Winter 2007

The Effect of Survey-Based Sentiment Measures on the Predictability and Volatility of Stock Returns Conditioned on the Payout Yield and Issue Yield

Darryl Philip Samsell
Old Dominion University

THE EFFECT OF SURVEY-BASED SENTIMENT MEASURES ON THE PREDICTABILITY AND VOLATILITY OF STOCK RETURNS CONDITIONED ON THE PAYOUT YIELD AND ISSUE YIELD

By

Darryl Philip Samsell
M.B.A. June 2003, Old Dominion University
B.BA. December 1980, James Madison University

A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirement for the Degree of

DOCTOR OF PHILOSOPHY

BUSINESS ADMINISTRATION-FINANCE

OLD DOMINION UNIVERSITY
December 2007

Approved by:

Mohammed Najand (Chair)

John Griffith (Member)

Larry Filer (Member)

ABSTRACT

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Darryl Philip Samsell
Old Dominion University, 2007
Director: Dr. Mohammed Najand

Survey-based sentiment indexes from the American Association of Individual Investors, Investors' Intelligence, and the Yale University International Center for Finance show strong in-sample monthly return predictability and are strong factors in explaining the cross-sectional variation in monthly returns and in explaining the excess volatility in returns beyond that explained by cash flow fundamentals proxied by the payout yield and the issue yield from Boudoukh, et al. (2007). These finding are robust to the use of numerous methods of sentiment variable computation. Sentiment is a more significant factor during the period from January 1997 to December 2005 when U.S. stock valuations reached a peak and subsequently fell. There is no asymmetrical effect of positive and negative sentiment on monthly return volatility. There is a lagged return feedback to sentiment. There is a strong common component between sentiment and the issue yield during the "bubble" period. Overall there is strong support for a behavioral component to stock pricing. However, even with a strong in-sample performance, there is no improvement in return predictability for out-of-sample one month forecasts by the addition of sentiment measures to the payout yield and issue yield. These measures of market under or over-valuation don't improve the prediction of the timing or magnitude of future corrections in valuation.

I dedicate this work to my two daughters, my son, and my wife for all their love, encouragement, and many sacrifices.

ACKNOWLEDGMENTS

I wish to thank all of my professors at Old Dominion University, as well as the staff, for their provision of a suburb learning experience and environment. I extend many thanks to my committee members, Dr. Najand, Dr. Griffith, and Dr. Filer, for their support and guidance during the program and on this manuscript. My special thanks go to my advisor, Dr. Najand, for his patience, support, and advice during my program at Old Dominion University. His efforts were beyond the expected and deserve special recognition. Last, but not least, my special thanks to Dr. Hudgins for her advice and support during the program.

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1. INTRODUCTION

The unexplained portion of the excess volatility in stock prices as documented by Campbell and Shiller (1988), Campbell (1991) and Shiller (2003) is one of the more important anomalies in finance and represents one of the biggest challenges to the efficient markets hypothesis (Shiller (2003)). Shiller (2003) suggests irrational investor behavior or investor sentiment as the likely explanation for this anomaly. The high stock market valuations peaking in 2000 followed by one of the largest corrections in history is an example of this anomaly and is referred to as a stock market "bubble" in Shiller (2002). The alternative hypothesis to the behavioral theory is that the excess volatility has a risk-based explanation.

Sentiment is defined in this paper as irrational behavior in making investment decisions possibly as a result of an overly optimistic (bullish) or pessimistic (bearish) outlook on future valuation measures. Past studies examining the underlying psychological reasons for irrational investor behaviors suggest that investors overreact to trends, place more weight on more recent or more salient information, and fail to appreciate the mean-reverting behavior of valuation factors driven by competition and economic forces toward equilibrium conditions (Examples include Kahneman and Riepe (1998), Barberis, Shleifer and Vishny (1998), DeBondt and Thaler (1985)). Kumar and Lee (2006) use a large database of the trading transactions of individual investors and find that sentiment does affect expected returns, that investors systematically trade together and trade in common sets of stocks which can be characterized as small, value, lower priced, and with low institutional holdings. Their trading patterns lead to return comovement or a common directional component beyond that explained by changes in fundamental factors.

The idea that sentiment affects future returns probably dates back to the beginning of trading in stocks. Hardy (1939), Zweig (1973) and Malkiel (1977) represent some of the earliest papers suggesting the use of technical measures to proxy for investor sentiment. They, respectively, suggest the use of the ratio of odd-lot sales to purchases, discounts on closed-end funds, and the ratio of net mutual fund redemptions to assets. Lee, Shleifer and Thaler (1991) find that discounts on closed-end funds do have some relationship with the returns of small stocks primarily held by individual investors. Neal and Wheatley (1998) find a positive relationship between closed-end fund discounts and expected small stock returns, a weak relationship between the ratio of net mutual fund redemptions to assets and expected large stock returns, and no relationship between the ratio of odd-lot sales to purchases and returns. More recently, Baker and Wurgler (2006) develop an annual sentiment index based on six technical factors suggested in past literature as proxies for sentiment; the closed-end fund discount, NYSE share turnover, the number of IPOs, the average first-day returns on IPOs, the equity share in new issues, and the dividend premium. They find sentiment mostly affects the stocks of firms thought to be more difficult to arbitrage including smaller, younger, and more difficult to value firms such as firms with higher proportions of intangible assets.

More recently, researchers began studying the effect of sentiment on expected returns using more direct survey measures of sentiment. Fisher and Statman (2000) test expected returns using four surveys: the first, from Investors' Intelligence (II) is thought to represent professional opinion; the second, from the American Association of

Individual Investors (AAII) is thought to represent individual investor sentiment; the third, also from the AAII represents how individual investors allocate their portfolios between stocks, bonds and cash; and fourth, a proprietary survey of sell-side strategists from Merrill Lynch. They find a significant negative relationship between both the AAII sentiment measure and the strategists' measure with future S&P 500 returns, but no relationship using the II measure. They also find a stronger relationship between the AAII sentiment measure and the returns of the S&P 500 stocks than with smaller stocks. They do not find a significant relationship between the AAII asset allocation measures and returns. Lee, Jiang and Indro (2002) examine the role of sentiment on weekly return volatility using the II sentiment (professional advisor) index and find that sentiment affects both large and small stock returns with a larger effect on small stocks. They find changes in sentiment are negatively correlated with return volatility; bearishness leads to increases in volatility while bullishness leads to decreases in volatility. In companion papers, Brown and Cliff (2004) and Brown and Cliff (2005) test the effects of sentiment on returns. In the 2004 study, using the AAII sentiment and the II sentiment index along with a number of indirect technical measures thought to proxy for sentiment, they find little predictability for weekly or monthly returns. The strongest relationship found was between professional sentiment and large stocks which is contrary to other studies including Baker and Wurgler (2006). Brown and Cliff (2005) test the effect of sentiment over longer time frames with the use of the II sentiment index and a model which estimates a difference from fundamental value. They find the survey sentiment index predicts returns over the next 1-3 years even when controlling for a number of indirect technical proxies for sentiment.

Taken together these papers tend to support the existence of investor sentiment and that this sentiment explains some of the excess volatility in stock returns. However none of these papers include the testing of the stock "bubble" period where investor sentiment is expected to be very strong. The papers using the survey measures tend to use inconsistent computed measures from the index; some use the bull-bear spread computed as the percentage bullish minus the percentage bearish, others use the bull to bull and bear ratio computed as the percentage bullish divided by the percentage bullish plus the percentage bearish, others use just use the percentage bullish, while others consider the neutral or correction percentages. Another consideration is the AAII survey respondents are those that choose to respond possibly introducing some self-selection bias.

This paper contributes to the literature by the testing of the effects of sentiment over more recent time periods and especially to include the bubble period as a sample period using two time series analyses and a cross sectional analysis. A further contribution is to consistently use all of the computed sentiment measures used in past studies for the AAII and the II survey indexes and not just for the last weekly survey in the month but also for the average of the four weekly surveys during the month so that information is not lost. An additional contribution is the testing of eight new survey indexes developing using formal survey methods by Robert Shiller utilizing random sampling and published by the Yale University International Center for Finance. I am not aware of any past studies using these indices.

An important consideration in estimating the effect of sentiment or confidence in a time series study is the use of some form of control or valuation factor in order to isolate the effect of sentiment from rational reactions to movements in fundamental or natural value. While the Brown and Cliff (2005) time series study uses a fundamental model to produce control values, there are insufficient studies of this model as a predictor of future returns. Numerous past studies, with some exceptions, have found the dividend yield to be a predictor of future market returns with increasing power over longer horizons. However, these studies generally use sample time periods ending prior to the early 1990s. Unfortunately, the dividend yield loses its predictive power in the 1990s as documented by Goyal and Welch (2003) and others. Boudoukh, et al. (2007) find that dividends experienced a structural break in the mid-1980s and that the more inclusive payout yield measure composed of dividends plus repurchased shares shows no such structural break. Further evidence that the dividend yield is an incomplete measure of cash flow to investors is provided by Brav, et al. (2005) who in a survey of 384 financial executives find that repurchases are now favored because they are more flexible than dividends and because they can be used to time the market or to increase earnings per share. Boudoukh, et al. (2007) find the payout yield is a significant time-series and cross-sectional predictor of equity returns while the dividend yield loses prediction ability in the 1990s. They also find that the net payout yield which adjusts the payout yield for issues has even stronger prediction power than the payout yield.

So a further contribution of this paper is the use of the payout yield and the issue yield as control factors in place of the dividend yield in the time series regressions.

The most complete recent study of the effect of sentiment on the cross section of returns is Baker and Wurgler (2006). While they use their developed indirect technical sentiment index, this paper extends their study to the direct survey measures including the

AAII, II, and ICF index measures in addition to extending the study to new time periods. This paper also extends their study by adding firm characteristic portfolio sorts for return on equity (since earnings is highly correlated with size), and momentum (since it is commonly used as the fourth factor in the multifactor model).

A final contribution is to extend the time series testing of the effects of changes in sentiment on return volatility to monthly time periods from weekly, to include the payout yield and issue yield control factors, and to extend the testing to the CRSP equal-weighted and value-weighted returns.

The rest of this paper is organized as follows: Section 2 contains a literature review; Section 3 describes the data and variables; Section 4 contains a time series analysis of stock returns using a vector autoregression model; Section 5 contains a time series analysis of stock returns using a GARCH model; Section 6 contains testing of the cross sectional variation in stock returns; and Section 7 concludes.

2. LITERATURE REVIEW

Modern finance theory requires that in order for sentiment driven or irrational mispricing to occur some limitation must exist to prevent informed rational investors from quickly correcting such mispricing to the extent that it is profitable to do so. This section reports on anecdotal and anomaly evidence that such mispricing does occur and that agency behavior and limits to arbitrage inhibit short term correction.

2.1 ANECDOTAL EVIDENCE OF SENTIMENT AND THE LIMITS TO ARBITRAGE

Lamont and Thaler (2003) document a violation of the law of one price and the failure of arbitrage to correct the obvious mis-pricing in the equity carve-out of Palm Inc. from 3Com Inc. The market price of the carve-out, Palm, indicated the value of the remaining assets of 3Com were worth a negative $63 per share. Several examples of mis-pricing due to ticker symbol confusion and the failure of corrective arbitrage are documented by Rashes (2001). In the MCI case investors confuse the ticker symbols between Massmutual Corporate Investors (MCI) and MCI Communications (MMCI). During the acquisition of MCI Communications by Worldcom Inc., investors mistakenly pushed the price of Massmutual significantly from the current market value. See Baker and Wurgler (2006) for an interesting history of anecdotal evidence of investor sentiment beginning in 1961.

2.2 ANOMALIES WITH POTENTIAL BEHAVIORAL EXPLANATIONS

Shiller (2002) reports that there was indeed a late 1990s stock market bubble that peaked in 2000 and that it was due to behavioral errors by professionals. It would be hard to argue against the finding of a bubble when the Nasdaq composite index rose from around 1,000 in 1995 to a level exceeding 4,500 in 2000 before returning to around 1,300 in 2002 (See Figures 1-4).

(Insert Figures 1-4)

This bubble is just one instance of the more important anomaly of excess volatility in stock prices (Shiller (2003)). Shiller suggests that the unexplained portion of excess volatility in prices represents one of the bigger challenges to the efficient markets hypothesis. Campbell and Shiller (1988) and Campbell (1991) also document this excess volatility in prices. Shiller posits that there is likely a behavioral explanation for this anomaly.

Sentiment is suggested as the most likely explanation for the closed-end fund discounts studied by Lee, et al. (1991) and Chopra, et al. (1993). In this case the premiums and discounts also represent a violation of the law of one price since investors could purchase the same stocks directly in the market rather than as shares in the closed-end funds. Closed-end fund discounts have been used in some studies (examples Neal and Wheatley (1998), Baker and Wurgler (2006)) as a proxy for sentiment.

DeBondt and Thaler (1985) find consistent and systematic price reversals for stocks with abnormal past long-term gains or abnormal past long-term losses. These extreme past winners and losers are compiled using monthly data from the Center for Research in Securities Prices (CRSP) for the period 1926-1982. Portfolios are formed on the basis of past 5 year cumulative returns into the 50 most extreme winner and losers. In the subsequent 5 year period, the past loser portfolios outperformed the past winner portfolios by 31.9%. In a follow up study, DeBondt and Thaler (1987) control for firm size and seasonality and provide stronger evidence of the long-term reversal effect. They argue that overreaction by investors to news events is consistent with long term overreaction/extrapolation and subsequent correction observed in market prices. These investor behaviors, displayed by individuals "making decisions with risk", are studied by Kahneman and Tversky (1982) who report that persons tend to overweight recent information and underweight base rate information. Investors tend to predict values in line with their perceptions using simple heuristics or rules-of- thumb. Kahneman and Tversky (1982) call this the representativeness heuristic. DeBondt and Thaler (1985) find that professional security analysts and economic forecasters also exhibit this behavioral bias.

Lakonishok, Shleifer and Vishny (1994) find that a variety of value-based (or contrarian) strategies earn higher returns. They specifically test for risk explanations and find no evidence that value strategies are fundamentally riskier. To be riskier, value stocks must under perform glamour (growth) stocks at times and particularly during falling markets. They present several possible explanations for the value effect. First, the effect may simply be due to data snooping as in Conrad, Cooper and Kaul (2003). However, superior returns to value strategies have been found in different time periods (Davis (1994)) and in different countries (Chan, Hamao and Lakonishok (1991), Fama and French (2006)) so this explanation is unlikely. Second, they find expectational errors on the part of investors particularly regarding growth rates. Investors tend to project past growth too far into the future without due consideration that growth rates are highly mean-reverting. Chan, Karceski and Lakonishok (2003) test the persistence of growth rates and find that abnormal growth rates of firms tend to return to median growth rates generally within three years and the median growth rate approximates the growth in GDP. Work by La Porta, et al. (1997) supports this explanation in their study of investor reactions to quarterly earning announcements. Post announcement returns are substantially higher for value stocks than for glamour stocks. Positive earnings surprises persist for value stocks for up to two to three years. They also suggest that investors may make investment decisions without regard to valuations. Investors may consider well-known or well-run firms to be good investments without regard to the price. Intermediaries may also be attracted to glamour stocks because the stocks are easier to justify to sponsors, or the stocks are considered safer, than value stocks, because the firms are perceived to be less likely to experience financial distress, or because the intermediaries' incentives are linked to an target index. Finally, the short time frames both individual investors and intermediaries (institutional investors) use to evaluate their results may explain the attraction to glamour stocks. Individuals expect high abnormal returns in a few months; institutional investors may have an even shorter time frame to match their target index.

While there is general agreement the evidence supports the existence of the long term return reversal effect and the value/growth effect, there is an on-going argument as to the explanations. The two leading hypotheses proposed to explain these anomalous effects are the risk compensation hypothesis and the behavioral bias hypothesis. The risk compensation hypothesis posits that investors require higher returns in order to take on higher risks in investments. This hypothesis is consistent with modern finance theory and the efficient markets hypothesis and is well described and argued by Fama and French (1992). They argue that the higher returns generated by value strategies is because these strategies are somehow fundamentally riskier and the higher return is compensation to investors for bearing this risk (Fama and French (1995)). While Fama and French (1992) finds this value premium in post-1963 stocks, Davis, Fama and French (2000) updates this finding to include stocks back to 1929. As firms experience poor performance (become distressed) their valuation measures (usually some form of book equity to market equity) becomes more desirable as investors decrease the relative stock price as they require higher returns for the additional risk. On the other hand, the valuation measures for firms experiencing superior performance become lower as investors increase the relative stock price as they project lower risk. To be consistent with this hypothesis one would argue that bubbles and crashes are simply rational reactions to new information regarding valuation factors.

The behavioral bias hypothesis argues that investors over-react to good/bad news or over-extrapolate recent performance (over-reaction) without proper consideration of mean-reversion. This hypothesis is not consistent with modern finance theory or the efficient markets hypothesis. Modern finance theory requires that informed investors quickly take advantage of any behavior based misvaluation and arbitrage it away to the extent that such arbitrage is profitable. It would seem that the overreaction bias theory would require a shortage of informed investors, a surplus of informed or uninformed intermediaries not acting in the best interest of their clients, some limits to arbitrage, or some combination of these.

One of the earliest behavior models is the noise trader model of De Long, et al. (1990). In this model, for reasons that include the failure to fully diversify and to trade based on newspaper recommendations, noise investors add risk to the market that is difficult to arbitrage away. Other behavior models have been proposed to explain the apparent overreaction found in these studies as well as under-reaction thought to be responsible for momentum effects. The two most prominent are the Barberis, et al. (1998) model and the Daniel, Hirshleifer and Subrahmanyam (2001) model. There are other less well known models by Hong and Stein (1999), Barberis, Shleifer and Wurgler (2005), and Bodurhta, Kim and Lee (1995). While each model uses somewhat different psychological biases to explain investor behavior, all three predict overreaction or under-reaction via investor behavior and limits to corrective arbitrage. The biases underlying each model are difficult to test empirically but do provide a possible basis for observed investor behavior. Testing the specific psychological biases is beyond the scope of this paper.

2.3 LIMITS TO ARBITRAGE AND THE BEHAVIOR OF INTERMEDIARIES

One might expect that, with the growth of investments in actively managed funds such as mutual funds and pension funds, the professional managers of these funds would quickly take actions to take advantage of mis-pricing. One might be wrong.

On December 30, 1996, a front page article in the Wall Street Journal (McGough and Damato (1996)) reports that Robert Marcin, the manager of the $2.3 billion MAS Funds Value Portfolio, is so concerned about over-valued stocks that he is reducing and using options to protect his personal holdings in stocks. However he is keeping the fund he manages fully invested in stocks because fund investors are very bullish and are quick to penalize managers who aren't fully invested in stocks. Marcin and other fund managers are concerned that if they reduce the fund's stock holdings they may share the fate of Jeffrey Vinik, manager of the huge Magellan Fund of Fidelity Investments. Around the end of 1995, he became very concerned about stock over-valuation and moved substantially into bonds and cash. Vinik was gone from Fidelity by October after investors withdrew approximately $5 billion from the fund bringing it down to $53.3 billion. Don Phillips, president of Morningstar said his departure was "a message sent throughout the entire fund industry". Apparently fund operators such as Fidelity have little tolerance for fund withdrawals when management fees are based on a percentage of assets managed.

Chan, Chen and Lakonishok (2002) examine the investment styles of actively managed equity mutual funds to see if fund managers are following the fund's stated objective style of investing and to examine the impact of agency on the management of the fund. They list a number of studies that show that active managers typically don't outperform passive benchmarks. They find these results somewhat surprising since professional managers should be aware of the anomalies in the literature particularly the superior returns earned by value stocks. In reality, active managers tend to cluster their investments around a broad market benchmark such as the S&P 500 index. The managers that take more distant positions from the benchmark tend to invest in glamour stocks and past winners. Controlling for style, the growth managers outperform value managers. Poorly performing value fund mangers tend to move to glamour (growth) stocks. Chan, et al. (2002) report the behavior of active equity mutual fund managers, along with similar evidence from pension manager studies, to be consistent with agency considerations or behavioral biases such as herding, over extrapolation, and hubris. Agency considerations include direct compensation incentives tied to achieving or beating a benchmark and/or tied to total assets under management. Since reporting services, like Morningstar, report fund performance relative to a comparable style benchmark, managers are motivated not to stray too far and may become in reality passive benchmark indexers. It is highly likely that this tendency of intermediaries to remain fully invested in the face of overvaluation and the tendency to cumulatively index the market adds to arbitrage risk and even higher overvaluation. It is also likely that after a correction begins the funds are forced to sell into falling prices as investors redeem their money from the funds perhaps adding to overshooting fundamental valuations and forcing prices to undervaluation.

Under modern financial theory, it has been argued that informed investors quickly arbitrage away stock misvaluations that arise from irrational or uninformed behavior. In order for systematic mispricing, for example for behavior such as overreaction, to occur there must be some obstacle or limit to this arbitrage activity. One of the first papers to examine the idea that arbitrage is limited in correcting noise or sentiment trading is Lee, et al. (1991) updated by Chopra, et al. (1993). They find that holding period risk is a significant limitation on arbitrage activity because the holding period is not subject to clear estimation. Conditions that may contribute to limits on arbitrage include: the inability to borrow shares at a reasonable cost to sell short, the likelihood that such borrowed shares will be recalled before the anticipated correction occurs, and the possibility that stock prices will move even farther away from fundamental value during the arbitragers' relevant time frame possibly triggering margin calls. Intermediaries would typically withdrawals from their clients as paper losses mount during this period. The difficulty in predicting when a correction will finally happen is a significant obstacle. Shleifer and Vishny (1997) describe this process well and make the case that true risk-less arbitrage is a text book fantasy especially for arbitrage performed by intermediaries; even the simplest arbitrage requires capital and holding period risk.

Brav and Heaton (2006) examine the limits to arbitrage using the generally accepted proxy of residual volatility from multifactor asset pricing models. Specifically they use the idiosyncratic risk (the residual) from the three factor model of Fama and French (1993) with the added momentum factor of Carhart (1997). While there may be some question whether this risk can actually limit arbitrage, they show that this measure is strongly correlated with other accepted measures including the degree of institutional holding, stock price level, and analyst coverage. They find that limits to arbitrage cannot explain the undervaluation anomalies such as high returns to small stocks, recent winners, value stocks, and positive earnings surprises. However the low returns to small growth stocks are consistent with limits to arbitrage evidence. But, these stocks comprise less than 1% or the CRSP portfolio of U.S. common stocks and so are economically tiny.

One might expect the high valuations for the so-called internet stocks in the late 1990s to be a prime area for arbitrage activity. While a bubble appears to have occurred in these stocks, there may yet be a rational explanation. Battalio and Schultz (2006) examine this period to see if it was even possible to short these stocks. Normally stock prices are closely aligned with synthetic prices, derived from the options market, because of arbitrage activity. However if short selling is infeasible then stock prices diverge from the synthetic prices. Using time-stamped quotes and trades they find that less than 1% of the synthetic prices offered an arbitrage opportunity in these internet stocks. They find the expected proceeds of synthetically shorting these stocks averages 99.5% of the expected proceeds of an actual short. They argue there was plenty of opportunity to synthetically short these stocks, yet investors did not do so. They suggest that the apparent overpricing was not as apparent to investors then as now with the benefit of hindsight. With hindsight, we can now see that the correction started in 2000, but even as late as 1999 how many of those investors who clearly saw the overvaluation could also predict the timing of the correction; the likely explanation is that the holding period risk as defined in Shleifer and Vishny (1997) was too high for profitable shorting.

Since hedge fund managers share in the profits of the fund, they might be expected to quickly take advantage of mispricing resulting in a stabilizing force on prices. However, Brunnermeier and Nagel (2004) find that certain funds actually were buying into and were heavily invested in tech stocks during the price run-up to March 2000 and then were able to exit quickly enough to avoid most of the subsequent correction. They also appeared to be able to identify and exit from specific stocks whose prices subsequently fell. This study provides evidence that hedge fund managers were able to identify sentiment driven mispricing and to successfully navigate and probably exacerbate the bubble and then to escape the correction. This provides additional evidence for the De Long, et al. (1990b) model in which informed investors take advantage of positive feedback (uninformed) investors by driving prices higher and higher and then exiting at the top.

2.4 EMPIRICAL STUDIES USING SENTIMENT MEASURES

The use of sentiment as a guide to investing has its roots in market adages documented in the literature back to Hardy (1939) and including Zweig (1973) and Malkiel (1977). The gist of the adages is that the best time to buy stocks is when investor sentiment is low and the best time to sell stocks is when sentiment is high suggesting that sentiment is a contrary indicator of future returns. Hardy (1939) suggests the use of the balance in odd-lot trading as a sentiment indicator. Zweig (1973) suggests the use of discounts on closed-end funds and Malkiel (1977) suggests that net mutual fund redemptions are an indicator of general sentiment. Neal and Wheatley (1998) test three measures of sentiment; the ratio of odd-lot sales to purchases, the ratio of net mutual fund redemptions to assets, and the discount on closed-end funds (Lee, et al. (1991)); for the period 1933 to 1993. Using least squares regression estimation for horizons of one month, one quarter, and one, two, three, and four years, they find evidence of return predictability in the discounts on closed-end funds and net mutual fund redemptions. Their data is NYSE and AMEX size based decile portfolios for the 1933 to 1992 time period. They find a positive relationship between discounts and expected returns on small stocks, a weak negative relationship between net redemptions and the expected returns on large stocks, and no prediction power in the odd-lot ratio. In addition they find that discounts and net redemptions predict the size premium, the difference in the returns of large and small stocks.

An out-of-sample study of the closed-end fund discount as a proxy for sentiment in the Greek market for the period 1997-2002 using Greek closed-end funds is performed by Doukas and Milonas (2002). Since the Athens Stock Exchange market was not as well developed during this time period as the U.S. market, it is expected that sentiment might play a larger role. Consistent with the U.S. market findings of Elton, Gruber and Busse (1998), they do not find supporting evidence that the risk of stocks is affected by sentiment as proxied by the closed-end fund discount. This measure of sentiment is not a priced factor in returns and does not affect the returns of smaller stocks.

Lee, et al. (2002) use a sentiment index developed by Investor's Intelligence in a GARCH model to examine the role of sentiment on weekly return volatility and excess returns using the DJIA, S&P500, and the Nasdaq indexes for the period 1973-1995. They find a significant positive correlation between excess returns and changes in sentiment for all three indexes indicating that sentiment affects large stocks as well as small stocks with a larger effect on the Nasdaq index. They also find that changes in sentiment are negatively correlated with return volatility. As investors become more bearish, volatility increases; as investors become more bullish, volatility decreases.

Fisher and Statman (2000) examine the Investors Intelligence Survey, a sentiment survey developed by the American Association of Individual Investors, and sentiment data of Wall Street sell-side strategists obtained from Merrill Lynch. The strategists' sentiment measure is the mean allocation to stocks as recommended by the strategists who numbered between 15 and 20 per year from September 1995 through July 1998.

Using correlation and multiple regression analysis, Fisher and Statman (2000) conclude the following: There is a low correlation between the three measures with the highest between the individual investors (AAII) and the (II) newsletter writers of 0.47. There is a significant negative relationship between the AAII sentiment measure and the returns of the S&P 500 index in the following month. This finding is also true for the strategists' sentiment measure, but there is no significant relationship between the Investors Intelligence measure and future returns. Using all three measures to forecast returns one month ahead results in a good fit with an R^2 of 8%. They also find a significantly positive relationship between the S&P 500 returns and future changes in the AAII sentiment. In addition, positive returns over four week periods lead to increased positive outlook on the market for the II newsletter writers, while positive returns over 26-52 week periods lead to more bearishness. Contrary to these findings, returns had little influence on the strategists' outlook. Contrary to other literature, they find that individual investors' sentiment as measured by AAII moves more with the S&P 500 returns than with small stock returns. Using a second survey by AAII of the asset allocations of individual investors between stocks, bonds, and cash, they find that individual investors do follow their sentiment with their investment decisions somewhat, yet seem to do better with their asset allocation then their sentiment would indicate. They find a positive relationship, though not significant, between increases in the stock allocation and future S&P 500 returns.

Brown and Cliff (2005) also use the Investor's Intelligence sentiment index. Their methodology includes the use of Fama and French (1993) portfolio regressions on the DJIA stocks for the period 1963-2000 and the use of pricing errors from a fundamental valuation model developed by Bakshi and Chen (2005) to estimate the effect of sentiment on deviations from estimated fundamental value covering the period 1979-1998. They find that sentiment levels are significantly negatively related with future two to three year horizon market returns. Consistent with their earlier paper, Brown and Cliff (2004), they find sentiment has little predictive power for short term returns. In this earlier paper, they use VAR models with bullish-bear spreads from the Investor's Intelligence sentiment index as well as from the American Association of Individual Investors as well as a number of indirect measures of sentiment. These measures include advances and declines in volume, changes in margin borrowing, changes in short interest, the odd-lot ratio, the CBOE equity put/call ratio, a volatility measure, the closed-end fund discount, fund flows, and IPO activity. Extracting the common sentiment elements using a Kalman filter and principal components from these measures, they find no short-run predictability of returns for weekly and monthly time frames. Contrary to findings, their 2005 results show that sentiment has the most influence on the returns for large growth stocks rather than the smaller stocks.

Baker and Wurgler (2006) examine the effect of sentiment on the cross-sectional variation in returns using an annual index constructed from six indirect technical factors associated in past studies to serve as a proxy for sentiment. These factors are the closed-end fund discount, NYSE share turnover, the number of IPOs, the average first-day returns on IPOs, the equity share in new issues, and the dividend premium. Using this index both pre and post orthogonalization for macroeconomic factors they perform portfolio sorts and Fama and French (1993) high-low portfolio return regressions as testing methods. For monthly return horizons they use data from the merged CRSP-

Compustat database for 1962-2001; for annual return horizons they use CRSP data from 1935-2001. After testing and eliminating risked based explanations they conclude that sentiment has the strongest effects on stocks that are characterized as small, young, highly volatile, unprofitable, non-dividend paying, extreme growth, or distressed.

Kumar and Lee (2006) gain access to a large database of investor trading transactions for more than 60,000 individual investors for the time period 1991-1996. Following noise trader models (Bodurtha, Kim and Lee (1995), Barberis, et al. (2005)) where individual investor sentiment or time varying preferences can affect returns, they find evidence that sentiment does affect returns. Individual investors systematically trade together and in common sets of stocks leading to return comovement or a common directional component beyond that explained by changes in fundamental factors. They develop a buy and sell dollar volume imbalance index, which measures whether investors are net buyers or net sellers for a given period, as a unique measure of sentiment and use portfolio sorts and regressions controlling for the Fama and French factors of RMRF, SMB, and HML as well as momentum, macroeconomic factors, and earnings expectations. This particular group of investors tends to hold and trade stocks characterized as small cap, value (High B/M), lower-priced, and have lower institutional holdings. These stocks also tend to have higher costs of arbitrage as proxied by the residual from a CAPM model denoting idiosyncratic risk.

2.5 DIVIDENDS PLUS REPURCHASES AS A PAYOUT FACTOR

A further consideration in estimating the effect of sentiment is the use of dividends in some form as a control or valuation factor. Numerous past studies with some exceptions have found the dividend yield to be a predictor of future returns with increasing power over longer horizons[1]. However these studies usually use sample time periods ending prior to the mid 1990s. Goyal and Welch (2003) document the loss of predictive power of the dividend yield in the 1990s. Fama and French (2001) report that the fraction of dividend paying Compustat firms fell from 67% in 1978 to 21% in 1999. Baker and Wurgler (2004) find four distinct trends in the rate of dividend initiations and omissions between 1963 and 2000. Boudoukh, et al. (2007) find that the total dollars of dividends paid experienced a structural break in the late 1980s and find that the more inclusive total payout yield measure composed of dividends plus repurchases divided by market capitalization shows no such structural break. They find an increasing percentage of repurchases in payouts (dividends + repurchases) beginning in 1984 and reaching approximate equality with dividends in the late 1990s and early 2000s. Their explanation for the increase in repurchases is "… the institution of SEC rule 10b-18 in 1982, which provides a safe harbor for firms conducting repurchases from stock price manipulation charges." Further evidence is provided by Brav, et al. (2005) who in a survey of 384 financial executives find that repurchases are now favored because they are more flexible than dividends and because they can be used to time the market or to increase earnings per share. Boudoukh, et al. (2007) find the payout yield is a significant time-series and cross-sectional predictor of equity returns while the dividend yield has lost predictability

[1] Examples include Campbell and Shiller (1989), Hodrick (1992), and Lewellen (2004).

power. They also find that the net payout yield which adjusts the payout yield for issues [(dividends + repurchases – issues)/market capitalization] has even stronger predictive power than the payout yield. They use several different methods for computing the dividend, repurchase, payout, issue and netpayout yield measures with similar results between methods. The first two methods use dividends, repurchases, and issues reported in annual Compustat income statement, balance sheet, and statement of cash flow and differ only in the treatment of treasury stock. The other methods use CRSP data; the first method is similar to the method for dividends, repurchases, payout, issues, and netpayout used in this paper and documented in Table 2 and Table 79; the second method uses the change in market capitalization and backs out the effect of price increases or decreases to compute repurchases and issues. The benefit of using the CRSP data is the monthly periodicity of the yield measures versus annual for the Compustat data. The reported test results use the yield measures developed using the CRSP data.

3. DATA AND VARIABLES

3.1 DATA

The full sample period is November 1987 through December 2005 (the available period for the firm level cross-sectional analysis data from Research Insight's (RI) Compustat database and for the American Association of Individual Investors (AAII) asset allocation sentiment measures) with two sub-periods for robustness tests as November 1987-December 1996 and January 1997- December 2005. The sub-periods are selected by dividing the sample period approximately in half thus yielding 110 monthly observations in the first sub-period and 118 in the second for a total of 218 observations. An additional sample period from March 2001 to December 2005 represents the available time frame for the eight monthly Yale ICF investor confidence measures. The sample period for the Baker-Wurgler sentiment index measures covers the time period from September 1989 to December 2004 with two sub-periods divided at December 1996 so as to be as consistent as possible with the AAII and II sub-periods. The full sample period in this study is preferable to those used in many earlier studies because it includes the full cycle of the stock market bubble with a top reached in 2000 and the subsequent multiyear correction. Consistent with prior studies, the sample is composed of all NYSE, AMEX, and NASDAQ firms included in both the Compustat annual file of active and research firms and the CRSP monthly return file. The firms in CRSP are selected as all NYSE, AMEX, Nasdaq listed firms with share codes 10 and 11 representing ordinary common shares. This selection excludes, for example, exchange traded funds, American trust components, ADRs, SBIs, unit trusts, closed-end funds, fund companies, REITS, and firms incorporated in another country. Next the CRSP firms are matched to Compustat firms using the first 6 digits of the CUSIP number which is the common identification data element in both systems. This matching yields 14,569 firms for the full time period with an average of 6,264 firms in any given month. For the cross-sectional analyses which use accounting data from Compustat, firms are excluded if they don't have a positive value for book equity in Compustat for their previous fiscal year ending t-1. Previous year fiscal year end accounting data for year t-1 are merged using a six month lag for monthly returns starting in July of year t through June of year t+1. The six month lag is used so that the accounting information is known before the return periods. The same matching process is used for the annual Baker and Wurgler sentiment measure with monthly returns.

3.2 SENTIMENT MEASURES

It will be helpful to refer the listing of sentiment variable names and short descriptions in Table 1 while reading this section.

(Insert Table 1)

Investor's Intelligence (II) Advisor Sentiment Index

This advisor sentiment measure is published weekly by Investor's Intelligence[2] and is based on a categorization by editors of over one hundred independent advisory services/newsletters as bullish, bearish, or neutral (See Figure 5).

(Insert Figure 5)

[2] http://www.investorsintelligence.com

The sentiment measure is available back to 1963. Continuity in the categorization system has been maintained the use of relatively few editors over the years. This service is the basis for the investor sentiment index used recently in Lee, et al. (2002) and Brown and Cliff (2005). Siegle (1992) reports that this index reflected a two-to-one ratio of bullishness to bearishness just prior the stock crash in October 1987 and then switched to a one-to-two ratio after the crash indicating the index's use as a contrarian indicator. This paper follows Lee, et al. (2002) and computes the index as the ratio of the number of bullish opinions to the sum of the number of bullish and bearish opinions as well as Brown and Cliff (2005) who use the bull-bear spread which is the percentage of bullish opinions less the percentage of bearish opinions. Also included is the percentage of bullish opinions in the last week of the month used by Fisher and Statman (2000). In addition I also use the percentage of bearish opinions and the percentage of neutral/ cautious opinions in the last week of the month. To ensure that the information in the earlier weeks of a month is not lost, a four week average of each measure is also used, thus generating a total of ten sentiment measures from II. Because these advisory letters are written by professionals to indicate the market outlook, they may better reflect professional sentiment than individual investor sentiment.

Baker and Wurgler's (2006) Sentiment Index

This sentiment measure is a annual composite index[3] developed by Baker and Wurgler (2006) using principal components analysis of six measures and their first lags used as proxies for sentiment in past papers: the closed-end fund discount, NYSE share turnover, the number of IPOs, the average first day return on IPOs, the equity share in new issues, and the dividend premium (See Figure 6).

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[3] Available to members at http://www.afajof.org/default.asp

(Insert Figure 6)

A second index is developed by orthogonalizing the first index for the macroeconomic variables of: growth in the industrial production index; growth in consumer durables, non-durables, and services; and for periods of recession. In their analysis the results from using the second index were qualitatively the same as those from using the first index. The inclusion of the the closed-end fund discount, the number of IPOs, and the average first day return on IPOs, may cause this index to tend to reflect individual investor sentiment more than professional sentiment. This paper uses both sentiment measures for testing.

The American Association of Individual Investors Indexes

Additional sentiment measures[4] come from the American Association of Individual Investors (AAII) founded in 1978 by James Cloonan, Ph.D. to support individual investors with investment education, research, and tools. Currently the AAII has approximately 150,000 members.

AAII Individual Investor Sentiment Index

AAII has surveyed members weekly since 1987 to measure the percentage of bullish, neutral, and bearish outlooks on the direction of the stock market over the next six months. Each member can vote only once in any weekly survey. The results of the survey are reported on Thursdays on their website. The survey asks members to respond to the following question: "I feel that the direction of the stock market over the next 6 months will be..." with the available answers of; Up - Bullish, No Change – Neutral, or Down – Bearish. The weekly history is available to members back to July 1987 as an

[4] Available to members at www.AAII.com

Excel file (See Figure 7). I follow the earlier literature discussed in the II section and use ten comparable sentiment measures.

(Insert Figure 7)

AAII Individual Investor Asset Allocation Index

AAII has surveyed members monthly since 1987 to measure the percentage of investment assets currently held in the five categories of stock mutual funds, stocks, bond mutual funds, bonds, and cash held including CDs, savings accounts, money market funds. The survey asks members to respond to the following question. "Please include all invested funds including self directed retirement plans, but only include amounts for those categories shown; do not include real estate investments or limited partnerships. What percent of your investment portfolio is in ... stock mutual funds, stocks, bond mutual funds, bonds, and cash (CDs, savings accounts, money market funds…)"? The monthly history is available to members back to November 1987 as an Excel file (See Figure 8). The sentiment measures include the percentages of the investors' portfolios allocated to stocks, bonds, and cash as well as the spread between the percent allocated to stocks and the percent allocated to bonds in an attempt to replicate the bull-bear spreads for the AAII and II sentiment measures.

(Insert Figure 8)

Yale School of Management Stock Market Confidence Indexes

Eight additional indexes come from the Yale University International Center for Finance.[5] The following is a condensed version of the information available on the ICF website. The ICF created two classes of investor confidence indexes; the first class of indexes is based on samples of wealthy individual American investors and the second

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[5] Available at http://icf.som.yale.edu/financial_data/behavioraldsets.shtml

class of indexes is based on samples of institutional investors. Each class of index seeks to capture four categories of investor confidence; One-Year Confidence, Buy-On-Dips Confidence, Crash Confidence and Valuation Confidence. These indexes were created under the direction of Dr. Robert Shiller, a well known and respected financial economist and professor at Yale. Starting With October 1989 the institutional surveys are performed every six months to April 2001, while the individual surveys are performed every six months starting with April 1999 to April 2001. Two earlier individual surveys are reported for October 1989 and October 1996. After July 2001 both classes of surveys are performed and reported monthly with the results reported as six-month moving averages. The historical results of the surveys are reported on the Yale International Center for Finance website. The investor samples are randomly drawn with approximately 100 participants in each survey. The institutional sample is selected from the investment managers section of the Money Market Directory of Pension Funds and Their Investment Managers. The monthly individual sample is a selection of high-income individual Americans from Survey Sampling, Inc. Prior to 1999, the individual sample was purchased from W.S. Pontoon, Inc. The survey questions have been consistent over time. Each of the four indexes is formed from one question that seeks to capture a specific aspect of investor confidence. The Valuation Confidence Index measures the percentage of investors that think the market is not too high (See Figure 9).

(Insert Figure 9)

The Crash Confidence Index measures the probability of a stock market crash similar to the crashes on October 28, 1929 or October 19, 1987 in the next six months (See Figure 10).

(Insert Figure 10)

The One-Year Confidence Index measures the percentage of investors that expect the Dow to increase in the next year (See Figure 11).

(Insert Figure 11)

The Buy-On-Dips Confidence Index measures the percentage of investors that expect the Dow to rebound the following day if the Dow were to fall 3% tomorrow (See Figure 12).

(Insert Figure 12)

These investor sentiment or confidence indices add another eight sentiment measures for testing for a grand total of thirty-four sentiment measures.

3.3 PAYOUT YIELD MEASURES

The computations for these variables are documented in Table 2; it may be useful to refer to that table while reading this section. Payout yield and issue yield measures are developed from CRSP data in a manner following Boudoukh, et al. (2007) . They report similar results from the use of yield measures developed from annual accounting data from Compustat or monthly data from CRSP. Using the CRSP data generates advantages over the use of Compustat data. First, using the CRSP data provides 218 monthly observations for the sample period versus 20 annual observations from Compustat better reflecting the information available to investors on a timelier basis. Second, the dividend amounts from CRSP include special cash dividends in addition to the ordinary dividends available in CRSP, so the total cash flow to investors is better captured. Third, the CRSP repurchases data also includes companies purchased by other public firms, taken private, or delisted for financial difficulty while the Compustat data only contains shares repurchased by the firm itself. The use of the CRSP data better follows the "total cash flow to and from investors concept" of Boudoukh, et al. (2007) than the use of Compustat data.

(Insert Table 2)

Using the 14,569 sample firms, the cash flow measures are calculated at the firm level and then summed for matching with the CRSP portfolio value-weighted and equal-weighted returns. Dividends are calculated by multiplying adjusted shares outstanding and adjusted dividends per share, both of which are adjusted historically for stock splits and stock dividends. These dividends include all cash dividends and not just ordinary dividends. Repurchases and issues are computed by multiplying the monthly change in adjusted shares outstanding by the average adjusted stock price for the month or just the beginning price if the ending price is missing or just the ending price if the beginning price is missing. Decreases in the adjusted shares outstanding are treated as repurchases while increases are treated as issues. Monthly portfolio level dollar dividends, repurchases, and issues amounts are computed by summing the firm level dollar amounts and then computing a twelve month moving sum at the portfolio level. Yields measures are computed at the portfolio level by the dividing the twelve month moving summed dollar amounts by the portfolio month end capitalization resulting in monthly yield measures. Payout yield is computed by dividing the sum of dividends and repurchases by the month end capitalization. Net Payout yield is computed by dividing (payout less issues) by the month end capitalization. (See Figures 13 – 16) The 12 month moving sums are plotted in Figure 13. Issues reached a remarkable high right at the peak of the stock market bubble in late 1999 and early 2000. Repurchases grew to exceed dividends in 1996 and reached an initial peak in the late 1999 and early 2000 before falling to a low in the 2002 and 2003 time frame before climbing again through 2005. From 1996 to 2005 repurchases represented larger dollar amount of cash flows to investors than dividends.

(Insert Figure 13)

Figure 14 shows these flows as a yield percentage along with the 10-year U.S. Treasury bond yield for reference. On a yield basis issues reached 12% at the peak in 2000. The growing importance of repurchases relative to dividends is clearly seen in the payout yield over time.

(Insert Figure 14)

Figure 15 depicts the payout yield, the net payout yield and the 10-year US Treasury bond yield. The net payout yield is approximately 0% from 1991 to 1995 when it begins a fall to approximately -8% in 2000 and then climbs back to approximately 0% at the end of 2001 and fluctuates around 0% through 2005. The payout yield reaches a minimum in 2000 and up to that point appears to somewhat track the 10-year bond yield with a fairly consistent gap until 2001 when gap decreases substantially as the market corrected.

(Insert Figure 15)

Figure 16 shows the payout yield, the dividend yield and the 10 year bond yield. Repurchases in dollars and on a yield basis represents an increasing portion of the cash flow to investors compared with dividends. Yields constructed from these measures are used as control variables in the sentiment test models.

(Insert Figure 16)

3.4 CHARACTERISTICS OF VARIABLES AND TESTS FOR NON-STATIONARITY

Table 3 presents the basic statistics of count, mean, minimum, maximum, median and standard deviation for the monthly dividend, repurchases, payout, issues, netpayout, risk-free rate, and return variables for the full sample period (section A) from 11/1987 to 12/2005 as well as the two sub-periods (section B) from 11/1987 to 12/1996 and (section C) from 1/1997 to 12/2005. An additional sample period (section D) is presented for the period from 3/2001 to 12/ 2005 for which the Yale ICF sentiment measures are available on a monthly basis.

(Insert Table 3)

Table 4 presents basic statistics for the AAII and II monthly sentiment variables for the sample period (section A) as well as the two main sub-periods (sections B & C) and the sample period (section D) for the Yale ICF sentiment measures. No statistics are presented for the 20 annual observations of the Baker-Wurgler sentiment indexes.

(Insert Table 4)

Table 5 presents the results of the Dickey and Fuller (1979) tests for non-stationarity and partial auto correlations up to four lags for the monthly dividend, repurchases, payout, issues, netpayout, risk-free rate, and return variables for the full sample period. The yield variables and the risk free rate variables exhibit high first period autocorrelation. For the variables found to be nonstationary, the natural logs and first differences are presented in Table 6. In order to achieve stationary variables, first differences are used for the risk-free rate, payout yield, and issue yield. The differenced yield and return variables exhibit a decreased first lag autocorrelation and show some autocorrelation at lag 3. The CRSP portfolio value-weighted and equal-weighted return variables are stationary without logging or first differencing and show no autocorrelation.

(Insert Tables 5 and 6)

Table 7 presents the results of the Dickey-Fuller unit root tests and partial auto correlations up to four lags for the monthly sentiment variables. Of the AAII and II sentiment variables, only the asset allocations to stock and cash and the allocation spread required first differencing to achieve stationarity. The sentiment variables show significant autocorrelation at lag 1.

(Insert Table 7)

Table 8 presents the results of the Dickey-Fuller unit root tests and partial auto correlations up to four lags for the monthly Yale ICF sentiment variables. All eight variables were first differenced in order to achieve stationarity. Before differencing these variables show high first order autocorrelation.

Tables 9-15 present Pearson correlation coefficients and their significance for the sentiment, yield, and return. As presented in Table 9, there is no significant correlation between the primary model variables of CRSP portfolio value-weighted and equal-weighted returns, changes in the risk-free rate, changes in the payout yield, and changes in the issue yield. The correlations for the sentiment variables used in the models with the yield and return variables are presented in Table 10. The highest correlations range between 0.55 and 0.51 and are between diibear, diispread, diibb and the return variables. Table 11 presents similar correlation information between the Yale ICF confidence variables and the yield and return variables. There is no significant correlation between these variables. Table 12 presents similar information for the Baker-Wurgler sentiment index. Interestingly the differenced BW variables used in our models show the highest levels of correlation with the yield and return variables with dsf2raw showing the highest correlation of 0.91 with equal-weighted returns. However these correlations cannot be considered valid since we are forming 183 monthly variables from 20 observations. Tables 13 and 14 present the correlation coefficients between the AAII and II sentiment variables. Table 13 presents the correlation information in the conventional matrix format while Table 14 presents the information sorted by the correlation coefficients for each variable which I find to be the more useful format in reviewing a large number of correlations. In Table 14 one can easily see the strongest correlations between the variables. As expected there are quite a few very high correlations between the variables. While I expected to find strong correlations between some of the AAII sentiment variables and some of the II sentiment variables, this is not the case. Primarily, the AAII asset allocation variables are highly correlated with one another; the sentiment measures are primarily correlated with one another; and the II advisor sentiment measures are primarily correlated with one another. One explanation may be that these variables really do reflect the views of different groups of investors. Perhaps the AAII asset allocation variables don't reflect sentiment, but simply indicate that this group of investors fails to rebalance their portfolios as valuations change. If so, then the allocation variables may actually represent a form of relative valuation somewhat like the payout yield. Table 15 presents the correlation information between the Yale ICF confidence variables. The highest coefficients range from 0.54 to 0.58 and involve dnvalinsa, dnyrinsa, dnyrinda, and dndiinsa. (Insert Tables 9 thru 15)

4. TIME SERIES ANALYSIS OF STOCK RETURNS USING VECTOR AUTOREGRESSION MODELING

Brown and Cliff (2005) use data reflecting time series deviations from a fundamental value model of the DJIA supplied to them by Bakshi and Chen (2005). This model is developed for firm level valuation, but could possibly be used for portfolio valuation. The Brown and Cliff (2005) model is a discounted cash flow model assuming that earnings per share growth follows a mean reverting process with a fixed percentage of earnings paid as dividends and with the use of the term structure to infer the discount rate. Unfortunately it is difficult to evaluate this model because the out-of-sample test period from 1985 to 1998 was overall a steadily growing bull market and their use of the prior three years moving average to develop parameters might not work over a longer period that includes significant corrections. The development of a fundamental value model with good predictive power has been shown to be quite difficult. Goyal and Welch (2006) perform a comprehensive analysis of factors used in prior papers over various sample periods to predict the equity premium. Although certain factors have predictive power in certain time periods, none of them have any significant predictive power in all periods beyond the simple use of the historical mean. While they did test dividends yields, they did not test the payout yield using dividends plus repurchases.

Boudoukh, et al. (2007) find the power of the payout yield in prediction is quite high with an R^2 of 12.1% and with the R^2 of the combined payout yield and issue yield (net payout yield) model at 26.2%. These models maintain their power over the full sample period in contrast to the dividend yield model which loses significance in the full sample time period but does have power prior to 1982 with an R^2 of 13%. There is some evidence that stock prices follow a long-term mean reverting process. Lamont (1998) finds that the price itself is the best predictor of long horizon returns indicating that prices may follow a mean reverting growth process. The price maintains its power at one year and five year horizons even when the other explanatory variables are removed from the VAR. Past work is highly suggestive of mean-reversion in the growth rate of prices but testing even 10-year horizons results in low power because of the small sample of non-overlapping ten-year periods available.[6] Actually the Bakshi and Chen (2005) model would converge to a mean reverting growth rate model if a sufficiently long time horizon was used for parameter development. There is some evidence that earnings follow a mean-reverting growth rate process; Chan, et al. (2003) test the persistence of growth rates and find that abnormal growth rates of firms tend to return to median growth rates generally within three years. With the exception of inflation, competitive market forces and the tendency of economic forces to seek equilibrium, mean reversion of cash flows and discount rates is not an unreasonable assumption. In the U.S. after the inflation peak in the 1970s, increased knowledge of inflation as a monetary phenomenon and political and institutional forces may have held inflation to a mean reverting process and may do so in the future. The use of the payout yield and the issue yield which proxy the cash flows between the market portfolio and all investors as well as incorporating the current price may tend to mean revert over time and may be useful relative measures of stock market valuations.

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[6] See Poterba and Summers (1988), Fama and French (1988a), Cecchetti, Lam and Mark (1990), Kim, Nelson and Startz (1991), and Balvers, Wu and Gilliland (2000) for this literature.

Following the work of Lamont (1998), Campbell and Shiller (1988), Campbell (1991), Hodrick (1992) and Campbell, Lo and MacKinlay (1997) concerning the predictability of dividend yields, a vector autoregressive model (VAR) is chosen for this time series analysis. The VAR system is the optimal model choice because it shows contemporaneous relationships between variables and lags including bi-directional relationships, jointly estimates coefficients and the elements in a variance-covariance matrix of innovations and generates standard errors corrected for heteroscedasticity (Hansen (1982)). As part of the VAR model estimation process, Johansen cointegration tests are used to test for cointegration and Granger-causality tests are performed to see if causality is rejected from the sentiment variable to the other variables.

The specification of the order in the vector autoregressive process is determined using the corrected Akaike information criterion (AICC) and partial autoregressive coefficients. The above referenced papers used a first order autoregressive process. Testing is performed primarily to determine the effect of the sentiment measures on the CRSP portfolio value-weighted and equal-weighted returns.

The VAR model is specified as follows:

$$\mathbf{y}_t = \delta + \sum_{i=1}^{p} \Phi_i \mathbf{y}_{t-i} + \varepsilon_t \qquad (1)$$

where $\mathbf{y}_t$ is a vector of state variables consisting of the CRSP portfolio return *r*, the change in the short term risk free rate *drf*, the change in the payout yield *dpayout*, the change in the issue yield *dissue*, and the change in the sentiment measure *dsentiment*.

The variables used in the VAR model are consistent with earlier dividend yield testing (Campbell (1991), Hodrick (1992)) except with the replacement of the dividend yield with the payout yield and issue yield and including the CRSP portfolio equal-weighted and value-weighted returns, the change in the short-term interest rate represented by the one-month T-bill rate and obtained from Ken French's website, and the sentiment measure as earlier described. Using the payout yield and the issue yield each as variables instead of combining them into a netpayout yield allows the VAR system to explicitly show the relationship of each variable on returns, the risk-free rate as well as each other.

Multiple iterations of the equation are estimated substituting the applicable return measure and sentiment measure resulting in approximately 68 estimations for each time period. The system is estimated using least squares because the MSE-F test statistic for the out-of-sample forecast error requires least squares estimation along with variable stationarity. The in-sample fit of the system is estimated by the F-test significance of the R^2s of the single equations in the system along with the corrected Akaike information criterion (AICC). The out-of-sample performance of the system is determined by testing the one month ahead forecast error between a restricted model (base model) without sentiment to a unrestricted model which includes a sentiment measure. This test uses the MSE-F statistic used by Goyal and Welch (2006) and developed by McCracken (2004) with methodology further described in Clark and McCracken (2005). The test statistic is similar to Theil's inequality coefficient and is a measurement of the change in the forecast mean squared error (MSE) from the restricted model (base model) to the unrestricted model in a form which can be compared to a developed critical value to see if the change is significantly different from zero. The test statistic is calculated as:

$$\text{MSE-F test statistic} = (P - \tau + 1) \times \frac{MSE_1 - MSE_2}{MSE_2} \times \left(\frac{R}{P}\right)^{.5} \qquad (2)$$

MSE_1 is the mean squared error of the base model forecast, MSE_2 is the mean squared error of the forecast with sentiment, P is the number of out-of-sample observations and τ is the forecast horizon, R is the number of observations used in estimating the model from which the first forecast value is predicted. Critical values developed by McCracken[7] are used to determine the significance of the MSE-F test statistic. The appropriate critical values can found in the McCracken tables by confidence level (90%, 95%, or 99%), by the number of additional variables in the unrestricted model (called k_2), and by the ratio or R/P (called π). Following McCracken the final term $\left(\frac{R}{P}\right)^{.5}$ corrects for the small P relative to R and is included as π approaches zero.

4.1 VAR MODEL LAG SELECTION

The next step in the analysis using VAR is to select the number of lags to include. I follow the previous literature in selecting the number of lags that minimizes the corrected Akaike Information Criterion (AICC). The AICC is a measure of fit for a VAR similar to an R^2 for univariate and multivariate regressions. While the measure can be used for comparison between models the strength of the fit in isolation is not necessarily

[7] An excel file of the developed MSE-F critical values by McCracken can be found at http://www.kansascityfed.org/econres/staff/tec.htm

easily evaluated. The base model is estimated for CRSP portfolio value-weighted and equal-weighted returns without any including any sentiment measures for lags 1 through 4. Tables 16 through 19 show the results of these estimations.

(Insert Table 16)

In Table 16, it can be seen that the AICC is minimized with three lags for both value-weighted and equal-weighted returns so a VAR (p=3) model is selected for the sentiment analysis. All models effectively achieve white noise in the residuals as measured by the Portmanteau Q statistic, except for the value-weighted return model with one lag. The single equations R^2s represent the fit of each of the single multivariate regression equations and are presented for comparison with the upcoming sentiment regressions. It can be noted that two significant R^2s for equal-weighted returns are shown for lags 2 and 4, while the rest are insignificant. The single equation R^2s are all significant for changes in the risk free rate, the payout yield and the issue yield.

Table 17 shows the forecast standard errors (RMSE) of the one month ahead forecasts and is presented to show that the errors while virtually the same for lags 1-4 are mostly minimized at lag 3 for changes in the risk-free rate, the payout yield, and the issue yield.

(Insert Table 17)

Other forecast statistics for the VAR(3) base models are presented in Table 18. The strength of the return forecasts can be seen in the root mean squared error and the upper and lower limits at the 95% confidence level. At this confidence level the forecast for value-weighted returns ranges from -7.24% to 9.16 and for equal-weighted returns from -9.32% to 11.59%. Considering the in-sample means for these returns are 1.06 and

1.31, the one-month-ahead forecast is likely not precise enough for investors. As the forecast horizon increases to 12 months, the forecast error increases with each added month (not shown).

(Insert Table 18)

Table 19 presents the proportion of the VAR base (value-weighted and equal-weighted returns) models forecast standard error attributable to each variable in the model. Virtually all of the forecast error for returns is attributable to the returns themselves. This is also true for changes in the risk-free rate. The value-weighted returns contribute 25% to the change in the payout yield error (13% for equal-weighted returns) with the remaining error attributable to the change in payout yield variable itself. Similarly the returns contribute 25% (value-weighted) and 22% (equal-weighted) to the changes in issue yield error. Changes in the risk-free rate do not contribute much to the prediction error in the other variables.

(Insert Table 19)

4.2 VAR MODELING RESULTS

The results of the unrestricted VAR models including the AAII and the II sentiment measures are presented in Tables 20-25 for equal-weighted returns and Tables 26-31 for value-weighted returns. Tables 32-33 present the models including the Baker-Wurgler sentiment index and Tables 34-35 present the models including the Yale University International Center for Finance investor confidence indexes. While reading this section, it will be useful to refer to Tables 1 and 2 for the short description of each variable name. In all of the tables the applicable base model is presented for comparison. For the AAII and II series of tables, the first table presents the AICC, the single equation statistics and the result of the Granger-Causality test. The numbers are listed for the variables where causality could not be rejected. Johansen cointegration tests were run as part of the VAR estimations and no cointegration was found for any of the models.

Table 20 presents the results for the equal-weighted return models for the full sample period from 11/1987 to 12/2005. Adding each sentiment variable increases the AICC from the base model indicating a somewhat poorer fit; however the significance of the decrease in fit is unknown. The only sentiment variables that increase the significance of the return R^2 are daastock (changes in the AAII % allocation to stocks), daacash (changes in the AAII % allocation to cash), and daaspread (changes in the spread between allocation to stocks and the allocation to bonds). The daaspread measure is highly correlated with the daastock measure and could be expected to produce similar results. In addition, causality could not be rejected for these variables and for the additional variables of the asbear4 (4-week average of AAII bearish sentiment), the asspread4 (4-week average AAII spread between bullish and bearish), and the asbb4 (4-week bullish to the sum of bullish and bearish ratio). Adding sentiment measures generally increases the R^2s of the change in payout yield ratio but not the changes in the risk-free rate or the changes in the issue yield.

(Insert Table 20)

Table 21 presents the same information for the first sub-period from 11/1987 to 12/1996. Again we see a decrease in the AICC with the addition of a sentiment variable. Causality can be rejected for returns for all of the sentiment measures. The R^2 for returns is 0.28 in the base model and is significant at the 99% level. The R^2s for returns don't improve much from the base model. If we were to only look at this time period, we might conclude that we could significantly predict equal-weighted returns using the base model and that sentiment didn't significantly affect equal-weighted returns.

(Insert Table 21)

Table 22 presents the same information for the second sub-period from 1/1997 to 12/2005. Again the AICC decreases from the base model with the addition of sentiment variables. In this time period the base model R^2 for returns is not significant. However with the addition of each the sentiment variables of daastock, aabond, daaspread and asbear4, the R^2s increase and become significant. The R^2s for these four models range from 0.22 to 0.26 which is fairly high for returns. While not directly comparable, Boudoukh, et al. (2007) report an R^2 of 0.26 using a netpayout yield composed of the payout yield less the issue yield. Causality cannot be rejected in this time period for three of the four sentiment variables for which causality could not be rejected in the full time period; daastock, daacash, and asbear4. In addition, causality cannot be rejected for aabond. For this time period it appears that sentiment did significantly affect equal-weighted returns as measured by these four sentiment variables. This makes sense as this time period includes the big run-up in Nasdaq stocks and the subsequent fall.

(Insert Table 22)

However, achieving a good in-sample fit with a relatively high R^2 doesn't necessarily mean that the variable can be predicted with a high level of confidence. Now we look at the out-of-sample forecast results for equal-weighted returns for the same time periods and sentiment variables. Tables 23- 25 list the forecast standard errors, usually referred to as the root mean squared errors (RMSE) which are the square roots of the mean squared errors (MSE) as well as the computed MSE-F statistics for the equal-weighted return and other variables. Table 23 presents the results for the full time period, Table 24 for the first sub-period and Table 25 for the second sub-period. For all three tables, we see no significant improvement in the forecast error with the inclusion of any sentiment variable for any time period. Focusing on the five sentiment measures with the strongest in-sample performance (daastock, aabond, daacash, daaspread, and asbear4), we see their MSE-F test statistics reach their highest levels in the second sub-period, but they are not significant at the 90% level. Interestingly the MSE-Fs for daastock and daaspread also reach their highest level for changes in the payout yield in the second sub-period, but also are not significant at the 90% level. The payout yield might also be viewed as a measure of relative value so there is some indication that the change in the percentage of an individual investor's portfolio allocated to stock may have some prediction power perhaps for a longer time periodicity than one month for equal-weighted returns. This measure is a contrary indicator (not shown) leading to the conclusion that the investors responding to the AAII Asset Allocation Survey were not rebalancing their portfolios as stock values increased or were actually increasing their allocation to stocks. There is further support for this conclusion in figure 8 where the allocation to stocks reached an all time high in year 2000 during the depicted time period.

(Insert Table 23)

(Insert Table 24)

(Insert Table 25)

Tables 26 through 31 present the in-sample information for value-weighted returns. The results presented on Table 26 show an increase in the AICC indicating a decrease in the model fit. None of the models generate a significant R^2 for the value – weighted return single equations, however causality from sentiment to returns cannot be rejected for the sentiment variables; iispread (Investors' Intelligence percent bullish less percent bearish), iibb (Investors' Intelligence percent bullish divided by the sum of percent bullish and percent bearish ratio), iibear4 (4 week average of Investors' Intelligence percent bearish), iispread4 (4 week average of iispread), and iibb4 (4 week average of iibb). The single equation R^2s increase somewhat for the change in payout yield but not the other variables.

(Insert Table 26)

Table 27 presents results for the first sub-period from 11/1987 to 12/1996 and shows a similar decrease in the AICC when sentiment variables are added to the base model. There are no significant single equation R2s for value-weighted returns for this period and causality from sentiment to returns can be rejected for all sentiment variables.

(Insert Table 27)

However, as presented in Table 24, for the second sub period from 1/1997 to 12/2005 there are some single equation returns R^2s with an increased significance from the base model. The sentiment variables for these equations are daastock, aabond, daaspread, iibear, iibb, iibear4, iispread4, and iibb4. The highest R^2 of 0.29 is for aabond while the R^2s range from 0.23 to 0.25 for the others. Causality cannot be rejected for aabond, iibear, iispread, iibb, iibear4, iicorr4, iispread4, and iibb4. As with equal-weighted returns we find some indication that sentiment is a factor in this bubble period. It also appears that while the AAII asset allocation measures were more significant for equal-weighted, the II advisor sentiment measures become significant for value-weighted returns in addition the AAII bond allocation. This indicates that the AAII asset allocation and sentiment indexes tend to measure individual investor sentiment and this sentiment seems to impact smaller stock returns (equal-weighted) more than larger stock returns (value-weighted). Larger stock returns seem to be more affected by sentiment as measured by the II advisors index and the AAII bond allocation.

(Insert Table 28)

Tables 29-31 present the out-of-sample forecast results for value-weighted returns similar to Tables 23-25 for equal-weighted returns. None of the MSE-F statistics for any of the variables are significant at the 90% level for any of the time periods indicating that adding sentiment does not add any significant prediction power to the restricted base model. However, during this second sub-period or the bubble period the aabond variable which had the highest single equation R^2 also has the highest MSE-F although still not significant at 90%.

(Insert Table 29)

(Insert Table 30)

(Insert Table 31)

Table 32 presents the in-sample VAR and single equation results for the Baker-Wurgler sentiment index for both equal-weighted and value-weighted returns. For both sets of returns and for all time periods adding the sentiment variables decreases the AICC indicating an increased model fit. The single equation R^2s for equal-weighted returns improve significantly from the base model for the full time period, however it appears that this improvement is mostly due the first sub-period since the R_2s for the second sub-period are not significant. This result is opposite from the AAII and II results where sentiment had a more significant effect in the second sub period. Causality to equal-weighted returns cannot be rejected for both sentiment measures for the full period and for the raw measure in the 2nd sub period. The loss of significance of sentiment during the second sub-period or the bubble period considering the AAII and II results suggest that the Baker-Wurgler measure is only applicable to the first sub-period for equal-weighted returns.

None of the single equation R^2s for the value-weighted returns are significant for any time period and causality from sentiment to returns is rejected for all time periods.

(Insert Table 32)

As presented in Table 33, the MSE-F statistics are not significant in any time period indicating the addition of the sentiment variables adds no prediction power to the base model.

(Insert Table 33)

There are an insufficient number of observations in the monthly Yale ICF index data for sub period testing so only the time period from 3/2001 to 12/2005 is presented in Tables 34 and 35. The AICC decreases somewhat from the base models for equal-weighted and value-weighted returns indicting a somewhat weaker fit. The models for equal-weighted returns including the sentiment variables dnyrinda and dnyrinsa show stronger and more significant single equation R^2s at 0.43 and 0.44 than the base model's 0.33. These sentiment variables indicate the change in the percentage of individual investors and institutional investors who believe the market will rise over the next 12 months. The models for value-weighted returns have no significant R^2s including the base model. Causality is rejected for all models.

(Insert Table 34)

The results of the MSE-F statistic test on table 39 indicate that there is no significant difference in the forecast containing the sentiment variables from the base models for either equal-weighted or value-weighted returns.

(Insert Table 35)

The VAR parameter estimates for the full sample period and the two sub periods are presented in Tables 36-39, for the model which has the strongest MSE-F statistic for equal-weighted returns. The AAII allocation to stocks sentiment factor is a significant factor for returns for the full sample period at lags 2 and 3, for the first sub period at lag 3, and for the bubble period at all three lags. The increase in the significance of the sentiment lags in the 2nd sub period indicates that sentiment played a much stronger role in the bubble period. Sentiment is also a significant factor in the payout yield which can be considered a measure of valuation. In particular sentiment is a significant contrarian factor in the 2nd sub period. The significant factors in sentiment are its own lags and returns at one lag. The significant factors in the issue yield are its own lags, returns, the payout yield, and sentiment. During the bubble period, in which the issue yield rose and fell with the market, the payout yield is significantly negative indicating that issues are high when the payout yield is low or when stock valuations are high. This result provides support for the behavioral theory of managerial timing of the market for issues of stock Baker and Wurgler (2000). Overall these results indicate that sentiment is a factor is moving stock valuations to highs and lows that are subsequently reversed indicating over and under valuation. There is some feedback into sentiment from returns. This evidence is consistent with the overreaction theory. Issues ebb and flow with stock over and under valuations consistent with managerial timing.

However, as previously documented, these results don't lead to an ability to predict the market over the next month. Figures 17 thru 24 present forecast plots of the VAR system state variables using the AAII allocation to stocks sentiment factor. The twelve months of 2005 are predicted from the sample period ending in 2004. In every plot the predicted values quickly return to the mean and the 95% confidence band widens. These results indicate that the mean is likely to be the best expected value for the next month but the variation is so large that actually achieving that forecast is unlikely on a monthly basis.

4.3 VAR MODELING CONCLUSION

In this chapter VAR models with 3 lags are used to test for improvement, from a base model, in the in-sample fit and the out-of-sample forecast ability for monthly equal-weighted and value-weighted CRSP portfolio returns by the addition of 34 different sentiment variables for the full sample period and two sub periods. While the in-sample fits are significantly improved by the addition of many of the sentiment variables, the out-of-sample forecast ability is not significantly improved. The testing leads to the conclusion that the use of these sentiment measures will not assist in forecasting the next month returns. This evidence contributes to the literature concerned with the predictability of stock returns by adding the empirical testing of these 34 sentiment variables with a different model, with more complete yield measures in the base models, with different time periods and especially with a time period from 1/1997 to 12/2005 that includes the bubble period and with a out-of-sample forecast error test. The Yale ICF investor confidence measures have not been tested in the literature before to my knowledge. Sentiment may operate over longer time-frames than monthly periods so future research might include extending this type of empirical testing to a longer time periodicity such as quarterly time frames or semi-annual time frames. Unfortunately, even showing that sentiment has a significant relationship with returns or valuation measures doesn't necessarily indicate causality. Also, as pointed out by Goyal and Welch (2006), significant in-sample performance doesn't lead to prediction or forecast ability. They find no monthly forecast ability for returns just as I find no forecast ability for value-weighted returns, equal-weighted returns, or changes in the risk-rate, payout yield, issue yield, or any of the sentiment measures. These results indicate that sentiment is a factor is moving stock valuations that are subsequently reversed indicating misvaluation. There is a feedback to sentiment from returns at a one month lag. Overall, this evidence is more consistent with the overreaction theory than the risk-based theory. The evidence supports managerial timing of stock issues.

5. TIME SERIES ANALYSIS OF STOCK RETURNS USING GARCH MODELS

5.1 METHODOLOGY

This time series analysis follows Lee, et al. (2002) and uses GARCH estimation in order to analyze the effects of monthly changes in sentiment on monthly CRSP portfolio equal-weighted and value-weighted returns including the effects on the formation of conditional volatility. The GARCH model is specified as follows.

$$\begin{aligned} R_{it} - R_{ft} &= \alpha_0 + \alpha_1 h_{it} + \alpha_2 \Delta S_t + \alpha_3 dpayout12yld_t \\ &+ \alpha_4 dissue12yld_t + \alpha_5 Jan_t + \alpha_6 Oct + \varepsilon_{it} \end{aligned} \tag{3}$$

where $\varepsilon_{it} \sim N(0, h_{it})$ and R_{it} is either the monthly equal-weighted or value-weighted return on the CRSP portfolio of common shares as defined in the data description section, R_{ft} is the risk-free rate and is proxied by the one-month T-bill rate from Ken French's website, and ΔS_t is either the change or the percentage change in one of the thirty-two sentiment measures (see Table 1 for sentiment variable names and a short description). The percentage change is added to be consistent with Lee, et al. (2002); they used both the change and the percentage change with few significant differences. *dpayout12yld* is the change in the payout yield; *dissue12yld* is the change in the issue yield. Dummy variables for October and January are included in the monthly horizon estimation to capture the seasonal effects found in excess stock returns consistent with Lee, et al. (2002). The term h_{it} is defined in equation 4 and captures the formation of conditional volatility.

$$h_{it} = \beta_0 + \beta_1\varepsilon_{it-1}^2 + \beta_2\varepsilon_{it-1}^2 I_{t-1} + \beta_3 h_{it-1} + \beta_4 R_{ft} + \beta_5(\Delta S_{t-1})^2 D_{t-1} + \beta_6(\Delta S_{t-1})^2(1 - D_{t-1}) \quad (4)$$

β_0 is the time invariant portion of conditional volatility, $\beta_1\varepsilon_{it-1}^2$ is the time variant portion of conditional volatility, $\beta_2\varepsilon_{it-1}^2 I_{t-1}$ captures differences in the effect on the formation of conditional volatility of positive shocks versus negative shocks to returns with the dummy variable, I_{t-1} =1 if $\varepsilon_{it-1} > 0$ and equal to zero otherwise, $\beta_3 h_{it-1}$ captures lagged volatility, $\beta_4 R_{ft}$ controls for the volatility effects of inflation expectations (higher volatility is found in higher inflation periods), $\beta_5(\Delta S_{t-1})^2 D_{t-1}$ and $\beta_6(\Delta S_{t-1})^2(1 - D_{t-1})$ captures the different reactions of investors to the magnitude of changes in positive and negative sentiment. The dummy variable, I_{t-1} =1 if $\varepsilon_{it-1} > 0$ and zero otherwise, captures the effect of positive and negative return shocks on volatility. Lee, et al. (2002) finds negative shocks lead to greater increases in volatility than positive shocks. $D_{t-1} = 1$ if $\Delta S_t > 0$ and zero otherwise. As a robustness test, the analyses also are performed using current period changes in the sentiment factor terms in equation 4 with no significant difference in results. The contributions of this study are to extend the Lee, et al. (2002) empirical testing to monthly data from weekly data and to extend the empirical testing beyond the one measure from Investors' Intelligence (II) used by Lee, et al. (2002) to additional sentiment and confidence indexes from the American Association of Individual Investors (AAII) and Yale University International Center for Finance utilizing 32 sentiment variables. In addition, this study performs testing for a new time period, including two sub-periods, which include the stock market bubble period and a third period post-bubble. Base models are run for each return type and time period without the sentiment variables for comparison to the models including sentiment. Likehood ratio tests are performed to see if the sentiment models demonstrate significant improvement from the base models.

The study begins with testing for autocorrelation and normality. Durbin-Watson h-tests indicate that standardized residuals show autocorrelation and the Bera-Jarque statistic indicates non-normality in the preliminary diagnostic models. The Durbin-Watson test shows first order autocorrelation in the equal-weighted excess returns model ($p<0.0005$) and third order autocorrelation in the value-weighted returns model ($p<0.0057$). After the first finding of autocorrelation, the Durbin-Watson test is not suitable to indicate additional higher orders of autocorrelation so stepwise autoregressions, using the Yule-Walker method, are performed starting with ten lags and then removing one lag at a time to identify any higher orders of autocorrelation. The results support the initial indicated autocorrelations so, following Lee, et al. (2002), a corrective lagged excess return term is added to equation 3 as follows:

$$\sum_{k=1}^{n} \gamma_k \left(R_{it-k} - R_{ft-k} \right) \tag{5}$$

Equation 5 for one lag is added to the equal-weighted excess return models and for the third lag to the value-weighted excess return models to remove the indicated serial correlation of the standardized residuals to an acceptable level [Dickey and Fuller (1979), Balvers, et al. (2000)]. Bera-Jarque statistics shows the standardized residuals on the adjusted models follow a non-normal distribution for both equal-weighted and value-weighted excess return models so the monthly data does exhibit some leptokurtosis as found in the weekly data by Lee, et al. (2002) Adding the GARCH terms reduces the non-normality as measured by the Bera-Jargue statistic from 19.03 ($p<0.0001$) to 6.53

(p<0.038) for the equal-weighted excess return full period base model and from 9.80 (p<0.0074 to 7.55 (p<0.023) for the value-weighted excess return full period base model. This analysis is performed for the full sample time period from 11/1987 to 12/2005 for monthly excess returns with AAII asset allocation and sentiment measures and II sentiment measures. The analysis is performed for the time period 3/2001 to 12/2005 for excess returns with the eight Yale ICF confidence measures. The Baker-Wurgler Sentiment Index is not used for these analyses because only 20 annual observations are available.

5.2 GARCH MODELING RESULTS

The tables are organized as follows. Tables 39-41 presents the results of the GARCH models for equal-weighted excess return models for the full sample period with changes in AAII asset allocation (Table 39), changes in AAII sentiment (Table 40) and changes in II sentiment (Table 41). Tables 42-47 present the similarly organized results for the two sub-periods and Tables 48-56 present the same models for equal-weighted excess returns except using percentage changes in the sentiment measure instead of changes. Tables 57-74 present the similarly organized results for the same models using value-weighted excess returns as the only change. Tables 75-78 present similar models for equal-weighted and value-weighted excess returns using the Yale ICF sentiment measures. For each table the appropriate base model is presented for comparison to the sentiment models.

Likelihood ratio testing shows that the addition of most of the sentiment variables to the time period models does not significantly improve the fit of the models from the base models without sentiment. The likelihood test statistic (Campbell, et al. (1997)) is (the log likelihood of the base model minus the log likelihood of the sentiment model) multiplied by -2 and is chi-square distributed with seven degrees of freedom (the number of parameters being tested). Some full time period models did demonstrate significant improvement, but no sub period models showed significant improvement. The equal weighted return sentiment models showing the most improvement in order of p value (with p values in parentheses) are: iicorr4 (0.00244), asspread4 (0.07967). The value-weighted models showing such improvement are: iicorr4 (0.01047), asneut4 (0.02623), asspread4 (0.07678), and aabond (0.08210). These results indicate that the four week averages of these sentiment measures do contain useful information beyond that of the last measure in the month; that using only the bull-bear spread or the bull to bull and bear ratio is incomplete; the portfolio allocation to bonds (aabond) is also one of the more significant measures in the VAR analyses and in the cross-sectional analyses.

The measure used in Lee, et al. (2002) is the change in the ratio of bullish sentiment to the sum of bullish and bearish sentiment from the Investors' Intelligence (II) Survey. The corresponding change and percentage change variables used in this paper are dibb, dibb4, pibb, and pibb4. The results for these variables for equal-weighted excess returns are on Tables 41 and 50, for example. The equal-weighted excess returns models should be most comparable to the Nasdaq returns models in Lee, et al. (2002) while the value-weighted excess returns models should be most comparable to the S&P 500 and the DJIA returns models in Lee, et al. (2002) Lee, et al. (2002) was testing for evidence of four theorized effects of sentiment. The "hold-more effect" is the increased riskiness of assets as a result of uninformed bullish (bearish) traders increasing (decreasing) their holdings of risky assets such as common stock. It is theorized that this effect, by increasing the riskiness of stocks, would increased expected returns. The "price-pressure effect" is a result of overreaction by uninformed investors, acting on optimism or pessimism, so stock prices are either too high or too low. The "Friedman effect" is the higher risk due to the increased presence of uninformed traders in the market who have poor timing ability. The "create-space effect" is related and is the crowding out of informed traders by uninformed traders increasing risk. It is theorized that increased risk leads to higher expected returns to compensate for the higher levels of risk and vice-versa.

For the equal-weighted excess returns models, the models including the variables most comparable with Lee, et al. (2002), the dibb4 and the pibb4 are the stronger models with smaller log-likelihood statistics and with insignificant intercept terms. The coefficients of the four variables (dibb, dibb4, pibb, and pibb4) for the change in sentiment and the percentage change in sentiment are positive and significant for indicating the net impact of "hold-more and price-pressure effects" of changes in sentiment on excess equal-weighted returns. This finding is consistent with Lee, et al. (2002) for the DJIA, S&P 500, and Nasdaq returns. For most of the equal-weighted and value-weighted excess return models the changes in sentiment and the percentage changes in sentiment are positive and significant indicating the net impact of "hold-more" and "price-pressure effects" in the monthly data is consistent with Lee, et al. (2002) There is no indication that these II sentiment measures affect larger stocks more than smaller stocks or that the similar AAII sentiment measures of dasbb, dasbb4, pasbb, or passbb4 affect smaller stocks more than larger stocks.

The coefficient for current conditional volatility which reflects the net impact of the "Friedman effect" and the "create-space effect" is not significant in most of the equal-weighted excess return models for the iibb sentiment measure whereas this variable is significantly negative in the Lee, et al. (2002) model. The current conditional volatility term is significant in some of the Yale-ICF confidence models. However the majority of the evidence in all models suggests that the monthly data does not support the "Friedman effect" and the "create-space effect". The difference could be due to the use of monthly data instead of weekly data or the addition of the payout yield and issue yield variables so the models were estimated again without the yield variables with the same results. It is likely that these effects are limited to weekly returns and don't apply to monthly returns.

The payout yield and issue yield variables are significantly negative in most of the models indicating they represent important valuation information.

The coefficient for the one month lag of conditional volatility is positive and significant for the majority of the base models and most of the percentage changes sentiment models for equal-weighted returns for the full sample period and for the second sample period but not for the first sample period. The same effect can be seen in the majority of the base models and the majority of the percentage changes sentiment models for value weighted-weighted returns. This suggests that investing in a month with high volatility in returns could have been rewarding for investors in the second sub-period or the bubble period.

Lee, et al. (2002) finds that negative shocks have a larger effect on future volatility than positive shocks. However, in my analysis, there is little evidence of this effect in any of the base models or sentiment models.

The effect of inflation is proxied by the risk-free rate. The coefficient for the inflation term in the model using iibb sentiment variable as used in the Lee, et al. (2002) paper was significant for the full period for equal-weighted returns but not for value-weighted returns or for the sub periods. Similar results are found with the removal of the yield variables but in fewer models. Possibly the sample periods in this paper really didn't experience the levels of inflation experienced in the 1970s as included in the Lee, et al. (2002) paper, so it could be expected that this variable is less significant in the more recent models.

Lee, et al. (2002) found evidence that the magnitude of changes in sentiment have a significant impact on the formation of conditional volatility; though they did not find evidence of an asymmetric effect between the magnitudes of positive versus negative changes. I find that virtually none of the models for either equal-weighted or value-weighted excess returns for any of the time periods have significant coefficients for the variables which indicate the magnitudes of changes toward positive or negative sentiment. This is also true when the yield variables are removed. The monthly data does not provide consistent support that bullish shifts in sentiment lead to reduced volatility or bearish shifts lead to increased volatility. Additionally, the analyses also are performed using current period changes in the sentiment factor terms in equation 4 with no difference in results.

In the equal-weighted and value-weighted return base models the January effect is significantly positive during the full sample period but not in the first or second sub-period. The January effect is significant in most of the full period equal-weighted return models with sentiment added; mostly with month-end sentiment added and fewer with the four week average sentiment. The January effect is significant in very few of the sub-period equal-weighted return models with sentiment. The January effect is significant in two of the full period equal-weighted returns models using the same II sentiment variables as Lee, et al. (2002) (dibb and pibb) and the comparable AAII sentiment variables (dasbb and pasbb). The January effect is also significant in the two sub-period models with the dasbb variable and in the first sub-period with the pasbb variable. For the value-weighted return models with sentiment, the January effect is significant in most of the full-period models and some of the first sub-period models and virtually none of the second sub-period models. The January effect is significant in two of the full period value-weighted returns models using the same II sentiment variables as Lee, et al. (2002) (dibb and pibb) and also in the first sub-period but not in the second sub-period. The January effect is not significant in any of the models with the comparable AAII sentiment variables (dasbb and pasbb). The effect is mostly in the small stocks as reflected in the equal-weighted return models for the first sub-period. The effect is virtually non-existent in the second sub-period. The January effect is virtually non-existent in the any of the Yale ICF equal-weighted or value-weighted return base or sentiment models for the period 3/2001 to 12/2005. Even though the exploration of the January effect is not the purpose of this paper, the evidence suggests that the January effect is less significant in these time periods than in Lee, et al. (2002), perhaps because of the addition of the payout yield and issue yield measures. An alternative explanation is that the dissemination of the knowledge of the effect has resulted in its demise via trading activity over time.

The models provide very similar evidence for the October effect. The October effect variable is significant in the equal-weighted returns base model and in most of the sentiment models for the first sub-period, but in just some of the sentiment models in the second sub-period. The October effect variable is not significant in most of the value-weighted returns models for either sub-period nor in the Yale ICF equal-weighted or value-weighted return base or sentiment models. The explanation for the disappearance of the October effect is likely the same as for the disappearance of the January effect.

(Insert Tables 39 thru 78)

5.3 GARCH MODELING CONCLUSION

In summary, the results of the analysis of the effect of the thirty-two sentiment measures on the formation of conditional volatility of CRSP portfolio equal-weighted and value-weighted excess returns using GARCH modeling and controlling for the payout yield, the issue yield and the risk-free rate are as follows.

First, the coefficient for the payout yield variable is significantly negative for every equal-weighted and value-weighted excess return base model and for virtually all of the sentiment models for all of the time periods for the AAII asset allocation sentiment, the AAII sentiment survey, and the II advisor sentiment. The payout yield variable is significantly negative for every equal-weighted and value-weighted excess return base model in the Yale ICF time period and for a majority of the sentiment models. This result indicates the payout yield measure contains significant stock market valuation information and should be included in market return analyses.

Second, the coefficient for the issue yield variable is significantly negative for every equal-weighted and value-weighted excess return base model and for virtually all of the sentiment models for all of the time periods for the AAII asset allocation sentiment, the AAII sentiment survey, and the II advisor sentiment with the exception of the second sub-period for value-weighted excess return models. During this period, the bubble period, the issue yield variable lost significance in the base model and for most of the sentiment models. The likely explanation for this effect is portrayed in figures 3 and 4. Issues, measured by dollars (or as a yield), began increasing to an unprecedented level beginning around 1997 and peaking around 2000 before returning to previous levels. This spike in issues seems to track the spike in the Nasdaq (figure 1) more closely than the increase in the S&P 500 (figure 3) for the same period but more importantly, the spike in issues seems to track with the sentiment measures in figures 7, 8, and 9 suggesting that the issue yield and sentiment contain the same information or a at least common element during this period. This issue yield variable returned to significance for value-weighted returns in the Yale ICF models from 3/2001 to 12/2005 just after the bubble period. These results indicate that the issue yield variable was more significant to smaller stock valuations during the bubble period as opposed to larger stock valuations. This analysis also indicates the issue yield variable contains significant stock market valuation information and should be included in market return analyses.

Third, changes in sentiment whether measured as differences or percentage changes has a significant contrarian effect on excess returns for almost all of the models including the models using the Lee, et al. (2002) tested sentiment variables of dibb and pibb and the AAII related variables of dasbb and pasbb. These results tend to support the net impact of the "hold-more" and "price-pressure" effects.

Fourth, the use of monthly data instead of weekly data seems to have removed most of the significance of the conditional volatility variable. In addition, few of the sentiment models provide evidence that bullish shifts in sentiment lead to reduced volatility or that bearish shifts lead to increased volatility.

Fifth, there is limited evidence that negative shocks to returns have a larger effect on future volatility than positive shocks.

Sixth, there is a limited effect from using the risk-free rate as a proxy for inflation possibly because there inflation was comparatively mild in the sample period compared to the 1970s used in the Lee, et al. (2002) paper.

Seventh, the significance of the January and October effects diminish from the first sub-period to the second sub-period and largely disappear in the third period from 3/2001 to 12/2005. The effects in the first sub-period were mostly in the equal-weighted returns model indicating they were mostly a smaller stock effect. Possibly the dissemination of the knowledge of the effects have resulted in the decrease in their effect over time.

6. SENTIMENT EFFECTS ON THE CROSS-SECTIONAL VARIATION IN STOCK RETURNS

This section documents the results of empirical tests of the effect of the sentiment measures on the cross-sectional variation in firm-level monthly stock returns. The approach used in this paper follows the cross-sectional methods used by Fama and French (1992) and Baker and Wurgler (2006) among others. Where possible the selection, symbols, and definitions of other explanatory variables follow Fama and French (1992), Baker and Wurgler (2006), Brown and Cliff (2005), Lee, et al. (2002), and Boudoukh, et al. (2007). The sample consists of all firms included in the merged CRSP and Compustat databases as described in section 3. The sentiment measures and the payout yield measures are described in section 3.

6.1 METHOD AND DATA

First, basic statistics and correlations are produced for firm characteristics expected to affect the cross-sectional variation in stock returns. Next, high, low and middle portfolios are formed monthly using sorts on the firm characteristics using breakpoints computed using NYSE listed firms consistent with past studies. The breakpoints are set at 30% and 70% to be consistent with Baker and Wurgler (2006); the low portfolios consist of the bottom three deciles, the top portfolios consist of the top three deciles and the middle portfolios consist of the middle four deciles. Basic statistics and correlations are produced for the return differences between the portfolios. Finally, formal significance testing of the portfolio return differences is performed using univariate and multivariate regressions consistent with Fama and French (1992) and Baker and Wurgler (2006). Specifically, univariate regressions are performed on the difference between long and short portfolio returns based on firm characteristics and sentiment and, second, multivariate regressions are performed adding the three Fama and French (1993) portfolio explanatory factors of excess market return (RMKT), small market equity minus big market equity (SMB), and high book equity-to-market equity minus low book equity-to-market equity (HML) plus the momentum factor (MOM) from Carhart (1997). The momentum factor is computed as the high cumulative return portfolio minus the low cumulative return portfolio over the months -12 to -2[8].

The equal-weighted monthly return on the long-short portfolio is the dependent variable and the regressions take the form;

$$Rx_{it,long} - Rx_{it,short} = b_0 + b_1 Sentiment_t + \varepsilon_{it} \tag{6}$$

$$\begin{aligned} Rx_{it,long} - Rx_{it,short} &= b_0 + b_1 Sentiment_t + b_2 RMKT_t + b_3 SMB_t \\ &+ b_4 HML_t + b_5 MOM_t + \varepsilon_{it} \end{aligned} \tag{7}$$

where RMKT is the excess market return over the risk-free rate. The SMB, HML, and MOM factors are not included for the respective regressions on size, book-to-market, and momentum. The portfolio monthly returns are regressed on the current monthly sentiment variables since the variables are mostly produced weekly and are developed to show the average effect during the month as well as the last week of the month so the level of sentiment is expected to be well known on a current basis. The exception is the annual Baker Wurgler sentiment index for which the index at the end of the year t-1 is used. The

[8] The RMKT, SMB, HML and MOM factors and the portfolio breakpoints calculations follow the Fama and French specifications obtained from Ken French's website at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

regressions are run on the portfolios formed on firm characteristic variables representing firm size, age, idiosyncratic risk, momentum, profitability, dividend policy, repurchase policy, issue policy, asset tangibility, growth opportunities, and distress.

The accounting variables are available on an annual periodicity from Research Insight's Compustat database and, following Fama and French (1992) and Baker and Wurgler (2006), are computed at the end of year t-1 and matched to returns from June of year t to June of year t+1. These annual variables are book equity, earnings, net property, plant and equipment, research and development expense, changes in external finance, sales, and assets. The monthly returns and return related variables are from the CRSP database. The specific calculation of the variables is shown in Table 79.

(Insert Table 79)

Following Fama and French (1992) and Baker and Wurgler (2006), the explanatory variables are winsorized monthly at the 99.5% and 0.05% levels as applicable. The variables EF/A, Sales Growth, Earnings, Momentum, BE/ME, and Netpayout Yield are winsorized at both the high and low levels. The variables ROE+, PPE/A, RD/A, Dividend Yield, Repurchase Yield, Issue Yield, and Payout Yield are winsorized only at the high level since the variables cannot be lower than zero by definition. Following Shumway (1997) and Shumway and Warther (1999), missing delisting returns are corrected by replacing missing NASDAQ delisting returns with -0.55 and by replacing missing NYSE and AMEX delisting returns with -0.30. Other observations with missing returns or returns less than -1.00 are removed.

In addition to the high minus low portfolios, following Baker and Wurgler (2006), the BE/ME, EF/A, and the Sales Growth portfolios are formed into "high minus medium" and "medium minus low" portfolios in order to better separate the multidimensional nature of these variables into growth opportunities and distress. To correct for any induced bias due to correlated innovations between explanatory variables and the portfolio returns, as documented in Stambaugh (1999), standard errors and T-statistic probabilities are bootstrapped using 1,000 portfolio repetitions. Each portfolio is formed by randomly selecting observations, with replacement, up to the number of observations in the original sample portfolio. The long-short regressions are also run for the two sub-periods to test the robustness of the full sample results. An additional robustness test adds dummy variables for the months of January and December to control for tax and liquidity effects around the end of the year with no significant difference in results for the sample period or either sub period.

6.2 BASIC STATISTICS AND CORRELATIONS

The basic statistics of the monthly firm characteristics are presented in Table 80 for the full sample period (July 1988 to December 2005) and the two sub periods (July 1988 to December 1996) and (January 1997 to December 2005).

(Insert Table 80)

The correlations of the monthly firm characteristics are presented in Table 81 for the full sample period. The variables which proxy for idiosyncratic risk or the difficulty in valuation and arbitrage (Brav and Heaton (2006)) , are Sigma, CAPM Sigma, and the FF4 Sigma and are highly correlated at 0.99 and 0.98. As shown in the basic statistics, these measures also have similar means, standard deviations, minimums and maximums.

Even though Sigma as the standard deviation in monthly firm returns should be the broadest measure of this risk, it appears that any of the three measures can be used. However the risk measures are correlated most highly with the explanatory variables of size (-0.42), dividend yield (-0.35), age (-0.34), research and development (0.33), issue yield (0.30), change in external financing (0.21), and asset tangibility (-0.19) possibly indicating that the least risky firms are larger, have higher dividend yields, are older, have lower research and development expense, tend to not issue more stock, tend to decrease their external financing, and tend to have higher levels of tangible assets. As expected, the payout yield as the sum of the repurchase yield and the dividend yield is highly correlated with the repurchase yield (0.86) and correlated with the dividend yield (0.44). Size is positively correlated with age (0.34), negatively correlated with risk (-0.41), positively correlated with earnings (0.37) and negatively correlated with (BE/ME) growth opportunities and distress (-0.29) possibly indicating that larger firms are older, less risky, have higher dollar earnings, have fewer growth opportunities and have lower financial distress. Age is positively correlated with earnings (0.31), negatively correlated with risk (-0.34), positively correlated with dividend yield (0.39), positively correlated with tangible assets (0.28), and negatively correlated with changes in external financing (-0.26). While the correlations between the explanatory variables are not high to enough to cause collinearity concerns, there does appear to be some common relationships with risk.

(Insert Table 81)

Tables 82 and 83 present the basic statistics and the sample period means for the monthly long minus short portfolio returns. If the risks associated with these firm characteristics are linear across the high, mid, and low portfolios and are fully priced then the long-short portfolio returns should be approximately the market return of 1% per month (Table 3). For the full period, the highest mean monthly return of 4.19% is achieved by shorting the high BE/ME portfolio and buying the low BE/ME portfolio. The next highest return of 2.44% is from shorting the high BE/ME portfolio and buying the mid BE/ME portfolio. This suggests that the risks proxied by the BE/ME variable are not linear across the portfolios. The means of the portfolio returns are consistent across sub periods.

(Insert Tables 82, 83)

The long-short portfolio monthly return correlations, presented in Table 84, show that the highest correlations with the risk measures are dividend yield (-0.97), earnings (-0.95), netpayout yield (-0.95), payout yield (-0.94), and ROE+ (-0.90) suggesting that the effective duration of cash flows to investors is key to the perceived riskiness of firms. The faster and higher the cash flows to investors, the lower the risk. Research and development expenses are also likely a measure of the duration of cash flows since the payoff from these projects could occur at some indeterminate future time. This variable is also highly correlated (0.83) with the risk measures. Baker and Wurgler classify the returns on the low sales growth (mid – low) portfolio as a distress measure, this measure is negatively correlated with the risk measures (-0.88) indicating that average to low sales growth is associated with lower risk. Low sales growth is also highly correlated with age (0.83) and size (0.71), so perhaps the lower sales growth firms are older and bigger with less distress. This contrasts with the high sale growth (high – mid) portfolio which Baker and Wurgler classify as a growth opportunity measure but is highly correlated with risk (0.88), and negatively correlated with age (-0.90) and size (-060). This fits the growth opportunities classification as being riskier with younger and smaller firms. Age seems to be a strong proxy for these cash flows to investors and is most highly correlated (0.98) with the dividend yield, next with the risk measure (-0.96), the netpayout yield (0.96), the payout yield (0.95), earnings (0.95), asset tangibility (0.92), sales growth (high – mid) (-0.90), RD/A (-0.86), and EF/A (high-mid) (-0.91). The correlations for the BE/ME, EF/A, and Sales Growth variables also shows that Baker and Wurgler are correct in extending the high –low portfolio sorts to high –mid and mid –low portfolio sorts.

(Insert Table 84)

6.3 LONG – SHORT PORTFOLIO RETURNS REGRESSION RESULTS

The long – short portfolio returns regression results are organized as follows.

For AAII, II, and BW sentiment measures:

Size and Age: Tables 85, 86.

Idiosyncratic Risk: Tables 87 – 89.

Momentum: Table 90.

Profitability: Tables 91, 92.

Dividend, Repurchase, Issue Policy: Tables 93 – 97.

Asset Tangibility: Tables 98, 99.

Growth Opportunities and Distress: Tables 100-108.

For the Yale ICF sentiment measures:

Size and Age: Table 109.

Idiosyncratic Risk: Table 110.

Momentum: Table 111.

Profitability: Table 112.

Dividend, Repurchase, Issue Policy: Table 113.

Asset Tangibility: Table 114.

Growth Opportunities and Distress: Table 115.

Growth Opportunities: Table 116

Distress: Table 117.

AAII, II, AND BW SENTIMENT MEASURES

Past studies have found the AAII and II sentiment measures to be contrarian indicators of future returns. So strong bullishness tends to indicate lower future returns and vice versa.

Size

Most of the AAII and II bullish and bearish sentiment measures in the size table are significant and appropriately signed for both sub periods with increased significance for the sub period 2 (bubble period) where stock valuations rose to unsupportable levels. The sentiment measures became somewhat more significant in the 2^{nd} sub period. The addition of the control factors (excluding SMB) had little effect on the significance of sentiment. These results supports Baker and Wurgler finding that bullishness (positive sentiment, over-optimism) is inversely related to future returns and tends to affect smaller stocks more than larger stocks. It is likely that the SMB factor in the multi- factor models captures some of this sentiment.

Age

More sentiment measures are significant the 2nd sub period than in the first providing support that sentiment was more important in valuations in the bubble period than before. These results also support the finding of Baker and Wurgler (2006) that sentiment tends to affect the valuations of younger firms more than older firms.

(Insert Tables 85, 86)

Idiosyncratic Risk

The results are very similar for all three risk measures (Sigma, CAPM Sigma, and FF4 Sigma). As with size and age, more sentiment measures are significant in the 2nd period. After that addition of the control factors in the first period only the neutral AAII sentiment measures are significant along with one bullish measure. In the 2nd sub period, the AAII asset allocation to cash measure is significantly negative probably indicating that this measure is a bearish measure. This analysis suggests that sentiment has a significant effect on riskier stocks in the 2nd sub period. This provides support for the Baker and Wurgler finding that sentiment has a significant predictive effect for stock prices with higher volatility and also provides support for behavioral effects on valuations beyond risk-based explanations. Alternatively these three risk measures might not necessarily be capturing the true volatility of stock returns. However, Baker and Wurgler used 12 months of returns (no lower than 9 months) while I use 36 months to match the Brav and Heaton idiosyncratic risk measure for cost of arbitrage, and the results of the effects of sentiment are the same. The proper period to use for the computation of these risk measures is unclear and possibly a future research question.

(Insert Tables 87, 88, 89)

Momentum

A momentum strategy involves buying recent strong performers and selling recent weak performers (Chan, Jegadeesh and Lakonishok (1996)), using evaluation periods ranging from 6 to 12 months. The effect of sentiment on return momentum has not been addressed in past studies, although the profitability of momentum strategies for investors, after investment costs, has been questioned (Lesmond, Schill and Zhou (2004)). The results presented in Table 90 indicate that bullishness has a significantly negative effect on future momentum returns mostly in sub period 2 where the AAII and II sentiment factors indicate significant bullishness even after the addition of the control factors (except MOM). Almost certainly there is a significant sentiment component in the momentum factor.

(Insert Table 90)

Profitability

Bullishness has a significantly negative effect on both earnings and ROE+ high – low portfolio returns as measured by either the AAII sentiment measures or the II sentiment measures in the 2nd sub period. There is a much smaller effect in the first sub period after the addition of the control factors. This is consistent with Baker and Wurgler's finding that bullishness has a stronger effect on the future returns of less profitable and non-profitable firms on earnings. They did not address positive return on equity in this manner. This finding is not unexpected since the high – low portfolio returns for earnings and ROE+ are highly positively correlated with age and highly negatively correlated with the risk measures.

(Insert Table 91, 92)

Dividend, Repurchase, and Issue Policy

Dividend Yield, Repurchase Yield, and Payout Yield

The results for the dividend yield, repurchase yield, and payout yield regressions are somewhat similar to the results for the profitability regressions with very significant sentiment effects in the 2^{nd} sub period and will much smaller effects in the first sub period. These findings are consistent with Baker and Wurgler's finding for earlier periods that sentiment affects non-dividend paying firms more than dividend payers. This is also consistent with a cash flow duration or valuation explanation; investors can value cash flows expected to be received sooner with more certainty than cash flows expected to be received later and also with a risk explanation in that cash flows received sooner are less risky that those received farther in the future. This is consistent with the high negative portfolio return correlations between the risk portfolio returns and the dividend and payout yield portfolio returns.

(Insert Tables 93, 94, 95)

Issue Yield

The issue yield story is a bit more interesting. In the high sentiment 2^{nd} sub period the strong individual sentiment before the addition of the control factors is virtually eliminated by the addition of the control factors. This suggests that there is a common valuation (risk) element between individual investor sentiment, the control factors, and the issue yield. This common element appears to be most closely related to individual investor sentiment since the AAII sentiment factors are primarily involved. This result is consistent with the VAR model results and taken with those results supports the behavioral theory of the managerial timing of issues in Baker and Wurgler (2000).

When stock valuations and bullish sentiment are high, firms tend to issue stock. However the reverse is not necessarily true for repurchases (Table 94) suggesting that any timing effect for repurchases is subjugated to the dividend replacement effect. These results also suggest the issue yield is a separate valuation factor from the payout yield and probably should not be combined into a netpayout yield.

(Insert Table 96)

Netpayout Yield

The netpayout yield is the payout yield less the issue yield. The results are very similar to the results for the dividend yield and payout yield. This is not surprising since the high-low portfolio returns are highly correlated (0.98, 0.95). These results again support the importance of the separate payout yield and issue yield as valuation factors rather than combined into the netpayout yield.

(Insert Table 97)

Asset Tangibility

PPE/A – Net Property, Plant & Equipment Divided by Assets

The regression results, as presented in Table 98, show that sentiment is a significant factor in explaining the portfolio returns in both sub periods. In the first period the significant sentiment variables, after the addition of the control factors, are the AAII asset allocation measures, the AAII neutral sentiment measures and the BW sentiment measures. In the second sub period the AAII sentiment measures are significant as well as one of the BW sentiment measures. These results indicate that individual investor sentiment had a much more significant effect in the bubble period and that professional sentiment had a lesser significant role. The results are consistent with BW and the interpretation is that higher levels of sentiment affect firms with fewer tangible assets probably because these firms are more difficult to value. Also the cash flows for firms with higher percentages of intangible assets occur farther into the future increasing the uncertainty of predicted values.

(Insert Table 98)

RD/A – Research & Development Expense Divided by Assets

The RD/A is an intangible asset measure and the portfolio sort is high – low rather than low-high so the signs are opposite from the PPE/A results. The results are consistent with the PPE/A results in that the AAII sentiment measures are very significant in the second sub period and mostly neutral in the first sub period.

The interpretation of the results is consistent with BW and the PP/E results in that sentiment tends to affect the valuation of firms with less tangible (more intangible) assets probably because the future cash flows of these firms are harder to value.

(Insert Table 99)

Growth Opportunities and Distress

BE/ME – Book Equity Divided by Market Equity

Following Baker and Wurgler, the BE/ME high – low portfolio (Table 100) is separated into a mid – low portfolio (Table 101) representing firms with relative higher growth opportunities and a high – mid portfolio (Table 102) representing relatively more financially distressed firms. There are different sentiment effects between the growth portfolio (Mid-Low) and the distress portfolio (High-Mid) with more effects of sentiment in the distress portfolio supporting the BW separation into these portfolios. This more apparent in the first sub period where the overall high low portfolio appear to be dominated by the distress portfolio effects. The results indicate that both individual investor and professional sentiment is a significant factor in both the growth and distress portfolios and therefore the book-to-market effect contains a substantial sentiment element that is not significantly diminished by the RMRF, SMB, and MOM control factors. Recall from Table 83 that in absolute terms the BE/ME (High - Low) portfolio had the largest monthly mean return followed by the BE/ME distress portfolio followed by the growth portfolio indicating the distress portion contributes more to the total return than the growth portion.

It should be noted that the Baker and Wurgler results for these three portfolios were not significant at the 90% level except for their mid – low portfolio with their orthogonalized sentiment measure. The interpretation is that investors tend to misvalue both high growth opportunity firms and high distress firms.

(Insert Tables 100, 101, 102)

EF/A – The Change in External Financing Divided by Assets

Following Baker and Wurgler, the EF/A high – low portfolio (Table 103) is divided into a high - mid portfolio (Table 104) representing firms with relative higher growth opportunities and a mid - low portfolio (Table 105) representing financially distressed firms. The results for the high – low portfolio regressions agree with the Baker and Wurgler results; in the first sub period both of their sentiment measures are significantly negative (Table 103). However their measures are not significant in the 2nd sub period. Few of the AAII or II sentiment measures are consistently significant in both sub-periods before or after the addition of the control factors. In the first sub period the

AAII bullish measures tend to be significant while the II measures are not significant. In the 2nd sub period the AAII measures indicating neutral or expected corrections are significant while the II bearish measures are significant.

The high – mid portfolio (growth opportunities) results are somewhat different. After the addition of the control factors, few of the individual investor and professional advisor measures are significant in the first sub period while most are significant in the 2nd sub period. The interpretation of these results is consistent with higher effects of sentiment in the 2nd sub period. Sentiment is a valuation factor in this portfolio even after the addition of the control factors

The mid – low portfolio (distress) results are the same as the growth portfolio except with somewhat lower significance for the sentiment measures in the 2nd sub period. The interpretation is that investors tend to misvalue both high growth opportunity firms and high distress firms relative to the mid portfolio.

(Insert Tables 103, 104, 105)

Sales Growth

The high – low portfolio is separated into the "growth" and "distress" portfolios just as was done for the BE/ME and EF/A portfolios. After the addition of the control factors, there are not significant sentiment measures in the first sub period for the growth portfolio. There are some significant AAII sentiment measures in the 2nd period after the control factors. However for the distress portfolio, there are more significant sentiment measures for both the first sub period and the 2nd sub period. These results are consistent with more significant sentiment effects on the distress portfolio than on the growth portfolio. Investors seem to misvalue the distress portfolio more than the growth portfolio.

(Insert Tables 106, 107, 108)

Yale University ICF Sentiment Measures

It may be useful to refer to Table 1 for the sentiment measure short definitions when reading this section.

Size and Age

After adding the control factors (except SMB) the bullish sentiment factors indicating a belief that the market will rise over the next 12 months for both individual investor (nyrinda) and institutional investors (nyrinsa) are significantly negative for the size portfolio indicating that sentiment does have predictive power for future returns. In this case investor bullishness indicates lower future returns and is consistent with the findings using the AAII and II sentiment measures. This can be interpreted as investors overvaluing small stocks when bullish and that sentiment tends to affect smaller stocks more than larger stocks.

The results for the age portfolio are quite similar to those for the size portfolio. After the addition of the control factors, the bullish sentiment factor indicating a belief that the market will rise over the next 12 months for institutional investors (nyrinsa), and the bullish sentiment factor indicating a belief that the market is not too high for individual investors (nvalinda) are significantly negative. This result is also consistent with results using the AAII and II sentiment measures. Investor sentiment is a contrarian indicator and tends to affect younger stocks; bullishness indicates lower future returns.

(Insert Table 109)

Idiosyncratic Risk

After the addition of the control factors, the ICF sentiment measure nyrinsa is significant in the Sigma, CAPM Sigma, and the FF4 Sigma portfolio regressions. The ICF sentiment measure nvalinda is significant in the CAPM Sigma, and the FF4 Sigma portfolio regressions after the control factors. These results are consistent with the results using the AAII and II sentiment measures.

(Insert Table 110)

Momentum

None of the ICF sentiment measures are significant for the momentum portfolio either before or after the addition of the control factors. This is not consistent with the findings using the AAII and II sentiment factors.

(Insert Table 111)

Profitability

The sentiment measures indicating a belief the market is not too high and will rise over the next 12 months for both individual and institutional investors are significant in the earnings and positive return on equity portfolio regressions. These results also support the earlier findings using AAII and II sentiment measures that sentiment tends to affect the valuation of less profitable (and unprofitable) firms more than those of highly profitable firms.

(Insert Table 112)

Dividend, Repurchase, and Issue Policy

The results using the ICF sentiment measures tend to follow the earlier results using the AAII and II sentiment measures. The sentiment measures are not significant for the issue yield supporting the earlier behavioral finding that firms tend to issue when sentiment is strongly bullish or that the issue yield is a measure of sentiment.

(Insert Table 113)

Tangibility

There are no significant sentiment measures for the PPE/A portfolio, so there is no support for the earlier findings using the AAII, and II sentiment measures. For the RD/A regressions, the ncrinsa (don't believe the market will crash in the next 6 months) measure is the only significant sentiment measure and only after the addition of the control factors. This finding does provide some additional support for the earlier finding that sentiment has a stronger effect on the valuation of firms with higher percentages of intangible assets.

(Insert Table 114)

Growth Opportunities and Distress

The results using the ICF sentiment measures tend to support the earlier findings using the AAII and II sentiment measures and provides further evidence that sentiment is a valuation factor in these portfolios with the interpretation that investors tend to misvalue firms with higher growth opportunities and higher distress possibilities.

(Insert Tables 115, 116, 117)

6.4 CROSS-SECTIONAL ANALYSIS CONCLUSION

This study extends past sentiment studies on the cross-section of stock returns by expanding the sentiment measures, by applying the study to more recent time periods, and in particular, to the time period from January 1997 to December 2005 which encompasses the stock bubble period where the effect of sentiment is expected to be stronger, by adding the additional idiosyncratic risk measures of the residual volatility from a CAPM and a Fama French four factor model, and by adding analyses for the firm characteristics of momentum, and repurchase, payout, issue, and netpayout policy. A further contribution of this study is the use, where possible, of firm characteristics developed from monthly data instead of from annual data. These data elements include market capitalization, and twelve month rolling sums of dividends, repurchases, and issues.

This study finds strong evidence that sentiment affects future returns; sentiment is a contrarian measure; bullish sentiment leads to lower future returns and bearish sentiment leads to higher future returns. For virtually every long-short portfolio formed on firm characteristics the significant sentiment measures are more numerous and more significant in the bubble period indicating that sentiment had a much larger effect on stock valuations in the bubble period than in the previous sub period. Simply using the AAII sentiment and the II sentiment bull-bear spread or the bull/(bull + bear) ratio as sentiment measures is incomplete as is using only the last weekly measure of AAII or II sentiment in the month as a conditioning factor. In several regressions, the AAII and II sentiment measures of bearishness, neutrality or correction expected were significant. In various analyses the AAII asset allocation measures to stocks, bonds, or cash were significant. For example, the allocation to cash was generally significant when the bearish measures were significant. For the monthly regressions, the four week average of the sentiment measure ending in the last week of the month contains more information than the last weekly survey of the month. For most analyses the Yale University ICF sentiment measures developed by formally supportable survey methods using random sampling tend to support the results obtained from the use of the AAII asset allocation survey, the AAII sentiment survey, and the II advisor sentiment survey.

For almost all of the analyses, the indirect sentiment measures developed by Baker and Wurgler were not significant. This is attributed to the use of monthly firm characteristics where possible and to the time periods used in this study. Even so, the results of this study support their findings that sentiment has a larger effect on smaller, younger, more risky firms; firms with lower intangible assets, higher tangible assets, lower or no earnings, with no or low dividends; and firms with higher growth opportunities, and firms with higher levels of financial distress.

New results show that sentiment has a significant effect on momentum firms, on firms with no or low return on equity, with no or low repurchases, with no or low payouts, and with no or low netpayouts. New results indicate there is a common valuation (risk) element between individual investor sentiment, the control factors, and the issue yield. This common element appears to be most closely related to individual investor sentiment since the AAII sentiment factors are primarily involved. This result is consistent with the VAR model results and taken with those results supports the behavioral theory of the managerial timing of issues in Baker and Wurgler (2000). When stock valuations and bullish sentiment are high, firms tend to issue stock. However the reverse is not true for repurchases suggesting that any timing effect for repurchases is subjugated to the dividend replacement effect. These results also suggest the issue yield is a separate valuation factor from the payout yield and probably should not be combined into a netpayout yield.

New sentiment measures developed by Yale University's International Center for Finance tend to support these findings.

7. CONCLUSION

The unexplained portion of the excess volatility in stock prices as documented by Campbell and Shiller (1988), Campbell (1991) and Shiller (2003) is one of the more important anomalies in finance and represents one of the biggest challenges to the efficient markets hypothesis (Shiller (2003)). Shiller (2003) suggests irrational investor behavior or investor sentiment as the likely explanation for this anomaly Considering investor sentiment as a measure of investor behavior and using two time-series empirical testing methods and one cross-sectional empirical testing method, this paper examines the effect of multiple measures of survey-based sentiment on U.S. stock returns.

A vector autoregression (VAR) model is used to empirically test for the prediction ability of sentiment on monthly returns both in-sample and out-of-sample beyond the conditioning factors of the risk-free rate, the combined dividend and repurchase yield (payout yield), and the issue yield which have some documented fit with returns. The empirical testing shows that the in-sample fits are significantly improved by the addition of many of the sentiment variables while the out-of-sample forecast ability is not significantly improved. The testing leads to the conclusion that the use of these sentiment measures will not assist in forecasting the next month's returns. These results indicate that sentiment is a factor in changing stock valuations that are subsequently reversed indicating misvaluation. There is feedback to sentiment from lagged returns. Overall, this evidence is more consistent with the behavioral theory than the risk-based theory. This evidence contributes to the literature concerned with the predictability of stock returns by adding the empirical testing of these 34 sentiment measures using a different model, using more complete conditioning factors, and using different time periods and especially the time period from 1/1997 to 12/2005 that includes the so-called "bubble" period, and adding a out-of-sample forecast error test. The Yale ICF investor confidence measures have not been tested in the literature before to my knowledge. These results are only for monthly returns. Sentiment may have forecast power over longer time-frames so future research might include extending this type of empirical testing to longer time periodicities such as bi-monthly, tri-monthly and so forth. The results concerning the issue yield support the behavioral theory of managerial timing of stock issues.

Additional time-series empirical testing is performed using a generalized autoregressive conditional heteroscedasticity (GARCH) model to test the effect of sentiment on the formation of conditional volatility in stock returns and conditioning on the same factors with some demonstrated fit with returns.

Changes in sentiment whether measured as differences or percentage changes have a significant contrarian effect on excess returns using almost any of the sentiment measures. These results tend to support the net impact of the sentiment effects referred to as "hold-more" and "price-pressure" effects (Lee, et al. (2002)). The use of monthly data instead of weekly data, seems to have removed the significance of the conditional volatility variable from many of the sentiment models. Few of the monthly sentiment models provide evidence that bullish shifts in sentiment lead to reduced volatility or that bearish shifts lead to increased volatility. There is no evidence that on a monthly basis negative shocks to returns have a larger effect on future volatility than positive shocks. There is some effect from using the risk-free rate as a proxy for inflation. The effect may be reduced because inflation was comparatively mild in the sample period compared to the 1970s used in the Lee, et al. (2002) paper. The significance of the January and October effects diminish from the first sub-period to the second sub-period and largely disappear in the third period from 3/2001 to 12/2005. The effects in the first sub-period were mostly in the equal-weighted returns model indicating they were mostly a smaller stock effect. Possibly the dissemination of the knowledge of the effects have resulted their demise over time. This evidence contributes to the literature by adding the testing of additional sentiment measures over different time periods and especially during the "bubble" period with expected high levels of sentiment. In addition, this testing extends the weekly return testing by Lee, et al. (2002) to monthly returns, adds more complete conditioning factors, and tests current changes in sentiment in addition to lagged changes.

Cross-sectional testing of the effects of sentiment on returns is performed using long-short equal-weighted portfolio returns sorted by firm characteristics. This study finds strong evidence that sentiment affects the cross sectional variation in returns. For virtually every long-short portfolio formed on firm characteristics the significant sentiment measures are more numerous and more significant in the bubble period indicating that sentiment had a much larger effect on stock valuations in the bubble period than in the previous sub period. The results of this study support the Baker and Wurgler (2006) findings that sentiment has a larger effect on smaller, younger, more risky firms; firms with higher intangible assets, lower or no earnings, no or low dividends; firms with higher growth opportunities, and firms with higher levels of financial distress.

New results show that sentiment has a significant effect on momentum firms, on firms with no or low return on equity, with no or low repurchases, with no or low payouts, and with no or low netpayouts. New results indicate there is a common valuation (risk) element between individual investor sentiment, the control factors, and the issue yield. This common element appears to be more closely related to individual investor sentiment since the AAII sentiment factors are primarily involved but is also related to professional sentiment. This result is consistent with the VAR model results and taken with those results supports the behavioral theory of the managerial timing of issues in Baker and Wurgler (2000). When stock valuations and bullish sentiment are high, firms tend to issue stock. However the reverse is not true for repurchases suggesting that any timing effect for repurchases is subjugated to the dividend replacement effect. These results also suggest the issue yield is a separate valuation factor from the payout yield and probably should not be combined into a netpayout yield.

This study extends past sentiment studies on the cross-section of stock returns by expanding the sentiment measures (including the ICF measures developed by formally supportable methods), by applying the study to more recent time periods, and in particular, to the time period from January 1997 to December 2005 which encompasses the stock "bubble" period where the effect of sentiment is expected to be stronger, by adding the additional idiosyncratic risk measures of the residual volatility from a CAPM and a Fama French four factor model, and by adding analyses for the firm characteristics of momentum, and repurchase, payout, issue, and netpayout policy. A further contribution of this study is the use, where possible, of firm characteristics developed from monthly data instead of from annual data. These data elements include market capitalization, and twelve month rolling sums of dividends, repurchases, and issues from CRSP.

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Figure 1. NASDAQ Actual Prices Compared to Projected Prices

NASDAQ actual closing prices compared to projected prices using the long term mean growth rate of 8.68%. Closing prices are adjusted for stock splits and stock dividends.

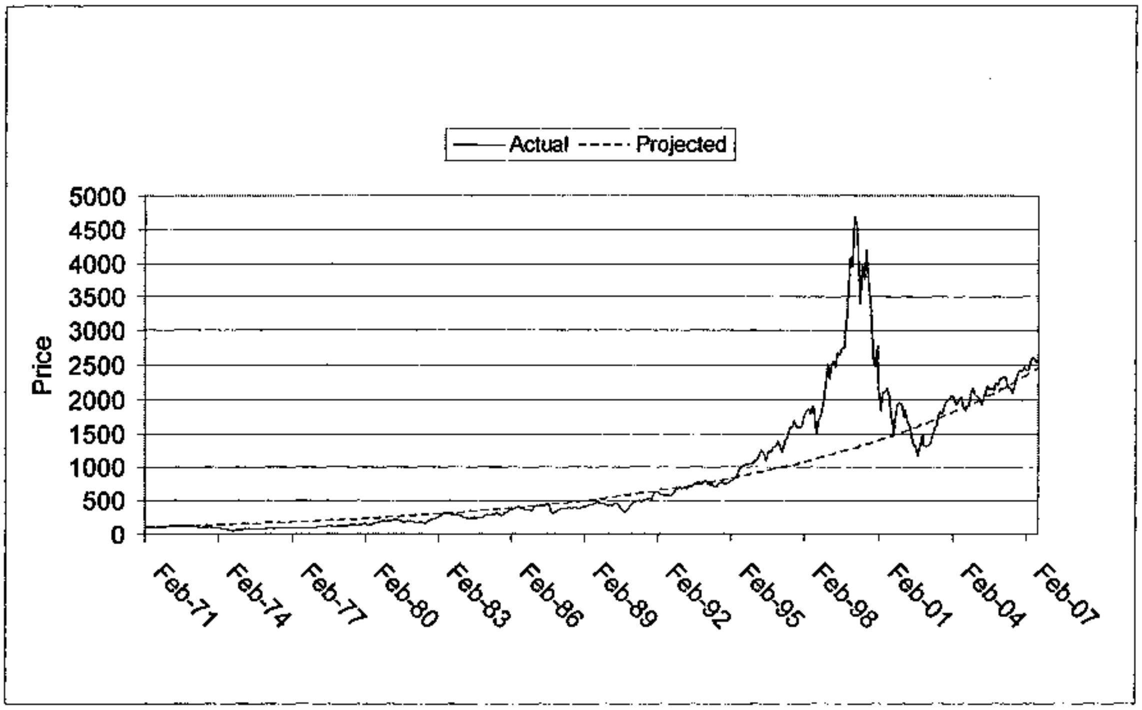

Figure 2. % Deviation of NASDAQ Actual Prices from Projected Prices

The percentage deviation of NASDAQ actual closing prices from projected prices using the long term mean growth rate of 8.68%. Closing prices are adjusted for stock splits and stock dividends.

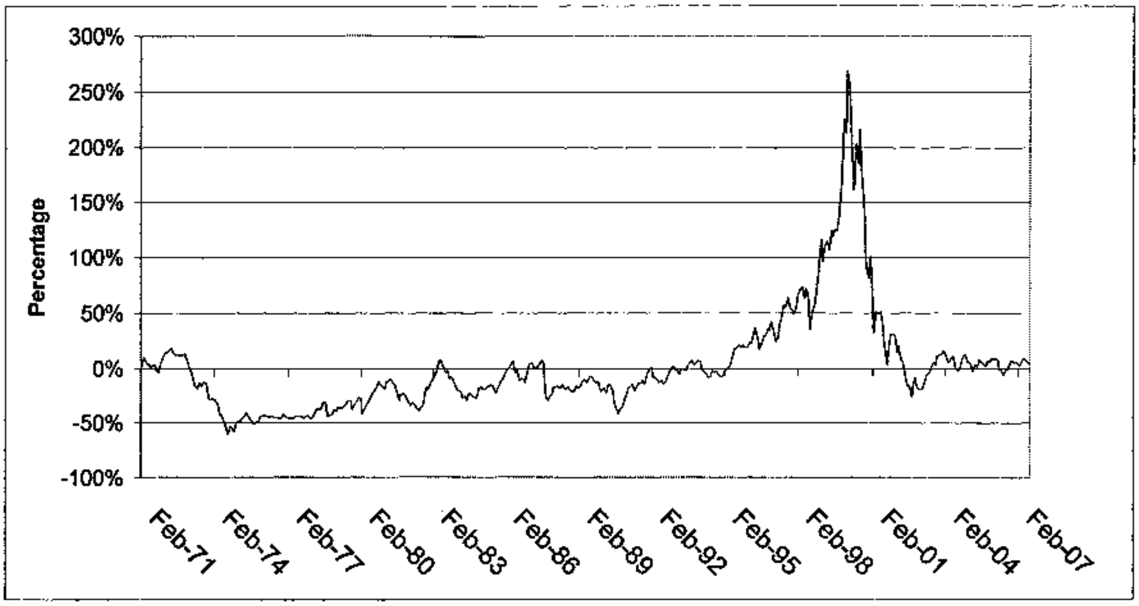

Figure 3. S&P 500 Index Actual Prices Compared to Projected Prices

S&P 500 INDEX actual closing prices compared to projected prices using the long term mean growth rate of 7.69%. Closing prices are adjusted for stock splits and stock dividends.

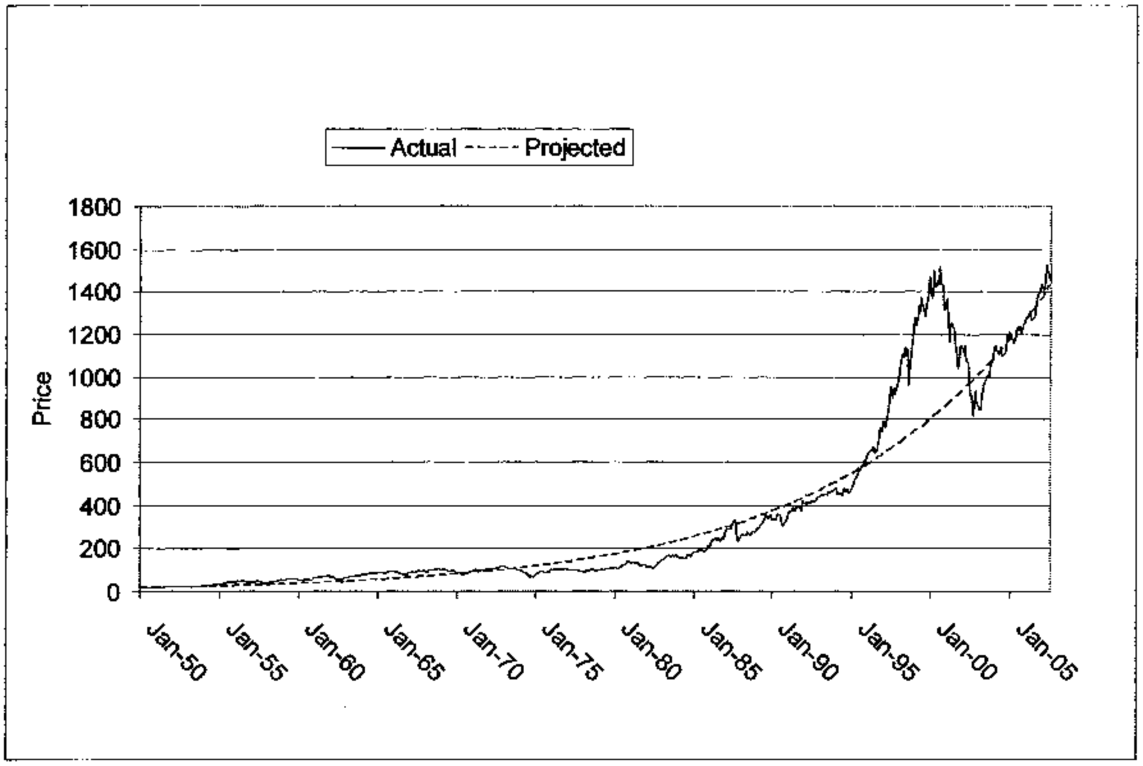

Figure 4. % Deviation of S&P 500 Index Actual Prices from Projected Prices

The percentage deviation of S&P 500 INDEX actual closing prices from projected prices using the long term mean growth rate of 7.69%. Closing prices are adjusted for stock splits and stock dividends.

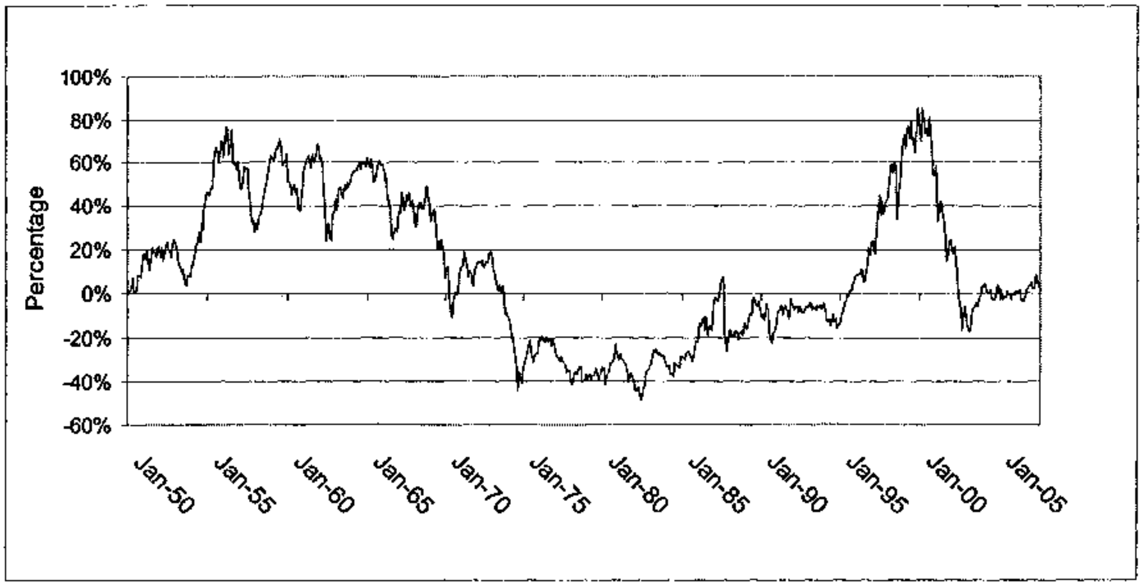

Figure 5. Investor's Intelligence Sentiment

The percentage of weekly professional advisory letters which indicate a bullish outlook on the stock market.

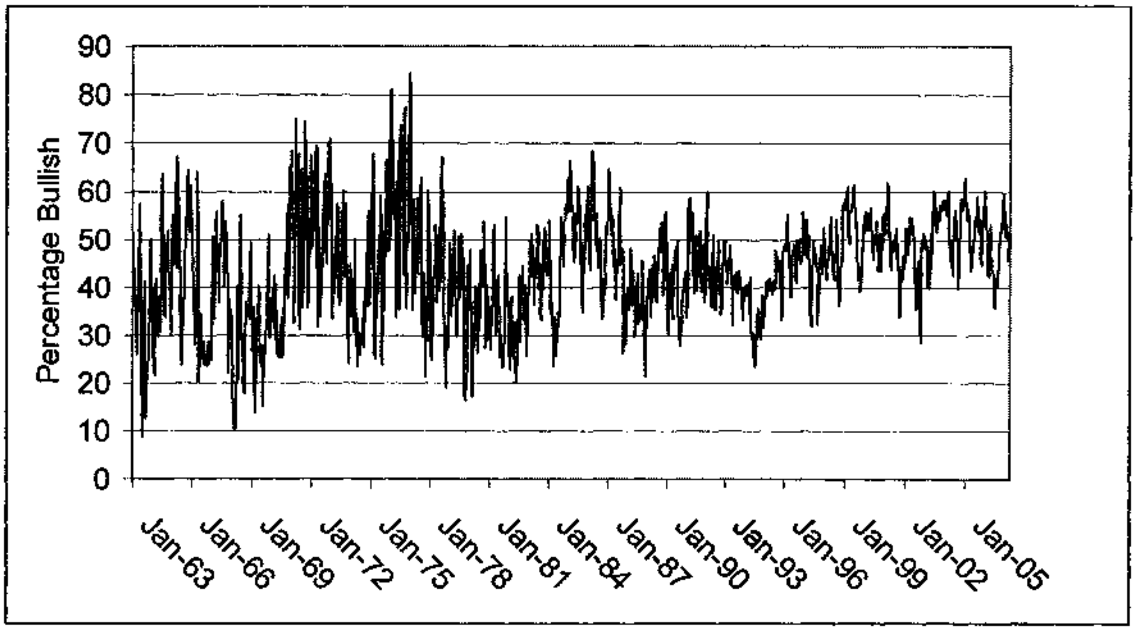

Figure 6. Baker Wurgler Sentiment

The sentiment index value as developed by Baker and Wurgler (2006) from six indirect proxy measures suggested in the literature to measure investor sentiment.

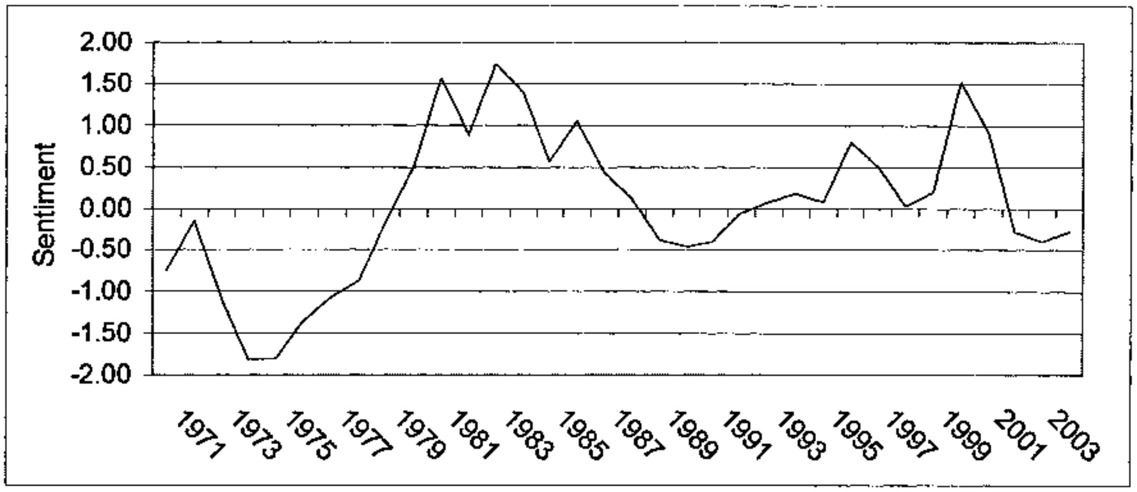

Figure 7. AAII Sentiment

The percentage of investors indicating a bullish outlook on the market in a weekly survey performed by the American Association of Individual Investors.

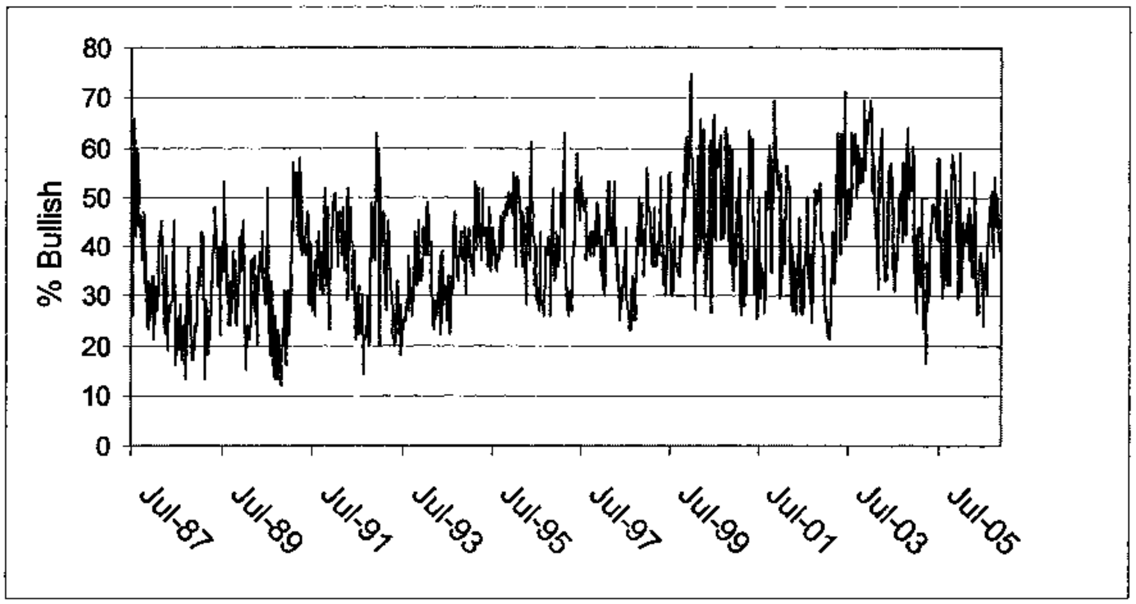

Figure 8. AAII Allocation to Stocks

The percentage of investors' portfolio allocations to stocks from a weekly survey performed by the American Association of Individual Investors.

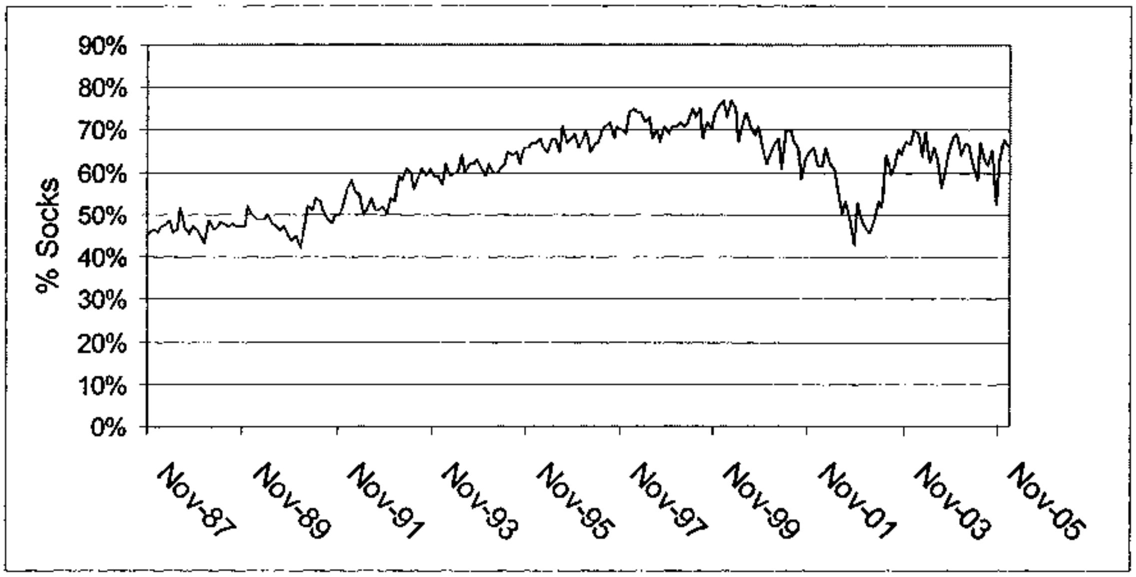

Figure 9. ICF Valuation Confidence Index

Yale University's International Center for Finance Valuation Confidence Index portrays the percentage of survey respondents who believe the market is not too high.

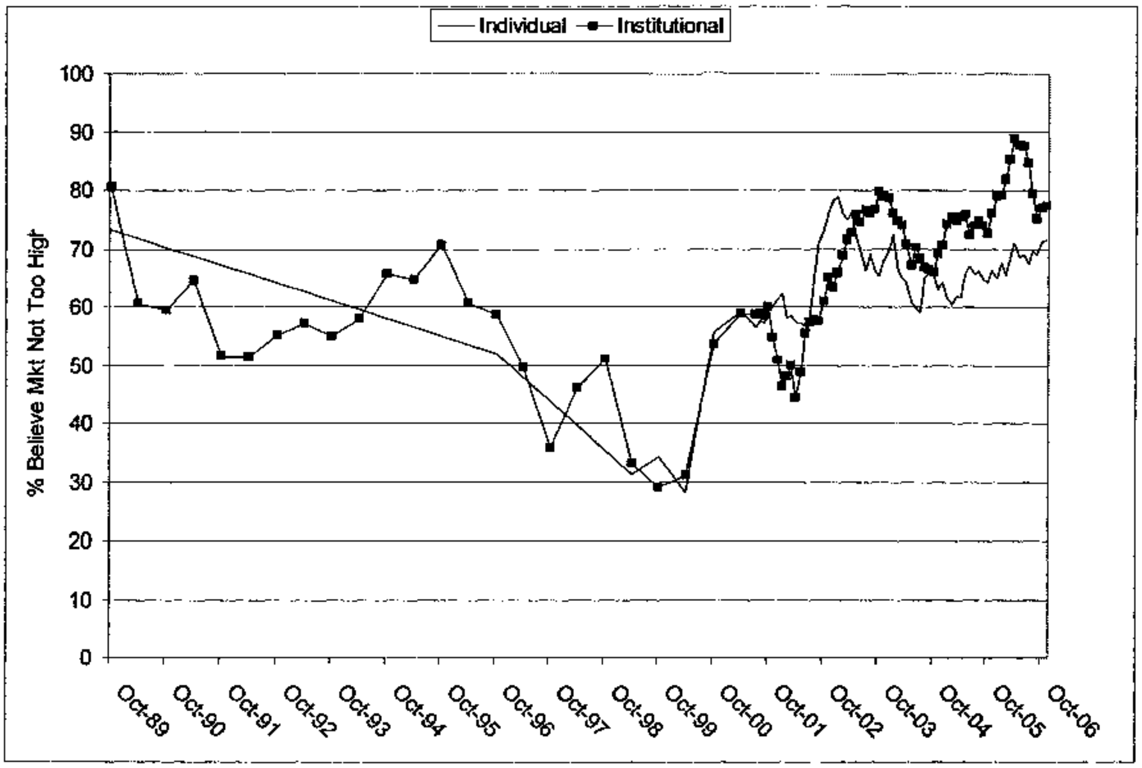

Figure 10. ICF Crash Confidence Index

Yale University's International Center for Finance Crash Confidence Index portrays the percentage of survey respondents who don't believe the market will crash in the next six months.

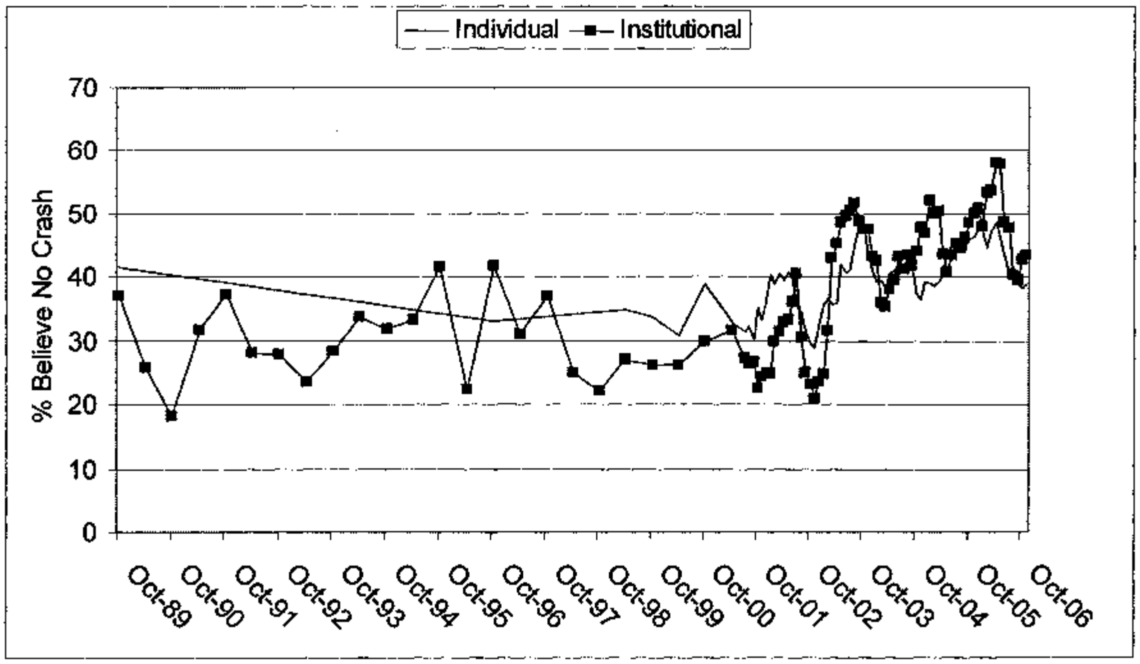

Figure 11. ICF One Year Confidence Index

Yale University's International Center for Finance One Year Confidence Index portrays the percentage of survey respondents who believe the market will rise over the next year.

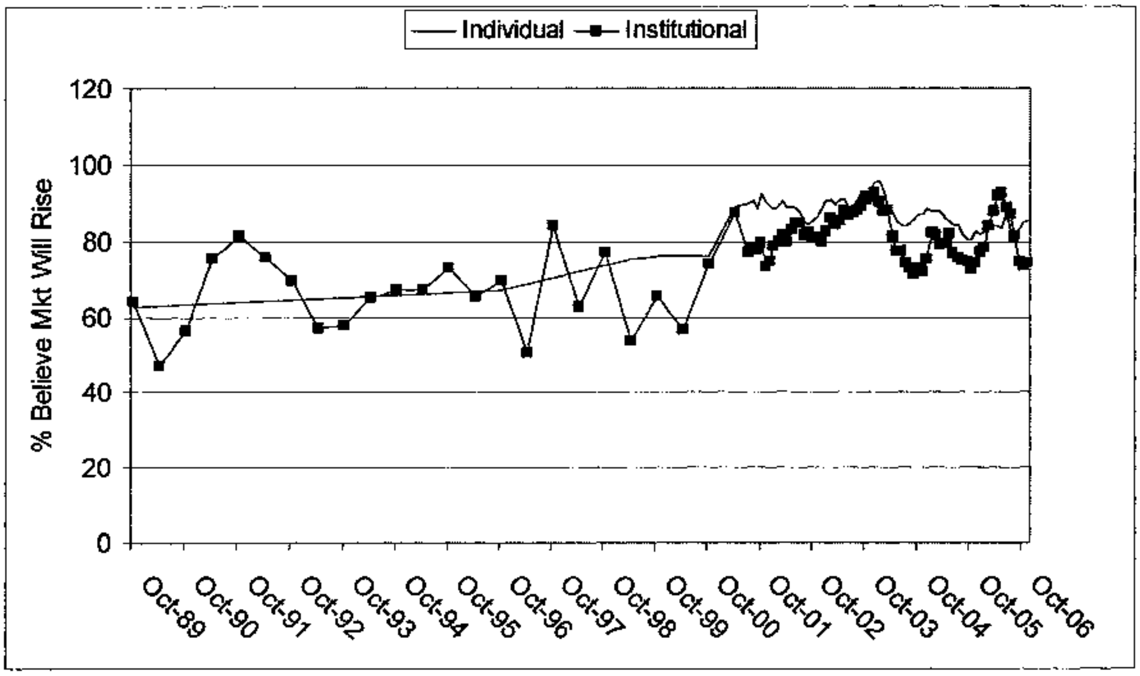

Figure 12. ICF Buy-On-Dips Confidence Index

Yale University's International Center for Finance Buy-On-Dips Confidence Index portrays the percentage of survey respondents who believe the market will rebound the next day should a 3% drop occur.

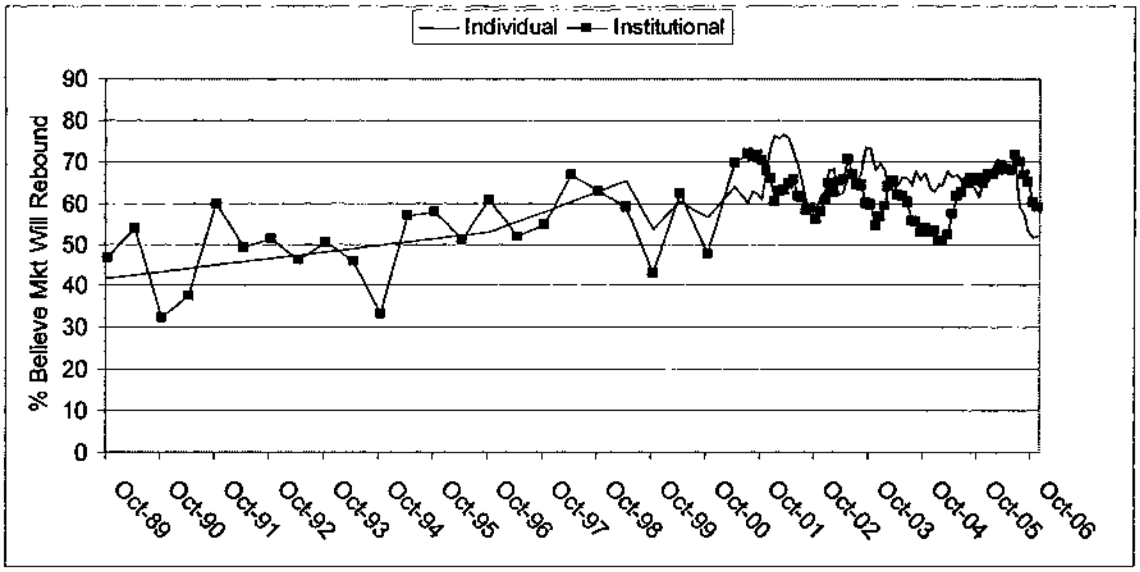

Figure 13. Dividends, Repurchases, Issues, and Payout Dollars

The twelve month moving sum in thousands of dollars of dividends, repurchases, issues, and payout is depicted for the total of the firms in the CRSP sample. Payout is the sum of dividends and repurchases.

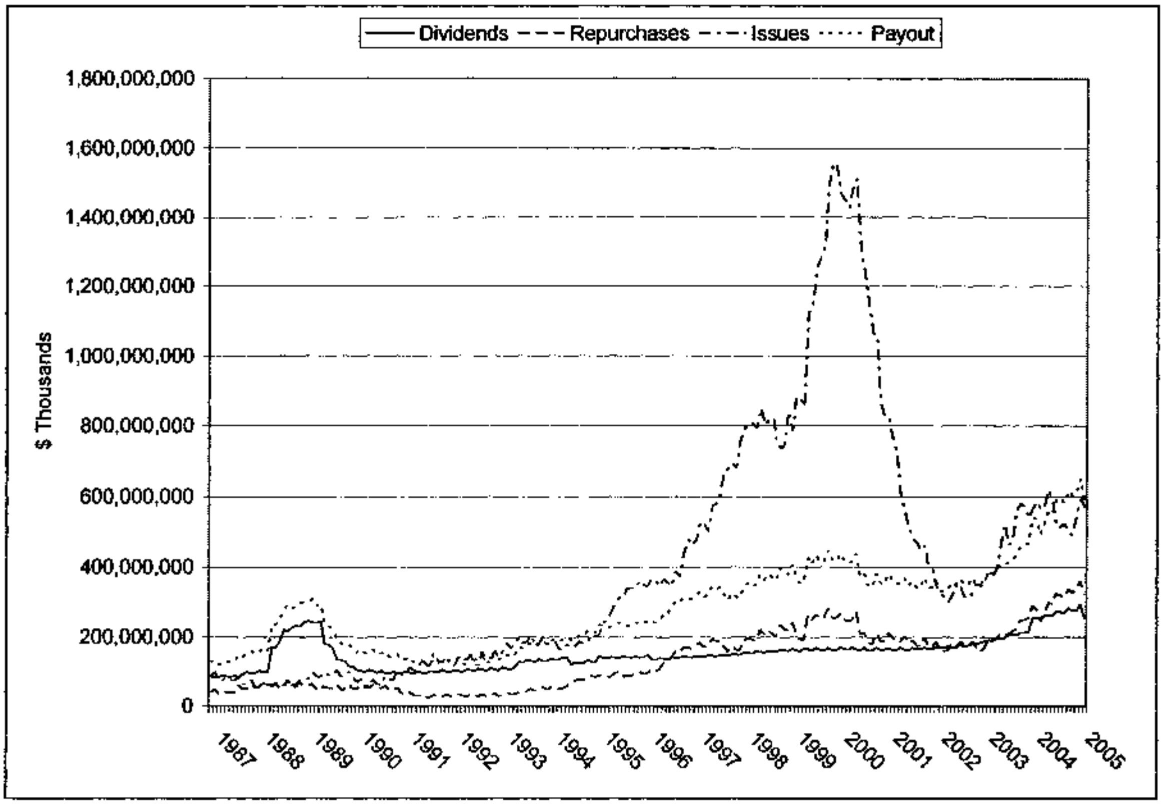

Figure 14. Dividends, Repurchases, Issues, and Payout Yields

The dividend, repurchase, issue, and payout yields are the twelve month moving sums of dividends, repurchases, issues, and payout divided by market capitalization and is depicted for the total of the firms in the CRSP sample. Payout is the sum of dividends and repurchases.

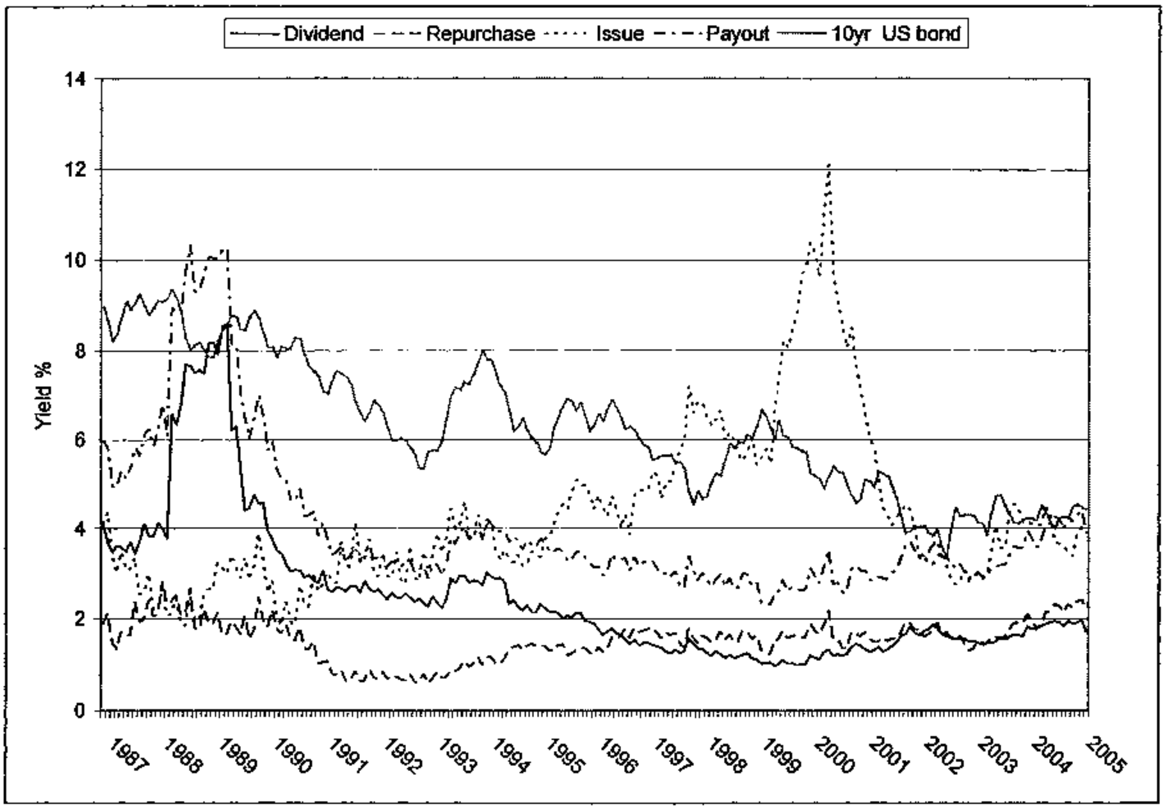

Figure 15. Payout, Net Payout, and 10yr US Bond Yields

The payout and net payout yields are the twelve month moving sums of payout and net payout divided by market capitalization and is depicted for the total of the firms in the CRSP sample. Payout is the sum of dividends and repurchases. Net payout is payout minus issues.

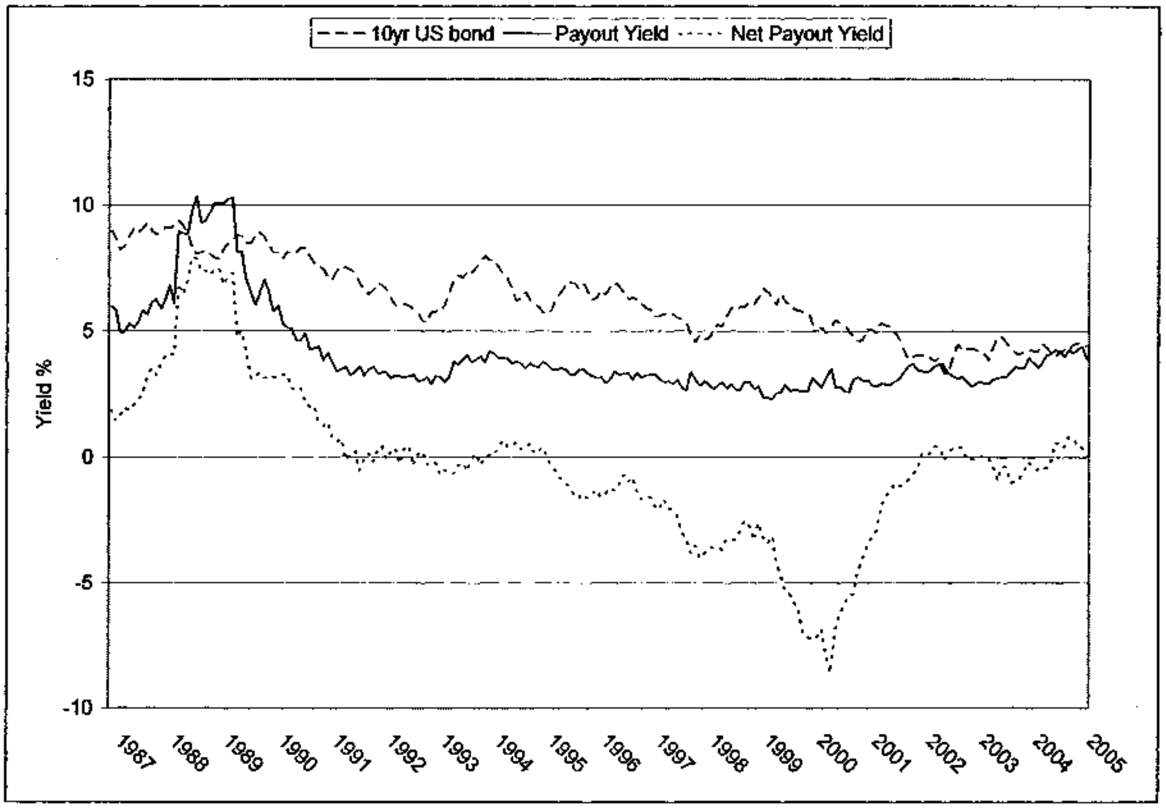

Figure 16. Payout, Dividend, and 10yr US Bond Yields

The payout and dividend yields are the twelve month moving sums of dividends and payout divided by market capitalization and is depicted for the total of the firms in the CRSP sample. Payout is the sum of dividends and repurchases.

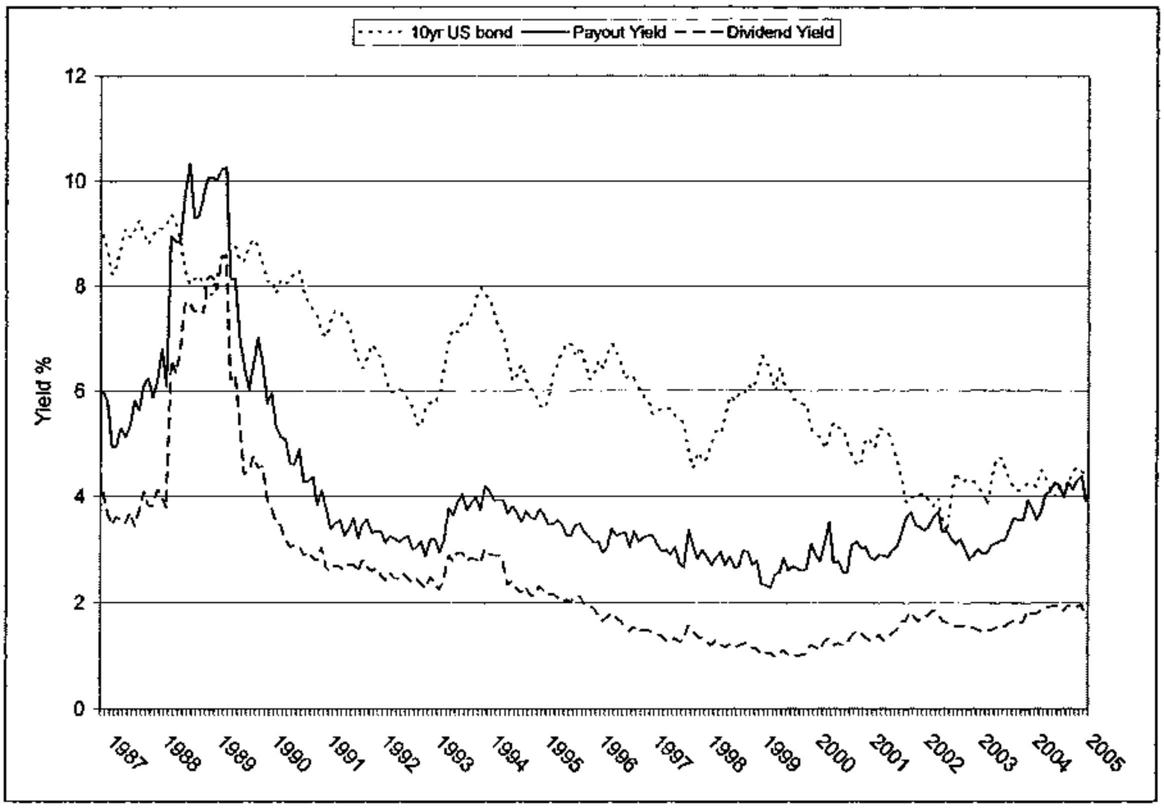

Figure 17. Equal-Weighted Returns Forecast

VAR forecast plot for the full sample period for equal-weighted returns using the AAII asset allocation to stocks as the sentiment measure.

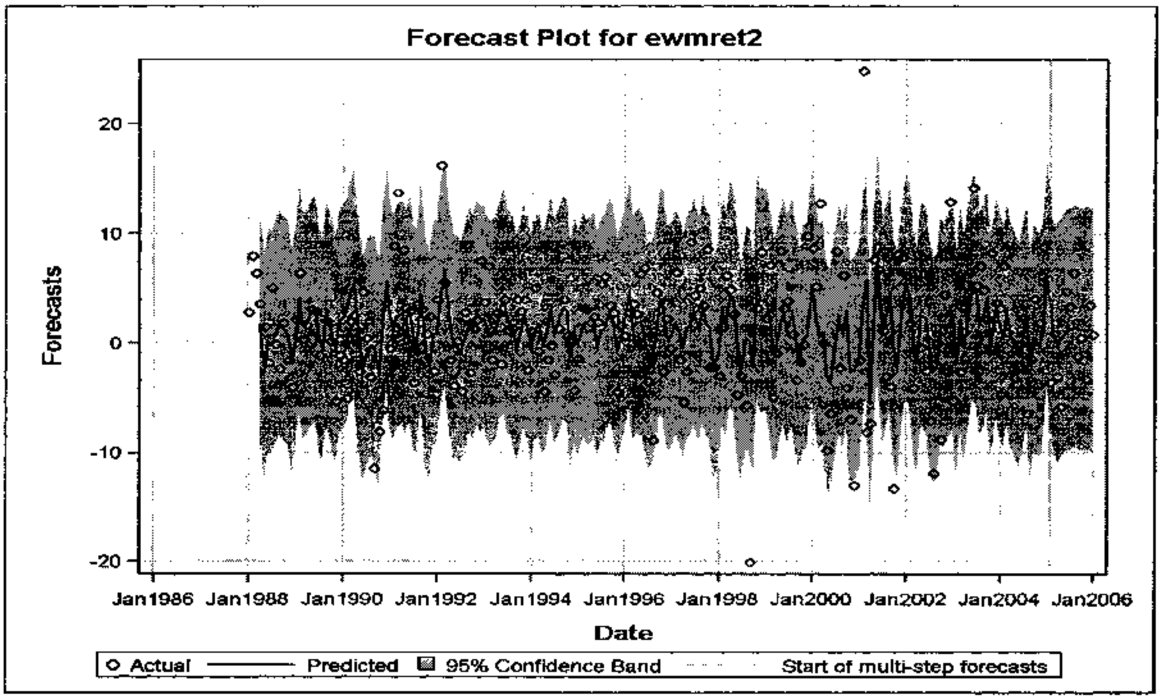

Figure 18. Value-Weighted Returns Forecast

VAR forecast plot for the full sample period for value-weighted returns using the AAII asset allocation to stocks as the sentiment measure.

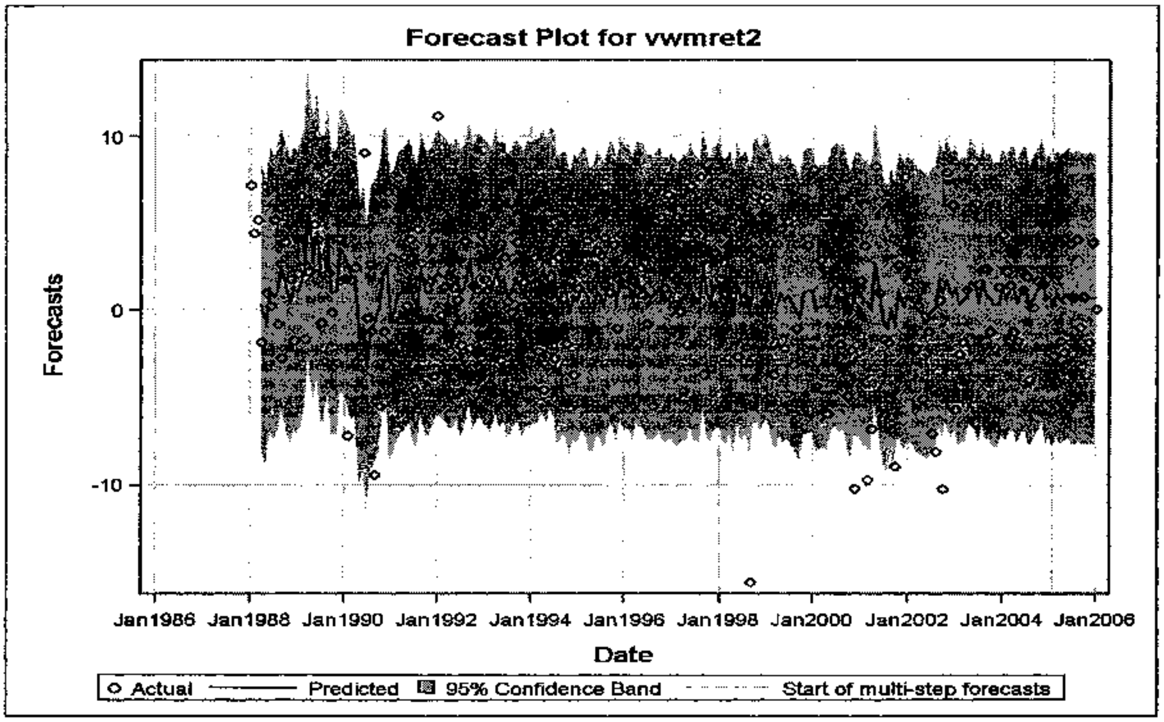

Figure 19. Sentiment Measure Forecast – Allocation to Stocks

VAR forecast plot for the full sample period for the changes in AAII asset allocations to stocks as the sentiment measure.

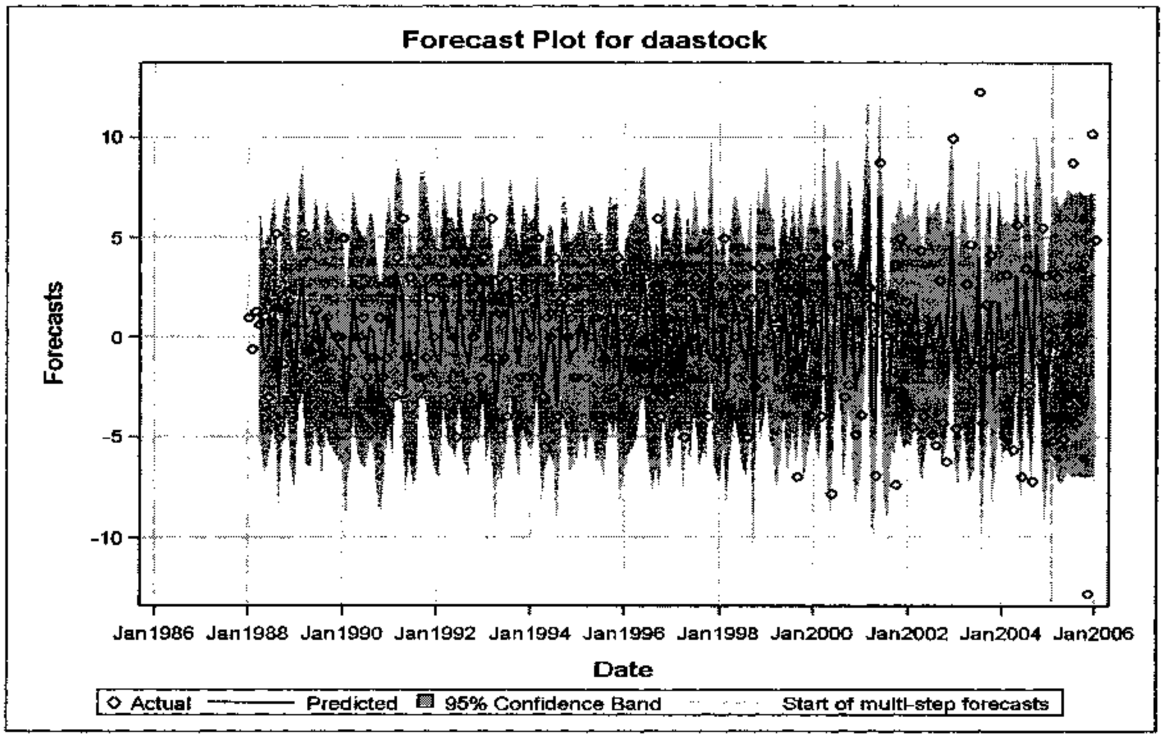

Figure 20. Sentiment Measure Forecast – Allocation to Bonds

VAR forecast plot for the full sample period for the levels of the AAII asset allocations to bonds as the sentiment measure.

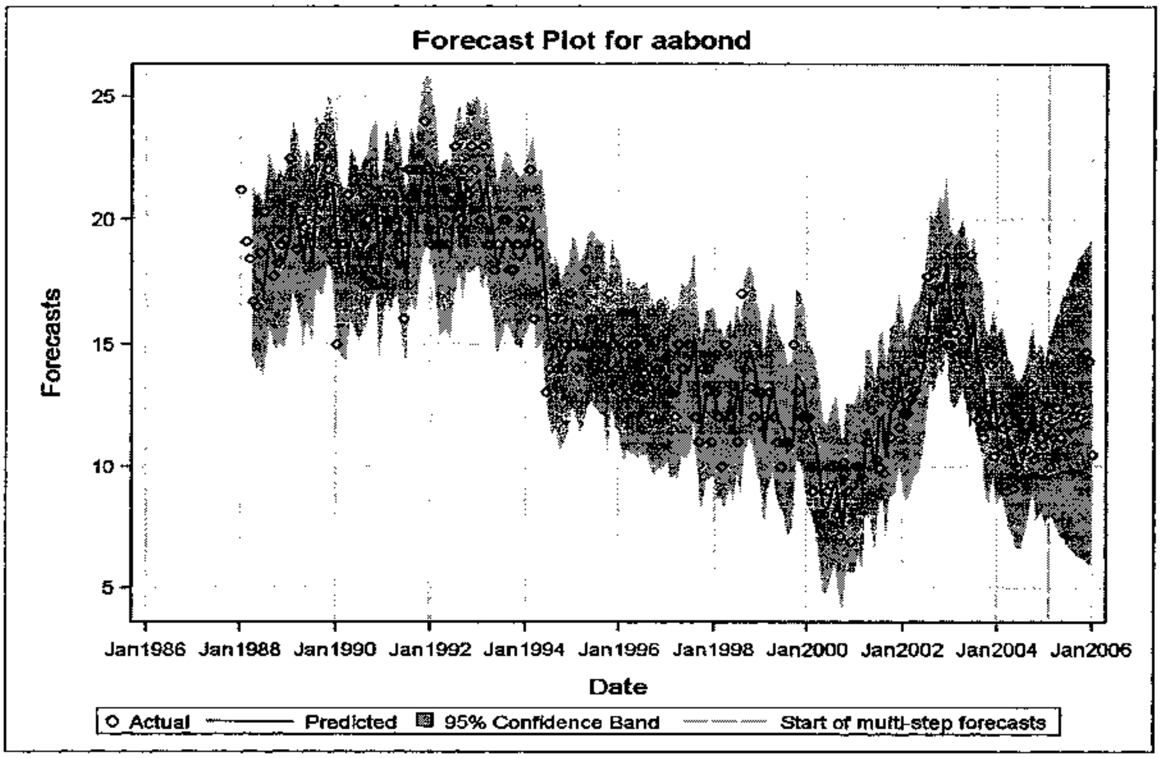

Figure 21. Sentiment Measure Forecast – Allocation to Cash

VAR forecast plot for the full sample period for the changes in the AAII asset allocations to cash as the sentiment measure.

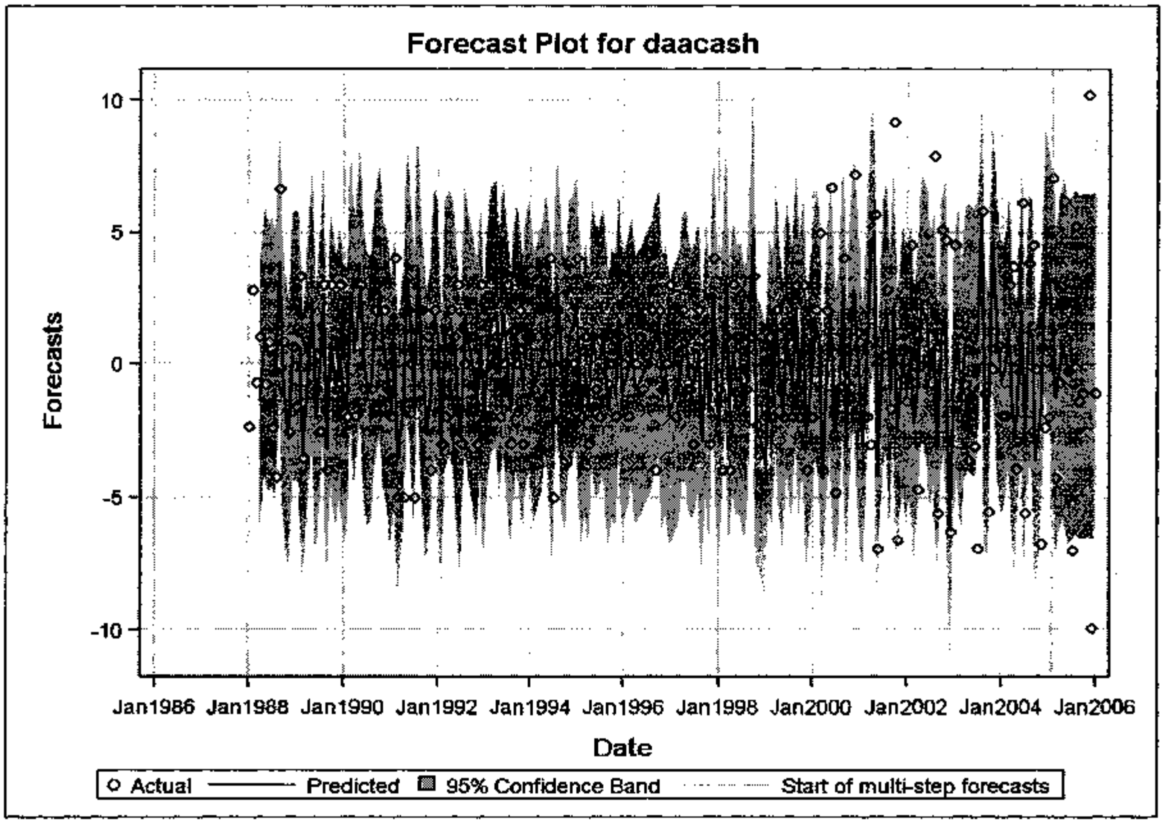

Figure 22. Risk-free Rate Changes Forecast

VAR forecast plot for the full sample period for the changes in the risk-free rate using the AAII asset allocations to stock as the sentiment measure.

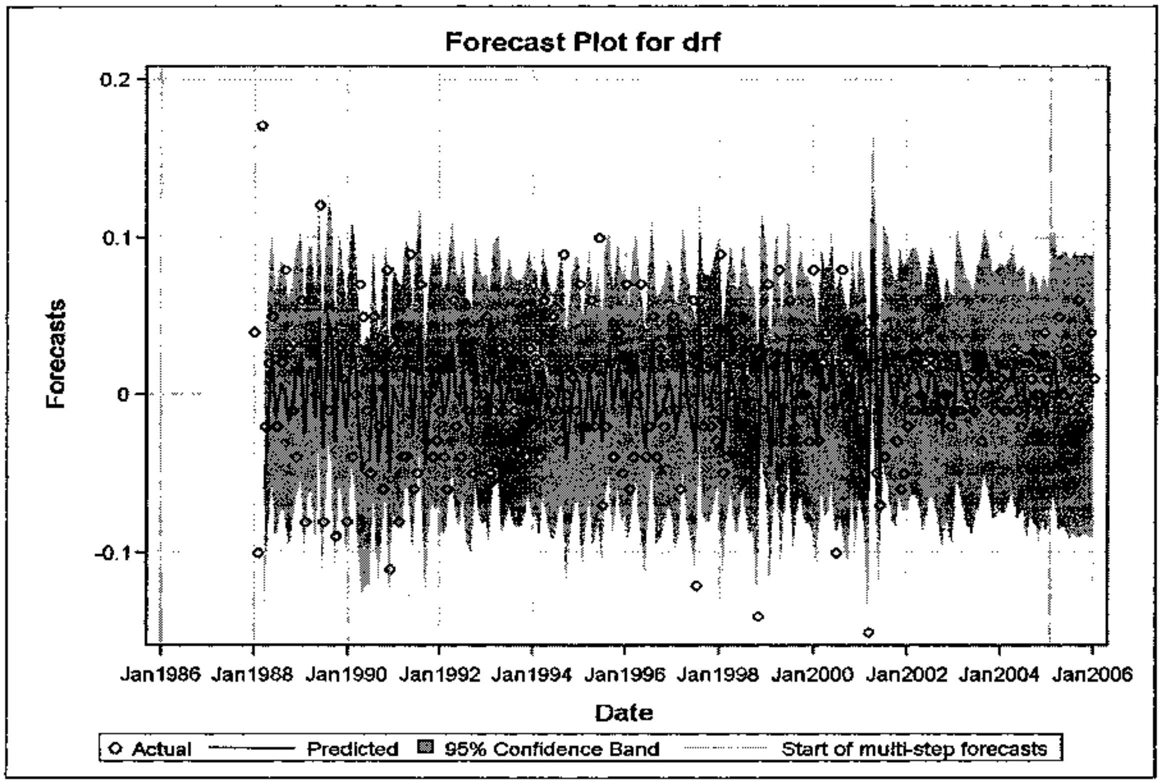

Figure 23. Payout Yield Changes Forecast

VAR forecast plot for the full sample period for the changes in the payout yield using the AAII asset allocations to stock as the sentiment measure.

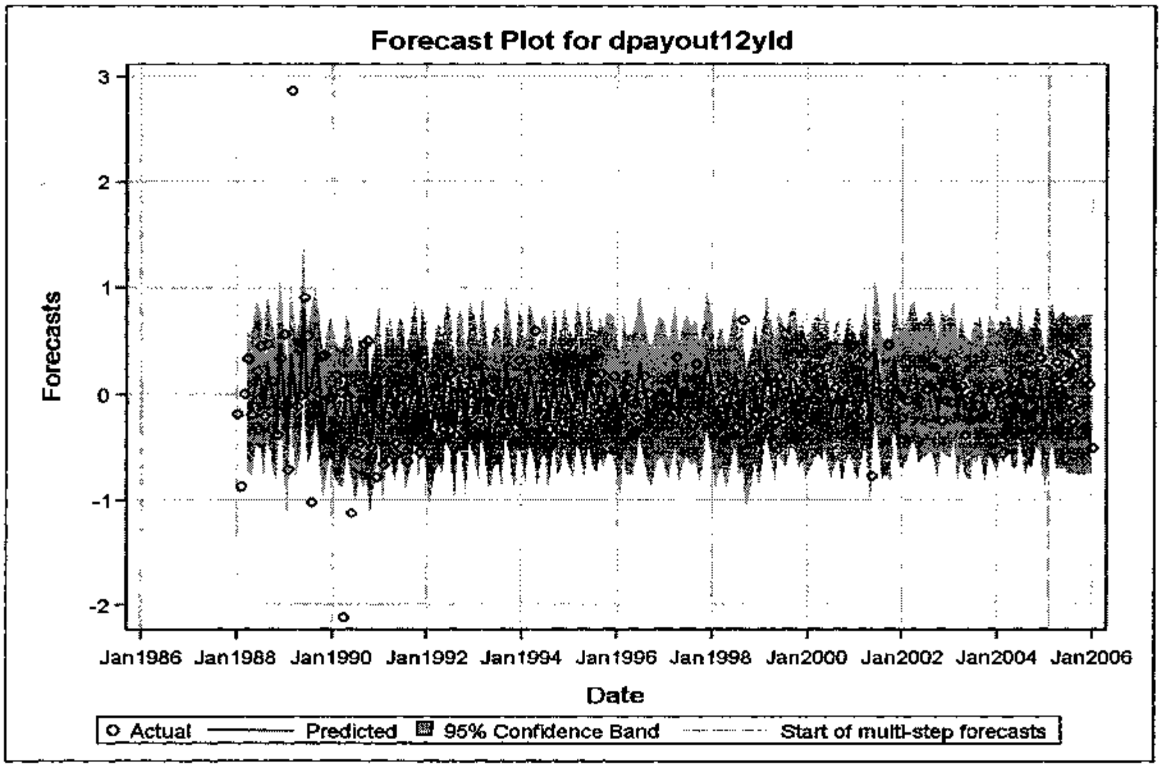

Figure 24. Issue Yield Changes Forecast

VAR forecast plot for the full sample period for the changes in the issue yield using the AAII asset allocations to stock as the sentiment measure.

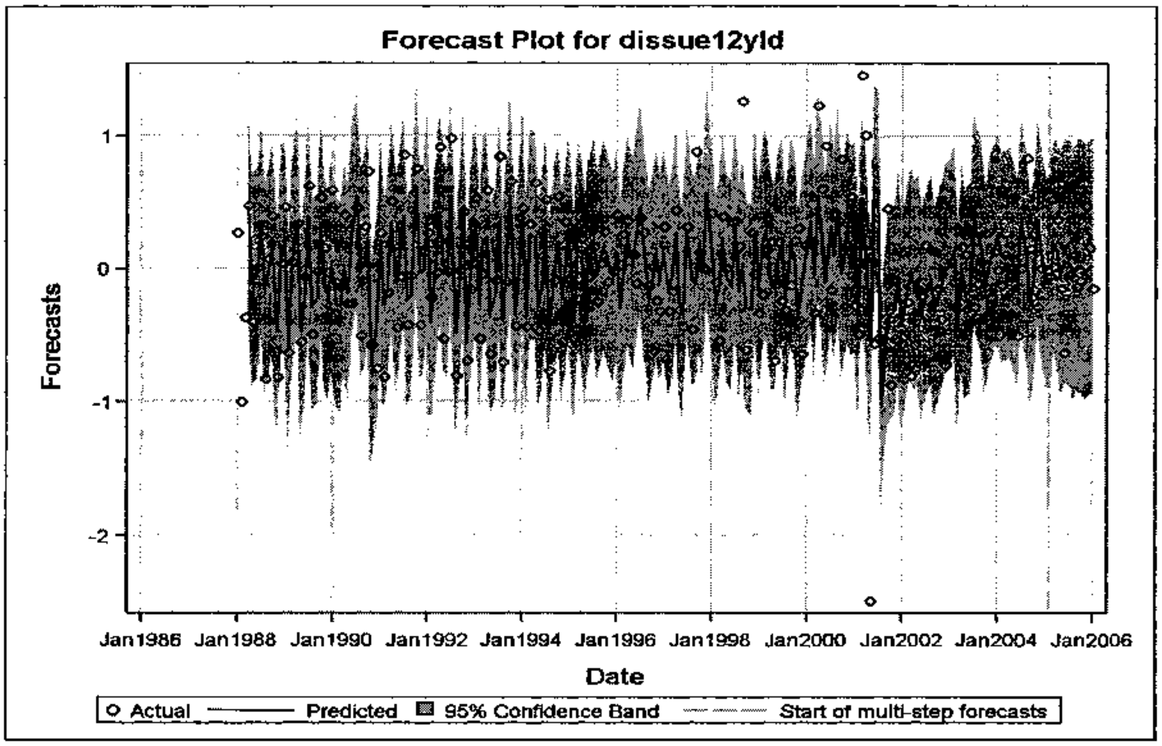

Table 1. Listing of Sentiment Variable Names With a Short Description

Variable Name	Related Variable Name	Short Description
American Association of Individual Investors (AAII) – Asset Allocation Survey (monthly)		
aastock		Percentage of investor's portfolio allocated to stocks
aabond		Percentage of investor's portfolio allocated to bonds
aacash		Percentage of investor's portfolio allocated to bonds
aaspread		aastock - aabond
American Association of Individual Investors (AAII)– Investor Sentiment Survey (weekly) Last weekly survey in month, Four week average of surveys		
asbull	asbull4	% expecting market to rise
asbear	asbear4	% expecting market to fall
asneut	asneut4	% expecting no change
asspread	asspread4	asbull-asbear
asbb	asbb4	asbull / (asbull + asbear)
Investors' Intelligence (II) – Advisors Sentiment index (weekly) Last weekly survey in month, Four week average of surveys		
iibull	iibull4	% of bullish newsletters, i.e. buy stocks
iibear	iibear4	% of bearish newsletters, i.e. sell stocks
iicorr	iicorr4	% of cautious newsletters, i.e. buy on a pullback
iispread	iispread4	iibull - iibear
iibb	iibb4	Iibull / (iibull + iibear)
Yale University International Center for Finance – Investor Confidence Surveys (monthly) Individual Survey, Institutional Survey		
nvalinda	nvalinsa	% believe market is not too high
nyrinda	nyrinsa	% believe market will rise over the next year
ncrinda	ncrinsa	% don't believe market will crash within 6 months
ndiinda	ndiinsa	% believe the market will rebound the next day should a 3% drop occur
Baker-Wurgler Sentiment Index (annual)		
sf2raw		BW constructed index using 6 factors
sf2		S2raw index orthogonalized for economic factors

For all tables, an "l" preceding the variable name indicates the natural log of the variable and a "d" preceding the variable name indicates the first difference of the variable.

Table 2. Return and Payout Variable Definitions

Returns and Rates	
vwmret2	CRSP portfolio value weighted monthly returns.
ewmret2	CRSP portfolio equal weighted monthly returns.
vw_rf	CRSP portfolio value weighted monthly returns minus the monthly risk-free rate. This variable is from Ken French's website.
ew_rf	CRSP portfolio equal weighted monthly returns minus the monthly risk-free rate. This variable is from Ken French's website.
RF	The monthly risk-free rate is proxied by the one month T-bill rate. This variable is from Ken French's website.
rrel	The relative risk-free rate is the monthly detrended T-bill rate from Lamont (1998), Campbell (1991) and Hodrick (1992). It is calculated as the monthly T-bill rate minus its 12 month moving average.
Dividend, Repurchase, and Issue Policy Dollar Variables	
divext12 (000s)	The rolling 12 months sum of dividends calculated at the firm level and summarized at the CRSP portfolio level. Monthly dividends are the product of adjusted dividends per share (madjdiv) and adjusted shares outstanding (madjshr) from CRSP.
repurc12 (000s)	The rolling 12 months sum of repurchases calculated at the firm level and summarized at the CRSP portfolio level.. Repurchases are the product of any monthly decrease in adjusted shares outstanding (madjshr) and the average adjusted price (madjprc) or just the beginning adjusted price if there in no ending price from CRSP.
issue12 (000s)	The rolling 12 months sum of issues calculated at the firm level and summarized at the CRSP portfolio level. Issues are the product of any monthly increase in adjusted shares outstanding (madjshr) and the average adjusted price (madjprc) or just the ending adjusted price if there is no beginning price from CRSP.
cap (000s)	The month-end market capitalization from CRSP calculated at the firm level and summarized at the CRSP portfolio level.
Dividend, Repurchases, Payout, Issue and Netpayout Yield Variables	
divext12yld (%)	Equals divext12 / cap
repurc12yld (%)	Equals repurc12 / cap
payout12yld (%)	Equals (divext12 + repurc12) / cap
issue12yld (%)	Equals issue12 / cap
netpayout12yld (%)	Equals (payout12 – issue12) / cap

For all tables, an "l" preceding the variable name indicates the natural log of the variable and a "d" preceding the variable name indicates the first difference

Table 3. Descriptive Statistics for Monthly Payout Yield Measures and Returns
(dollars in millions, yields and returns in percents)

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
A. For the full period 11/1987 to 12/2005						
divext12	218	153,510	83,266	291,949	148,315	46,499
repurc12	218	131,455	24,348	358,781	102,321	87,839
issue12	218	408,513	52,582	1,556,362	325,714	364,195
cap	218	8,196,359	2,162,488	16,868,144	7,715,737	4,543,817
div12yld	218	2.501	0.985	8.597	1.947	1.614
repur12yld	218	1.549	0.596	2.811	1.590	0.447
payout12yld	218	4.050	2.291	10.326	3.393	1.772
issue12yld	218	4.304	1.846	12.100	3.791	1.888
netpayout12yld	218	-0.254	-8.593	7.928	-0.189	3.131
vwmret2	218	1.025	-15.623	11.204	1.490	4.184
ewmret2	218	1.275	-20.171	24.868	1.650	5.454
RF	218	0.364	0.060	0.790	0.390	0.169
rrel	218	-0.006	-0.203	0.204	-0.007	0.076
vw_rf	218	0.661	-16.053	10.824	1.157	4.180
ew_rf	218	0.911	-20.601	24.328	1.188	5.474
B. For the sub-period 11/1987 to 12/1996						
divext12	110	128,659	83,266	245,511	114,831	40,167
repurc12	110	53,654	24,348	106,805	50,649	20,570
issue12	110	139,874	52,582	365,571	118,520	79,571
cap	110	4,068,470	2,162,488	7,801,378	3,754,127	1,432,282
div12yld	110	3.523	1.768	8.597	2.839	1.730
repur12yld	110	1.407	0.596	2.811	1.367	0.545
payout12yld	110	4.930	2.866	10.326	3.896	2.112
issue12yld	110	3.255	1.846	5.078	3.206	0.772
netpayout12yld	110	1.676	-1.641	7.928	0.496	2.572
vwmret2	110	1.293	-9.459	11.204	1.659	3.468
ewmret2	110	1.264	-11.537	16.166	1.859	4.214
RF	110	0.443	0.210	0.790	0.440	0.148
rrel	110	-0.003	-0.179	0.204	-0.004	0.080
vw_rf	110	0.850	-10.119	10.824	1.134	3.466
ew_rf	110	0.821	-12.197	15.826	1.250	4.241

Table 3. Continued

(dollars in millions, yields and returns in percents)

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
C. For the sub-period 1/1997 to 12/2005						
divext12	108	178,821	134,113	291,949	165,941	38,210
repurc12	108	210,696	104,305	358,781	194,750	51,541
issue12	108	682,126	299,516	1,556,362	572,793	335,844
cap	108	12,400,689	7,725,385	16,868,144	12,755,366	2,103,057
div12yld	108	1.460	0.985	1.969	1.460	0.265
repur12yld	108	1.693	1.230	2.420	1.642	0.246
payout12yld	108	3.153	2.291	4.388	3.061	0.458
issue12yld	108	5.373	2.742	12.100	4.718	2.084
netpayout12yld	108	-2.219	-8.593	0.807	-1.555	2.327
vwmret2	108	0.752	-15.623	8.327	1.329	4.806
ewmret2	108	1.287	-20.171	24.868	1.215	6.499
RF	108	0.285	0.060	0.560	0.310	0.150
rrel	108	-0.009	-0.203	0.126	-0.008	0.072
vw_rf	108	0.467	-16.053	8.173	1.185	4.808
ew_rf	108	1.002	-20.601	24.328	1.020	6.514
D. For the Yale ICF sample period 3/2001 to 12/2005						
divext12	58	199,719	161,672	291,949	179,062	41,106
repurc12	58	221,402	158,592	358,781	197,887	55,862
issue12	58	569,616	299,516	1,510,195	515,999	263,723
cap	58	12,433,730	9,154,138	14,828,638	12,765,253	1,548,058
div12yld	58	1.604	1.199	1.969	1.604	0.218
repur12yld	58	1.767	1.303	2.420	1.697	0.287
payout12yld	58	3.371	2.570	4.388	3.343	0.474
issue12yld	58	4.551	2.742	12.100	4.049	1.959
netpayout12yld	58	-1.181	-8.593	0.807	-0.371	2.154
vwmret2	58	0.360	-10.191	8.327	0.909	4.275
ewmret2	58	1.407	-13.261	14.247	1.215	5.781
RF	58	0.166	0.060	0.440	0.140	0.092
rrel	58	-0.024	-0.203	0.126	-0.023	0.085
vw_rf	58	0.195	-10.331	8.173	0.634	4.290
ew_rf	58	1.241	-13.541	14.157	1.045	5.799

Table 4. Descriptive Statistics for Monthly Sentiment Measures

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
A. For the full time period 11/1987 to 12/2005						
AAII Asset Allocation						
Aastock	218	60.202	42.000	77.000	61.800	9.264
aabond	218	15.296	6.900	24.000	15.000	4.025
Aacash	218	24.506	11.000	38.600	23.100	6.439
aaspread	218	20.400	-16.000	54.000	23.600	18.529
AAII Sentiment Survey - 4 week average						
asbull4	218	39.238	18.000	64.460	39.210	9.537
asbear4	218	28.031	13.980	58.000	27.280	7.331
asneut4	218	32.735	17.660	51.400	32.800	7.032
asspread4	218	11.207	-38.400	50.480	11.900	15.489
asbb4	218	57.999	25.258	82.177	59.084	10.955
AAII Sentiment Survey - month end						
aaspread	218	20.400	-16.000	54.000	23.600	18.529
asbull	218	39.888	17.000	71.400	40.000	11.360
asbear	218	27.939	6.700	61.000	27.000	8.947
asneut	218	32.173	10.700	54.000	33.000	8.185
asspread	218	11.948	-38.000	62.800	11.000	18.740
asbb	218	58.402	27.381	89.250	58.554	13.016
II Advisors Sentiment - 4 week average						
iibull4	218	45.533	26.600	61.980	45.960	7.349
iibear4	218	33.368	18.340	55.780	32.180	8.174
iicorr4	218	21.100	10.100	33.900	21.440	4.665
iispread4	218	12.165	-25.080	41.300	13.830	14.829
iibb4	218	57.837	34.853	76.126	59.012	9.377
II Advisors Sentiment - month end						
iibull	218	45.398	21.100	62.900	45.750	7.651
iibear	218	33.424	17.400	55.300	32.300	8.389
iicorr	218	21.178	8.600	35.600	21.550	4.993
iispread	218	11.974	-34.200	42.300	13.200	15.261
iibb	218	57.720	27.618	76.327	58.323	9.685

Table 4. Continued

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
B. For the sub time period 11/1987 to 12/1996						
AAII Asset Allocation						
Aastock	110	54.827	42.000	71.000	53.000	7.680
aabond	110	18.245	12.000	24.000	19.000	2.944
Aacash	110	26.926	17.000	38.000	26.000	5.777
aaspread	110	9.655	-16.000	42.000	6.000	15.359
AAII Sentiment Survey - 4 week average						
asbull4	110	34.833	18.000	51.600	36.000	8.181
asbear4	110	29.756	15.400	58.000	29.000	7.276
asneut4	110	35.411	22.400	51.400	34.400	6.571
asspread4	110	5.076	-38.400	36.200	6.400	14.020
asbb4	110	53.778	25.258	77.015	54.838	10.402
AAII Sentiment Survey - month end						
asbull	110	36.355	17.000	61.000	35.000	9.825
asbear	110	29.064	10.000	61.000	29.000	8.501
asneut	110	34.582	16.000	54.000	34.500	7.965
asspread	110	7.291	-38.000	51.000	7.000	16.557
asbb	110	55.339	27.381	85.915	55.077	12.079
II Advisors Sentiment - 4 week average						
iibull4	110	41.413	26.600	53.880	40.970	6.157
iibear4	110	37.836	21.520	55.780	37.470	7.818
iicorr4	110	20.752	10.100	33.900	21.010	4.842
iispread4	110	3.577	-25.080	30.120	4.640	13.214
iibb4	110	52.450	34.853	69.764	53.056	8.338
II Advisors Sentiment - month end						
iibull	110	41.286	21.100	58.600	41.450	6.604
iibear	110	37.863	19.300	55.300	36.850	8.025
iicorr	110	20.851	8.600	35.600	21.200	5.188
iispread	110	3.424	-34.200	31.600	4.400	13.752
iibb	110	52.342	27.618	72.507	52.782	8.730

Table 4. Continued

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
C. For the sub time period 1/1997 to 12/2005						
AAII Asset Allocation						
Aastock	108	65.676	42.800	77.000	67.100	7.350
aabond	108	12.292	6.900	18.600	12.000	2.446
Aacash	108	22.042	11.000	38.600	21.250	6.160
aaspread	108	31.343	-14.400	54.000	34.200	14.712
AAII Sentiment Survey - 4 week average						
asbull4	108	43.725	23.480	64.460	43.140	8.720
asbear4	108	26.274	13.980	47.560	24.600	6.992
asneut4	108	30.009	17.660	43.000	29.990	6.438
asspread4	108	17.451	-19.880	50.480	18.040	14.433
asbb4	108	62.298	35.129	82.177	63.038	9.809
AAII Sentiment Survey - month end						
asbull	108	43.486	23.000	71.400	41.200	11.725
asbear	108	26.794	6.700	50.000	24.250	9.280
asneut	108	29.720	10.700	45.700	28.700	7.694
asspread	108	16.692	-22.600	62.800	18.000	19.696
asbb	108	61.522	33.824	89.250	63.580	13.247
II Advisors Sentiment - 4 week average						
iibull4	108	49.730	34.640	61.980	49.720	5.974
iibear4	108	28.818	18.340	45.480	29.010	5.641
iicorr4	108	21.455	10.100	31.700	21.790	4.471
iispread4	108	20.913	-7.840	41.300	21.500	10.725
iibb4	108	63.324	45.284	76.126	63.385	6.876
II Advisors Sentiment - month end						
iibull	108	49.586	32.200	62.900	48.950	6.261
iibear	108	28.904	17.400	44.400	28.300	6.020
iicorr	108	21.510	10.600	33.900	22.300	4.788
iispread	108	20.682	-10.200	42.300	21.550	11.312
iibb	108	63.198	43.164	76.327	63.936	7.251

Table 4. Continued

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
D. For the sub time period 3/2001 to 12/2005						
AAII Asset Allocation						
Aastock	58	61.269	42.800	70.000	63.050	7.009
aabond	58	12.886	9.000	18.600	12.350	2.402
Aacash	58	25.864	18.600	38.600	24.000	5.313
aaspread	58	22.519	-14.400	40.000	26.100	14.028
AAII Sentiment Survey - 4 week average						
asbull4	58	44.530	23.480	64.460	44.210	9.841
asbear4	58	28.446	13.980	47.560	27.600	7.682
asneut4	58	27.038	17.660	36.620	26.700	5.110
asspread4	58	16.084	-19.880	50.480	16.130	16.899
asbb4	58	60.725	35.129	82.177	61.338	11.076
AAII Sentiment Survey - month end						
asbull	58	44.876	23.200	71.400	44.350	13.009
asbear	58	28.490	8.600	48.800	27.200	9.880
asneut	58	26.636	10.700	45.700	26.100	6.821
asspread	58	16.386	-22.600	62.800	15.850	22.070
asbb	58	60.613	34.218	89.250	61.366	14.394
II Advisors Sentiment - 4 week average						
iibull4	58	50.318	35.940	61.980	51.180	6.008
iibear4	58	26.646	18.340	39.960	25.470	5.940
iicorr4	58	23.041	14.500	30.000	23.750	3.479
iispread4	58	23.672	-0.900	41.300	24.080	11.431
iibb4	58	65.399	49.382	76.126	65.989	7.433
II Advisors Sentiment - month end						
iibull	58	50.128	34.400	62.900	49.250	6.029
iibear	58	26.690	17.400	42.700	25.300	6.128
iicorr	58	23.183	12.800	30.900	23.150	3.772
iispread	58	23.438	-8.300	42.300	22.900	11.557
iibb	58	65.296	44.617	76.327	65.507	7.487

Table 4. Continued

Variable	N	Mean	Minimum	Maximum	Median	Std Dev
Yale ICF Investor Confidence						
Institutional						
nvalinsa	58	67.032	44.270	79.850	69.660	9.659
nyrinsa	58	81.113	71.110	92.520	80.890	5.640
ncrinsa	58	38.659	20.790	52.000	41.550	9.490
ndiinsa	58	62.146	50.670	71.930	62.585	5.630
Individual						
nvalinda	58	64.855	56.470	78.920	64.890	5.868
nyrinda	58	88.008	80.490	95.620	88.510	3.453
ncrinda	58	39.065	28.950	48.880	39.445	4.984
ndiinda	58	66.093	58.390	76.650	65.340	4.240

Table 5. Stationarity Test Results and Autocorrelation Statistics for Monthly Yield and Return Variables, for the Full Period 11/1987 to 12/2005

	Augmented Dickey-Fuller Unit Root Tests					
Variable	Rho	Pr < Rho	Tau	Pr < Tau	F	Pr > F
Payout Yield Variables						
div12yld	-20.216	0.061	-2.890	0.168	4.180	0.342
repur12yld	-5.508	0.780	-1.450	0.842	1.400	0.897
payout12yld	-12.507	0.279	-2.280	0.445	2.620	0.655
issue12yld	-9.977	0.430	-2.050	0.571	2.160	0.745
netpayout12yld	-12.790	0.265	-2.270	0.449	2.620	0.653
Return Variables						
RF	-9.079	0.494	-1.990	0.604	1.990	0.780
rrel	-18.532	0.086	-2.720	0.229	3.790	0.419
vwmret2	-407.365	0.000	-7.150	<.0001	25.600	0.001
ewmret2	-639.880	0.000	-7.540	<.0001	28.420	0.001
vw_rf	-405.822	0.000	-7.150	<.0001	25.590	0.001
ew_rf	-573.542	0.000	-7.460	<.0001	27.860	0.001

	Partial Autocorrelation Lags			
	1	2	3	4
Payout Yield Variables				
div12yld	0.978	0.071	-0.008	-0.340
repur12yld	0.876	0.277	0.465	-0.331
payout12yld	0.975	0.112	0.064	-0.250
issue12yld	0.968	0.111	0.178	-0.430
netpayout12yld	0.988	0.024	-0.025	-0.428
Return Variables				
RF	0.963	0.354	0.117	-0.164
rrel	0.804	0.329	0.126	-0.104
vwmret2	0.000	-0.027	-0.010	-0.066
ewmret2	0.216	-0.121	-0.054	-0.112
vw_rf	-0.001	-0.029	-0.014	-0.070
ew_rf	0.222	-0.117	-0.050	-0.108

Table 6. Stationarity Test Results and Autocorrelation Statistics for Selected Logged and Differenced Yield and Return Variables, for the Full Period 11/1987 to 12/2005

	Augmented Dickey-Fuller Unit Root Tests					
Variable	**Rho**	**Pr < Rho**	**Tau**	**Pr < Tau**	**F**	**Pr > F**
Logged Variables						
lpayout12yld	-5.936	0.746	-1.470	0.838	1.300	0.918
lissue12yld	-11.391	0.339	-2.200	0.488	2.460	0.687
lnetpayout12yld	-8.563	0.533	-1.850	0.675	1.820	0.813
lrf	-7.957	0.581	-1.760	0.720	1.640	0.851
Differenced Variables						
dpayout12yld	-195.434	0.000	-6.300	<.0001	19.880	0.001
dissue12yld	-101.694	0.000	-5.370	<.0001	14.410	0.001
dnetpayout12yld	-57.379	0.001	-4.430	0.003	9.800	0.001
drf	-104.623	0.000	-5.520	<.0001	15.370	0.001

	Partial Autocorrelations Lags			
	1	**2**	**3**	**4**
Logged Variables				
lpayout12yld	0.973	0.148	0.170	-0.207
lissue12yld	0.951	0.242	0.377	-0.567
lnetpayout12yld	0.975	-0.040	0.160	-0.227
lrf	0.977	0.260	0.145	-0.216
Differenced Variables				
dpayout12yld	-0.125	-0.025	0.281	0.045
dissue12yld	-0.123	-0.195	0.413	-0.098
dnetpayout12yld	-0.015	0.015	0.440	0.036
drf	-0.368	-0.134	0.158	0.065

Table 7. Stationarity Test Results and Autocorrelation Statistics for Monthly AAII and II Sentiment Variables, for the Full Period 11/1987 to 12/2005

	Augmented Dickey Fuller Unit Root Tests						Partial Autocorrelations			
							Lags			
Variable	Rho	Pr < Rho	Tau	Pr < Tau	F	Pr > F	1	2	3	4
aastock	-12.37	0.2862	-2.47	0.3408	3.14	0.5497	0.9231	0.3074	0.1681	-0.0708
aabond	-32.17	0.0040	-3.96	0.0115	7.84	0.0129	0.8696	0.3588	0.2057	0.1262
Aacash	-15.63	0.1552	-2.79	0.2016	3.97	0.3849	0.8732	0.3316	0.2556	-0.0448
aaspread	-12.36	0.2865	-2.47	0.3410	3.14	0.5499	0.9230	0.3077	0.1682	-0.0706
asbull	-147.53	0.0001	-8.52	<.0001	36.27	0.0010	0.4027	0.0748	0.0396	0.0092
asbear	-116.59	0.0001	-7.56	<.0001	28.56	0.0010	0.2977	0.1374	-0.0298	-0.0127
asneut	-74.38	0.0006	-6.12	<.0001	18.75	0.0010	0.5069	0.3204	0.0576	0.0095
asspread	-146.63	0.0001	-8.47	<.0001	35.87	0.0010	0.3349	0.0632	-0.0061	-0.0095
asbb	-147.78	0.0001	-8.50	<.0001	36.17	0.0010	0.3232	0.0561	-0.0061	-0.0086
asbull4	-108.11	0.0001	-7.29	<.0001	26.54	0.0010	0.6405	0.0906	0.0466	0.0468
asbear4	-84.94	0.0006	-6.46	<.0001	20.86	0.0010	0.6014	0.0295	0.0324	-0.0086
asneut4	-65.10	0.0006	-5.66	<.0001	16.02	0.0010	0.7500	0.1302	-0.0121	0.0963
asspread4	-103.41	0.0001	-7.13	<.0001	25.39	0.0010	0.6003	0.0528	0.0435	0.0130
asbb4	-104.94	0.0001	-7.18	<.0001	25.77	0.0010	0.5997	0.0279	0.0563	-0.0047
iibull	-94.59	0.0006	-6.81	<.0001	23.22	0.0010	0.6452	0.1575	0.0842	0.1561
iibear	-77.02	0.0006	-6.15	<.0001	18.94	0.0010	0.7823	0.0194	0.1023	0.0938
iicorr	-66.76	0.0006	-5.74	<.0001	16.46	0.0010	0.6216	0.1127	-0.0783	0.0590
iispread	-86.05	0.0006	-6.50	<.0001	21.12	0.0010	0.7306	0.1016	0.1072	0.1354
iibb	-85.25	0.0006	-6.47	<.0001	20.93	0.0010	0.7331	0.1004	0.1219	0.1377
iibull4	-100.46	0.0001	-7.05	<.0001	24.82	0.0010	0.7076	0.0451	0.1973	0.0713
iibear4	-66.22	0.0006	-5.70	<.0001	16.26	0.0010	0.8142	0.0150	0.0916	0.0748
iicorr4	-64.92	0.0006	-5.74	<.0001	16.51	0.0010	0.7195	-0.0185	-0.0686	0.0026
iispread4	-82.73	0.0006	-6.37	<.0001	20.27	0.0010	0.7712	0.0441	0.1767	0.0746
iibb4	-79.90	0.0006	-6.26	<.0001	19.59	0.0010	0.7789	0.0406	0.1802	0.0813
Logged Variables										
laastock	-12.71	0.2692	-2.51	0.3210	3.25	0.5275	0.9242	0.2923	0.1629	-0.0861
laacash	-15.39	0.1628	-2.76	0.2130	3.89	0.4010	0.8708	0.3414	0.2657	-0.0161
laaspread	-15.06	0.1732	-2.56	0.2986	3.39	0.4994	0.8941	0.2757	0.1973	-0.0761
Differenced Variables										
daastock	-441.95	0.0001	-14.16	<.0001	100.39	0.0010	-0.3509	-0.1778	0.0455	-0.0567
daacash	-573.57	0.0001	-16.35	<.0001	133.62	0.0010	-0.3814	-0.2950	0.0094	-0.0150
daaspread	-442.51	0.0001	-14.17	<.0001	100.48	0.0010	-0.3513	-0.1781	0.0453	-0.0553

Table 8. Stationarity Test Results and Autocorrelation Statistics for Monthly Yale-ICF Confidence Variables, for the Period 3/2001 to 12/2005

	Augmented Dickey Fuller Unit Root Tests						Partial Autocorrelations Lags			
Variable	Rho	Pr < Rho	Tau	Pr < Tau	F	Pr > F	1	2	3	4
nvalinsa	-7.1993	0.6238	-1.8700	0.6594	1.7800	0.8216	0.9453	-0.1455	0.0396	-0.1092
nyrinsa	-10.2811	0.3793	-2.2200	0.4678	2.5300	0.6759	0.8639	-0.1382	-0.0711	-0.0386
ncrinsa	-18.6781	0.0623	-2.9700	0.1503	4.4000	0.3085	0.9206	-0.2995	-0.1643	-0.1131
ndiinsa	-8.9976	0.4742	-1.8600	0.6614	2.2700	0.7251	0.8770	-0.1598	-0.2998	-0.0066
nvalinda	-9.0036	0.4737	-2.0800	0.5467	2.1800	0.7432	0.8966	-0.1992	-0.2034	-0.1000
nyrinda	-12.3233	0.2572	-2.3800	0.3851	2.9500	0.5921	0.8852	-0.2407	-0.1293	-0.1611
ncrinda	-15.1332	0.1420	-2.6100	0.2771	3.4300	0.4986	0.8576	-0.1169	-0.1070	-0.0969
ndiinda	-21.4023	0.0315	-3.1400	0.1064	4.9400	0.2029	0.7685	-0.2251	-0.1472	-0.2346
Logged Variables										
lnvalinsa	-7.8082	0.5716	-1.9500	0.6170	1.9300	0.7927	0.9434	-0.1432	0.0628	-0.1435
lnyrinsa	-10.6127	0.3572	-2.2500	0.4507	2.6000	0.6617	0.8613	-0.1396	-0.0701	-0.0353
ncrinsa	-18.6781	0.0623	-2.9700	0.1503	4.4000	0.3085	0.9206	-0.2995	-0.1643	-0.1131
lndiinsa	-9.2790	0.4523	-1.8900	0.6459	2.2900	0.7225	0.8781	-0.1722	-0.3066	0.0205
lnvalinda	-9.2412	0.4552	-2.1000	0.5337	2.2300	0.7339	0.8932	-0.1913	-0.2010	-0.0890
lnyrinda	-12.2746	0.2597	-2.3700	0.3878	2.9400	0.5941	0.8869	-0.2439	-0.1298	-0.1671
lncrinda	-14.9325	0.1485	-2.6100	0.2770	3.4200	0.5010	0.8593	-0.1052	-0.1384	-0.1035
lndiinda	-21.4457	0.0311	-3.1400	0.1063	4.9500	0.2027	0.7583	-0.2097	-0.1536	-0.2260
Differenced Variables										
dnvalinsa	-50.9753	0.0001	-4.9200	0.0010	12.1200	0.0010	0.1515	-0.0406	0.1744	0.1099
dnyrinsa	-55.0546	0.0001	-5.4000	0.0002	14.8000	0.0010	0.0434	-0.0222	-0.1615	0.2040
dncrinsa	-33.0017	0.0011	-3.8800	0.0192	7.5600	0.0228	0.2518	0.1155	-0.0317	-0.2638
dndiinsa	-40.2141	0.0001	-5.1800	0.0005	13.6800	0.0010	0.0456	0.1182	-0.0215	-0.0753
dnvalinda	-37.6756	0.0002	-4.1700	0.0089	8.7400	0.0010	0.1618	0.1079	-0.0677	-0.0710
dnyrinda	-44.2825	0.0001	-5.1500	0.0005	13.4800	0.0010	0.0778	0.0412	0.0123	0.0336
dncrinda	-49.1435	0.0001	-4.9100	0.0010	12.1000	0.0010	0.0373	0.0488	-0.0033	-0.0458
dndiinda	-53.6477	0.0001	-5.0300	0.0007	12.7700	0.0010	0.0925	-0.0320	-0.0325	0.0197

Table 9. Pearson Correlation Coefficients for Monthly Yield and Return Measures for the Full Period 11/1987 to 12/2005

Prob > |r| under H0: Rho=0

	vwmret2	ewmret2	drf	dpayout12yld	dissue12yld
vwmret2	1.00000	0.76662 <.0001	0.00257 0.9700	-0.42577 <.0001	-0.40534 <.0001
ewmret2	0.76662 <.0001	1.00000	-0.09511 0.1627	-0.32819 <.0001	-0.39608 <.0001
drf	0.00257 0.9700	-0.09511 0.1627	1.00000	0.13781 0.0426	0.12125 0.0747
dpayout12yld	-0.42577 <.0001	-0.32819 <.0001	0.13781 0.0426	1.00000	0.40856 <.0001
dissue12yld	-0.40534 <.0001	-0.39608 <.0001	0.12125 0.0747	0.40856 <.0001	1.00000

Table 10. Pearson Correlation Coefficients for Monthly AAII and II Sentiment Measures With Yield and Return Variables for the Full Period 11/1987 to 12/2005

Prob > |r| under H0: Rho=0

Number of Observations: 217

	vwmret2	ewmret2	drf	dpayout12yld	dissue12yld
daastock	0.2026	0.2949	-0.1192	-0.0034	-0.0350
	0.0027	<.0001	0.0798	0.9608	0.6078
aabond	0.0475	0.0048	0.0117	-0.0456	-0.0455
	0.4853	0.9444	0.8642	0.5043	0.5054
daacash	-0.1970	-0.3024	0.0804	-0.0171	-0.0095
	0.0036	<.0001	0.2383	0.8020	0.8897
daaspread	0.2023	0.2943	-0.1183	-0.0028	-0.0345
	0.0028	<.0001	0.0822	0.9678	0.6136
dasbull	0.3768	0.2971	0.0176	-0.1790	-0.2001
	<.0001	<.0001	0.7969	0.0082	0.0031
dasbear	-0.2815	-0.2650	-0.0441	0.1164	0.1303
	<.0001	<.0001	0.5186	0.0871	0.0553
dasneut	-0.2094	-0.1087	0.0305	0.1221	0.1368
	0.0019	0.1102	0.6551	0.0727	0.0442
dasspread	0.3543	0.3004	0.0317	-0.1598	-0.1787
	<.0001	<.0001	0.6425	0.0185	0.0083
dasbb	0.3372	0.2943	0.0410	-0.1542	-0.1676
	<.0001	<.0001	0.5480	0.0231	0.0134
dasbull4	0.2342	0.3499	-0.0556	-0.0676	-0.0745
	0.0005	<.0001	0.4152	0.3217	0.2743
dasbear4	-0.2515	-0.3982	0.0103	0.0246	0.0591
	0.0002	<.0001	0.8804	0.7190	0.3863
dasneut4	-0.0499	-0.0451	0.0769	0.0777	0.0438
	0.4644	0.5092	0.2593	0.2546	0.5209
dasspread4	0.2556	0.3925	-0.0373	-0.0511	-0.0715
	0.0001	<.0001	0.5847	0.4543	0.2948
dasbb4	0.2408	0.3841	-0.0418	-0.0392	-0.0628
	0.0003	<.0001	0.5404	0.5662	0.3572
diibull	0.4580	0.4150	-0.0593	-0.2953	-0.1824
	<.0001	<.0001	0.3850	<.0001	0.0070
diibear	-0.4875	-0.5537	0.0774	0.2395	0.2365
	<.0001	<.0001	0.2566	0.0004	0.0004
diicorr	-0.0546	0.0909	-0.0108	0.1291	-0.0314
	0.4235	0.1821	0.8739	0.0576	0.6457
diispread	0.5059	0.5141	-0.0726	-0.2890	-0.2226
	<.0001	<.0001	0.2873	<.0001	0.0010
diibb	0.5093	0.5273	-0.0616	-0.2785	-0.2292
	<.0001	<.0001	0.3666	<.0001	0.0007
diibull4	0.2631	0.3409	-0.1304	-0.2559	-0.0763
	<.0001	<.0001	0.0550	0.0001	0.2630

Table 10. Continued

Prob > |r| under H0: Rho=0
Number of Observations: 217

	vwmret2	ewmret2	drf	dpayout12yld	dissue12yld
diibear4	-0.2756	-0.4164	0.0776	0.2561	0.1011
	<.0001	<.0001	0.2553	0.0001	0.1377
diicorr4	-0.0265	0.0483	0.0958	0.0430	-0.0218
	0.6975	0.4793	0.1597	0.5284	0.7500
diispread4	0.2852	0.3993	-0.1119	-0.2714	-0.0933
	<.0001	<.0001	0.1003	<.0001	0.1708
diibb4	0.2894	0.4163	-0.0997	-0.2627	-0.1001
	<.0001	<.0001	0.1434	<.0001	0.1416

Table 11. Pearson Correlation Coefficients for Monthly ICF Confidence Variables With Yield and Return Variables for the time period 3/2001 to 12/2005

Prob > |r| under H0: Rho=0
Number of Observations = 58

	vwmret2	ewmret2	drf	dpayout12yld	dissue12yld
dnvalinda	-0.22576 0.0884	-0.37140 0.0041	0.07840 0.5586	0.26026 0.0485	0.10268 0.4431
dnvalinsa	-0.31013 0.0178	-0.33963 0.0091	0.19784 0.1366	0.04475 0.7387	0.15748 0.2378
dnyrinda	-0.24182 0.0674	-0.22330 0.0920	0.12858 0.3361	0.13346 0.3179	0.15691 0.2395
dnyrinsa	-0.08388 0.5313	-0.08326 0.5344	0.22810 0.0851	0.06930 0.6052	0.15862 0.2344
dncrinda	0.16463 0.2168	0.13368 0.3171	-0.07411 0.5804	-0.16278 0.2221	-0.18591 0.1623
dncrinsa	0.12780 0.3391	0.17148 0.1981	-0.09839 0.4625	-0.03241 0.8092	-0.01620 0.9039
dndiinda	0.15839 0.2350	0.13924 0.2972	-0.11620 0.3850	-0.08132 0.5440	0.10981 0.4119
dndiinsa	-0.12958 0.3323	-0.14459 0.2789	0.26402 0.0452	0.16380 0.2192	0.26817 0.0418

Table 12. Pearson Correlation Coefficients for BW Sentiment Variables With Yield and Return Variables for the Time Period 9/1989 to 12/2004

Prob > |r| under H0: Rho=0
Number of Observations

	vwmret2	ewmret2	drf	dpayout12yld	dissue12yld
sf2	-0.08970	-0.02907	0.02083	0.14698	0.05322
	0.2259	0.6953	0.7790	0.0465	0.4731
	184	184	184	184	184
sf2raw	-0.07333	-0.04397	0.00852	0.12157	0.08131
	0.3225	0.5534	0.9086	0.1002	0.2725
	184	184	184	184	184
lsf2	-0.05164	0.01808	0.03231	0.20084	0.01761
	0.4864	0.8076	0.6632	0.0063	0.8125
	184	184	184	184	184
lsf2raw	-0.04570	-0.02736	0.01950	0.14542	0.05949
	0.5379	0.7123	0.7928	0.0489	0.4224
	184	184	184	184	184
dsf2	-0.01855	-0.03402	-0.11451	-0.03967	0.04489
	0.8032	0.6475	0.1227	0.5939	0.5462
	183	183	183	183	183
dsf2raw	-0.03373	-0.00839	-0.07218	-0.01838	0.05649
	0.6503	0.9102	0.3315	0.8049	0.4476
	183	183	183	183	183

Table 13. Pearson Correlation Coefficients for Monthly AAII and II Sentiment Measures for the Full Period 11/1987 to 12/2005

N = 218, Prob > |r| under H0: Rho=0

	aastock	aabond	aacash	aaspread	asbull	asbear	asneut	asspread	asbb	asbull4	asbear4	asneut4	asspread4
aastock	1.00000	-0.81243	-0.93097	1.00000	0.30933	-0.28289	-0.12008	0.32258	0.32909	0.49580	-0.45950	-0.19338	0.52279
		<.0001	<.0001	<.0001	<.0001	<.0001	0.0769	<.0001	<.0001	<.0001	<.0001	0.0042	<.0001
aabond	-0.81243	1.00000	0.54350	-0.81231	-0.30947	0.14809	0.26764	-0.25830	-0.24921	-0.50754	0.32616	0.34793	-0.46690
	<.0001		<.0001	<.0001	<.0001	0.0288	<.0001	0.0001	0.0002	<.0001	<.0001	<.0001	<.0001
aacash	-0.93097	0.54350	1.00000	-0.93105	-0.25161	0.31483	0.00505	-0.30284	-0.31788	-0.39570	0.45748	0.05997	-0.46019
	<.0001	<.0001		<.0001	0.0002	<.0001	0.9409	<.0001	<.0001	<.0001	<.0001	0.3783	<.0001
aaspread	1.00000	-0.81231	-0.93105	1.00000	0.30932	-0.28302	-0.11994	0.32264	0.32915	0.49566	-0.45958	-0.19311	0.52274
	<.0001	<.0001	<.0001		<.0001	<.0001	0.0772	<.0001	<.0001	<.0001	<.0001	0.0042	<.0001
asbull	0.30933	-0.30947	-0.25161	0.30932	1.00000	-0.69894	-0.62346	0.93989	0.91126	0.80759	-0.51504	-0.55804	0.74107
	<.0001	<.0001	0.0002	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
asbear	-0.28289	0.14809	0.31483	-0.28302	-0.69894	1.00000	-0.12340	-0.90114	-0.91953	-0.52223	0.72451	-0.04699	-0.66449
	<.0001	0.0288	<.0001	<.0001	<.0001		0.0690	<.0001	<.0001	<.0001	<.0001	0.4901	<.0001
asneut	-0.12008	0.26764	0.00505	-0.11994	-0.62346	-0.12340	1.00000	-0.31902	-0.25918	-0.54983	-0.07737	0.82587	-0.30195
	0.0769	<.0001	0.9409	0.0772	<.0001	0.0690		<.0001	0.0001	<.0001	0.2553	<.0001	<.0001
asspread	0.32258	-0.25830	-0.30284	0.32264	0.93989	-0.90114	-0.31902	1.00000	0.99142	0.73889	-0.65812	-0.31584	0.76649
	<.0001	0.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001
asbb	0.32909	-0.24921	-0.31788	0.32915	0.91126	-0.91953	-0.25918	0.99142	1.00000	0.71491	-0.66538	-0.27579	0.75515
	<.0001	0.0002	<.0001	<.0001	<.0001	<.0001	0.0001	<.0001		<.0001	<.0001	<.0001	<.0001
asbull4	0.49580	-0.50754	-0.39570	0.49566	0.80759	-0.52223	-0.54983	0.73889	0.71491	1.00000	-0.68073	-0.64621	0.93797
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001
asbear4	-0.45950	0.32616	0.45748	-0.45958	-0.51504	0.72451	-0.07737	-0.65812	-0.66538	-0.68073	1.00000	-0.11914	-0.89249
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.2553	<.0001	<.0001	<.0001		0.0792	<.0001
asneut4	-0.19338	0.34793	0.05997	-0.19311	-0.55804	-0.04699	0.82587	-0.31584	-0.27579	-0.64621	-0.11914	1.00000	-0.34153
	0.0042	<.0001	0.3783	0.0042	<.0001	0.4901	<.0001	<.0001	<.0001	<.0001	0.0792		<.0001
asspread4	0.52279	-0.46690	-0.46019	0.52274	0.74107	-0.66449	-0.30195	0.76649	0.75515	0.93797	-0.89249	-0.34153	1.00000
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	
asbb4	0.52809	-0.45774	-0.47363	0.52807	0.71616	-0.66900	-0.26243	0.75354	0.75136	0.91333	-0.91022	-0.28966	0.99322
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Table 13. Continued

N = 218, Prob > |r| under H0: Rho=0

	aastock	aabond	aacash	aaspread	asbull	asbear	asneut	asspread	asbb	asbull4	asbear4	asneut4	asspread4
iibull	0.42844	-0.46101	-0.32768	0.42824	0.49800	-0.30240	-0.36066	0.44626	0.43163	0.59805	-0.35865	-0.43689	0.53801
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iibear	-0.36064	0.36382	0.29088	-0.36043	-0.53249	0.31986	0.38956	-0.47551	-0.45232	-0.65755	0.40711	0.46704	-0.59759
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iicorr	-0.05062	0.09518	0.01342	-0.05065	0.13151	-0.07399	-0.10183	0.11505	0.09852	0.18831	-0.13439	-0.11518	0.17956
	0.4571	0.1614	0.8438	0.4569	0.0525	0.2767	0.1340	0.0902	0.1471	0.0053	0.0475	0.0898	0.0079
iispread	0.41305	-0.43112	-0.32418	0.41283	0.54239	-0.32744	-0.39496	0.48512	0.46504	0.66129	-0.40360	-0.47577	0.59823
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iibb	0.39585	-0.41810	-0.30759	0.39564	0.54775	-0.32697	-0.40293	0.48815	0.46734	0.66290	-0.39958	-0.48215	0.59732
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iibull4	0.46111	-0.48891	-0.35711	0.46086	0.44224	-0.25867	-0.33118	0.39158	0.37654	0.63026	-0.41576	-0.42109	0.58488
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iibear4	-0.37491	0.37629	0.30349	-0.37466	-0.45469	0.25817	0.34903	-0.39889	-0.37529	-0.64822	0.42387	0.43691	-0.59978
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iicorr4	-0.06944	0.11075	0.03081	-0.06948	0.10046	-0.04509	-0.09023	0.08243	0.06470	0.14305	-0.08768	-0.10244	0.12958
	0.3075	0.1029	0.6510	0.3072	0.1393	0.5078	0.1844	0.2255	0.3417	0.0348	0.1972	0.1316	0.0561
iispread4	0.43518	-0.44972	-0.34427	0.43492	0.46981	-0.27050	-0.35652	0.41394	0.39348	0.66967	-0.43970	-0.44952	0.62047
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
iibb4	0.41947	-0.43810	-0.32894	0.41921	0.47480	-0.27010	-0.36389	0.41678	0.39591	0.67116	-0.43610	-0.45529	0.61970
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Table 13. Continued

N = 218, Prob > |r| under H0: Rho=0

	asbb4	iibull	iibear	iicorr	iispread	iibb	iibull4	iibear4	iicorr4	iispread4	iibb4
aastock	0.52809 <.0001	0.42844 <.0001	-0.36064 <.0001	-0.05062 0.4571	0.41305 <.0001	0.39585 <.0001	0.46111 <.0001	-0.37491 <.0001	-0.06944 0.3075	0.43518 <.0001	0.41947 <.0001
aabond	-0.45774 <.0001	-0.46101 <.0001	0.36382 <.0001	0.09518 0.1614	-0.43112 <.0001	-0.41810 <.0001	-0.48891 <.0001	0.37629 <.0001	0.11075 0.1029	-0.44972 <.0001	-0.43810 <.0001
aacash	-0.47363 <.0001	-0.32768 <.0001	0.29088 <.0001	0.01342 0.8438	-0.32418 <.0001	-0.30759 <.0001	-0.35711 <.0001	0.30349 <.0001	0.03081 0.6510	-0.34427 <.0001	-0.32894 <.0001
aaspread	0.52807 <.0001	0.42824 <.0001	-0.36043 <.0001	-0.05065 0.4569	0.41283 <.0001	0.39564 <.0001	0.46086 <.0001	-0.37466 <.0001	-0.06948 0.3072	0.43492 <.0001	0.41921 <.0001
asbull	0.71616 <.0001	0.49800 <.0001	-0.53249 <.0001	0.13151 0.0525	0.54239 <.0001	0.54775 <.0001	0.44224 <.0001	-0.45469 <.0001	0.10046 0.1393	0.46981 <.0001	0.47480 <.0001
asbear	-0.66900 <.0001	-0.30240 <.0001	0.31986 <.0001	-0.07399 0.2767	-0.32744 <.0001	-0.32697 <.0001	-0.25867 0.0001	0.25817 0.0001	-0.04509 0.5078	-0.27050 <.0001	-0.27010 <.0001
asneut	-0.26243 <.0001	-0.36066 <.0001	0.38956 <.0001	-0.10183 0.1340	-0.39496 <.0001	-0.40293 <.0001	-0.33118 <.0001	0.34903 <.0001	-0.09023 0.1844	-0.35652 <.0001	-0.36389 <.0001
asspread	0.75354 <.0001	0.44626 <.0001	-0.47551 <.0001	0.11505 0.0902	0.48512 <.0001	0.48815 <.0001	0.39158 <.0001	-0.39889 <.0001	0.08243 0.2255	0.41394 <.0001	0.41678 <.0001
asbb	0.75136 <.0001	0.43163 <.0001	-0.45232 <.0001	0.09852 0.1471	0.46504 <.0001	0.46734 <.0001	0.37654 <.0001	-0.37529 <.0001	0.06470 0.3417	0.39348 <.0001	0.39591 <.0001
asbull4	0.91333 <.0001	0.59805 <.0001	-0.65755 <.0001	0.18831 0.0053	0.66129 <.0001	0.66290 <.0001	0.63026 <.0001	-0.64822 <.0001	0.14305 0.0348	0.66967 <.0001	0.67116 <.0001
asbear4	-0.91022 <.0001	-0.35865 <.0001	0.40711 <.0001	-0.13439 0.0475	-0.40360 <.0001	-0.39958 <.0001	-0.41576 <.0001	0.42387 <.0001	-0.08768 0.1972	-0.43970 <.0001	-0.43610 <.0001
asneut4	-0.28966 <.0001	-0.43689 <.0001	0.46704 <.0001	-0.11518 0.0898	-0.47577 <.0001	-0.48215 <.0001	-0.42109 <.0001	0.43691 <.0001	-0.10244 0.1316	-0.44952 <.0001	-0.45529 <.0001
asspread4	0.99322 <.0001	0.53801 <.0001	-0.59759 <.0001	0.17956 0.0079	0.59823 <.0001	0.59732 <.0001	0.58488 <.0001	-0.59978 <.0001	0.12958 0.0561	0.62047 <.0001	0.61970 <.0001
asbb4	1.00000	0.51578 <.0001	-0.57337 <.0001	0.17295 0.0105	0.57377 <.0001	0.57177 <.0001	0.56680 <.0001	-0.57637 <.0001	0.11703 0.0847	0.59861 <.0001	0.59663 <.0001

Table 13. Continued

N = 218, Prob > |r| under H0: Rho=0

	asbb4	iibull	iibear	iicorr	iispread	iibb	iibull4	iibear4	iicorr4	iispread4	iibb4
iibull	0.51578 <.0001	1.00000	-0.81001 <.0001	-0.17148 0.0112	0.94662 <.0001	0.92779 <.0001	0.92158 <.0001	-0.75981 <.0001	-0.12052 0.0758	0.87556 <.0001	0.85906 <.0001
iibear	-0.57337 <.0001	-0.81001 <.0001	1.00000	-0.43884 <.0001	-0.95580 <.0001	-0.96757 <.0001	-0.78717 <.0001	0.95383 <.0001	-0.43141 <.0001	-0.91589 <.0001	-0.92660 <.0001
iicorr	0.17295 0.0105	-0.17148 0.0112	-0.43884 <.0001	1.00000	0.15526 0.0218	0.20388 0.0025	-0.08968 0.1871	-0.43818 <.0001	0.90944 <.0001	0.19708 0.0035	0.24037 0.0003
iispread	0.57377 <.0001	0.94662 <.0001	-0.95580 <.0001	0.15526 0.0218	1.00000	0.99703 <.0001	0.89475 <.0001	-0.90526 <.0001	0.17672 0.0089	0.94243 <.0001	0.94005 <.0001
iibb	0.57177 <.0001	0.92779 <.0001	-0.96757 <.0001	0.20388 0.0025	0.99703 <.0001	1.00000	0.87848 <.0001	-0.91595 <.0001	0.22112 0.0010	0.94026 <.0001	0.94306 <.0001
iibull4	0.56680 <.0001	0.92158 <.0001	-0.78717 <.0001	-0.08968 0.1871	0.89475 <.0001	0.87848 <.0001	1.00000	-0.82460 <.0001	-0.13054 0.0543	0.95014 <.0001	0.93260 <.0001
iibear4	-0.57637 <.0001	-0.75981 <.0001	0.95383 <.0001	-0.43818 <.0001	-0.90526 <.0001	-0.91595 <.0001	-0.82460 <.0001	1.00000	-0.45323 <.0001	-0.95989 <.0001	-0.97060 <.0001
iicorr4	0.11703 0.0847	-0.12052 0.0758	-0.43141 <.0001	0.90944 <.0001	0.17672 0.0089	0.22112 0.0010	-0.13054 0.0543	-0.45323 <.0001	1.00000	0.18513 0.0061	0.23153 0.0006
iispread4	0.59861 <.0001	0.87556 <.0001	-0.91589 <.0001	0.19708 0.0035	0.94243 <.0001	0.94026 <.0001	0.95014 <.0001	-0.95989 <.0001	0.18513 0.0061	1.00000	0.99721 <.0001
iibb4	0.59663 <.0001	0.85906 <.0001	-0.92660 <.0001	0.24037 0.0003	0.94005 <.0001	0.94306 <.0001	0.93260 <.0001	-0.97060 <.0001	0.23153 0.0006	0.99721 <.0001	1.00000

Table 14. Pearson Correlation Coefficients for Monthly AAII and II Sentiment Variables for the Full Period 11/1987 to 12/2005

Sorted by Correlation

Prob > |r| under H0: Rho=0

Number of Observations: 217

daastock	daastock	daaspread	daacash	dasspread4	dasbull4	dasbear4	dasbb4	diibb4	diispread4	diibear4	diibull4	dasspread
	1.0000	1.0000	-0.8199	0.3709	0.3561	-0.3449	0.3411	0.2785	0.2718	-0.2626	0.2507	0.2334
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002	0.0005
aabond	aabond	daacash	daaspread	daastock	dasneut4	dasbb	dasbull	dasspread	diibull	dasbear	diibb	dasbull4
	1.0000	-0.0901	-0.0631	-0.0630	-0.0404	0.0288	0.0287	0.0269	0.0216	-0.0213	0.0201	0.0187
		0.1860	0.3553	0.3557	0.5542	0.6732	0.6741	0.6932	0.7516	0.7548	0.7681	0.7842
daacash	daacash	daastock	daaspread	dasspread4	dasbear4	dasbull4	dasbb4	diibb4	dasbear	diispread4	diibear4	dasspread
	1.0000	-0.8199	-0.8199	-0.3683	0.3493	-0.3481	-0.3381	-0.2899	0.2877	-0.2802	0.2725	-0.2686
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
daaspread	daaspread	daastock	daacash	dasspread4	dasbull4	dasbear4	dasbb4	diibb4	diispread4	diibear4	diibull4	dasspread
	1.0000	1.0000	-0.8199	0.3706	0.3558	-0.3445	0.3408	0.2778	0.2711	-0.2621	0.2500	0.2342
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002	0.0005
dasbull	dasbull	dasspread	dasbb	dasbear	dasbull4	dasspread4	dasbb4	dasneut	dasbear4	diibb	diispread	diibear
	1.0000	0.9487	0.9131	-0.7644	0.6480	0.6100	0.5871	-0.5320	-0.4903	0.4562	0.4514	-0.4496
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
dasbear	dasbear	dasbb	dasspread	dasbull	dasspread4	dasbear4	dasbb4	dasbull4	diibb	diispread	diibear	diibull
	1.0000	-0.9479	-0.9291	-0.7644	-0.4979	0.4834	-0.4795	-0.4615	-0.3736	-0.3664	0.3480	-0.3359
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
dasneut	dasneut	dasbull	dasneut4	dasbull4	dasspread4	dasbb4	dasspread	diibear	diibear4	diispread	diibb	diispread4
	1.0000	-0.5320	0.4780	-0.3891	-0.2829	-0.2719	-0.2369	0.2338	0.2332	-0.2123	-0.2101	-0.2007
		<.0001	<.0001	<.0001	<.0001	<.0001	0.0004	0.0005	0.0005	0.0017	0.0019	0.0030
dasspread	dasspread	dasbb	dasbull	dasbear	dasbull4	dasspread4	dasbb4	dasbear4	diibb	diispread	diibear	diibull
	1.0000	0.9888	0.9487	-0.9291	0.5981	0.5942	0.5720	-0.5184	0.4450	0.4387	-0.4287	0.3920
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
dasbb	dasbb	dasspread	dasbear	dasbull	dasspread4	dasbull4	dasbb4	dasbear4	diibb	diispread	diibear	diibull
	1.0000	0.9888	-0.9479	0.9131	0.5751	0.5739	0.5598	-0.5080	0.4337	0.4274	-0.4114	0.3872
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Table 14. Continued.

Sorted by Correlation
Prob > |r| under H0: Rho=0
Number of Observations: 217

dasbull4	dasbull4	dasspread4	dasbb4	dasbear4	dasbull	dasspread	dasneut4	dasbb	diibb4	diispread4	diibear4	diibull4
	1.0000	0.9570	0.9357	-0.7895	0.6480	0.5981	-0.5871	0.5739	0.5480	0.5416	-0.5322	0.4917
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
dasbear4	dasbear4	dasbb4	dasspread4	dasbull4	dasspread	dasbb	diibb4	dasbull	diispread4	dasbear	diibear4	diibull4
	1.0000	-0.9413	-0.9336	-0.7895	-0.5184	-0.5080	-0.4938	-0.4903	-0.4839	0.4834	0.4775	-0.4375
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
dasneut4	dasneut4	dasbull4	dasneut	dasbull	dasspread4	dasspread	dasbb4	dasbb	diispread4	diibb4	diibear4	diibull4
	1.0000	-0.5871	0.4780	-0.4086	-0.3270	-0.2903	-0.2822	-0.2645	-0.2439	-0.2412	0.2371	-0.2237
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0003	0.0003	0.0004	0.0009
dasspread4	dasspread4	dasbb4	dasbull4	dasbear4	dasbull	dasspread	dasbb	diibb4	diispread4	diibear4	dasbear	diibull4
	1.0000	0.9912	0.9570	-0.9336	0.6100	0.5942	0.5751	0.5533	0.5449	-0.5364	-0.4979	0.4938
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
dasbb4	dasbb4	dasspread4	dasbear4	dasbull4	dasbull	dasspread	dasbb	diibb4	diispread4	diibear4	diibull4	dasbear
	1.0000	0.9912	-0.9413	0.9357	0.5871	0.5720	0.5598	0.5482	0.5409	-0.5290	0.4932	-0.4795
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diibull	diibull	diispread	diibb	diibear	diibull4	diispread4	diibb4	diicorr	diibear4	dasbull	dasspread	dasbb
	1.0000	0.9419	0.9162	-0.7367	0.7010	0.6576	0.6438	-0.5300	-0.5297	0.3960	0.3920	0.3872
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diibear	diibear	diibb	diispread	diibear4	diibull	diibb4	diispread4	diibull4	dasspread4	dasbull4	dasbb4	dasbull
	1.0000	-0.9402	-0.9211	0.7555	-0.7367	-0.7164	-0.7004	-0.5758	-0.4860	-0.4818	-0.4778	-0.4496
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diicorr	diicorr	diicorr4	diibull	diibull4	diispread	diibear	diibear4	diibb	dasbb4	dasbear4	dasspread4	diispread4
	1.0000	0.7138	-0.5300	-0.2970	-0.2144	-0.1829	-0.1772	-0.1530	0.1004	-0.0910	0.0866	-0.0778
		<.0001	<.0001	<.0001	0.0015	0.0069	0.0089	0.0242	0.1406	0.1819	0.2040	0.2538
diispread	diispread	diibb	diibull	diibear	diibb4	diispread4	diibull4	diibear4	dasbull	dasbull4	dasspread4	dasspread
	1.0000	0.9947	0.9419	-0.9211	0.7267	0.7267	0.6898	-0.6804	0.4514	0.4491	0.4485	0.4387
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Table 14 Continued

Sorted by Correlation
Prob > |r| under H0: Rho=0
Number of Observations: 217

diibb	diibb	diispread	diibear	diibull	diibb4	diispread4	diibear4	diibull4	dasbull	dasspread4	dasbull4	dasspread
	1.0000	0.9947	-0.9402	0.9162	0.7256	0.7190	-0.6890	0.6682	0.4562	0.4491	0.4479	0.4450
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diibull4	diibull4	diispread4	diibb4	diibear4	diibull	diispread	diibb	diibear	dasspread4	dasbb4	dasbull4	diicorr4
	1.0000	0.9494	0.9299	-0.7780	0.7010	0.6898	0.6682	-0.5758	0.4938	0.4932	0.4917	-0.4784
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diibear4	diibear4	diibb4	diispread4	diibull4	diibear	diibb	diispread	dasspread4	dasbull4	diibull	dasbb4	dasbear4
	1.0000	-0.9498	-0.9360	-0.7780	0.7555	-0.6890	-0.6804	-0.5364	-0.5322	-0.5297	-0.5290	0.4775
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diicorr4	diicorr4	diicorr	diibull4	diibull	diibear4	diispread4	diibear	diispread	diibb4	dasbear	dasbb	dasneut
	1.0000	0.7138	-0.4784	-0.3575	-0.1794	-0.1784	-0.1547	-0.1290	-0.1286	0.1086	-0.0962	-0.0912
		<.0001	<.0001	<.0001	0.0081	0.0085	0.0226	0.0578	0.0586	0.1108	0.1581	0.1806
diispread4	diispread4	diibb4	diibull4	diibear4	diispread	diibb	diibear	diibull	dasspread4	dasbull4	dasbb4	dasbear4
	1.0000	0.9960	0.9494	-0.9360	0.7267	0.7190	-0.7004	0.6576	0.5449	0.5416	0.5409	-0.4839
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
diibb4	diibb4	diispread4	diibear4	diibull4	diispread	diibb	diibear	diibull	dasspread4	dasbb4	dasbull4	dasbear4
	1.0000	0.9960	-0.9498	0.9299	0.7267	0.7256	-0.7164	0.6438	0.5533	0.5482	0.5480	-0.4938
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001

Table 15. Pearson Correlation Coefficients for Monthly Yale ICF Confidence Variables for the Period 3/2001 to 12/2005

N = 58, Prob > |r| under H0: Rho=0

	dnvalinda	dnvalinsa	dnyrinda	dnyrinsa	dncrinda	dncrinsa	dndiinda	dndiinsa
dnvalinda	1.00000	-0.05909	0.28451	0.11330	-0.14545	-0.33720	0.11491	0.06749
		0.6595	0.0304	0.3971	0.2760	0.0096	0.3904	0.6147
dnvalinsa	-0.05909	1.00000	0.38285	0.53793	-0.07207	0.15627	-0.10237	0.25157
	0.6595		0.0030	<.0001	0.5908	0.2414	0.4445	0.0568
dnyrinda	0.28451	0.38285	1.00000	0.57612	-0.11071	0.02586	0.39770	0.58166
	0.0304	0.0030		<.0001	0.4081	0.8472	0.0020	<.0001
dnyrinsa	0.11330	0.53793	0.57612	1.00000	0.00329	0.14581	0.35733	0.40253
	0.3971	<.0001	<.0001		0.9805	0.2748	0.0059	0.0017
dncrinda	-0.14545	-0.07207	-0.11071	0.00329	1.00000	-0.05618	0.20142	-0.18353
	0.2760	0.5908	0.4081	0.9805		0.6753	0.1295	0.1679
dncrinsa	-0.33720	0.15627	0.02586	0.14581	-0.05618	1.00000	0.06966	0.00232
	0.0096	0.2414	0.8472	0.2748	0.6753		0.6033	0.9862
dndiinda	0.11491	-0.10237	0.39770	0.35733	0.20142	0.06966	1.00000	0.24668
	0.3904	0.4445	0.0020	0.0059	0.1295	0.6033		0.0619
dndiinsa	0.06749	0.25157	0.58166	0.40253	-0.18353	0.00232	0.24668	1.00000
	0.6147	0.0568	<.0001	0.0017	0.1679	0.9862	0.0619	

Table 16. VAR Model Lag Selection and In-Sample Fit for Returns for the Full Time Period 11/1987 to 12/2005

VAR		Single Equation R^2s				
Lags	AICC	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Q Probability > Chi sq
Value-weighted Returns						
1	-7.4077	0.0056	0.1518 ***	0.0774 ***	0.0309	0.1074
2	-7.4393	0.0238	0.1735 ***	0.0964 ***	0.1141 ***	<.0001
3	-7.8994	0.0381	0.2403 ***	0.1805 ***	0.3152 ***	<.0001
4	-7.8094	0.0606	0.2471 ***	0.2135 ***	0.3266 ***	<.0001
Equal weighted Returns						
1	-6.8822	0.0559	0.1538 ***	0.0787 ***	0.0370 ***	0.0294
2	-6.9294	0.0824 **	0.1946 ***	0.1164 ***	0.1160 ***	<.0001
3	-7.2823	0.0980	0.2413 ***	0.1913 ***	0.3101 ***	<.0001
4	-7.1771	0.1107 *	0.2536 ***	0.2187 ***	0.3169 ***	<.0001

*, **, *** = Significant at 90%, 95%, or 99%

Table 17. Forecast Standard Errors (RMSE) for the One-Month Ahead Forecast for the Full Period 11/1987 to 12/2005

Lag	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
Value-weighted CRSP portfolio returns				
Forecast Standard Error (RMSE) - 1st Month Ahead				
1	4.1700	0.0429	0.3600	0.4749
2	4.1748	0.0424	0.3562	0.4548
3	4.1852	0.0398	0.3434	0.4043
4	4.1839	0.0401	0.3400	0.4050
Equal-weighted CRSP portfolio returns				
Forecast Standard Error (RMSE) - 1st Month Ahead				
1	5.3543	0.0429	0.3598	0.4734
2	5.3240	0.0419	0.3522	0.4543
3	5.3328	0.0398	0.3411	0.4058
4	5.3599	0.0399	0.3389	0.4079

Table 18. Statistics for the VAR (3) One-Month Ahead Forecast for the Full Period 11/1987 to 12/2005

Item	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
Value-weighted CRSP portfolio returns				
Forecast	0.9586	-0.0010	0.0965	-0.0825
RMSE	4.1852	0.0398	0.3434	0.4043
Lower - 95% Confidence	-7.2443	-0.0790	-0.5766	-0.8749
Upper - 95% Confidence	9.1614	0.0770	0.7695	0.7099
In-sample mean	1.0639	-0.0001	-0.0095	-0.0010
Equal-weighted CRSP portfolio returns				
Forecast	1.1349	0.0029	0.1346	0.0211
RMSE	5.3328	0.0398	0.3411	0.4058
Lower - 95% Confidence	-9.3172	-0.0751	-0.5340	-0.7743
Upper - 95% Confidence	11.5869	0.0809	0.8032	0.8164
In-sample mean	1.3061	-0.0001	-0.0095	-0.0010

Table 19. VAR(3) Model Proportion of Prediction Error for the One-Month Ahead Forecast for the Full Period 11/1987 to 12/2005

Item	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
Value weighted CRSP portfolio returns				
Return	1.0000	0.0000	0.0000	0.0000
Δ Risk-free Rate	0.0011	0.9989	0.0000	0.0000
Δ Payout Yield	0.2488	0.0043	0.7470	0.0000
Δ Issue Yield	0.2454	0.0159	0.0267	0.7120
Equal weighted CRSP portfolio returns				
Return	1.0000	0.0000	0.0000	0.0000
Δ Risk-free Rate	0.0034	0.9966	0.0000	0.0000
Δ Payout Yield	0.1321	0.0025	0.8654	0.0000
Δ Issue Yield	0.2170	0.0171	0.0575	0.7083

Table 20. VAR Model In-Sample Results for Equal-weighted Returns with Changes AAII and II Sentiment for the Full Period 11/1987 to 12/2005

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate (1)	Δ Payout Yield (2)	Δ Issue Yield (3)	Δ Sentiment(4)	Causal
daastock	-5.1172	0.1446 ***	0.2422 ***	0.2315 ***	0.3320 ***	0.3394 ***	1
aabond	-6.0276	0.1262 **	0.2514 ***	0.1918 ***	0.3129 ***	0.8222 ***	
daacash	-5.4056	0.1455 ***	0.2455 ***	0.2211 ***	0.3416 ***	0.3912 ***	1,2
daaspread	-3.7301	0.1449 ***	0.2422 ***	0.2315 ***	0.3321 ***	0.3398 ***	1
asbull	-2.5941	0.1039 *	0.2557 ***	0.1956 ***	0.3179 ***	0.1954 ***	
asbear	-3.0077	0.1015	0.2576 ***	0.1929 ***	0.3303 ***	0.1840 ***	2
asneut	-3.4069	0.1080 *	0.2652 ***	0.2056 ***	0.3124 ***	0.3690 ***	2
asspread	-1.5485	0.1025	0.2534 ***	0.1926 ***	0.3241 ***	0.1686 ***	
asbb	-2.2510	0.1006	0.2514 ***	0.1930 ***	0.3243 ***	0.1633 ***	
asbull4	-3.3910	0.1161 **	0.2483 ***	0.1940 ***	0.3272 ***	0.4931 ***	4
asbear4	-3.9079	0.1369 **	0.2453 ***	0.2053 ***	0.3273 ***	0.4895 ***	1,3,4
asneut4	-4.1548	0.1131 *	0.2589 ***	0.1990 ***	0.3214 ***	0.6003 ***	
asspread4	-2.3914	0.1249 **	0.2438 ***	0.1981 ***	0.3284 ***	0.4747 ***	1,4
asbb4	-3.0733	0.1273 **	0.2425 ***	0.1993 ***	0.3268 ***	0.4795 ***	1,4
iibull	-3.9992	0.1085 *	0.2541 ***	0.2292 ***	0.3167 ***	0.5003 ***	3
iibear	-4.2918	0.1150 *	0.2575 ***	0.2160 ***	0.3223 ***	0.6566 ***	3,4
iicorr	-4.4425	0.1025	0.2475 ***	0.2055 ***	0.3276 ***	0.4325 ***	4
iispread	-2.9522	0.1137 *	0.2577 ***	0.2284 ***	0.3185 ***	0.6034 ***	3,4
iibb	-3.8912	0.1153 **	0.2575 ***	0.2285 ***	0.3184 ***	0.6070 ***	2,3,4
iibull4	-4.2843	0.1204 **	0.2526 ***	0.2419 ***	0.3190 ***	0.6277 ***	3,4
iibear4	-4.4733	0.1135 *	0.2594 ***	0.2398 ***	0.3260 ***	0.7467 ***	3,4
iicorr4	-4.8437	0.1129 *	0.2485 ***	0.2039 ***	0.3356 ***	0.5654 ***	4
iispread4	-3.1711	0.1179 **	0.2575 ***	0.2502 ***	0.3208 ***	0.7102 ***	3,4
iibb4	-4.1263	0.1195 **	0.2572 ***	0.2471 ***	0.3208 ***	0.7193 ***	3,4
Base Model	-7.2823	0.0980 **	0.2413 ***	0.1913 ***	0.3101 ***		

*, **, *** = Significant at 90%, 95%, or 99%

Table 21. VAR Model In-Sample Results for Equal-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 11/1987 to 12/1996

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate (1)	Δ Payout Yield(2)	Δ Issue Yield(3)	Δ Sentiment(4)	Causal
daastock	-6.1331	0.3090 ***	0.2855 ***	0.2977 ***	0.7926 ***	0.2839 ***	
aabond	-6.5795	0.2840 ***	0.3328 ***	0.2770 ***	0.7955 ***	0.6834 ***	2
daacash	-6.6322	0.3026 ***	0.3235 ***	0.2956 ***	0.7951 ***	0.4508 ***	2
daaspread	-4.7466	0.3091 ***	0.2854 ***	0.2978 ***	0.7926 ***	0.2841 ***	
asbull	-3.5081	0.2968 ***	0.2923 ***	0.2859 ***	0.7954 ***	0.3402 ***	
asbear	-3.9012	0.3008 ***	0.3025 ***	0.2772 ***	0.8001 ***	0.3912 ***	
asneut	-4.1418	0.3025 ***	0.3175 ***	0.3062 ***	0.8035 ***	0.4013 ***	2
asspread	-2.4802	0.2969 ***	0.2899 ***	0.2779 ***	0.7969 ***	0.3618 ***	4
asbb	-3.0471	0.3006 ***	0.2879 ***	0.2810 ***	0.7969 ***	0.3380 ***	4
asbull4	-4.4120	0.2853 ***	0.2815 ***	0.2780 ***	0.8064 ***	0.6099 ***	4
asbear4	-4.8622	0.2914 ***	0.3175 ***	0.2916 ***	0.7978 ***	0.6751 ***	2,4
asneut4	-4.9992	0.2968 ***	0.3171 ***	0.2964 ***	0.8039 ***	0.6233 ***	2,4
asspread4	-3.4185	0.2856 ***	0.2898 ***	0.2831 ***	0.8033 ***	0.6445 ***	4
asbb4	-3.9788	0.2840 ***	0.2889 ***	0.2882 ***	0.8024 ***	0.6347 ***	4
iibull	-4.7486	0.3095 ***	0.3259 ***	0.3717 ***	0.7926 ***	0.3764 ***	3,4
iibear	-4.8352	0.2903 ***	0.3490 ***	0.2875 ***	0.8041 ***	0.6471 ***	4
iicorr	-5.0970	0.2971 ***	0.3041 ***	0.3305 ***	0.8041 ***	0.4893 ***	4
iispread	-3.5899	0.3003 ***	0.3486 ***	0.3275 ***	0.7983 ***	0.5363 ***	3,4
iibb	-4.5153	0.3018 ***	0.3481 ***	0.3244 ***	0.7972 ***	0.5457 ***	3,4
iibull4	-5.0643	0.2971 ***	0.3312 ***	0.3973 ***	0.7953 ***	0.5070 ***	3,4
iibear4	-4.9641	0.2893 ***	0.3574 ***	0.3180 ***	0.8083 ***	0.6931 ***	3,4
iicorr4	-5.4899	0.2856 ***	0.3048 ***	0.3147 ***	0.8036 ***	0.6356 ***	4
iispread4	-3.8030	0.2946 ***	0.3578 ***	0.3636 ***	0.8028 ***	0.6227 ***	3,4
iibb4	-4.7558	0.2971 ***	0.3583 ***	0.3554 ***	0.8009 ***	0.6426 ***	3,4
Base Model	-8.1009	0.2823 ***	0.2767 ***	0.2667 ***	0.7901 ***		

*, **, *** = Significant at 90%, 95%, or 99%

Table 22. VAR Model In-Sample Results for Equal-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 1/1997 to 12/2005

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate(1)	Δ Payout Yield(2)	Δ Issue Yield(3)	Δ Sentiment(4)	Causal
daastock	-5.4269	0.2545 **	0.3357 ***	0.3220 ***	0.2917 ***	0.4257 ***	1,3
aabond	-6.7061	0.2353 **	0.3401 ***	0.2658 **	0.2501 **	0.5860 ***	1
daacash	-5.5335	0.2041	0.3431 ***	0.2774 ***	0.2890 ***	0.4421 ***	1,3
daaspread	-4.0397	0.2552 **	0.3359 ***	0.3218 ***	0.2920 ***	0.4260 ***	1,3
asbull	-2.9942	0.1781	0.3485 ***	0.2414 **	0.2487 **	0.1677	
asbear	-3.3287	0.1649	0.3508 ***	0.2738 **	0.2788 ***	0.1248	3
asneut	-3.8783	0.1621	0.3310 ***	0.2309 **	0.2457 **	0.3666 ***	
asspread	-1.9199	0.1786	0.3522 ***	0.2578 **	0.2620 **	0.1303	3
asbb	-2.6986	0.1714	0.3488 ***	0.2614 **	0.2626 **	0.1280	3
asbull4	-3.7660	0.1833	0.3363 ***	0.2439 **	0.2832 ***	0.3494 ***	
asbear4	-4.2440	0.2171 *	0.3293 ***	0.2383 **	0.2922 ***	0.3742 ***	1,4
asneut4	-4.7592	0.1820	0.3458 ***	0.2406 **	0.2430 **	0.6131 ***	
asspread4	-2.7567	0.1962	0.3331 ***	0.2402 **	0.2921 ***	0.3424 ***	4
asbb4	-3.5366	0.2070	0.3320 ***	0.2393 **	0.2970 ***	0.3493 ***	4
iibull	-4.6045	0.1667	0.3535 ***	0.2351 **	0.2480 **	0.4542 ***	2
iibear	-5.1334	0.1840	0.3560 ***	0.2609 **	0.2564 **	0.5230 ***	2,4
iicorr	-4.9976	0.1745	0.3383 ***	0.2437 **	0.2664 **	0.5003 ***	
iispread	-3.6940	0.1748	0.3610 ***	0.2504 **	0.2501 **	0.4843 ***	2,4
iibb	-4.6257	0.1775	0.3578 ***	0.2519 **	0.2496 **	0.4893 ***	2,4
iibull4	-4.8582	0.1913	0.3436 ***	0.2452 **	0.2729 **	0.5978 ***	2,4
iibear4	-5.4627	0.1881	0.3472 ***	0.2632 **	0.2639 **	0.6979 ***	2,3,4
iicorr4	-5.4224	0.1848	0.3312 ***	0.2538 **	0.2729 **	0.6271 ***	
iispread4	-3.9394	0.1916	0.3506 ***	0.2568 **	0.2714 **	0.6471 ***	2,4
iibb4	-4.8785	0.1935	0.3484 ***	0.2568 **	0.2689 **	0.6546 ***	2,4
Base Model	-7.9855	0.1452	0.3265 ***	0.2187 **	0.2304 **		

*, **, *** = Significant at 90%, 95%, or 99%

Table 23. VAR Model Out-of-Sample Forecast Results for Equal-weighted Returns with Changes in AAII and II Sentiment for the Full Period 11/1987 to 12/2005

	Forecast Standard Error (RMSE) - 1st Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
daastock	5.2324	0.0401	0.3351	0.4023	2.9354	0.5543	-0.1995	0.5235	0.2488
aabond	5.2881	0.0398	0.3436	0.4080	1.7564	0.2426	-0.0288	-0.2051	-0.1561
daacash	5.2297	0.0400	0.3373	0.3994	2.5728	0.5700	-0.1358	0.3261	0.4625
daaspread	5.2313	0.0401	0.3351	0.4023	5.8727	0.5605	-0.1995	0.5235	0.2517
asbull	5.3554	0.0397	0.3428	0.4065	10.5350	-0.1206	0.0578	-0.1375	-0.0521
asbear	5.3625	0.0396	0.3434	0.4028	8.4404	-0.1584	0.0941	-0.1862	0.2112
asneut	5.3431	0.0394	0.3406	0.4082	6.5653	-0.0553	0.2406	0.0404	-0.1665
asspread	5.3596	0.0398	0.3434	0.4047	17.8244	-0.1429	0.0144	-0.1911	0.0794
asbb	5.3653	0.0398	0.3433	0.4046	12.4139	-0.1730	-0.0288	-0.1837	0.0843
asbull4	5.3186	0.0399	0.3431	0.4037	7.0385	0.0762	-0.0860	-0.1664	0.1465
asbear4	5.2559	0.0400	0.3407	0.4037	5.4722	0.4216	-0.1429	0.0336	0.1472
asneut4	5.3279	0.0396	0.3421	0.4055	4.5293	0.0263	0.1159	-0.0786	0.0212
asspread4	5.2921	0.0400	0.3423	0.4034	11.7177	0.2210	-0.1713	-0.0944	0.1709
asbb4	5.2850	0.0400	0.3420	0.4039	8.2506	0.2598	-0.1924	-0.0736	0.1357
iibull	5.3415	0.0397	0.3355	0.4069	5.5623	-0.0469	0.0288	0.4802	-0.0773
iibear	5.3219	0.0396	0.3384	0.4052	5.1051	0.0583	0.0941	0.2302	0.0410
iicorr	5.3595	0.0399	0.3407	0.4036	3.9253	-0.1427	-0.1003	0.0387	0.1551
iispread	5.3260	0.0396	0.3357	0.4063	9.9272	0.0362	0.0941	0.4643	-0.0387
iibb	5.3212	0.0396	0.3357	0.4064	6.2649	0.0622	0.0941	0.4661	-0.0408
iibull4	5.3058	0.0398	0.3328	0.4062	4.5832	0.1461	0.0000	0.7285	-0.0296
iibear4	5.3266	0.0396	0.3332	0.4041	4.2733	0.0332	0.1305	0.6860	0.1186
iicorr4	5.3283	0.0399	0.3410	0.4012	3.1908	0.0238	-0.0789	0.0101	0.3280
iispread4	5.3132	0.0396	0.3310	0.4057	8.2283	0.1054	0.0941	0.8935	0.0085
iibb4	5.3085	0.0397	0.3316	0.4057	5.1135	0.1309	0.0868	0.8312	0.0092
Base Model	5.3328	0.0398	0.3411	0.4058					

*, **, *** = Significant at 90%, 95%, or 99%

Table 24. VAR Model Out-of-Sample Forecast Results for Equal-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 11/1987 to 12/1996

	Forecast Standard Error (RMSE) - 1st Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
daastock	3.7357	0.0435	0.4326	0.2175	2.2624	0.0511	-0.2029	0.1018	-0.2027
aabond	3.8027	0.0420	0.4389	0.2160	1.8109	-0.2944	0.4793	-0.1818	-0.0692
daacash	3.7529	0.0423	0.4332	0.2162	1.8395	-0.0395	0.3381	0.0729	-0.0845
daaspread	3.7354	0.0435	0.4325	0.2175	4.5268	0.0530	-0.2029	0.1037	-0.2027
asbull	3.7686	0.0433	0.4362	0.2161	8.6236	-0.1211	-0.1090	-0.0622	-0.0719
asbear	3.7578	0.0430	0.4388	0.2136	7.2448	-0.0650	0.0321	-0.1801	0.1584
asneut	3.7532	0.0425	0.4299	0.2118	6.4078	-0.0407	0.2520	0.2239	0.3292
asspread	3.7683	0.0433	0.4386	0.2153	14.4965	-0.1196	-0.1404	-0.1704	0.0000
asbb	3.7585	0.0434	0.4377	0.2152	10.7577	-0.0684	-0.1717	-0.1283	0.0027
asbull4	3.7991	0.0436	0.4386	0.2102	5.5641	-0.2766	-0.2559	-0.1686	0.4838
asbear4	3.7831	0.0425	0.4344	0.2148	4.5274	-0.1951	0.2520	0.0168	0.0450
asneut4	3.7686	0.0425	0.4330	0.2115	4.2626	-0.1209	0.2425	0.0839	0.3513
asspread4	3.7984	0.0433	0.4370	0.2118	9.1728	-0.2732	-0.1449	-0.1007	0.3225
asbb4	3.8026	0.0434	0.4355	0.2124	6.8940	-0.2940	-0.1539	-0.0298	0.2727
iibull	3.7345	0.0422	0.4091	0.2176	5.6135	0.0576	0.3768	1.2742	-0.2062
iibear	3.7859	0.0415	0.4357	0.2114	5.2207	-0.2097	0.7398	-0.0402	0.3629
iicorr	3.7678	0.0429	0.4223	0.2114	4.0513	-0.1169	0.0552	0.5902	0.3620
iispread	3.7591	0.0415	0.4233	0.2145	10.1782	-0.0717	0.7347	0.5439	0.0690
iibb	3.7551	0.0415	0.4243	0.2151	6.3838	-0.0511	0.7245	0.4954	0.0147
iibull4	3.7677	0.0421	0.4007	0.2161	4.6100	-0.1163	0.4547	1.7477	-0.0755
iibear4	3.7886	0.0412	0.4263	0.2092	4.7468	-0.2233	0.8789	0.3986	0.5838
iicorr4	3.7983	0.0429	0.4273	0.2117	3.1555	-0.2725	0.0644	0.3493	0.3359
iispread4	3.7743	0.0412	0.4118	0.2121	8.8093	-0.1504	0.8842	1.1330	0.2937
iibb4	3.7677	0.0412	0.4144	0.2131	5.3974	-0.1165	0.8946	0.9925	0.2007
Base Model	3.7454	0.0430	0.4348	0.2153					

*, **, *** = Significant at 90%, 95%, or 99%

Table 25. VAR Model Out-of-Sample Forecast Results for Equal-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 1/1997 to 12/2005

	Forecast Standard Error (RMSE) - 1st Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
daastock	6.0988	0.0362	0.1899	0.4642	3.5060	1.0765	-0.1894	1.1299	0.5045
aabond	6.1768	0.0361	0.1976	0.4777	1.7146	0.8022	-0.1251	0.2911	-0.0708
daacash	6.3018	0.0360	0.1961	0.4651	3.1553	0.3838	-0.0819	0.4531	0.4653
daaspread	6.0961	0.0362	0.1900	0.4641	7.0144	1.0859	-0.1894	1.1276	0.5089
asbull	6.4037	0.0359	0.2009	0.4781	11.4284	0.0606	0.0000	-0.0353	-0.0892
asbear	6.4550	0.0358	0.1966	0.4684	9.4177	-0.0961	0.0330	0.4018	0.3188
asneut	6.4658	0.0364	0.2023	0.4791	6.6103	-0.1287	-0.2584	-0.1697	-0.1279
asspread	6.4020	0.0358	0.1987	0.4739	19.7278	0.0661	0.0551	0.1812	0.0867
asbb	6.4299	0.0359	0.1982	0.4737	13.2980	-0.0198	0.0055	0.2299	0.0955
asbull4	6.3833	0.0362	0.2006	0.4670	7.6872	0.1241	-0.1841	-0.0029	0.3816
asbear4	6.2499	0.0364	0.2013	0.4641	6.0138	0.5544	-0.2847	-0.0752	0.5107
asneut4	6.3886	0.0359	0.2010	0.4799	4.3546	0.1076	-0.0383	-0.0460	-0.1627
asspread4	6.3327	0.0363	0.2011	0.4641	12.7738	0.2842	-0.2267	-0.0509	0.5089
asbb4	6.2902	0.0363	0.2012	0.4625	8.6212	0.4217	-0.2425	-0.0635	0.5816
iibull	6.4479	0.0357	0.2017	0.4783	5.0023	-0.0746	0.0773	-0.1168	-0.0974
iibear	6.3805	0.0357	0.1983	0.4757	4.4747	0.1329	0.1108	0.2227	0.0120
iicorr	6.4179	0.0362	0.2006	0.4724	3.6954	0.0170	-0.1520	-0.0059	0.1469
iispread	6.4167	0.0355	0.1997	0.4777	8.7459	0.0205	0.1894	0.0810	-0.0704
iibb	6.4062	0.0356	0.1995	0.4778	5.5773	0.0530	0.1387	0.1020	-0.0765
iibull4	6.3521	0.0360	0.2004	0.4703	4.1459	0.2223	-0.0764	0.0128	0.2363
iibear4	6.3647	0.0359	0.1980	0.4732	3.3736	0.1827	-0.0219	0.2543	0.1131
iicorr4	6.3775	0.0363	0.1993	0.4704	2.9750	0.1423	-0.2531	0.1269	0.2359
iispread4	6.3508	0.0358	0.1989	0.4708	6.9556	0.2265	0.0330	0.1671	0.2158
iibb4	6.3433	0.0359	0.1989	0.4716	4.4088	0.2505	0.0000	0.1681	0.1817
Base Model	6.4234	0.0359	0.2005	0.4760					

*, **, *** = Significant at 90%, 95%, or 99%

Table 26. VAR Model In-Sample Results for Value-weighted Returns with Changes in AAII and II Sentiment for the Full Period 11/1987 to 12/2005

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate(1)	Δ Payout Yield(2)	Δ Issue Yield(3)	Δ Sentiment(4)	Causal
daastock	-5.6348	0.0560	0.2412 ***	0.2111 ***	0.3292 ***	0.3145 ***	
aabond	-6.6018	0.0544	0.2519 ***	0.1818 ***	0.3193 ***	0.8191 ***	
daacash	-5.9529	0.0613	0.2456 ***	0.2040 ***	0.3369 ***	0.3869 ***	2
daaspread	-4.2477	0.0561	0.2413 ***	0.2111 ***	0.3293 ***	0.3148 ***	
asbull	-3.2417	0.0490	0.2549 ***	0.1844 ***	0.3215 ***	0.2241 ***	
asbear	-3.7068	0.0411	0.2577 ***	0.1827 ***	0.3315 ***	0.2234 ***	2
asneut	-4.0612	0.0512	0.2590 ***	0.1958 ***	0.3204 ***	0.3809 ***	2
asspread	-2.1821	0.0457	0.2549 ***	0.1817 ***	0.3260 ***	0.2020 ***	
asbb	-2.8874	0.0453	0.2527 ***	0.1816 ***	0.3260 ***	0.1971 ***	
asbull4	-4.0037	0.0578	0.2462 ***	0.1852 ***	0.3363 ***	0.5388 ***	4
asbear4	-4.4562	0.0545	0.2431 ***	0.1959 ***	0.3296 ***	0.5130 ***	3,4
asneut4	-4.7750	0.0468	0.2532 ***	0.1881 ***	0.3265 ***	0.6110 ***	
asspread4	-2.9719	0.0592	0.2429 ***	0.1893 ***	0.3349 ***	0.5151 ***	4
asbb4	-3.6558	0.0589	0.2417 ***	0.1887 ***	0.3328 ***	0.5179 ***	4
iibull	-4.6226	0.0703	0.2501 ***	0.2144 ***	0.3240 ***	0.5027 ***	1,3
iibear	-4.8502	0.0750	0.2524 ***	0.2000 ***	0.3342 ***	0.6720 ***	3,4
iicorr	-5.0552	0.0527	0.2459 ***	0.1960 ***	0.3338 ***	0.4318 ***	4
iispread	-3.5468	0.0758	0.2524 ***	0.2121 ***	0.3287 ***	0.6130 ***	1,3,4
iibb	-4.4699	0.0766	0.2525 ***	0.2123 ***	0.3293 ***	0.6176 ***	1,2,3,4
iibull4	-4.9423	0.0685	0.2464 ***	0.2289 ***	0.3320 ***	0.6514 ***	3
iibear4	-5.1272	0.0768	0.2511 ***	0.2262 ***	0.3350 ***	0.7722 ***	1,3,4
iicorr4	-5.4502	0.0536	0.2476 ***	0.1958 ***	0.3439 ***	0.5678 ***	4
iispread4	-3.8400	0.0752	0.2494 ***	0.2366 ***	0.3327 ***	0.7377 ***	1,3,4
iibb4	-4.7887	0.0766	0.2491 ***	0.2333 ***	0.3324 ***	0.7479 ***	1,3,4
Base Model	-7.8994	0.0381	0.2403 ***	0.1805 ***	0.3152 ***		

*, **, *** = Significant at 90%, 95%, or 99%

Table 27. VAR Model In-Sample Results for Value-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 11/1987 to 12/1996

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate(1)	Δ Payout Yield(2)	Δ Issue Yield(3)	Δ Sentiment(4)	Causal
daastock	-6.9819	0.1611	0.3230 ***	0.2981 ***	0.8400 ***	0.2461 **	
aabond	-7.5359	0.1614	0.3603 ***	0.2944 ***	0.8432 ***	0.6845 ***	2
daacash	-7.4913	0.1506	0.3666 ***	0.3087 ***	0.8429 ***	0.4136 ***	2
daaspread	-5.5956	0.1614	0.3230 ***	0.2982 ***	0.8400 ***	0.2463 **	
asbull	-4.4894	0.1465	0.3149 ***	0.2931 ***	0.8430 ***	0.3495 ***	4
asbear	-4.7764	0.1384	0.3473 ***	0.2844 ***	0.8454 ***	0.3583 ***	4
asneut	-5.0359	0.1588	0.3457 ***	0.3136 ***	0.8490 ***	0.3973 ***	2
asspread	-3.4197	0.1396	0.3239 ***	0.2847 ***	0.8433 ***	0.3489 ***	4
asbb	-3.9791	0.1462	0.3223 ***	0.2886 ***	0.8448 ***	0.3162 ***	4
asbull4	-5.4071	0.1294	0.3258 ***	0.2822 ***	0.8414 ***	0.6591 ***	4
asbear4	-5.7514	0.1353	0.3807 ***	0.2967 ***	0.8415 ***	0.6744 ***	2,4
asneut4	-5.9145	0.1556	0.3357 ***	0.3021 ***	0.8430 ***	0.6490 ***	2,4
asspread4	-4.3697	0.1278	0.3533 ***	0.2861 ***	0.8412 ***	0.6681 ***	4
asbb4	-4.9253	0.1250	0.3520 ***	0.2898 ***	0.8410 ***	0.6542 ***	4
iibull	-5.7203	0.1381	0.3327 ***	0.3540 ***	0.8408 ***	0.4145 ***	3,4
iibear	-5.7764	0.1340	0.3448 ***	0.2836 ***	0.8460 ***	0.6911 ***	4
iicorr	-6.0418	0.1553	0.3373 ***	0.3407 ***	0.8500 ***	0.5073 ***	4
iispread	-4.5426	0.1309	0.3419 ***	0.3125 ***	0.8431 ***	0.5818 ***	3,4
iibb	-5.4517	0.1312	0.3415 ***	0.3097 ***	0.8429 ***	0.5917 ***	3,4
iibull4	-6.1085	0.1309	0.3345 ***	0.3701 ***	0.8391 ***	0.6152 ***	3,4
iibear4	-5.9340	0.1288	0.3530 ***	0.3100 ***	0.8477 ***	0.7356 ***	3,4
iicorr4	-6.4180	0.1592	0.3296 ***	0.3198 ***	0.8518 ***	0.6351 ***	4
iispread4	-4.8234	0.1251	0.3506 ***	0.3457 ***	0.8428 ***	0.6989 ***	3,4
iibb4	-5.7555	0.1256	0.3511 ***	0.3381 ***	0.8426 ***	0.7096 ***	3,4
Base Model	-9.0193	0.1225	0.3126 ***	0.2781 ***	0.8384 ***		

*, **, *** = Significant at 90%, 95%, or 99%

Table 28. VAR Model In-Sample Results for Value-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 1/1997 to 12/2005

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate(1)	Δ Payout Yield(2)	Δ Issue Yield(3)	Δ Sentiment(4)	Causal
daastock	-6.0660	0.2446 **	0.3620 ***	0.3128 ***	0.2644 **	0.4387 ***	3
aabond	-7.3885	0.2904 ***	0.3599 ***	0.2692 **	0.2313 **	0.5766 ***	1
daacash	-6.2114	0.2092 *	0.3644 ***	0.2788 ***	0.2632 **	0.4611 ***	3
daaspread	-4.6786	0.2446 **	0.3624 ***	0.3127 ***	0.2647 **	0.4384 ***	3
asbull	-3.7243	0.1934	0.3871 ***	0.2485 **	0.2243 *	0.1830	
asbear	-4.1153	0.1941	0.3921 ***	0.2745 ***	0.2510 **	0.2020	3
asneut	-4.6786	0.2030	0.3527 ***	0.2401 **	0.2276 *	0.3915 ***	
asspread	-2.6576	0.1900	0.3963 ***	0.2630 **	0.2345 **	0.1728	3
asbb	-3.4547	0.1900	0.3963 ***	0.2630 **	0.2345 **	0.1728	3
asbull4	-4.3793	0.1979	0.3568 ***	0.2382 **	0.2444 **	0.3916 ***	
asbear4	-4.9447	0.1980	0.3584 ***	0.2363 **	0.2548 **	0.4522 ***	4
asneut4	-5.3999	0.1918	0.3635 ***	0.2438 **	0.2333 **	0.5907 ***	
asspread4	-3.3989	0.1991	0.3586 ***	0.2366 **	0.2500 **	0.4035 ***	4
asbb4	-4.1994	0.1988	0.3559 ***	0.2364 **	0.2541 **	0.4187 ***	4
iibull	-5.2792	0.2122 *	0.3644 ***	0.2386 **	0.2224 *	0.4680 ***	2
iibear	-5.7917	0.2503 **	0.3761 ***	0.2908 ***	0.2460 **	0.5632 ***	1,2,4
iicorr	-5.7377	0.2234 *	0.3589 ***	0.2640 **	0.2542 **	0.4948 ***	
iispread	-4.3378	0.2302 *	0.3725 ***	0.2599 **	0.2275 *	0.5136 ***	1,2,4
iibb	-5.2696	0.2330 **	0.3741 ***	0.2655 **	0.2296 *	0.5214 ***	1,2,4
iibull4	-5.5397	0.2219 *	0.3557 ***	0.2501 **	0.2518 **	0.6029 ***	2,4
iibear4	-6.2286	0.2468 **	0.3628 ***	0.2807 ***	0.2469 **	0.7464 ***	1,2,3,4
iicorr4	-6.1268	0.2272 *	0.3526 ***	0.2751 ***	0.2601 **	0.6158 ***	1
iispread4	-4.6464	0.2335 **	0.3605 ***	0.2601 **	0.2495 **	0.6789 ***	1,2,4
iibb4	-5.6004	0.2344 **	0.3616 ***	0.2623 **	0.2470 **	0.6942 ***	1,2,4
Base Model	-8.7131	0.1802 *	0.3487 ***	0.2331 **	0.2144 **		

*, **, *** = Significant at 90%, 95%, or 99%

Table 29. VAR Model Out-of-Sample Forecast Results for Value-weighted Returns with Changes in AAII and II Sentiment for the Full Period 11/1987 to 12/2005

	Forecast Standard Error (RMSE) - 1st Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
daastock	4.1774	0.0401	0.3395	0.4032	2.9903	0.0535	-0.1994	0.3334	0.0804
aabond	4.1808	0.0398	0.3457	0.4061	1.7718	0.0300	0.0072	-0.1923	-0.1287
daacash	4.1657	0.0400	0.3410	0.4008	2.5818	0.1345	-0.1144	0.2014	0.2483
daaspread	4.1772	0.0401	0.3395	0.4031	5.9829	0.0552	-0.1923	0.3334	0.0839
asbull	4.1928	0.0397	0.3452	0.4055	10.3454	-0.0520	0.0650	-0.1456	-0.0818
asbear	4.2101	0.0396	0.3455	0.4025	8.2340	-0.1689	0.1158	-0.1760	0.1305
asneut	4.1880	0.0396	0.3427	0.4058	6.5028	-0.0194	0.1377	0.0544	-0.1043
asspread	4.2001	0.0397	0.3457	0.4041	17.4632	-0.1014	0.0650	-0.1932	0.0128
asbb	4.2010	0.0398	0.3457	0.4041	12.1608	-0.1074	0.0216	-0.1940	0.0142
asbull4	4.1734	0.0399	0.3450	0.4010	6.7139	0.0809	-0.1002	-0.1325	0.2345
asbear4	4.1808	0.0400	0.3427	0.4030	5.3448	0.0304	-0.1641	0.0569	0.0904
asneut4	4.1977	0.0398	0.3444	0.4040	4.4684	-0.0848	0.0288	-0.0822	0.0234
asspread4	4.1703	0.0400	0.3441	0.4014	11.2586	0.1024	-0.1641	-0.0607	0.2062
asbb4	4.1709	0.0401	0.3442	0.4021	7.9404	0.0983	-0.1852	-0.0706	0.1593
iibull	4.1456	0.0398	0.3388	0.4047	5.5491	0.2747	-0.0287	0.3941	-0.0304
iibear	4.1352	0.0398	0.3419	0.4017	4.9894	0.3484	0.0144	0.1293	0.1888
iicorr	4.1847	0.0400	0.3427	0.4018	3.9279	0.0031	-0.1073	0.0586	0.1802
iispread	4.1332	0.0398	0.3393	0.4033	9.8055	0.3622	0.0144	0.3516	0.0711
iibb	4.1316	0.0398	0.3392	0.4031	6.1795	0.3736	0.0144	0.3559	0.0832
iibull4	4.1497	0.0399	0.3356	0.4023	4.4347	0.2459	-0.1002	0.6706	0.1413
iibear4	4.1311	0.0398	0.3362	0.4014	4.0525	0.3777	-0.0072	0.6181	0.2062
iicorr4	4.1826	0.0399	0.3427	0.3987	3.1821	0.0175	-0.0788	0.0544	0.4028
iispread4	4.1348	0.0399	0.3339	0.4021	7.8274	0.3515	-0.0431	0.8236	0.1571
iibb4	4.1316	0.0399	0.3347	0.4022	4.8461	0.3736	-0.0502	0.7576	0.1506
Base Model	4.1852	0.0398	0.3434	0.4043					

*, **, *** = Significant at 90%, 95%, or 99%

Table 30. VAR Model Out-of-Sample Forecast Results for Value-weighted Returns with Changes in AAII and II Sentiment for the Sub-Period 11/1987 to 12/1996

	Forecast Standard Error (RMSE) - 1st Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
daastock	3.3092	0.0423	0.4324	0.1910	2.3214	0.1214	-0.1715	-0.0469	-0.2204
aabond	3.3086	0.0411	0.4336	0.1892	1.8079	0.1248	0.3917	-0.0983	-0.0271
daacash	3.3298	0.0409	0.4291	0.1893	1.9009	-0.0014	0.4921	0.1035	-0.0457
daaspread	3.3086	0.0423	0.4324	0.1911	4.6446	0.1248	-0.1715	-0.0460	-0.2214
asbull	3.3378	0.0426	0.4340	0.1893	8.5629	-0.0487	-0.2849	-0.1163	-0.0395
asbear	3.3536	0.0416	0.4366	0.1878	7.4379	-0.1410	0.1858	-0.2341	0.1168
asneut	3.3138	0.0416	0.4276	0.1856	6.4293	0.0939	0.1665	0.1740	0.3512
asspread	3.3512	0.0423	0.4365	0.1891	14.6419	-0.1273	-0.1578	-0.2301	-0.0177
asbb	3.3385	0.0423	0.4353	0.1882	10.9333	-0.0531	-0.1806	-0.1770	0.0734
asbull4	3.3711	0.0422	0.4373	0.1902	5.2014	-0.2413	-0.1302	-0.2635	-0.1383
asbear4	3.3597	0.0405	0.4329	0.1902	4.5324	-0.1761	0.7285	-0.0663	-0.1342
asneut4	3.3201	0.0419	0.4312	0.1893	4.1143	0.0558	0.0141	0.0091	-0.0395
asspread4	3.3742	0.0414	0.4361	0.1904	8.8625	-0.2590	0.2831	-0.2107	-0.1505
asbb4	3.3797	0.0414	0.4350	0.1905	6.7067	-0.2903	0.2586	-0.1619	-0.1607
iibull	3.3543	0.0420	0.4149	0.1906	5.4393	-0.1449	-0.0328	0.8005	-0.1729
iibear	3.3623	0.0416	0.4369	0.1874	4.8844	-0.1913	0.1472	-0.2455	0.1530
iicorr	3.3206	0.0419	0.4191	0.1850	3.9794	0.0532	0.0377	0.5871	0.4185
iispread	3.3682	0.0417	0.4280	0.1892	9.6654	-0.2251	0.1041	0.1580	-0.0354
iibb	3.3677	0.0417	0.4288	0.1894	6.0517	-0.2222	0.0994	0.1184	-0.0478
iibull4	3.3682	0.0420	0.4097	0.1916	4.0726	-0.2252	-0.0047	1.0731	-0.2736
iibear4	3.3722	0.0414	0.4287	0.1864	4.4054	-0.2479	0.2782	0.1226	0.2605
iicorr4	3.3129	0.0421	0.4257	0.1839	3.1575	0.0988	-0.0747	0.2665	0.5440
iispread4	3.3795	0.0414	0.4175	0.1894	7.8696	-0.2892	0.2391	0.6657	-0.0509
iibb4	3.3784	0.0414	0.4199	0.1895	4.8653	-0.2830	0.2488	0.5459	-0.0633
Base Model	3.3295	0.0419	0.4314	0.1889					

*, **, *** = Significant at 90%, 95%, or 99%

Table 31. VAR Model Out-of-Sample Forecast Results for Value-weighted Returns With Changes in AAII and II Sentiment for the Sub-Period 1/1997 to 12/2005

	Forecast Standard Error (RMSE) - 1st Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
daastock	4.5330	0.0355	0.1912	0.4731	3.4659	0.4900	-0.1217	0.7846	0.3266
aabond	4.3933	0.0356	0.1972	0.4836	1.7340	1.1581	-0.1545	0.1494	-0.1113
daacash	4.6379	0.0354	0.1959	0.4735	3.1012	0.0278	-0.0832	0.2815	0.3103
daaspread	4.5330	0.0355	0.1912	0.4730	6.9387	0.4902	-0.1162	0.7823	0.3318
asbull	4.6841	0.0348	0.2000	0.4858	11.3232	-0.1661	0.2794	-0.1257	-0.1993
asbear	4.6819	0.0347	0.1965	0.4774	8.9928	-0.1571	0.3614	0.2228	0.1449
asneut	4.6561	0.0358	0.2011	0.4848	6.4793	-0.0491	-0.2626	-0.2337	-0.1582
asspread	4.6939	0.0345	0.1980	0.4826	19.2403	-0.2063	0.4325	0.0648	-0.0701
asbb	4.6986	0.0347	0.1977	0.4823	12.8598	-0.2258	0.3555	0.0989	-0.0587
asbull4	4.6711	0.0356	0.2013	0.4795	7.4332	-0.1119	-0.1980	-0.2576	0.0576
asbear4	4.6708	0.0356	0.2016	0.4762	5.6264	-0.1108	-0.1763	-0.2813	0.1954
asneut4	4.6887	0.0355	0.2006	0.4830	4.4787	-0.1852	-0.0997	-0.1857	-0.0851
asspread4	4.6674	0.0356	0.2015	0.4777	12.1662	-0.0966	-0.1708	-0.2775	0.1316
asbb4	4.6684	0.0357	0.2016	0.4764	8.1485	-0.1009	-0.2142	-0.2794	0.1874
iibull	4.6291	0.0354	0.2013	0.4864	4.9385	0.0656	-0.0832	-0.2518	-0.2223
iibear	4.5159	0.0351	0.1943	0.4790	4.2821	0.5685	0.1013	0.4533	0.0783
iicorr	4.5962	0.0356	0.1979	0.4763	3.7154	0.2080	-0.1654	0.0788	0.1886
iispread	4.5761	0.0352	0.1984	0.4848	8.4939	0.2964	0.0448	0.0238	-0.1586
iibb	4.5676	0.0352	0.1977	0.4842	5.3993	0.3342	0.0673	0.0989	-0.1326
iibull4	4.6006	0.0357	0.1998	0.4771	4.1193	0.1886	-0.2142	-0.1052	0.1550
iibear4	4.5264	0.0355	0.1956	0.4787	3.0911	0.5204	-0.1107	0.3095	0.0903
iicorr4	4.5847	0.0358	0.1964	0.4745	3.0196	0.2583	-0.2626	0.2300	0.2679
iispread4	4.5660	0.0355	0.1984	0.4779	6.6345	0.3414	-0.1436	0.0258	0.1249
iibb4	4.5634	0.0355	0.1981	0.4787	4.1482	0.3528	-0.1272	0.0558	0.0920
Base Model	4.6444	0.0353	0.1987	0.4809					

*, **, *** = Significant at 90%, 95%, or 99%

Table 32. VAR Model In-Sample Results for Returns with Changes in Baker-Wurgler Sentiment for the Time Period 9/1989 to 12/2004

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate (1)	Δ Payout Yield (2)	Δ Issue Yield (3)	Δ Sentiment (4)	Causal
Equal-weighted Returns							
Full Period - 9/1989 to 12/2004							
dsf2	-11.2784	0.1558 **	0.2420 ***	0.2047 ***	0.3034 ***	0.0691	1,4
dsf2raw	-11.1017	0.1570 **	0.2410 ***	0.1997 ***	0.3078 ***	0.0712	1,4
Base Model	-7.5927	0.1051 *	0.2368 ***	0.1871 ***	0.2843 ***		
Sub Period 1 - 9/1989 to 12/1996							
dsf2	-12.4661	0.3446 ***	0.3028 **	0.3148 **	0.7987 ***	0.1069	2
dsf2raw	-12.9227	0.3349 **	0.2783 *	0.3130 **	0.7993 ***	0.0935	2
Base Model	-8.4287	0.3303 ***	0.2163 *	0.2914 ***	0.7862 ***		
Sub Period 2 - 1/1997 to 12/2004							
dsf2	-11.1670	0.2217	0.4154 ***	0.2671 **	0.2705 **	0.1852	2,4
dsf2raw	-10.5214	0.2202	0.3947 ***	0.2463 *	0.2570 *	0.1365	1,4
Base Model	-7.7852	0.1452	0.3620 ***	0.2156 *	0.2333 **		
Value weighted Returns							
Full Period - 9/1989 to 12/2004							
dsf2	-11.8925	0.0688	0.2375 ***	0.1875 ***	0.3013 ***	0.0742	4
dsf2raw	-11.7070	0.0530	0.2355 ***	0.1827 ***	0.3088 ***	0.0689	4
Base Model	-8.2358	0.0428	0.2325 ***	0.1675 ***	0.2808 ***		
Sub Period 1 - 9/1989 to 12/1996							
dsf2	-13.5472	0.1809	0.3880 ***	0.3358 **	0.8426 ***	0.1201	2
dsf2raw	-14.0004	0.1758	0.3577 ***	0.3369 **	0.8429 ***	0.1346	2
Base Model	-9.5225	0.1723	0.2744 **	0.3191 ***	0.8408 ***		
Sub Period 2 - 1/1997 to 12/2004							
dsf2	-11.8534	0.2262	0.4236 ***	0.2672 **	0.2582 *	0.1829	2,4
dsf2raw	-11.2057	0.2088	0.4070 ***	0.2506 *	0.2407 *	0.1402	4
Base Model	-8.5009	0.1836	0.3810 ***	0.2203 **	0.2090 *		

*, **, *** = Significant at 90%, 95%, or 99%

Table 33. VAR Model Out-of-Sample Forecast Results for Returns with Changes in Baker-Wurgler Sentiment for the Time Period 9/1989 to 12/2004

Forecast Standard Error (RMSE) - 1st Month Ahead						Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
Equal-weighted Returns									
Full Period - 9/1989 to 12/2004									
dsf2	5.5527	0.0397	0.2753	0.4265	0.1476	0.4749	0.0066	-0.0285	0.1426
dsf2raw	5.5487	0.0397	0.2761	0.4252	0.1612	0.4944	-0.0132	-0.1106	0.2273
Base Model	5.6526	0.0397	0.2750	0.4289					
Sub Period 1 - 9/1989 to 12/1996									
dsf2	3.9733	0.0417	0.3327	0.2194	0.1174	-0.1842	0.6079	-0.1409	0.1432
dsf2raw	4.0025	0.0424	0.3331	0.2191	0.0933	-0.2704	0.3813	-0.1567	0.1615
Base Model	3.9131	0.0437	0.3288	0.2219					
Sub Period 2 - 1/1997 to 12/2004									
dsf2	6.5715	0.0355	0.1979	0.4984	0.1544	0.3021	0.2658	0.1594	0.0605
dsf2raw	6.5777	0.0361	0.2007	0.5030	0.2072	0.2917	0.0765	0.0100	-0.0365
Base Model	6.7565	0.0364	0.2009	0.5013					
Value-weighted Returns									
Full Period - 9/1989 to 12/2004									
dsf2	4.3885	0.0398	0.2782	0.4272	0.1472	0.0474	0.0000	0.0028	0.1689
dsf2raw	4.4256	0.0398	0.2791	0.4249	0.1614	-0.1719	-0.0328	-0.0749	0.3140
Base Model	4.3964	0.0398	0.2783	0.4299					
Sub Period 1 - 9/1989 to 12/1996									
dsf2	3.4401	0.0391	0.3275	0.1940	0.1166	-0.2775	0.9770	-0.1925	-0.1575
dsf2raw	3.4506	0.0400	0.3272	0.1938	0.0912	-0.3132	0.6404	-0.1820	-0.1470
Base Model	3.3612	0.0421	0.3223	0.1915					
Sub Period 2 - 1/1997 to 12/2004									
dsf2	4.8606	0.0352	0.1979	0.5026	0.1546	0.0820	0.1788	0.1275	0.1395
dsf2raw	4.9150	0.0357	0.2001	0.5085	0.2067	-0.0362	0.0002	0.0079	0.0146
Base Model	4.8981	0.0358	0.2003	0.5092					

*, **, *** = Significant at 90%, 95%, or 99%

Table 34. VAR Model In-Sample Results for Returns with Changes in Yale ICF Sentiment for the Time Period 3/2001 to 12/2005

VAR		Single Equation R^2s					
Sentiment	AICC	Return	Δ Risk-free Rate(1)	Δ Payout Yield(2)	Δ Issue Yield(3)	Δ Sentiment(4)	Causal
Equal-weighted Returns							
dncrinda	-6.5781	0.3966 *	0.2829	0.3996 *	0.2848	0.1349	
dncrinsa	-5.7035	0.3901	0.3062	0.3729	0.2546	0.2326	
dndiinda	-6.2066	0.3772	0.3058	0.3847	0.3409	0.1740	
dndiinsa	-6.7022	0.3653	0.3738	0.4009 *	0.3929 *	0.2857	2,4
dnvalinda	-6.8003	0.3804	0.3280	0.3752	0.3477	0.3906	4
dnvalinsa	-6.6272	0.3955 *	0.3164	0.3893	0.2778	0.2396	
dnyrinda	-7.4760	0.4287 **	0.2863	0.4190 *	0.3001	0.1897	3
dnyrinsa	-6.4796	0.4373 **	0.2820	0.4275 **	0.2867	0.3313	
Base Model	-9.3470	0.3370 *	0.2578	0.3515 *	0.2445		
Value weighted Returns							
dncrinda	-7.2385	0.3407	0.3074	0.3727	0.2550	0.1755	
dncrinsa	-6.3577	0.3629	0.3136	0.3314	0.2384	0.2773	
dndiinda	-6.7919	0.3192	0.3255	0.3423	0.3257	0.1737	
dndiinsa	-7.2684	0.3196	0.3764	0.3723	0.3986 *	0.2445	2,4
dnvalinda	-7.3742	0.3265	0.3262	0.3449	0.3483	0.4322 **	4
dnvalinsa	-7.0624	0.3299	0.3151	0.3665	0.2621	0.1680	
dnyrinda	-7.9832	0.3587	0.2974	0.3755	0.2873	0.1732	3
dnyrinsa	-6.8741	0.3721	0.2850	0.3940 *	0.2541	0.2714	
Base Model	-9.9052	0.2861	0.2679	0.3104	0.2279		

*, **, *** = Significant at 90%, 95%, or 99%

Table 35. VAR Model Out-of-Sample Forecast Results for Returns with Changes in Yale ICF Sentiment for the Time Period 3/2001 to 12/2005

	Forecast Standard Error (RMSE) - One Month Ahead					Forecast Mean Squared Error F-statistic (MSE-F)			
Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield	Δ Sentiment	Return	Δ Risk-free Rate	Δ Payout Yield	Δ Issue Yield
Equal-weighted Returns									
dncrinda	5.2191	0.0221	0.1656	0.3483	2.5377	0.1377	-0.2612	0.0205	-0.1295
dncrinsa	5.2474	0.0218	0.1693	0.3556	3.6403	0.0632	-0.0436	-0.2689	-0.3991
dndiinda	5.3025	0.0218	0.1677	0.3343	3.1327	-0.0782	-0.0498	-0.1440	0.4373
dndiinsa	5.3528	0.0207	0.1655	0.3209	6.9387	-0.2037	0.6790	0.0353	1.0548
dnvalinda	5.2886	0.0214	0.1690	0.3326	2.3932	-0.0430	0.1721	-0.2450	0.5126
dnvalinsa	5.2239	0.0216	0.1670	0.3500	0.3500	0.1249	0.0567	-0.0939	-0.1939
dnyrinda	5.0784	0.0221	0.1629	0.3445	1.6141	0.5265	-0.2316	0.2470	0.0158
dnyrinsa	5.0403	0.0221	0.1617	0.3478	2.7615	0.6375	-0.2730	0.3525	-0.1115
Base Model	5.2718	0.0217	0.1659	0.3449					
Value-weighted Returns									
dncrinda	3.9568	0.0217	0.1693	0.3555	2.4775	0.0365	-0.1304	0.1409	-0.2555
dncrinsa	3.8896	0.0216	0.1748	0.3594	3.5327	0.2743	-0.0688	-0.2864	-0.3975
dndiinda	4.0209	0.0215	0.1734	0.3382	3.1332	-0.1791	0.0507	-0.1788	0.4290
dndiinsa	4.0195	0.0206	0.1694	0.3194	2.6658	-0.1745	0.6118	0.1369	1.3040
dnvalinda	3.9992	0.0214	0.1730	0.3324	2.3100	-0.1074	0.0571	-0.1528	0.6801
dnvalinsa	3.9890	0.0216	0.1701	0.3537	2.7782	-0.0733	-0.0501	0.0736	-0.1919
dnyrinda	3.9022	0.0219	0.1689	0.3477	1.6305	0.2285	-0.2212	0.1721	0.0402
dnyrinsa	3.8614	0.0221	0.1664	0.3557	2.8825	0.3777	-0.3337	0.3844	-0.2629
Base Model	3.9674	0.0215	0.1711	0.3487					

*, **, *** = Significant at 90%, 95%, or 99%

Table 36. VAR Parameter Estimates for the Full Sample Period for Equal-Weighted Returns Using the AAII Asset Allocation to Stocks.

	ewmret2	drf	dpayout12yld	dissue12yld	daastock
Constant	1.4343 ***	-0.0026	-0.0342	-0.0516 *	-0.1876
ewmret2(t-1)	0.1677 **	-0.0007	-0.0047	0.0112 *	0.2745 ***
drf(t-1)	0.3019	-0.3983 ***	-0.3939	0.2307	0.9305
dpayout12yld(t-1)	0.5882	0.0062	-0.0875	0.0278	0.7101
dissue12yld(t-1)	-0.5003	0.0050	-0.1792 ***	-0.0871	-0.2170
daastock(t-1)	0.2204	-0.0003	-0.0181 **	-0.0193 *	-0.5999 ***
ewmret2(t-2)	-0.1675 *	0.0012 *	0.0188 ***	0.0199 ***	0.0609
drf(t-2)	-18.4802 *	-0.0630	0.8986	1.1300	-4.1710
dpayout12yld(t-2)	0.6072	0.0096	0.1037	-0.1041	-0.0156
dissue12yld(t-2)	0.3896	-0.0042	-0.0296	-0.0306	0.7945
daastock(t-2)	0.4297 ***	0.0001	-0.0210 **	-0.0134	-0.2747 ***
ewmret2(t-3)	-0.1954 **	0.0012 *	0.0148 ***	0.0157 **	-0.0663
drf(t-3)	-10.8603	0.1483 **	0.4408	0.7032	-1.3743
dpayout12yld(t-3)	0.5316	0.0177 **	0.2583 ***	-0.1251	-0.0527
dissue12yld(t-3)	-0.4982	-0.0052	0.0789	0.5216 ***	0.3502
daastock(t-3)	0.4122 ***	0.0003	-0.0262 ***	-0.0219 **	0.0189

*, **, *** = Significant at 90%, 95%, or 99%

Table 37. VAR Parameter Estimates for the First Sub Period for Equal-Weighted Returns Using the AAII Asset Allocation to Stocks.

	ewmret2		drf		dpayout12yld		dissue12yld		daastock	
Constant	1.1467	***	-0.0002		-0.0331		-0.0390		0.0295	
ewmret2(t-1)	0.3439	***	-0.0009		-0.0126		0.0048		0.2147	***
drf(t-1)	3.6169		-0.4413	***	-0.9664		-0.8738	*	3.0897	
dpayout12yld(t-1)	1.2564		-0.0002		-0.0779		0.0286		0.1421	
dissue12yld(t-1)	-1.8985		-0.0092		-0.3377	**	-0.2179	***	0.6505	
daastock(t-1)	0.0854		-0.0014		-0.0183		-0.0017		-0.4745	***
ewmret2(t-2)	-0.1437		0.0002		0.0318	**	0.0084		-0.0121	
drf(t-2)	-19.9551	**	-0.0993		0.6647		-0.0873		-0.0224	
dpayout12yld(t-2)	-0.2769		0.0143		0.2308	**	0.0152		-0.2090	
dissue12yld(t-2)	-1.5284		-0.0282	*	-0.1123		-0.1482	**	0.3829	
daastock(t-2)	0.1954		-0.0004		-0.0348		-0.0113		-0.1939	
ewmret2(t-3)	-0.1570		0.0027	**	0.0161		0.0266	***	0.0467	
drf(t-3)	-22.2040	***	0.1281		0.4074		0.3248		-4.7604	
dpayout12yld(t-3)	0.5608		0.0314	***	0.2383	**	-0.1218	**	0.7288	
dissue12yld(t-3)	-3.4126	***	-0.0151		0.1343		0.7790	***	-0.2975	
daastock(t-3)	0.3242	*	-0.0015		-0.0361	*	-0.0033		-0.0746	

*, **, *** = Significant at 90%, 95%, or 99%

Table 38. VAR Parameter Estimates for the Second Sub Period for Equal-Weighted Returns Using the AAII Asset Allocation to Stocks.

	ewmret2	drf	dpayout12yld	dissue12yld	daastock
Constant	1.5704 **	-0.0004	0.0096	-0.0189	-0.3996
ewmret2(t-1)	-0.0069	-0.0006	-0.0046	0.0196 *	0.2614 ***
drf(t-1)	-15.0114	-0.3818 ***	0.4980	2.3508 *	-1.0481
dpayout12yld(t-1)	1.6359	0.0080	-0.4196 ***	-0.5621 *	1.1411
dissue12yld(t-1)	-1.4712	0.0069	-0.0123	0.1516	-1.2515
daastock(t-1)	0.5231 **	0.0000	-0.0201 ***	-0.0398 **	-0.6290 ***
ewmret2(t-2)	-0.1372	0.0010	0.0049	0.0177	0.1068
drf(t-2)	-32.0655 *	-0.0422	1.2531 **	3.6228 **	-14.1289
dpayout12yld(t-2)	9.1315 **	-0.0280	-0.4460 ***	-0.7098 **	-1.5667
dissue12yld(t-2)	0.1999	0.0109	0.0096	0.0622	1.4691
daastock(t-2)	0.7921 ***	-0.0001	-0.0186 **	-0.0385 **	-0.3233 **
ewmret2(t-3)	-0.1309	-0.0004	0.0030	-0.0051	-0.0932
drf(t-3)	5.3532	0.1717 *	0.1541	1.7154	4.0486
dpayout12yld(t-3)	7.8920 *	-0.0465 *	-0.0041	-0.7882 **	-0.3592
dissue12yld(t-3)	0.6761	-0.0087	-0.0521	0.1847	0.8532
daastock(t-3)	0.6474 ***	0.0011	-0.0196 ***	-0.0323 **	0.0233

*, **, *** = Significant at 90%, 95%, or 99%

Table 39. GARCH Model Results for Equal-weighted Returns with Changes in AAII Asset Allocation for the Full Period 11/1987 to 12/2005

	Base Model		daastock		daabond		daacash		daaspread	
Intercept	0.740		1.000		1.764	*	1.442		0.982	
dpayout12yld	-2.466	***	-2.765	***	-2.368	***	-3.070	***	-2.754	***
dissue12yld	-3.353	***	-3.063	***	-3.692	***	-3.606	***	-3.086	***
jan	1.929	**	2.336	**	1.935	*	2.475	**	2.303	**
oct	-2.896	**	-2.494	**	-1.992		-2.381	**	-2.625	**
ΔS			0.280	***	-0.073		-0.481	***	0.140	***
xvwrtnlag3	0.308	***	0.262	***	0.281	***	0.224	***	0.262	***
β_0	0.000	***	0.000	***	14.131	***	12.627	**	0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.082	**	0.020		0.066		0.042		0.020	
β_3h_{it-1}	0.890	***	0.858	***	0.000		0.000		0.857	***
α_1h_{it}	0.005		-0.017		-0.052		-0.041		-0.015	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.028		0.000		0.000	
β_4R_{ft}	1.487		2.791	**	0.000		12.615		2.770	**
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		2.359	***	0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.274	**	0.216		0.147		0.069	**
Log-likelihood	-625.769		-619.439		-629.426		-624.667		-619.415	

*, **, *** = Significant at 90%, 95%, or 99%

Table 40. GARCH Model Results for Equal-weighted Returns with Changes in AAII Sentiment for the Full Period 11/1987 to 12/2005

A. Month-end

	Base Model	dasbull	dasbear	dasneut	dasbb	dasspread
Intercept	0.740	-6.209	0.755	0.538	0.834	-6.068
dpayout12yld	-2.466 ***	-2.550 ***	-2.070 **	-2.601 ***	-1.875 *	-2.051 *
dissue12yld	-3.353 ***	-3.285 ***	-3.011 ***	-3.401 ***	-2.708 ***	-3.832 ***
jan	1.929 **	3.195 ***	2.705 ***	2.119 **	2.770 ***	3.005 ***
oct	-2.896 **	-2.432 *	-3.006 ***	-2.687 **	-2.994 ***	-1.903
ΔS		0.119 ***	-0.134 ***	-0.033	0.101 ***	0.067 ***
xvwrtnlag3	0.308 ***	0.305 ***	0.317 ***	0.304 ***	0.316 ***	0.317 ***
β_0	0.000 ***	5.172	0.000 ***	0.000 ***	0.000 ***	6.517
$\beta_1\varepsilon^2_{it-1}$	0.082 **	0.000	0.066	0.060	0.070	0.004
$\beta_3 h_{it-1}$	0.890 ***	0.686 ***	0.893 ***	0.902 ***	0.889 ***	0.616 *
$\alpha_1 h_{it}$	0.005	0.359	-0.002	0.013	-0.006	0.350
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.016	0.000	0.014	0.000
$\beta_4 R_{ft}$	1.487	0.000	1.495	0.965	1.552 *	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.007	0.000	0.000	0.000	0.002
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.004	0.000	0.011	0.000	0.001
Log-likelihood	-625.769	-624.690	-613.381	-625.336	-611.709	-624.483

B. Four-week Average

	Base Model	dasbull4	dasbear4	dasneut4	dasbb4	dasspread4
Intercept	0.740	0.806	0.611	0.728	0.631	-3.521
dpayout12yld	-2.466 ***	-2.439 ***	-2.624 ***	-2.450 ***	-2.679 ***	-2.106 **
dissue12yld	-3.353 ***	-3.373 ***	-3.087 ***	-3.347 ***	-3.191 ***	-3.584 ***
jan	1.929 **	1.608	2.067 **	1.889 **	1.782 *	2.981 ***
oct	-2.896 **	-2.749 **	-2.629 ***	-2.888 **	-2.821 ***	-2.594 **
ΔS		0.184 ***	-0.254 ***	-0.005	0.162 ***	0.126 ***
xvwrtnlag3	0.308 ***	0.253 ***	0.229 ***	0.307 ***	0.231 ***	0.214 ***
β_0	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	2.651
$\beta_1\varepsilon^2_{it-1}$	0.082 **	0.078	0.088	0.082 **	0.098 *	0.025
$\beta_3 h_{it-1}$	0.890 ***	0.886 ***	0.851 ***	0.890 ***	0.844 ***	0.802 ***
$\alpha_1 h_{it}$	0.005	0.004	0.015	0.006	0.017	0.241
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_4 R_{ft}$	1.487	1.600	1.494	1.526	1.489	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	0.022	0.000	0.000	0.001
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.000	0.000	0.009	0.003
Log-likelihood	-625.769	-612.973	-606.743	-625.765	-608.908	-617.224

*, **, *** = Significant at 90%, 95%, or 99%

Table 41. GARCH Model Results for Equal-weighted Returns with Changes in II Sentiment for the Full Period 11/1987 to 12/2005

A. Month-end

	Base Model		diibull		diibear		diicorr		diispread		diibb	
Intercept	0.740		1.469	**	2.275	***	0.702		1.734	**	1.673	**
dpayout12yld	-2.466	***	-0.961		-1.615	*	-2.361	**	-1.152		-1.193	
dissue12yld	-3.353	***	-3.326	***	-3.077	***	-3.415	***	-3.149	***	-3.102	***
jan	1.929	**	2.146	**	0.869		1.897	*	1.657	*	1.609	*
oct	-2.896	**	-2.609	**	-2.381	**	-2.764	**	-2.525	**	-2.575	**
ΔS			0.294	***	-0.392	***	-0.028		0.187	***	0.299	***
xvwrtnlag3	0.308	***	0.315	***	0.288	***	0.328	***	0.307	***	0.311	***
β_0	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.082	**	0.000		0.000		0.138	**	0.000		0.000	
$\beta_3 h_{it-1}$	0.890	***	0.918	***	0.915	***	0.807	***	0.918	***	0.921	***
$\alpha_1 h_{it}$	0.005		-0.049		-0.099	*	0.010		-0.067		-0.064	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.083	**	0.080	*	0.000		0.081	*	0.080	*
$\beta_4 R_{ft}$	1.487		1.856	***	1.969	***	1.191		1.798	***	1.682	***
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.097		0.000		0.000	
Log-likelihood	-625.769		-604.291		-597.283		-625.318		-597.707		-596.644	

B. Four-week Average

	Base Model		diibull4		diibear4		diicorr4		diispread4		diibb4	
Intercept	0.740		0.724		0.622		-0.296		0.798		0.796	
dpayout12yld	-2.466	***	-1.573	*	-1.565	*	-2.490	***	-1.474		-1.497	
dissue12yld	-3.353	***	-3.298	***	-3.380	***	-3.686	***	-3.397	***	-3.371	***
jan	1.929	**	1.487		0.918		2.805	**	1.193		1.174	
oct	-2.896	**	-2.433	**	-2.728	**	-2.418	*	-2.510	**	-2.532	**
ΔS			0.207	***	-0.240	***	-0.054		0.124	***	0.209	***
xvwrtnlag3	0.308	***	0.254	***	0.237	***	0.316	***	0.236	***	0.231	***
β_0	0.000	***	0.000	***	0.779		16.095	***	0.000	***	0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.082	**	0.101	**	0.160	**	0.116		0.089	**	0.086	**
$\beta_3 h_{it-1}$	0.890	***	0.867	***	0.792	***	0.000		0.878	***	0.881	***
$\alpha_1 h_{it}$	0.005		0.007		0.020		0.040		0.005		0.006	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.487		1.673		0.003		0.000		1.666	*	1.613	*
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.028		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.515	*	0.000		0.000	
Log-likelihood	-625.769		-617.808		-618.031		-634.946		-616.631		-615.667	

*, **, *** = Significant at 90%, 95%, or 99%

Table 42. GARCH Model Results for Equal-weighted Returns with Changes in AAII Asset Allocation for the Sub-Period 11/1987 to 12/1996

	Base Model		daastock		daabond		daacash		daaspread	
Intercept	0.695		0.807	*	0.839	*	0.694		0.805	*
dpayout12yld	-1.927	***	-2.135	***	-1.954	***	-1.948	***	-2.137	***
dissue12yld	-2.410	***	-2.465	***	-2.453	***	-2.353	***	-2.463	***
jan	0.834		1.349		0.801		0.953		1.357	
oct	-4.387	***	-4.441	***	-4.559	***	-4.515	***	-4.439	***
ΔS			0.127		0.010		-0.075		0.064	
xewrtnlag1	0.412	***	0.400	***	0.409	***	0.392	***	0.400	***
β_0	4.876	***	2.930	**	3.727	**	5.181	***	2.940	**
$\beta_1\varepsilon^2_{it-1}$	0.716		0.554	*	0.826	**	0.648		0.551	*
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	0.000		-0.010		-0.008		0.001		-0.010	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071		0.259		0.000		0.079		0.263	
$\beta_4 R_{ft}$	0.000		0.000		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.362		0.000		0.000		0.090	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.628		0.363		0.000		0.157	
Log-likelihood	-280.415		-277.883		-279.176		-280.242		-277.892	

*, **, *** = Significant at 90%, 95%, or 99%

Table 43. GARCH Model Results for Equal-weighted Returns with Changes in AAII Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model		dasbull		dasbear		dasneut		dasbb		dasspread	
Intercept	0.695		1.459		2.355	**	0.782		0.549		3.262	
dpayout12yld	-1.927	***	-1.861	**	-2.106	***	-1.848	***	-1.794	**	-1.768	**
dissue12yld	-2.410	***	-1.715	**	-1.168		-2.418	***	-1.771	**	-1.826	*
jan	0.834		2.612	***	3.422	***	0.610		2.648	***	2.965	***
oct	-4.387	***	-3.902	***	-3.747	***	-4.571	***	-4.291	***	-3.956	***
ΔS			0.061		-0.143	***	-0.030		0.062	**	0.060	***
xewrtnlag1	0.412	***	0.326	***	0.267	***	0.422	***	0.367	***	0.338	***
β_0	4.876	***	5.027		0.121		4.187	***	5.923	***	2.193	
$\beta_1\varepsilon^2_{it-1}$	0.716		0.000		0.000		0.841	*	0.134		0.000	
$\beta_3 h_{it-1}$	0.000		0.210		0.891	***	0.000		0.000		0.504	
$\alpha_1 h_{it}$	0.000		-0.077		-0.183		-0.005		0.018		-0.281	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071		0.000		0.000		0.088		0.000		0.039	
$\beta_4 R_{ft}$	0.000		0.443		2.193		0.000		0.000		3.918	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.041		0.000		0.000		0.022		0.004	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.013		0.000		0.000		0.011		0.000	
Log-likelihood	-280.415		-276.797		-273.882		-279.929		-275.880		-274.654	

B. Four-week Average

	Base Model		dasbull4		dasbear4		dasneut4		dasbb4		dasspread4	
Intercept	0.695		0.695		0.657		0.665		0.697		0.679	
dpayout12yld	-1.927	***	-1.989	***	-1.900	***	-2.017	***	-2.055	***	-2.009	***
dissue12yld	-2.410	***	-2.438	***	-2.479	***	-2.346	***	-2.476	***	-2.478	***
jan	0.834		0.700		1.299		1.002		0.984		1.071	
oct	-4.387	***	-4.522	***	-4.364	***	-4.283	***	-4.566	***	-4.520	***
ΔS			0.070		-0.133	**	0.037		0.073	**	0.059	**
xewrtnlag1	0.412	***	0.380	***	0.386	***	0.420	***	0.374	***	0.373	***
β_0	4.876	***	4.511	***	3.557	***	4.888	***	3.836	***	3.972	***
$\beta_1\varepsilon^2_{it-1}$	0.716		0.704	**	0.683	**	0.694		0.693	**	0.651	**
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	0.000		0.002		0.006		0.001		0.003		0.005	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071		0.000		0.000		0.093		0.000		0.000	
$\beta_4 R_{ft}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.017		0.000		0.000		0.033		0.020	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.113		0.000		0.000		0.000	
Log-likelihood	-280.415		-278.864		-276.304		-280.146		-277.366		-277.166	

*, **, *** = Significant at 90%, 95%, or 99%

Table 44. GARCH Model Results for Equal-weighted Returns with Changes in II Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model	diibull	diibear	diicorr	diispread	diibb
Intercept	0.695	0.930 *	0.147	0.754 *	0.402	0.266
dpayout12yld	-1.927 ***	-1.361 *	-1.752 **	-1.745 ***	-1.359	-1.288
dissue12yld	-2.410 ***	-1.725 **	-2.159 ***	-2.542 ***	-2.084 **	-2.028 **
jan	0.834	1.242	0.751	1.063	0.740	0.868
oct	-4.387 ***	-4.234 ***	-3.625 ***	-4.599 ***	-3.983 ***	-3.769 ***
ΔS		0.200 ***	-0.244 ***	-0.045	0.124 ***	0.207 ***
xewrtnlag1	0.412 ***	0.424 ***	0.323 ***	0.437 ***	0.393 ***	0.374 ***
β_0	4.876 ***	3.164 **	5.226 ***	1.733	3.912 **	4.592 ***
$\beta_1\varepsilon^2_{it-1}$	0.716	0.555	0.274	1.014 ***	0.441	0.393
β_3h_{it-1}	0.000	0.000	0.000	0.000	0.000	0.000
α_1h_{it}	0.000	-0.026	0.064	-0.004	0.030	0.048
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071	0.435	0.000	0.000	0.107	0.000
β_4R_{ft}	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_5(\Delta S_{t-1})^2D_{t-1}$		0.025	0.035	0.124	0.014	0.036
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.005	0.073	0.124	0.007	0.011
Log-likelihood	-280.415	-270.259	-271.403	-277.578	-270.170	-269.787

B. Four-week Average

	Base Model	diibull4	diibear4	diicorr4	diispread4	diibb4
Intercept	0.695	0.613	0.756	0.630	0.669	0.674
dpayout12yld	-1.927 ***	-1.485 ***	-1.527 ***	-1.850 ***	-1.449 ***	-1.445 ***
dissue12yld	-2.410 ***	-2.336 ***	-2.674 ***	-2.230 ***	-2.540 ***	-2.531 ***
jan	0.834	1.114	0.174	1.318	0.594	0.587
oct	-4.387 ***	-4.299 ***	-4.602 ***	-4.228 ***	-4.451 ***	-4.447 ***
ΔS		0.129 ***	-0.106 **	-0.061	0.066 ***	0.114 ***
xewrtnlag1	0.412 ***	0.364 ***	0.372 ***	0.404 ***	0.358 ***	0.348 ***
β_0	4.876 ***	3.959 ***	4.253 ***	4.765 **	4.160 ***	4.282 ***
$\beta_1\varepsilon^2_{it-1}$	0.716	0.819 **	0.792 ***	0.763 **	0.784 ***	0.755 **
β_3h_{it-1}	0.000	0.000	0.000	0.000	0.000	0.000
α_1h_{it}	0.000	0.003	-0.003	0.001	0.003	0.003
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071	0.000	0.000	0.000	0.000	0.000
β_4R_{ft}	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_5(\Delta S_{t-1})^2D_{t-1}$		0.000	0.000	0.000	0.000	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.000	0.011	0.000	0.000
Log-likelihood	-280.415	-276.104	-277.546	-280.133	-276.494	-276.244

*, **, *** = Significant at 90%, 95%, or 99%

Table 45. GARCH Model Results for Equal-weighted Returns with Changes in AAII Asset Allocation for the Sub-Period 1/1997 to 12/2005

	Base Model	daastock	daabond	daacash	daaspread
Intercept	2.724	0.807 *	0.839 *	0.694	0.805 *
dpayout12yld	-8.032 ***	-2.135 ***	-1.954 ***	-1.948 ***	-2.137 ***
dissue12yld	-5.038 ***	-2.465 ***	-2.453 ***	-2.353 ***	-2.463 ***
jan	1.221	1.349	0.801	0.953	1.357
oct	-0.259	-4.441 ***	-4.559 ***	-4.515 ***	-4.439 ***
ΔS		0.127	0.010	-0.075	0.064
xewrtnlag1	0.234 **	0.400 ***	0.409 ***	0.392 ***	0.400 ***
β_0	0.247	2.930 **	3.727 **	5.181 ***	2.940 **
$\beta_1\varepsilon^2_{it-1}$	0.012	0.554 *	0.826 **	0.648	0.551 *
$\beta_3 h_{it-1}$	0.917 ***	0.000	0.000	0.000	0.000
$\alpha_1 h_{it}$	-0.079	-0.010	-0.008	0.001	-0.010
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025	0.259	0.000	0.079	0.263
$\beta_4 R_{ft}$	4.678	0.000	0.000	0.000	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.362	0.000	0.000	0.090
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.628	0.363	0.000	0.157
Log-likelihood	-325.232	-277.883	-279.176	-280.242	-277.892

*, **, *** = Significant at 90%, 95%, or 99%

Table 46. GARCH Model Results for Equal-weighted Returns with Changes in AAII Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model	dasbull	dasbear	dasneut	dasbb	dasspread
Intercept	2.724	1.459	2.307 **	0.782	0.549	3.262
dpayout12yld	-8.032 ***	-1.861 **	-2.126 ***	-1.848 ***	-1.794 **	-1.768 **
dissue12yld	-5.038 ***	-1.715 **	-1.399	-2.418 ***	-1.771 **	-1.826 *
jan	1.221	2.612 ***	2.965 ***	0.610	2.648 ***	2.965 ***
oct	-0.259	-3.902 ***	-4.136 ***	-4.571 ***	-4.291 ***	-3.956 ***
ΔS		0.061	-0.144 ***	-0.030	0.062 **	0.060 ***
xewrtnlag1	0.234 **	0.326 ***	0.268 ***	0.422 ***	0.367 ***	0.338 ***
β_0	0.247	5.027	0.123	4.187 ***	5.923 ***	2.193
$\beta_1\varepsilon^2_{it-1}$	0.012	0.000	0.000	0.841 *	0.134	0.000
$\beta_3 h_{it-1}$	0.917 ***	0.210	0.886 ***	0.000	0.000	0.504
$\alpha_1 h_{it}$	-0.079	-0.077	-0.168	-0.005	0.018	-0.281
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025	0.000	0.000	0.088	0.000	0.039
$\beta_4 R_{ft}$	4.678	0.443	2.322	0.000	0.000	3.918
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.041	0.000	0.000	0.022	0.004
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.013	0.000	0.000	0.011	0.000
Log-likelihood	-325.232	-276.797	-274.033	-279.929	-275.880	-274.654

B. Four-week Average

	Base Model	dasbull4	dasbear4	dasneut4	dasbb4	dasspread4
Intercept	2.724	0.695	0.657	0.665	0.697	0.679
dpayout12yld	-8.032 ***	-1.989 ***	-1.900 ***	-2.017 ***	-2.055 ***	-2.009 ***
dissue12yld	-5.038 ***	-2.438 ***	-2.479 ***	-2.346 ***	-2.476 ***	-2.478 ***
jan	1.221	0.700	1.299	1.002	0.984	1.071
oct	-0.259	-4.522 ***	-4.364 ***	-4.283 ***	-4.566 ***	-4.520 ***
ΔS		0.070	-0.133 **	0.037	0.073 **	0.059 **
xewrtnlag1	0.234 **	0.380 ***	0.386 ***	0.420 ***	0.374 ***	0.373 ***
β_0	0.247	4.511 ***	3.557 ***	4.888 ***	3.836 ***	3.972 ***
$\beta_1\varepsilon^2_{it-1}$	0.012	0.704 **	0.683 **	0.694	0.693 **	0.651 **
$\beta_3 h_{it-1}$	0.917 ***	0.000	0.000	0.000	0.000	0.000
$\alpha_1 h_{it}$	-0.079	0.002	0.006	0.001	0.003	0.005
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025	0.000	0.000	0.093	0.000	0.000
$\beta_4 R_{ft}$	4.678	0.000	0.000	0.000	0.000	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.017	0.000	0.000	0.033	0.020
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.113	0.000	0.000	0.000
Log-likelihood	-325.232	-278.864	-276.304	-280.146	-277.366	-277.166

*, **, *** = Significant at 90%, 95%, or 99%

Table 47. GARCH Model Results for Equal-weighted Returns with Changes in II Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model		diibull		diibear		diicorr		diispread		diibb	
Intercept	2.724		3.151	**	0.147		0.754	*	0.402		0.266	
dpayout12yld	-8.032	***	-6.503	**	-1.752	**	-1.745	***	-1.359		-1.288	
dissue12yld	-5.038	***	-4.212	***	-2.159	***	-2.542	***	-2.084	**	-2.028	**
jan	1.221		2.214		0.751		1.063		0.740		0.868	
oct	-0.259		-1.119		-3.625	***	-4.599	***	-3.983	***	-3.769	***
ΔS			0.364	***	-0.244	***	-0.045		0.124	***	0.207	***
xewrtnlag1	0.234	**	0.216	**	0.323	***	0.437	***	0.393	***	0.374	***
β_0	0.247		0.251		5.226	***	1.733		3.912	**	4.592	***
$\beta_1\varepsilon^2_{it-1}$	0.012		0.017		0.274		1.014	***	0.441		0.393	
$\beta_3 h_{it-1}$	0.917	***	0.913	***	0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.079		-0.121		0.064		-0.004		0.030		0.048	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025		0.023		0.000		0.000		0.107		0.000	
$\beta_4 R_{ft}$	4.678		3.403		0.000		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.035		0.124		0.014		0.036	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.073		0.124		0.007		0.011	
Log-likelihood	-325.232		-313.054		-271.403		-277.578		-270.170		-269.787	

B. Four-week Average

	Base Model		diibull4		diibear4		diicorr4		diispread4		diibb4	
Intercept	2.724		0.613		0.756		0.630		0.669		0.674	
dpayout12yld	-8.032	***	-1.485	***	-1.527	***	-1.850	***	-1.449	***	-1.445	***
dissue12yld	-5.038	***	-2.336	***	-2.674	***	-2.230	***	-2.540	***	-2.531	***
jan	1.221		1.114		0.174		1.318		0.594		0.587	
oct	-0.259		-4.299	***	-4.602	***	-4.228	***	-4.451	***	-4.447	***
ΔS			0.129	***	-0.106	**	-0.061		0.066	***	0.114	***
xewrtnlag1	0.234	**	0.364	***	0.372	***	0.404	***	0.358	***	0.348	***
β_0	0.247		3.959	***	4.253	***	4.765	**	4.160	***	4.282	***
$\beta_1\varepsilon^2_{it-1}$	0.012		0.819	**	0.792	***	0.763	**	0.784	***	0.755	**
$\beta_3 h_{it-1}$	0.917	***	0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.079		0.003		-0.003		0.001		0.003		0.003	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	4.678		0.000		0.000		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.011		0.000		0.000	
Log-likelihood	-325.232		-276.104		-277.546		-280.133		-276.494		-276.244	

*, **, *** = Significant at 90%, 95%, or 99%

Table 48. GARCH Model Results for Equal-weighted Returns with % Changes in AAII Asset Allocation for the Full Period 11/1987 to 12/2005

	Base Model		paastock		paabond		paacash		paaspread
Intercept	0.740		1.364		0.883	*	1.399		No Fit
dpayout12yld	-2.466	***	-2.598	**	-1.952	**	-2.662	***	
dissue12yld	-3.353	***	-3.306	***	-3.321	***	-3.270	***	
jan	1.929	**	2.247	**	1.887	*	1.861	*	
oct	-2.896	**	-2.655	**	-3.620	***	-3.050	***	
ΔS			17.165	***	2.277		-8.961	***	
xvwrtnlag3	0.308	***	0.249	***	0.325	***	0.245	***	
β_0	0.000	***	0.000	***	0.000	***	0.000	***	
$\beta_1\varepsilon^2_{it-1}$	0.082	**	0.027		0.169	**	0.025		
$\beta_3 h_{it-1}$	0.890	***	0.920	***	0.744	***	0.916	***	
$\alpha_1 h_{it}$	0.005		-0.035		0.007		-0.029		
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.044		0.000		0.000		
$\beta_4 R_{ft}$	1.487		1.680		0.000		1.855		
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		8.092		29.377		
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.211		288.543	**	12.551		
Log-likelihood	-625.769		-621.273		-624.496		-617.843		

*, **, *** = Significant at 90%, 95%, or 99%

Table 49. GARCH Model Results for Equal-weighted Returns with % Changes in AAII Sentiment for the Full Period 11/1987 to 12/2005

A. Month-end

	Base Model	pasbull	pasbear	pasneut	pasbb	passpread
Intercept	0.740	0.635	0.662	0.659	0.716	1.323 *
dpayout12yld	-2.466 ***	-2.119 **	-2.137 **	-2.301 ***	-2.129 **	-2.545 ***
dissue12yld	-3.353 ***	-2.912 ***	-2.875 ***	-3.388 ***	-3.026 ***	-3.284 ***
jan	1.929 **	2.044 **	2.595 ***	2.015 **	2.401 ***	1.786
oct	-2.896 **	-3.094 ***	-3.329 ***	-2.558 **	-3.172 ***	-2.657 **
ΔS		3.745 ***	-3.107 ***	-1.764	4.784 ***	0.044
xvwrtnlag3	0.308 ***	0.322 ***	0.303 ***	0.301 ***	0.331 ***	0.305 ***
β_0	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
$\beta_1\varepsilon^2_{it-1}$	0.082 **	0.080 **	0.078 **	0.037	0.072	0.026
β_3h_{it-1}	0.890 ***	0.884 ***	0.884 ***	0.912 ***	0.890 ***	0.940 ***
α_1h_{it}	0.005	0.000	0.022	0.009	-0.008	-0.028
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.013	0.002
β_4R_{ft}	1.487	1.463	1.371	1.027	1.476	0.000
$\beta_5(\Delta S_{t-1})^2D_{t-1}$		1.497	0.678	5.546	0.000	0.022
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.045	11.564	0.000	0.074 **
Log-likelihood	-625.769	-616.614	-612.621	-623.302	-614.789	-603.174

B. Four-week Average

	Base Model	pasbull4	pasbear4	pasneut4	pasbb4	passpread4
Intercept	0.740	0.851	0.562	0.693	0.857	0.713
dpayout12yld	-2.466 ***	-2.486 ***	-2.610 ***	-2.459 ***	-2.554 ***	-2.437 **
dissue12yld	-3.353 ***	-3.398 ***	-3.139 ***	-3.351 ***	-3.308 ***	-3.493 ***
jan	1.929 **	1.421	2.216 **	1.942 **	1.572	2.570 **
oct	-2.896 **	-2.743 **	-2.918 ***	-2.815 **	-2.724 ***	-2.045
ΔS		6.465 ***	-5.886 ***	-0.496	8.801 ***	-0.027
xvwrtnlag3	0.308 ***	0.249 ***	0.250 ***	0.307 ***	0.232 ***	0.281 ***
β_0	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	21.325 ***
$\beta_1\varepsilon^2_{it-1}$	0.082 **	0.079 *	0.079	0.080 **	0.083 *	0.049
β_3h_{it-1}	0.890 ***	0.887 ***	0.867 ***	0.890 ***	0.884 ***	0.000
α_1h_{it}	0.005	-0.005	0.027	0.007	-0.006	-0.005
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.000	0.000
β_4R_{ft}	1.487	1.610	1.381	1.512	1.514	0.000
$\beta_5(\Delta S_{t-1})^2D_{t-1}$		0.000	7.932	0.000	0.000	0.013
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.054	4.036	0.000	0.000
Log-likelihood	-625.769	-614.404	-608.549	-625.723	-609.909	-632.121

*, **, *** = Significant at 90%, 95%, or 99%

Table 50. GARCH Model Results for Equal-weighted Returns with % Changes in II Sentiment for the Full Period 11/1987 to 12/2005

A. Month-end

	Base Model	piibull	piibear	piicorr	piispread	piibb
Intercept	0.740	1.068	1.014	0.694	-3.241	1.378 **
dpayout12yld	-2.466 ***	-1.042	-1.794 **	-2.553 ***	-2.694 ***	-1.270
dissue12yld	-3.353 ***	-3.420 ***	-2.698 ***	-3.323 ***	-3.844 ***	-3.314 ***
jan	1.929 **	2.230 **	1.123	1.818 *	3.052 ***	1.567 *
oct	-2.896 **	-2.871 ***	-2.483 **	-2.807 **	-2.410 *	-2.628 **
ΔS		10.755 ***	-12.950 ***	0.622	0.158 *	13.159 ***
xvwrtnlag3	0.308 ***	0.332 ***	0.286 ***	0.304 ***	0.284 ***	0.325 ***
β_0	0.000 ***	0.000 ***	0.000 ***	0.000 ***	16.896	0.000 ***
$\beta_1\varepsilon^2_{it-1}$	0.082 **	0.000	0.081 **	0.083 **	0.052	0.000
$\beta_3 h_{it-1}$	0.890 ***	0.923 ***	0.886 ***	0.889 ***	0.099	0.921 ***
$\alpha_1 h_{it}$	0.005	-0.031	-0.001	0.007	0.186	-0.049
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.082 **	0.000	0.000	0.000	0.083 *
$\beta_4 R_{ft}$	1.487	1.723 ***	1.278	1.445	0.000	1.761 ***
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	0.000	0.000	0.018	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.000	2.582	0.168	0.000
Log-likelihood	-625.769	-607.652	-594.997	-625.551	-626.141	-602.703

B. Four-week Average

	Base Model	piibull4	piibear4	piicorr4	piispread4	piibb4
Intercept	0.740	0.691	0.841	0.698	0.502	0.728
dpayout12yld	-2.466 ***	-1.717 *	-1.523 *	-2.438 ***	-2.393 ***	-1.706 *
dissue12yld	-3.353 ***	-3.294 ***	-3.407 ***	-3.342 ***	-3.207 ***	-3.344 ***
jan	1.929 **	1.334	1.382	1.974 **	1.583	1.094
oct	-2.896 **	-2.570 **	-2.611 **	-2.825 **	-2.786 **	-2.595 **
ΔS		7.456 ***	-10.044 ***	-0.307	0.109 **	8.403 ***
xvwrtnlag3	0.308 ***	0.266 ***	0.210 ***	0.309 ***	0.312 ***	0.255 ***
β_0	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
$\beta_1\varepsilon^2_{it-1}$	0.082 **	0.095 **	0.084 **	0.084 **	0.095 **	0.083 **
$\beta_3 h_{it-1}$	0.890 ***	0.873 ***	0.885 ***	0.888 ***	0.880 ***	0.885 ***
$\alpha_1 h_{it}$	0.005	0.006	0.010	0.006	0.017	0.006
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_4 R_{ft}$	1.487	1.638	1.483	1.513	1.360	1.619 *
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	0.000	0.000	0.000	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.000	1.088	0.000	0.000
Log-likelihood	-625.769	-619.393	-613.744	-625.750	-623.369	-618.986

*, **, *** = Significant at 90%, 95%, or 99%

Table 51. GARCH Model Results for Equal-weighted Returns with % Changes in AAII Asset Allocation for the Sub-Period 11/1987 to 12/1996

	Base Model		paastock		paabond		paacash		paaspread
Intercept	0.695		0.780		0.766		0.701		No Fit
dpayout12yld	-1.927	***	-2.025	***	-1.964	***	-1.931	***	
dissue12yld	-2.410	***	-2.280	***	-2.307	***	-2.382	***	
jan	0.834		1.048		0.975		0.865		
oct	-4.387	***	-4.537	***	-4.292	***	-4.494	***	
ΔS			5.194		-1.643		-1.308		
xewrtnlag1	0.412	***	0.396	***	0.418	***	0.400	***	
β_0	4.876	***	3.993	**	3.813	**	5.039	***	
$\beta_1\varepsilon^2_{it-1}$	0.716		0.786		0.863	*	0.690		
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.000		
$\alpha_1 h_{it}$	0.000		-0.007		-0.005		0.000		
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071		0.114		0.080		0.056		
$\beta_4 R_{ft}$	0.000		0.000		0.000		0.000		
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			253.966		0.000		0.000		
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			1.361		43.880		0.000		
Log-likelihood	-280.415		-278.963		-279.399		-280.348		

*, **, *** = Significant at 90%, 95%, or 99%

Table 52. GARCH Model Results for Equal-weighted Returns with % Changes in AAII Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model	pasbull	pasbear	pasneut	pasbb	passpread
Intercept	0.695	0.803 *	5.828	0.776	2.310 ***	0.637
dpayout12yld	-1.927 ***	-2.138 ***	-1.887 **	-1.906 ***	-2.155 ***	-1.922 ***
dissue12yld	-2.410 ***	-2.286 ***	-1.609 *	-2.414 ***	-1.243	-2.623 ***
jan	0.834	0.951	3.589 ***	0.708	2.924 ***	0.675
oct	-4.387 ***	-5.036 ***	-4.081 ***	-4.496 ***	-3.861 ***	-4.757 ***
ΔS		1.927 *	-3.840 ***	-0.558	4.318 ***	0.057
xewrtnlag1	0.412 ***	0.448 ***	0.301 ***	0.419 ***	0.267 ***	0.445 ***
β_0	4.876 ***	2.462 **	6.333	4.488 ***	0.084	4.540 ***
$\beta_1\varepsilon^2_{it-1}$	0.716	0.767 ***	0.000	0.764 *	0.000	0.760 ***
$\beta_3 h_{it-1}$	0.000	0.000	0.046	0.000	0.884 ***	0.000
$\alpha_1 h_{it}$	0.000	-0.009	-0.543	-0.003	-0.180 *	0.006
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071	0.000	0.001	0.122	0.000	0.000
$\beta_4 R_{ft}$	0.000	0.000	5.242	0.000	1.992	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		19.292	0.508	0.000	6.069	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		55.144	0.000	0.000	0.000	0.013
Log-likelihood	-280.415	-275.638	-274.831	-280.183	-275.328	-268.402

B. Four-week Average

	Base Model	pasbull4	pasbear4	pasneut4	pasbb4	passpread4
Intercept	0.695	0.698	0.785	0.665	0.693	0.678
dpayout12yld	-1.927 ***	-1.843 ***	-2.063 ***	-2.018 ***	-1.906 ***	-1.929 ***
dissue12yld	-2.410 ***	-2.471 ***	-2.321 ***	-2.346 ***	-2.417 ***	-2.336 ***
jan	0.834	0.504	1.026	0.998	0.618	0.977
oct	-4.387 ***	-4.435 ***	-4.346 ***	-4.293 ***	-4.342 ***	-4.360 ***
ΔS		2.257 *	-2.843 **	1.245	3.219 **	0.033
xewrtnlag1	0.412 ***	0.380 ***	0.384 ***	0.421 ***	0.379 ***	0.406 ***
β_0	4.876 ***	4.380 ***	4.526 *	4.835 ***	4.169 ***	5.056 ***
$\beta_1\varepsilon^2_{it-1}$	0.716	0.797 ***	0.736 **	0.694	0.794 **	0.656
$\beta_3 h_{it-1}$	0.000	0.000	0.003	0.000	0.000	0.000
$\alpha_1 h_{it}$	0.000	-0.002	-0.003	0.000	-0.002	0.001
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071	0.000	0.000	0.112	0.000	0.127
$\beta_4 R_{ft}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.066	0.000	0.000	5.408	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	1.797	0.000	0.000	0.000
Log-likelihood	-280.415	-278.551	-277.592	-280.135	-277.342	-278.602

*, **, *** = Significant at 90%, 95%, or 99%

Table 53. GARCH Model Results for Equal-weighted Returns with % Changes in II Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model		piibull		piibear		piicorr		piispread		piibb	
Intercept	0.695		0.821	*	19,463	***	0.612		0.091		0.503	
dpayout12yld	-1.927	***	-1.439	**	-1.959	***	-1.642	***	-2.044	***	-1.261	
dissue12yld	-2.410	***	-1.826	**	-2.088	***	-2.472	***	-2.271	***	-2.175	***
jan	0.834		1.048		0.559		2.633	*	1.803	*	0.614	
oct	-4.387	***	-4.413	***	-3.822	**	-4.338	***	-3.873	***	-4.230	***
ΔS			6.916	***	-11.633	***	-1.485		-0.019		8.371	***
xewrtnlag1	0.412	***	0.421	***	0.376	***	0.423	***	0.387	***	0.380	***
β_0	4.876	***	3.363	**	4.377		2.196	*	5.982	***	4.716	**
$\beta_1\varepsilon^2_{it-1}$	0.716		0.610		0.000		0.834	*	0.399	*	0.426	
β_3h_{it-1}	0.000		0.000		0.477		0.000		0.000		0.003	
α_1h_{it}	0.000		-0.025		-2,324	***	0.005		0.051		0.012	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071		0.446		0.000		0.007		0.000		0.313	
β_4R_{ft}	0.000		0.000		0.001		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			12.718		0.000		36.565		0.032		0.117	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		66.762		0.245		0.000	
Log-likelihood	-280.415		-270.964		-269.759		-277.280		-275.418		-271.040	

B. Four-week Average

	Base Model		piibull4		piibear4		piicorr4		piispread4		piibb4	
Intercept	0.695		0.600		0.646		0.652		0.158		0.672	
dpayout12yld	-1.927	***	-1.537	**	-1.577	**	-1.868	***	-1.792	***	-1.503	**
dissue12yld	-2.410	***	-2.337	***	-2.809	***	-2.298	***	-2.197	***	-2.524	***
jan	0.834		0.886		0.708		1.291		1.105		0.369	
oct	-4.387	***	-4.353	***	-4.471	***	-4.270	***	-3.672	***	-4.515	***
ΔS			4.855	**	-5.383	***	-0.768		0.161	***	4.837	***
xewrtnlag1	0.412	***	0.368	***	0.324	***	0.406	***	0.362	***	0.366	***
β_0	4.876	***	3.927	***	4.637	***	4.729	**	6.183	***	4.132	***
$\beta_1\varepsilon^2_{it-1}$	0.716		0.831	**	0.514		0.735		0.419	*	0.795	***
β_3h_{it-1}	0.000		0.000		0.000		0.000		0.000		0.000	
α_1h_{it}	0.000		0.001		0.020		0.002		0.056		0.000	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.071		0.000		0.119		0.034		0.000		0.000	
β_4R_{ft}	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		0.000		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.196		98.645		14.095		0.000		0.000	
Log-likelihood	-280.415		-276.271		-276.594		-280.176		-276.470		-276.776	

*, **, *** = Significant at 90%, 95%, or 99%

Table 54. GARCH Model Results for Equal-weighted Returns with % Changes in AAII Asset Allocation for the Sub-Period 1/1997 to 12/2005

	Base Model		paastock		paabond		paacash		paaspread	
Intercept	2.724		2.060		2.775	*	2.181	*	0.962	
dpayout12yld	-8.032	***	-8.215	***	-9.118	***	-8.235	***	-9.868	***
dissue12yld	-5.038	***	-4.217	***	-4.809	***	-4.540	***	-3.598	***
jan	1.221		1.447		1.768		1.296		1.726	
oct	-0.259		0.780		-0.481		-0.030		0.557	
ΔS			21.258	***	3.802		-10.786	***	0.400	
xewrtnlag1	0.234	**	0.167	*	0.251	***	0.157	*	0.191	**
β_0	0.247		0.000	***	0.213		0.392		7.776	
$\beta_1\varepsilon^2_{it-1}$	0.012		0.000		0.018		0.000		0.000	
$\beta_3 h_{it-1}$	0.917	***	0.844	***	0.900	***	0.904	***	0.000	
$\alpha_1 h_{it}$	-0.079		-0.062		-0.085		-0.055		-0.014	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025		0.000		0.030		0.000		0.000	
$\beta_4 R_{ft}$	4.678		9.465	*	4.688		6.845		55.333	**
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		10.639		0.000		0.913	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			587.343		0.000		0.019		7.752	
Log-likelihood	-325.232		-319.623		-323.999		-318.012		-325.487	

*, **, *** = Significant at 90%, 95%, or 99%

Table 55. GARCH Model Results for Equal-weighted Returns with % Changes in AAII Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model	pasbull	pasbear	pasneut	pasbb	passpread
Intercept	2.724	2.844	2.303	2.032	2.632	-1.086
dpayout12yld	-8.032 ***	-7.198 **	-6.949 **	-7.266 ***	-6.996 **	-10.907 ***
dissue12yld	-5.038 ***	-4.904 ***	-4.784 ***	-4.998 ***	-5.122 ***	-4.030 ***
jan	1.221	2.241	1.277	2.094	2.047	3.593 **
oct	-0.259	-0.271	-0.048	0.111	-0.124	0.014
ΔS		4.101 ***	-2.103 ***	-3.493 *	4.529 ***	-0.097
xewrtnlag1	0.234 **	0.303 ***	0.249 ***	0.243 **	0.307 ***	0.182 *
β_0	0.247	0.484	0.000 ***	0.680	0.379	0.000 ***
$\beta_1\varepsilon^2_{it-1}$	0.012	0.022	0.019	0.000	0.021	0.000
$\beta_3 h_{it-1}$	0.917 ***	0.896 ***	0.931 ***	0.864 ***	0.898 ***	0.979 ***
$\alpha_1 h_{it}$	-0.079	-0.107	-0.058	-0.054	-0.097	0.065
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025	0.044	0.000	0.000	0.053	0.000
$\beta_4 R_{ft}$	4.678	3.345	4.472 *	3.135	3.286	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	0.000	21.960	0.000	0.101 ***
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.000	3.219	0.000	0.045
Log-likelihood	-325.232	-321.169	-321.695	-319.613	-320.922	-312.441

B. Four-week Average

	Base Model	pasbull4	pasbear4	pasneut4	pasbb4	passpread4
Intercept	2.724	2.310	-0.126	2.351	2.013	0.529
dpayout12yld	-8.032 ***	-7.372 **	-7.157 **	-8.584 ***	-6.788 **	-9.389 ***
dissue12yld	-5.038 ***	-4.709 ***	-4.493 ***	-4.694 ***	-4.605 ***	-4.233 ***
jan	1.221	2.011	2.076	1.779	1.606	2.866
oct	-0.259	-0.095	-0.235	-0.296	0.116	0.178
ΔS		9.762 ***	-4.894 ***	-3.142	12.214 ***	-0.033
xewrtnlag1	0.234 **	0.219 **	0.192 **	0.239 **	0.203 **	0.221 **
β_0	0.247	0.011	0.000 ***	0.215	0.000 ***	27.656 ***
$\beta_1\varepsilon^2_{it-1}$	0.012	0.022	0.008	0.008	0.019	0.000
$\beta_3 h_{it-1}$	0.917 ***	0.922 ***	0.905 ***	0.935 ***	0.924 ***	0.000
$\alpha_1 h_{it}$	-0.079	-0.092	0.044	-0.065	-0.078	0.000
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025	0.019	0.000	0.002	0.014	0.000
$\beta_4 R_{ft}$	4.678	3.529	4.766 *	4.357	3.747 *	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	9.909	0.257	0.000	0.003
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	0.000	4.067	0.000	0.000
Log-likelihood	-325.232	-313.957	-318.884	-324.613	-312.309	-328.862

*, **, *** = Significant at 90%, 95%, or 99%

Table 56. GARCH Model Results for Equal-weighted Returns with % Changes in II Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model		piibull		piibear		piicorr		piispread		piibb	
Intercept	2.724		3.014	*	2.933		3.561		-2,245	***	5.955	
dpayout12yld	-8.032	***	-6.933	**	-6.414	**	-8.460	***	-9.686	***	-7.435	***
dissue12yld	-5.038	***	-4.050	***	-3.418	***	-5.245	***	-3.437	***	-3.436	***
jan	1.221		2.206		2.046		1.307		3.456	**	2.555	
oct	-0.259		-1.113		-0.494		0.090		1.233		-1.210	
ΔS			16.773	***	-13.689	***	2.063		1.609	***	24.050	***
xewrtnlag1	0.234	**	0.218	**	0.214	**	0.248	***	0.212	**	0.215	**
β_0	0.247		0.366		0.111		0.697		22.553	***	0.989	
$\beta_1\varepsilon^2_{it-1}$	0.012		0.011		0.025		0.013		0.000		0.010	
β_3h_{it-1}	0.917	***	0.913	***	0.933	***	0.893	***	0.000		0.900	***
α_1h_{it}	-0.079		-0.122		-0.110		-0.118		99.563	***	-0.311	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025		0.021		0.000		0.057		0.000		0.026	
β_4R_{ft}	4.678		3.457		2.486		3.418		0.000		1.240	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		0.000	***	0.145		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		1.924		0.005		0.000	
Log-likelihood	-325.232		-312.842		-310.229		-324.619		-316.378		-306.968	

B. Four-week Average

	Base Model		piibull4		piibear4		piicorr4		piispread4		piibb4	
Intercept	2.724		2.017	*	2.557	*	2.746		25.719		2.376	*
dpayout12yld	-8.032	***	-8.100	***	-7.533	**	-7.980	***	-8.583	***	-8.187	***
dissue12yld	-5.038	***	-3.926	***	-3.839	***	-5.286	***	-4.757	***	-3.590	***
jan	1.221		1.557		1.666		1.368		2.538		1.771	
oct	-0.259		-0.759		0.021		-0.171		-0.266		-0.269	
ΔS			16.163	***	-14.474	***	1.606		-0.201		23.809	***
xewrtnlag1	0.234	**	0.105		0.088		0.234	**	0.266	***	0.073	
β_0	0.247		0.029		0.103		0.661		1.891		0.155	
$\beta_1\varepsilon^2_{it-1}$	0.012		0.000		0.008		0.000		0.000		0.000	
β_3h_{it-1}	0.917	***	0.932	***	0.941	***	0.925	***	0.915	***	0.931	***
α_1h_{it}	-0.079		-0.055		-0.077		-0.083		-1.032		-0.078	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.025		0.013		0.000		0.000		0.014		0.011	
β_4R_{ft}	4.678		5.407	**	3.924	*	2.503		0.000		4.638	**
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		0.000		32.832		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		1.026		0.000		0.000	
Log-likelihood	-325.232		-318.297		-316.225		-324.425		-325.736		-314.693	

*, **, *** = Significant at 90%, 95%, or 99%

Table 57. GARCH Model Results for Value-weighted Returns with Changes in AAII Asset Allocation for the Full Period 11/1987 to 12/2005

	Base Model		daastock		daabond		daacash		daaspread	
Intercept	1.446	**	-0.041		6.268		1.460	**	-0.023	
dpayout12yld	-3.356	***	-3.824	***	-3.466	***	-3.378	***	-3.850	***
dissue12yld	-2.675	***	-2.342	***	-2.609	***	-2.646	***	-2.326	***
jan	-1.582	*	-1.212		-1.576		-1.469		-1.206	
oct	-1.265		-0.650		-0.432		-1.224		-0.655	
ΔS			0.236	***	-0.161		-0.205	***	0.118	***
xvwrtnlag3	-0.005		0.003		-0.025		0.002		0.003	
β_0	0.000	***	6.363	*	10.847	***	0.000	***	6.288	*
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.049		0.029		0.070		0.049	
β_3h_{it-1}	0.885	***	0.000		0.000		0.882	***	0.000	
α_1h_{it}	-0.035		0.067		-0.451		-0.042		0.066	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000	
β_4R_{ft}	1.346	*	10.980		0.000		1.440		11.110	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.204		0.400		0.000		0.052	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.021		0.003		0.000	
Log-likelihood	-565.376		-570.624		-571.683		-560.626		-570.592	

*, **, *** = Significant at 90%, 95%, or 99%

Table 58. GARCH Model Results for Value-weighted Returns with Changes in AAII Sentiment for the Time Period 11/1987 to 12/2005

A. Month-end

	Base Model		dasbull		dasbear		dasneut		dasbb		daaspread	
Intercept	1.446	**	1.347	**	1.575	***	1.009		1.500	***	-0.023	
dpayout12yld	-3.356	***	-2.760	***	-2.991	***	-3.908	***	-2.784	***	-3.850	***
dissue12yld	-2.675	***	-2.343	***	-2.439	***	-2.141	***	-2.400	***	-2.326	***
jan	-1.582	*	-1.055		-1.055		-1.338		-1.117		-1.206	
oct	-1.265		-1.417		-1.455	*	-0.819		-1.564	*	-0.655	
ΔS			0.091	***	-0.094	***	-0.087	***	0.074	***	0.118	***
xvwrtnlag3	-0.005		0.022		0.042		0.001		0.034		0.003	
β_0	0.000	***	0.000	***	0.000	***	7.822	***	0.000	***	6.288	*
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.083	*	0.078	**	0.056		0.083	**	0.049	
$\beta_3 h_{it-1}$	0.885	***	0.876	***	0.884	***	0.000		0.879	***	0.000	
$\alpha_1 h_{it}$	-0.035		-0.036		-0.060		-0.014		-0.052		0.066	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	1.108		1.047		3.806		1.009		11.110	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.017		0.000		0.052	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.062		0.000		0.000	
Log-likelihood	-565.376		-551.167		-554.639		-570.840		-551.396		-570.592	

B. Four-week Average

	Base Model		dasbull4		dasbear4		dasneut4		dasbb4		dasspread4	
Intercept	1.446	**	0.504		1.107		-37.232		0.803		0.965	
dpayout12yld	-3.356	***	-4.003	***	-3.531	***	-4.402	***	-3.640	***	-3.508	***
dissue12yld	-2.675	***	-2.083	***	-2.295	***	-2.396	***	-2.197	***	-2.200	***
jan	-1.582	*	-1.318		-1.206		-1.692		-1.187		-1.231	
oct	-1.265		-0.636		-0.491		-0.820		-0.535		-0.674	
ΔS			0.102	***	-0.144	***	-0.054		0.089	***	0.066	***
xvwrtnlag3	-0.005		0.006		-0.008		0.016		-0.002		-0.004	
β_0	0.000	***	4.727	**	6.129	***	11.908	**	5.442	***	6.113	***
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.101		0.111		0.000		0.118		0.151	
$\beta_3 h_{it-1}$	0.885	***	0.000		0.000		0.001		0.000		0.000	
$\alpha_1 h_{it}$	-0.035		0.029		-0.021		3.159		0.005		-0.005	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	11.374	*	7.063		0.047		7.840		5.382	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.069	**	0.000		0.000		0.051	**	0.023	**
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.090	*	0.009		0.000		0.000	
Log-likelihood	-565.376		-566.346		-564.873		-573.316		-564.831		-564.847	

*, **, *** = Significant at 90%, 95%, or 99%

Table 59. GARCH Model Results for Value-weighted Returns with Changes in II Sentiment for the Time Period 11/1987 to 12/2005

A. Month-end

	Base Model		diibull		diibear		diicorr		diispread		diibb	
Intercept	1.446	**	-17.054		0.295		1.360	**	-4.194		-11.237	
dpayout12yld	-3.356	***	-2.975	***	-3.315	***	-3.233	***	-2.948	***	-2.819	***
dissue12yld	-2.675	***	-2.379	***	-1.837	***	-2.831	***	-2.116	***	-2.133	***
jan	-1.582	*	-1.690	*	-2.277	**	-1.401		-1.882	**	-1.829	**
oct	-1.265		-0.575		-0.554		-1.125		-0.592		-0.399	
ΔS			0.242	***	-0.307	***	-0.023		0.151	***	0.243	***
xvwrtnlag3	-0.005		0.022		0.054		-0.003		0.047		0.057	
β_0	0.000	***	4.131		7.018		0.000	***	4.981		7.276	*
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.000		0.063		0.093		0.000		0.000	
$\beta_3 h_{it-1}$	0.885	***	0.583	**	0.007		0.837	***	0.436		0.227	
$\alpha_1 h_{it}$	-0.035		1.727		0.054		-0.025		0.508		1.223	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	0.000		4.881		1.277		0.000		0.054	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.010		0.000		0.000		0.007		0.009	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.049		0.045		0.002		0.003	
Log-likelihood	-565.376		-555.156		-553.132		-564.732		-550.909		-549.913	

B. Four-week Average

	Base Model		diibull4		diibear4		diicorr4		diispread4		diibb4	
Intercept	1.446	**	-0.692		0.463		-1.042		-0.209		0.025	
dpayout12yld	-3.356	***	-4.006	***	-4.028	***	-3.521	***	-3.888	***	-3.886	***
dissue12yld	-2.675	***	-2.420	***	-2.347	***	-2.672	***	-2.436	***	-2.366	***
jan	-1.582	*	-1.767		-2.011	*	-1.316		-1.957	*	-1.923	
oct	-1.265		-0.534		-0.750		-0.555		-0.826		-0.549	
ΔS			0.139	***	-0.169	***	-0.033		0.086	***	0.143	***
xvwrtnlag3	-0.005		0.034		0.026		0.002		0.035		0.033	
β_0	0.000	***	9.502	***	9.217	***	10.137	***	9.594	***	9.145	***
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.017		0.047		0.012		0.030		0.036	
$\beta_3 h_{it-1}$	0.885	***	0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.035		0.124		0.033		0.145		0.088		0.067	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	4.351		2.925		3.112		3.747		4.576	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.049		0.016		0.062		0.014		0.039	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.091		0.146		0.000		0.000	
Log-likelihood	-565.376		-571.109		-570.416		-576.428		-570.356		-570.094	

*, **, *** = Significant at 90%, 95%, or 99%

Table 60. GARCH Model Results for Value-weighted Returns with Changes in AAII Asset Allocation for the Sub-Period 11/1987 to 12/1996

	Base Model	daastock	daabond	daacash	daaspread
Intercept	1.333 *	2.086 ***	3.553 **	1.119 *	2.084 ***
dpayout12yld	-2.475 ***	-2.668 ***	-2.540 ***	-2.760 ***	-2.671 ***
dissue12yld	-2.577 ***	-2.512 ***	-2.257 ***	-2.289 ***	-2.508 ***
jan	-1.788	-1.172	-0.853	-1.651	-1.160
oct	-2.731	-3.621 *	-2.818	-2.504	-3.613 *
ΔS		0.132	0.022	-0.016	0.066
xvwrtnlag3	-0.017	-0.021	-0.095	-0.055	-0.021
β_0	1.385	1.994	0.704	0.000 ***	1.996
$\beta_1\varepsilon^2_{it-1}$	0.288 *	0.392 **	0.090	0.195	0.392 **
$\beta_3 h_{it-1}$	0.000	0.211	0.721 ***	0.000	0.210
$\alpha_1 h_{it}$	-0.009	-0.086	-0.301	0.016	-0.086
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.000
$\beta_4 R_{ft}$	10.188	0.000	0.000	13.669 ***	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.363	0.042	0.224	0.091
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.182	0.331	0.000	0.046
Log-likelihood	-259.312	-256.525	-256.893	-259.017	-256.523

*, **, *** = Significant at 90%, 95%, or 99%

Table 61. GARCH Model Results for Value-weighted Returns with Changes in AAII Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model		dasbull		dasbear		dasneut		dasbb		dasspread	
Intercept	1.333	*	2.559		2.541		1.277	*	2.441		1.214	
dpayout12yld	-2.475	***	-1.986	***	-2.296	***	-2.380	***	-2.171	***	-1.993	***
dissue12yld	-2.577	***	-2.387	***	-2.240	***	-2.617	***	-2.283	***	-2.308	***
jan	-1.788		-1.853	**	-0.973		-1.995	*	-1.295		-1.502	
oct	-2.731		-3.666	*	-3.269		-2.797		-3.590	*	-3.309	
ΔS			0.101	***	-0.106	***	-0.036		0.082	***	0.061	***
xvwrtnlag3	-0.017		0.032		0.059		-0.033		0.043		0.048	
β_0	1.385		3.858		4.515		1.117		3.983		7.321	***
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.155		0.136		0.285	*	0.152		0.106	
β_3h_{it-1}	0.000		0.000		0.000		0.000		0.000		0.000	
α_1h_{it}	-0.009		-0.188		-0.199		0.002		-0.181		0.002	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
β_4R_{ft}	10.188		2.978		3.185		10.685		3.519		0.000	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		0.002		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.011		0.000		0.000		0.002		0.000	
Log-likelihood	-259.312		-252.064		-253.967		-258.624		-251.969		-254.253	

B. Four-week Average

	Base Model		dasbull4		dasbear4		dasneut4		dasbb4		dasspread4	
Intercept	1.333	*	1.337	**	1.120	*	1.434	*	1.215	**	1.235	**
dpayout12yld	-2.475	***	-2.346	***	-2.547	***	-2.375	***	-2.466	***	-2.422	***
dissue12yld	-2.577	***	-2.724	***	-2.649	***	-2.658	***	-2.729	***	-2.730	***
jan	-1.788		-1.865	*	-1.439		-2.008	*	-1.678		-1.654	
oct	-2.731		-3.069		-2.738		-2.894		-2.994		-2.969	
ΔS			0.098	**	-0.116	**	-0.042		0.082	**	0.062	**
xvwrtnlag3	-0.017		0.003		0.044		-0.029		0.030		0.030	
β_0	1.385		0.520		0.227		1.653		0.084		0.296	
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.296	**	0.262	*	0.312	*	0.288	**	0.287	**
β_3h_{it-1}	0.000		0.000		0.000		0.000		0.000		0.000	
α_1h_{it}	-0.009		-0.013		0.005		-0.017		-0.002		-0.005	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
β_4R_{ft}	10.188		11.325		12.538		9.157		12.385		11.871	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		0.000		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.000		0.000		0.000	
Log-likelihood	-259.312		-256.112		-256.320		-258.996		-255.588		-255.643	

*, **, *** = Significant at 90%, 95%, or 99%

Table 62. GARCH Model Results for Value-weighted Returns with Changes in II Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model		diibull		diibear		diicorr		diispread		diibb	
Intercept	1.333	*	2.473	*	1.222	***	1.933	***	2.097	**	2.298	**
dpayout12yld	-2.475	***	-1.652	***	-2.311	***	-2.286	***	-1.545	***	-1.656	***
dissue12yld	-2.577	***	-1.902	***	-2.305	***	-2.819	***	-2.174	***	-2.136	***
jan	-1.788		-2.059	**	-3.216	***	-1.669		-2.689	***	-2.691	***
oct	-2.731		-2.240		-2.563	*	-3.374	*	-2.290		-2.293	
ΔS			0.208	***	-0.247	***	-0.029		0.135	***	0.211	***
xvwrtnlag3	-0.017		-0.095		-0.051		0.027		-0.086		-0.094	
β_0	1.385		4.237		2.456	**	2.265		3.541	***	3.777	***
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.324		0.311		0.488	**	0.398		0.374	
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.177		0.000		0.000	
$\alpha_1 h_{it}$	-0.009		-0.162		0.026		-0.061		-0.111		-0.144	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	10.188		0.001		0.000		0.000		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.084	*	0.009		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.007		0.094		0.124		0.004		0.007	
Log-likelihood	-259.312		-247.590		-244.487		-258.251		-244.060		-244.628	

B. Four-week Average

	Base Model		diibull4		diibear4		diicorr4		diispread4		diibb4	
Intercept	1.333	*	1.734	**	1.511	**	0.524		1.769	**	1.786	**
dpayout12yld	-2.475	***	-1.974	***	-2.069	***	-2.418	***	-1.828	***	-1.858	***
dissue12yld	-2.577	***	-2.659	***	-3.075	***	-2.410	***	-2.822	***	-2.850	***
jan	-1.788		-2.239	*	-2.900	***	-1.305		-2.583	***	-2.691	***
oct	-2.731		-3.142	**	-3.295	**	-2.204		-3.208	**	-3.295	**
ΔS			0.125	**	-0.151	***	-0.005		0.080	***	0.131	***
xvwrtnlag3	-0.017		-0.033		-0.021		-0.021		-0.023		-0.022	
β_0	1.385		4.442		4.019	***	1.402		4.663	***	4.642	***
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.375	**	0.358	**	0.142		0.382	**	0.382	**
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.009		-0.044		-0.001		0.083		-0.046		-0.046	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	10.188		0.712		0.000		8.019		0.000		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.013		0.022		0.065		0.003		0.010	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.073		0.220		0.000		0.000	
Log-likelihood	-259.312		-256.704		-255.661		-257.913		-255.885		-255.837	

*, **, *** = Significant at 90%, 95%, or 99%

Table 63. GARCH Model Results for Value-weighted Returns with Changes in AAII Asset Allocation for the Sub-Period 1/1997 to 12/2005

	Base Model		daastock		daabond		daacash		daaspread	
Intercept	27.757		0.503		5.234		1.163		0.504	
dpayout12yld	-12.738	***	-11.946	***	-11.548	***	-12.749	***	-11.940	***
dissue12yld	-1.093		-1.389	*	-1.310	*	-1.324	*	-1.391	*
jan	-1.709		-1.866		-2.036		-1.798		-1.867	
oct	0.590		1.109		0.800		0.605		1.105	
ΔS			0.207	***	-0.003		-0.264	***	0.103	***
xvwrtnlag3	0.025		0.020		-0.006		-0.008		0.021	
β_0	8.024		5.769		10.733	***	4.973		5.749	
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000	
$\beta_3 h_{it-1}$	0.391		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-2.020		0.006		-0.356		-0.041		0.006	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.000		0.118		0.000		0.000	
$\beta_4 R_{ft}$	0.126		15.868		0.949		15.401		15.918	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.397		0.541		0.000		0.099	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.449		0.000	
Log-likelihood	-293.118		-288.920		-290.173		-284.017		-288.918	

*, **, *** = Significant at 90%, 95%, or 99%

Table 64. GARCH Model Results for Value-weighted Returns with Changes in AAII Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model	dasbull	dasbear	dasneut	dasbb	dasspread
Intercept	27.757	1.574	2.173	12.885	1.823	1.986
dpayout12yld	-12.738 ***	-11.544 ***	-12.382 ***	-10.590 ***	-12.252 ***	-11.866 ***
dissue12yld	-1.093	-0.922	-1.222	-1.441 *	-1.015	-0.991
jan	-1.709	-1.475	-2.162	-1.287	-1.840	-1.581
oct	0.590	0.793	0.684	1.366	0.647	0.688
ΔS		0.090 ***	-0.063	-0.153 ***	0.058 **	0.044 **
xvwrtnlag3	0.025	0.047	0.030	0.040	0.030	0.039
β_0	8.024	8.601 **	9.244 **	6.494 *	10.458 ***	9.044 **
$\beta_1 \varepsilon^2_{it-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_3 h_{it-1}$	0.391	0.000	0.000	0.383	0.000	0.000
$\alpha_1 h_{it}$	-2.020	-0.082	-0.116	-1.062	-0.094	-0.111
$\beta_2 \varepsilon^2_{it-1} I_{t-1}$	0.021	0.062	0.159	0.045	0.163	0.121
$\beta_4 R_{ft}$	0.126	10.139	4.504	0.000	0.476	7.249
$\beta_5 (\Delta S_{t-1})^2 D_{t-1}$		0.005	0.000	0.014	0.009	0.003
$\beta_6 (\Delta S_{t-1})^2 (1-D_{t-1})$		0.000	0.022	0.002	0.000	0.000
Log-likelihood	-293.118	-287.828	-289.803	-284.885	-289.211	-288.857

B. Four-week Average

	Base Model	dasbull4	dasbear4	dasneut4	dasbb4	dasspread4
Intercept	27.757	0.500	1.488	5.079	1.109	1.166
dpayout12yld	-12.738 ***	-10.933 ***	-11.756 ***	-12.855 ***	-11.110 ***	-11.550 ***
dissue12yld	-1.093	-1.280 *	-1.090	-1.079	-1.191	-1.080
jan	-1.709	-1.544	-1.777	-1.967	-1.668	-1.711
oct	0.590	0.977	0.891	0.396	1.019	1.061
ΔS		0.116 **	-0.136 **	-0.084	0.093 **	0.066 **
xvwrtnlag3	0.025	0.043	-0.021	0.022	0.020	0.020
β_0	8.024	8.285 **	7.384 **	11.494 ***	7.126 **	7.281 **
$\beta_1 \varepsilon^2_{it-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_3 h_{it-1}$	0.391	0.000	0.000	0.000	0.000	0.000
$\alpha_1 h_{it}$	-2.020	0.004	-0.070	-0.335	-0.043	-0.047
$\beta_2 \varepsilon^2_{it-1} I_{t-1}$	0.021	0.000	0.051	0.143	0.008	0.016
$\beta_4 R_{ft}$	0.126	10.051	6.580	2.392	11.041	10.749
$\beta_5 (\Delta S_{t-1})^2 D_{t-1}$		0.039	0.000	0.011	0.042	0.018
$\beta_6 (\Delta S_{t-1})^2 (1-D_{t-1})$		0.000	0.115	0.000	0.000	0.000
Log-likelihood	-293.118	-288.881	-285.672	-292.208	-287.459	-287.350

*, **, *** = Significant at 90%, 95%, or 99%

Table 65. GARCH Model Results for Value-weighted Returns with Changes in II Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model		diibull		diibear		diicorr		diispread		diibb	
Intercept	27.757		-0.039		1,006	***	3.158		-0.337		-0.427	
dpayout12yld	-12.738	***	-10.155	***	-10.703	***	-12.448	***	-9.778	***	-9.713	***
dissue12yld	-1.093		-1.350	*	-1.035		-1.144		-1.034		-0.969	
jan	-1.709		-1.695		-1.360		-2.037		-1.859		-1.905	
oct	0.590		1.076		0.449		0.823		0.723		0.684	
ΔS			0.264	***	-0.351	***	0.017		0.179	***	0.290	***
xvwrtnlag3	0.025		0.113	*	0.058		0.018		0.122	*	0.120	*
β_0	8.024		5.332		0.729	*	11.711	***	6.324	**	6.728	**
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
β_3h_{it-1}	0.391		0.021		0.927	***	0.000		0.000		0.000	
α_1h_{it}	-2.020		0.046		-99.870	***	-0.184		0.081		0.091	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.000		0.000		0.116		0.000		0.000	
β_4R_{ft}	0.126		13.303		0.003		2.365		10.746		9.894	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.145		0.000		0.033		0.027		0.050	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.036		0.000		0.000	
Log-likelihood	-293.118		-282.461		-274.529		-294.173		-279.656		-279.453	

B. Four-week Average

	Base Model		diibull4		diibear4		diicorr4		diispread4		diibb4	
Intercept	27.757		19.474		11.602		3.025		6.418		15.095	
dpayout12yld	-12.738	***	-11.724	***	-12.260	***	-12.211	***	-12.096	***	-12.022	***
dissue12yld	-1.093		-1.274		-0.883		-1.316		-0.970		-1.020	
jan	-1.709		-1.958		-2.158		-2.024		-2.028		-2.102	
oct	0.590		0.504		0.754		0.682		0.528		0.616	
ΔS			0.202	***	-0.312	***	-0.029		0.135	***	0.228	***
xvwrtnlag3	0.025		0.074		0.065		0.020		0.069		0.070	
β_0	8.024		12.326		11.536	***	12.107	***	11.476	***	11.872	***
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
β_3h_{it-1}	0.391		0.017		0.000		0.000		0.000		0.000	
α_1h_{it}	-2.020		-1.478		-0.905		-0.174		-0.473		-1.181	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.029		0.044		0.107		0.084		0.037	
β_4R_{ft}	0.126		0.001		0.516		2.499		0.064		0.209	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.003		0.000		0.048		0.008		0.009	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.026		0.000		0.000		0.000	
Log-likelihood	-293.118		-290.457		-288.165		-294.375		-289.010		-288.501	

*, **, *** = Significant at 90%, 95%, or 99%

Table 66. GARCH Model Results for Value-weighted Returns with % Changes in AAII Asset Allocation for the Full-Period 11/1987 to 12/2005

	Base Model		paastock		paabond		paacash		paaspread
Intercept	1.446	**	1.369	**	1.530	**	1.492	**	No Fit
dpayout12yld	-3.356	***	-3.333	***	-3.340	***	-3.334	***	
dissue12yld	-2.675	***	-2.567	***	-2.658	***	-2.674	***	
jan	-1.582	*	-1.398		-1.548	*	-1.525		
oct	-1.265		-1.061		-1.227		-1.253		
ΔS			9.068	**	0.854		-4.638	***	
xvwrtnlag3	-0.005		0.003		-0.009		0.000		
β_0	0.000	***	0.000	***	0.000	***	0.000	***	
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.066	*	0.069	*	0.073		
$\beta_3 h_{it-1}$	0.885	***	0.893	***	0.884	***	0.878	***	
$\alpha_1 h_{it}$	-0.035		-0.038		-0.043		-0.039		
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		
$\beta_4 R_{ft}$	1.346	*	1.286		1.303		1.471		
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		4.015		0.509		
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.262		0.000		0.456		
Log-likelihood	-565.376		-562.205		-564.249		-560.880		

*, **, *** = Significant at 90%, 95%, or 99%

Table 67. GARCH Model Results for Value-weighted Returns with % Changes in AAII Sentiment for the Full-Period 11/1987 to 12/2005

A. Month-end

	Base Model		pasbull		pasbear		pasneut		pasbb		passpread	
Intercept	1.446	**	1.308	**	1.582	***	1.390	**	1.453	***	1.950	***
dpayout12yld	-3.356	***	-2.812	***	-3.020	***	-3.248	***	-2.895	***	-3.263	***
dissue12yld	-2.675	***	-2.337	***	-2.401	***	-2.498	***	-2.422	***	-2.622	***
jan	-1.582	*	-1.213		-1.053		-1.389		-1.048		-1.527	
oct	-1.265		-1.456		-1.577	*	-1.059		-1.506	*	-1.286	
ΔS			3.154	***	-2.108	***	-1.857	**	3.618	***	0.083	
xvwrtnlag3	-0.005		0.015		0.042		-0.026		0.027		-0.006	
β_0	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.080	*	0.088	**	0.061		0.077	*	0.038	
$\beta_3 h_{it-1}$	0.885	***	0.881	***	0.871	***	0.883	***	0.887	***	0.933	***
$\alpha_1 h_{it}$	-0.035		-0.044		-0.038		-0.026		-0.060		-0.076	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	1.067		1.138		1.548		0.964		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.620		0.000		0.036	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		1.621		0.000		0.031	*
Log-likelihood	-565.376		-554.546		-554.319		-562.821		-554.651		-548.588	

B. Four-week Average

	Base Model		pasbull4		pasbear4		pasneut4		pasbb4		passpread4	
Intercept	1.446	**	1.373	***	1.470	**	1.594	**	1.400	**	0.808	
dpayout12yld	-3.356	***	-3.106	***	-3.246	***	-3.258	***	-3.086	***	-3.615	***
dissue12yld	-2.675	***	-2.767	***	-2.758	***	-2.739	***	-2.782	***	-2.680	***
jan	-1.582	*	-1.705	*	-1.335		-1.539		-1.570		-1.513	
oct	-1.265		-1.237		-1.272		-1.122		-1.162		-0.684	
ΔS			3.928	***	-3.718	***	-0.834		5.399	***	-0.024	
xvwrtnlag3	-0.005		0.027		0.042		-0.015		0.048		0.007	
β_0	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	13.013	***
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.088	*	0.085	*	0.056		0.084		0.000	
$\beta_3 h_{it-1}$	0.885	***	0.868	***	0.873	***	0.875	***	0.873	***	0.000	
$\alpha_1 h_{it}$	-0.035		-0.037		-0.034		-0.049		-0.045		0.000	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	1.324		1.164		1.601	*	1.226		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		11.489		0.000		0.015	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		1.294		0.000		0.250		0.000	
Log-likelihood	-565.376		-558.086		-556.148		-565.082		-555.873		-571.783	

*, **, *** = Significant at 90%, 95%, or 99%

Table 68. GARCH Model Results for Value-weighted Returns with % Changes in II Sentiment for the Full-Period 11/1987 to 12/2005

A. Month-end

	Base Model		piibull		piibear		piicorr		piispread		piibb	
Intercept	1.446	**	1.365	**	1.759	***	1.310	**	-7.071		1.532	**
dpayout12yld	-3.356	***	-2.270	***	-2.788	***	-3.258	***	-3.887	***	-2.375	***
dissue12yld	-2.675	***	-2.346	***	-2.166	***	-2.839	***	-2.563	***	-2.265	***
jan	-1.582	*	-1.480	*	-1.794	**	-1.425		-1.469		-2.007	***
oct	-1.265		-1.144		-1.050		-1.121		-0.873		-1.087	
ΔS			8.318	***	-8.430	***	-0.181		0.079		10.349	***
xvwrtnlag3	-0.005		-0.017		-0.001		-0.004		0.023		-0.007	
β_0	0.000	***	0.000	***	0.000	***	0.000	***	11.821	**	0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.073		0.081	*	0.090		0.000		0.069	*
$\beta_3 h_{it-1}$	0.885	***	0.881	***	0.877	***	0.837	***	0.007		0.887	***
$\alpha_1 h_{it}$	-0.035		-0.044		-0.062		-0.021		0.648		-0.060	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	1.211	*	1.094		1.040		0.016		1.154	*
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.000		0.011		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		33.199		0.059		0.000	
Log-likelihood	-565.376		-548.750		-543.283		-564.686		-565.683		-545.369	

B. Four-week Average

	Base Model		piibull4		piibear4		piicorr4		piispread4		piibb4	
Intercept	1.446	**	1.365	**	1.433	***	1.436	**	1.468	**	1.435	**
dpayout12yld	-3.356	***	-2.673	***	-2.627	***	-3.292	***	-3.364	***	-2.720	***
dissue12yld	-2.675	***	-2.727	***	-2.735	***	-2.676	***	-2.657	***	-2.706	***
jan	-1.582	*	-1.813	*	-1.749	*	-1.484		-1.485		-1.995	**
oct	-1.265		-1.081		-0.968		-1.161		-1.231		-1.049	
ΔS			5.471	***	-5.453	***	-0.452		-0.029		5.508	***
xvwrtnlag3	-0.005		0.003		0.009		-0.005		-0.006		0.002	
β_0	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.073	**	0.081	*	0.085	*	0.072	*	0.073	**	0.077	**
$\beta_3 h_{it-1}$	0.885	***	0.871	***	0.869	***	0.885	***	0.886	***	0.878	***
$\alpha_1 h_{it}$	-0.035		-0.032		-0.030		-0.035		-0.037		-0.037	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	1.346	*	1.459		1.399		1.358		1.325	*	1.388	*
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			1.255		0.000		0.000		0.000		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.383		0.425		0.000		0.000	
Log-likelihood	-565.376		-561.135		-559.506		-565.293		-565.169		-560.967	

*, **, *** = Significant at 90%, 95%, or 99%

Table 69. GARCH Model Results for Value-weighted Returns with % Changes in AAII Asset Allocation for the Sub-Period 11/1987 to 12/1996

	Base Model		paastock		paabond		paacash		paaspread
Intercept	1.333	*	1.378		1.118		1.261	*	No Fit
dpayout12yld	-2.475	***	-2.609	***	-2.597	***	-2.650	***	
dissue12yld	-2.577	***	-2.425	***	-2.173	***	-2.413	***	
jan	-1.788		-1.668		-1.376		-1.758		
oct	-2.731		-2.809		-2.217		-2.633		
ΔS			7.475		-2.814		-0.311		
xvwrtnlag3	-0.017		-0.021		-0.030		-0.044		
β_0	1.385		2.159		0.507		0.225		
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.242		0.213		0.238		
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.000		
$\alpha_1 h_{it}$	-0.009		-0.021		0.010		0.000		
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		
$\beta_4 R_{ft}$	10.188		8.653		13.085		12.898		
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.388		0.000		95.112		
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			5.271		0.301		0.000		
Log-likelihood	-259.312		-258.550		-258.650		-259.135		

*, **, *** = Significant at 90%, 95%, or 99%

Table 70. GARCH Model Results for Value-weighted Returns with % Changes in AAII Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model		pasbull		pasbear		pasneut		pasbb		passpread	
Intercept	1.333	*	2.102	*	1.276		1.297	*	1.059	*	1.515	*
dpayout12yld	-2.475	***	-2.001	***	-2.404	***	-2.446	***	-2.247	***	-2.402	***
dissue12yld	-2.577	***	-2.435	***	-2.038	***	-2.582	***	-2.150	***	-2.678	***
jan	-1.788		-1.933	**	-0.578		-1.895		-1.063		-1.962	*
oct	-2.731		-3.670	*	-2.868		-2.746		-3.157		-2.929	
ΔS			3.639	***	-2.635	***	-0.696		4.120	***	0.049	
xvwrtnlag3	-0.017		0.020		0.041		-0.030		0.025		-0.012	
β_0	1.385		2.841		0.335		1.113		0.000	***	2.729	
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.182		0.142		0.282	*	0.165		0.326	*
$\beta_3 h_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.009		-0.137		0.001		0.001		0.001		-0.016	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	10.188		4.963		12.884		10.837		13.177	***	6.851	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.000		0.997		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			24.775		0.000		0.013		0.000		0.000	
Log-likelihood	-259.312		-252.638		-252.816		-259.042		-252.230		-252.372	

B. Four-week Average

	Base Model		pasbull4		pasbear4		pasneut4		pasbb4		passpread4	
Intercept	1.333	*	1.347	**	1.376	**	1.404	*	1.181	**	0.295	
dpayout12yld	-2.475	***	-2.276	***	-2.717	***	-2.419	***	-2.403	***	-2.657	***
dissue12yld	-2.577	***	-2.773	***	-2.814	***	-2.627	***	-2.713	***	-2.015	***
jan	-1.788		-2.026	*	-1.357		-1.957	*	-1.742		-1.046	
oct	-2.731		-3.169	*	-2.895		-2.833		-2.955		-1.838	
ΔS			3.309	**	-3.677	**	-1.116		3.969	**	0.100	
xvwrtnlag3	-0.017		0.011		0.039		-0.029		0.035		-0.047	
β_0	1.385		0.731		0.000	***	1.492		0.275		0.241	
$\beta_1\varepsilon^2_{it-1}$	0.288	*	0.314	**	0.250		0.303	*	0.288	**	0.000	
$\beta_3 h_{it-1}$	0.000		0.000		0.372		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.009		-0.021		-0.016		-0.012		-0.004		0.109	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_4 R_{ft}$	10.188		10.543		5.661		9.684		11.913		15.138	**
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		26.575		0.000		0.000		0.136	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.000		0.000		0.000		0.061	
Log-likelihood	-259.312		-255.786		-256.224		-259.101		-255.558		-254.694	

*, **, *** = Significant at 90%, 95%, or 99%

Table 71. GARCH Model Results for Value-weighted Returns with % Changes in II Sentiment for the Sub-Period 11/1987 to 12/1996

A. Month-end

	Base Model	piibull	piibear	piicorr	piispread	piibb
Intercept	1.333 *	2.109 *	2.675 **	1.636 ***	1.206 **	2.091 **
dpayout12yld	-2.475 ***	-1.695 ***	-2.049 ***	-2.059 ***	-2.514 ***	-1.706 ***
dissue12yld	-2.577 ***	-1.942 ***	-2.379 ***	-2.896 ***	-2.680 ***	-2.301 ***
jan	-1.788	-2.080 **	-2.575 ***	-1.464	-2.123 **	-2.750 ***
oct	-2.731	-2.266	-2.784	-3.296 **	-2.845	-2.470
ΔS		7.962 ***	-9.513 ***	-0.382	0.033	8.929 ***
xvwrtnlag3	-0.017	-0.100	-0.071	0.041	-0.019	-0.090
β_0	1.385	3.466	3.601 *	3.186	1.950	3.971 ***
$\beta_1\varepsilon^2_{it-1}$	0.288 *	0.303	0.344	0.499 **	0.351 **	0.396
$\beta_3 h_{it-1}$	0.000	0.000	0.103	0.000	0.000	0.000
$\alpha_1 h_{it}$	-0.009	-0.124	-0.185	-0.026	0.009	-0.116
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_4 R_{ft}$	10.188	1.795	0.000	0.034	7.090	0.000
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	0.000	6.534	0.013	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		31.060	0.000	76.024	0.054	0.087
Log-likelihood	-259.312	-248.572	-246.748	-257.160	-253.869	-246.343

B. Four-week Average

	Base Model	piibull4	piibear4	piicorr4	piispread4	piibb4
Intercept	1.333 *	1.658 **	1.661 ***	1.061	1.273 *	1.818 **
dpayout12yld	-2.475 ***	-1.951 ***	-1.868 ***	-2.515 ***	-2.479 ***	-1.760 ***
dissue12yld	-2.577 ***	-2.634 ***	-3.175 ***	-2.482 ***	-2.588 ***	-2.816 ***
jan	-1.788	-2.293 **	-2.656 **	-1.703	-1.742	-2.773 ***
oct	-2.731	-2.988 *	-3.366 **	-2.559	-2.732	-3.320 **
ΔS		4.601 *	-6.468 ***	0.632	-0.017	5.685 **
xvwrtnlag3	-0.017	-0.035	-0.013	-0.025	-0.018	-0.022
β_0	1.385	3.484	4.053 ***	1.275	1.181	4.723
$\beta_1\varepsilon^2_{it-1}$	0.288 *	0.350 **	0.369 **	0.267	0.287 *	0.392 **
$\beta_3 h_{it-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\alpha_1 h_{it}$	-0.009	-0.043	-0.012	0.023	0.000	-0.054
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.000	0.000	0.000	0.000	0.000
$\beta_4 R_{ft}$	10.188	3.724	0.000	9.516	10.700	0.431
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		2.487	0.000	13.788	0.000	0.000
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.000	128.608	4.546	0.000	0.000
Log-likelihood	-259.312	-256.896	-254.547	-258.726	-259.258	-256.473

*, **, *** = Significant at 90%, 95%, or 99%

Table 72. GARCH Model Results for Value-weighted Returns with % Changes in AAII Asset Allocation for the Sub-Period 1/1997 to 12/2005

	Base Model	paastock	paabond	paacash	paaspread
Intercept	27.757	33.831	14.742	3.586 ***	2.995
dpayout12yld	-12.738 ***	-12.596 ***	-11.995 ***	-11.527 ***	-12.775 ***
dissue12yld	-1.093	-1.192	-1.132	-2.286 **	-1.149
jan	-1.709	-1.905	-1.736	-2.164	-2.248
oct	0.590	0.683	1.224	0.336	0.361
ΔS		12.203 *	0.460	-5.367 **	0.337
xvwrtnlag3	0.025	0.032	-0.015	-0.047	-0.003
β_0	8.024	7.927	6.419 *	0.039	9.342 **
$\beta_1\varepsilon^2_{it-1}$	0.000	0.000	0.018	0.000	0.000
$\beta_3 h_{it-1}$	0.391	0.343	0.425	0.931 ***	0.000
$\alpha_1 h_{it}$	-2.020	-2.672	-1.128	-0.244 **	-0.179
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021	0.015	0.033	0.000	0.115
$\beta_4 R_{ft}$	0.126	0.332	0.000	1.782 *	8.088
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		23.388	18.776	17.617	0.487
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		3.375	0.000	1.223	0.000
Log-likelihood	-293.118	-289.112	-289.337	-281.129	-290.493

Table 73. GARCH Model Results for Value-weighted Returns with % Changes in AAII Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model		pasbull		pasbear		pasneut		pasbb		passpread	
Intercept	27.757		5.300		1.224		1.024		2.126		2.329	
dpayout12yld	-12.738	***	-12.454	***	-11.559	***	-11.664	***	-12.551	***	-13.136	***
dissue12yld	-1.093		-0.724		-1.458		-0.943		-1.034		-0.860	
jan	-1.709		-1.631		-1.932		-0.719		-2.027		-2.484	
oct	0.590		0.401		1.000		0.354		0.465		0.323	
ΔS			3.178	**	-1.359		-4.419	***	2.851	*	0.063	
xvwrtnlag3	0.025		0.031		0.037		-0.005		0.021		-0.015	
β_0	8.024		10.905	***	9.709	**	11.477	***	9.083	***	9.739	***
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_3 h_{it-1}$	0.391		0.000		0.000		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-2.020		-0.393		-0.035		-0.021		-0.124		-0.105	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.086		0.103		0.000		0.208		0.494	
$\beta_4 R_{ft}$	0.126		2.388		3.231		1.880		4.322		5.537	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			3.512		0.000		0.217		19.288		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		38.054		0.000		0.000		0.000	
Log-likelihood	-293.118		-288.580		-290.910		-287.460		-288.648		-285.169	

B. Four-week Average

	Base Model		pasbull4		pasbear4		pasneut4		pasbb4		passpread4	
Intercept	27.757		6.919		11.017		7.023		17.160		0.558	
dpayout12yld	-12.738	***	-11.566	***	-12.269	***	-12.800	***	-12.586	***	-11.910	***
dissue12yld	-1.093		-1.776	**	-1.064		-1.064		-0.944		-1.549	**
jan	-1.709		-1.817		-1.641		-1.841		-2.009		-1.875	
oct	0.590		0.549		0.509		0.352		0.279		0.984	
ΔS			5.098	***	-2.771	*	-2.366		6.686	***	-0.033	
xvwrtnlag3	0.025		0.004		0.029		0.020		0.033		0.044	
β_0	8.024		0.223		10.025		12.271	***	11.180	***	14.259	***
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_3 h_{it-1}$	0.391		0.958	***	0.141		0.000		0.000		0.000	
$\alpha_1 h_{it}$	-2.020		-0.590		-0.821		-0.478		-1.410		0.000	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.014		0.056		0.094		0.033		0.000	
$\beta_4 R_{ft}$	0.126		0.685		0.862		1.216		0.625		0.000	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		2.202		8.239		0.003	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		6.674		0.000		5.518		0.001	
Log-likelihood	-293.118		-281.141		-289.540		-292.437		-286.551		-292.440	

Table 74. GARCH Model Results for Value-weighted Returns with % Changes in II Sentiment for the Sub-Period 1/1997 to 12/2005

A. Month-end

	Base Model		piibull		piibear		piicorr		piispread		piibb	
Intercept	27.757		4.448	*	23.902		1.477		-0.561		17.907	
dpayout12yld	-12.738	***	-10.601	***	-12.047	***	-13.417	***	-10.158	***	-11.324	***
dissue12yld	-1.093		-1.679	**	-0.161		-1.627	*	-1.576	**	-0.449	
jan	-1.709		-1.583		-1.902		-2.710		-1.685		-2.043	
oct	0.590		-0.109		0.809		0.349		2.074		-0.292	
ΔS			10.995	***	-9.830	***	0.504		0.957	***	17.963	***
xvwrtnlag3	0.025		0.001		0.033		-0.032		0.136	*	0.101	*
β_0	8.024		0.122		0.430		8.774	***	6.550		9.992	***
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.003	
$\beta_3 h_{it-1}$	0.391		0.954	***	0.948	***	0.000		0.021		0.000	
$\alpha_1 h_{it}$	-2.020		-0.384		-2.420		-0.044		0.065		-1.695	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.022		0.006		1.056	*	0.000		0.030	
$\beta_4 R_{ft}$	0.126		0.996		0.151		0.000		12.204		0.276	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.632		0.000		27.349		1.247		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		0.017		0.000		2.974		0.000	
Log-likelihood	-293.118		-275.965		-276.473		-291.169		-283.584		-278.656	

B. Four-week Average

	Base Model		piibull4		piibear4		piicorr4		piispread4		piibb4	
Intercept	27.757		18.365		22.466		12.111		2.466		0.978	
dpayout12yld	-12.738	***	-11.216	***	-12.130	***	-10.934	***	-12.323	***	-10.795	***
dissue12yld	-1.093		-1.613	*	-0.816		-2.381	***	-1.226		-1.411	
jan	-1.709		-1.812		-1.930		-2.044		-2.041		-1.990	
oct	0.590		0.499		0.692		0.333		0.788		1.248	
ΔS			8.095	**	-7.868	***	-1.278		-0.026		13.068	***
xvwrtnlag3	0.025		0.024		0.058		-0.049		0.005		0.096	
β_0	8.024		0.590		8.121		0.636	*	10.279	**	9.347	
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000		0.000	
$\beta_3 h_{it-1}$	0.391		0.939	***	0.293		0.930	***	0.000		0.022	
$\alpha_1 h_{it}$	-2.020		-1.514		-1.824		-0.967		-0.134		-0.041	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.021		0.013		0.030		0.013		0.085		0.000	
$\beta_4 R_{ft}$	0.126		0.167		0.325		0.000		8.568		10.127	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			3.299		0.000		6.616		0.000		0.332	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.000		9.544		0.000		0.042		0.000	
Log-likelihood	-293.118		-284.774		-287.733		-285.139		-293.265		-289.208	

Table 75. GARCH Model Results for Equal-weighted Returns with Changes in Yale ICF Confidence for the Period 3/2001 to 12/2005

	Base Model	dncrinda	dndiinda	dnvalinda	dnyrinda
Intercept	3.817	3.353	8.540	-1.750	8.856 *
dpayout12yld	-6.575 *	-7.275 *	-6.684	-6.664	-5.173
dissue12yld	-3.683 **	-4.184 ***	-4.112 **	-1.837	-5.204 **
jan	-0.292	-1.489	-0.112	-3.351	-1.732
oct	2.568	4.049	2.489	3.370	2.230
ΔS		0.287	0.363	-0.767 **	-0.476
xvwrtnlag3	0.250 **	0.242 *	0.277 *	0.178	0.187
β_0	0.000 ***	0.040	4.787	17.198 ***	0.000 ***
$\beta_1\varepsilon^2_{it-1}$	0.000	0.000	0.000	0.000	0.000
$\beta_3 h_{it-1}$	0.807 ***	0.000	0.513	0.000	0.896 ***
$\alpha_1 h_{it}$	-0.150	-0.131	-0.390	0.126	-0.412
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.271	0.089	0.000	0.000
$\beta_4 R_{ft}$	29.946	99.723	29.010	0.000	8.042
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.000	0.000	0.816	0.138
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		1.613	0.000	0.622	0.502
Log-likelihood	-171.038	-169.033	-170.582	-170.488	-168.142

	Base Model	dncrinsa	dndiinsa	dnvalinsa	dnyrinsa
Intercept	3.817	-38.097	4.156	0.846	4.015 *
dpayout12yld	-6.575 *	-2.956	-9.954 **	-8.822 **	-9.536 **
dissue12yld	-3.683 **	-4.317 *	-3.636 **	-2.165	-5.300 ***
jan	-0.292	-1.063	-1.539	1.322	0.054
oct	2.568	1.402	1.965	2.382	1.179
ΔS		0.239	0.255	-0.554 **	0.095
xvwrtnlag3	0.250 **	0.142	0.299 **	0.203	0.259 *
β_0	0.000 ***	1.379	1.035	0.000 ***	5.659
$\beta_1\varepsilon^2_{it-1}$	0.000	0.002	0.000	0.000	0.000
$\beta_3 h_{it-1}$	0.807 ***	0.927 ***	0.000	0.558 *	0.000
$\alpha_1 h_{it}$	-0.150	1.836	-0.159	-0.001	-0.153
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000	0.002	0.505	0.000	0.656
$\beta_4 R_{ft}$	29.946	0.000 ***	93.616	26.173	51.914
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$		0.017	0.031	1.348	0.403
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$		0.002	0.305	0.000	0.104
Log-likelihood	-171.038	-169.990	-169.866	-166.203	-168.913

*, **, *** = Significant at 90%, 95%, or 99%

Table 76. GARCH Model Results for Equal-weighted Returns with % Changes in Yale ICF Confidence for the Period 3/2001 to 12/2005

	Base Model		pncrinda		pndiinda		pnvalinda		pnyrinda	
Intercept	3.817		4.081		3.554		19.072		5.409	
dpayout12yld	-6.575	*	-5.013		-7.767	*	-6.386		-5.294	
dissue12yld	-3.683	**	-3.951	**	-3.997	***	-2.964		-4.916	***
jan	-0.292		-0.255		-0.369		-2.980		-1.406	
oct	2.568		3.211		2.346		2.795		1.920	
ΔS			9.976		22.717		-44.390	**	-20.659	
xvwrtnlag3	0.250	**	0.235	**	0.273	*	0.193		0.225	*
β_0	0.000	***	0.000	***	2.097		8.928		0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000	
$\beta_3 h_{it-1}$	0.807	***	0.802	***	0.000		0.441		0.915	***
$\alpha_1 h_{it}$	-0.150		-0.171		-0.141		-0.911		-0.239	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.404		0.044		0.000	
$\beta_4 R_{ft}$	29.946		30.132	*	102.818		10.817		9.855	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.000		0.000		0.000		804.787	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			3.106		0.000		0.567		137.915	
Log-likelihood	-171.038		-170.467		-169.889		-169.013		-169.607	

	Base Model		pncrinsa		pndiinsa		pnvalinsa		pnyrinsa	
Intercept	3.817		3.960	**	3.591	**	4.039		3.216	*
dpayout12yld	-6.575	*	-7.632	*	-9.475	**	-5.455	*	-8.125	**
dissue12yld	-3.683	**	-3.947	***	-4.355	***	-3.899	**	-4.329	***
jan	-0.292		-1.091		-1.543		-0.056		0.090	
oct	2.568		1.844		2.174		2.948		1.765	
ΔS			4.555		14.813		-32.640	*	8.692	
xvwrtnlag3	0.250	**	0.268	*	0.277	**	0.243	**	0.264	*
β_0	0.000	***	0.000	***	0.000	***	0.080		1.443	
$\beta_1\varepsilon^2_{it-1}$	0.000		0.000		0.000		0.000		0.000	
$\beta_3 h_{it-1}$	0.807	***	0.000		0.000		0.768	***	0.195	
$\alpha_1 h_{it}$	-0.150		-0.148	*	-0.134	*	-0.172		-0.117	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.191		0.484		0.000		0.566	
$\beta_4 R_{ft}$	29.946		106.314	***	112.511	***	30.221		74.690	
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			660.052		106.030		54.327		8.340	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			3.377		19.307		13.584		2.653	
Log-likelihood	-171.038		-169.868		-169.900		-167.246		-170.125	

*, **, *** = Significant at 90%, 95%, or 99%

Table 77. GARCH Model Results for Value-weighted Returns with Changes in Yale ICF Confidence for the Period 3/2001 to 12/2005

	Base Model		dncrinda		dndiinda		dnvalinda		dnyrinda	
Intercept	3.188	**	0.964		3.404	**	-8.344		1.877	
dpayout12yld	-5.856	***	-6.584	***	-5.246	**	-3.635		-8.018	***
dissue12yld	-2.982	**	-2.650	*	-3.486	***	-2.942	*	-2.283	
jan	-2.330		-3.161		-1.931		-2.637		-2.852	
oct	2.145		3.657	**	2.474		2.074		1.883	
ΔS			0.269		0.186		-0.287		-0.008	
xvwrtnlag3	0.085		0.080		0.084		-0.009		0.023	
β_0	0.000	***	0.000	***	0.000	***	0.001		0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.047		0.000		0.049		0.011		0.000	
$\beta_3 h_{it-1}$	0.761	***	0.000		0.746	***	0.979	***	0.000	
$\alpha_1 h_{it}$	-0.280	*	-0.067		-0.322	*	0.764		-0.131	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.000		0.000		0.756	
$\beta_4 R_{ft}$	14.431		36.514	**	15.099	*	0.217		61.049	***
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.327		0.000		0.038		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			3.977		0.000		0.000		0.000	
Log-likelihood	-151.052		-150.542		-150.337		-151.319		-152.241	

	Base Model		dncrinsa		dndiinsa		dnvalinsa		dnyrinsa	
Intercept	3.188	**	-10.460		-13.187		-0.358		1.441	
dpayout12yld	-5.856	***	-4.421		-6.986	**	-6.560	**	-6.815	**
dissue12yld	-2.982	**	-3.389	**	-1.412		-1.334		-2.645	*
jan	-2.330		-1.313		-2.347		-2.245		-2.576	
oct	2.145		2.311		2.832		3.584	*	2.173	
ΔS			0.156		0.013		-0.626	***	0.051	
xvwrtnlag3	0.085		-0.036		0.134		0.252	***	0.060	
β_0	0.000	***	0.239		12.718	***	1.116		0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.047		0.004		0.000		0.394		0.005	
$\beta_3 h_{it-1}$	0.761	***	0.962	***	0.000		0.000		0.000	
$\alpha_1 h_{it}$	-0.280	*	0.937		1.021		0.053		-0.100	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.040		0.539		0.942	
$\beta_4 R_{ft}$	14.431		0.000		0.000		22.833		58.607	***
$\beta_5(\Delta S_{t-1})^2 D_{t-1}$			0.021		0.000		0.479		0.000	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			0.009		0.000		0.000		0.000	
Log-likelihood	-151.052		-150.895		-156.490		-149.892		-152.968	

*, **, *** = Significant at 90%, 95%, or 99%

Table 78. GARCH Model Results for Value-weighted Returns with % Changes in Yale ICF Confidence for the Period 3/2001 to 12/2005

	Base Model		pncrinda		pndiinda		pnvalinda		pnyrinda	
Intercept	3.188	**	4.081		3.554		19.072		5.409	
dpayout12yld	-5.856	***	-5.013		-7.767	*	-6.386		-5.294	
dissue12yld	-2.982	**	-3.951	**	-3.997	***	-2.964		-4.916	***
jan	-2.330		-0.255		-0.369		-2.980		-1.406	
oct	2.145		3.211		2.346		2.795		1.920	
ΔS			9.976		22.717		-44.390	**	-20.659	
xvwrtnlag3	0.085		0.235	**	0.273	*	0.193		0.225	*
β_0	0.000	***	0.000	***	2.097		8.928		0.000	***
$\beta_1\varepsilon^2_{it-1}$	0.047		0.000		0.000		0.000		0.000	
β_3h_{it-1}	0.761	***	0.802	***	0.000		0.441		0.915	***
α_1h_{it}	-0.280	*	-0.171		-0.141		-0.911		-0.239	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.000		0.404		0.044		0.000	
β_4R_{ft}	14.431		30.132	*	102.818		10.817		9.855	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			0.000		0.000		0.000		804.787	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			3.106		0.000		0.567		137.915	
Log-likelihood	-151.052		-170.467		-169.889		-169.013		-169.607	

	Base Model		pncrinsa		pndiinsa		pnvalinsa		pnyrinsa	
Intercept	3.188	**	3.960	**	3.591	**	4.039		3.216	*
dpayout12yld	-5.856	***	-7.632	*	-9.475	**	-5.455	*	-8.125	**
dissue12yld	-2.982	**	-3.947	***	-4.355	***	-3.899	**	-4.329	***
jan	-2.330		-1.091		-1.543		-0.056		0.090	
oct	2.145		1.844		2.174		2.948		1.765	
ΔS			4.555		14.813		-32.640	*	8.692	
xvwrtnlag3	0.085		0.268	*	0.277	**	0.243	**	0.264	*
β_0	0.000	***	0.000	***	0.000	***	0.080		1.443	
$\beta_1\varepsilon^2_{it-1}$	0.047		0.000		0.000		0.000		0.000	
β_3h_{it-1}	0.761	***	0.000		0.000		0.768	***	0.195	
α_1h_{it}	-0.280	*	-0.148	*	-0.134	*	-0.172		-0.117	
$\beta_2\varepsilon^2_{it-1}I_{t-1}$	0.000		0.191		0.484		0.000		0.566	
β_4R_{ft}	14.431		106.314	***	112.511	***	30.221		74.690	
$\beta_5(\Delta S_{t-1})^2D_{t-1}$			660.052		106.030		54.327		8.340	
$\beta_6(\Delta S_{t-1})^2(1-D_{t-1})$			3.377		19.307		13.584		2.653	
Log-likelihood	-151.052		-169.868		-169.900		-167.246		-170.125	

*, **, *** = Significant at 90%, 95%, or 99%

Table 79. Firm Characteristic Variable Definitions

Returns	Firm level monthly returns (mret) come from CRSP.
Size	Size is the natural log of monthly market capitalization (mcap) from CRSP and is calculated using stock prices (madjprc) and outstanding shares (madjshr) adjusted historically for stock splits and stock dividends.
Age	Age is the number of years since the first listing of the firm's unique identifier (permco) on CRSP beginning with 1930.
Idiosyncratic Risk	
Sigma	Sigma is the standard deviation of the monthly returns computed on a rolling 36 months basis. 36 months is chosen to be consistent with Brav and Heaton (2006).
CAPM Sigma	CAPM Sigma is the standard deviation of the monthly standard error from a CAPM market model (Black) computed on a rolling 36 months basis. 36 months is chosen to be consistent with Brav and Heaton (2006).
FF4 Sigma	FF4 Sigma is the standard deviation of the monthly standard error from a four factor model using the Fama French factors of MKTRF, HML, SMB, and MOM computed on a rolling 36 months basis. 36 months is chosen to be consistent with Brav and Heaton (2006).
Momentum	
Mom	Momentum is computed as the difference in adjusted cumulative returns (mcumtret) from CRSP from month -12 to month -2.
Profitability	
Earn	Earnings are income before extraordinary items (IB) plus deferred taxes from the income statement (TXDI) less preferred dividends (DVP) from Compustat.
BE	Book equity (BE) is the fiscal year-end sum of shareholders equity (CEQ) and balance sheet deferred taxes (TXDB) from Compustat
ROE+	Return on equity (ROE) is earnings divided by book equity (BE) and is limited to positive returns or otherwise is zero.
Dividend, Repurchase, and Issue Policy	
Dividend Yield	The dividend yield is the rolling 12 months sum of dividends divided by month-end market capitalization (cap) from CRSP. Monthly dividends are the product of adjusted dividends per share (madjdiv) and adjusted shares outstanding (madjshr)
Repurchase Yield	The repurchase yield is the rolling 12 months sum of repurchases divided by month-end market capitalization (cap) from CRSP. Repurchases are the product of any monthly decrease in adjusted shares outstanding (madjshr) and the average adjusted price (madjprc) or just the beginning adjusted price if there in no ending price.
Payout Yield	The payout yield is the rolling 12 months sum of dividends and repurchases divided by month-end market capitalization (cap) from CRSP
Issue Yield	The issue yield is the rolling 12 months sum of issues divided by month-end market capitalization (cap) from CRSP. Issues are the product of any monthly increase in adjusted shares outstanding (madjshr) and the average adjusted price (madjprc) or just the ending adjusted price if there is no beginning price.
Netpayout Yield	The netpayout yield is the rolling 12 months sum of dividends and repurchases less issues divided by month-end market capitalization (cap) from CRSP
Tangibility	
PPE/A	Net property, plant, and equipment (PPENT) divided by total assets (AT) from Compustat.
RD/A	Research and development expense (XRD) divided by total assets (AT) from Compustat.
Growth Opportunities and Distress	
BE/ME(ln)	The book-to-market ratio (BE/ME) is the natural log of book equity (BE) from Compustat divided by CRSP market capitalization (ME).
EF/A	The change in external finance divided by assets (AT). The change in external finance is defined as the change in assets (AT) less the change in retained earnings (RE).
Sales Growth	Sales growth is the change in annual sales divided by the prior annual sales (SALE) from Compustat.

Table 80. Basic Statistics of Monthly Firm Characteristics, July 1988 to December 2005

	Full Period					Sub Period 1					Sub Period 2				
	N	Mean	Std Dev	Min	Max	N	Mean	Std Dev	Min	Max	N	Mean	Std Dev	Min	Max
Monthly Returns															
Returns	845,857	0.014	0.214	-1.000	12.667	330,749	0.014	0.180	-1.000	12.500	515,108	0.013	0.233	-1.000	12.667
Size and Age															
Size(ln) and Age	845,857	11.915	2.300	0.000	20.216	330,749	11.608	2.136	0.000	18.961	515,108	12.112	2.379	0.000	20.216
Age	845,857	13.748	14.674	0.077	75.964	330,749	13.628	14.424	0.077	66.962	515,108	13.825	14.833	0.077	75.964
Idiosyncratic Risk															
Sigma	609,283	0.162	0.103	0.022	2.161	208,928	0.131	0.075	0.023	2.118	400,355	0.179	0.112	0.022	2.161
CAPM Sigma	609,283	0.154	0.101	0.022	2.156	208,928	0.124	0.076	0.022	2.148	400,355	0.169	0.108	0.022	2.156
FF4 Sigma	609,283	0.147	0.095	0.018	2.227	208,928	0.120	0.073	0.018	2.227	400,355	0.161	0.102	0.022	2.220
Momentum															
Mom	761,085	0.289	2.831	-47.34	51.380	284,242	0.263	1.312	-5.357	13.771	476,843	0.305	3.430	-47.34	51.380
Profitability															
Earn	795,218	52.018	295.344	-2,609	5,337	309,292	36.260	155.156	-424	1,541	485,926	62.048	356.606	-2,609	5,337
ROE+	845,857	0.094	0.144	0.000	1.503	330,749	0.100	0.149	0.000	1.503	515,108	0.090	0.140	0.000	1.501
Dividend, Repurchase, and Issue Policy															
Dividend Yield	845,857	0.007	0.017	0.000	0.640	330,749	0.009	0.022	0.000	0.640	515,108	0.006	0.014	0.000	0.130
Repurchase Yield	845,857	0.014	0.046	0.000	0.790	330,749	0.011	0.043	0.000	0.790	515,108	0.016	0.048	0.000	0.558
Payout Yield	845,857	0.022	0.059	0.000	1.466	330,749	0.022	0.064	0.000	1.466	515,108	0.022	0.056	0.000	0.656
Issue Yield	845,857	0.078	0.199	0.000	3.123	330,749	0.061	0.148	0.000	1.498	515,108	0.088	0.226	0.000	3.123
Netpayout Yield	845,857	-0.055	0.204	-3.068	1.373	330,749	-0.039	0.158	-1.430	1.373	515,108	-0.066	0.228	-3.068	0.477
Tangibility															
PPE/A	832,365	0.488	0.389	0.000	2.406	325,740	0.528	0.400	0.000	2.406	506,625	0.462	0.379	0.000	2.118
RD/A	845,857	0.059	0.134	0.000	1.245	330,749	0.046	0.114	0.000	1.207	515,108	0.066	0.145	0.000	1.245
Growth Opportunities and Distress															
BE/ME(ln)	796,713	-0.861	1.197	-11.64	2.958	312,834	-0.886	1.159	-11.13	2.430	483,879	-0.845	1.220	-11.64	2.958
EF/A	791,720	0.165	0.354	-1.379	2.883	299,843	0.129	0.291	-1.340	1.622	491,877	0.187	0.385	-1.379	2.883
Sales Growth	785,193	0.396	1.681	-0.970	28.000	296,945	0.299	1.228	-0.947	18.682	488,248	0.455	1.902	-0.970	28.000

Table 81. Correlations of Monthly Firm Characteristics, July 1988 to December 2005

	Return	Size	Age	Sigma	CAPM Sigma	FF4 Sigma	Mom	Earn	ROE+	Div Yield	Repur Yield	Issue Yield	Payout Yield	Net Payout Yield	PPE/A	RD/A	BE/ME	EF/A
Size	0.07	1.00																
Age	0.00	0.34	1.00															
Idiosyncratic Risk																		
Sigma	0.06	-0.38	-0.34	1.00														
CAPM Sigma	0.06	-0.41	-0.34	0.99	1.00													
FF4 Sigma	0.05	-0.42	-0.34	0.98	0.99	1.00												
Momentum	0.00	0.15	0.04	-0.07	-0.07	-0.07	1.00											
Profitability																		
Earnings	0.00	0.37	0.31	-0.20	-0.20	-0.20	0.05	1.00										
Positive ROE	0.00	0.19	0.06	-0.21	-0.21	-0.21	0.06	0.20	1.00									
Dividend, Repurchase, and Issue Policy																		
Dividend Yield	-0.02	0.21	0.39	-0.35	-0.35	-0.35	-0.01	0.15	0.06	1.00								
Repurchase Yield	-0.03	-0.01	0.03	-0.03	-0.03	-0.03	-0.04	0.02	0.03	0.05	1.00							
Issue Yield	-0.11	-0.09	-0.11	0.30	0.30	0.30	-0.07	-0.06	-0.10	-0.09	0.07	1.00						
Payout Yield	-0.03	0.05	0.14	-0.13	-0.13	-0.13	-0.04	0.06	0.04	0.44	0.86	0.04	1.00					
Netpayout Yield	0.10	0.10	0.15	-0.33	-0.33	-0.33	0.06	0.08	0.11	0.22	0.18	-0.95	0.25	1.00				
Tangibility																		
PPE/A	0.01	0.08	0.28	-0.19	-0.17	-0.17	0.01	0.06	-0.01	0.22	-0.02	-0.07	0.05	0.08	1.00			
RD/A	0.01	-0.07	-0.17	0.33	0.32	0.30	-0.01	-0.07	-0.15	-0.14	-0.06	0.10	-0.09	-0.13	-0.13	1.00		
Growth Opportunities and Distress																		
BE/ME	-0.11	-0.29	0.16	-0.09	-0.09	-0.09	-0.22	-0.05	-0.28	0.18	0.14	-0.04	0.18	0.09	0.11	-0.28	1.00	
EF/A	-0.03	-0.06	-0.26	0.21	0.21	0.20	-0.05	-0.08	-0.17	-0.15	-0.06	0.25	-0.10	-0.27	-0.20	0.33	-0.22	1.00
Sales Growth	-0.01	-0.03	-0.13	0.09	0.09	0.09	-0.02	-0.04	-0.04	-0.08	-0.01	0.14	-0.03	-0.14	-0.11	0.10	-0.09	0.34

Table 82. Basic Statistics of Monthly Long-Short Portfolio Returns Formed on Firm Characteristics, June 1990 to December 2005

		Mean	Std Dev	Minimum	Maximum
Size and Age					
Size	High-Low	0.0108	0.0519	-0.3060	0.1658
Age	High-Low	-0.0015	0.0572	-0.2710	0.1761
Idiosyncratic Risk					
Sigma	High-Low	0.0083	0.0734	-0.1892	0.3583
CAPM Sigma	High-Low	0.0082	0.0701	-0.1770	0.3484
FF4 Sigma	High-Low	0.0078	0.0691	-0.1837	0.3434
Momentum					
Mom	High-Low	0.0045	0.0606	-0.4580	0.2453
Profitability					
Earn	High-Low	-0.0032	0.0602	-0.2967	0.1719
ROE+	High-Low	-0.0012	0.0470	-0.2294	0.1406
Dividend, Repurchase, and Issue Policy					
Dividend Yield	High-Low	-0.0086	0.0592	-0.2812	0.1612
Repurchase Yield	High-Low	-0.0015	0.0313	-0.1964	0.1172
Payout Yield	High-Low	-0.0107	0.0475	-0.2577	0.1407
Issue Yield	High-Low	-0.0144	0.0288	-0.0897	0.1588
Netpayout Yield	High-Low	0.0015	0.0524	-0.2551	0.1618
Tangibility					
PPE/A	High-Low	0.0010	0.0450	-0.2239	0.1358
RD/A	High-Low	0.0050	0.0444	-0.1153	0.2624
Growth Opportunities and Distress					
BE/ME	High-Low	-0.0419	0.0482	-0.3264	0.0893
EF/A	High-Low	-0.0098	0.0301	-0.1145	0.1302
Sales Growth	High-Low	-0.0063	0.0228	-0.0739	0.0626
Growth Opportunities					
BE/ME	Mid-Low	-0.0174	0.0343	-0.2500	0.0800
EF/A	High-Mid	-0.0067	0.0337	-0.1201	0.1718
Sales Growth	High-Mid	-0.0039	0.0323	-0.1169	0.1430
Distress					
BE/ME	High-Mid	-0.0244	0.0244	-0.1194	0.0786
EF/A	Mid-Low	-0.0032	0.0128	-0.0545	0.0268
Sales Growth	Mid-Low	-0.0024	0.0258	-0.1090	0.0683

Table 83. Mean Returns for Monthly Long-Short Portfolio Returns Formed on Firm Characteristics, June 1990 to December 2005

		Full Period	Sub Period 1	Sub Period 2
Size and Age				
Size	High-Low	0.0108	0.0075	0.0132
Age	High-Low	-0.0015	-0.0008	-0.0020
Idiosyncratic Risk				
Sigma	High-Low	0.0083	0.0079	0.0086
CAPM Sigma	High-Low	0.0082	0.0077	0.0086
FF4 Sigma	High-Low	0.0078	0.0073	0.0082
Momentum				
Mom	High-Low	0.0045	0.0038	0.0049
Profitability				
Earn	High-Low	-0.0032	-0.0022	-0.0039
ROE+	High-Low	-0.0012	-0.0006	-0.0015
Dividend, Repurchase, and Issue Policy				
Dividend Yield	High-Low	-0.0086	-0.0088	-0.0085
Repurchase Yield	High-Low	-0.0015	0.0008	-0.0032
Payout Yield	High-Low	-0.0107	-0.0087	-0.0122
Issue Yield	High-Low	-0.0144	-0.0122	-0.0160
Netpayout Yield	High-Low	0.0015	-0.0007	0.0032
Tangibility				
PPE/A	High-Low	0.001	-0.0008	0.0023
RD/A	High-Low	0.005	0.0057	0.0046
Growth Opportunities and Distress				
BE/ME	High-Low	-0.0419	-0.0353	-0.0466
EF/A	High-Low	-0.0098	-0.0097	-0.0099
Sales Growth	High-Low	-0.0063	-0.0047	-0.0074
Growth Opportunities				
BE/ME	Mid-Low	-0.0174	-0.0143	-0.0197
EF/A	High-Mid	-0.0067	-0.0055	-0.0075
Sales Growth	High-Mid	-0.0039	-0.0028	-0.0047
Distress				
BE/ME	High-Mid	-0.0244	-0.0210	-0.0269
EF/A	Mid-Low	-0.0032	-0.0043	-0.0024
Sales Growth	Mid-Low	-0.0024	-0.0020	-0.0027

Table 84. Correlations of Monthly Long-Short Portfolio Returns Formed on Firm Characteristics, June 1990 to December 2005

		Size and Age		Idiosyncratic Risk			Momentum	Profitability		Dividend, Repurchase, and Issue Policy				
		Size	Age	Sigma	CAPM Sigma	FF4 Sigma	Mom	Earn	ROE+	Dividend Yield	Repurchase Yield	Payout Yield	Issue Yield	Netpayout Yield
Size	High-Low	1.00												
Age	High-Low	0.72	1.00											
Sigma	High-Low	-0.75	-0.94	1.00										
CAPM Sigma	High-Low	-0.78	-0.95	1.00	1.00									
FF4 Sigma	High-Low	-0.78	-0.96	0.99	1.00	1.00								
Mom	High-Low	0.62	0.32	-0.41	-0.41	-0.39	1.00							
Earn	High-Low	0.83	0.95	-0.92	-0.94	-0.95	0.31	1.00						
ROE+	High-Low	0.73	0.91	-0.87	-0.89	-0.90	0.34	0.93	1.00					
Dividend Yield	High-Low	0.72	0.98	-0.97	-0.97	-0.97	0.34	0.94	0.91	1.00				
Repurchase Yield	High-Low	0.46	0.86	-0.79	-0.80	-0.81	-0.04 [c]	0.84	0.82	0.86	1.00			
Payout Yield	High-Low	0.63	0.95	-0.93	-0.93	-0.94	0.17 [a]	0.92	0.88	0.97	0.93	1.00		
Issue Yield	High-Low	-0.45	-0.71	0.70	0.68	0.68	-0.48	-0.56	-0.59	-0.71	-0.51	-0.61	1.00	
Netpayout Yield	High-Low	0.64	0.96	-0.95	-0.94	-0.94	0.32	0.89	0.87	0.98	0.87	0.95	-0.80	1.00
PPE/A	High-Low	0.62	0.92	-0.87	-0.86	-0.87	0.35	0.82	0.78	0.90	0.74	0.85	-0.76	0.91
RD/A	High-Low	-0.39	-0.86	0.83	0.82	0.83	-0.11	-0.76	-0.79	-0.86	-0.82	-0.87	0.69	-0.88
BE/ME	High-Low	-0.27	0.34	-0.24	-0.22	-0.24	-0.55	0.22	0.17 [a]	0.34	0.59	0.48	-0.21	0.39
EF/A	High-Low	-0.46	-0.81	0.75	0.72	0.73	-0.37	-0.65	-0.68	-0.80	-0.67	-0.73	0.83	-0.84
Sales Growth	High-Low	-0.04 [c]	-0.34	0.27	0.23	0.24	-0.20	-0.12 [b]	-0.07 [c]	-0.31	-0.21	-0.25	0.62	-0.40
BE/ME	Mid-Low	0.09 [c]	0.67	-0.59	-0.58	-0.59	-0.32	0.58	0.55	0.68	0.83	0.77	-0.40	0.69
EF/A	High-Mid	-0.66	-0.91	0.87	0.86	0.87	-0.48	-0.81	-0.83	-0.90	-0.73	-0.83	0.81	-0.91
Sales Growth	High-Mid	-0.60	-0.90	0.88	0.86	0.87	-0.40	-0.79	-0.78	-0.90	-0.74	-0.85	0.83	-0.93
BE/ME	High-Mid	-0.66	-0.27	0.34	0.37	0.36	-0.65	-0.38	-0.43	-0.28	0.00 [c]	-0.14 [b]	0.15 [a]	-0.20
EF/A	Mid-Low	0.68	0.47	-0.55	-0.57	-0.57	0.41	0.61	0.58	0.51	0.34	0.47	-0.16 [a]	0.42
Sales Growth	Mid-Low	0.71	0.83	-0.86	-0.88	-0.88	0.32	0.88	0.92	0.86	0.75	0.85	-0.49	0.81

All are significant at the 99% level except a = 95%, b=90%, and c=not significant at 90%

Table 84. Continued

		Tangibility		Growth Opportunities and Distress			Growth Opportunities			Distress		
		PPE/A	RD/A	BE/ME	EF/A	Sales Growth	BE/ME	EF/A	Sales Growth	BE/ME	EF/A	Sales Growth
PPE/A	High-Low	1.00										
RD/A	High-Low	-0.85	1.00									
BE/ME	High-Low	0.35	-0.55	1.00								
EF/A	High-Low	-0.84	0.77	-0.33	1.00							
Sales Growth	High-Low	-0.48	0.33	-0.31	0.71	1.00						
BE/ME	Mid-Low	0.65	-0.79	0.88	-0.57	-0.31	1.00					
EF/A	High-Mid	-0.88	0.79	-0.21	0.93	0.53	-0.54	1.00				
Sales Growth	High-Mid	-0.90	0.82	-0.32	0.93	0.61	-0.61	0.95	1.00			
BE/ME	High-Mid	-0.22	0.03 [c]	0.74	0.15 [a]	-0.17 [a]	0.32	0.33	0.23	1.00		
EF/A	Mid-Low	0.36	-0.28	-0.22	-0.09 [c]	0.26	0.06 [c]	-0.46	-0.34	-0.53	1.00	
Sales Growth	Mid-Low	0.71	-0.75	0.13 [b]	-0.54	0.12 [c]	0.49	-0.73	-0.72	-0.44	0.66	1.00

All are significant at the 99% level except a = 95%, b=90%, and c=not significant at 90%

Table 85. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Size

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, HML, MOM
aastock	0.0003	0.0001	-0.0001	0.0000	0.0006	0.0002
aabond	-0.0013	-0.0011	-0.0013	-0.0014	-0.0031	-0.0017
aacash	-0.0001	0.0002	0.0006	0.0005	-0.0004	0.0000
aaspread	0.0002	0.0001	-0.0001	0.0000	0.0003	0.0001
asbull	-0.0011 ***	-0.0009 ***	-0.0008 *	-0.0007	-0.0016 ***	-0.0013 **
asbear	0.0012 ***	0.0012 ***	0.0009 **	0.0008	0.0016 ***	0.0015 ***
asneut	0.0006	0.0002	0.0002	0.0002	0.0012 *	0.0006
asspread	-0.0007 ***	-0.0006 ***	-0.0005 **	-0.0004 *	-0.0009 ***	-0.0008 ***
asbb	-0.0009 ***	-0.0008 ***	-0.0006 *	-0.0005	-0.0013 ***	-0.0012 ***
asbull4	-0.0015 ***	-0.0015 ***	-0.0014 ***	-0.0013 ***	-0.0026 ***	-0.0027 ***
asbear4	0.0014 ***	0.0016 ***	0.0012 ***	0.0011 **	0.0018 ***	0.0023 ***
asneut4	0.0015 **	0.0011 **	0.0008	0.0008	0.0027 ***	0.0020 **
asspread4	-0.0008 ***	-0.0009 ***	-0.0008 ***	-0.0007 ***	-0.0014 ***	-0.0016 ***
asbb4	-0.0011 ***	-0.0012 ***	-0.0010 ***	-0.0009 ***	-0.0019 ***	-0.0021 ***
iibull	-0.0013 ***	-0.0014 ***	-0.0013 **	-0.0014 **	-0.0026 ***	-0.0031 ***
iibear	0.0017 ***	0.0017 ***	0.0015 **	0.0016 ***	0.0042 ***	0.0041 ***
iicorr	-0.0017 **	-0.0016 **	-0.0014	-0.0014 *	-0.0021	-0.0012
iispread	-0.0008 ***	-0.0009 ***	-0.0008 **	-0.0009 ***	-0.0020 ***	-0.0021 ***
iibb	-0.0014 ***	-0.0014 ***	-0.0013 **	-0.0014 ***	-0.0032 ***	-0.0034 ***
iibull4	-0.0012 ***	-0.0015 ***	-0.0017 **	-0.0018 ***	-0.0020 ***	-0.0030 ***
iibear4	0.0014 ***	0.0015 ***	0.0013 **	0.0013 ***	0.0035 ***	0.0039 ***
iicorr4	-0.0012	-0.0010	-0.0006	-0.0005	-0.0021	-0.0012
iispread4	-0.0007 ***	-0.0008 ***	-0.0008 **	-0.0008 ***	-0.0016 ***	-0.0020 ***
iibb4	-0.0011 ***	-0.0013 ***	-0.0013 **	-0.0013 ***	-0.0026 ***	-0.0032 ***
sf2raw	0.0019	0.0008	0.0123	0.0127	-0.0027	-0.0035
sf2	0.0011	-0.0006	0.0105	0.0130	-0.0057	-0.0075

*, **, *** = Significant at 90%, 95%, or 99%

Table 86. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Age

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0000	-0.0001	0.0002	0.0003	-0.0002	-0.0004
aabond	-0.0007	-0.0004	-0.0012	-0.0008	-0.0030	-0.0001
aacash	0.0004	0.0003	-0.0001	-0.0003	0.0006	0.0005
aaspread	0.0000	0.0000	0.0001	0.0002	-0.0001	-0.0002
asbull	-0.0011 ***	-0.0005 **	-0.0004	-0.0002	-0.0018 ***	-0.0006 *
asbear	0.0011 ***	0.0002	0.0002	-0.0003	0.0019 ***	0.0005
asneut	0.0009 **	0.0005 **	0.0004	0.0009 ***	0.0015 **	0.0004
asspread	-0.0007 ***	-0.0002 *	-0.0002	0.0000	-0.0010 ***	-0.0004 *
asbb	-0.0009 ***	-0.0003	-0.0002	0.0001	-0.0015 ***	-0.0005 *
asbull4	-0.0011 ***	-0.0008 ***	-0.0005	-0.0001	-0.0021 ***	-0.0016 ***
asbear4	0.0008 **	0.0006 *	0.0003	-0.0002	0.0014 *	0.0013 ***
asneut4	0.0013 **	0.0008 **	0.0005	0.0008 **	0.0022 **	0.0009 *
asspread4	-0.0006 ***	-0.0004 ***	-0.0002	0.0000	-0.0011 ***	-0.0009 ***
asbb4	-0.0007 **	-0.0006 ***	-0.0003	0.0000	-0.0015 ***	-0.0012 ***
iibull	-0.0014 ***	-0.0006 *	-0.0015 ***	-0.0006	-0.0024 ***	-0.0014 **
iibear	0.0014 ***	0.0008 ***	0.0011 ***	0.0006 *	0.0031 ***	0.0013 **
iicorr	-0.0006	-0.0005	-0.0003	-0.0004	-0.0010	0.0001
iispread	-0.0008 ***	-0.0004 ***	-0.0007 ***	-0.0003	-0.0016 ***	-0.0008 ***
iibb	-0.0013 ***	-0.0007 ***	-0.0012 ***	-0.0005 *	-0.0026 ***	-0.0013 ***
iibull4	-0.0008 *	-0.0008 **	-0.0014 ***	-0.0006	-0.0008	-0.0016 ***
iibear4	0.0008 **	0.0008 ***	0.0008 **	0.0005	0.0014	0.0015 ***
iicorr4	-0.0003	-0.0004	0.0000	-0.0004	-0.0007	0.0003
iispread4	-0.0004 **	-0.0004 ***	-0.0006 ***	-0.0003	-0.0006	-0.0009 ***
iibb4	-0.0007 **	-0.0007 ***	-0.0009 **	-0.0005	-0.0010	-0.0013 ***
sf2raw	0.0057	0.0021	0.0167	0.0089	0.0061	0.0014
sf2	0.0046	0.0019	0.0185	0.0106	0.0086	0.0006

*, **, *** = Significant at 90%, 95%, or 99%

Table 87. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Risk, SIGMA

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0003	0.0003	-0.0002	-0.0002	0.0008	0.0009 *
aabond	0.0005	0.0002	0.0012	0.0005	0.0010	-0.0015
aacash	-0.0009	-0.0007	-0.0001	0.0003	-0.0014	-0.0011 **
aaspread	0.0002	0.0002	-0.0001	-0.0001	0.0004	0.0005 *
asbull	0.0022 ***	0.0005 **	0.0016 **	0.0006 **	0.0027 ***	0.0006
asbear	-0.0021 ***	-0.0004	-0.0013 **	0.0000	-0.0027 ***	-0.0006
asneut	-0.0016 **	-0.0004	-0.0006	-0.0011 ***	-0.0022 **	-0.0004
asspread	0.0012 ***	0.0003 *	0.0008 **	0.0002	0.0015 ***	0.0003
asbb	0.0017 ***	0.0004 *	0.0010 **	0.0002	0.0022 ***	0.0005
asbull4	0.0022 ***	0.0008 ***	0.0015 **	0.0004	0.0031 ***	0.0015 ***
asbear4	-0.0017 ***	-0.0007 *	-0.0011	0.0002	-0.0024 **	-0.0014 **
asneut4	-0.0022 **	-0.0007	-0.0011	-0.0014 ***	-0.0029 **	-0.0007
asspread4	0.0011 ***	0.0005 ***	0.0007 *	0.0001	0.0017 ***	0.0009 ***
asbb4	0.0015 ***	0.0006 **	0.0009	0.0001	0.0023 ***	0.0012 ***
iibull	0.0027 ***	0.0006	0.0030 ***	-0.0001	0.0040 ***	0.0018 ***
iibear	-0.0026 ***	-0.0006 **	-0.0025 ***	-0.0002	-0.0044 ***	-0.0010 *
iicorr	0.0005	0.0001	0.0011	0.0004	0.0000	-0.0011
iispread	0.0015 ***	0.0003 *	0.0016 ***	0.0000	0.0025 ***	0.0009 ***
iibb	0.0023 ***	0.0005 *	0.0024 ***	0.0001	0.0038 ***	0.0012 **
iibull4	0.0016 **	0.0008 **	0.0025 **	-0.0002	0.0021 *	0.0022 ***
iibear4	-0.0014 **	-0.0006 **	-0.0016 *	0.0000	-0.0022 *	-0.0013 **
iicorr4	0.0000	-0.0002	0.0003	0.0003	-0.0003	-0.0014
iispread4	0.0008 ***	0.0004 **	0.0011 **	0.0000	0.0012 **	0.0011 ***
iibb4	0.0013 **	0.0006 **	0.0017 **	-0.0001	0.0019 **	0.0015 ***
sf2raw	-0.0079	-0.0017	-0.0095	0.0004	-0.0089	-0.0007
sf2	-0.0042	-0.0017	-0.0100	-0.0019	-0.0089	-0.0004

*, **, *** = Significant at 90%, 95%, or 99%

Table 88. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Risk, CAPM

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0003	0.0004	-0.0002	-0.0001	0.0009	0.0010 *
aabond	0.0005	0.0002	0.0014	0.0003	0.0007	-0.0017
aacash	-0.0009	-0.0008	-0.0002	0.0001	-0.0013	-0.0012 **
aaspread	0.0002	0.0002	-0.0001	0.0000	0.0004	0.0005 *
asbull	0.0020 ***	0.0005 **	0.0015 **	0.0006 **	0.0024 ***	0.0006 *
asbear	-0.0019 ***	-0.0004	-0.0012 *	0.0000	-0.0025 ***	-0.0007
asneut	-0.0015 **	-0.0004	-0.0007	-0.0011 ***	-0.0020 **	-0.0003
asspread	0.0011 ***	0.0003 **	0.0008 **	0.0002	0.0014 ***	0.0004 *
asbb	0.0016 ***	0.0004 **	0.0009 **	0.0003	0.0021 ***	0.0006 *
asbull4	0.0021 ***	0.0009 ***	0.0016 **	0.0005	0.0030 ***	0.0016 ***
asbear4	-0.0017 ***	-0.0007 **	-0.0011	0.0001	-0.0023 ***	-0.0015 ***
asneut4	-0.0022 **	-0.0007	-0.0012	-0.0015 ***	-0.0028 **	-0.0007
asspread4	0.0011 ***	0.0005 ***	0.0008 **	0.0001	0.0016 ***	0.0010 ***
asbb4	0.0015 ***	0.0007 ***	0.0009 *	0.0002	0.0023 ***	0.0013 ***
iibull	0.0025 ***	0.0007 *	0.0027 ***	0.0000	0.0039 ***	0.0019 ***
iibear	-0.0025 ***	-0.0007 **	-0.0024 ***	-0.0002	-0.0042 ***	-0.0012 **
iicorr	0.0007	0.0002	0.0013	0.0004	0.0001	-0.0010
iispread	0.0014 ***	0.0004 **	0.0015 ***	0.0001	0.0024 ***	0.0010 ***
iibb	0.0022 ***	0.0006 **	0.0023 ***	0.0001	0.0037 ***	0.0014 ***
iibull4	0.0016 **	0.0008 **	0.0024 **	-0.0001	0.0021 *	0.0022 ***
iibear4	-0.0014 ***	-0.0007 **	-0.0017 **	-0.0001	-0.0023 **	-0.0015 **
iicorr4	0.0001	-0.0001	0.0004	0.0002	-0.0002	-0.0012
iispread4	0.0009 ***	0.0004 **	0.0011 **	0.0000	0.0013 **	0.0011 ***
iibb4	0.0013 ***	0.0007 **	0.0017 **	0.0000	0.0020 **	0.0017 ***
sf2raw	-0.0075	-0.0027	-0.0104	0.0024	-0.0090	-0.0028
sf2	-0.0048	-0.0030	-0.0071	0.0002	-0.0077	-0.0022

*, **, *** = Significant at 90%, 95%, or 99%

Table 89. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Risk, 4 Factor Model

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0003	0.0004	-0.0001	-0.0001	0.0008	0.0010 *
aabond	0.0006	0.0002	0.0013	0.0003	0.0012	-0.0012
aacash	-0.0009	-0.0008 *	-0.0002	0.0000	-0.0012	-0.0011 **
aaspread	0.0002	0.0002	0.0000	0.0000	0.0004	0.0004 *
asbull	0.0019 ***	0.0006 **	0.0014 **	0.0007 **	0.0023 ***	0.0006 *
asbear	-0.0019 ***	-0.0005	-0.0012 *	0.0000	-0.0024 ***	-0.0007
asneut	-0.0014 **	-0.0004	-0.0007	-0.0011 ***	-0.0018 **	-0.0003
asspread	0.0011 ***	0.0003 **	0.0007 **	0.0002	0.0014 ***	0.0004 *
asbb	0.0015 ***	0.0004 **	0.0009 *	0.0003	0.0020 ***	0.0006 *
asbull4	0.0020 ***	0.0009 ***	0.0015 **	0.0005	0.0028 ***	0.0016 ***
asbear4	-0.0016 ***	-0.0008 **	-0.0011	0.0001	-0.0022 **	-0.0015 ***
asneut4	-0.0020 **	-0.0007	-0.0012	-0.0015 ***	-0.0026 **	-0.0006
asspread4	0.0011 ***	0.0005 ***	0.0007 *	0.0001	0.0015 ***	0.0009 ***
asbb4	0.0014 ***	0.0007 ***	0.0009 *	0.0002	0.0021 ***	0.0013 ***
iibull	0.0024 ***	0.0007 *	0.0026 ***	0.0000	0.0036 ***	0.0019 ***
iibear	-0.0024 ***	-0.0007 **	-0.0023 ***	-0.0002	-0.0041 ***	-0.0013 **
iicorr	0.0007	0.0003	0.0011	0.0004	0.0003	-0.0008
iispread	0.0013 ***	0.0004 **	0.0014 ***	0.0001	0.0022 ***	0.0010 ***
iibb	0.0021 ***	0.0006 **	0.0022 ***	0.0002	0.0035 ***	0.0014 ***
iibull4	0.0016 ***	0.0008 **	0.0023 **	-0.0001	0.0019 *	0.0022 ***
iibear4	-0.0014 ***	-0.0007 **	-0.0015 *	0.0000	-0.0021 **	-0.0016 **
iicorr4	0.0002	0.0000	0.0004	0.0003	0.0000	-0.0012
iispread4	0.0008 ***	0.0004 **	0.0011 **	0.0000	0.0012 **	0.0011 ***
iibb4	0.0012 ***	0.0007 **	0.0016 **	0.0000	0.0018 **	0.0017 ***
sf2raw	-0.0062	-0.0016	-0.0094	0.0036	-0.0080	-0.0022
sf2	-0.0038	-0.0024	-0.0065	0.0023	-0.0075	-0.0018

*, **, *** = Significant at 90%, 95%, or 99%

Table 90. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Momentum

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML
aastock	-0.0001	0.0000	-0.0002	0.0001	0.0000	0.0003
aabond	0.0001	0.0000	-0.0005	0.0001	0.0006	0.0010
aacash	0.0001	-0.0001	0.0004	-0.0002	-0.0002	-0.0006
aaspread	0.0000	0.0000	-0.0001	0.0000	0.0000	0.0002
asbull	-0.0014 ***	-0.0012 ***	-0.0007 **	-0.0007 **	-0.0020 ***	-0.0018 ***
asbear	0.0011 ***	0.0008	0.0006 **	0.0003	0.0015 **	0.0011
asneut	0.0014 ***	0.0012 ***	0.0004	0.0007 *	0.0024 ***	0.0020 **
asspread	-0.0007 ***	-0.0006 ***	-0.0004 ***	-0.0003 **	-0.0011 ***	-0.0009 **
asbb	-0.0010 ***	-0.0008 ***	-0.0005 **	-0.0004 *	-0.0015 ***	-0.0013 **
asbull4	-0.0016 ***	-0.0015 **	-0.0009 **	-0.0004	-0.0027 ***	-0.0030 ***
asbear4	0.0010 **	0.0006	0.0007 *	0.0000	0.0014 *	0.0009
asneut4	0.0020 **	0.0019 **	0.0008	0.0006	0.0034 **	0.0035 ***
asspread4	-0.0008 ***	-0.0007 **	-0.0005 **	-0.0002	-0.0013 ***	-0.0013 **
asbb4	-0.0010 ***	-0.0008 *	-0.0006 **	-0.0002	-0.0017 ***	-0.0016 **
iibull	-0.0009 *	-0.0005	-0.0008	-0.0006	-0.0016 *	-0.0012
iibear	0.0012 ***	0.0010 **	0.0009 *	0.0004	0.0028 **	0.0026 **
iicorr	-0.0013 *	-0.0013 *	-0.0010	0.0000	-0.0016	-0.0017
iispread	-0.0006 **	-0.0004 *	-0.0005 *	-0.0003	-0.0013 **	-0.0012 *
iibb	-0.0010 **	-0.0007 *	-0.0009 *	-0.0004	-0.0021 **	-0.0020 **
iibull4	-0.0006	-0.0003	-0.0011 *	-0.0006	-0.0003	-0.0001
iibear4	0.0008 **	0.0006	0.0008 *	0.0002	0.0016	0.0015
iicorr4	-0.0011	-0.0010	-0.0004	0.0002	-0.0019	-0.0020
iispread4	-0.0004 *	-0.0002	-0.0005 *	-0.0002	-0.0005	-0.0005
iibb4	-0.0006 *	-0.0005	-0.0009 *	-0.0003	-0.0009	-0.0009
sf2raw	-0.0063	-0.0068	0.0114	0.0056	-0.0099	-0.0139
sf2	-0.0055	-0.0067	0.0067	0.0044	-0.0130	-0.0192

*, **, *** = Significant at 90%, 95%, or 99%

Table 91. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Earnings

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0003	-0.0002	-0.0002	0.0000	-0.0002	-0.0005
aabond	-0.0005	-0.0006	-0.0011	-0.0002	-0.0025	-0.0005
aacash	0.0007	0.0007	0.0007	0.0002	0.0006	0.0009
aaspread	-0.0001	-0.0001	-0.0001	0.0000	-0.0001	-0.0003
asbull	-0.0011 ***	-0.0006 **	-0.0006	-0.0006 **	-0.0016 ***	-0.0007 *
asbear	0.0013 ***	0.0005 *	0.0006	0.0000	0.0019 **	0.0009 **
asneut	0.0007	0.0004	0.0003	0.0011 ***	0.0009	0.0002
asspread	-0.0007 ***	-0.0004 **	-0.0004	-0.0002	-0.0010 ***	-0.0005 **
asbb	-0.0010 ***	-0.0005 **	-0.0004	-0.0002	-0.0014 ***	-0.0007 **
asbull4	-0.0015 ***	-0.0010 ***	-0.0012 **	-0.0007 *	-0.0022 ***	-0.0016 ***
asbear4	0.0013 ***	0.0009 **	0.0010 **	0.0002	0.0018 **	0.0016 ***
asneut4	0.0014 **	0.0007	0.0008	0.0013 ***	0.0020 *	0.0006
asspread4	-0.0008 ***	-0.0006 ***	-0.0006 **	-0.0003	-0.0012 ***	-0.0010 ***
asbb4	-0.0011 ***	-0.0008 ***	-0.0008 **	-0.0003	-0.0017 ***	-0.0014 ***
iibull	-0.0015 ***	-0.0006	-0.0012 **	-0.0005	-0.0025 ***	-0.0015 **
iibear	0.0016 ***	0.0009 ***	0.0014 **	0.0007	0.0033 ***	0.0015 **
iicorr	-0.0011	-0.0008	-0.0012	-0.0006	-0.0009	0.0000
iispread	-0.0009 ***	-0.0004 **	-0.0007 **	-0.0004	-0.0017 ***	-0.0009 ***
iibb	-0.0014 ***	-0.0007 ***	-0.0012 **	-0.0006	-0.0027 ***	-0.0014 ***
iibull4	-0.0012 **	-0.0008 **	-0.0016 **	-0.0005	-0.0013	-0.0018 ***
iibear4	0.0012 ***	0.0009 ***	0.0011 **	0.0005	0.0021 **	0.0017 ***
iicorr4	-0.0006	-0.0006	-0.0005	-0.0005	-0.0008	0.0002
iispread4	-0.0006 ***	-0.0005 ***	-0.0007 **	-0.0003	-0.0010 **	-0.0011 ***
iibb4	-0.0010 ***	-0.0008 ***	-0.0011 **	-0.0004	-0.0016 ***	-0.0016 ***
sf2raw	0.0021	0.0006	0.0138	-0.0054	0.0025	-0.0001
sf2	-0.0004	0.0015	0.0137	-0.0027	0.0021	0.0005

*, **, *** = Significant at 90%, 95%, or 99%

Table 92. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Positive ROE

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0002	-0.0001	0.0000	-0.0002	-0.0005
aabond	-0.0005	-0.0005	-0.0007	-0.0001	-0.0027	-0.0004
aacash	0.0006	0.0007	0.0005	0.0000	0.0007	0.0008
aaspread	-0.0001	-0.0001	-0.0001	0.0000	-0.0001	-0.0003
asbull	-0.0010 ***	-0.0007 ***	-0.0005 *	-0.0005 *	-0.0015 ***	-0.0007 **
asbear	0.0010 ***	0.0005	0.0003	-0.0001	0.0016 ***	0.0008 **
asneut	0.0008 **	0.0006 **	0.0005	0.0010 ***	0.0011 *	0.0004
asspread	-0.0006 ***	-0.0003 **	-0.0002	-0.0001	-0.0009 ***	-0.0004 **
asbb	-0.0008 ***	-0.0005 **	-0.0003	-0.0001	-0.0013 ***	-0.0006 **
asbull4	-0.0012 ***	-0.0010 ***	-0.0009 ***	-0.0005 *	-0.0018 ***	-0.0015 ***
asbear4	0.0010 **	0.0008 *	0.0005	0.0000	0.0015 **	0.0014 ***
asneut4	0.0013 **	0.0009 *	0.0010 **	0.0013 ***	0.0017 *	0.0007
asspread4	-0.0006 ***	-0.0005 ***	-0.0005 **	-0.0002	-0.0010 ***	-0.0009 ***
asbb4	-0.0009 ***	-0.0007 ***	-0.0006 **	-0.0002	-0.0014 ***	-0.0013 ***
iibull	-0.0011 ***	-0.0005	-0.0007 *	-0.0005	-0.0021 ***	-0.0014 **
iibear	0.0012 ***	0.0008 **	0.0010 ***	0.0008 **	0.0024 ***	0.0011 **
iicorr	-0.0009	-0.0008	-0.0013 **	-0.0008	-0.0004	0.0005
iispread	-0.0006 ***	-0.0004 **	-0.0005 **	-0.0004 *	-0.0013 ***	-0.0008 ***
iibb	-0.0010 ***	-0.0006 **	-0.0008 **	-0.0006 *	-0.0021 ***	-0.0012 ***
iibull4	-0.0008 **	-0.0007 *	-0.0010 **	-0.0004	-0.0010	-0.0016 ***
iibear4	0.0009 ***	0.0008 **	0.0009 ***	0.0006	0.0013 *	0.0014 **
iicorr4	-0.0006	-0.0006	-0.0008	-0.0006	-0.0003	0.0006
iispread4	-0.0005 ***	-0.0004 **	-0.0005 ***	-0.0003	-0.0007 **	-0.0009 ***
iibb4	-0.0007 ***	-0.0007 **	-0.0009 ***	-0.0005	-0.0011 **	-0.0014 ***
sf2raw	0.0057	0.0040	0.0058	-0.0046	0.0084	0.0045
sf2	0.0037	0.0039	0.0026	-0.0031	0.0109	0.0055

*, **, *** = Significant at 90%, 95%, or 99%

Table 93. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Dividend Yield

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0002	0.0001	0.0002	-0.0005	-0.0007
aabond	-0.0006	-0.0004	-0.0011	-0.0007	-0.0020	0.0010
aacash	0.0006	0.0006	0.0002	-0.0002	0.0011	0.0008 *
aaspread	-0.0001	-0.0001	0.0000	0.0001	-0.0003	-0.0003
asbull	-0.0013 ***	-0.0005 **	-0.0007 *	-0.0004 *	-0.0018 ***	-0.0006 **
asbear	0.0013 ***	0.0003	0.0005	-0.0002	0.0020 ***	0.0006
asneut	0.0010 **	0.0005	0.0005	0.0011 ***	0.0014 **	0.0003
asspread	-0.0008 ***	-0.0002 *	-0.0004	-0.0001	-0.0011 ***	-0.0004 *
asbb	-0.0010 ***	-0.0003 *	-0.0004	-0.0001	-0.0016 ***	-0.0005 *
asbull4	-0.0012 ***	-0.0009 ***	-0.0007	-0.0003	-0.0021 ***	-0.0016 ***
asbear4	0.0009 **	0.0006 *	0.0003	-0.0002	0.0016 **	0.0014 ***
asneut4	0.0013 **	0.0008 **	0.0008	0.0013 ***	0.0020 **	0.0008
asspread4	-0.0006 ***	-0.0004 **	-0.0003	0.0000	-0.0012 ***	-0.0009 ***
asbb4	-0.0008 ***	-0.0006 **	-0.0003	-0.0001	-0.0016 ***	-0.0013 ***
iibull	-0.0015 ***	-0.0006 *	-0.0016 ***	-0.0002	-0.0025 ***	-0.0015 ***
iibear	0.0014 ***	0.0007 **	0.0012 **	0.0004	0.0031 ***	0.0012 **
iicorr	-0.0004	-0.0004	-0.0003	-0.0005	-0.0004	0.0006
iispread	-0.0008 ***	-0.0004 **	-0.0008 ***	-0.0002	-0.0016 ***	-0.0008 ***
iibb	-0.0013 ***	-0.0006 **	-0.0012 ***	-0.0003	-0.0025 ***	-0.0012 ***
iibull4	-0.0008	-0.0007 **	-0.0013 **	-0.0001	-0.0010	-0.0017 ***
iibear4	0.0007 **	0.0007 **	0.0007	0.0003	0.0013	0.0014 **
iicorr4	-0.0001	-0.0002	0.0001	-0.0005	-0.0003	0.0007
iispread4	-0.0004 *	-0.0004 **	-0.0005 *	-0.0001	-0.0006	-0.0009 ***
iibb4	-0.0006 **	-0.0006 **	-0.0008 *	-0.0002	-0.0010	-0.0014 ***
sf2raw	0.0086	0.0026	0.0160	0.0008	0.0094	0.0027
sf2	0.0067	0.0029	0.0178	0.0021	0.0115	0.0020

*, **, *** = Significant at 90%, 95%, or 99%

Table 94. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Repurchase Yield

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0003	-0.0004 **	0.0001	0.0001	-0.0006	-0.0006 **
aabond	0.0001	0.0005	-0.0003	-0.0003	-0.0004	0.0013
aacash	0.0005 *	0.0006 **	-0.0001	0.0000	0.0009 *	0.0007 **
aaspread	-0.0001	-0.0002 **	0.0000	0.0000	-0.0003	-0.0003 **
asbull	-0.0003	-0.0002 *	0.0000	-0.0001	-0.0004	-0.0002
asbear	0.0004	0.0001	0.0000	-0.0001	0.0006	0.0002
asneut	0.0002	0.0002	0.0001	0.0003 **	0.0001	0.0001
asspread	-0.0002	-0.0001	0.0000	0.0000	-0.0003	-0.0001
asbb	-0.0003	-0.0002	0.0000	0.0000	-0.0004	-0.0002
asbull4	-0.0004 *	-0.0005 ***	-0.0001	-0.0002	-0.0005	-0.0006 **
asbear4	0.0003	0.0004 **	0.0000	0.0000	0.0005	0.0006 **
asneut4	0.0003	0.0004	0.0001	0.0004 **	0.0003	0.0003
asspread4	-0.0002 *	-0.0003 ***	0.0000	-0.0001	-0.0003	-0.0004 **
asbb4	-0.0003 *	-0.0004 ***	0.0000	-0.0001	-0.0005	-0.0005 **
iibull	-0.0007 ***	-0.0005 **	-0.0005 ***	-0.0002	-0.0011 **	-0.0008 **
iibear	0.0005 ***	0.0004 ***	0.0003 **	0.0003 **	0.0008 **	0.0004
iicorr	0.0002	0.0000	0.0000	-0.0004	0.0004	0.0006
iispread	-0.0003 ***	-0.0003 ***	-0.0002 ***	-0.0002 *	-0.0006 **	-0.0004 **
iibb	-0.0005 ***	-0.0004 ***	-0.0003 ***	-0.0003 *	-0.0008 ***	-0.0005 **
iibull4	-0.0004	-0.0005 ***	-0.0003 **	-0.0002	-0.0004	-0.0010 ***
iibear4	0.0003 **	0.0005 ***	0.0002	0.0002	0.0003	0.0006 *
iicorr4	0.0002	0.0000	0.0001	-0.0003	0.0004	0.0006
iispread4	-0.0002 **	-0.0003 ***	-0.0001 *	-0.0001	-0.0002	-0.0005 ***
iibb4	-0.0003 **	-0.0004 ***	-0.0002 *	-0.0002	-0.0003	-0.0007 ***
sf2raw	0.0043	0.0026	0.0020	-0.0017	0.0078 *	0.0058 *
sf2	0.0030	0.0006	0.0040	-0.0006	0.0102 *	0.0052

*, **, *** = Significant at 90%, 95%, or 99%

Table 95. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Payout Yield

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0003	-0.0002	0.0000	0.0002	-0.0005	-0.0005
aabond	-0.0001	0.0001	-0.0009	-0.0005	-0.0011	0.0012
aacash	0.0006	0.0005	0.0002	-0.0002	0.0009	0.0006
aaspread	-0.0001	-0.0001	0.0000	0.0001	-0.0002	-0.0003
asbull	-0.0009 ***	-0.0004 **	-0.0005	-0.0003	-0.0012 ***	-0.0005 **
asbear	0.0009 ***	0.0002	0.0003	-0.0002	0.0014 **	0.0004
asneut	0.0007 **	0.0005 **	0.0004	0.0008 ***	0.0009	0.0004
asspread	-0.0005 ***	-0.0002 *	-0.0003	0.0000	-0.0007 ***	-0.0003 *
asbb	-0.0007 ***	-0.0003 *	-0.0003	0.0000	-0.0011 ***	-0.0005 **
asbull4	-0.0009 ***	-0.0007 ***	-0.0005	-0.0003	-0.0014 ***	-0.0012 ***
asbear4	0.0007 *	0.0005 *	0.0002	-0.0002	0.0011 *	0.0009 ***
asneut4	0.0010 **	0.0008 **	0.0006	0.0010 ***	0.0013 *	0.0008 *
asspread4	-0.0005 ***	-0.0004 ***	-0.0002	0.0000	-0.0008 ***	-0.0006 ***
asbb4	-0.0006 **	-0.0005 ***	-0.0002	0.0000	-0.0011 ***	-0.0009 ***
iibull	-0.0013 ***	-0.0006 **	-0.0013 ***	-0.0001	-0.0020 ***	-0.0013 ***
iibear	0.0011 ***	0.0006 ***	0.0010 **	0.0004	0.0019 ***	0.0006
iicorr	0.0000	-0.0001	-0.0002	-0.0006	0.0004	0.0010
iispread	-0.0007 ***	-0.0004 ***	-0.0006 ***	-0.0001	-0.0011 ***	-0.0006 ***
iibb	-0.0011 ***	-0.0005 ***	-0.0010 ***	-0.0002	-0.0017 ***	-0.0008 **
iibull4	-0.0008 *	-0.0007 ***	-0.0010 **	0.0000	-0.0008	-0.0014 ***
iibear4	0.0005 **	0.0006 **	0.0005	0.0002	0.0006	0.0009 **
iicorr4	0.0003	0.0000	0.0001	-0.0003	0.0005	0.0010
iispread4	-0.0004 **	-0.0004 ***	-0.0004 *	-0.0001	-0.0005	-0.0007 ***
iibb4	-0.0006 **	-0.0006 ***	-0.0006 *	-0.0001	-0.0007	-0.0010 ***
sf2raw	0.0070	0.0026	0.0133	-0.0002	0.0088	0.0046
sf2	0.0038	0.0007	0.0152	0.0019	0.0106	0.0034

*, **, *** = Significant at 90%, 95%, or 99%

Table 96. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Issue Yield

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0001	-0.0003 **	-0.0003 **	0.0002	0.0003
aabond	0.0006	0.0003	0.0002	0.0005	0.0006	-0.0007
aacash	0.0002	0.0000	0.0006 **	0.0005 **	-0.0003	-0.0003
aaspread	-0.0001	0.0000	-0.0002 **	-0.0002 **	0.0001	0.0001
asbull	0.0006 ***	0.0001	0.0000	-0.0001	0.0012 ***	0.0002
asbear	-0.0005 ***	0.0001	0.0000	0.0001	-0.0010 ***	-0.0001
asneut	-0.0005 **	-0.0002	0.0000	0.0000	-0.0012 ***	-0.0002
asspread	0.0003 ***	0.0000	0.0000	-0.0001	0.0006 ***	0.0001
asbb	0.0004 ***	0.0000	0.0000	-0.0001	0.0009 ***	0.0001
asbull4	0.0002	0.0000	-0.0004 **	-0.0002 *	0.0010 **	0.0003
asbear4	0.0000	0.0002	0.0003	0.0003 *	-0.0005	0.0000
asneut4	-0.0004	-0.0003	0.0003	0.0000	-0.0014 **	-0.0004
asspread4	0.0001	0.0000	-0.0002	-0.0001 *	0.0005 **	0.0001
asbb4	0.0000	-0.0001	-0.0003 *	-0.0002 *	0.0006 *	0.0001
iibull	0.0002	-0.0003 *	0.0004 **	0.0001	0.0007	-0.0004
iibear	-0.0001	0.0003 *	0.0000	0.0000	-0.0011 *	0.0005
iicorr	-0.0002	-0.0001	-0.0007 ***	-0.0001	0.0005	-0.0001
iispread	0.0001	-0.0002 *	0.0001	0.0000	0.0005 *	-0.0003
iibb	0.0001	-0.0003 **	0.0001	0.0001	0.0008 *	-0.0004
iibull4	-0.0004 *	-0.0004 **	0.0000	0.0000	-0.0005	-0.0004
iibear4	0.0003 *	0.0003 *	0.0002	0.0000	0.0002	0.0005
iicorr4	-0.0001	0.0000	-0.0006 **	0.0000	0.0006	0.0000
iispread4	-0.0002 *	-0.0002 **	-0.0001	0.0000	-0.0002	-0.0003 *
iibb4	-0.0003 *	-0.0003 **	-0.0001	0.0000	-0.0003	-0.0004
sf2raw	-0.0018	0.0018	-0.0044	-0.0071 *	0.0010	0.0048
sf2	-0.0029	0.0008	-0.0065	-0.0059	0.0005	0.0058

*, **, *** = Significant at 90%, 95%, or 99%

Table 97. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Netpayout Yield

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0001	0.0000	0.0004	0.0005 *	-0.0006	-0.0007 *
aabond	-0.0010	-0.0005	-0.0012	-0.0011 **	-0.0014	0.0016
aacash	0.0003	0.0003	-0.0004	-0.0006	0.0011	0.0008 *
aaspread	0.0000	0.0000	0.0002	0.0002 *	-0.0003	-0.0004 *
asbull	-0.0010 ***	-0.0003	-0.0004	-0.0002	-0.0017 ***	-0.0005 *
asbear	0.0010 ***	0.0001	0.0002	-0.0003	0.0018 ***	0.0004
asneut	0.0007 *	0.0004	0.0003	0.0008 ***	0.0014 **	0.0003
asspread	-0.0006 ***	-0.0001	-0.0002	0.0000	-0.0010 ***	-0.0003
asbb	-0.0008 ***	-0.0002	-0.0002	0.0001	-0.0015 ***	-0.0004
asbull4	-0.0008 **	-0.0005 **	-0.0001	-0.0001	-0.0019 ***	-0.0012 ***
asbear4	0.0005	0.0003	-0.0001	-0.0004	0.0014 *	0.0010 **
asneut4	0.0009	0.0007 **	0.0004	0.0010 ***	0.0018 *	0.0007
asspread4	-0.0004 *	-0.0003 *	0.0000	0.0001	-0.0010 ***	-0.0007 ***
asbb4	-0.0005	-0.0003 *	0.0000	0.0001	-0.0014 ***	-0.0010 ***
iibull	-0.0011 ***	-0.0003	-0.0014 ***	-0.0003	-0.0022 ***	-0.0010 **
iibear	0.0009 ***	0.0003	0.0008 **	0.0004	0.0025 ***	0.0005
iicorr	0.0000	-0.0001	0.0002	-0.0004	-0.0001	0.0007
iispread	-0.0006 ***	-0.0002	-0.0006 ***	-0.0002	-0.0013 ***	-0.0005 **
iibb	-0.0009 ***	-0.0003	-0.0009 ***	-0.0004 *	-0.0021 ***	-0.0007 *
iibull4	-0.0004	-0.0003	-0.0009 *	-0.0002	-0.0006	-0.0012 ***
iibear4	0.0002	0.0003	0.0004	0.0003	0.0007	0.0008 *
iicorr4	0.0002	-0.0001	0.0004	-0.0004	-0.0002	0.0007
iispread4	-0.0001	-0.0002	-0.0003	-0.0001	-0.0004	-0.0006 **
iibb4	-0.0002	-0.0003	-0.0005	-0.0002	-0.0006	-0.0008 **
sf2raw	0.0107	0.0045	0.0149	0.0099	0.0098	0.0026
sf2	0.0096	0.0042	0.0185	0.0109	0.0121	0.0017

*, **, *** = Significant at 90%, 95%, or 99%

Table 98. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Tangibility, PPE/A

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0002	0.0003	0.0002	0.0006 **	0.0002	0.0000
aabond	-0.0010	-0.0009 *	-0.0008	-0.0010 **	-0.0038	-0.0009
aacash	0.0000	-0.0002	-0.0002	-0.0008 **	0.0003	0.0001
aaspread	0.0001	0.0001	0.0001	0.0003 **	0.0001	0.0000
asbull	-0.0009 ***	-0.0003	-0.0005 *	-0.0002	-0.0014 ***	-0.0004
asbear	0.0010 ***	0.0002	0.0004	-0.0001	0.0015 ***	0.0005 *
asneut	0.0006	0.0002	0.0003	0.0006 **	0.0010 *	0.0002
asspread	-0.0006 ***	-0.0002	-0.0003	0.0000	-0.0008 ***	-0.0003 **
asbb	-0.0007 ***	-0.0002 *	-0.0003	-0.0001	-0.0012 ***	-0.0004 *
asbull4	-0.0006 *	-0.0004 *	-0.0004	-0.0002	-0.0011 *	-0.0007 **
asbear4	0.0004	0.0002	0.0002	-0.0001	0.0006	0.0006 *
asneut4	0.0007	0.0003	0.0004	0.0008 **	0.0012	0.0004
asspread4	-0.0003	-0.0002	-0.0002	0.0000	-0.0006 *	-0.0004 **
asbb4	-0.0004	-0.0003	-0.0002	-0.0001	-0.0007	-0.0006 **
iibull	-0.0007 **	-0.0001	-0.0011 ***	-0.0002	-0.0011 *	-0.0004
iibear	0.0008 **	0.0003 *	0.0006	0.0001	0.0019 ***	0.0007 *
iicorr	-0.0004	-0.0005	0.0004	0.0001	-0.0013	-0.0004
iispread	-0.0004 **	-0.0001	-0.0005 **	-0.0001	-0.0009 **	-0.0004 *
iibb	-0.0007 ***	-0.0002	-0.0008 **	-0.0001	-0.0014 ***	-0.0006 *
iibull4	0.0000	-0.0001	-0.0008 *	-0.0001	0.0005	-0.0003
iibear4	0.0001	0.0002	0.0002	0.0000	0.0002	0.0005
iicorr4	-0.0002	-0.0003	0.0007	0.0001	-0.0012	-0.0003
iispread4	0.0000	-0.0001	-0.0002	0.0000	0.0001	-0.0002
iibb4	-0.0001	-0.0001	-0.0003	-0.0001	0.0001	-0.0004
sf2raw	0.0020	-0.0030	0.0203 *	0.0139 **	-0.0017	-0.0074 *
sf2	0.0049	-0.0001	0.0253 **	0.0163 **	0.0034	-0.0063

*, **, *** = Significant at 90%, 95%, or 99%

Table 99. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, July 1988 to December 2005, Tangibility, RD/A

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	0.0002	0.0001	0.0001	-0.0002	0.0004	0.0005
aabond	0.0001	-0.0002	-0.0005	-0.0001	0.0015	-0.0014
aacash	-0.0004	-0.0003	-0.0001	0.0003	-0.0008	-0.0005
aaspread	0.0001	0.0001	0.0001	-0.0001	0.0002	0.0003
asbull	0.0009 ***	0.0005 ***	0.0003	0.0001	0.0014 ***	0.0007 ***
asbear	-0.0008 **	-0.0002	0.0000	0.0002	-0.0014 **	-0.0005 *
asneut	-0.0008 **	-0.0006 ***	-0.0004	-0.0006 **	-0.0012 **	-0.0006 *
asspread	0.0005 ***	0.0002 **	0.0001	0.0000	0.0008 ***	0.0004 ***
asbb	0.0007 ***	0.0003 **	0.0001	0.0000	0.0012 ***	0.0005 ***
asbull4	0.0005 *	0.0005 **	0.0002	0.0002	0.0010 **	0.0008 ***
asbear4	-0.0002	-0.0002	0.0002	0.0002	-0.0005	-0.0006
asneut4	-0.0008 *	-0.0007 **	-0.0006 *	-0.0009 ***	-0.0011 *	-0.0006
asspread4	0.0002	0.0002 *	0.0000	0.0000	0.0005 *	0.0004 **
asbb4	0.0003	0.0003 *	0.0000	0.0000	0.0007 *	0.0006 **
iibull	0.0005	-0.0002	0.0004	-0.0005 *	0.0009	0.0002
iibear	-0.0003	0.0002	0.0000	0.0003	-0.0008	0.0005
iicorr	-0.0004	-0.0002	-0.0005	0.0001	-0.0002	-0.0009
iispread	0.0002	-0.0001	0.0001	-0.0002	0.0005	-0.0001
iibb	0.0003	-0.0002	0.0001	-0.0003	0.0008	-0.0002
iibull4	-0.0002	-0.0002	-0.0002	-0.0007 ***	-0.0005	0.0002
iibear4	0.0003	0.0002	0.0003	0.0004	0.0007	0.0004
iicorr4	-0.0004	-0.0001	-0.0005 *	0.0002	-0.0002	-0.0009
iispread4	-0.0002	-0.0001	-0.0002	-0.0003 **	-0.0004	-0.0001
iibb4	-0.0002	-0.0002	-0.0003	-0.0004 **	-0.0006	-0.0002
sf2raw	-0.0059	-0.0005	-0.0082	0.0043	-0.0062	-0.0006
sf2	-0.0041	0.0011	-0.0102	0.0039	-0.0079	0.0023

*, **, *** = Significant at 90%, 95%, or 99%

Table 100. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Growth Opportunities & Distress, BE/ME, High - Low

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM
aastock	-0.0006	-0.0003	0.0003	0.0003	-0.0011	-0.0002
aabond	0.0010	0.0011 *	0.0003	0.0004	0.0002	0.0002
aacash	0.0008	0.0002	-0.0006	-0.0006	0.0015 *	0.0003
aaspread	-0.0003	-0.0002	0.0001	0.0001	-0.0005	-0.0001
asbull	0.0002	0.0003 *	0.0005 *	0.0008 ***	0.0003	0.0005
asbear	-0.0002	-0.0007 ***	-0.0007 **	-0.0011 ***	0.0000	-0.0005
asneut	-0.0002	0.0002	0.0001	0.0002	-0.0008	-0.0002
asspread	0.0001	0.0003 **	0.0003 **	0.0006 ***	0.0001	0.0003
asbb	0.0002	0.0004 **	0.0004 **	0.0007 ***	0.0001	0.0003
asbull4	0.0006 **	0.0007 ***	0.0009 **	0.0009 ***	0.0013 **	0.0014 ***
asbear4	-0.0006	-0.0010 ***	-0.0010 **	-0.0011 ***	-0.0008	-0.0015 ***
asneut4	-0.0005	0.0000	-0.0003	-0.0002	-0.0014 *	-0.0006
asspread4	0.0004 *	0.0005 ***	0.0006 **	0.0006 ***	0.0006 **	0.0008 ***
asbb4	0.0005 *	0.0006 ***	0.0008 ***	0.0007 ***	0.0008	0.0012 ***
iibull	-0.0002	0.0004	-0.0003	0.0006 *	0.0007	0.0017 **
iibear	-0.0006 **	-0.0010 ***	-0.0006	-0.0011 ***	-0.0025 ***	-0.0033 ***
iicorr	0.0022 ***	0.0017 ***	0.0020 ***	0.0016 ***	0.0027 **	0.0019 **
iispread	0.0001	0.0004 ***	0.0001	0.0005 ***	0.0009 ***	0.0015 ***
iibb	0.0003	0.0007 ***	0.0002	0.0009 ***	0.0017 ***	0.0025 ***
iibull4	0.0003	0.0006 **	0.0005	0.0009 **	0.0015 **	0.0021 ***
iibear4	-0.0009 ***	-0.0010 ***	-0.0008 **	-0.0010 ***	-0.0033 ***	-0.0032 ***
iicorr4	0.0018 ***	0.0013 **	0.0015 **	0.0014 ***	0.0025 *	0.0014
iispread4	0.0003 *	0.0004 ***	0.0004	0.0006 ***	0.0014 ***	0.0016 ***
iibb4	0.0006 **	0.0008 ***	0.0007 *	0.0009 ***	0.0023 ***	0.0025 ***
sf2raw	-0.0026	-0.0057	0.0018	0.0034	0.0015	-0.0029
sf2	-0.0017	-0.0056	0.0089	0.0089	0.0078	0.0010

*, **, *** = Significant at 90%, 95%, or 99%

Table 101. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Growth Opportunities, BE/ME, Mid - Low

Mid - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM
aastock	-0.0004	-0.0002	0.0000	0.0001	-0.0007	-0.0002
aabond	0.0002	0.0003	0.0001	0.0003	-0.0013	-0.0011
aacash	0.0007 *	0.0002	-0.0001	-0.0002	0.0011 *	0.0004
aaspread	-0.0002	-0.0001	0.0000	0.0000	-0.0004	-0.0001
asbull	-0.0002	0.0001	0.0000	0.0002	-0.0003	0.0002
asbear	0.0003	-0.0003	-0.0001	-0.0005 ***	0.0006	-0.0001
asneut	0.0001	0.0002	0.0002	0.0003 *	-0.0001	-0.0001
asspread	-0.0002	0.0001	0.0000	0.0002 **	-0.0002	0.0001
asbb	-0.0002	0.0001	0.0001	0.0003 **	-0.0004	0.0001
asbull4	0.0000	0.0003 *	0.0002	0.0003 *	0.0002	0.0007 **
asbear4	0.0000	-0.0004 **	-0.0003	-0.0005 ***	0.0001	-0.0006
asneut4	-0.0001	0.0000	0.0001	0.0001	-0.0004	-0.0004
asspread4	0.0000	0.0002 **	0.0001	0.0002 **	0.0000	0.0004 **
asbb4	0.0000	0.0002 *	0.0002	0.0003 **	0.0000	0.0005 **
iibull	-0.0004	0.0003	-0.0006 **	0.0001	-0.0002	0.0010 **
iibear	0.0000	-0.0005 ***	0.0000	-0.0005 ***	-0.0005	-0.0016 ***
iicorr	0.0009 **	0.0007 **	0.0010 ***	0.0009 ***	0.0010	0.0006
iispread	-0.0001	0.0002 **	-0.0001	0.0002 *	0.0001	0.0008 ***
iibb	-0.0001	0.0004 ***	-0.0002	0.0004 **	0.0002	0.0013 ***
iibull4	-0.0001	0.0003	-0.0002	0.0003	0.0005	0.0011 **
iibear4	-0.0002	-0.0005 ***	-0.0002	-0.0005 ***	-0.0012 ***	-0.0015 ***
iicorr4	0.0009 *	0.0006	0.0008 **	0.0008 ***	0.0010	0.0005
iispread4	0.0000	0.0002 **	0.0000	0.0002 **	0.0005 **	0.0007 ***
iibb4	0.0001	0.0004 ***	0.0001	0.0004 **	0.0008 ***	0.0012 ***
sf2raw	0.0017	-0.0009	-0.0019	-0.0049	0.0054	0.0015
sf2	0.0021	0.0006	0.0003	-0.0019	0.0107 *	0.0067

*, **, *** = Significant at 90%, 95%, or 99%

Table 102. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Distress, BE/ME, High - Mid

High - Mid	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM
aastock	-0.0002	-0.0001	0.0003	0.0002	-0.0004	-0.0001
aabond	0.0008 *	0.0009 **	0.0002	0.0001	0.0014	0.0014
aacash	0.0001	-0.0001	-0.0005	-0.0004	0.0003	-0.0001
aaspread	-0.0001	-0.0001	0.0001	0.0001	-0.0002	-0.0001
asbull	0.0005 ***	0.0003 **	0.0005 **	0.0006 ***	0.0006 ***	0.0003
asbear	-0.0005 ***	-0.0004 ***	-0.0006 ***	-0.0006 ***	-0.0006 **	-0.0004
asneut	-0.0003	0.0000	0.0000	-0.0001	-0.0007 **	-0.0001
asspread	0.0003 ***	0.0002 **	0.0003 ***	0.0004 ***	0.0004 ***	0.0002 *
asbb	0.0004 ***	0.0003 **	0.0004 ***	0.0005 ***	0.0005 ***	0.0003
asbull4	0.0006 ***	0.0004 **	0.0007 ***	0.0006 ***	0.0011 ***	0.0007 ***
asbear4	-0.0007 ***	-0.0006 ***	-0.0007 ***	-0.0006 **	-0.0009 ***	-0.0009 ***
asneut4	-0.0005	0.0000	-0.0004	-0.0003	-0.0009 **	-0.0002
asspread4	0.0004 ***	0.0003 ***	0.0004 ***	0.0004 ***	0.0006 ***	0.0005 ***
asbb4	0.0005 ***	0.0004 ***	0.0005 ***	0.0005 ***	0.0008 ***	0.0007 ***
iibull	0.0002	0.0001	0.0002	0.0005 *	0.0009 ***	0.0007 *
iibear	-0.0007 ***	-0.0005 ***	-0.0006 **	-0.0006 ***	-0.0021 ***	-0.0017 ***
iicorr	0.0013 ***	0.0010 ***	0.0010 **	0.0007 **	0.0017 ***	0.0013 **
iispread	0.0003 ***	0.0002 **	0.0003	0.0003 **	0.0009 ***	0.0007 ***
iibb	0.0005 ***	0.0003 **	0.0004	0.0005 **	0.0015 ***	0.0012 ***
iibull4	0.0004 *	0.0003 *	0.0006 *	0.0006 **	0.0010 ***	0.0010 ***
iibear4	-0.0006 ***	-0.0005 ***	-0.0006 **	-0.0006 ***	-0.0021 ***	-0.0018 ***
iicorr4	0.0010 ***	0.0007 **	0.0006 *	0.0006 *	0.0015 **	0.0009 *
iispread4	0.0003 ***	0.0002 ***	0.0004 **	0.0003 ***	0.0009 ***	0.0008 ***
iibb4	0.0005 ***	0.0004 ***	0.0005 **	0.0005 ***	0.0015 ***	0.0013 ***
sf2raw	-0.0044	-0.0050 *	0.0042	0.0078	-0.0041	-0.0046
sf2	-0.0042	-0.0061 **	0.0082	0.0112	-0.0037	-0.0060

*, **, *** = Significant at 90%, 95%, or 99%

Table 103. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Growth Opportunities & Distress, EF/A, High-Low

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0001	-0.0004 **	-0.0005 ***	-0.0002	0.0000
aabond	0.0007	0.0003	0.0006	0.0009 **	0.0023	0.0002
aacash	0.0002	0.0002	0.0006 **	0.0006 **	-0.0001	0.0000
aaspread	-0.0001	-0.0001	-0.0002 **	-0.0002 ***	-0.0001	0.0000
asbull	0.0006 ***	0.0001	-0.0001	-0.0003 *	0.0011 ***	0.0002
asbear	-0.0004 *	0.0001	0.0002	0.0004 **	-0.0010 ***	-0.0001
asneut	-0.0006 **	-0.0002	-0.0001	-0.0001	-0.0012 ***	-0.0003
asspread	0.0003 ***	0.0000	-0.0001	-0.0002 **	0.0006 ***	0.0001
asbb	0.0004 **	0.0000	-0.0001	-0.0002 **	0.0009 ***	0.0001
asbull4	0.0003	0.0002 *	-0.0003 *	-0.0002	0.0009 **	0.0006 ***
asbear4	0.0000	0.0000	0.0003	0.0002	-0.0004	-0.0002
asneut4	-0.0005	-0.0004 **	0.0002	0.0001	-0.0013 **	-0.0006 **
asspread4	0.0001	0.0001	-0.0002 *	-0.0001	0.0004 *	0.0003 ***
asbb4	0.0001	0.0001	-0.0003 *	-0.0002	0.0006 *	0.0003 **
iibull	0.0004 *	0.0001	0.0005 ***	0.0001	0.0008	0.0002
iibear	-0.0004 **	-0.0003 **	-0.0001	-0.0002	-0.0015 ***	-0.0005 **
iicorr	0.0003	0.0005 **	-0.0004	0.0004	0.0010	0.0004
iispread	0.0002 **	0.0001	0.0002	0.0001	0.0007 **	0.0002 *
iibb	0.0004 **	0.0002 *	0.0002	0.0002	0.0011 ***	0.0004 *
iibull4	-0.0001	0.0001	0.0002	0.0002	-0.0004	0.0002
iibear4	-0.0001	-0.0003 **	0.0000	-0.0003	-0.0003	-0.0006 **
iicorr4	0.0003	0.0005 **	-0.0004	0.0004	0.0011	0.0005
iispread4	0.0000	0.0001 *	0.0001	0.0001	0.0000	0.0002
iibb4	0.0000	0.0002 **	0.0001	0.0002	0.0001	0.0004 *
sf2raw	-0.0057	-0.0020	-0.0071	-0.0107 **	-0.0067	-0.0017
sf2	-0.0068	-0.0018	-0.0113 *	-0.0112 **	-0.0101	-0.0027

*, **, *** = Significant at 90%, 95%, or 99%

Table 104. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Growth Opportunities, EF/A, High-Mid

High - Mid	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0001	-0.0002	-0.0002	-0.0002	0.0000
aabond	0.0008	0.0007 *	0.0007	0.0008 *	0.0024	0.0006
aacash	0.0000	0.0000	0.0001	0.0002	-0.0001	-0.0001
aaspread	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	0.0000
asbull	0.0008 ***	0.0002	0.0002	0.0001	0.0013 ***	0.0003 *
asbear	-0.0007 ***	-0.0001	-0.0001	0.0003 *	-0.0012 ***	-0.0003
asneut	-0.0007 **	-0.0003	-0.0002	-0.0005 **	-0.0012 **	-0.0003
asspread	0.0004 ***	0.0001	0.0001	-0.0001	0.0007 ***	0.0002 *
asbb	0.0006 ***	0.0001	0.0001	-0.0001	0.0010 ***	0.0003 *
asbull4	0.0006 **	0.0004 ***	0.0002	0.0001	0.0013 ***	0.0008 ***
asbear4	-0.0003	-0.0002	-0.0001	0.0000	-0.0007	-0.0005 *
asneut4	-0.0008 **	-0.0005 **	-0.0001	-0.0003	-0.0016 **	-0.0006 *
asspread4	0.0003 **	0.0002 **	0.0001	0.0000	0.0006 ***	0.0004 ***
asbb4	0.0003 *	0.0003 **	0.0001	0.0000	0.0008 **	0.0006 ***
iibull	0.0006 **	0.0001	0.0007 ***	0.0001	0.0012 **	0.0005
iibear	-0.0007 ***	-0.0004 **	-0.0005 **	-0.0004	-0.0020 ***	-0.0008 ***
iicorr	0.0006	0.0007 **	0.0001	0.0006 **	0.0011	0.0003
iispread	0.0004 ***	0.0002	0.0003 ***	0.0001	0.0009 ***	0.0004 **
iibb	0.0006 ***	0.0003 *	0.0005 ***	0.0002	0.0015 ***	0.0006 ***
iibull4	0.0001	0.0002	0.0006 **	0.0002	0.0001	0.0006 *
iibear4	-0.0003	-0.0004 ***	-0.0003 *	-0.0003	-0.0008	-0.0009 ***
iicorr4	0.0005	0.0006 **	0.0000	0.0005	0.0012	0.0004
iispread4	0.0001	0.0002 **	0.0002 **	0.0002	0.0002	0.0004 ***
iibb4	0.0002	0.0003 **	0.0004 *	0.0003	0.0004	0.0007 ***
sf2raw	-0.0059	-0.0025	-0.0057	-0.0026	-0.0065	-0.0021
sf2	-0.0065	-0.0031	-0.0081	-0.0049	-0.0091	-0.0032

*, **, *** = Significant at 90%, 95%, or 99%

Table 105. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Distress, EF/A, Mid-Low

Mid - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0001	0.0000	-0.0003	-0.0002	0.0000	-0.0001
aabond	-0.0002	-0.0004	-0.0001	0.0001	-0.0003	-0.0003
aacash	0.0002	0.0002	0.0005 *	0.0004	0.0000	0.0002
aaspread	0.0000	0.0000	-0.0001	-0.0001	0.0000	0.0000
asbull	-0.0002 ***	-0.0001	-0.0003 **	-0.0003 **	-0.0001 *	-0.0001
asbear	0.0002 ***	0.0001	0.0003 **	0.0001	0.0002 *	0.0001
asneut	0.0001	0.0000	0.0002	0.0004 **	0.0001	0.0000
asspread	-0.0001 ***	-0.0001	-0.0002 **	-0.0001	-0.0001 **	-0.0001
asbb	-0.0002 ***	-0.0001	-0.0002 **	-0.0001	-0.0001 **	-0.0001
asbull4	-0.0003 ***	-0.0002	-0.0005 ***	-0.0003 **	-0.0004 ***	-0.0003 *
asbear4	0.0003 ***	0.0002 *	0.0005 **	0.0002	0.0003 **	0.0003 *
asneut4	0.0002 *	0.0000	0.0003	0.0004 *	0.0003	0.0001
asspread4	-0.0002 ***	-0.0001 *	-0.0003 ***	-0.0002 *	-0.0002 ***	-0.0002 **
asbb4	-0.0003 ***	-0.0002 *	-0.0004 ***	-0.0002	-0.0003 ***	-0.0002 **
iibull	-0.0002	0.0000	-0.0002	0.0000	-0.0004 **	-0.0003
iibear	0.0002 **	0.0001	0.0004 *	0.0001	0.0004 **	0.0002
iicorr	-0.0003	-0.0002	-0.0005 *	-0.0002	0.0000	0.0001
iispread	-0.0001 **	0.0000	-0.0002	0.0000	-0.0002 **	-0.0002
iibb	-0.0002 **	-0.0001	-0.0003	-0.0001	-0.0003 **	-0.0002
iibull4	-0.0002 **	-0.0001	-0.0004	0.0000	-0.0004 **	-0.0004 **
iibear4	0.0002 **	0.0001	0.0003 *	0.0001	0.0004 ***	0.0003 **
iicorr4	-0.0002	-0.0001	-0.0003	-0.0001	0.0000	0.0001
iispread4	-0.0001 **	-0.0001	-0.0002 *	0.0000	-0.0002 ***	-0.0002 **
iibb4	-0.0002 **	-0.0001	-0.0003 *	0.0000	-0.0004 ***	-0.0003 **
sf2raw	0.0002	0.0006	-0.0015	-0.0074	-0.0002	0.0004
sf2	-0.0001	0.0014	-0.0031	-0.0068	-0.0010	0.0003

*, **, *** = Significant at 90%, 95%, or 99%

Table 106. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Growth Opportunities and Distress, Sales Growth, High-Low

High - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0004 ***	-0.0003 *	-0.0004 *	-0.0003	-0.0005 *	-0.0004
aabond	0.0007 *	0.0003	0.0003	0.0006	0.0015	0.0003
aacash	0.0006 ***	0.0005 **	0.0006 *	0.0003	0.0004	0.0005
aaspread	-0.0002 ***	-0.0002 **	-0.0002 *	-0.0001	-0.0002 *	-0.0002
asbull	0.0001	-0.0002 **	-0.0003 *	-0.0004 **	0.0004 *	-0.0001
asbear	0.0000	0.0002 *	0.0003	0.0002	-0.0003	0.0002
asneut	-0.0001	0.0001	0.0002	0.0003 *	-0.0005 *	-0.0001
asspread	0.0000	-0.0001 **	-0.0002	-0.0002 **	0.0002	-0.0001
asbb	0.0000	-0.0002 **	-0.0002 *	-0.0002 **	0.0003	-0.0001
asbull4	-0.0003	-0.0002	-0.0006 ***	-0.0004 **	0.0001	-0.0001
asbear4	0.0005 **	0.0004 **	0.0006 *	0.0003	0.0003	0.0004
asneut4	0.0000	-0.0001	0.0005 *	0.0003	-0.0006	-0.0004
asspread4	-0.0002 *	-0.0002 **	-0.0004 **	-0.0002 **	0.0000	-0.0001
asbb4	-0.0003 **	-0.0003 **	-0.0005 ***	-0.0003 **	0.0000	-0.0002
iibull	-0.0001	-0.0003 *	0.0003	-0.0001	-0.0003	-0.0006 **
iibear	0.0001	0.0001	0.0003	0.0001	-0.0005	-0.0001
iicorr	0.0000	0.0003	-0.0011 ***	-0.0002	0.0013 **	0.0009 **
iispread	-0.0001	-0.0001	0.0000	-0.0001	0.0001	-0.0002
iibb	-0.0001	-0.0001	-0.0001	-0.0001	0.0002	-0.0002
iibull4	-0.0006 ***	-0.0004 **	-0.0002	-0.0001	-0.0010 **	-0.0007 **
iibear4	0.0004 **	0.0001	0.0004 *	0.0000	0.0003	0.0001
iicorr4	0.0002	0.0004	-0.0008 *	0.0000	0.0013 **	0.0010 ***
iispread4	-0.0003 ***	-0.0001 *	-0.0002	0.0000	-0.0004 *	-0.0003
iibb4	-0.0004 ***	-0.0002	-0.0003	0.0000	-0.0005	-0.0003
sf2raw	-0.0039	-0.0006	-0.0061	-0.0083	-0.0024	0.0007
sf2	-0.0060	-0.0011	-0.0109	-0.0077	-0.0054	0.0003

*, **, *** = Significant at 90%, 95%, or 99%

Table 107. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Growth Opportunities, Sales Growth, High-Mid

High - Mid	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0001	-0.0002	-0.0001	-0.0002	0.0000
aabond	0.0008	0.0005	0.0006	0.0005	0.0022	0.0003
aacash	0.0001	0.0000	0.0001	0.0001	-0.0001	0.0000
aaspread	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	0.0000
asbull	0.0007 ***	0.0001	0.0002	0.0001	0.0012 ***	0.0002
asbear	-0.0007 ***	-0.0001	-0.0002	0.0000	-0.0011 ***	-0.0002
asneut	-0.0005 **	-0.0002	-0.0001	-0.0002	-0.0011 **	-0.0002
asspread	0.0004 ***	0.0001	0.0001	0.0000	0.0006 ***	0.0001
asbb	0.0005 ***	0.0001	0.0001	0.0000	0.0010 ***	0.0002
asbull4	0.0005 **	0.0003 ***	0.0001	0.0001	0.0011 ***	0.0007 ***
asbear4	-0.0003	-0.0002	-0.0001	-0.0001	-0.0006	-0.0003
asneut4	-0.0007 *	-0.0004 **	0.0000	-0.0002	-0.0014 **	-0.0006 **
asspread4	0.0002 *	0.0002 **	0.0001	0.0001	0.0006 **	0.0003 ***
asbb4	0.0003	0.0002 **	0.0000	0.0001	0.0007 **	0.0004 ***
iibull	0.0006 **	0.0000	0.0009 ***	0.0002	0.0010 **	0.0002
iibear	-0.0006 ***	-0.0002	-0.0005 **	-0.0002	-0.0015 ***	-0.0003
iicorr	0.0002	0.0003	-0.0003	0.0001	0.0007	0.0001
iispread	0.0003 ***	0.0001	0.0004 ***	0.0001	0.0007 **	0.0002
iibb	0.0005 ***	0.0001	0.0006 ***	0.0002	0.0012 ***	0.0003
iibull4	0.0001	0.0001	0.0006 **	0.0002	-0.0001	0.0003
iibear4	-0.0001	-0.0002 *	-0.0002	-0.0002	-0.0004	-0.0004
iicorr4	0.0002	0.0003	-0.0004	0.0001	0.0008	0.0001
iispread4	0.0001	0.0001	0.0002	0.0001	0.0001	0.0002
iibb4	0.0001	0.0002	0.0003	0.0002	0.0002	0.0004 *
sf2raw	-0.0066	-0.0024	-0.0085	-0.0017	-0.0065	-0.0018
sf2	-0.0068	-0.0024	-0.0108	-0.0022	-0.0088	-0.0021

*, **, *** = Significant at 90%, 95%, or 99%

Table 108. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, Distress, Sales Growth, Mid-Low

Mid - Low	Full Time Period		Sub Period 1		Sub Period 2	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
aastock	-0.0002	-0.0002	-0.0002	-0.0001	-0.0003	-0.0004
aabond	0.0000	-0.0002	-0.0003	0.0001	-0.0006	0.0001
aacash	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005
aaspread	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0002
asbull	-0.0006 ***	-0.0004 **	-0.0005 ***	-0.0004 **	-0.0008 ***	-0.0003 *
asbear	0.0007 ***	0.0003 *	0.0005 ***	0.0002	0.0008 ***	0.0004
asneut	0.0004 **	0.0002	0.0003	0.0005 **	0.0006 *	0.0001
asspread	-0.0004 ***	-0.0002 **	-0.0003 ***	-0.0002 *	-0.0004 ***	-0.0002
asbb	-0.0005 ***	-0.0003 **	-0.0004 ***	-0.0003 *	-0.0007 ***	-0.0003
asbull4	-0.0007 ***	-0.0006 ***	-0.0007 ***	-0.0005 **	-0.0010 ***	-0.0007 **
asbear4	0.0007 ***	0.0006 **	0.0006 ***	0.0004	0.0009 ***	0.0007 **
asneut4	0.0006 **	0.0003	0.0005	0.0005 *	0.0008 *	0.0003
asspread4	-0.0004 ***	-0.0003 ***	-0.0004 ***	-0.0003 *	-0.0006 ***	-0.0005 ***
asbb4	-0.0006 ***	-0.0005 ***	-0.0005 ***	-0.0003 *	-0.0008 ***	-0.0006 ***
iibull	-0.0007 ***	-0.0003	-0.0006 **	-0.0003	-0.0013 ***	-0.0008 **
iibear	0.0007 ***	0.0003	0.0007 ***	0.0004	0.0011 ***	0.0002
iicorr	-0.0002	0.0000	-0.0008 **	-0.0003	0.0005	0.0008
iispread	-0.0004 ***	-0.0002 *	-0.0004 ***	-0.0002	-0.0007 ***	-0.0003 *
iibb	-0.0006 ***	-0.0003	-0.0006 ***	-0.0003	-0.0010 ***	-0.0005
iibull4	-0.0007 ***	-0.0005 **	-0.0008 ***	-0.0002	-0.0009 **	-0.0011 ***
iibear4	0.0005 ***	0.0004 *	0.0006 ***	0.0002	0.0007 *	0.0005
iicorr4	0.0001	0.0002	-0.0004	-0.0001	0.0006	0.0009 *
iispread4	-0.0003 ***	-0.0002 **	-0.0004 ***	-0.0001	-0.0005 **	-0.0005 ***
iibb4	-0.0005 ***	-0.0003 **	-0.0006 ***	-0.0002	-0.0007 **	-0.0007 **
sf2raw	0.0027	0.0015	0.0022	-0.0063	0.0043	0.0023
sf2	0.0008	0.0015	-0.0003	-0.0055	0.0038	0.0022

*, **, *** = Significant at 90%, 95%, or 99%

Table 109. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Size and Age

High-Low	Size		Age	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	-0.0007	-0.0003	-0.0008	-0.0004
nyrinsa	-0.0018 **	-0.0016 *	-0.0011	-0.0009 *
ncrinsa	-0.0007	-0.0002	-0.0005	0.0001
ndiinsa	-0.0006	-0.0008	-0.0004	0.0000
nvalinda	-0.0012	-0.0007	-0.0024 **	-0.0011 **
nyrinda	-0.0032 **	-0.0027 **	-0.0021	-0.0013
ncrinda	-0.0013	-0.0006	-0.0006	0.0000
ndiinda	-0.0016	-0.0006	-0.0005	0.0005

*, **, *** = Significant at 90%, 95%, or 99%

Table 110. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Idiosyncratic Risk

High to Low

	Sigma		CAPM Sigma		Four Factor Sigma	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	0.0013	0.0005	0.0013	0.0006 *	0.0012	0.0006
nyrinsa	0.0020 *	0.0014 **	0.0019 *	0.0013 **	0.0017	0.0013 **
ncrinsa	0.0012	0.0001	0.0011	0.0001	0.0010	0.0001
ndiinsa	0.0006	0.0003	0.0004	0.0002	0.0005	0.0002
nvalinda	0.0029 *	0.0012	0.0027 *	0.0012 *	0.0026 *	0.0012 *
nyrinda	0.0031	0.0014	0.0030 *	0.0014	0.0028 *	0.0014
ncrinda	0.0015	-0.0001	0.0015	0.0001	0.0012	0.0000
ndiinda	0.0017	-0.0009	0.0016	-0.0009	0.0012	-0.0010

*, **, *** = Significant at 90%, 95%, or 99%

Table 111. Regressions of Long-Short Portfolio Returns on AAII, II, and BW Sentiment, March 2001 to December 2005, Momentum

High-Low

Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML
nvalinsa	-0.0006	0.0003
nyrinsa	-0.0002	-0.0002
ncrinsa	0.0002	0.0011
ndiinsa	0.0003	0.0001
nvalinda	-0.0023	-0.0006
nyrinda	-0.0020	-0.0017
ncrinda	-0.0004	0.0007
ndiinda	-0.0012	-0.0008

*, **, *** = Significant at 90%, 95%, or 99%

Table 112. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Profitability

High-Low

	Earnings		Positive Return on Equity	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	-0.0006	-0.0005	-0.0011 **	-0.0007 **
nyrinsa	-0.0018 **	-0.0016 ***	-0.0017 **	-0.0015 **
ncrinsa	-0.0005	-0.0001	-0.0008	-0.0002
ndiinsa	-0.0006	-0.0001	-0.0001	0.0001
nvalinda	-0.0017	-0.0010 *	-0.0025 **	-0.0015 **
nyrinda	-0.0032 **	-0.0022 **	-0.0028 **	-0.0020 *
ncrinda	-0.0007	-0.0001	-0.0010	-0.0003
ndiinda	-0.0009	0.0006	-0.0006	0.0007

*, **, *** = Significant at 90%, 95%, or 99%

Table 113. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Dividend, Repurchase, and Issue Policy

High-Low

	Dividend Yield		Repurchases Yield		Payout Yield	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	-0.0011 *	-0.0006 *	-0.0005 ***	-0.0005 **	-0.0007 *	-0.0004 *
nyrinsa	-0.0012	-0.0010 *	-0.0004	-0.0004	-0.0011	-0.0010 **
ncrinsa	-0.0007	-0.0001	-0.0004 **	-0.0003	-0.0005	-0.0001
ndiinsa	-0.0002	0.0001	0.0001	0.0002	-0.0003	-0.0001
nvalinda	-0.0026 **	-0.0011 *	-0.0006	-0.0004	-0.0016 *	-0.0008 *
nyrinda	-0.0020	-0.0013	-0.0004	-0.0001	-0.0017 *	-0.0012
ncrinda	-0.0009	-0.0002	-0.0006	-0.0004	-0.0005	0.0000
ndiinda	-0.0007	0.0005	0.0002	0.0006	-0.0001	0.0008

	Issue Yield		Net Payout Yield	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	0.0007	0.0001	-0.0013 *	-0.0007 **
nyrinsa	-0.0004	-0.0005	-0.0007	-0.0005
ncrinsa	0.0003	-0.0002	-0.0008	-0.0001
ndiinsa	-0.0001	-0.0002	0.0001	0.0002
nvalinda	0.0017 *	0.0003	-0.0026 **	-0.0012 **
nyrinda	-0.0002	-0.0007	-0.0014	-0.0005
ncrinda	0.0002	-0.0004	-0.0010	-0.0001
ndiinda	-0.0004	-0.0011	0.0000	0.0012

*, **, *** = Significant at 90%, 95%, or 99%

Table 114. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Tangibility

High-Low

	PPE/A		RD/A	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	-0.0005	0.0001	0.0006	-0.0001
nyrinsa	-0.0001	-0.0001	0.0003	0.0004
ncrinsa	0.0000	0.0005	0.0000	-0.0006 **
ndiinsa	-0.0004	-0.0002	0.0005	0.0004
nvalinda	-0.0020 *	-0.0004	0.0024 **	0.0008
nyrinda	-0.0004	-0.0004	0.0012	0.0011
ncrinda	-0.0003	0.0001	-0.0001	-0.0005
ndiinda	0.0000	-0.0001	-0.0002	-0.0002

*, **, *** = Significant at 90%, 95%, or 99%

Table 115. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Growth Opportunities and Distress

	BE/ME High to Low		EF/A High to Low		Sales Growth High to Low	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	0.0004	0.0003	0.0008	0.0003	0.0004	0.0001
nyrinsa	0.0003	0.0003	-0.0006	-0.0006 *	-0.0015 ***	-0.0013 ***
ncrinsa	0.0007	0.0007	0.0004	0.0000	0.0001	0.0000
ndiinsa	-0.0007	-0.0009	-0.0003	-0.0003	-0.0004	-0.0004
nvalinda	0.0002	-0.0003	0.0019 **	0.0006	0.0011	0.0003
nyrinda	0.0008	0.0008	-0.0012	-0.0013 **	-0.0026 ***	-0.0022 ***
ncrinda	0.0017 *	0.0018 **	0.0007	0.0004	0.0001	0.0001
ndiinda	0.0025 ***	0.0025 ***	-0.0001	-0.0003	-0.0008	-0.0002

*, **, *** = Significant at 90%, 95%, or 99%

Table 116. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Growth Opportunities

	BE/ME Mid to Low		EF/A High to Mid		Sales Growth High to Mid	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	-0.0002	-0.0001	0.0009	0.0005	0.0008	0.0003
nyrinsa	-0.0002	-0.0002	-0.0004	-0.0004	-0.0003	-0.0004
ncrinsa	0.0000	0.0001	0.0005	0.0001	0.0005	0.0001
ndiinsa	-0.0001	-0.0002	-0.0004	-0.0006	-0.0003	-0.0003
nvalinda	-0.0006	-0.0004	0.0022 **	0.0009 **	0.0022 **	0.0010 **
nyrinda	0.0001	0.0001	-0.0004	-0.0007	-0.0005	-0.0009
ncrinda	0.0004	0.0005	0.0006	0.0002	0.0006	0.0001
ndiinda	0.0012 ***	0.0014 ***	-0.0002	-0.0008	-0.0002	-0.0008

*, **, *** = Significant at 90%, 95%, or 99%

Table 117. Regressions of Long-Short Portfolio Returns on ICF Sentiment, March 2001 to December 2005, Distress

	BE/ME High to Medium		EF/A Mid to Low		Sales Growth Mid to Low	
Sentiment Variable	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM	Sentiment b_1	Sentiment b_1 controlling for RMRF, SMB, HML, MOM
nvalinsa	0.0006 *	0.0004	-0.0001	-0.0002	-0.0004	-0.0002
nyrinsa	0.0006	0.0006	-0.0003	-0.0002	-0.0012 **	-0.0009 **
ncrinsa	0.0006	0.0005	-0.0001	-0.0001	-0.0004	-0.0001
ndiinsa	-0.0006	-0.0007	0.0001	0.0003	-0.0001	-0.0001
nvalinda	0.0008	0.0002	-0.0003	-0.0004 *	-0.0011	-0.0007
nyrinda	0.0008	0.0007	-0.0008 **	-0.0006	-0.0020 **	-0.0014
ncrinda	0.0014 *	0.0013 **	0.0001	0.0001	-0.0005	0.0001
ndiinda	0.0013 *	0.0011 *	0.0001	0.0004	-0.0006	0.0006

*, **, *** = Significant at 90%, 95%, or 99%

Curriculum Vitae

Darryl P. Samsell

Old Dominion University
College of Business & Public Administration
Norfolk, VA 23529
dsamsell@odu.edu

Research Interests

Investments; investor behavior, market efficiency
Corporate finance; governance and incentives
International finance; hedging and risk management

Work Experience

Senior Director of Financial Planning/Control Beverly Enterprises	1990 - 1991
Director of Financial Systems Beverly Enterprises	1987 - 1989
Director of Accounting Beverly Enterprises	1985 - 1986
Manager of Auditing & Accounting Ernst & Young	1980 - 1984

Teaching Experience

Assistant Professor – Department of Business Management Guilford College	Fall 2007
Instructor – Financial Management Old Dominion University	2005 - 2007
Teaching assistant, Old Dominion University	2004 - 2005

Education

Ph.D., Business Administration (with international emphasis), Finance Curriculum Old Dominion University	2007
M.BA., Finance Concentration Old Dominion University	2003
B.BA., Accounting, Magna Cum Laude James Madison University	1980