

# **Investing in Morningstar Five-Star Stock Upgrades: Price and Style Effects**

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*We study the impact of buy recommendations derived from Morningstar 5-Star stock upgrades. Our results show that Morningstar's recommendations follow a sudden abnormal decline in stock price and do not impact share prices of the companies mentioned. The upgrades are followed by a persistent positive abnormal return. Returns for a portfolio of Morningstar recommendations are significantly above the market return, but are not statistically different from zero when adjusted for risk. Factor analysis suggests that these returns are driven by beta exposure, smaller stocks, and negative momentum effects. Overall performance is average after adjusting for factor exposures.*

## **INTRODUCTION**

Investors face a daily barrage of information and investment advice from a multitude of sources. These range from the financial press, to designated financial advisors, e.g., CFP, CFA, CPA, CLU, Ph.D., to financial newsletters, websites, and blogs, to investment programming on television, to research presented in academic journals. Here we examine the market impact and portfolio performance characteristics of a set of stock recommendations provided by the popular investment giant, Morningstar, Inc. The results add to the literature on information effects of analysts' recommendations and studies of equity recommendations disseminated in investment newsletters. They provide insights into the performance of a popular and established provider of investment data, analysis, and advice. The results should be of interest to researchers in these areas and to investors seeking to develop an active, or alpha-generating, investment strategy.

Morningstar is a well-established company providing a broad spectrum of independent investment advice to individual investors and others. Their advice has evolved from a rating system of 1 to 5 stars applied to mutual funds to similar analysis for individual stocks. Our objective in this paper is to better understand the impact and nature of Morningstar's recommendations captured by stocks moving into its top 5-star rating. We examine the market impact of a large sample of upgrades to a 5-star rating, spanning the period from June 9, 2009 through December 31, 2011. We also construct several portfolios from these 5-star upgrades over the same period and examine the risk-adjusted returns on these portfolios.

Our results provide information of relevance to investors seeking to develop an alpha-generating investment strategy by following Morningstar's recommendations. The results differ from many prior studies of analysts' information effects in that the Morningstar recommendations do not materially impact

equity prices when announced, but do result in positive abnormal returns subsequent to the recommendation. Using portfolio methods to control for risk yields results consistent with prior studies of analysts' recommendations and financial newsletter performance, in that we do not find evidence of significant positive alphas. The 5-star stocks have above average market risk exposure, appear to be smaller cap stocks, and have experienced price declines prior to their upgrade to 5-star status. Our results also show that value stocks are more likely to attain multiple 5-star upgrades.

The remainder of the paper proceeds as follows. Section 2 provides a summary of Morningstar's array of services and a review of the literature on the information effects of analysts' recommendations and impact of financial newsletters. Section 3 discusses the data and methods employed, and Section 4 presents our results. Section 5 concludes the paper.

## **MORNINGSTAR AND ANALYSTS INFORMATION EFFECTS**

### **Morningstar**

Morningstar was founded in 1984 by Joe Mansueto to provide individual investors with mutual fund analysis and commentary. Its first product was *The Mutual Fund Sourcebook*<sup>™</sup>, a quarterly publication containing performance data, portfolio holdings, and other information on approximately 400 mutual funds. Today, Morningstar claims to be one of the most recognized and trusted names in the investment industry, serving more than 7.4 million individual investors, 270,000 financial advisors, and 4,300 institutional clients.

On its website Morningstar.com, Morningstar, Inc. touts itself as a "leading provider of independent investment research in North America, Europe, Australia, and Asia; offering an extensive line of products and services for individuals, financial advisors, and institutions." The company provides data on more than 380,000 investments, including stocks, mutual funds and other types of funds, along with real-time global market data on more than eight million equities, indexes, futures, options, commodities, precious metals, foreign exchange, and Treasury markets. Morningstar also offers investment management services, with in excess of \$190 billion assets under management or advisement. They have operations in 27 countries.

Morningstar offers products and services to individual investors and to advisors and institutions. Much of their service is targeted toward providing independent information and advice to individual investors. Their website states that "individuals use Morningstar to make educated investment decisions. These investors want all the pertinent facts, as well as the assurance that their information source is completely independent." The company lists various attributes that relate to its ability to deliver world-class investment research and services. These attributes include, investor focus (maintaining an independent view and designing products to help investors make well-informed investment decisions); depth, breadth, and accuracy of data (employing 270 analysts worldwide and providing information on approximately 330,000 investment offerings); innovative, proprietary investment tools (e.g., Morningstar Rating<sup>™</sup>, Morningstar Style Box<sup>™</sup>, Morningstar Ownership Zone<sup>™</sup>, and a proprietary sector classification system for stocks); and finally, research and technology expertise (striving to rapidly adopt new technology and providing a flexible technology platform allowing products to work together). The primary tool for individual investors is Morningstar.com<sup>®</sup>, which Morningstar claims consistently ranks among the best investment sites on the web.

In 1985, shortly after its founding, Morningstar released its now famous Morningstar Rating<sup>™</sup> for mutual funds, using the familiar rating of from one to five stars. In 1988, the company expanded into analysis of individual stocks, launching its Morningstar<sup>®</sup> StockInvestor<sup>™</sup> newsletter. In 2001, Morningstar launched its Morningstar rating for individual stocks. Similar to its ratings of mutual funds, the Morningstar rating for stocks assigns each stock a rating of from one to five stars. A stock's rating is driven by its level of expected return, with 5-star stocks being those expected to offer investors returns well above a company's cost of capital.

## **Information Effects of Analysts' Recommendations**

There is an extensive literature examining the reaction of security prices to analysts' recommendations; particularly recommendations disseminated by the business and financial media. Most analysts' recommendations (first-hand information disclosed to the market for the first time) are quickly reflected in stock prices through client actions before the mass investing public comes to know about the opinions (second-hand information). Thus, from the perspective of the average investor, analyst opinions qualify as second-hand information.

Several prior studies document the impact of analyst's recommendations on security prices; see for example, (Davies and Canes, 1978), (Groth, Lewellen, Schlarbaum, and Lease, 1979), (Copeland and Mayers, 1982), (Bjerring, Lakonishok, and Vermaelen, 1983), (Stickel, 1985), (Glascock, Henderson, and Martin, 1986), (Pari, 1987), (Liu, Smith, and Syed, 1990), (Barber and Loeffler, 1993), (Stickel, 1995), (Trahan and Bolster, 1995), (Desai and Jain, 1995), (Walker and Hatfield, 1996), and (Liang, 1999), (Bolster and Trahan, 2009), and (Bolster, Trahan, and Venkateswaran, 2012). The announcement period abnormal returns documented in these studies range from 0.66 percent to 3.53 percent and are generally found to be short-lived, dissipating over the month following announcement. This is consistent with a price pressure hypothesis, whereby dissemination of second-hand information by an influential source induces temporary price pressure that quickly dissipates.

In the case of Morningstar, the company does not report any "hold for release" or non-public information; but rather reports conclusions inferred from independent analysis. Since Morningstar analysts are not employed by anyone else, it seems likely that their recommendations represent a new opinion from a neutral source that is released to the market. Relying on what is commonly referred to as the "mosaic theory" to define first-hand information; even a fresh analyst's opinion may be formulated based on elements that have been public for some time. Yet a talented analyst may be able to assemble information from public sources and generate a novel inference. Similar to information disseminated in financial newsletters, Morningstar's recommendations may be viewed more as first-hand information, possibly with some second-hand information characteristics. (Loviscek and Jordan, 2000) find weak evidence that building stock portfolios from the top holdings of equity mutual funds with five-star Morningstar ratings can outperform the S&P 500 index, but they conclude that the evidence is not strong enough to recommend the strategy.

Other studies of newsletter recommendations yield similar results. (Chandy, Peavy, and Reichenstein, 1993) find that following Value Line's Stock Highlight section provide abnormal returns that are at best short lived. (Graham and Harvey, 1996, 1997) examine the performance of 326 financial newsletter asset allocation strategies and conclude that the newsletters do not possess any superior information about future returns. (Metrick, 1999) studies recommendations from 153 investment newsletters and finds no evidence of superior performance. (Bolster and Trahan, 2009) and (Bolster, Trahan, and Venkateswaran, 2012) study stock recommendations by Jim Cramer on the CNBC television program *Mad Money*. They find that, while Cramer's recommendations do move the market, the effects are short-lived and the portfolio returns to the recommendations are not significant when adjusted for risk.

Given the continuing proliferation of investment advice disseminated in financial newsletters, adding to the scientific literature on the study of these newsletters provides value to both researchers and investors. Stock selections in the Morningstar 5-star upgrade reports provide an opportunity to study the impact of a large sample of recommendations from a well-known and credible source of investment advice.

## **DATA AND METHODOLOGY**

### **Morningstar Data**

Subscribers to the Premium Membership of Morninstar.com may opt to receive emails alerting them to stocks that became 5-star investments (Morningstar 5-Star Stock Updates). Morningstar analysts cover over 1,700 companies in more than 100 industries, including more than 85% of the Wilshire 5000 Index. Morningstar evaluates each company as a business and conducts a fundamental analysis valuation

considering how much capital a company invests and its return on capital, free cash flow, growth, and sources of competitive advantage and the likely fade in returns as competitive advantages erode over time. It examines each company using a discounted cash flow model and computes the value as the present value of the company's expected future free cash flows discounted at its cost of capital.

Morningstar analysts compare each company's fair value estimate to its market value and assign a rating of from one to five stars. Stocks trading at large discounts to fair value receive higher (4 or 5) star ratings, while those trading at large premiums to fair value estimates receive lower (1 or 2) star ratings. Stocks trading close to fair value receive 3-star ratings. Risk is also factored into the rating so that the greater the uncertainty of the stock, the greater its discount to fair value needs to be to earn a 5-star rating. A 5-star rating can be interpreted as a "consider buying" recommendation, i.e., the price of the stock is below the fair value by a sufficient margin to be purchased. Morningstar also advises individuals to consider their circumstances, including diversification, risk tolerance, and tax considerations.

Ratings are updated daily and therefore may change daily. Ratings can change due to: 1) a movement in the stock's price, 2) a change in the analyst's estimate of the stock's fair value, 3) a change in the analyst's assessment of a company's business risk, or 4) a combination of these factors. It should be noted that the Morningstar stock ratings are fundamentally different than the star ratings for mutual funds. The mutual fund ratings are descriptive, backward-looking, based on historical performance, strictly quantitative, calculated once a month, and rank funds according to a fixed distribution (i.e., only 10% of the funds in each category can receive 5-star ratings). The ratings for stocks are based on forward-looking estimates, adjusted for uncertainty, based on quantitative and qualitative inputs, calculated daily, and do not rank stocks according to a fixed distribution. (Dorsey, 2008) provides a more complete description of the Morningstar Rating for Stocks.

We develop our sample of Morningstar's recommendations through a Premium Membership to Morningstar.com, utilizing the 5-Star Update emails that are sent out whenever a stock is upgraded to a 5-star rating. We include the recommendations from June 9, 2009 through December 31, 2011 and develop a sample of 1,090 5-star upgrades. Emails announcing the upgrades are sent at 8:00 a.m. Chicago time. The event date is the date of the email. Occasionally, emails are sent on Saturday mornings and for these we consider the event date to be the following Monday, or Tuesday in the event of a Monday holiday. Daily stock returns are obtained from CRSP. We drop firms for which the required returns are not available on CRSP, leaving a sample of 1,056 recommendations for the event study and portfolio performance analysis.

### **Methodology: Impact of Buy and Sell Recommendations**

We use a two-step procedure to compute the average daily abnormal returns with stock price data from CRSP, following (Brown and Warner, 1985). First, we estimate the parameters of a single-factor market model for each firm. We use the returns from day -301 to day -46 to estimate each firm's alpha and beta coefficients. Second, we compute the excess return by subtracting a firm's expected daily return from its actual return. We calculate the cumulative abnormal returns by summing the abnormal returns over the periods from days -1 to -1, 0 to 0, 1 to 1, 0 to 1, -1 to 0, -30 to -1, 0 to 30, and 1 to 30; where day 0 represents 5-star upgrade email date.

### **Methodology: Portfolio Performance**

Morningstar's stock ratings are likely followed by a subset of the investing public. We presume most subscribers are individual investors. For the purposes of the 5-star upgrades, Morningstar does not represent itself as a portfolio manager but it clearly is picking stocks. Morningstar's effectiveness in this regard can best be examined by assembling the 5-star upgrades into a portfolio. The CRSP data we employ measures daily total returns for individual stocks using closing prices. We create a portfolio by investing \$1 in each 5-star stock at the close of the market on the day Morningstar releases the information. We believe the closing price incorporates any short-term information effects of the disclosure and better focuses the analysis on the continued performance of the portfolio.

We do not have data identifying an exit date representing demotion to 4-stars. However, it is clear that such events happen because many stocks have multiple 5-star upgrades, often over a brief period. We focus on a portfolio where we buy on every new upgrade announcement. This means our portfolio will frequently have multiple positions in an individual stock. We also maintain a 30 day holding period for each position. This reflects an assumption that stocks do not retain their 5-star status for long periods and focuses the portfolio on the most recent 5-star upgrades. While we focus on this construction methodology, we also provide summary results for a portfolio where only a single investment in a specific stock is allowed and another buy-and-hold portfolio where all positions are held until the end of 2011.

We then calculate the daily holding period returns for our portfolios beginning on June 10, 2009 and ending on December 30, 2011, a period of 647 days. Next we examine excess returns, or alpha, for the portfolios for the entire period and subperiods. Risk-adjusted performance is assessed using the 1-factor CAPM, the (Fama-French, 1993) 3-factor model and a 4-factor model.

In its simplest form, alpha can be defined as follows,

$$\alpha = \text{Actual return} - \text{Expected return} \quad (1)$$

The CAPM assumes a single risk factor, the market risk premium, and is represented in the following form:

$$R_{it} = R_{ft} + \beta_p(RM_t - R_{ft}), \quad (2)$$

where  $R_{it}$  is the return for Portfolio  $i$  on day  $t$ ,  
 $R_{ft}$  is the return on a portfolio of 30-day Treasury bills on day  $t$ ,  
 $RM_t$  is the return on a market cap weighted composite of NYSE and NASDAQ stocks,  
and  $\beta_p$  represents the systematic risk measure for the portfolio.

If we rearrange the terms, we can generate a regression equation:

$$R_{it} - R_{ft} = \alpha_i + \beta_i(RM_t - R_{ft}) + e_{it}. \quad (3)$$

Once we estimate values for  $\alpha_i$  and  $\beta_i$ , we can rearrange the terms again:

$$\alpha_i = R_{it} - [R_{ft} + \beta_i(RM_t - R_{ft})], \quad (4)$$

and  $\alpha_i$  becomes our estimate of Jensen's alpha, or abnormal performance.

Fama and French (1993) show that there are other factors effective at explaining return. Their 3-factor model is now considered the standard method for calculating risk-adjusted returns. This approach can be summarized as follows:

$$R_{it} - R_{ft} = \alpha_i + b_i(RM_t - R_{ft}) + s_iSMB_t + h_iHML_t + e_{it}. \quad (5)$$

In the equation,  $R_{it} - R_{ft}$  and  $RM_t - R_{ft}$  represent the day  $t$  excess return on the portfolio and the market respectively.  $SMB_t$  is the difference between returns for small cap and large cap, or "small minus big" securities during day  $t$ . The differential return between value stocks (high book-to-market) and growth stocks (low book-to-market) during day  $t$  is captured by  $HML_t$ . We estimate values for  $\alpha_i$ ,  $b_i$ ,  $s_i$ , and  $h_i$  using historical data. Analogous to the Jensen's alpha provided by a 1-factor model, our 3-factor alpha is simply the intercept, or  $\alpha_i$  term we have estimated.

Finally, we add a fourth factor, identified by (Carhart, 1997), to capture any momentum effects. This factor,  $UMD_t$ , represents the difference between the better and worse performing stocks, or “up minus down” for day  $t$ . The 4-factor model is:

$$R_{it} - R_{f_t} = \alpha_i + b_i(RM_t - R_{f_t}) + s_iSMB_t + h_iHML_t + u_iUMD_t + e_{it}. \quad (6)$$

Again, the intercept,  $\alpha_i$ , is our 4-factor alpha. Daily return estimates for factors,  $R_{f_t}$ ,  $RM_t$ ,  $SMB$ ,  $HML$ , and  $UMD$  are obtained from Kenneth French’s data library ([mba.tuck.dartmouth.edu/pages/faculty/ken.french](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french)).

## RESULTS

### Event Study Results

Our results in Table 1 show that Morningstar’s recommendations follow significant decreases in share prices of the companies that it upgrades. There is no evidence of the recommendations having an impact on the share prices on the day of announcement. The share prices increase subsequent to announcement of the Morningstar ratings changes. The abnormal returns for the buy recommendations are a negative and statistically significant -2.45% on the day prior to the recommendation, a statistically insignificant 0.06% on the day of the recommendation and a positive and statistically significant 0.24% on day +1. The returns are negative and significant for the -1 to 0 (-2.39%) and -30 to -1 (-5.81%) windows, suggesting that a decline in the prices of the stocks motivates the rating changes. The abnormal returns remain positive and significant for the 0 to 1, 0 to 30 and 1 to 30 post announcement windows at 0.30%, 2.57% and 2.51% respectively, suggesting increasing positive abnormal returns to these stocks after the ratings changes.

Table 1 also shows the results for each year of the sample—2009, 2010, and 2011. The results are generally quite robust for each period, with large, statistically significant negative abnormal returns on day -1 of -3.13%, -2.41%, and -2.25% for 2009, 2010, and 2011 respectively. Abnormal returns are also consistently negative and statistically significant for the pre-announcement periods and positive and statistically significant for the post-announcement periods. The only difference is that in 2009 for day 0, the abnormal return is positive (0.43%) and statistically significant and the return for day +1 (0.09%) is not statistically significant.

**TABLE 1**  
**EVENT STUDY RESULTS**

Announcement-period returns for 1,056 Morningstar 5-Star Upgrades made between June 9, 2009 and December 31, 2011, and for sub-periods 2009, 2010, and 2011. Day 0 is the day the upgrade is announced. Z-statistics are shown in parentheses.

	2009—2011	2009	2010	2011
Number of Observations	1,056	189	262	605
CAR -1,-1	-2.45% (-38.148) <sup>***</sup>	-3.13% (-11.913) <sup>***</sup>	-2.41% (-18.211) <sup>***</sup>	-2.25% (-31.757) <sup>***</sup>
CAR 0,0	0.06% (1.139)	0.43% (1.764) <sup>**</sup>	0.21% (0.934)	-0.13% (-0.096)
CAR 1,1	0.24% (4.509) <sup>***</sup>	0.09% (0.475)	0.27% (2.696) <sup>***</sup>	0.28% (3.917) <sup>***</sup>
CAR 0,1	0.30% (3.994) <sup>***</sup>	0.52% (1.583) <sup>*</sup>	0.49% (2.567) <sup>***</sup>	0.15% (2.702) <sup>***</sup>
CAR -1,0	-2.39% (-26.170) <sup>***</sup>	-2.69% (-7.177) <sup>***</sup>	-2.20% (-12.216) <sup>***</sup>	-2.38% (-22.524) <sup>***</sup>
CAR -30,-1	-5.81% (-16.498) <sup>***</sup>	-8.15% (-5.186) <sup>***</sup>	-3.73% (-5.701) <sup>***</sup>	-5.99% (-15.146) <sup>***</sup>
CAR 0,30	2.57% (9.290) <sup>***</sup>	3.83% (2.910) <sup>***</sup>	2.30% (3.607) <sup>***</sup>	2.29% (8.367) <sup>***</sup>
CAR 1,30	2.51% (9.241) <sup>***</sup>	3.40% (2.636) <sup>***</sup>	2.09% (3.496) <sup>***</sup>	2.42% (8.548) <sup>***</sup>

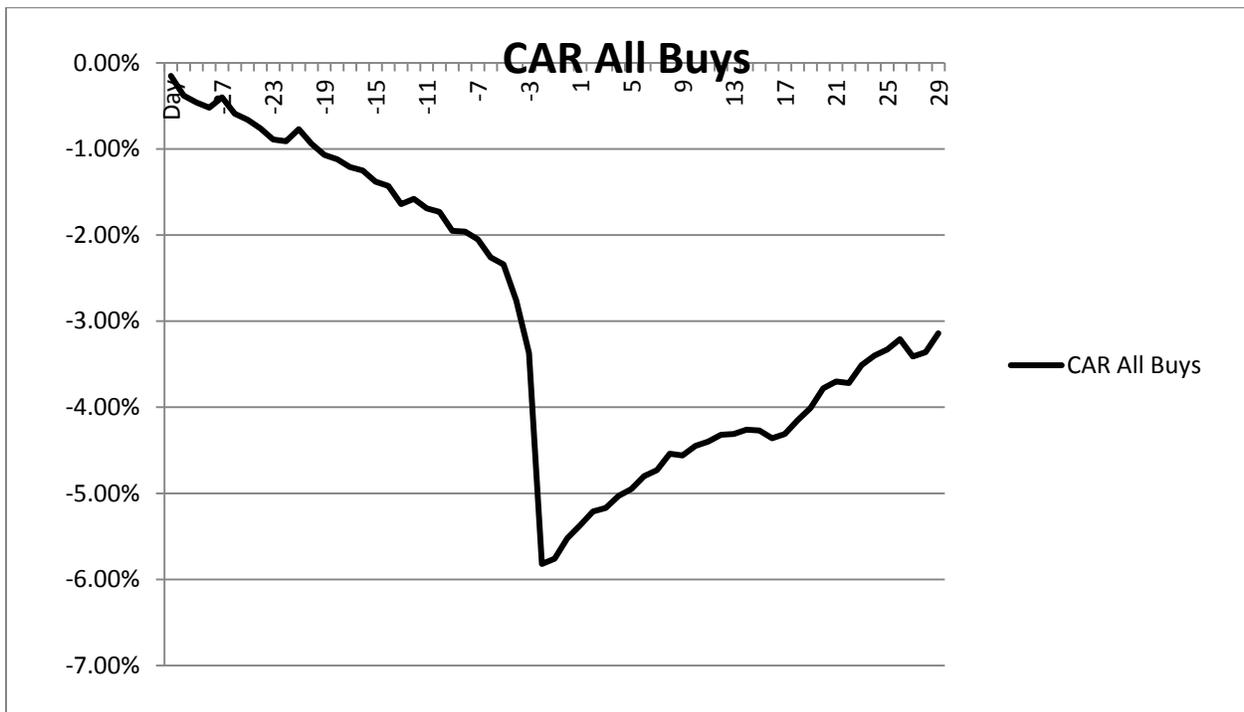
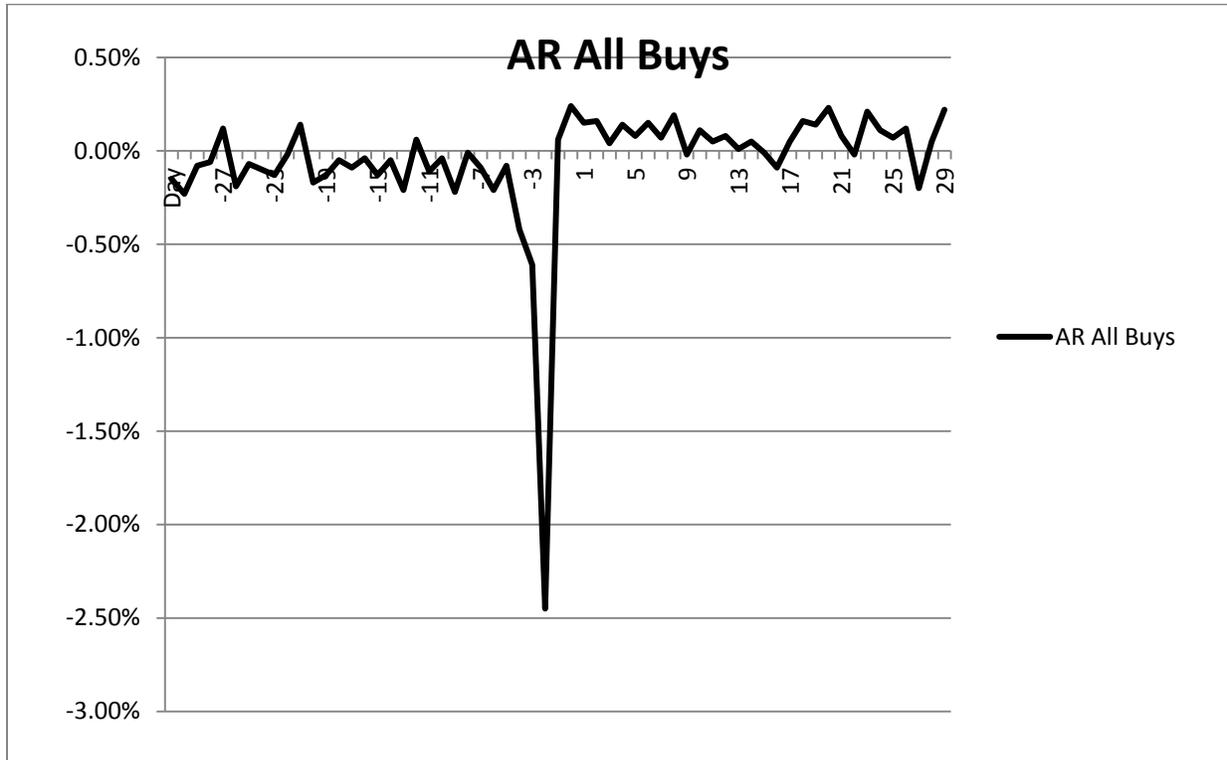
\*\*\*significant at the 1% level

\*\*significant at the 5% level

\*significant at the 10% level

**FIGURE 1**  
**EVENT STUDY RESULTS**

Daily abnormal returns (AR) and cumulative abnormal returns (CAR) for 1,056 Morningstar 5-Star Upgrades between June 9, 2009 and December 31, 2011. Day 0 is the day the upgrade is announced.



Overall, the event study results suggest that the Morningstar buy recommendations follow periods of negative abnormal returns, most notably after significant abnormal drops in share prices on the day prior to the announcement. There is no compelling evidence that the Morningstar announcements lead to any temporary or lasting revaluation of the companies recommended on the date of announcement. Finally, the results show that the recommended companies generally experience small positive abnormal returns on the day subsequent to the announcement and larger abnormal returns for the 30 days beyond the announcement. Figure 1 plots the daily abnormal returns and cumulative abnormal returns for +/- 30 days around the announcement date. Contrasting with the results of prior studies of second-hand information and price pressure effects (for example, Barber and Loeffler, 1993; Bolster and Trahan, 2009; Bolster, Trahan, and Venkateswaran, 2012), there are no positive abnormal returns associated with buy recommendations, which disappear in the month subsequent to the recommendations. For the Morningstar recommendations, the positive results subsequent to the announcement persist at a statistically significant level and they increase over the post-event period.

### **Portfolio Performance**

Our primary focus is on the portfolio constructed by investing \$1 in each new 5-star stock and holding that security for 30 trading days. We refer to this as Portfolio 1. The initial portfolio formed at the close of the market on June 9, 2009 contains three stocks. This number climbs to 37 within 7 trading days. The average number of holdings during the 647 day overall holding period is 48.7. The cumulative return for Portfolio 1 for the overall holding period is 59.08% versus 40.27% for our market proxy. At first glance, this outperformance seems impressive but we have not yet adjusted for market risk or other factors related to return. Cumulative performance for Portfolio 1, two additional portfolios, and the market index are shown in Figure 2.

**FIGURE 2**  
**PORTFOLIO PERFORMANCE**

Cumulative performance of three portfolios formed from Morningstar 5-star upgrades and a proxy for the stock market. Portfolio 1 is formed by investing \$1 in each unique five-star upgrade and holding the position for 30 days. Portfolio 2 is formed similarly but eliminates incidences requiring multiple investments in the same firm. Portfolio 3 is formed similarly to Portfolio 1 but all positions are held until December 30, 2011. The performance of a value weighted composite of NYSE and NASDAQ stock returns is shown for comparison.

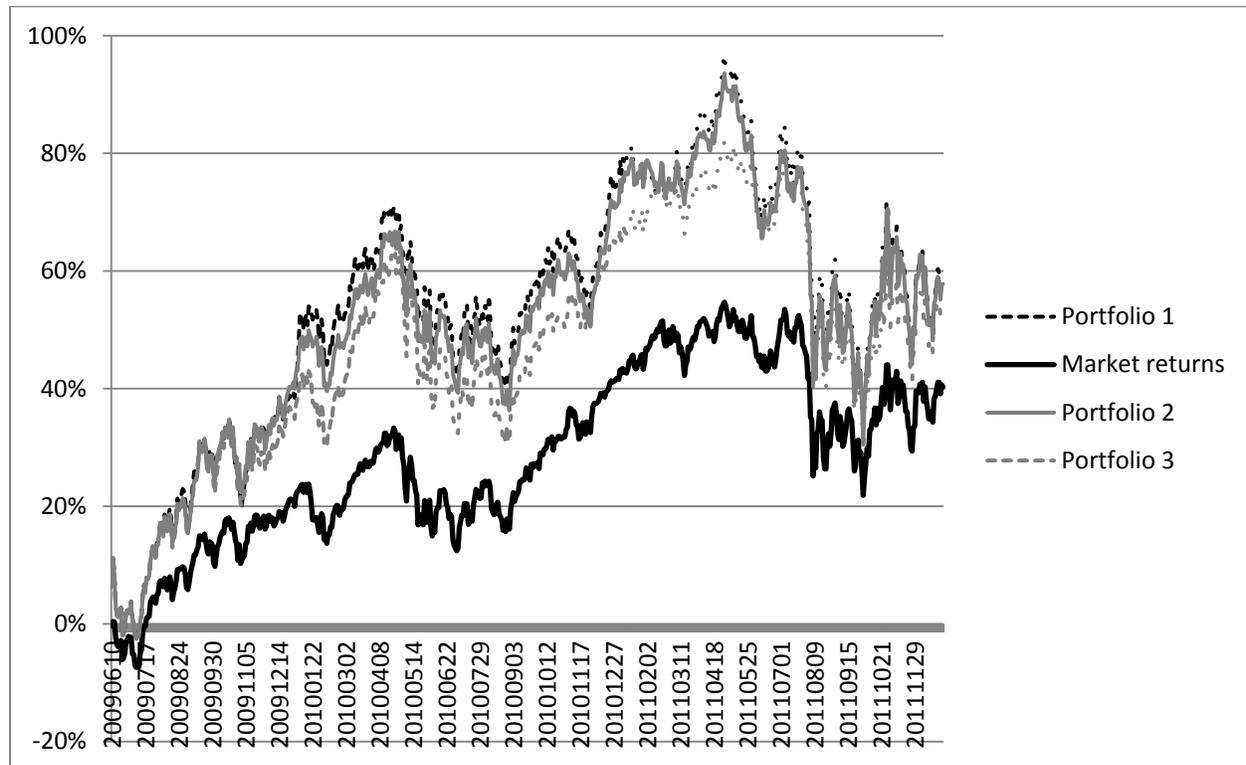


Table 2 provides regression results for Portfolio 1 using 1-, 3-, and 4-factor models. Panel A shows these results for the 647 day period. Estimated alphas for each these regressions are 0.0001, or 0.01% per day. None are significantly different from zero indicating that Portfolio 1 performs as expected when adjusting for market performance (RM-Rf), market capitalization (SMB), book-to-market (HML), and momentum (UMD) characteristics. There is no material abnormal performance.

How is this possible given the nearly 19% advantage in cumulative return? We estimate a beta of 1.24 for the 1-factor CAPM model. Hence, Portfolio 1 has materially more risk than the market. The 3-factor model also maintains a level of systematic risk that is significantly higher than the market. The significant positive coefficient for SMB shows a strong tilt toward smaller cap stocks. The HML coefficient is positive, but not at a statistically significant level. This suggests that Portfolio 1 does not materially favor value or growth stocks. Results from the 4-factor model are very similar to the 3-factor results. The HML coefficient is now negative but again, not significant. However, the momentum factor, UMD is negative and highly significant. This indicates that Portfolio 1 holds stocks that have not performed well during the period prior to their inclusion. Portfolio 1 is contrarian. This makes sense given the general description of Morningstar's stock rating methodology. Morningstar assigns 5-star ratings to

stocks trading at significant discounts to their proprietary valuation model. Presumably, these would be stocks with solid fundamentals but weakening market values.

**TABLE 2**  
**PORTFOLIO 1 RESULTS**

Results of regression analysis for 1, 3, and 4 factor Fama-French models for the full sample of dollar weighted returns. Returns are generated assuming \$1 is invested in each new buy recommendation at the closing price on the day following the upgrade to five stars. Securities remain in the portfolio for 30 days following the recommendation. If a specific stock is recommended while already in the portfolio, an additional \$1 is invested in that security. (T-statistics for two tailed tests are shown in parenthesis. All factors are tested for significant differences from 0 with the exception of the RM – Rf factor which is tested for significant differences from 1.)

**Panel A: Results for the entire sample, June 9, 2009 to December 30, 2011**

Factor	1-factor (CAPM)	3-factor	4-factor
$\alpha$	0.0001	0.0001	0.0001
	(0.42)	(0.43)	(0.56)
RM – Rf	1.2409	1.1412	1.1698
	(11.09)***	(4.90)***	(6.37)***
SMB		0.3570	0.3930
		(6.35)***	(7.58)***
HML		0.0641	-0.0795
		(1.09)	(-1.42)
UMD			-0.3859
			(-10.83)***
R-squared	0.835	0.844	0.868

**Panel B: Results for 2009**

Factor	1-factor (CAPM)	3-factor	4-factor
$\alpha$	0.0007	0.0007	0.0006
	(0.89)	(0.93)	(0.84)
RM – Rf	1.2822	1.1919	1.1749
	(4.38)***	(1.82)*	(1.70)*
SMB		0.2599	0.3245
		(1.76)*	(2.22)**
HML		0.0854	-0.0836
		(0.54)	(-0.50)
UMD			-0.2675
			(-2.82)***
R-squared	0.737	0.739	0.752

**Panel C: Results for 2010**

Factor	1-factor (CAPM)	3-factor	4-factor
$\alpha$	0.0003	0.0002	0.0002
	(0.70)	(0.53)	(0.57)
RM – Rf	1.0578	0.9557	1.0644
	(1.67)*	(-0.85)	(1.18)
SMB		0.3141	0.3984
		(3.89)***	(5.03)***
HML		0.1053	0.1837
		(0.97)	(1.76)*
UMD			-0.4369
			(-4.90)***
R-squared	0.788	0.799	0.816

**Panel D: Results for 2011**

Factor	1-factor (CAPM)	3-factor	4-factor
$\alpha$	-0.0003	-0.0001	-0.0000
	(-0.63)	(-0.32)	(-0.08)
RM – Rf	1.3343	1.1958	1.1997
	(12.23)***	(5.70)***	(6.55)***
SMB		0.4524	0.4177
		(5.72)***	(5.94)***
HML		0.2704	-0.1003
		(3.04)***	(-1.11)
UMD			-0.4341
			(-8.30)***
R-squared	0.905	0.916	0.934

\*\*\*significant at the 1% level

\*\*significant at the 5% level

\*significant at the 10% level

In Panels B, C and D of Table 2, we break the overall evaluation period into calendar years. All estimates of alpha for each of three years are non-significant for all models employed. Most other results for individual years are similar to those for the overall period but there are two exceptions worth mentioning. First, beta dipped to a low of 1.0578 in 2010. This still represents a significantly higher level of systematic risk than the market but it is also significantly lower than the beta for 2009 and 2011, suggesting that stocks with more moderate betas were more likely to gain 5-star upgrades in 2010. Second, while the small cap tilt was consistent across all individual years, the HML coefficient was positive and significant at the 1% level in 2011. This would indicate that Morningstar had a preference for value over growth in 2011. However, the HML coefficient reverses sign and loses significance in 2011 when the momentum factor is added to the analysis. The coefficient on UMD remains highly significant and negative in all individual years.

The portfolio we have examined to this point is one constructed by investing in each new 5-star stock and holding that position for 30 days. For robustness, we also examine two alternative portfolios built with somewhat different assumptions. Portfolio 2 eliminates overlapping holding periods for specific stocks. It is not uncommon for a stock to obtain a 5-star rating more than once, sometimes over a period of just a week or two. This will occur if a volatile stock fluctuates around the critical discount of market price to Morningstar's estimate of fair value. Therefore, Portfolio 1 frequently held multiple positions in

the same stock. Portfolio 2 retains the 30 day holding period but eliminates incidences of redundant holdings of the same stock. This analysis should eliminate any bias due to an overreliance on high volatility stocks. Table 3, Panel A shows results of analysis for Portfolio 2 for the overall holding period. All results are comparable to results for Portfolio 1 with the exception of a negative coefficient for HML in the 4-factor model that is significant at the 5% level. This suggests that the elimination of overlapping holding periods for individual positions enhanced exposure to growth stocks. Apparently, stocks that obtain 5-star upgrades multiple times in a brief period are more likely to be value stocks. When this influence is removed from the portfolio, the HML coefficient indicates a bias toward growth stocks.

**TABLE 3**  
**PORTFOLIO 2 AND 3 RESULTS**

Panel A: Portfolio 2. Results for the entire sample, June 9, 2009 to December 30, 2011. Consolidated Positions, 30-Day Holding Period Portfolio Performance. Results of regression analysis for 1, 3, and 4 factor Fama-French models for the full sample of dollar weighted returns. Returns are generated assuming \$1 is invested in each new buy recommendation at the closing price on the day following the upgrade to five stars. Securities remain in the portfolio for 30 days following the recommendation. If a specific stock is recommended while already in the portfolio, the holding period is extended for an additional 30 days. (T-statistics for two tailed tests are shown in parenthesis. All factors are tested for significant differences from 0 with the exception of the RM – Rf factor which is tested for significant differences from 1.)

Factor	1-factor (CAPM)	3-factor	4-factor
$\alpha$	0.0001	0.0001	0.0001
	(0.43)	(0.42)	(0.57)
RM – Rf	1.2183	1.1278	1.1563
	(10.83)***	(4.79)***	(6.42)***
SMB		0.3452	0.3811
		(6.63)***	(8.06)***
HML		0.0340	-0.1090
		(0.53)	(-2.14)**
UMD			-0.3844
			(-11.83)***
R-squared	0.850	0.859	0.884

Panel B: Portfolio 3. Results for the entire sample, June 9, 2009 to December 30, 2011. Buy and Hold Portfolio Performance. Results of regression analysis for 1, 3, and 4 factor Fama-French models for the full sample of dollar weighted returns. Returns are generated assuming \$1 is invested in each new buy recommendation at the closing price on the day following the upgrade to five stars. Securities remain in the portfolio until the end of the period of analysis, December 30, 2011. (T-statistics for two tailed tests are shown in parenthesis. All factors are tested for significant differences from 0 with the exception of the RM – Rf factor which is tested for significant differences from 1.)

Factor	1-factor (CAPM)	3-factor	4-factor
$\alpha$	0.0001	0.0001	0.0001
	(0.48)	(0.59)	(0.67)
RM – Rf	1.1714	1.0454	1.056
	(12.33)***	(2.61)***	(3.28)***
SMB		0.3526	0.3658
		(10.39)***	(11.07)***
HML		0.1949	0.1424
		(5.48)***	(4.00)***
UMD			-0.1410
			(-6.21)***
R-squared	0.917	0.930	0.934

\*\*\*significant at the 1% level

\*\*significant at the 5% level

\*significant at the 10% level

Panel B of Table 3 shows results of analysis for Portfolio 3, formed by investing in each new 5-star stock and holding it until the end of 2011. Unlike the previous portfolios, this “buy and hold” portfolio continually grows in size. When compared to Portfolio 1, Portfolio 3 has more moderate values for beta and positive and significant coefficients for HML in both the 3- and 4-factor models. This suggests that the “buy and hold” approach modeled with Portfolio 3 has a bias toward value stocks. This makes sense given the results for Portfolio 2 in Panel A. Multiple purchases and overlapping holding periods for the same stock at different points in time will eventually cause the portfolio to assimilate any characteristics of those stocks at the expense of stocks purchased only once during the overall holding period. This again suggests that stocks receiving 5-star upgrades multiple times appear to be value stocks.

To summarize, our analysis of holding period returns for portfolios formed from Morningstar’s 5-star ratings provide several robust findings. First, while the 5-star upgrade portfolios formed here outperform the market in absolute terms, they do not do so on a risk-adjusted basis. Alphas for these portfolios are not statistically significant. This result is robust across all portfolios, sub-periods, and factor models employed. It suggests that the subset of stocks identified as “5-star” generate returns appropriate for their market risk and other factor exposures. Second, stocks obtaining 5-star upgrades tend to have above average market risk exposure, or beta. Third, all models indicate that 5-star stocks appear to be smaller cap stocks and have experienced price declines prior to their ascendency to 5-star status. This is consistent, as Morningstar’s estimate of a stock’s fair value is based on fundamentals which will not change with the frequency of market value. To achieve a 5-star rating, the difference between these two values must be large. A sudden decline in market value is more likely than an abrupt increase in Morningstar’s fair value. Thus, many stocks will eclipse the critical value needed for a 5-star upgrade following a period of decline in market value. Fourth, it is easier for value stocks to obtain a 5-star upgrade. The elimination of multiple holdings of individual stocks with overlapping 5-star upgrade events tilted the portfolio’s performance toward growth. When multiple holdings were permitted and allowed to remain in a buy and hold portfolio, the portfolio’s performance tilted toward value. The more frequently a stock attains a new 5-star rating, the more likely it is to be a value stock.

Finally, our examination of holding period returns for individual calendar years indicates remarkable stability in the portfolio characteristics. Aside from a brief decline in beta in 2010, performance was consistently associated with high beta, small cap and contrarian return characteristics.

## SUMMARY AND CONCLUSION

We examine the nature and impact of stock buy recommendations provided to investors by Morningstar, Inc. through its 5-Star Upgrade e-mail service. Our event study results suggest that these recommendations follow negative momentum. Contrasting with the results of many prior studies of second-hand information and price pressure effects, the Morningstar recommendations do not impact the stock prices of the upgraded companies at announcement, but positive and statistically significant abnormal returns occur subsequent to the announcement and increase in the month subsequent to the recommendations. This is consistent with Morningstar analysts providing some valuable analysis.

The cumulative return for a dollar-weighted portfolio formed from Morningstar's recommendations from June 9, 2009 through December 31, 2011 and holding each position for a 30 day period is 59.08%. A value weighted composite of NYSE and NASDAQ stocks earned 40.27% over the same period. Our factor analysis of portfolio performance for the entire period of analysis suggests that factor-adjusted returns, or alphas, are not significantly different from zero. Multivariate analysis suggests that Morningstar's portfolio returns are driven by beta exposure at the market level, smaller stocks, and negative momentum effects. When we look at performance year by year, the results are reasonably robust. Varying the parameters for including and holding stocks in the portfolio shows that value stocks are more likely to obtain repeat 5-star upgrades.

Morningstar, Inc. is a well-established provider of information and analysis on a wide variety of financial investments. Our results provide some perspective on the overall value of Morningstar's recommendations disseminated through its 5-Star Upgrade emails for stocks. The Morningstar recommendations do produce significant and growing abnormal returns over the 30 trading days subsequent to the announcements. In a portfolio context, the returns to buying and holding a Morningstar portfolio are average. These results should be of interest to investors seeking to develop an active, or alpha-generating, investment strategy, to those interested in an unbiased and scientific analysis of this Morningstar service, and to those interested in studies of the impact of analysts' recommendations.

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