Good Reasons Sell: Reason-Based Choice Among Group and Individual Investors in the Stock Market

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In this paper, we compare the investment decisions of groups (stock clubs) and individuals. Both individuals and clubs are more likely to purchase stocks that are associated with good reasons (e.g., a company that is featured on a list of most-admired companies). However, stock clubs favor such stocks more than individuals, despite the fact that such reasons do not improve performance. We describe why social dynamics may make good reasons more important for groups than individuals.
(*Reason-Based Choice; Group Decision Making; Group Polarization*)

Introduction

How do decision makers decide among a large number of alternatives? We propose that individuals and groups will make such difficult decisions by choosing the alternatives with good reasons, and we predict that groups (compared with individuals) will demonstrate the strongest preference for good reasons.

We define "good reasons" as arguments or rationales that seem attractive or convincing as stand-alone propositions. Unfortunately, good reasons sometimes lead to bad choices. One of the most basic insights of research on decision making and decision analysis is that alternatives involve trade-offs. Alternatives that have good reasons may be less attractive for other reasons—most importantly, because other people also think that such alternatives are attractive and compete strongly for them. Thus, good managers may be expensive and good retail locations taken. If groups engage in dynamic processes that lead them to focus on alternatives described by good reasons, they may end up choosing alternatives that are contested, overpriced, or unavailable.

In this paper, we examine a situation where reasons are likely to matter a great deal because decision makers confront many alternatives, each of which has a different reason for selecting it. We study the stock picks of individuals and groups (i.e., stock clubs). There are at least three aspects of this setting that make it theoretically interesting.

First, the number of alternatives that decision makers consider in the stock market is much larger than in previous laboratory studies, and it would be interesting to know what role reasons play in such a setting. There is a large number of publicly traded securities, and our sample includes purchases of more than 9,700 separate stocks. Thus, there are many alternatives available for choice.[1] This contrasts with typical research on individual or group decision making where decision makers choose from a few alternatives provided by an experimenter. Such research is important because it has precisely elucidated key decision processes, but it is unlikely to tell us as much as we would like to know about how people make decisions when attention is scarce and alternatives are many.

[1] Over our six-year sample period, individuals made 1,021,960 purchases of 9,724 different stocks; groups (stock clubs) made 3,499 purchases of 1,205 stocks.

Management Science © 2003 INFORMS
Vol. 49, No. 12, December 2003, pp. 1636–1652
0025-1909/03/4912/1636
1526-5501 electronic ISSN

Second, our setting eliminates certain motivational problems that make it difficult to interpret why individuals or groups may favor good reasons. When individuals and groups make stock picks, their own money is at stake, but in most organizational settings this is not the case. For example, in finance, some have speculated that institutional managers may pick stocks with good reasons because they are easy to justify to customers, e.g., the employees who receive benefits from a pension fund (Lakonishok et al. 1994). In the economics and organizational literatures, this kind of agency problem arises whenever an "agent" makes a decision for another person. Because agents do not have their own money at stake, they may make costly decisions that mostly serve to protect themselves. In an earlier period, information systems managers often succumbed to this kind of agency problem by buying expensive IBM computers rather than less expensive competitive products that were probably equally good. Buying IBM provided a good reason for their choice that protected them if anything went wrong—according to the popular saying, "No one ever got fired for buying IBM." Similar issues of agency have been discussed in the psychological literature on accountability (Tetlock 1992, Lerner and Tetlock 1999), where research has often examined the behavior of an individual who must give an account to others but who does not pay any personal penalty for a bad decision. In our situation, we study the decisions of individuals and groups who have their own money at stake, thus reducing or eliminating agency problems. Yet, we predict that individuals and groups will still prefer alternatives with good reasons because they resolve internal conflict and allow decision makers to choose more easily among many alternatives.

Third, and most important, stock picks are interesting because they allow us to compare alternatives that are equated in value, but where some reasons are better than others. Clearly, some companies are better than others—they have better strategies, better products, and better management—so they provide decision makers with better reasons for selecting their company's stock. However, because the stock market is a *market*, good reasons do not translate into good performance. When a company provides investors with good reasons to select it, the investors will bid up its stock until they are indifferent between it and the stock of a company with reasons that are less good. Thus, in the stock market, good reasons are expensive. Numerous researchers have argued that the U.S. stock market is informationally efficient (Fama 1991). This means that investors cannot, on average, earn abnormal profits by trading on the basis of publicly available information such as that people use to construct reasons. Indeed, in our study, good reasons do not lead to superior performance—neither individual investors nor investment clubs increase their average risk-adjusted returns through their trading choices (Odean 1999, Barber and Odean 2000a, b).

In this paper, we explore a situation where individuals and groups must choose among a large number of alternatives. Even though individuals and groups have ample incentives to make good decisions, we predict that both will prefer stocks that provide good reasons (albeit at a higher stock price). But we predict that group dynamics will systematically lead groups to emphasize good reasons more than individuals. Below, we review previous work that leads to these predictions.

Reason-Based Choice Among Individuals and Groups

In this section, we review previous literature that suggests that both individuals and groups make choices based on reasons. Reason-based choice differs in important ways from the standard cost-benefit calculations of a rational utility analysis. We also review evidence that groups, relative to individuals, may be more likely to engage in reason-based choice.

Individuals

When possible, individuals avoid making trade-offs. They frame and reframe a decision, attempting to find a dominant option and, if they cannot find one, they may reluctantly engage in a more difficult process of making trade-offs (Slovic 1975). Trade-offs typically require cognitive effort (Payne et al. 1993), and individuals are even more likely to avoid trade-offs when they are emotionally difficult (Luce et al. 1997, 1999).

Because individuals are reluctant to make the trade-offs that rational models assume, researchers have suggested models of reason-based choice that assume individuals choose not by trading off costs and benefits but by tallying reasons for one alternative versus the other (Tversky et al. 1988, Simonson 1989, Shafir et al. 1993). Individuals engaged in reason-based choice are less oriented toward trade-offs than the standard model of rational choice would predict. According to Shafir et al. (1993, p. 13), "Unlike numerical values, which are easy to compare, conflicting reasons may be hard to reconcile." When individuals cannot construct a good reason to make a particular choice, they may work to add an alternative to their choice set or delay until a good reason becomes available (Tversky and Shafir 1992, Luce 1998).

Of course, in most situations, and particularly in the market setting we study, it is not possible to avoid all trade-offs by selecting a good reason. In the stock market, alternatives that have good reasons will also have a high price. However, research suggests that individuals may neglect to pay attention to dimensions like price when they are making a difficult and potentially conflict-filled decision (Luce et al. 1999). Furthermore, they may find it more difficult to evaluate whether they have paid the right price for an asset than to evaluate whether the asset has good reasons to support it (Hsee 1996, 1999; Hsee et al. 1999).

Groups

Reasons are important for individuals, but they may be more important for groups. In research on groups, reason-based models of choice have been central, especially in the literature on group polarization where Persuasive Arguments Theory was the favored explanation of this phenomenon (Burnstein and Vinokur 1977, Isenberg 1986). Persuasive Arguments Theory assumed that group members polarized their opinions after group discussion because they exchanged arguments (i.e., reasons) for their preferred choice and, on average, came away from the group discussion with even more reasons in favor of it. The typical group polarization study showed that, after discussion, groups chose more extreme responses on a *unidimensional scale* of attitude or risk (Myers and Lamm 1976, Moscovici and Zavalloni 1969), so it is an extrapolation to assume that they would choose different alternatives in the kind of context we study. But we think that the logic of Persuasive Arguments Theory is convincing, and groups may be more likely than individuals to choose alternatives that are accompanied by good reasons.

Another reason to assume that groups will emphasize good reasons more than individuals is work on accountability (Tetlock 1992, Lerner and Tetlock 1999). If group members are concerned about maintaining the approval and respect of their fellow group members, they must find plausible reasons for advocating one alternative over another. Because individuals in groups are accountable to each other, the social dynamics of groups are likely to ensure that reasons receive enhanced attention. As Lerner and Tetlock (1999, p. 264) note, "a desire to avoid appearing foolish in front of the audience heightens (a) the need to ensure that one's choice is securely based on reasons, and thus (b) the preference for options that are easy to justify." Reasons matter, and they may matter more in the social dynamics of groups.

Other evidence that groups may place more weight on reasons than individuals is that groups seem to emphasize prominent dimensions of choice more than individuals. When individuals choose between two alternatives, they often place more weight on the alternative that ranks higher on the more prominent attribute (e.g., favoring "safety" in a trade-off between "safety" and money, see Tversky et al. 1988). Irwin and Davis (1995) showed that groups tend to place more weight on the prominent dimension than individuals. Why? Irwin and Davis (1995, p. 329) note that group members may prefer "noncontroversial reasoning" to explain their choices to each other, and an argument to choose the alternative that is highest on the prominent dimension "is both easy to explain and likely to be accepted by a majority of group members." They found that whenever groups (or individuals) focused on the more prominent attribute, they rated their decisions as easier to make, simpler to explain, and they expressed more overall confidence in their decision.

The research on prominence effects in individual (Tversky et al. 1988) and group choice (Irwin and Davis 1995) is provocative because it suggests that both individuals and groups tend to avoid trad-

ing off costs and benefits, preferring instead to marshal good reasons for one alternative over another. Indeed, Irwin and Davis (1995) convincingly demonstrate that this tendency is more important for groups. But the results of the prominence experiments are somewhat difficult to transfer directly to the situation of stock picking because they tend to feature alternatives characterized by two dimensions, one of which is clearly more prominent. Stocks can be characterized on many dimensions (products, management, sales, stock returns) and it is not clear which is the most prominent. Nonetheless, we borrow the underlying logic of this research to speculate that while good reasons will be important for both individuals and groups, they will be more important for groups.

Reason-Based Choice vs. Consequential Choice in Stock Selection

Our review above suggests that both individuals and groups will choose based on reasons, with groups doing this more so. In this section, we briefly discuss some of the advantages of the stock selection context for testing reason-based choice.

The clear alternative to reason-based choice is standard consequentialist cost-benefit analysis where instead of tallying reasons, investors trade-off attributes to make a final decision. In a lab study, we might try to find evidence of reason-based choice by creating a few experimental alternatives, then through extensive pilot testing we could try to create some alternatives for which there is a good reason but also an offsetting disadvantage that is perfectly balanced in the opposite direction. If we could accomplish this challenging methodological task, then we would have a clear baseline experimental prediction: Investors who are doing cost-benefit analysis should pick randomly, because all options are equated in value. If, instead, investors favored the alternatives with a better reason, this would provide evidence of reason-based choice.

In a lab study, creating a few carefully balanced alternatives would be difficult and creating a large number would be impossible. Luckily, the stock market does this on its own. The stock market involves thousands of highly-motivated investors who vote by buying and selling stocks and who back up their votes with money. On balance, it works to carefully equate the advantages and disadvantages of various stocks through the mechanism of price. Certainly, some stocks have better reasons—they represent better companies with better future prospects—but in the market, these stocks will have their price bid up until they perform no better as an investment than the stocks of poorly managed firms. Thus, the stock market provides an interesting natural context to test how individuals and groups respond to a vast number of alternatives that have been precisely equated in value.

The best advice for most investors is to invest in a mutual fund that mimics the performance of the whole stock market at low cost. However, if indeed individuals or clubs have inside information or insight when they make trade-offs and select particular stocks, then their decisions should be idiosyncratically driven by their unique inside information. Their choices, therefore, will appear random and should not be easily predictable through public information on overt attributes of stocks.[2]

Background on Stock Clubs

In the 1990s, people became much more interested in the stock market—not surprising given that annual stock returns were at a historic high until the market downturn in 2000. At the height of the market in 2000, the percentage of U.S. adults who invested in stocks or mutual funds was 51%, a figure that had doubled during the decade between 1990 and 2000 (Harrington 2002).

Many investors choose to pursue at least some of their investments with others. According to various surveys, the number of Americans who participate in investment clubs is between 2% and 11% of the

[2] Readers who are not accustomed to thinking about how markets operate can also think about this argument by comparing market participants. For every buyer of a stock, there must be a seller, so performing better than the market is a zero-sum game. In a market composed of individuals, clubs, and institutions, institutional investors end up providing most of the volume of trade, so these large investors end up taking the other side of most trades. The question is whether a club or an individual can pick stocks *better* than an institutional investor who has vast resources and devotes the full-time attention of its employees to picking stocks.

population (Harrington 2002). Our description of stock clubs comes from work by Brooke Harrington, a sociologist at Brown University, who has documented the behavior of the clubs using both broad-scale surveys (e.g., a survey of 3,000 of the 30,000 clubs listed with the National Association of Investors Corporation) and detailed observation of actual club meetings (Harrington 2001, 2002).

Stock clubs are small groups. The average club in Harrington's (2002) sample is made up of 15 people—friends, relatives, or coworkers who pool their money to invest in the stock market. Every month, club members contribute money and meet together for about two hours to decide how to invest it. Often, the meetings consist of a few presentations by individual members who propose a specific stock to buy or sell; the club discusses each proposal and votes on it.

By law, clubs are organized in a reasonably formal way. They elect a president, vice president, treasurer, and secretary, and these officials have duties defined by law. The club owns the portfolio in common, and it is legally equivalent to any other financial partnership. They must register with the Internal Revenue Service (IRS) as small businesses, and the IRS does not distinguish between investment clubs and accounting firms (Harrington 2001).

In our analyses below, we compare the alternatives selected by clubs and individuals, so we would prefer that club members be drawn from the same population as individual investors. The disadvantage of field data is that we cannot randomly assign people to conditions, but there is evidence that the members of stock clubs are drawn from the same population as individual investors. In Harrington's (2001) data, 62% of stock club members also invested as individuals. If club decisions are made by a majority vote as in Harrington's (2001) field observations, then it would be reasonably rare for a club's decisions to be controlled by a majority of members who do not trade as individuals. Assume a club of the average size in Harrington's sample (i.e., 15 members) who are drawn at random from a distribution where 62% of potential club members invest individually. The probability of creating a club that has a majority of noninvestors (8 or more out of 15) is only 17%. This probability ranges from 14% to 25% across club sizes from 7 to 19. Even if clubs were completely homogeneous and attracted all investors or all noninvestors, the majority of club decisions would still be made by clubs composed of individuals who also invest on their own. Thus, we can have some faith that when we compare clubs to individuals, we are not solely tapping the behavior of different "types" of investors. At least in part we are tapping how social dynamics affect the choices of club members who also invest as individuals.

Table 1 compares the overall portfolios and performances of clubs and individuals. Clubs invest in more stocks than individuals, but both are heavily underdiversified relative to standard recommendations (which would require a diverse assortment of at least 20 stocks). In terms of performance, both display similar gross and net returns. (The difference in gross returns is not significant, and the difference in net returns is marginally significant, although that conclusion depends on the method used to measure risk-adjusted performance.) The difference in net performance is primarily a result of high per-trade costs for clubs (because percentage commissions are lower for large trades and clubs trades are smaller). Overall, 57% of individuals underperform the market (net of trading costs) as do 60% of clubs.

Field Study

In this section, we turn to our analyses that examine what kinds of reasons are favored by clubs and individuals. We compare the stock picks of clubs and individuals based on stock characteristics that may provide good reasons. Below, we describe our data set

Table 1 Descriptive Statistics for the Stock Portfolios and Performance of Clubs and Individuals

	Clubs ($N = 166$)		Individuals	
	Mean	Median	Mean	Median
Number of stocks	7.5	6.7	4.3	2.6
Value of stock held ($)	37,416	20,159	36,253	8,599
Trade size-purchase ($)	7,600	2,213	11,205	4,988
Annual turnover (%)	66.7	38.0	76.3	31.5
Gross yearly return (%)	17.0		18.7	
Net yearly return (%)	14.1		16.4	

Note. The gross return on an Index Fund during this period is 18.0% (CRSP SP 500), the net return is 17.8% (Vanguard Index 500 mutual fund). Figures for clubs are from Barber and Odean (2000b). Figures for individuals are from Barber and Odean (2000a).

and the variables that we use in our analysis. Then, we present our analyses of the effect of reasons on individual and groups.

Stock Purchases

Our primary data set comes from a large discount brokerage firm and contains the investment records from 78,000 clients over a six-year period (February 1991 through December 1996). The data set contains a random sample of clients with open accounts at this discount brokerage firm during this period (see Barber and Odean 2000a, for a complete description of the data set). Of these clients, the vast majority are individuals, but 166 are identified as investment clubs. Below, we compare how investment clubs and individuals choose common stock (i.e., the stock of companies that are publicly traded).[3]

Firm Characteristics

To understand whether clubs and individuals select stocks based on reasons, we selected a number of variables that we expected to serve as proxies for various reasons investors might invest in stocks. Our single best proxy for a good reason is the "most-admired companies" variable.

Most-Admired Companies. Our ranking of admired companies comes from *Fortune* magazine's annual survey of America's most-admired companies. Each fall, *Fortune* surveys thousands of executives, outside directors, and financial analysts. Participants rate firms on eight attributes (quality of management, quality of products, innovation, value as a long-term investment, financial soundness, talent of work force, community and environmental responsibility, and use of corporate assets). *Fortune* calculates an overall rating of each company by averaging the scores on the eight attributes. The results of the survey are published in the early part of each year (no later than the first week of March during our sample period).[4]

We do not assume that investors look up the "admired ranking" of their investments in *Fortune* magazine, but we regard this variable as the best proxy for reasons that are available in the business environment—it represents a survey of thousands of industry insiders who rate each company on multiple dimensions (management, innovation, financial soundness, etc.), so the aggregate rankings provide a summary of the "reasons" available to thousands of knowledgeable observers. Presumably, whenever investors have direct contact with a company, or whenever they receive information from an industry participant or news source, they will receive better reasons for investing in companies that are more admired.

Financial Variables

In addition to the most-admired company rankings, we also include a number of financial variables. Some of these may also contribute to good reasons for investing, but our prediction is not as strong here as for the admired company rankings. In general, we include these variables to control for other factors that might make it less easy for us to interpret the effect of the "most-admired" rankings above, but of the financial variables, the two best proxies for good reasons are probably stock returns and growth in sales. We also include a number of other financial controls that may serve as proxies, not so much for good reasons, but for pure notoriety (e.g., advertising to sales, market capitalization).

All of our financial variables are taken from companies' financial statements that are annually updated in December. Whenever clubs or individuals purchase a stock, we impute the values of these variables from the prior year, because this is the information that is most publicly available at the time the stock is purchased.

Three-Year Return. This variable measures how much the stock has increased in value over three years. Essentially, it treats the stock like a bank account and describes the compound interest rate that would have

[3] We do not examine investments in mutual funds, American depository receipts, warrants, or options. The clubs made 7,559 trades in all securities; common stocks accounted for slightly more than 80% of those trades. The individual investors made more than 1.8 million trades; common stocks accounted for slightly more than 60%.

[4] We thank Peter Antunovich for providing us with the data required for this analysis.

Table 2 Descriptive Statistics on Stocks Purchased by Clubs and Individuals

	Weighted equally across stocks/years				Weighted by number of buys	
	N	Mean	Median	Std. dev.	Clubs mean	Individual mean
Raw variables						
Admired rank	1,985	180.73	176.00	109.07	78.99	120.12
Sales growth (%)	40,267	29.69	10.07	106.44	26.22	31.99
Three-year return (%)	30,974	62.34	25.41	202.60	150.24	141.96
Market to book	33,213	3.41	1.68	7.77	5.01	4.94
Size ($000,000)	43,619	654.56	66.96	3,155.14	9,867.05	7,891.76
Advertising/sales (%)	9,198	4.28	2.32	7.51	4.11	4.05
Percentile ranks						
Admired rank	1,985	50.0	50.0		76.8	65.9
Sales growth (%)*	14,307	50.0	50.0		69.2	61.8
Three-year return (%)	30,974	50.0	50.0		69.0	62.3
Market to book	33,213	50.0	50.0		71.5	66.4
Size ($000,000)	43,619	50.0	50.0		85.6	81.0
Advertising/sales (%)	9,198	50.0	50.0		61.2	55.0

Note. Admired rank is from *Fortune*'s annual survey. Sales growth is one-year percentage change in sales. Three-year return is the compound return on a firm's stock over the prior three years. Market to book is the ratio of market value of equity (price times shares outstanding) divided by book value of equity. Size is based on a firm's market value of equity. Advertising/sales is the three-year average ratio of advertising expense to sales. All variables are updated annually in December.

*Percentile ranks for sales growth are based on five-year weighted sales growth ranks, not annual sales growth (%).

been paid to investments in this stock over the three-year window. Three-year returns are the compound return on a firm's common stock over the three years ending in December; stock returns data are from the Center for Research in Security Prices (CRSP).

Sales Growth. We calculate annual and five-year sales growth. This variable essentially measures how much the company is growing in size. Sales growth does not always translate into profitability; especially in early stages, many companies will sacrifice some profits to quickly grow sales and reach more customers. Annual sales growth is the one-year percentage change in sales. Five-year sales growth is calculated as in Lakonishok et al. (1994). Specifically, for each company for each of years −1 to −5, we calculate percentage change in sales. Then, for each year, we rank all firms by this variable. We compute each firm's weighted average rank, giving the weight of 5 to its growth rank in year −1, the weight of 4 to its growth rank in year −2, etc.

Advertising/Sales. This variable, "advertising intensity," represents how much a company advertises for every dollar of sales it generates. The scores on this variable are higher for companies that sell consumer goods rather than industrial goods. Advertising intensity is measured as the three-year average of advertising expense divided by sales. Advertising expense and sales data are from Compustat. Compared with other financial variables, companies report this variable much less systematically than the other variables, so our analyses that use this variable necessarily have a reduced sample size.

Size. Size measures the total value of a firm's stock (price times shares outstanding). This represents the total value that the market assigns to the firm's equity.

Market to Book. Market-to-book ratios are calculated as the total market value of all outstanding stock divided by the book value of the tangible, physical assets of the firm (net of outstanding liabilities). In the investment literature, firms with a high market-to-book ratio are known as "growth" stocks, because the stock market currently values the company high relative to its current value on the accounting books. This essentially indicates that the market is emphasizing

future potential over current value, a response that can be justified if a firm is expected to grow dramatically. Conversely, firms with a low market-to-book value are often called "value stocks," because the stock market is implicitly emphasizing current value over future growth. In calculating market-to-book value, data on price and shares outstanding comes from CRSP and data on the book value of equity from Compustat.

Table 2 presents descriptive statistics. Many of the purchased firms are extremely small—more than half have market capitalizations of less than $70 million and some registered no purchases by clubs or individuals in particular years. The top part of Table 2 provides statistics for the variables in terms of the actual scales (e.g., dollars or percentages) underlying the variables. For our analyses, we will transform the variables into percentile ranks. The statistics for the transformed percentile rank variables are presented in the bottom part of the table.

Which Reasons Are Good Reasons?

Before we turn to our analyses, we investigate which of our variables are the best proxies for good reasons. We asked a group of MBAs to participate in a survey about "good reasons for stock selection" and rate the six measures in our data set on how well they serve as proxies for a good reason. To clarify responses, we specified a direction on each measure (e.g., "high three-year stock return" or "large size/market cap"). There were two conditions: Some participants ($N = 21$) rated the measures based on "how hard it would be to argue against buying this stock" (1 = very hard to argue against buying the stock; 5 = very easy to argue against buying the stock), others ($N = 19$) rated the measures based on "how good a reason it would provide for buying a stock" (1 = not a very good reason to buy the stock; 5 = a very good reason to buy the stock).

Table 3 presents the results of this analysis. The two different rating scales provide converging evidence that three variables represent good reasons (most-admired rank, sales growth, three-year return), whereas our other variables, which we intended as control variables, do not. All three of the good-reason variables are empirically indistinguishable when viewed from the criteria of "reasons to buy" a stock, but they differ more when considered from the criteria of "how hard it would be to argue against." Admired rank is rated the hardest reason to argue against and sales growth is rated more difficult to argue against than three-year return. The three reasons probably differ on these two scales because the investments literature allows measures like "strong recent sales growth" and "strong recent stock price returns" to be interpreted in either a positive way (e.g., strong recent returns are good because trends continue) or a contrarian way (e.g., what goes up must come down). In contrast, it is difficult to argue against a company that scores well on all the measures included in the most-admired rankings (see Shefrin 2001 for converging evidence on this point). Thus, below, we will treat admired rank as our single best proxy for "good reasons" with sales growth and three-year return as secondary proxies.

Table 3 Ratings of How Well Measures Serve as Proxies for Good Reasons

	Measure of good reason	
	Good reason to buy	Easy to argue against
Admired rank	3.11[a]	2.28[a]
Sales growth	3.25[a]	2.78[b]
Three-year return	2.86[a]	3.41[c]
Market to book	2.07[b]	4.03[d]
Size	1.96[b]	4.13[d]
Advertising	1.50[c]	4.50[e]

Note. Ratings are on a five-point Likert scale. For the first column, 1 = not a very good reason to buy the stock; 5 = a very good reason to buy the stock, and for the second column, 1 = very hard to argue against buying the stock; 5 = very easy to argue against buying the stock. Within a column, rows with different superscripts differ by $p < 0.05$ by a paired t-test.

Do Good Reasons Produce Good Performance?

We note that we have analyzed the performance implications of each of our variables, and in each case, investors would not have earned positive market-adjusted returns by investing in stocks with good reasons. To analyze the performance implications of the various reasons, we used the standard analysis in the finance literature. The details of this analysis are somewhat complex,[5] but the conclusions are clear and in

[5] We calculated average monthly returns on zero-investment portfolios based on each of six variables: admired rank, three-year

line with previous research that has studied these measures: Large, admired, growth firms with strong prior three-year stock returns and five-year sales growth earned poor returns during this sample period. Our results are consistent with previous research that suggests strategies are more likely to be profitable when they are contrarian, i.e., when they bet against the prevailing wisdom that might favor firms that are admired, have strong past returns, etc. (Lakonishok et al. 1994).

Univariate Results

We first analyze the purchases of clubs and individuals for each variable separately. Our procedure is identical for each variable, so we will describe the procedure for the specific example of the admired company rankings. We first sort firms into deciles on the basis of their admired company ranking, and we categorize the purchases of clubs and individuals into these deciles. We then use a chi-squared test to test the null hypothesis that the proportion of all buys falling into each category is equal for clubs and individuals.

This analysis is presented in Table 4. For each variable, we are able to comfortably reject the null hypothesis that the purchases by clubs and individuals are identical ($ps < 0.01$). Relative to individuals, clubs buy the stocks of companies that are admired, have strong three-year stock returns, and strong five-year sales growth. Of our control variables, they also prefer companies that are advertised, large, and have high market-to-book ratios. Of all the variables, clubs differ most from individuals in their preference for buying the stock of admired companies. Among companies with admired ranks, 73% of club purchases are concentrated in the top 30% of admired companies compared with 56% of individual purchases.

Discussion. This analysis provides some evidence in favor of the idea that groups emphasize good reasons more than individuals. In Table 4, we have ranked these reasons for choosing a stock in descending order of how well they serve as proxies for good reasons. Thus, the fact that clubs prefer highly-admired companies more than individuals may be evidence that clubs weight good reasons more than individuals. Of course, this univariate analysis may mask correlations among variables that call this interpretation into question. Thus, we next use a regression analysis to simultaneously examine the effects of the variables.

Multivariate Results for Reasons

By focusing on each variable separately as we did in the univariate analysis, we ignored the correlation among our independent variables. Shefrin and Statman (1995) and Clarke and Statman (1994) report that admired companies tend to be large companies with high market-to-book ratios. In Table 5, we present the correlations between our independent variables: admired rank, market to book, size, three-year return, five-year sales growth, advertising/sales, and annual sales growth. We also find that admired companies tend to be larger with higher market-to-book ratios. They also have strong three-year returns, five-year sales growth, and annual sales growth. To investigate whether these correlations account for some of the univariate results of the prior section, we estimate pooled time-series cross-sectional regressions.

Consider the purchases of clubs. We aggregate the purchases of all clubs within a calendar year, thus, our unit of observation is the stock-year. The dependent variable in our analysis of club decisions is the percentage of all club purchases that were made in each stock. For example, in 1991 purchases of Coca-Cola represented 0.76% of all club buys during the year.

growth rank, sales growth rank, advertising/sales rank, market to book and size. For the first four variables, the long side of the portfolio is a value-weighted portfolio of those firms that rank in the top 30% of all ranked firms and the short side of the portfolios is a value-weighted portfolio of those firms that ranked in the bottom 30%. The size and market-to-book portfolios (which are long big stocks and high market-to-book firms, respectively) are constructed as described in Fama and French (1993). In all cases but one (advertising to sales), the zero-investment portfolios have a negative mean monthly return, though in many cases these means are not reliably different from zero, possibly due to our short sample period. Each of the variables that we employ to construct zero-investment portfolios with the exception of advertising to sales has been extensively studied. The negative returns are consistent with prior findings. DeBondt and Thaler (1985, 1987) analyze the performance of portfolios formed on the basis of three-year returns. Lakonishok et al. (1994) analyze five-year sales growth and market-to-book ratios. Fama and French (1992, 1993) analyze firm size and market-to-book ratios. Sheffrin and Statman (1995) and Antunovich and Laster (1998) analyze admired ranks.

Table 4 Univariate Analysis of the Stock Buying Decisions of Clubs vs. Individuals

	Clubs		Individuals		Clubs less individuals (%)
	Number	%	Number	%	
Admired companies					
Top 10%	500	46.5	88,763	33.0	13.8
2nd 10%	193	17.9	37,517	13.9	4.0
3rd 10%	93	8.6	24,864	9.2	−0.6
Bottom 70%	290	27.0	117,826	43.8	−16.9
Total	1,076	100.0	268,970	100.0	0.0
Sales growth					
Top 10%	720	36.6	202,691	30.6	6.0
2nd 10%	335	17.0	112,222	16.9	0.1
3rd 10%	236	12.0	81,864	12.4	−0.4
Bottom 70%	674	34.3	265,634	40.1	−5.8
Total	1,965	100.0	662,411	100.0	0.0
Three-year return					
Top 10%	783	26.1	206,688	24.5	1.6
2nd 10%	543	18.1	111,972	13.3	4.8
3rd 10%	350	11.7	81,722	9.7	2.0
Bottom 70%	1,327	44.2	443,819	52.6	−8.4
Total	3,003	100.0	844,201	100.0	0.0
Market to book					
Top 10%	536	16.4	164,980	17.6	−1.2
2nd 10%	804	24.5	183,921	19.6	4.9
3rd 10%	670	20.4	146,139	15.6	4.9
Bottom 70%	1,267	38.7	443,107	47.2	−8.6
Total	3,277	100.0	938,147	100.0	0.0
Size					
Top 10%	1,956	59.7	465,553	49.6	10.1
2nd 10%	455	13.9	145,014	15.5	−1.6
3rd 10%	275	8.4	91,059	9.7	−1.3
Bottom 70%	591	18.0	236,521	25.2	−7.2
Total	3,277	100.0	938,147	100.0	0.0
Advertising/sales					
Top 10%	153	10.5	31,361	8.6	1.9
2nd 10%	176	12.1	37,565	10.3	1.8
3rd 10%	211	14.5	47,839	13.1	1.4
Bottom 70%	916	62.9	249,013	68.1	−5.2
Total	1,456	100.0	365,778	100.0	0.0

Note. The sample consists of 3,499 (1,021,960) purchases of common stocks made by 166 investment clubs (66,465 individuals) at a large discount brokerage house between January 1991 and November 1996. Admired company ranks are overall ranks from *Fortune*'s annual survey. Sales growth represents five-year weighted sales growth, with greater weight placed on more recent years. Three-year return is the compound return on a firm's stock over the prior three years and is updated monthly. Market to book is the ratio of market value of equity (price times shares outstanding) divided by book value of equity; firms with negative book value of equity are excluded from the analysis. Size is based on a firm's market value of equity. Advertising/sales is the three-year average ratio of advertising expense to sales. All variables are updated annually except three-year return (updated monthly) and admired company rankings (updated in publication months).

(Stocks with no purchases have a value of zero.) Thus, the number of observations is equal to the number of stock-years for which data are available. This ranges from 11,575, when all stocks are included, to 536, when we include only stocks with admired rankings and advertising/sales data. Analogously, the dependent variable for individual investor decisions is the percentage of all purchases by all individuals that were made in each stock.

The independent variables for the regressions are ranks based on the following variables: admired rank, market-to-book ratio, size, three-year return, sales growth, and advertising/sales. We use ranks to minimize the effect of outliers, and we rank each variable so that results consistent with our hypotheses would result in a positive coefficient (e.g., the least-admired company receives a rank of one). Note that by ranking all variables, we make it easy to compare the magnitude of coefficients across different underlying variables.

One complication we face in these regressions is that data for some variables are missing. If we require data on all the independent variables, our sample size drops from more than 40,000 firm-years (see Table 2) to only 536 firm-years. Two variables are responsible for most of this drop: admired rankings and advertising/sales. On admired rankings, the number of firms range from 283 in 1992 to 392 in 1996. On advertising intensity, less than 20% of all listed firms report advertising expenditures. As a result, we estimate four separate pooled time-series regressions. In the first, we do not require data on advertising intensity and include an admired dummy variable, which takes on a value of one when a firm does not receive an admired ranking;[6] in the second, we add advertising-to-sales data; in the third, we require an admired ranking (thus eliminating the need for the admired dummy) and drop the requirement of advertising-to-sales data; and in the fourth, we require both advertising-to-sales data and an admired ranking.

We present the results of these regressions in Table 6. The dependent variable for the regression is the proportion of buys by clubs (Panel A), the proportion

[6] In the first regression, firms without an admired ranking are assigned the mean admired ranking (of 180).

Table 5 Spearman Rank Correlations Among Firm Characteristics

	Admired rank	Market to book	Size	Three-year return	Five-year sales growth	Advertising/sales
Admired rank						
Market to book	0.388* (1,689)					
Size	0.512* (1,853)	0.304* (33,213)				
Three-year return	0.332* (1,786)	0.413* (24,060)	0.412* (30,898)			
Five-year sales growth	0.281* (1,355)	0.256* (11,781)	0.093* (12,645)	0.137* (12,404)		
Advertising/sales	0.081 (693)	0.119* (7,125)	0.042* (7,836)	−0.016 (7,066)	0.032 (4,253)	
Annual sales growth	0.197* (1,764)	0.311* (32,355)	0.102* (33,463)	0.300* (24,239)	0.165* (12,910)	0.013 (8,086)

Note. Admired ranks are overall ranks from *Fortune*'s annual survey (a rank of 1 represents the lowest ranking). Market to book is the ratio of market value of equity (price times shares outstanding) divided by book value of equity. Size is based on a firm's market value of equity. Three-year return is the compound return on a firm's stock over the prior three years. Five-year sales growth represents five-year weighted sales growth ranking, with greater weight placed on more recent years. Advertising/sales is the three-year average ratio of advertising expense to sales. Annual sales growth is the percentage change in sales. All variables are updated annually in December. (Number of observations is in parentheses.)

*Significant at the 1% level.

of buys by individuals (Panel B), and the difference between these two proportions (Panel C). Our hypotheses predict differences in the buying behavior of groups relative to individuals, thus, the results of Panel C are the most direct test of these hypotheses. These results are generally consistent with our predictions: relative to individuals, clubs prefer admired firms with more dramatic sales growth and stock returns. Though the statistical significance of some variables depends on the form of the regression, the general tenor of the results is consistent across regression models. In particular, the importance of a firm's admired ranking in predicting the different preferences of clubs and individuals is quite robust to the specification of our regression model.

Note that the coefficient on most-admired rank, which is our best proxy for a good reason, is always greater than the other coefficients in our analysis (often by a factor of 10 or more). To further investigate this effect, we ran a joint test where the null hypothesis was that this coefficient is identical to the coefficients on the other variables. In general, the results suggest that most admired rank is significantly more important than the other variables. In the first and second regressions, this hypothesis can be rejected for clubs, individuals, and the difference between clubs and individuals at a probability of $p < 0.01$. In the third regression, the hypothesis can be rejected for clubs and individuals at $p < 0.01$, and for the difference at $p < 0.05$. For the fourth regression, the hypothesis can be rejected for individuals ($p < 0.01$), clubs ($p < 0.05$), and the result is marginally significant for the difference ($p = 0.085$). In sum, there is evidence that admired rank, our best proxy for good reasons, is a more important variable than any of the other variables in our analysis.

Discussion. As with the univariate results, the regressions in Table 6 suggest that reasons matter for both groups and individuals, but matter more for groups. Consider, for example, that both groups and individuals are more likely to select companies with strong five-year sales growth, even controlling for other variables that serve as proxies for basic familiarity like advertising intensity. However, clubs and individuals do not necessarily differ in their approach to sales growth in Panel C after we control for advertising intensity.

The results for admired rank indicate that good reasons are more important for clubs than individuals, even after controlling for all other reasons. If we had not controlled for size, advertising intensity, and other variables, then this might be interpreted as a simple effect of availability. However, these other variables ought to control fairly well for whether people have simply heard about a company. Our analysis suggests that the companies that are most likely to generate good reasons are differentially likely to be selected by groups rather than individuals.

The National Association of Investment Clubs (NAIC) lists "invest in growth companies" as one of

Table 6 Club and Individual Stock Purchases Regressed on Firm Characteristics

	Purchases of all stocks		Purchases of stocks with admired ranking	
Observations	11,575	3,466	1,289	536
Panel A: Investment clubs				
Intercept	−147.7135 (−16.14)**	−204.5344 (−9.76)**	−482.8512 (−4.48)**	−805.7696 (−3.42)**
Admired rank	3.6920 (27.03)**	4.5156 (16.25)**	2.3407 (5.57)**	3.1574 (4.14)**
Sales growth	0.3806 (8.29)**	0.3289 (2.95)**	2.3773 (5.82)**	2.1545 (2.70)**
Three-year return	0.0913 (1.73)	0.1245 (1.00)	0.6176 (1.29)	0.8308 (0.92)
Market to book	0.2662 (4.79)**	0.2230 (1.67)	1.3222 (2.62)**	0.3096 (0.31)
Size	0.3260 (6.77)**	0.5885 (4.76)**	2.6475 (2.19)*	5.9591 (2.22)*
Advertising/sales	—	0.2469 (2.38)*	—	0.7942 (1.22)
Admired dummy	−76.1124 (−17.36)**	−75.9533 (−7.56)**	—	—
Adjusted *R*-squared	0.138	0.175	0.127	0.122
Panel B: Individual investors				
Intercept	−32.1626 (−5.39)**	−60.7958 (−4.75)**	−394.4383 (−5.57)**	−709.4601 (−5.04)**
Admired rank	1.4977 (16.82)**	1.8914 (11.14)**	0.8121 (2.94)**	0.7842 (1.72)
Sales growth	0.2005 (6.70)**	0.2495 (3.66)**	1.2674 (4.72)**	1.9408 (4.07)**
Three-year return	−0.0046 (−0.13)	0.0949 (1.24)	−0.1871 (−0.59)	0.6276 (1.16)
Market to book	0.1858 (5.13)**	0.1187 (1.45)	0.2315 (0.70)	−0.4435 (−0.73)
Size	0.3345 (10.66)**	0.4592 (6.07)**	4.1056 (5.16)**	7.0131 (4.36)**
Advertising/sales	—	0.1130 (1.78)	—	0.2930 (0.75)
Admired dummy	−65.2681 (−22.83)**	−68.7096 (−11.19)**	—	—
Adjusted *R*-squared	0.133	0.178	0.072	0.109
Panel C: Investment clubs less individual investors				
Intercept	−115.5509 (−17.90)**	−143.7386 (−9.87)**	−88.4128 (−1.30)	−96.3095 (−0.66)
Admired rank	2.1943 (22.77)**	2.6241 (13.59)**	1.5286 (5.78)**	2.3732 (4.98)**
Sales growth	0.1801 (5.56)**	0.0794 (1.02)	1.1100 (4.31)**	0.2136 (0.43)
Three-year return	0.0959 (2.58)**	0.0296 (0.34)	0.8047 (2.66)**	0.2033 (0.36)
Market to book	0.0803 (2.05)*	0.1043 (1.12)	1.0906 (3.43)**	0.7531 (1.19)
Size	−0.0086 (−0.25)	0.1293 (1.51)	−1.4581 (−1.91)	−1.0540 (−0.63)
Advertising/sales	—	0.1339 (1.85)	—	0.5012 (1.23)
Admired dummy	−10.8443 (−3.51)**	−7.2437 (−1.04)	—	—
Adjusted *R*-squared	0.057	0.072	0.110	0.087

Notes. The dependent variable is the proportion of buys by clubs (Panel A), proportion of buys by individuals (Panel B), and proportion of buys by clubs less the proportion of buys by individuals (Panel C). Proportion of buys is calculated by year as the number of buys of a particular stock (e.g., IBM) by all clubs (or individuals) in our data set divided by the total number of buys for all stocks. Admired ranks are overall ranks from *Fortune*'s annual survey. Market to book is the ratio of market value of equity (price times shares outstanding) divided by book value of equity. Size is based on a firm's market value of equity. Three-year return is the compound return on a firm's stock over the prior three years. Sales growth represents five-year weighted sales growth, with greater weight placed on more recent years. Advertising/sales is the three-year average ratio of advertising expense to sales. When regressions are estimated using firms without admired company rankings, firms with missing rankings data are assigned the median admired rank (180) and admired dummy takes on a value of one. All independent variables are based on ranks to mitigate the effect of extreme observations. All coefficients have been multiplied by 100,000 to eliminate leading zeroes. (*t*-statistics are in parentheses.)

$^{*}p < 0.05$, $^{**}p < 0.01$.

its principles of investing (O'Hara and Janke 1996, p. 16). Thus, if many of our clubs are members of the NAIC, they might tend to favor stocks that rank high on our measures of sales growth, three-year return, and market to book. However, even if this were true, it would not explain why clubs prefer admired companies after controlling for these other measures. Furthermore, in ancillary analyses (which are available from the authors), we find the same preference for admired companies even after limiting our sample to

firms with declining earnings or to firms with sales growth in the bottom third of all firms.

Experiment: Groups and Individuals Choose Stocks

Based on previous experimental work, we have argued that groups place more weight on good rationales than do individuals. However, because people in our field data were not randomly assigned to invest as either individuals or groups, we cannot know whether there is some underlying difference between the two sets of people that might account for these differences. In this experiment, we randomly assigned individuals to choose some stocks as individuals and some as a member of a "stock club" of three people.[7]

Method. Students in an MBA class ($N = 48$) participated in an in-class "exercise on decision making." They first made choices among one randomly assigned group of six stocks as individuals, then discussed a different set of six stocks in a group of three and made a group choice.

Each set of six stocks represented three industries; within each industry, one stock was rated as more admired but also more expensive (as measured by the market-to-book ratio described below) and another stock as less admired but less expensive. Our key dependent variable is how many of the most-admired stocks are chosen by individuals and by groups.

Materials. Stocks were selected from the *Fortune* magazine list of America's most-admired companies. We surveyed industries for which *Fortune* listed at least 10 companies and selected the second and ninth most-admired company on the overall industry ranking. We disguised the names of the companies (e.g., listing them as Computer Software A and B) and, for each company, we provided the following information: a one-paragraph description of the company's business from Yahoo! Finance (disguised to eliminate information that would clearly identify the company, such as company and brand names), the market-to-book ratio from Yahoo!, and numerical ratings from the *Fortune* most-admired list on innovation, financial soundness, employee talent, use of corporate assets, social responsibility, quality of management, and quality of products and services.

As one might expect, the more-admired companies were all more expensive as measured by market-to-book ratios. The experimental materials described the market-to-book ratio as follows: "This ratio is the market value of the firm's stock divided by its book value. For example, if you buy a stock with a market-to-book ratio of 2.3, you are paying \$2.30 for every \$1 of assets (net of outstanding liabilities) that are currently on the firm's books."

Individual and Group Decision. We randomly assigned the six pairs of companies to one of two lists, and each person in the experiment made decisions about one list as an individual and one as a member of a group. For the group decisions, we gave each person the two stocks from one industry and then asked them to discuss the stocks and share information with the other two members of their groups. After the individuals and groups had a chance to consider each stock, we asked them to choose one stock in each industry in which to invest.

Results. Our key dependent variable is the proportion of admired companies chosen by individuals and groups. Table 7 breaks down the data by industry; it shows that although individuals and groups tended to favor admired companies, the groups favored them more. To compute an overall statistical test, we average across the three industries in each set and collapse across the two sets. Overall, individuals chose the most-admired companies 64% of the time, while groups chose them 90% of the time ($t(60) = 2.84$, $p < 0.01$).

Discussion

Consistent with our argument and with the pattern in our field data, groups favored stocks with good rationales more than did individuals. Together, the results of this experiment and the field data provide converging evidence for our argument about the effects of reason-based choice among groups and individuals. Compared with the field data, the experimental evidence is impoverished because we were only able to give participants a limited selection of stocks described on only a few key dimensions (and with

[7] We thank Ken Taylor for help with the design and administration of this study.

Table 7 Experiment: Percentage of Most-Admired Companies Chosen by Individuals and Groups

		Percentage of admired companies chosen	
Company set	Industry	Individual	Group
A	Diversified wholesalers	71	100
	Computer software	42	85
	Consumer food	67	100
B	Entertainment	89	89
	Property and casualty insurance	56	78
	Medical products	61	89

none of their own money riding on the outcome of their choices). The field context presents investors with thousands of choices that have been systematically equated in value by an efficient market.

Nonetheless, the experimental evidence allows us to eliminate the concern that clubs choose differently than individuals solely because club members nonrandomly sort themselves into clubs on the basis of some unobserved characteristic (e.g., risk aversion). In the experiment, the same students make individual and group choices, yet their decisions showed that groups favor good reasons more than individuals purely because of the dynamics of a group decision. This experiment also eliminates a simple availability bias interpretation of the results because the names of the companies were disguised. (We gave a separate group of nine MBAs the 12 different descriptions and asked them to guess the company names whenever they could. In only 2 of 108 cases were companies successfully recognized.)

General Discussion

In this paper, we postulate that good reasons affect choices more when groups convene to make a collective decision than when individuals decide alone. Our results suggest that good reasons matter. This effect is best illustrated by the fact that clubs show much greater preference for the stock of companies that are rated as most admired. Such companies are more likely than others to generate the kind of positive regard among consumers, analysts, and news reporters that translates into good reasons. Note, however, that these good reasons do not translate into good performance. In our sample, large, admired, growth firms with strong prior three-year stock returns and five-year sales growth earned poor returns (see Footnote 5).

In an interesting field setting, these results provide evidence for the kind of reason-based choice that has been described among individuals (Shafir et al. 1993), groups (Burnstein and Vinokur 1977), and individuals who are accountable in a group or social environment (Tetlock 1992, Lerner and Tetlock 1999). Importantly, our work also extends these laboratory results by considering choices in a situation where there is a much richer and more complex set of alternatives than in the typical laboratory study, and in a situation where decision makers have substantial personal resources at stake.

In the following section, we consider alternative accounts of our results and describe why these alternatives cannot fully explain the phenomena that we have attributed to good reasons.

Alternative Explanations

Availability. One immediate question is whether we are merely documenting an effect of availability. Perhaps investors invest in companies that are available in memory without conducting any further search for reasons. As a first test of "availability," consider the data in Table 8, which reports the stocks that show the greatest difference in purchases between clubs and individuals. While many of the companies in Table 8 are recognizable, they would probably not rank high in a free recall measure of availability. Furthermore, our experimental results show that knowledge of companies is not necessary to document the fact that groups and individuals tend to prefer stocks from companies associated with good reasons.

Group Shift/Polarization. At one level, our empirical results could certainly be classified as group polarization. Compared with individuals, groups choose alternatives that are more extreme on various dimensions. However, note that this empirical effect differs from the traditional group polarization effect—that groups chose more extreme responses on a *unidimensional scale* of attitude or risk (Myers and Lamm 1976, Moscovici and Zavalloni 1969), not different alterna-

Table 8 Stocks with Largest Difference Between Club and Individual Buys

Name	Year	% Club buys	% Ind. buys	Difference	Most admired percentile rank	Stock return percentile rank	Three-year growth percentile rank
Merck & Co., Inc.	1993	4.87	2.52	**2.35**	99	76	81
Waste Management, Inc.	1991	2.29	0.36	**1.93**	—	86	95
Boeing Company	1991	2.29	0.71	**1.58**	96	95	66
Wal-Mart Stores, Inc.	1991	2.68	1.27	**1.40**	98	92	97
Motorola, Inc.	1995	2.89	1.57	**1.32**	98	94	87
Merck & Co., Inc.	1994	2.54	1.25	**1.29**	97	29	81
Boeing Company	1992	2.15	0.96	**1.19**	95	79	82
Wal-Mart Stores, Inc.	1993	2.89	1.74	**1.15**	98	91	95
Hewlett Packard Corporation	1996	2.23	1.09	**1.14**	97	86	88
Motorola, Inc.	1994	1.91	0.80	**1.11**	98	84	80
Merck & Co., Inc.	1992	2.87	1.81	**1.06**	99	92	80
ConAgra Foods, Inc.	1992	1.15	0.14	**1.01**	87	91	88
Biomet, Inc.	1993	1.22	0.23	**0.99**	—	87	95
Harley-Davidson, Inc.	1994	1.06	0.10	**0.95**	88	90	—

tives. This same argument applies to a "conservative shift" interpretation (because this is a subset of group polarization), but it is also important to distinguish "rhetorically safe" investments with a good reason (e.g., in an admired company with an expensive stock) from low-risk investments (e.g., stocks with low market risk). Our results show that clubs favor rhetorically safe stocks, not necessarily low-risk stocks. In financial terms, the portfolios of clubs and individuals do not differ in their market risk (i.e., beta), the most standard financial measure of risk.[8]

Preference Aggregation Schemes. A number of theories in psychology and economics might predict that groups may exhibit more extreme behavior than individuals merely because of the way groups aggregate the preferences of their individual members. Group choices may be more extreme, for example, because of a Social Decision Scheme (Davis 1973) that acts like a majority vote, or because the group responds like the "median voter." Similarly, common information may play a greater role in group decisions simply because it has already affected the underlying choices of individuals (Gigone and Hastie 1993, 1997). These theories suggest a different explanation for our results because they do not assume that the group dynamic alters the kinds of reasons selected in groups.

[8] This analysis is available from the authors.

These approaches are easiest to apply in the situation where they have been used most often—where individuals have well-formed preferences across a limited number of options (e.g., convict versus acquit in a jury decision). In our context, there are so many options that it is unlikely that group members could take a vote and agree on any single stock without exchanging copious amounts of information.

In situations where there is no obvious correct answer (such as picking stocks), group studies often find that groups go with the majority preference of their individual members (Davis 1973). To provide an empirical simulation of a majority-rule aggregation procedure, we explored what would happen if we randomly assembled stock clubs from sets of individual investors. Would the members of these stock clubs already hold any stock in their individual portfolios about which a majority would agree? We picked a point in time (December 1996), and simulated the overlapping stock ownership that could be expected in a club of 15 members (the average stock club size in Harrington's 2001 survey). We created 10,000 simulated clubs composed of randomly sampled individual investors from our data set and compared the overlaps among the stocks they held. The results of this simulation are reported in Table 9. It provides no reason to suspect that a majority-rule aggregation procedure plays a large role in our data. On average, simulated club members own 83.02 stocks in total, and 93.3% of stocks were held by only one individual. In the 10,000

Table 9 Probabilities of Overlapping Stock Ownership Among Simulated Club Members

n	Probability that a stock will be held by *n*/15 club members
1	0.932
2	0.058
3	0.008
4	0.001
5	0.00017
6	0.00002
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0

Notes. Above are the results of simulating 10,000 randomly selected clubs of 15 members, the average stock club size in Harrington's (2001) survey. We randomly select individuals in our data set in December 1996 to form simulated clubs. We then compare the overlaps among the stocks the individuals in each simulated club held on that date. On average, the members of each of these simulated clubs held 83.02 stocks in total. The table reports the probability that the same stock is held by *n*/15 members.

simulated clubs, there was never a case where more than six members of the club held a stock in common so a simple majority-rule procedure cannot account for the choices we witness. Indeed, the chances of having even a third of club members who owned a particular stock is approximately 2 in 10,000. Thus, simple group aggregation schemes are unlikely to drive our results.

We could make a similar argument to contrast our findings with the results of hidden profile tasks that show that group discussion tends to focus on information that all group members already share in common (Wittenbaum and Stasser 1996). In our context, information is unlikely to be shared in common. So, to explain the effects of group dynamics, we must consider how reasons are traded in an active process, not simply how groups aggregate the preexisting preferences or information of their members.

Conclusions

The finance literature has sometimes assumed that good reasons would be important, but it explained this assumption through agency problems rather than the psychological mechanism we favor. Lakonishok et al. (1994) argue that both individual and institutional investors (e.g., the management teams that run pension funds) may focus on "glamor stocks" (i.e., the stocks we have referred to as growth stocks) rather than value stocks. They show that controlling for all the standard financial measures of risk, value stocks outperform growth stocks, a result that is inconsistent with classic versions of efficient markets but consistent with the notion that investors differentially prefer growth stocks and overpay for them.

Lakonishok et al. (1994, p. 1576) note that many actors might prefer good reasons, for example, "institutions might prefer glamor stocks because they appear to be 'prudent' investments and hence are easy to justify to sponsors." We agree that good reasons are important, but Lakonishok et al. (1994) emphasize an agency problem that we find implausible in our results (e.g., justification to sponsors). Club members put their own money at stake and their fellow members can easily monitor how their recommendations perform, so club members who endorse a particular stock have incentives to endorse wisely. Our data suggest that social dynamics in general, not just in agency relationships, place a premium on good reasons.

In many contexts, it is reasonable to select an alternative characterized by good reasons—the best reasons sometimes correspond to the best alternatives. But this is not always the case and it is not the case in the market setting we study. Decision analysis presumes that people will make better decisions if they confront trade-offs and make them systematically, and the technology of decision analysis is designed to give people tools to do this. But without such tools, decision makers may find it more natural to try to evaluate the quality of a reason than to weigh the costs and benefits of a complex alternative (Luce et al. 1999, Hsee et al. 1999). Especially in situations where people must exchange reasons to convince others—e.g., in a group decision or in the social marketplace of ideas more broadly—the process we document may yield alternatives that have notable disadvantages but that happen to come attached to a good reason.

Acknowledgments

The authors thank Colin Camerer, Mitch Peterson, Martin Weber, George Wu, and seminar participants at Chicago, Davis, and Northwestern for helpful comments. Odean is grateful to the National Science Foundation (Grant No. 0222107) for financial support.

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Accepted by Detlof Von Winterfelt; received August 7, 2002. This paper was with the authors 5 months for 1 revision.