

The Disposition Effect and Individual Investor Decisions: The Roles of Regret and Counterfactual Alternatives

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Recent studies have documented a strong tendency for individual investors to delay realizing capital losses, while realizing gains prematurely (Odean [1996], Shefrin and Statman [1985], Weber and Camerer [1996]). This tendency has been termed the "disposition effect." The disposition effect is inconsistent with normative approaches to stock sales, such as those based on tax losses (see, for example, Constantinides [1983]).

We surveyed individual investors, and found that more respondents reported regret about holding on to a losing stock too long than about selling a winning stock too soon. This finding suggests that individual investors are consistently engaging in behavior that they have been warned can cost them money and that they regret later.

Two additional experiments confirm the disposition effect and the role of regret, and offer evidence about the role of an agent (broker) in the assignment of blame and regret. We show that investor satisfaction and regret are not simply functions of outcome, but are influenced by counterfactual alternatives and the type of action taken (holding versus selling). We suggest that the disposition effect may be highly related to reduction of anticipated regret.

Investors are frequently cautioned against holding losing stocks too long (e.g., Sease and Prestbo [1993]). Although this advice seems obvious, a number of recent studies have documented a strong tendency among individual investors to delay realizing capital losses, while prematurely realizing gains (Odean [1998], Shefrin and Statman [1985], Weber and Camerer [1998]). This tendency has been termed the "disposition effect," and it is inconsistent with normative approaches to stock sales, such as those based on tax losses (see, for example, Constantinides [1983]).

We surveyed individual investors, and found that more reported feeling regret about holding a losing stock too long than about selling a winning stock too soon. This finding suggests that individual investors realize, at least in hindsight, the repercussions of such an investment style.

This paper reports some of the results of our survey of individual investors. We also report on the findings of two experiments that investigate some of the factors underlying investor satisfaction and regret in the context of the disposition effect. We focus on the disposition effect because it is a pervasive phenomenon that is contrary to normative approaches to individual invest-

ing, and because it reliably leads to consequences that evoke regret.

First, we briefly review the literature on the disposition effect and relevant findings from our regret study. We then follow with the details of our studies, and conclude with suggestions for future research.

The Disposition Effect

Shefrin and Statman [1985] were the first to frame the decision to realize capital gains and losses behaviorally. They cited numerous accounts of professional traders and individual investors failing to cut losses in an effort to break even with the purchase price of a stock. They documented the tendency of investors to sell stocks that have appreciated and to hold those that have declined in value, and they coined the term "disposition effect." They also noted that the higher incidence of activity in December could be due to investor self-control for tax considerations. Their evidence was inconsistent with normative approaches to stock sales such as those based on tax considerations.

Shefrin and Statman [1985] attributed their findings to a descriptive theory based on loss aversion (Kahneman and Tversky [1979]), self-control (Thaler and Shefrin [1981]), mental accounting, and the desire to avoid regret (Thaler [1980]).

Lakonishok and Smidt [1986] examined aggregate market volume data and found that volume movements were positively correlated to past price movements,

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consistent with the disposition effect. Ferris, Haugen, and Makhija [1988] also used volume to study the disposition effect. They first determined an expected normal volume level, and then looked at actual volume relative to the expected price changes. Price declines led to negative relative volume and price increases led to greater than normal volume, again confirming the disposition effect. This effect was pervasive, even in December, despite the tax benefits of selling losers at that time.

Weber and Camerer [1998] used an experimental setting. They found that the original purchase price served as a reference point to assess a particular outcome, and that a desire to avoid losses relative to the reference point led to holding losers too long. They not only confirmed the disposition effect, they also found that winners are sold too soon and that losers are held too long, compounding the negative impact of the effect.

Odean [1998] analyzed the trading records of 10,000 individual investors. He showed that losing stocks were held longer than winning stocks, and that the proportion of realized gains was about 50% higher than realized losses, except for tax-motivated selling in December. Odean [1998] also compared subsequent stock prices of sold winners, held winners, sold losers, and held losers at sixteen weeks and one year. He found that the average return of sold winners was over twice that of held losers at both time periods, demonstrating the impact on longer-run portfolio performance of holding losers and selling winners. Odean's [1998] data came from a discount brokerage, and thus reflected the decisions of individual investors who were not using a retail broker's services.

These explanations rely primarily on loss aversion to explain investor decisions to realize gains and losses, however. But there are emotional aspects of decision making that may also play a significant role in choosing when to realize gains and losses. Selling a losing stock results in an immediate tangible loss. Holding it leaves open the possibility that it may reverse direction. In addition, the investor may be in a state of denial about a bad decision. Forgoing the sale allows this denial to continue.

Another aspect is the regret of the loss. The desire to avoid regret was cited by Shefrin and Statman [1985] as a factor behind the disposition effect. We turn now to a brief review of the literature on regret and decision making.

Regret

Regret has been studied in a number of different contexts and is commonly defined as a negative emotion evoked by the knowledge that a different choice

would have led to a better outcome. Thus, regret can only be experienced fully after the fact, although it can be anticipated before an action. Shefrin and Statman [1985] mentioned regret as a factor in the disposition effect because the pain associated with realizing a loss was assumed to be greater than the pride associated with realizing a gain.

However, there are other aspects of regret that are relevant to the decision to realize gains or losses, such as the foregone alternatives to actual outcomes, and whether outcomes were obtained through acts of omission or commission. Degree of regret may also be affected by whether a decision was made by an individual or an agent. Connolly and Zeelenberg [2002] suggested that regret is comprised of two components: an evaluation of the realized outcome compared to some alternative, and a feeling of self-blame for having made a bad choice.

Degree of regret appears to co-vary with the "closeness" of the foregone or counterfactual alternative (Kahneman and Miller [1986]). For example, the holder of a lottery ticket with five of six winning numbers is likely to feel more regret about his choice of numbers than the holder of a ticket with four of the six numbers. Similarly, an investor who comes close to selling a loser but continues to hold the stock will experience more regret than the investor who only briefly considered the same trade.

Another aspect of regret is whether an outcome is obtained through an act of omission or commission. Typically, subjects report feeling more regret for actions that led to a bad outcome than bad outcomes that occurred from failing to act (Kahneman and Tversky [1982], Ritov and Baron [1995]). However, Gilovich and Medvec [1995] showed that long-run regret is often linked to things not done rather than actions taken. These conflicting results are most likely attributable to the length of time between the regret-evoking event and the evaluation.

Gilovich and Medvec's [1995] results came from a study that asked older subjects to reflect on their lives. The studies that found acts of commission produced more regret were based on having subjects read hypothetical scenarios and then evaluating the degree of regret immediately afterward. A longer time span may produce more opportunity to reflect on alternative courses of action, leading to more regret for actions not taken. Investors may also be reluctant to realize losses because anticipated regret is more salient for the action of selling than for the inaction of continuing to hold.

However, in the longer run, regret may be greater for not cutting a loss, because the cost becomes more apparent over time. Ritov and Baron [1995] showed that anticipated regret was greater when people knew they would have complete information about outcomes, compared to when information was only avail-

able about the chosen outcome. In the case of investments, one will always have information about foregone alternatives. The power of anticipated regret was shown by Cooke, Meyvis, and Schwartz [2001], who demonstrated that experimental subjects preferred to minimize future regret even at the cost of maximizing earnings.

A possible factor in regret that is related to omission/commission differences is whether regret is alleviated by the actions of an agent. For example, the agent can be blamed if a negative outcome occurs. If a positive outcome occurs, one can take the credit for oneself (or at least for selecting a good agent). This is consistent with self-serving attributions, in which people are more likely to take credit for successes than blame for failures (Miller and Ross [1975]). However, Connolly, Ordóñez, and Coughlan [1997] demonstrated that outcome is more important than responsibility in overall ratings of happiness and regret.

Preliminary Survey

We conducted a survey of individual investors to gain insight into issues related to investor decision making, such as influences on sell decisions, preferences for income form, and regret about past investment decisions. The findings of the survey were used to refine our experimental hypotheses.

Method and Results

We developed a brief questionnaire of closed-ended questions relating to these issues as well as demographic and portfolio information. The questionnaire was mailed to a random sample of 500 members of the American Association of Individual Investors.

We received 176 responses, a response rate of 35%. Respondents were predominantly male (82%), well-educated (89% had a college or graduate degree), with a mean age of 59.5 years. Mean annual income was \$99,000, with 23.9% derived from investments. The majority of respondents were still working, with only 30% retired. Approximate portfolio size averaged \$588,000.

Investment Questions

The question most relevant to us was:

Thinking back to investment decisions that you now regret, do you feel more regret for:

- Selling a “winning” stock too soon, or
- Not selling a “losing” stock soon enough.

Only one respondent had no regret for any investment decision. Of the less fortunate balance, 59% reported more regret for not selling a loser soon enough, and 41% reported more regret for selling a winning stock too soon.

The other directly relevant question asked respondents to rate the importance of different factors in their decisions to sell. Table 1 reports the percentage of respondents who answered “1” or “most important” for each factor. The strongest influence on selling appears to be broker recommendation, followed closely by stock price reaching a predetermined target, and need for liquidity. The desire to cut losses and the desire to take profits appeared to be less influential, trailed only by the anticipated direction of the market.

Two other survey questions were related to the disposition effect. One asked whether respondents spent more time on decisions to buy or to sell; the other asked whether the decision to buy or to sell was more difficult. The majority of respondents (62%) spent more time on buy decisions; 8.5% spent more time on sell decisions. 29.5% spent about the same amount of time on both. Interestingly, 51% said that decisions to sell were more difficult, 32% said both were about the same, and 17% said that decisions to buy were more difficult.

The reported difficulty associated with sell decisions, in conjunction with the reliance on brokers and predetermined price targets, suggests that issues of anticipated regret and self-control may play an important role in the disposition effect.

Experiment 1

The goal of our first experiment was to explore three questions about investor regret. First, we wanted to examine the role of omission versus commission with respect to holding losers and selling winners. In the survey, we found that more respondents felt regret for holding losers, which is an act of omission. This is in line with Gilovich and Medvec’s [1995] finding, but is at odds with earlier work. We had not measured regret in the survey, given that each respondent had different

Table 1. Percentage of “Most Important” Ratings for Influences on Selling

Broker recommendation	52.2%
Stock price has reached a predetermined target	47.7%
Need for liquidity	46.6%
Desire to purchase a different stock or other investment	41.5%
Desire to cut losses	39%
Desire to take profits	33.1%
Anticipated direction of the market	32%

Note: N = 177.

circumstances. We did not have a clear directional hypothesis for this question, because previous work was not consistent in predicting whether omission or commission leads to greater regret.

Second, we wanted to compare the impact of counterfactual outcomes to real outcomes on degree of regret. How would regret associated with a missed gain compare to regret associated with a loss? A missed gain is an opportunity cost, yet prior research indicates that opportunity costs tend to be underweighted (Kahneman and Tversky [1982]). From this perspective, greater regret should be associated with an actual loss than with an opportunity cost. In addition, missed losses evoke feelings of relief (Loomes and Sugden [1982]). Is the satisfaction from a missed loss similar to that from an actual gain, where the financial outcome is better, or to that from a missed gain, where the financial outcome is identical?

Finally, we wanted to explore whether a broker's involvement alleviated regret, and how credit and blame were allocated between broker and investor for different outcomes. Attribution theory (Ross [1977]) suggests that brokers are likely to be blamed for bad outcomes more often than they will be given credit for good outcomes.

Hypotheses

- H1A: Satisfaction with a missed loss will be closer to satisfaction with a real gain than with a missed gain.
- H1B: Satisfaction with a missed gain will be closer to satisfaction with a real loss than with a missed loss.
- H2: More responsibility will be attributed to brokers for losing outcomes than for winning outcomes.

Method

We used the independent variables action (hold versus sell), outcome (positive versus negative), and actor (self versus broker). Our dependent variables were degree of satisfaction/regret, and, for problems involving a broker, allocation of responsibility between self and broker. Each subject read two problems of the following form, one version of which involved a broker.

Imagine that last year you purchased some stock in "Company A" at \$15 a share. After it fell in value to \$11 a share, you decided to sell/thought about selling, but decided to hold. You found out this morning that the current price is \$27/\$6 a share.

The version with the broker began "Imagine that last year, based on your broker's advice," but was otherwise identical, except that Company A became Company B.

Subjects were asked to rate their satisfaction with their decision using an 11-point scale anchored by "regret very much" on the low end, and "very satisfied" on the high end. Responsibility for outcome was allocated by dividing 100 points between the broker and self.

The experiment was conducted in a classroom setting with 125 adult undergraduate and MBA students at a large Midwestern business school. All subjects had taken at least one course in finance. Subjects received course credit for participating in the experiment.

Results

Satisfaction/regret. We conducted a three-way analysis of variance on the satisfaction/regret measure. The main effects of action (sell/hold) and outcome (win/lose), as well as the two-way interaction between action and outcome, were all significant at $p < 0.01$ or less. The three-way interaction was not significant. In order to understand the nature of the effects, we undertook a more detailed analysis, following Keppel [1982]. Figure 1 reports the cell means. ANOVA results are reported in Table 2.

The interaction between action and actor was significant when a broker was not involved ($F(1, 120) = 25.43, p < 0.001$ for independent decisions; $F(1, 120) = 1.71, n.s.$ for broker). Degree of satisfaction was greater for independently made decisions when the action was holding rather than selling. There was no difference in satisfaction between holding and selling when a broker's advice was used. This result is consistent with the disposition effect in that holding a stock reaffirms that one has made a good choice.

The interaction between action and outcome was significant when the outcome was positive, but not when the outcome was negative ($F(1, 120) = 38.02, p < 0.001$ for positive outcomes, $F(1, 120) < 1, n.s.$ for negative outcomes). Holding yielded more satisfaction than selling when the outcome was positive. Again, holding a stock reaffirms one's good choice.

Allocation of responsibility. We had hypothesized that brokers would be blamed more for bad outcomes than given credit for good outcomes. While the mean allocations of responsibility support this idea, they are not statistically significant. The mean allocations are listed in Figure 2. Interestingly, the data indicate that participants attributed the greatest responsibility to themselves for missed losses, followed by gains, losses, and missed gains.

FIGURE 1
Regret-Satisfaction Ratings for Outcomes, Study 2

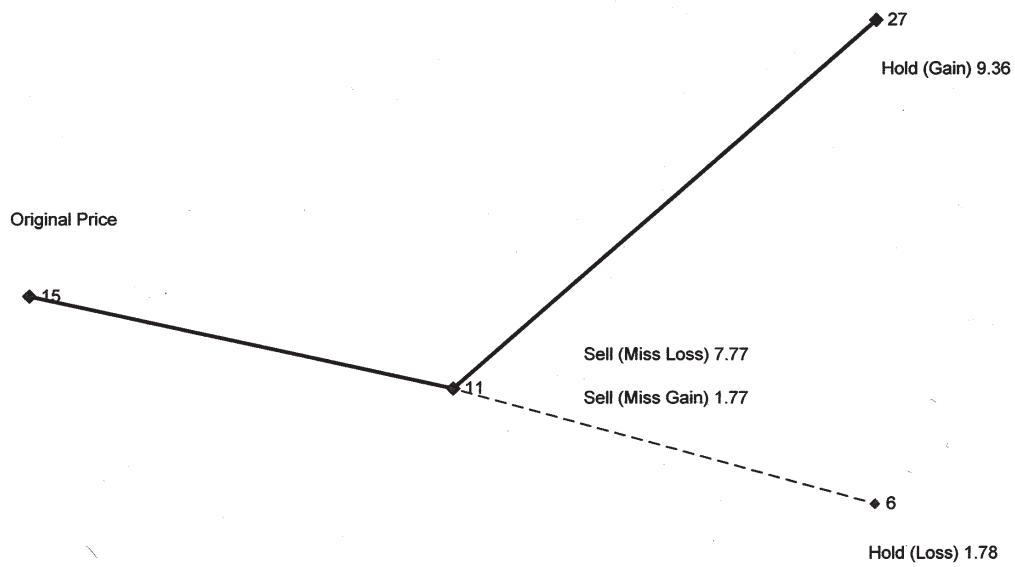
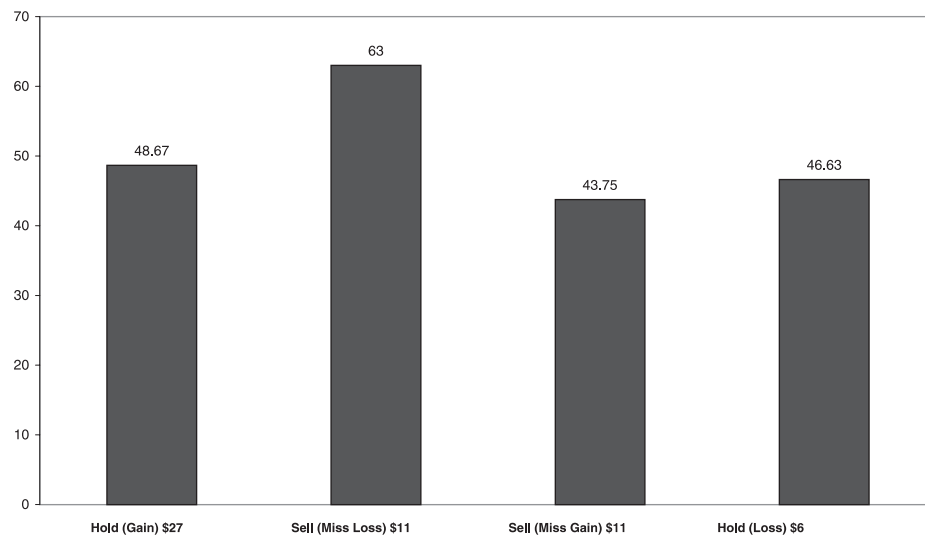


Table 2. ANOVA Results, Study 2

Source	SS	df	MS	F	
Action	319.7	1	319.7	20.28	$p < .001$
Outcome	2387.7	1	2387.7	151.51	$p < .001$
Actor	168.33	1	168.33	10.68	$p < .01$
Action $\times$ Outcome	283.84	1	283.84	18.01	$p < .001$
Action $\times$ Actor	110.71	1	110.71	7.02	$p < .01$
Actor $\times$ Outcome	113.45	1	113.45	7.19	$p < .01$
Action $\times$ Outcome $\times$ Actor	55.1	1	55.1	3.49	n.s.

FIGURE 2
Allocation of Responsibility to Self by Outcome, Study 2



Discussion

The first issue addressed by our experiment was whether acts of omission or commission affected rated regret consistently with the disposition effect. Our results showed more respondents associated regret with holding losers than with selling winners too soon, demonstrating an *ex post* awareness of the long-term consequences of the disposition effect. Interestingly, there appeared to be no difference between holding and selling when outcomes were negative, even though the financial outcome for holding was significantly worse than for selling. The significant difference for positive results may be attributed to the difference in absolute financial outcomes.

There were four types of outcomes in our experiment: 1) real gain (positive), 2) missed loss (positive), 3) missed gain (negative), and 4) real loss (negative). The financial outcomes for missed loss and missed gain were identical: The stock was sold at \$11 in both conditions. What distinguished the conditions were the counterfactual alternatives in each one. The missed loss could have been a real loss, and the missed gain could have been a real gain.

The ratings of satisfaction/regret for the identical financial outcomes in these conditions demonstrate the power of counterfactual alternatives to influence outcome evaluations. The regret ratings for the missed gains are as low as for actual losses, even though the financial outcome was much better with missed gains. Thus individual investors may anticipate a great deal of regret for selling too soon and for missing a gain.

Indeed, the original purchase must have been prompted by a belief that the stock price would rise, so selling in the face of a loss points to a poor decision in the first place. Unlike the individual investor, the market does not recognize what could have been. Successful investors learn from experience how to cut their losses when necessary.

Finally, transactions involving brokers produced no more regret than those with no broker when outcomes were negative, across both holding and selling. The significant difference for positive outcomes appears to have been driven by higher satisfaction with a missed loss when a broker advised a sale than when the decision was made independently.

In addition to advising and facilitating transactions, the role of a broker may also include bearing some of the responsibility for decisions. Recall that the investor survey showed most respondents considered decisions to sell more difficult than decisions to buy. Placing some of the burden on a broker could lead to higher satisfaction with the decision. Interestingly, the data show that respondents attributed the greatest responsibility to themselves for missed losses, followed by gains, losses, and missed gains. Note that the extremes are both for holding rather than for selling.

Experiment 2

The subjects in our second experiment were 106 adult MBA students in finance classes at a large Midwestern university.

The first experiment presented a decision as a *fait accompli*, and then asked subjects to assess their satisfaction with it and to allocate responsibility for the outcome. We designed the second experiment to allow subjects to make a decision themselves, learn the result, and then assess their satisfaction and allocate responsibility for the outcome. The point was to make the situation somewhat less artificial. The second experiment included the possibility of allocating responsibility to the market, as well as to oneself and to the broker.

Hypotheses

- H3: Ratings of satisfaction/regret will be more extreme for subjects who do not take a broker's advice.
- H4: Allocation of responsibility to a broker will be greater for losses than for gains.
- H5: Allocation of responsibility to oneself will be greater for decisions to hold than for decisions to sell.
- H6: Allocation of responsibility to the market will be greater for losses than for gains.

Method

We used the independent variables broker's advice (hold versus sell) and outcome (win versus lose). Subjects read the following scenario in a classroom setting:

About six months ago, you purchased 100 shares of stock in a food product company that has been having a few problems, but seems basically sound. The market has been fairly stable, with mild random fluctuations. The current share price is \$20. You are not sure whether you should continue to hold this stock. You now have the opportunity to ask a broker you met at a party for advice.

Broker: Sell! (Hold!)

Subjects then chose whether to take the broker's advice. At this point, the current stock price was revealed as either \$25 or \$15, and subjects learned whether they had won or lost. There were four possible outcomes: gain (\$25 per share), missed loss (\$20 per share), missed gain (\$20 per share), or loss (\$15 per share). Gain and missed loss were coded as wins; missed gain and loss were coded as losses. Subjects then rated their satisfaction with their decision on a scale from 1 to 7,

allocating responsibility for the outcome among themselves, the broker, and the market by dividing 100 points.

Results

We used as dependent variables the choice to follow the broker's advice or not, the degree of satisfaction or regret with the decision, and allocation of responsibility for the outcome to oneself, the broker, and the market.

Taking the broker's advice. The ratio of subjects who did not take the broker's advice was almost three to one. Eighty did not take the advice; twenty-six did. There was no significant difference whether the broker's advice was to sell or to hold, $\chi^2(1) = 1.13$, ns. When the advice was "sell," eleven took the advice and forty-five did not. When the advice was "hold," fifteen took the advice and thirty-five did not.

Satisfaction/regret. We first examined the degree of satisfaction/regret via a two-way analysis of variance (broker advice $\times$ outcome). The effect of broker advice (sell versus hold) was marginally significant, $F(1, 100) = 3.34$, $p = 0.07$. The advice to hold was somewhat more likely to lead to higher satisfaction, supporting H3. Not surprisingly, the effect of outcome was highly significant, $F(1, 100) = 160.49$, $p < 0.0001$. The interaction between broker advice and outcome was not significant, $F(1, 100) = 1.29$, n.s. Figure 3 and 4 list mean satisfaction/regret scores for the different conditions. Table 3 reports ANOVA results for Study 3.

As in the first experiment, we were interested in whether satisfaction/regret for identical outcomes but different counterfactual outcomes varied. In this case, the outcomes for missed loss and missed gain were \$20, but the counterfactual outcomes were \$25 and \$15, respectively. The mean satisfaction/regret score for missed gain was 3.71, while it was 6.00 for missed loss. A t-test on the mean satisfaction/regret scores showed that, despite the identical financial outcome, the evaluation of the choice was significantly different, $t(44) = -6.08$, $p < 0.0001$.

However, some of our questions required a more detailed analysis based on whether subjects chose to take the broker's advice, whether the advice was to sell or to hold, and the ultimate outcome. Rather than deal with the unbalanced effects inherent in an analysis with a 75%/25% split on a factor, we conducted separate analyses for subjects who did and did not take the broker's advice. For subjects who took the broker's advice, both the nature of the advice (sell versus hold) and the outcome (win versus lose) had significant effects on satisfaction/regret, $F(1, 21) = 4.36$, $p < 0.05$, and $F(1, 21) = 12.23$, $p < 0.005$, respectively. The interaction was not significant, however. The advice to hold was more likely to lead to higher satisfaction than the advice to sell, and, naturally, winning was more likely to lead to higher satisfaction than losing.

For subjects who did not take the advice, there was no effect on satisfaction/regret, $F(1, 75) = 0.65$, n.s. However, in addition to the main effect of outcome ($F(1, 75) = 188.22$, $p < 0.0001$), the interaction between broker's advice and outcome was significant, $F(1, 75) = 5.43$, $p < 0.05$. This interaction can be at-

FIGURE 3
Overall Satisfaction-Regret Ratings, Study 3

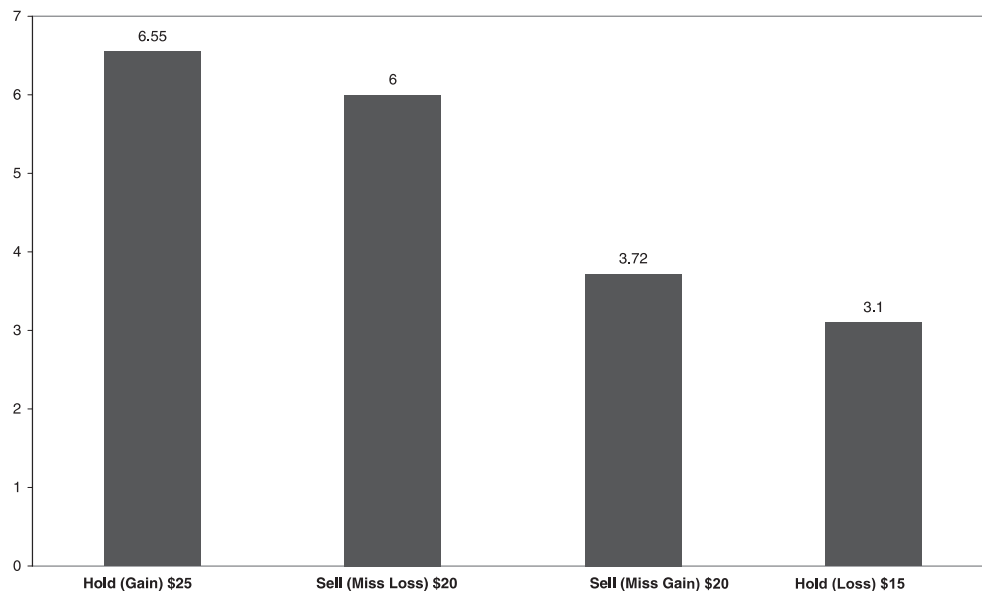
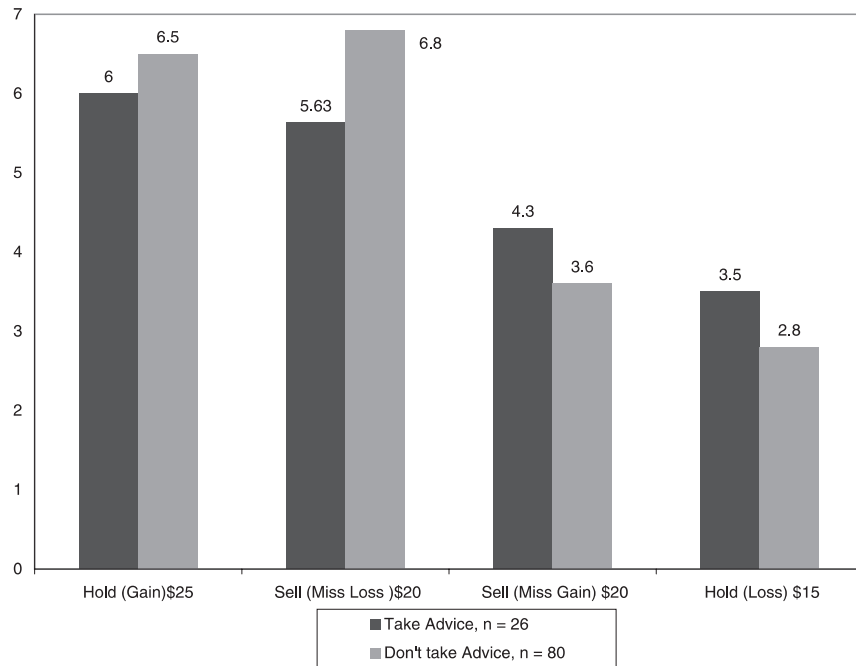


FIGURE 4
Satisfaction-Regret Ratings by Advice Taken or Not, Study 3



tributed to the much lower satisfaction/regret score for subjects who chose to hold against the “sell” advice and then lost, compared to those who lost by selling when advised to “hold.” The lower score here is also partially attributable to the lower financial outcome relative to the missed gain condition, although the satisfaction with winning outcomes was not significantly different despite different financial outcomes. Two points are of interest here.

First, for the identical financial outcome, the mean scores for the missed loss and the missed gain conditions were 6.8 and 3.6, respectively, again demonstrating that counterfactual outcomes influence evaluations. Second, the satisfaction/regret scores were more extreme for winners and for losers for those who did not take the broker’s advice.

Allocation of responsibility. We were interested in how responsibility for the outcome would be allocated among the subject, the broker, and the market. We hypothesized that subjects who took the broker’s advice would attribute more responsibility to the broker and market when they lost. We also expected to see little responsibility allocated to the broker by subjects

who did not take the advice, no matter what the outcome. Figures 5 and 6 depict the mean allocations of responsibility for the different conditions.

Contrary to our expectations, subjects who took the advice allocated less responsibility to themselves for wins than for losses (40% for wins versus 64.29% for losses). For these subjects, the market received credit for wins (46.25), but little blame for losses (17.14%). The broker received more blame for losses (18.57%) than credit for wins (13.75%).

For subjects who did not take the advice, there were no major differences in allocation of responsibility across wins and losses, although about 9% of responsibility was attributed to the broker in both cases.

Interestingly, for all subjects, the greatest allocation of responsibility to oneself occurred in the missed gain condition. Taking the broker’s advice had no effect (63% versus 67%). This may be because this loss appears to be caused by actively going against one’s previous choice: selling a stock that had been purchased in the hopes of positive returns. The missed gain condition also garnered the highest allocation of responsibility to the broker even for those who did not take the advice (25% for advice takers, 13.5% for non-takers).

Table 3. ANOVA Results, Study 3

Source	SS	df	MS	F	
Broker Advice	4.54	1	4.54	3.34	p = .07
Outcome	218.05	1	218.05	160.49	p < .0001
Broker Advice × Outcome	1.76	1	1.76	1.30	n.s.

Figure 5
Overall Allocation of Responsibility by Outcome, Study 3

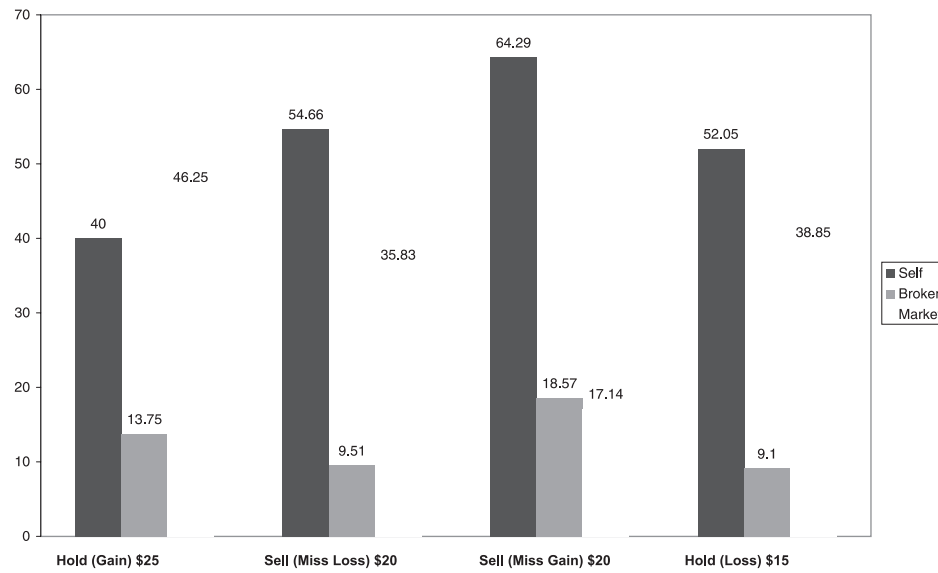
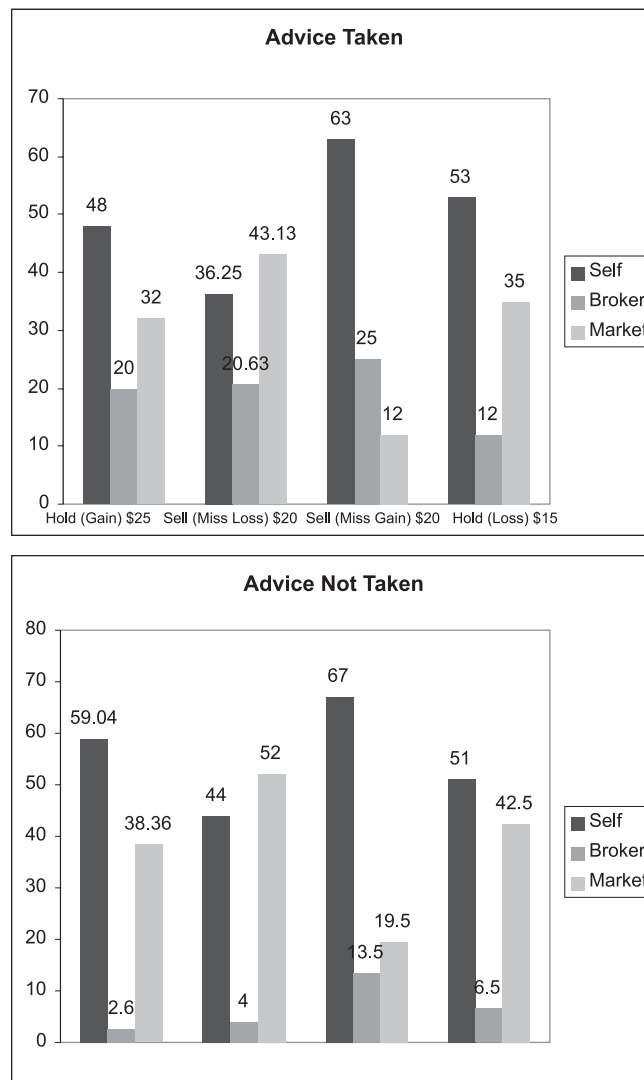


Figure 6
Allocation of Responsibility by Outcome and Reaction to Advice, Study 3



Conclusions and Future Research

Our results show that satisfaction with investment decisions is not simply a function of outcome. Instead, alternative outcomes may affect evaluations of decisions. Anticipation of regret may lead investors into the trap of holding losing stocks too long.

Our survey of active individual investors showed that less than 10% spend more time on sell decisions. However, less than 20% said buy decisions were more difficult. Virtually all respondents reported regret for investment decisions, either for not selling a losing stock soon enough, or for selling a winning stock too soon.

Our experiments were designed to assess whether regret or anticipated regret impacted investor decisions. Initial results to determine whether losses were attributed to broker advice were negative, but the results of our second experiment were more complicated. Because of the lack of additional information, broker advice may have served as an anchor – whether it was directly followed or not. The extremes of regret appeared to be mitigated for those who did follow the broker's advice.

The most significant limitation of our studies is that the experiments were based on hypothetical situations. Our second study was designed to be somewhat more realistic, however, subjects did not have any real financial stake in the outcome. Further tests are warranted to better determine the nature of the relationship among advice, outcomes, and satisfaction.

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