Too Many Cooks Spoil the Profits: Investment Club Performance

Brad M. Barber and Terrance Odean

We report our analysis, using account data from a large discount brokerage firm, of the common stock investment performance of 166 investment clubs from February 1991 through January 1997. The average club tilted its common stock investment toward high-beta, small-cap growth stocks and turned over 65 percent of its portfolio annually. The average club lagged the performance of a broad-based market index and the performance of individual investors. Moreover, 60 percent of the clubs underperformed the index.

> The queen of all National Association of Investors Corporation investors is a group known as the Beardstown Ladies, a group of women from the central Illinois town of Beardstown, who average close to 70 years old. From 1983 through 1992, they averaged a 23.6 percent annual return, bettering the Standard & Poor's 500 by more than 8 percent. In 1991, their portfolio grew by a whopping 59.5 percent.
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> The Beardstown women have become celebrities. They starred in their own video, "Cookin' Up Profits on Wall Street," have been profiled in dozens of publications and have become favorites on "CBS This Morning" television show.
>
> How do they do it?
>
> *Chicago Tribune*, December 14, 1994

> The Beardstown Ladies, the investment club of grandmotherly investors that became popular with the media, said that an audit by Price Waterhouse shows their 10-year average annual rate of return was 9.1 percent—not the 23.4 percent promoted on the cover of their best-selling book.
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> *Wall Street Journal*, March 18, 1998

In May 1998, the National Association of Investors Corporation (NAIC) reported that more than 35,000 investment clubs were operating in the United States. The financial press has made frequent and bold claims regarding the performance of investment clubs. One often-quoted figure from a NAIC survey of clubs is that 60 percent of investment clubs beat the market.[1] Are these claims myth or reality? This article attempts to answer this question while providing a descriptive analysis of the common stock investments of clubs.[2]

Using data from a large discount brokerage house, we analyzed the performance of a randomly selected sample of 166 investment clubs. This sample enabled us to overcome the obvious shortcomings of conclusions based on surveys of self-reported performance of clubs (an example of these limitations is the reporting of the Beardstown Ladies). Our results are sobering news for investment clubs. We document that 60 percent of the 166 clubs underperformed the market. We also document the underperformance of investment clubs vis-à-vis individual investors and discuss the reasons for this performance.[3]

Data and Methods

After a description of the investment club data, we explain the methods we used for calculating returns and evaluating performance.

Investment Club Data. Our primary data set for this research was information from a large discount brokerage firm on the investments of 78,000 clients from February 1991 through December 1996. The sample was drawn randomly from all clients with open accounts at this firm during 1991. Barber and Odean (forthcoming 2000) provided a complete description of these data. Of these clients, 166 were identified as investment clubs.[4]

In the research reported here, we focused on the common stock investments of investment clubs.

Brad M. Barber is associate professor of management and finance and Terrance Odean is assistant professor of finance at the University of California at Davis.

We excluded from the current analysis investments in mutual funds (both open-end and closed-end funds), American Depositary Receipts, warrants, and options. These clubs made 7,559 trades in all securities; common stocks accounted for slightly more than 80 percent of those trades. The 166 clubs are all in the United States, although not concentrated in any particular state or region; 34 percent are in the West, 32 percent in the Midwest, 22 percent in the East, and 12 percent in the South.

In **Table 1**, we present descriptive information for the stock positions and trades of the 166 clubs. The position statements (Panel A) indicate that the average club held 7.5 stocks worth $37,416 during our sample period, although each of these figures is positively skewed. The average club had a smaller account with more stocks than did the average individual in the database, who held 4.3 stocks worth $47,334. Not surprisingly, with more individual stocks held on average, the average club's common stock portfolio was about 30 percent less volatile than the average individual's; the average monthly standard deviation of returns for clubs was 6.0 percent, whereas that for individuals was 8.7 percent.

The asset classes held by clubs also differed from those held by individuals. In their accounts at this broker, clubs held more positions in individual common stocks (91 percent) than individuals held (59 percent), fewer equity mutual funds (4 percent versus 16 percent), and fewer bonds (1 percent versus 17 percent). Keep in mind that each club member, however, probably had a much larger investment in her or his personal portfolio than in the club portfolio. In May 1998, the NAIC reported that the average NAIC member had a personal portfolio value of $225,000.[5]

Panels B and C of Table 1 indicate that clubs made slightly more purchases than sales during the sample period but the average value of stocks sold was slightly higher than the value of stocks purchased. The average trade of individuals, which was $11,205 for purchases and $13,707 for sales, was roughly 50 percent larger than the average trade of clubs; the median trade of individuals, which was $4,988 for purchases and $5,738 for sales, was more than twice as large as the median club trade.[6]

For each trade, we estimated the bid–ask spread component of transaction costs for stocks sold, spr_{ds}, or stocks bought, spr_{db}, as

$$spr_{d_s} = \frac{P^{cl}_{d_s}}{P^{s}_{d_s}} - 1 \tag{1a}$$

and

$$spr_{d_b} = -\left(\frac{P^{cl}_{d_b}}{P^{b}_{d_b}}\right) - 1, \tag{1b}$$

where $P^{cl}_{d_s}$ and $P^{cl}_{d_b}$ are the reported closing prices from the CRSP daily stock return files on the day of, respectively, a sale or a purchase; $P^{s}_{d_s}$ and $P^{b}_{d_b}$ are, respectively, the actual sale and purchase price from our account database. Our estimate of the bid–ask spread component of transaction costs included any market impact that might result from a trade. It also included an intraday return on the day of the trade. The commission component of transaction costs was estimated as the dollar value of the commission paid scaled by the total principal value of the transaction, both of which are reported in our account data.

Table 1. Descriptive Statistics of Trade Size, Trade Price, Transaction Costs, and Turnover for Investment Clubs, February 1991–December 1996

	Mean	25th Percentile	Median	75th Percentile	Standard Deviation	Number of Observations
A. Monthly common stock positions						
Number of stocks	7.51	3.75	6.66	10.07	5.17	166
Value of stock held	$37,416	$10,740	$20,159	$35,682	$56,055	166
B. Purchases						
Trade size	$7,600	$1,188	$2,213	$3,825	$49,820	3,427
Price/share	34.2	15.5	28.0	43.8	151.7	3,427
Monthly turnover	5.44%	1.48%	3.06%	5.76%	9.14%	166
Commission	3.02	1.52	2.54	3.99	2.34	3,413
Spread	0.40					3,410
C. Sales						
Trade size	$8,900	$1,425	$2,704	$5,100	$49,916	2,836
Price/share	33.4	14.3	26.1	40.9	156.7	2,836
Monthly turnover	5.68%	1.11%	3.28%	6.03%	9.72%	166
Commission	3.98	1.28	2.14	3.61	9.88	2,812
Spread	0.71					2,808

The average purchase cost a club 0.40 percent in bid–ask spread and 3.02 percent in commissions. The average sale cost a club 0.71 percent in bid–ask spread and 3.98 percent in commissions. Our estimate of the bid–ask spread is slightly higher than the trading cost of 0.21 percent for purchases and 0.63 percent for sales paid by open-end mutual funds from 1966 to 1993 (Carhart 1997) and 0.31 percent for purchases and 0.69 percent for sales paid by individuals (Barber and Odean forthcoming 2000). The round-trip commission cost of 7 percent for clubs is higher than the 5 percent for individuals, but clubs tend to execute smaller trades than individuals (Barber and Odean forthcoming 2000). In sum, the average cost of a trade for clubs was 1 percent for the bid–ask spread and about 7 percent in commissions.[7]

Finally, we calculated the monthly portfolio turnover for each club. In each month during our sample period, we identified the common stocks held by each club at the beginning of month t from their position statement. To calculate monthly sales turnover, we matched these positions to sales during month t. The monthly sales turnover was calculated as the shares sold times the beginning-of-the-month price per share divided by the total beginning-of-the-month market value of the club's portfolio. To calculate monthly purchase turnover, we matched these positions to purchases during month $t - 1$. The monthly purchase turnover was calculated as the shares purchased times the beginning-of-the-month price per share divided by the total beginning-of-the-month market value of the portfolio.[8] The average club purchased 5.44 percent and sold 5.68 percent of its stock portfolio each month, although the median club traded much less frequently (buying 3.06 percent of its stock portfolio and selling 3.28 percent).

In sum, clubs traded their common stocks quite frequently. The average club turned over more than 65 percent of its common stock portfolio each year. This rate indicates that an investment club held its common stock investment, on average, for 18 months.[9] The average club traded slightly less frequently than the average mutual fund (annual turnover of 78 percent, Carhart 1997) or individual investor (annual turnover of 76 percent, Barber and Odean forthcoming 2000).

Return Calculations. The focus of our analysis was the return performance of investment clubs investing in common stocks. We analyzed both the gross performance and the performance net of a reasonable accounting for commissions, the bid–ask spread, and the market impact of trades.

We estimated the gross monthly return on each common stock investment by using the beginning-of-the-month position statements from our account data and the CRSP monthly returns file. In doing so, we made two simplifying assumptions. First, we assumed that all securities were bought or sold on the last day of the month. Thus, we ignored the returns earned on stocks purchased from the purchase date to the end of the month and included the returns earned on stocks sold from the sale date to the end of the month. Second, we ignored intramonth trading (e.g., a purchase on March 6 and a sale of the same security on March 20), although we did include in our analysis short-term trades that yielded a position at the end of a calendar month. Barber and Odean (forthcoming 2000) documented that these two simplifying assumptions yield estimates of return performance that are slightly overstated.

Consider the common stock portfolio for a particular club. The gross monthly return on the club's (c's) portfolio, $R^{gr}_{c,t}$, was calculated as

$$R^{gr}_{c,t} = \sum_{i=1}^{m_{c,t}} p_{i,t} R^{gr}_{i,t}, \tag{2}$$

where $p_{i,t}$ is the beginning-of-the-month market value for the holding of stock i by club c in month t divided by the beginning-of-the-month market value of all stocks held by club c, $R^{gr}_{i,t}$ is the gross monthly return for stock i in month t, and $m_{c,t}$ is the number of stocks held by club c in month t.

For security i in month t, we calculated a monthly return net of transaction costs, $R^{nt}_{i,t}$ as

$$1 + R^{nt}_{i,t} = \left(1 + R^{gr}_{i,t}\right) \frac{1 - c^{s}_{i,t}}{1 + c^{b}_{i,t-1}}, \tag{3}$$

where $c^{s}_{i,t}$ is the cost of sales scaled by the sales price in month t and $c^{b}_{i,t-1}$ is the cost of purchases scaled by the purchase price in month $t - 1$. The costs of purchases and sales included the commissions and bid–ask spread components, which were estimated individually for each trade as previously described. Thus, for a security purchased in month $t - 1$ and sold in month t, both $c^{s}_{i,t}$ and $c^{b}_{i,t-1}$ were positive; for a security that was neither purchased in month $t - 1$ nor sold in month t, both $c^{s}_{i,t}$ and $c^{b}_{i,t-1}$ were zero. Because the timing and cost of purchases and sales vary among clubs, the net return for security i in month t will vary among clubs. The net monthly portfolio return for each club was calculated as

$$R^{nt}_{c,t} = \sum_{i=1}^{m_{c,t}} p_{i,t} R^{nt}_{i,t}. \tag{4}$$

(If only a portion of the beginning-of-the-month position in stock *i* was purchased or sold, the transaction cost was applied only to the portion that was purchased or sold.)

We estimated the average gross and net monthly return earned by investment clubs as

$$RC_t^{gr} = \frac{1}{n_{c,t}}\sum_{c=1}^{n_{c,t}} R_{c,t}^{gr} \tag{5a}$$

and

$$RC_t^{nt} = \frac{1}{n_{c,t}}\sum_{c=1}^{n_{c,t}} R_{c,t}^{nt} \tag{5b}$$

where $n_{c,t}$ is the number of clubs with common stock investment in month *t*.

Performance Evaluation. We calculated four measures of risk-adjusted performance. First, we calculated an own-benchmark abnormal return for investment clubs, which is similar in spirit to that proposed by Grinblatt and Titman (1993) and Lakonishok, Shleifer, and Vishny (1992). In this abnormal-return calculation, the benchmark for club *c* was the month *t* return of the beginning-of-the-year portfolio held by the club.[10] It represents the return that the club would have earned had it merely held its beginning-of-year portfolio for the entire year. The own-benchmark abnormal return is the return earned by club *c* less the own-benchmark return; if the club did not trade during the year, the own-benchmark return would be zero for all 12 months during the year. In each month, the abnormal returns of the clubs were averaged, yielding a 72-month time series of mean monthly own-benchmark abnormal returns. Statistical significance was calculated by using *t*-statistics based on this time series. The advantage of own-benchmark abnormal return as a measure is that it does not adjust returns according to a particular risk model. No model of risk is universally accepted; furthermore, it may be inappropriate to adjust investors' returns for stock characteristics that they do not associate with risk. The own-benchmark measure takes into account each club's investment style and risk profile. By using the portfolio held by each club at the beginning of the year as a benchmark, the measure emphasizes the effect of trading on performance.

Second, we calculated the mean monthly market-adjusted abnormal return for clubs by subtracting the return on a value-weighted index of NYSE/Amex/Nasdaq stocks from the return earned by the average club.

Third, using the theoretical framework of the capital asset pricing model (CAPM), we estimated Jensen's alpha (Jensen 1969) by regressing the monthly excess return earned by the average club on the market excess return. For example, we estimated the following monthly time-series regression:

$$RC_t^{gr} - R_{f,t} = \alpha_i + \beta_i\left(R_{m,t} - R_{f,t}\right) + \varepsilon_{i,t}, \tag{6}$$

where

$R_{f,t}$ = the monthly return on T-bills in month t[11]
$R_{m,t}$ = the monthly return on a value-weighted market index in month t
α_i = the CAPM intercept (Jensen's alpha)
β_i = the market beta
$\varepsilon_{i,t}$ = the regression error term

The subscript *i* denotes parameter estimates and error terms from regression *i*, where we estimated two regressions—one for the gross and one for the net performance of the average club.

Fourth, we used the three-factor model developed by Fama and French (1993) to carry out an intercept test. To evaluate the performance of the average club, we estimated the following monthly time-series regression:

$$RC_t^{gr} - R_{f,t} = \alpha_j + \beta_j\left(R_{m,t} - R_{f,t}\right) + s_j SMB_t + h_j HML_t + \varepsilon_{j,t}, \tag{7}$$

where SMB_t is the return on a value-weighted portfolio of small-cap stocks (*S*) minus the return on a value-weighted portfolio of big-cap stocks (*B*) in month *t* and HML_t is the return on a value-weighted portfolio of stocks with high ratios of book value to market value (*H*) minus the return on a value-weighted portfolio of low-BV/MV stocks (*L*) in month *t*.[12] The regression yielded parameter estimates of α_j, β_j, s_j (for size) and h_j (for BV/MV). The subscript *j* denotes parameter estimates and error terms from regression *j*, where we again estimated two regressions. We placed particular emphasis on the Fama–French intercept tests because investment clubs tilt their portfolios toward small-cap stocks. The three-factor model provided a reasonable adjustment for this tilt.[13]

Fama and French (1993) argued that the risk of common stock investments can be parsimoniously summarized as risk related to the market, company size, and a company's BV/MV. In measuring these three risk exposures, we used the coefficient estimates on the market excess return ($R_{m,t} - R_{f,t}$), the size zero-investment portfolio (SMB_t), and the BV/MV zero-investment portfolio (HML_t) from the

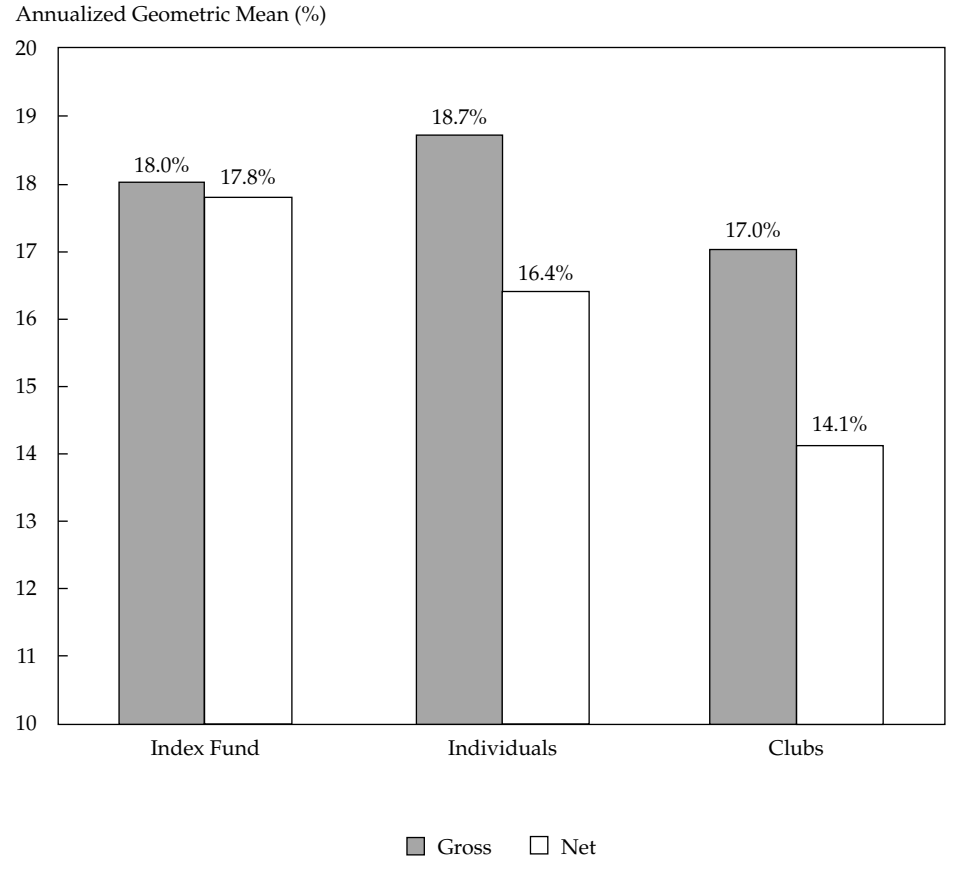
three-factor regressions. Portfolios with above-average market risk had betas greater than 1. Portfolios with a tilt toward small stocks relative to a value-weighted market index had size coefficients greater than zero, $s_j > 0$; portfolios with a tilt toward value stocks had BV/MV coefficients greater than zero, $h_j > 0$.

Results

We summarize our main findings in **Figure 1**, which shows the gross and net annual returns earned by the S&P 500 Index, the average individual investor, and the average investment club.[14] As the figure shows, the average annual gross returns of clubs lagged that earned by the S&P 500 and the average individual investor. The differences become quite pronounced when transaction costs are considered: The average annual net returns of clubs lagged that earned by a passive S&P 500 index fund by 3.7 percentage points (pps) a year. Even individual investors, who were unable to match market performance, performed considerably better than the average club.

We present the gross and net percentage monthly returns for common stock portfolios held by investment clubs in **Table 2**. Three of the four performance measures indicate that the gross performance of investment clubs (Panel A) was unremarkable; the market-adjusted return, Jensen's alpha, and the intercept test from the Fama–French

Figure 1. Gross and Net Annual Return Earned by Passive Index Fund, Average Individual Investor, and Average Investment Club, February 1991–January 1997



Note: The gross return on the index fund is the return on the S&P 500 as reported by CRSP; the net return is that earned by the Vanguard 500 Index. (During the same period, a value-weighted index of NYSE/Amex/Nasdaq stocks earned a return of 17.9 percent. The Vanguard Total Stock Market Index was not available at the beginning of our sample period.) Vanguard fund returns are from Morningstar. The gross and net performance of individual investors are from Barber and Odean (forthcoming 2000).

Table 2. Summary of Monthly Abnormal Returns (in pps) for the Average Investment Club, February 1991–January 1997
(standard errors in parentheses)

Return Measure	Excess Return	$R_{m,t} - R_{f,t}$	HML_t	SMB_t	Adjusted R^2
A. Gross monthly returns					
Own benchmark abnormal	–0.106**				
	(0.043)				
Market adjusted	–0.038				
	(0.165)				
CAPM intercept	–0.195	1.148			86.0
	(0.168)	(0.055)			
Fama–French three factor	–0.172	1.100**	–0.115**	0.335***	93.3
	(0.122)	(0.042)	(0.052)	(0.046)	
B. Net monthly returns					
Own benchmark abnormal	–0.290***				
	(0.044)				
Market adjusted	–0.252				
	(0.161)				
CAPM intercept	–0.404**	1.144***			86.4
	(0.165)	(0.054)			
Fama–French three factor	–0.373***	1.083**	–0.129**	0.324***	93.4
	(0.119)	(0.041)	(0.051)	(0.045)	

*Significant at the 10 percent level.
**Significant at the 5 percent level.
***Significant at the 1 percent level.

three-factor model were not reliably different from zero. The own-benchmark abnormal return, however, which emphasizes the effect of trading on performance, indicates that the gross performance of investment clubs was reliably negative in the period studied. This result suggests that the stocks clubs choose to buy perform worse than the stocks they choose to sell—a result that we confirm later in this article. Also noteworthy in these results are the coefficient estimates on the market, size, and BV/MV factors. Investment clubs tilt their investments toward small-cap growth stocks with high market risk. The market beta for stocks held by individual investors was reliably greater than 1, however; the coefficient estimate on SMB_t was reliably positive; and the coefficient estimate on HML_t was reliably negative. The size and beta tilts of investment clubs are similar to those of individual investors (Barber and Odean forthcoming 2000), but individual investors tilt toward value stocks, if they can be said to tilt toward anything, whereas investment clubs tilt toward growth stocks.

The NAIC recommends that clubs invest in growth stocks, and apparently they do.[15] This advice is interesting in light of the evidence that growth stocks earn average returns over long horizons that are less than those of the market (Fama and French 1992, 1998; Lakonishok, Shleifer, and Vishny 1994). We found that the small-cap stock tilt of clubs helped their performance during our sample period whereas, consistent with the evidence for long horizons, the growth tilt did not: The mean monthly abnormal returns on SMB_t and HML_t during the 72-month sample period were, respectively, 0.15 pps and 0.20 pps.

Panel B of Table 2 presents the more interesting findings. Net of transaction costs, the investment clubs performed poorly. They underperformed the value-weighted market index by 0.25 pps (3 pps a year), although this underperformance was not reliably different from zero. Of course, the simple market adjustment does not account for the tendency of investment clubs to tilt toward small-cap growth stocks with high market risk. The own-benchmark abnormal return, which does account for the tilts, indicates that clubs underperformed their beginning-of-the-year portfolio by 3.5 pps a year; results for the Jensen's alpha (the CAPM intercept) measure indicate underperformance of 4.8 pps a year, and the Fama–French intercept test indicate underperformance of 4.4 pps a year. In combination, these results indicate that the net return performance of investment clubs is reliably negative.

Cross-Sectional Variation in Performance. We should emphasize that the average club performance masks considerable cross-sectional variation in performances. So, for each club, we calculated the mean monthly market-adjusted abnormal return during our sample period. We present the distribution of those means in **Table 3**.[16] The gross return performance of clubs was solid. The median club

Table 3. Cross-Sectional Distribution of Market-Adjusted Returns for 166 Investment Clubs, February 1991–January 1997

Measure	Gross Monthly Return	Net Monthly Return
Minimum	–4.650 pps	–7.842 pps
1st percentile	–4.480	–5.957
5th percentile	–1.984	–2.587
10th percentile	–1.190	–1.674
25th percentile	–0.454	–0.597
Median	0.075	–0.131
75th percentile	0.389	0.188
90th percentile	0.752	0.706
95th percentile	1.755	1.361
99th percentile	4.380	3.948
Maximum	5.438	4.368
Percentage > 0	54.8%	39.8%
Binomial *Z*-statistic	1.25	–2.64**

**Significantly different from 50 percent at the 5 percent level.

Table 4. Monthly Abnormal Returns for Portfolios of Purchases and/or Sales of 166 Investment Clubs, January 1992–December 1996

Market-adjusted return	
Buy portfolio	–0.179 pps
Sell portfolio	0.166
Buy/sell	–0.346*
CAPM intercept	
Buy portfolio	–0.529
Sell portfolio	–0.119
Buy/sell	–0.410*
Fama–French intercept	
Buy portfolio	–0.304
Sell portfolio	0.078
Buy/sell	–0.382*

Note: Portfolio returns were calculated by weighting each security in proportion to the value of trades made in the security.

*Significant at the 10 percent level.

beat the market by 0.075 pps per month and 54.8 percent of clubs beat the market. Unfortunately, the net performance of the clubs was poor. The median club underperformed the market by 0.131 pps a month. More importantly, in contrast to some claims in the financial press that 60 percent of clubs beat the S&P 500, we found that 60 percent of clubs underperformed a market index.[17]

Security Selection Ability. The investment clubs we studied showed little ability to time security selections; the stocks the clubs chose to sell earned reliably greater returns than the stocks they chose to buy. These results are consistent with those in Odean (1999), which documented a similar result for individual investors.[18]

To test security selection, in each month, we constructed a portfolio of those stocks purchased by the clubs in the preceding 12 months. The returns on this portfolio in month t were calculated as

$$\frac{\sum_{i=1}^{n} T_{i,t} R_{i,t}}{\sum_{i=1}^{n} T_{i,t}},$$

where $T_{i,t}$ is the aggregate value of all trades in security i from month $t - 12$ through month $t - 1$ and $R_{i,t}$ is the gross monthly return of stock i in month t. Two portfolios were constructed—one for club purchases and one for club sales.

Again, we used market-adjusted returns or intercept tests from time-series regressions (either the CAPM or the Fama–French three-factor model) to evaluate the performance of each portfolio. The results of this analysis are in **Table 4**. Regardless of the benchmark used, the stocks that clubs bought earned reliably lower returns than the stocks they sold; underperformance ranged, depending on the benchmark, from roughly 0.35 pps to 0.41 pps a month (4.2–4.9 pps a year). In short, as is the case for individual investors in general, clubs hurt their gross performance by trading.

Contrasting the Performance of Clubs and Individuals. Both clubs and individual investors underperformed the market during our sample period, but the clubs lagged even the performance of individual investors (by about 16 basis points a month). Why do clubs perform worse than individuals? First, they execute smaller trades, so they have higher proportional commission costs. Relative to individuals, clubs give up about 5 bps a month to trading costs.[19] Second, clubs tilt their investments toward stocks that are larger and more firmly in the growth camp than do individuals. These tilts cost the clubs about 11 bps a month relative to individuals.[20]

Conclusion

We analyzed the investment performance of 166 investment clubs randomly drawn from the account data of a large discount brokerage house for the period February 1991 through January 1997. These clubs tilted their common stock investments toward small-cap growth stocks with high market risk. They turned over 65 percent of their portfolios each year, which implies that the average holding period for a club's stock investment was approximately 18 months. These clubs earned an average annual net return of 14.1 percent; during the same period, the S&P 500 returned 18 percent. (A

value-weighted index of all NYSE/Amex/Nasdaq stocks returned 17.9 percent.) Sixty percent (100) of the 166 clubs underperformed the market. Finally, these clubs hurt their performance by trading; in addition to the obvious costs associated with trading (commissions and the bid–ask spread), the stocks the clubs bought subsequently earned lower returns (by 4.2 pps a year) than the stocks they chose to sell.

We also documented that the investment clubs underperformed individual investors net of trading costs by about 2 pps a year. Based on our analysis, the investing patterns of investment clubs differ from those of individual investors in several respects. First, the average investment club tilts its investments toward growth stocks (stocks with low book-to-market ratios); the average individual investor does not. Second, on average, clubs execute smaller trades than do individuals. The average trade of individuals is about 50 percent larger than the average trade of clubs; the median trade of individuals is more than twice as large as the median trade of clubs. Third, on average, clubs with annual turnover of about 65 percent trade almost as frequently as individuals, who average annual turnover of about 75 percent. For these three reasons (a tilt toward growth stocks, small trade size, and frequent trading), the average club underperforms the average individual investor.

The financial press has frequently touted the superior performance of investment clubs. The evidence they cite often came from surveys of investment clubs. Our research highlights three inherent limitations of the survey approach to documenting performance. First, we speculate that those clubs with superior performance are more likely to respond to a survey. This selection bias in reporting will lead to overstatement of the performance of the average club. Second, if poor performance is one reason clubs disband, clubs with superior performance are more likely to survive and respond to surveys. This survivorship bias will also lead to overstatement of the average club's performance. Third, surveys that rely on an investment club's ability to calculate its returns are likely to be unreliable. The experience of the Beardstown Ladies underscores the challenges that such calculations can pose.

Investment clubs serve many useful functions: They encourage savings. They educate their members about financial markets. They foster friendships and social ties. They entertain. Unfortunately, their investments do not beat the market.

Notes

1. See, for example, "Old Standby: The Investment Club Approach Finds a New Popularity," *Wall Street Journal*, July 17, 1991:C1. Similar claims were made in "For Fun and Money: Investment Clubs are Embraced by Baby-Boom Generation," *Wall Street Journal*, May 6, 1986:C1; "Guess Who Loves the Small Investor?" *Wall Street Journal*, November 6, 1990, C1; "Investment Clubs Proliferate, Featuring Risky Type of Player," *Wall Street Journal*, March 3, 1994:C1; and "When Going the Club Route Goes Awry," *New York Times*, February 1, 1998:sec. 3, p. 5.
2. See Harrington (1999) for a discussion of the mechanics and social dynamics of investment clubs.
3. The investment experience of individual investors is taken from Barber and Odean (forthcoming 2000). It represents the investment experience of more than 60,000 individual investors at the same discount brokerage firm as the 166 clubs that we analyzed for this article.
4. To date, we have been unable to identify whether these clubs are members of the NAIC. We would welcome the opportunity to separately analyze the performance of NAIC-affiliated clubs.
5. For this reason, when we analyzed return performance, we focused on market-adjusted returns and alphas rather than measures of risk (volatility, as in Sharpe ratios).
6. See Barber and Odean (forthcoming 2000, Table 1).
7. When these averages are weighted by the equity value of each trade, commissions are lower—0.9 percent for purchases and 0.8 percent for sales—and the round-trip bid–ask spread is greater, 1.75 percent.
8. If more shares were sold than were held at the beginning of the month (because, for example, an investor purchased additional shares after the beginning of the month), we assumed the entire beginning-of-the-month position in that security was sold. Similarly, if more shares were purchased in the preceding month than were held in the position statement, we assumed that the entire position was purchased in the preceding month. Thus, turnover in this study could not exceed 100 percent in a month.
9. The NAIC reported the average length of time a member holds a stock to be 7.25 years, which implies an annual turnover rate of 14 percent (www.better-investing.org/member/history.html). We understand that these figures come from club surveys.
10. When calculating this benchmark, we began the year on February 1 because our first monthly position statements were from the month end of January 1991. If a stock held by a club at the beginning of the year was missing CRSP return data during the year, we assumed the stock was invested in the remainder of the club's portfolio.
11. The return on T-bills is from Ibbotson Associates (1998).
12. The construction of these portfolios is discussed in detail in Fama and French (1993). We thank Kenneth French for providing us with these data.
13. Lyon, Barber, and Tsai (1999) documented that intercept tests in which the three-factor model is used are well specified in random samples and samples of large or small companies.
14. The value-weighted return of all NYSE/Amex/Nasdaq stocks during the same period was 17.9 percent. Because the Vanguard 500 Index was available as an investment alternative during our entire sample period whereas the Vanguard Total Stock Market Index was not, we used the S&P 500 as the market benchmark for this analysis. In the remainder of the article, the benchmark is the index of all NYSE/Amex/Nasdaq stocks.

15. See, for example, the investment philosophy of the NAIC at www.better-investing.org/member/history.html, which advises "buy growth stocks—companies whose sales are increasing at a rate faster than the industry in general."
16. This distribution was similar when we used intercepts from a Fama–French three-factor model regression to measure the performance of each club.
17. In October 1998, the NAIC Web page reported that "members using NAIC tools and investment principles show that 42.9 percent equaled or exceeded the earnings of the S&P 500 Index." This number is consistent with our findings.
18. Barber and Odean (1999) documented that both men and women time their trades poorly.
19. The difference between the gross and net market-adjusted return for clubs was 21.4 bps; the difference for individuals was 16.8 bps. Thus, the clubs sacrificed about 4.6 bps more than individuals to trading costs.
20. The gross market-adjusted return of clubs was –3.8 bps and that of individuals was 7.8 bps. Thus, the tilt toward large growth stocks cost clubs 11.6 bps more a month relative to individuals.

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