.48%	1.08%	(0.09)		0.33%	1.30%	0.98%	(0.20)
p-value			(0.84)	(0.43)				(0.87)	(0.47)		
High Rating											
(i)	Matched firm	95	10.60%	10.38%	−0.22%	(0.63)	93	10.71%	10.64%	−0.06%	(0.91)
(ii)	VIC firm	99	10.65%	13.02%	2.37%*	(0.00)	97	10.35%	14.29%	3.95%*	(0.00)
(ii)–(i)			0.04%	2.64%	2.60%*	(0.00)		−0.36%	3.65%*	4.01%*	(0.00)
p-value			(0.98)	(0.12)				(0.83)	(0.04)		

in short interest. Conversely, PCT_SHORT falls by 0.28% for matched firms. The difference in these changes is statistically significant. Looking 2 months before to 2 months after widens the gap between VIC firms and their matches; VIC firms experience an increase in PCT_SHORT of 2.23%, whereas their matches experience a slight decline in this time period.

The entire sample of VIC sell recommendations appears to experience increases in short interest, but we also examine whether ratings play a role in the VIC firms that are shorted the most. Examining the firms in the lowest ratings quintile in Table 7 shows that the increase in PCT_SHORT for VIC firms is approximately 0.50% in both windows. Although PCT_SHORT declines for matched firms, the differences across the 2 sets of firms are not statistically significant. However, VIC firms in the highest ratings quintile experience an increase of 2.37% from 1 month before to 1 month after the report is posted and an increase of 3.95% in the larger window. The differences in these increases between VIC firms and their matches are both significant at the 1% level.

These results are consistent with the empirical prediction from the awareness-sharing hypothesis that sharing recommendations about overvalued firms spurs other investors to short the recommended firms, particularly for the sell recommendations garnering the best ratings.

B. Collaboration-Sharing Hypothesis

To quantitatively assess the predictions of the collaboration-sharing hypothesis, we analyze the ratings and comments attached to VIC recommendations. VIC has a robust infrastructure to facilitate collaboration and comments on individual ideas. Whenever an idea is posted to VIC, members receive an idea alert and are able to rate the idea and share their comments on the investment thesis. We test whether VIC members receive feedback on their ideas by determining if members are active in posting and responding to comments about specific stock ideas. Although they are descriptive in nature, these tests are among the first that attempt to empirically document the basic predictions of Stein's (2008) model.

In addition to posting comments, VIC members can mark comments as "private." Private comments are only visible to the VIC community and are not accessible by the general public.[17] We test the association between the ratings assigned to VIC recommendations and the number of comments marked as private as a way to test whether the most valuable ideas (as measured by ratings) remain localized within a small group.

We analyze the comments attached to VIC recommendations using data from Jan. 1, 2004, through Nov. 21, 2009. We begin our analysis of comment data on Jan. 1, 2004 because the option to label comments private was rarely used prior to this date (13.44% of ideas had at least 1 private comment prior to 2004 vs. 74.45% after Jan. 1, 2004).[18] Furthermore, we are unable to access comments after Nov. 21, 2009 because of Web site restrictions.

[17] Anyone can sign up for guest access to VIC, but access to recommendations and comments comes with a 45-day delay; that is, guests can view recommendations and comments 45 days after they are posted. However, comments marked as private are never made available to guests.

[18] We are unable to determine the reason for the significant shift in the number of comments marked private beginning in 2004. The results in this section are subject to the caveat that they might not apply

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Table 8 provides a detailed description of the comments from VIC. We analyze the comments for the sample of recommendations that have at least 1 comment and MVE available in the month prior to being posted to VIC.[19] In total, we examine the comments on 1,271 buy recommendations and 228 sell recommendations. The sample is smaller than the original sample used for the abnormal return analysis because not all recommendations receive comments and because of the Web site restriction mentioned previously. We tabulate the total number of comments submitted (COMMENTS), the number of unique VIC members involved in a particular conversation (MEMBERS), the number of comments that are designated as private (NUM_PRIVATE), the number of comments that are author submitted (NUM_AUTHOR), and the number of comments that are submitted within 45 days of the recommendation's posting (NUM_LT_45_DAYS). We also report the percentage of comments marked private (PCT_PRIVATE), submitted by the author (PCT_AUTHOR), and percentage of comments submitted within 45 days of posting (PCT_LT_45_DAYS).

Summary statistics certainly suggest that ideas submitted to VIC receive extensive feedback. Buy and sell recommendations receive 11.35 and 13.13 comments, respectively, and approximately 5 VIC users comment on each

TABLE 8
Comments Summary Statistics

Table 8 reports summary statistics for the comments associated with ValueInvestorsClub.com (VIC) recommendations submitted from Jan. 1, 2004, to Nov. 20, 2009. Panels A and B show the characteristics of buy and sell investment ideas, respectively. The sample consists of all firms that have at least 1 monthly return observation, data for MVE in the month preceding the recommendation, and at least 1 comment. COMMENTS represents the number of comments. MEMBERS represents the number of unique members commenting. NUM_PRIVATE (PCT_PRIVATE) represents the number (percentage) of comments that are private. NUM_AUTHOR (PCT_AUTHOR) represents the number (percentage) of comments from the author. NUM_LT_45_DAYS (PCT_LT_45_DAYS) represents the number (percentage) of comments submitted within 45 days of the recommendation date.

Variable	Mean	Median	Std. Dev.	Min.	Q1	Q3	Max.
Panel A. Buy Recommendations (N = 1,271)							
COMMENTS	11.35	8.00	12.90	1.00	4.00	14.00	138.00
MEMBERS	4.77	4.00	3.29	1.00	3.00	6.00	28.00
NUM_PRIVATE	3.53	2.00	5.66	0.00	0.00	4.00	82.00
PCT_PRIVATE	29.69%	25.00%	27.67%	0.00%	0.00%	50.00%	100.00%
NUM_AUTHOR	4.15	3.00	5.28	0.00	1.00	6.00	57.00
PCT_AUTHOR	38.06%	42.86%	25.53%	0.00%	20.00%	50.00%	100.00%
NUM_LT_45_DAYS	6.50	4.00	7.61	0.00	2.00	9.00	91.00
PCT_LT_45_DAYS	65.51%	77.78%	37.50%	0.00%	40.00%	100.00%	100.00%
Panel B. Sell Recommendations (N = 228)							
COMMENTS	13.13	8.50	15.01	1.00	4.00	17.50	147.00
MEMBERS	5.20	5.00	3.27	1.00	3.00	7.00	24.00
NUM_PRIVATE	4.37	2.00	7.21	0.00	1.00	5.00	73.00
PCT_PRIVATE	31.32%	26.67%	27.18%	0.00%	7.85%	50.00%	100.00%
NUM_AUTHOR	4.44	2.50	5.77	0.00	0.00	6.00	40.00
PCT_AUTHOR	34.07%	40.00%	23.90%	0.00%	0.00%	50.00%	100.00%
NUM_LT_45_DAYS	6.66	5.00	7.04	0.00	1.50	10.00	47.00
PCT_LT_45_DAYS	63.95%	76.79%	38.09%	0.00%	36.13%	100.00%	100.00%

to the broader VIC sample and that something beyond our control may be spuriously causing the association between ratings and the percentage of comments marked as private.

[19] Over 90% of VIC recommendations we examine receive at least 1 comment. In unreported analysis, we find that ideas that receive ratings are more likely to be commented on.

recommendation (i.e., average MEMBERS is 4.77 and 5.20 for buy and sell recommendations, respectively). In addition, many of the comments are provided by the author. The mean PCT_AUTHOR is 38.06% for buy ideas and 34.07% for sell ideas, which suggests that there is a conversational, give-and-take nature of the comments between the recommendation's author and VIC members. These results fit the primary prediction of Stein's (2008) collaboration theory that fund managers share their ideas to receive feedback from other smart investors. However, a direct test of Stein's prediction that VIC managers submit ideas to receive feedback is beyond the reach of our data.

Other interesting results from the comment analysis are the percentage of comments that are labeled as private (PCT_PRIVATE) and the percentage of comments that are submitted within 45 days of the recommendation posting (PCT_LT_45_DAYS). These two data parameters are important because private posts remain restricted to the VIC community after the 45-day lock-up period. For the sample of buy and sell recommendations, 29.69% and 31.32% of comments are marked private, respectively, and 65.51% of all buy comments and 63.95% of all sell comments occur within the 45-day window around the recommendation. These results suggest that VIC members limit some of their conversations to the VIC community and focus their discussion efforts in the 45-day window before comment and recommendation data become accessible by the public.

We next test Stein's (2008) hypothesis that more valuable ideas will be shared among a smaller group of agents.[20] To assess this hypothesis, we use the number of private comments (NUM_PRIVATE) and the percentage of total comments marked private (PCT_PRIVATE) as proxies for the size of the collaboration group. For example, if idea X has 20 comments and 15 are private, the collaboration information for idea X will be primarily limited to VIC members, whereas if idea Y has 20 comments and 0 are private, the feedback information is available to VIC members and the general public after 45 days.

We calculate the univariate relation between ratings and number of comments marked private or the percentage of comments marked private (untabulated). For buy recommendations, the lowest-rated ideas have a mean (median) NUM_PRIVATE of 2.41 (1.00) and a PCT_PRIVATE of 26.48% (20.00%), but the highest-rated ideas have a mean (median) NUM_PRIVATE of 6.23 (3.00) and a PCT_PRIVATE of 32.38% (26.49%). Statistical tests for differences in means and medians reveal that the differences are significant. Sell recommendations show a similar pattern: Low-rated ideas have lower NUM_PRIVATE and PCT_PRIVATE than the high-rated ideas. The mean and median differences are all statistically significant except for the difference in means for sell recommendations.

To investigate Stein's (2008) hypothesis in a multivariate setting, we regress NUM_PRIVATE and PCT_PRIVATE on ratings variables and several other controls.[21] In untabulated analysis, we find that the estimated coefficient on RATING is positive and significant in all of our estimations, suggesting a robust

[20] Ideally, we would like to test whether the most valuable ideas are kept private, but the VIC Web site automatically makes all ideas public after 45 days of posting.

[21] For the analysis on NUM_PRIVATE, we focus on results from a Poisson regression because the data are bound from 0 to infinity. We also conduct our tests using standard ordinary least squares regressions and a negative binomial regression technique; all results are qualitatively similar. For the

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association between ratings and the number and percentage of comments marked private. These results suggest that VIC members want to limit their discussions on the best ideas to the VIC community. Overall, the regression estimates provide evidence that generally supports Stein's hypotheses: A positive relation exists between the perceived quality of an idea (as proxied by the idea's rating) and how widely information is shared in the market (as proxied by the percentage and number of private comments).

VI. Conclusion

In this article, we examine why investors share private information with one another. We explore this question using data from a private Web site called ValueInvestorsClub.com on which small hedge fund managers share detailed buy and sell recommendations with one another. We develop the awareness-sharing and collaboration-sharing hypotheses that describe conditions under which sharing is economically rational. The awareness-sharing hypothesis suggests that capital-constrained investors share their information with others to induce them to trade in order to push prices to fundamental value. We find evidence consistent with this hypothesis: Abnormal trading activity increases in the days surrounding a VIC report, and institutional ownership and short interest increase following VIC buy and sell recommendations, respectively. We also show that the changes are most dramatic for the highest-quality recommendations as captured by the ratings assigned to the recommendations by VIC members.

With respect to the collaboration-sharing hypothesis, we find that the investors in our sample share profitable ideas to collaborate with other sophisticated investors. Specifically, VIC members actively comment and rate the ideas of the recommendations posted to the Web site. In addition, we document that VIC members limit the extent of sharing when ideas are perceived to be particularly valuable as measured by the ratings assigned to the recommendations. These results are consistent with the empirical predictions of Stein (2008), but they are only descriptive, and detailed tests of the model are beyond the reach of our data. Future research can examine the predictions of the collaboration-sharing hypothesis in more detail.

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analysis on PCT_PRIVATE, we use the fractional logit model estimated using a quasi-likelihood approach developed by Papke and Wooldridge (1996) because PCT_PRIVATE is bound between 0 and 1.

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