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When Two Anomalies Meet: The Post–Earnings Announcement Drift and the Value–Glamour Anomaly

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This study of the post–earnings announcement drift and the value–glamour anomaly finds that value stocks have greater information uncertainty, exhibit more-muted initial market reactions to earnings surprises, and have better (more positive or less negative) post–earnings announcement drifts than do glamour stocks. A trading strategy based on these findings can generate an average annual abnormal return of 16.6–18.8 percent before transaction costs.

The post–earnings announcement drift and the value–glamour anomaly have been studied extensively in the finance and accounting literature. In our study, we attempted to link these two anomalies directly by examining the initial market responses and drift patterns of value and glamour portfolios, contingent on both the sign of the earnings surprise (+/−/0) and the sign of the instant stock price reaction to the earnings news (+/−). Ball and Brown (1968) were the first to document the post–earnings announcement drift: the tendency of stock prices to continue to move in the direction of the earnings surprise after earnings are announced. A number of researchers have offered various explanations for the post–earnings announcement drift: investor learning (Chordia and Shivakumar 2006), disclosures (Shin 2006), idiosyncratic stock return volatility (Mendenhall 2004), information uncertainty (Francis, LaFond, Olsson, and Schipper 2007), transaction costs (Ng, Rusticus, and Verdi 2008), liquidity (Chordia, Goyal, Sadka, Sadka, and Lakshmanan 2009), and abnormal announcement period trading volume (Garfinkel and Sokobin 2006).

The value–glamour anomaly refers to the empirical regularity with which the future returns of value stocks outperform those of glamour stocks (Graham and Dodd 1934; Lakonishok, Shleifer, and Vishny [LSV] 1994; Fama and French 1992). Value stocks are perceived to have low growth potential. Morningstar defines value stocks as stocks with low ratios of price per share to various measures of worth, such as earnings or book value.[1] In contrast, glamour stocks have high ratios, which suggests that investors must believe that the companies will experience rapid growth to justify the prices at which their stocks sell. Researchers have offered several explanations for the return differential between value stocks and growth stocks. First, Fama and French (1992, 1996) argued that value strategies are fundamentally risky—their higher average returns reflect compensation for risk. Second, LSV (1994) and Shleifer, Lakonishok, La Porta, and Vishny (SLLV 1997) attributed the superior future performance of value stocks to the assumption that investors make systematic errors in predicting future growth in earnings of out-of-favor stocks. Doukas, Kim, and Pantzalis (2002), however, failed to find evidence to support this hypothesis. Third, Fama (1998) and Kothari, Sabino, and Zach (1999) claimed that the return differential may reflect methodological problems in measuring long-term abnormal returns. Finally, Doukas, Kim, and Pantzalis (2004) argued that value stocks are exposed to greater investor disagreement, which, as a unique source of risk, leads to higher average returns.[2]

In our study, we examined initial and subsequent market reactions to earnings announcements of both value and glamour stocks. We based our study on prior research that explored behavioral and rational explanations for these two anomalies. In particular, we investigated how information uncertainty may lead to different initial and subsequent reactions to earnings news. Following Zhang (2006), we defined information uncertainty as ambiguity regarding the implications of new information for a company's value. Both behavioral

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models (see, e.g., Daniel, Hirshleifer, and Subrahmanyam 1998) and rational models (see, e.g., Merton 1987; Kurz 1994; Morris 1996) can relate information uncertainty to the predictability of stock returns vis-à-vis the value–glamour anomaly and the post–earnings announcement drift.

Value stocks usually draw less media and investor attention than glamour stocks and are typically followed by fewer financial analysts. When both the demand for information and the supply of information are weak, uncertainty arises naturally. Therefore, we would expect value stocks to have greater information uncertainty than glamour stocks. And if value stocks do have greater information uncertainty than glamour stocks, we would also expect value stocks to have more-muted initial reactions to earnings surprises. From the behavioral perspective, investors who underreact to earnings surprises underreact more in cases of greater information uncertainty (Zhang 2006). From the rational perspective, Bayesian investors may initially place less weight on more-uncertain information but gradually increase that weight as the uncertainty is subsequently attenuated or resolved (Brav and Heaton 2002; Francis et al. 2007). Under both behavioral and rational models, value stocks have more-muted initial reactions to earnings surprises than glamour stocks if the value stocks have greater information uncertainty.

In addition to information uncertainty, other factors (e.g., transaction costs) may lead to a weak initial response. Ng et al. (2008) showed that transaction costs inhibit the informed trades that are necessary to incorporate earnings information into prices, which implies weak return responses at the time of earnings announcements. They found that earnings response coefficients are lower for companies with high transaction costs. If value companies have fewer analysts covering them—and perhaps fewer market makers—they could certainly exhibit high transaction costs.

Once the earnings are announced, two forces related to information uncertainty can come into play. The first force is delayed reaction to more-uncertain information (*delayed reaction effect*). The second is high expected return associated with strong information uncertainty signals (*risk premium effect*). Easley and O'Hara (2004) showed that investors require a higher return for holding stocks with greater private information. Merton (1987) demonstrated that when information is incomplete and the investor base is small, the value of a company is always lower in the capital market equilibrium. Therefore, investors may demand a risk premium for holding securities with high information uncertainty. When earnings news is good, both the delayed reaction effect and the risk premium effect produce higher positive returns for value stocks. Thus, we would expect value stocks to have better (more positive) post-announcement drifts than glamour stocks. When earnings news is bad, however, only the risk premium effect produces higher returns. The delayed reaction effect leads to lower (more negative) returns. Therefore, the magnitude and the direction of the post-earnings price movement depend on which effect dominates, and whether value stocks have better (less negative) drifts than glamour stocks is unknown *ex ante*.

To test our expectations, we sorted companies into five value–glamour quintiles for each quarter, conditioned on both the sign of the earnings surprise (defined as the difference between the actual earnings and the analyst consensus forecast) and the sign of the instant stock price reaction to the earnings news (measured by abnormal returns over a three-day window around quarterly earnings announcements—the earnings announcement abnormal returns, or EAARs). This feature of our research design was important because the signs of both earnings surprises and EAARs contain different pieces of valuable information. First, stock price reaction is not always positively related to earnings surprise—that is, a positive earnings surprise does not necessarily lead to a positive initial stock price reaction. For example, on 23 July 2008, PepsiCo and Genzyme Corporation announced their second-quarter earnings. Both companies beat analysts' mean estimates by roughly 1 percent. But PepsiCo's three-day (starting one day before the earnings announcement) stock return was 4.6 percent and Genzyme's was –5.6 percent. Other information released around earnings announcement dates may lead to this "wrong" market reaction (Liu and Thomas 2000; Jegadeesh and Livnat 2006), which is one of the reasons for the low explanatory power of earnings surprises with respect to drifts (Kinney, Burgstahler, and Martin 2002). Second, stocks may have asymmetric reactions to positive earnings surprises versus negative earnings surprises. Skinner and Sloan (2002) found that growth stocks exhibit asymmetrically large negative price responses to negative earnings surprises. Third, initial stock price reactions may affect subsequent price movements. Chan, Jegadeesh, and Lakonishok (1996) and Brandt, Kishore, Santa-Clara, and Venkatachalam (2008) found that portfolios with high EAARs generate substantially higher post–earnings announcement drifts than do portfolios with low EAARs.

By exploring the post–earnings announcement drifts of value and glamour portfolios in six different categories as determined by the signs of both the EAARs (+/–) and the earnings surprises

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(+/−/0), we were able to discern groups of observations in which earnings surprises and EAARs moved in the same direction. This approach amplifies the post–earnings announcement drifts of both value and glamour stocks.

Our study is related to research by SLLV (1997), Skinner and Sloan (2002), and Dreman and Berry (1995). SLLV investigated the return differential between value and growth stocks around quarterly earnings announcement dates. They found that size-adjusted EAARs are substantially higher for value stocks than for glamour stocks and that the return differential accounts for up to 30 percent of the annual value premium reported in prior studies. Skinner and Sloan (2002) showed that growth stocks and other stocks respond similarly to positive earnings surprises but that growth stocks exhibit much larger negative responses to negative earnings surprises. They concluded that the inferior return to growth stocks is attributable to overoptimistic expectational errors that are corrected through subsequent negative earnings surprises. Dreman and Berry (1995) proposed the *mispricing-correction hypothesis*, which states that the original mispricing is followed by corrective price action; they found that analysts' errors have an asymmetrical impact on both high- and low-P/E stocks. Our study differs from those studies in two ways. First, we examined the two anomalies at a finer level of data by conditioning on the signs of not only the earnings surprises but also the EAARs. As mentioned earlier, this feature of our research design was important because the signs of both earnings surprises and EAARs contain different pieces of valuable information. Second, those studies explained their results in terms of behavioral models. In our study, however, we did not attempt to distinguish between behavioral and rational models because doing so is empirically *impossible* given that the predictions from both types of models are identical (Brav and Heaton 2002).

Our study is also related to Liang (2003), Zhang (2006), and Francis et al. (2007). Both Liang (2003) and Zhang (2006) derived their implications from the behavioral model of Daniel et al. (1998) and studied the relationship between underreaction and information uncertainty. Francis et al. (2007) argued that post–earnings announcement drifts can arise rationally under a learning model. Our study differs from those studies in that we focused on both initial and subsequent price responses to earnings announcements of value stocks and glamour stocks, not on information uncertainty per se. Although we relied on information uncertainty to motivate our study of the two anomalies,[3] we did not attempt to claim that information uncertainty is the only explanation. Other factors, such as transaction costs (Ng et al. 2008) and expectational errors (Skinner and Sloan 2002), may also explain some of our results.

Sample Selection and Methodology

We obtained the mean/median analyst forecasts, quarterly EPS, earnings announcement dates, and actual realized EPS from the I/B/E/S summary statistics files. Our sample period covered June 1984–December 2008 and included all the companies from I/B/E/S during that period. We matched the earnings forecasts for each company with daily stock returns from CRSP. All cash dividends, stock splits, and stock dividends were adjusted so that all current and past returns, earnings figures, and forecasts were expressed on a comparable basis. We obtained book value and other financial data from Capital IQ Compustat's annual file tape.

Information Uncertainty Measures. Following Zhang (2006), we used six proxies for information uncertainty: company size (ME), company age (AGE), analyst coverage (COV), dispersion in analyst earnings forecasts (DISP), stock return volatility (SIGMA), and cash flow volatility (CVOL). Except for company age, we defined the proxies as in Zhang (2006); we defined company age as the difference between current year and year of incorporation.[4] If the incorporation year was unavailable, we used the earlier of either the earliest year that a company had a positive stock price (CRSP) or the earliest year that a company had nonmissing data for total assets (Compustat). Small companies, young companies, and companies with small analyst coverage, large analyst forecast dispersion, high stock volatility, or high cash flow volatility are likely to have higher information uncertainty (for a detailed discussion, see Zhang 2006).

We included turnover ratio as an additional proxy. Information uncertainty may also be related to investor attention. When little attention is paid to a stock, fewer market participants are willing to collect, analyze, and distribute information about the stock's value, which implies less certainty. Using turnover ratio to measure investor attention, Hou, Peng, and Xiong (2009) found that price underreaction to earnings news weakens with investor attention: The lower the turnover, the higher the earnings momentum profits. Therefore, we defined turnover ratio as the average monthly turnover (number of shares traded in a month divided by number of shares outstanding at the end of the month) over the previous year.

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Estimation of EAARs, Earnings Surprises, and Post–Earnings Announcement Drifts. Following SLLV (1997), we measured EAARs as the value-weighted, size-adjusted abnormal returns over a three-day window centered on the earnings announcement date. Abnormal returns vary with company size (Fama and French 1992). To control for this effect when computing abnormal returns, we used value-weighted returns on 10 Fama–French size portfolios as benchmark returns. We avoided a benchmark that adjusts for the book-to-market effect because our objective was to study the value–glamour effect, together with the post–earnings announcement drift, and one proxy for identifying the value–glamour effect is the book-to-market ratio. We obtained all the benchmark returns and breakpoints for each decile from Kenneth French's online data library.[5] We computed abnormal returns as follows:

$$EAAR_{i,q} = \prod_{t=-1}^{t=+1}\left(1+R_{i,t}\right) - \prod_{t=-1}^{t=+1}\left(1+R_{b,t}\right),$$

where $EAAR_{i,q}$ is the EAAR for company i in quarter q over a three-day window centered on the announcement date, $R_{i,t}$ is the daily return for company i on day t, and $R_{b,t}$ is the daily value-weighted benchmark return on the Fama–French size portfolio that contains stock i. We constructed the 10 Fama–French size portfolios at the end of each June by using the June market equity and NYSE breakpoints.

We cumulated returns until one day after the announcement date to account for two possibilities. First, some companies announce earnings after the closing bell. Second, infrequent trading of some stocks may lead to delayed stock price reactions to earnings news, particularly since our sample included NASDAQ issues (see Chan, Jegadeesh, and Lakonishok 1996).

We measured earnings surprises as the difference between actual and expected EPS divided by the absolute value of expected EPS:[6]

$$Earnings\ surprise_{i,q} = \frac{Actual_{i,q} - Expected_{i,q}}{\text{abs}\left(Expected_{i,q}\right)},$$

where $Actual_{i,q}$ is the actual EPS announced on the earnings announcement date for company i in quarter q, $Expected_{i,q}$ is the median analyst forecast of EPS for company i in quarter q, and abs is the absolute value. Using the mean analyst forecast leaves the inferences unchanged.

Our calculation of the size-adjusted post–earnings announcement drifts is similar to our calculation of the EAARs:

$$Drift_{i,n} = \prod_{t=2}^{t=n}\left(1+R_{i,t}\right) - \prod_{t=2}^{t=n}\left(1+R_{b,t}\right),$$

where $Drift_{i,n}$ is the size-adjusted cumulative abnormal return for company i from the second day after the announcement to the nth day after the announcement.

Computation of Value Measures. Following Doukas, Kim, and Pantzalis (2002), we used the book-to-market ratio (BM) to capture the value–glamour effect. We calculated BM as the ratio of the fiscal year-end book value of equity to the market value of equity (the closing price at fiscal year-end times the number of common shares outstanding). Although we excluded companies with negative book-to-market ratios, our results are not sensitive to the inclusion of such companies.[7]

To check for robustness, we included other measures of the value–glamour effect, as suggested by LSV (1994): earnings-to-price ratio (EP), cash-flow-to-price ratio (CP), and sales growth ratio (SG). EP is the operating income after depreciation scaled by the market value of equity. CP is the cash flow from operations scaled by the market value of equity. We measured SG as the average annual growth in sales over the previous three years.

Assignment of Stocks. For the end of each June over 1984–2008, we sorted stocks into quintiles on the basis of our value–glamour proxy, BM. The value stocks were in the highest quintile of BM, and the glamour stocks were in the lowest. For each quarter between July of year t and June of year t + 1, we sorted stocks into six subsamples classified by the signs of earnings surprises (+/−/0) and EAARs (+/−): both positive, both negative, positive and negative, negative and positive, zero and positive, or zero and negative. Thus, the value–glamour stocks were predetermined at the end of each June, no matter what the following earnings surprises and EAARs were. For example, a value stock might have a positive earnings surprise and a positive EAAR in one quarter and a negative earnings surprise and a positive EAAR in another quarter.

We examined both the initial market reaction to the earnings surprise and the drift patterns in each subsample in the subsequent periods, starting from the second day after the earnings announcement up to one month (22 trading days), three months (63 trading days), six months (126 trading days), nine months (189 trading days), and one year (252 trading days) thereafter.

For those interested in an implementable trading strategy, we also looked at the drift from the second day after the current quarter's earnings

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announcement to the second day before the next quarter's earnings announcement.[8] Because that drift was almost the same as the three-month drift (63 trading days), we do not report those results for the sake of brevity.

Summary Statistics and Tests of Information Uncertainty Differences between Value and Glamour Stocks

Panel A of **Table 1** reports summary statistics of key variables for the sample period (June 1984–December 2008), which contained 243,207 company-quarter observations. To reduce the influence of extreme values, we Winsorized all the values at 1 percent and 99 percent. The mean of the EAARs is 0.24 percent and the median is 0.09 percent; the distribution is thus positively skewed. The mean values of BM, company size, analyst coverage, return volatility, cash flow volatility, and forecast dispersion are 0.62, $2.5 billion, 9, 6.15 percent, 8.44 percent, and 0.28 percent, respectively. They are similar to those in Zhang (2006), except for the mean value of forecast dispersion. Any differences may be largely due to different sample periods and Winsorization.[9] The average company age in our sample was 26 years, which is larger than the average age of 18 years in Zhang's sample, because we used the year of incorporation to calculate company age whereas Zhang used the number of years since the company was first covered by CRSP.

Panel B reports the correlation matrix. The correlations among our information uncertainty measures are largely consistent with those in Zhang (2006). Company size, company age, and analyst coverage are positively correlated with each other and negatively correlated with cash flow volatility, return volatility, and analyst dispersion. The correlations between the value measure (BM) and the information uncertainty proxies support our first hypothesis—namely, companies with a large BM (value stocks) have greater information uncertainty than companies with a small BM (glamour stocks). The former are often smaller, younger, covered by fewer analysts, and more volatile and have higher variation in earnings estimates and lower turnover ratios. To further illustrate the relationship between the value measure and the information uncertainty proxies, we present in Panel C the mean values of seven information uncertainty proxies in each quintile sorted by BM. The differences between the value portfolio and the glamour portfolio are significant. On average, glamour stocks are about three times larger, six years older, and 2.3 percentage points (pps) less volatile, and they are covered by 2.4 more analysts and have twice the turnover and half the analyst dispersion. All the evidence confirms our hypothesis that value stocks have greater information uncertainty than glamour stocks.

Table 2 reports the number and frequency of the total company-quarter observations in each subsample over our sample period. We formed six subsamples according to the different signs of the earnings surprises (+/−/0) and the initial market responses, or EAARs (+/−). Panel A shows the total number of observations in each subsample, and Panel B shows the frequency of those observations. In total, the EAARs and earnings surprises of about 52.9 percent of the observations move in the same direction; the EAARs and earnings surprises of 35.3 percent of the observations move in opposite directions; for the rest of the observations, the earnings surprises are equal or close to zero (0 or less than 0.001).

Some 14 percent of the observations have positive EAARs when earnings surprises are negative, and 21.3 percent have negative EAARs when earnings surprises are positive. We offer four possible explanations for these two "anomalies": (1) There may be some extraordinarily good (bad) information beyond earnings for a stock to have a positive response to the negative (positive) earnings surprise; (2) investors may update expected earnings and prospects for the company between the survey of analysts and the earnings announcement (stale earnings forecast); (3) the announced earnings may be a flawed measure if contaminated by irregular events; (4) there may be some "noise" in measuring returns (Johnson and Zhao 2010).

Several scenarios may explain why earnings surprises and EAARs sometimes move in the same direction. First, no news other than earnings information is announced. Second, some other positive (negative) information is revealed, together with positive (negative) earnings information, and it reinforces the earnings surprises. Finally, some other positive (negative) information is released, together with negative (positive) earnings information, but it is not strong enough to overturn the impact of the earnings surprises.

Table 2 also reveals that the percentage of companies with positive EAARs is very close to the percentage with negative EAARs (47.9 percent versus 52.1 percent), whereas the percentage of companies with positive or no earnings surprises is significantly larger than the percentage with negative earnings surprises (62 percent versus 38 percent). One possible explanation for these asymmetrical earnings surprises is that executives

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Table 1. Summary Statistics, June 1984–December 2008

Variable	*N*	Mean	Median	Minimum	Maximum	Std. Dev.
A. Descriptive statistics						
ME	243,207	2,501	409	14	52,861	7,080
EAARs	229,304	0.24%	0.09%	–92.28%	397.41%	8.50%
BM	243,207	0.62	0.50	—	2.40	0.44
AGE	243,183	26	20	2	100	21
COV	243,207	9	7	1	60	8
CVOL	156,100	8.44%	5.79%	0.08%	64.60%	10.07%
SIGMA	238,967	6.15%	5.26%	0.99%	86.80%	3.55%
DISP	186,703	0.28%	0.07%	0.00%	5.22%	0.70%
Turnover	242,770	1.41	0.94	0.10	7.45	1.37

	ME	BM	AGE	COV	CVOL	SIGMA	DISP	Turnover
B. Correlation matrix[a]								
ME	1	–0.251*	0.334***	0.712***	–0.343***	–0.446***	–0.203***	0.235***
BM	–0.010***	1	–0.133***	–0.178***	0.152***	0.127***	0.234***	–0.269***
AGE	0.238***	–0.005**	1	0.242***	–0.322***	–0.333***	–0.057***	0.102***
COV	0.524***	–0.012***	0.210***	1	–0.201***	–0.204***	–0.115***	0.353***
CVOL	–0.135***	0.008***	–0.244***	–0.147***	1	0.483***	0.183***	–0.205***
SIGMA	–0.193***	0.019***	–0.269***	–0.178***	0.401***	1	0.229***	–0.359***
DISP	–0.077***	0.012***	–0.068***	–0.106***	0.171***	0.278***	1	–0.068***
Turnover	0.031***	–0.009***	0.103***	0.284***	–0.167***	–0.332***	–0.066***	1

BM Rank	ME	AGE	COV	CVOL	SIGMA	DISP	Turnover
C. Information uncertainty proxies of BM-sorted portfolios							
1 (Glamour)	4,388	28.19	9.38	7.23%	5.29%	0.25%	2.00
2	3,037	27.64	9.49	7.45%	5.48%	0.18%	1.57
3	2,299	26.82	8.67	7.78%	6.09%	0.20%	1.28
4	1,726	25.44	7.95	8.81%	6.32%	0.25%	1.13
5 (Value)	1,055	22.23	6.99	10.93%	7.55%	0.51%	1.04
Value – Glamour	–3,332***	–5.96***	–2.39***	3.70 pps***	2.26 pps***	0.26 pp***	–0.96***

Notes: This table presents descriptive statistics (Panel A) and the correlation matrix (Panel B) of our key variables. In Panel C, Portfolio 1 (glamour) has the lowest BM and Portfolio 5 (value) has the highest. The mean company characteristics for a portfolio are obtained for the end of each June by averaging the company characteristics across the stocks in that portfolio. Panel C presents the time-series averages of these portfolio-level means. Company size (ME) is the market capitalization (in millions of dollars) at the end of June of each year. EAARs are the three-day earnings announcement abnormal returns. BM is the ratio of the fiscal year-end book value of equity to the market value of equity. AGE is the difference between the current year and the incorporation year; if the incorporation year was unavailable, we used the earlier of either the earliest year that a company had a positive stock price (CRSP) or the earliest year that a company had nonmissing data for total assets (Compustat). COV (analyst coverage) is the number of analysts following the company in the previous year. CVOL (cash flow volatility) is the standard deviation of cash flow from operations in the past five years (with a minimum of three years), where cash flow from operations equals earnings before extraordinary items minus total accruals, scaled by the average total assets. SIGMA (stock volatility) is the standard deviation of the weekly market excess returns over the year ending at the end of month *t*. DISP is the standard deviation of analysts' forecasts in month *t* scaled by the prior year-end stock price. Turnover is the average monthly turnover (number of shares traded in a month divided by number of shares outstanding at the end of the month) over the previous year.

[a]The Pearson correlations are shown above the diagonal and the Spearman correlations are shown below.

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

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Table 2. Number and Frequency of Observations vis-à-vis the Signs of Earnings Surprises and EAARs, June 1984–December 2008

	ES > 0	ES < 0	Subtotal	ES = 0	Total
A. Number of observations					
EAARs > 0	69,830	34,051	103,881	12,613	116,494
EAARs < 0	51,802	58,841	110,643	16,070	126,713
Subtotal	121,632	92,892	214,524	28,683	243,207
B. Frequency of observations					
EAARs > 0	28.71%	14.00%	42.71%	5.19%	47.90%
EAARs < 0	21.30	24.19	45.49	6.61	52.10
Subtotal	50.01%	38.19%	88.21%	11.79%	100.00%

facing intense pressure from analysts and investors to meet earnings estimates may sometimes alter earnings figures over accounting periods to achieve or surpass the forecast estimates. Fortunately, the market is not easily deceived, as demonstrated by a roughly equal number of positive and negative responses to earnings surprises.

Market Reactions to Earnings Announcements and Testing the Differences between Value and Glamour Stocks

Table 3 reports initial market reactions and post–earnings announcement drifts for value–glamour investing based on BM classification. Several interesting results warrant a detailed discussion.

First, consistent with our hypothesis, we found that value stocks have more-muted initial reactions to earnings surprises over the three-day announcement window in every single category, contingent on the sign of the earnings surprises and EAARs. On the one hand, when initial reactions (EAARs) are positive (Panels A, D, and E), regardless of the sign of the earnings surprises (+/−/0), value stocks have lower positive three-day EAARs (5.59 percent, 4.76 percent, and 4.57 percent) than do glamour stocks (6.26 percent, 5.68 percent, and 4.91 percent). On the other hand, when EAARs are negative (Panels B, C, and F), value stocks have less negative three-day EAARs (–5.43 percent, –3.64 percent, and –4.10 percent) than do glamour stocks (–6.98 percent, –4.93 percent, and –5.64 percent). This finding is different from, although not necessarily inconsistent with, the evidence from SLLV (1997), who found that earnings announcement returns are systematically more positive for value stocks by pooling all companies together without considering the signs of EAARs and earnings surprises. Our finding is consistent with Francis et al. (2007), who found that investors initially respond less to unexpected earnings signals characterized as having high information uncertainty than to signals with low information uncertainty. Our finding is also consistent with the prediction of investor attention theories (Hirshleifer and Teoh 2003; Hou, Peng, and Xiong 2009). Value stocks usually draw less media and investor attention than glamour stocks and are covered by fewer analysts. Limited attention can cause investors to ignore useful information around earnings announcement dates and thus be unable to analyze and incorporate the news into prices instantaneously.

Second, we found strong evidence showing that when earnings news is good, value stocks have better (more positive) post-announcement drifts than glamour stocks. When earnings surprises are positive (Panels A and C), the drifts of value stocks are mostly significantly better than those of glamour stocks. In Panel A, when both earnings surprises and initial market responses are positive, the drifts of value stocks over three, six, and nine months after the earnings announcements are 3.18 percent, 5.72 percent, and 7.87 percent, whereas those of glamour stocks are 2.03 percent, 2.90 percent, and 4.15 percent. The drift differences between the two cohorts of stocks are significant at the 1 percent level.

Third, our empirical results suggest, *ex post*, that when earnings news is bad, value stocks still have better (less negative) drifts than glamour stocks. For value stocks, the risk premium effect induced by high information uncertainty signals apparently dominates the delayed reaction effect arising from the uncertainty. When both earnings surprises and initial reactions are negative (Panel B), the drifts of value stocks are –0.74 percent, –0.53 percent, and 0.26 percent over three, six, and nine months after the earnings announcements, whereas those of glamour stocks are –1.23 percent, –2.08 percent, and –2.26 percent. The drift differences are all significant at the 1 percent level. This finding is broadly consistent with Skinner and Sloan (2002), who found that glamour stocks exhibit asymmetrically large negative price

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Table 3. Initial Market Reactions and Post–Earnings Announcement Drifts of BM-Sorted Portfolios, June 1984–December 2008

BM Rank	*N*	EAARs (%)	1 Mo. (%)	3 Mo. (%)	6 Mo. (%)	9 Mo. (%)	1 Year (%)
A. Earnings surprises > 0; EAARs > 0							
1 (Glamour)	136	6.26	0.8	2.03	2.90	4.15	5.32
2	152	5.81	1.08	2.23	2.96	3.97	5.14
3	150	5.32	1.15	2.41	3.89	5.23	7.00
4	148	4.95	0.97	2.15	3.63	5.07	6.75
5 (Value)	140	5.59	1.30	3.18	5.72	7.87	10.45
Value – Glamour (pps)		–0.67***	0.50***	1.15***	2.82***	3.72***	5.13***
B. Earnings surprises < 0; EAARs < 0							
1 (Glamour)	111	–6.98	–0.29	–1.23	–2.08	–2.26	–0.89
2	112	–6.13	–0.02	–1.02	–1.65	–2.01	–0.83
3	121	–5.36	0.00	–1.20	–1.33	–1.01	0.70
4	128	–4.91	–0.11	–0.85	–0.58	–0.29	0.75
5 (Value)	142	–5.43	–0.11	–0.74	–0.53	0.26	3.38
Value – Glamour (pps)		1.55***	0.18	0.49***	1.55***	2.52***	4.28***
Spread = Value in Panel A – Glamour in Panel B (pps)		12.57***	1.59***	4.41***	7.80***	10.03***	11.35***
C. Earnings surprises > 0; EAARs < 0							
1 (Glamour)	132	–4.93	0.4	1.48	1.90	2.38	2.79
2	108	–4.22	0.54	0.99	1.05	1.03	1.14
3	103	–3.75	0.79	1.07	2.19	2.76	3.63
4	102	–3.33	0.88	1.58	2.79	3.95	4.86
5 (Value)	94	–3.64	0.74	1.69	3.72	5.99	8.47
Value – Glamour (pps)		1.29***	0.34	0.2	1.81***	3.61***	5.68***
D. Earnings surprises < 0; EAARs > 0							
1 (Glamour)	56	5.68	–0.15	–0.45	–0.43	0.73	2.81
2	65	4.71	–0.13	–0.4	–0.63	–0.76	1.08
3	71	4.33	–0.23	–0.3	0.39	1.83	3.31
4	76	3.99	–0.25	–0.55	–0.37	0.31	1.89
5 (Value)	86	4.76	–0.02	0.02	1.35	2.91	6.45
Value – Glamour (pps)		–0.92***	0.13	0.47	1.78**	2.18**	3.64***
E. Earnings surprises = 0; EAARs > 0							
1 (Glamour)	27	4.91	0.37	0.22	–0.52	–1.75	–2.84
2	31	4.72	0.18	–0.31	–0.97	–1.37	–2.83
3	28	4.33	0.28	0.12	–0.53	–0.72	–1.2
4	24	4.10	0.24	–0.54	–0.73	–0.98	–0.52
5 (Value)	20	4.57	0.77	1.16	2.27	4.28	5.50
Value – Glamour (pps)		–0.34***	0.4	0.94	2.79**	6.03***	8.34***
F. Earnings surprises = 0; EAARs < 0							
1 (Glamour)	43	–5.64	–0.17	–1.09	–1.46	–2.96	–3.92
2	38	–4.9	–0.30	–1.46	–2.5	–3.24	–3.9
3	33	–4.34	0.54	–1.39	–0.93	–1.66	–1.00
4	28	–3.96	0.02	0.11	0.67	–0.48	0.44
5 (Value)	23	–4.10	0.33	–0.16	1.70	2.38	4.28
Value – Glamour (pps)		1.54***	0.50*	0.93	3.16***	5.34***	8.20***

Notes: This table presents initial and subsequent abnormal returns of BM-sorted portfolios contingent on the signs of earnings surprises and EAARs. For each quarter, the mean abnormal return for a portfolio was obtained by averaging event-time returns across the stocks in that portfolio. The table shows the time-series averages of these portfolio-level means. *N* is the average number of companies in a quarter.

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

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responses to negative earnings surprises; they attributed the return differential between glamour and value stocks to overoptimistic expectational errors, which are corrected through subsequent negative earnings surprises.

EAARs and earnings surprises sometimes move in opposite directions (Panels C and D). Johnson and Zhao (2010) suggested a variety of explanations for this phenomenon: "noise" in the measured earnings surprises or in measuring the EAARs and, more importantly, discordant information released on the announcement date, such as surprisingly good current quarterly earnings accompanied by a surprisingly bad future earnings forecast. In addition to the more-muted initial reactions and better drifts of value stocks, we found that the magnitudes of the drifts of both value and glamour stocks are smaller than those in Panels A and B owing to the two opposite signs. Johnson and Zhao (2010) also found that "contrarian stocks" (i.e., stocks whose EAARs and earnings surprises have opposite signs) have a decidedly muted drift. They observed that some of this muted drift can be traced to the decreased earnings surprise persistence of contrarian stocks. Some of the muted drift can also be traced to two other factors—discordant revenue changes and analyst earnings forecast revisions—but whether these two factors dampen the drift directly or indirectly through their impact on reduced earnings persistence is unclear.

Finally, we looked at companies with no earnings surprises (Panels E and F). Again, we found that value stocks, on average, perform better than glamour stocks after earnings are announced. The drifts of most glamour stocks are usually negative, which suggests that although the executives in these companies may be managing the accounting of earnings to meet the expectations of analysts and investors, the companies may not be operating as well as the earnings information indicates.

On the basis of our results in Table 3, we conclude that, across all the panels, value stocks have more-muted initial reactions to earnings surprises than glamour stocks, but they always have higher abnormal returns than the glamour portfolios after earnings announcements. Value stocks have either larger positive drifts or smaller negative drifts than glamour stocks.

For practitioners, perhaps our most important finding is that they can easily design a profitable trading strategy based on our results. When both EAARs and earnings surprises are positive (Panel A), value stocks have the largest positive drifts across all panels. When both are negative (Panel B), glamour stocks have the largest negative drifts. A trading strategy of taking a long position in the value stocks in Panel A and a short position in the glamour stocks in Panel B can generate positive abnormal returns. Because a market participant is likely to be most focused on the three-month holding periods between earnings announcements, we can estimate the quarterly expected return for our stock portfolio to be 4.41 percent[10] (3.18 percent from Panel A less –1.23 percent from Panel B), or an annualized return of 17.6 percent. An estimate of typical stock trading transaction costs for institutional investors[11] (1 percent round-trip) must be deducted to produce a realistic annualized trading return of 13.6 percent.

Figure 1 shows the three-month (63 trading days) abnormal returns to a strategy that takes a long position in value stocks when both earnings surprises and EAARs are positive and a short position in glamour stocks when both are negative. We used quarterly earnings announcement data in our analysis—that is, we reviewed new information and constructed our hedge portfolios quarterly. The portfolio's beta—the correlation of the portfolio drifts with the S&P 500 Index returns—is –0.06, very close to 0, which shows that this strategy is relatively market neutral. The annualized Sharpe ratio—the excess portfolio return over the risk-free rate divided by the standard deviation—is 0.94, which is significantly different from zero at the 1 percent level. We incurred losses in 21.05 percent of the quarters in our sample period.[12] The hedged portfolio's return comes mostly from the long side (the value stocks) and to a lesser degree from the short side (the glamour stocks). This result is consistent with Phalippou (2008), who found that the value premium is a long-side anomaly and a value premium puzzle, not a growth discount puzzle. Thus, this strategy has relatively less severe constraints in terms of shorting stocks. Note also that this strategy holds relatively well over both our 24-year sample period and three past recessions: July 1990–March 1991, March 2001–November 2001, and December 2007–June 2009 (our sample period ends in 2008).

Controlling for Size Effects

One concern is that the abnormal return to the trading strategy may be caused by smaller companies through the so-called size effect. To control for this effect, following Fama and French (1995), we constructed six size/BM portfolios, formed yearly from a simple sort of companies into two groups on the basis of company size (ME) and another simple sort into three groups on the basis of BM. We obtained the size and BM breakpoints for each year from Kenneth French's online data library.

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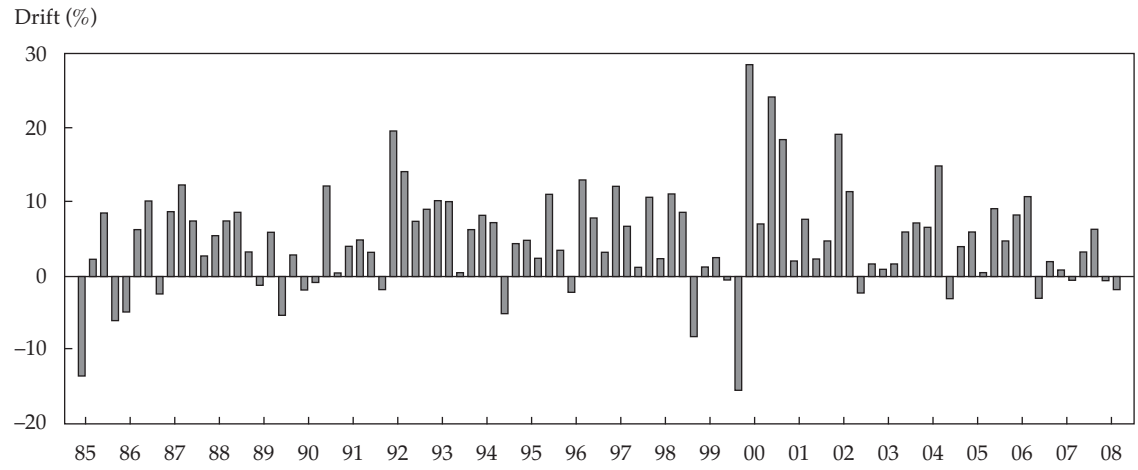
Figure 1. Three-Month Annualized Abnormal Returns, 1985–2008



Notes: This figure shows three-month (63 trading days) post–earnings announcement drifts for a strategy that takes a long position in value stocks when both earnings surprises and EAARs are positive and a short position in glamour stocks when both earnings surprises and EAARs are negative. The annualized return for the portfolio is 17.6 percent.

Table 4 presents our results. For simplicity, we report only those findings where earnings surprises and initial market reactions move in the same direction. On average, the big companies are more than 20 times larger than the small companies. They have weaker (less positive or less negative) drifts than the small companies, although the difference is not very significant when both earnings surprises and initial market reactions are negative. This finding is consistent with Bhushan (1994) and Brav and Heaton (2006), who found that drifts are stronger for smaller stocks.

Regardless of company size, value stocks always have more-muted initial market reactions and better drifts than glamour stocks. Our trading strategy, however, is significantly affected by company size. For the small companies, the strategy of taking a long position in small value stocks when both earnings surprises and EAARs are positive and a short position in small glamour stocks when both are negative can generate a 5.14 pp spread in the three months after the earnings announcement. The spread reduces to 3.02 pps for the big value and glamour companies. Furthermore, the strategy works quite well for the small companies even one year after the announcement. Its 12-month spread is 12.72 pps. In contrast, the 12-month spread for the big companies is only 5.56 pps. Because the big companies usually have much lower transaction costs, we suggest that investors update their portfolios of big companies quarterly and their portfolios of small companies less frequently (e.g., semiannually).

Robustness Tests

To ensure that our results were not driven by definitions of key variables, we conducted a variety of robustness tests.

First, in our main test, we used the median analyst forecast to estimate earnings surprises. We then used the mean analyst forecast to see whether our results would hold, and these results are reported in Panels A and B of **Table 5**. We found that value stocks have more-muted initial reactions and better drifts than glamour stocks. This evidence is consistent with our previous findings and suggests that the results are not sensitive to the usage of mean values or median values.

Second, our main findings are based on tests of event-time portfolios. To the best of our knowledge, a significant portion of the return differential between value and glamour portfolios occurs within several days of earnings announcements. Therefore, constructing event-time portfolios is more appropriate for most active investors.[13] Some less active investors, however, may adjust their portfolios less frequently (e.g., quarterly). To see whether our findings would hold in calendar time, we formed our portfolios on the first day of each calendar quarter (1 January, 1 April, 1 July, and 1 October). After a company announced its earnings, we sorted the company into a portfolio in the next calendar quarter according to its BM and the signs of its earnings surprise and EAAR. Panels C and D of Table 5 report the results. All the main results remain unchanged, although the return to the trading strategy is a bit lower.

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Table 4. Initial Market Reactions and Post–Earnings Announcement Drifts of Size/BM-Sorted Portfolios, June 1984–December 2008

Size Rank	BM Rank	*N*	Size	EAARs (%)	1 Mo. (%)	3 Mo. (%)	6 Mo. (%)	9 Mo. (%)	1 Year (%)
A. Earnings surprises > 0; EAARs > 0									
Small	Glamour	138	363	6.97	1.04	2.17	3.67	5.43	6.76
Small	Medium	169	333	6.00	1.29	2.87	4.90	6.30	8.54
Small	Value	183	270	5.84	1.28	3.91	6.00	8.59	11.23
Small value – Small glamour (pps)				–1.13***	0.24	1.73***	2.34***	3.16***	4.47***
Big	Glamour	101	9,778	4.99	0.67	1.06	1.45	1.68	2.55
Big	Medium	81	7,090	4.10	0.76	1.31	1.60	2.03	2.58
Big	Value	56	5,413	3.88	0.77	1.63	1.97	2.38	3.44
Big value – Big glamour (pps)				–1.12***	0.10	0.57*	0.52*	0.70**	0.89**
B. Earnings surprises < 0; EAARs < 0									
Small	Glamour	116	287	–7.27	–0.31	–1.23	–2.69	–3.02	–1.48
Small	Medium	149	295	–5.96	–0.01	–0.93	–1.38	–1.32	0.92
Small	Value	186	233	–5.62	–0.07	–0.23	–0.68	0.11	2.85
Small value – Small glamour (pps)				1.65***	0.24	1.00***	2.01***	3.13***	4.34***
Big	Glamour	52	9,108	–5.48	0.02	–1.39	–2.13	–2.36	–2.12
Big	Medium	55	7,362	–4.13	–0.16	–0.87	–0.83	–0.70	–0.64
Big	Value	43	4,885	–3.82	–0.36	–0.71	0.59	1.22	1.89
Big value – Big glamour (pps)				1.66***	–0.39	0.68*	2.72***	3.58***	4.01***
Spread = Small value in Panel A – Small glamour in Panel B (pps)				13.11***	1.59***	5.14***	8.69***	11.61***	12.72***
Spread = Big value in Panel A – Big glamour in Panel B (pps)				9.35***	0.75**	3.02***	4.10***	4.74***	5.56***

Notes: See notes to Table 3. This table presents initial and subsequent abnormal returns of size/BM-sorted portfolios contingent on the signs of earnings surprises and EAARs. The size breakpoint for year *t* equals the median NYSE market equity at the end of June of year *t*. The BM breakpoints are the 30th and 70th NYSE percentiles.

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

Finally, we used other value measures, including earnings-to-price ratio (EP), cash-flow-to-price ratio (CP), and sales growth ratio (SG). Because these measures directly affect the choice of value or glamour portfolio, they are important to practitioners who wish to implement our trading strategy. **Table 6** reports our findings for value and glamour stocks. When using SG, we took a special step to exclude stocks with zero or negative earnings. An important issue when using SG to define value stocks is that companies with the lowest past sales growth ratios may not all be value stocks—some may be issued by stagnant companies whose future returns do not look promising. To differentiate these stagnant companies from value companies, we required that companies have positive earnings in order to be considered value companies. We defined value stocks as stocks ranking highest on EP or CP and lowest on SG, and we defined glamour stocks as stocks ranking lowest on EP or CP and highest on SG. Both initial market reactions and drift patterns are consistent with our findings in Table 3. Value stocks have more-muted reactions than glamour stocks over the three-day announcement window. When both EAARs and earnings surprises are positive (Panels A, C, and E), value stocks have larger positive drifts than glamour stocks. When both are negative (Panels B, D, and F), glamour stocks have larger negative drifts across all panels. For the practitioner, the different value measures (EP, CP, and SG) in our trading strategy would generate estimated annual returns (before transaction costs) of 17.9 percent, 18.8 percent, and 16.6 percent, respectively.

Conclusion

Our study emerged from our analysis of two frequently examined market anomalies: the value–glamour anomaly, popularized by LSV (1994),

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Table 5. Robustness Tests: Earnings Surprises Calculated with Mean Values and Calendar-Time Portfolio, June 1984–December 2008

BM Rank	*N*	EAARs (%)	1 Mo. (%)	3 Mo. (%)	6 Mo. (%)	9 Mo. (%)	1 Year (%)
A. Earnings surprises calculated with mean estimates; earnings surprises > 0 and EAARs > 0							
1 (Glamour)	148	5.99	0.7	1.68	1.97	2.49	2.94
2	147	5.61	1.06	1.98	2.77	3.67	4.59
3	147	5.18	1.03	2.26	3.39	4.64	6.03
4	143	4.81	0.94	2	3.18	4.56	6.04
5 (Value)	136	5.33	1.19	2.88	5.25	7.01	9.41
Value – Glamour (pps)		–0.67***	0.49*	1.20**	3.28***	4.52***	6.47***
B. Earnings surprises calculated with mean estimates; earnings surprises < 0 and EAARs < 0							
1 (Glamour)	103	–6.6	–0.32	–1.8	–3.43	–4.49	–4.24
2	110	–5.84	–0.25	–1.47	–2.31	–2.72	–2.07
3	118	–5.15	–0.16	–1.48	–1.65	–1.83	–1
4	125	–4.77	–0.27	–1.2	–1.07	–0.96	–0.3
5 (Value)	138	–5.25	–0.37	–1.12	–1.11	–0.51	1.94
Value – Glamour (pps)		1.35***	–0.05	0.68*	2.32***	3.98***	6.19***
Spread = Value in Panel A – Glamour in Panel B (pps)		11.92***	1.51***	4.68***	8.68***	11.50***	13.65***
C. Calendar-time portfolio; earnings surprises > 0 and EAARs > 0							
1 (Glamour)	136	6	0.78	0.55	1.41	1.85	1.97
2	152	5.66	0.76	0.55	1.33	2.08	2.9
3	150	5.19	0.86	1.3	2.58	3.88	4.56
4	148	4.82	0.63	1.07	2.17	3.53	5.15
5 (Value)	140	5.31	1.33	2.15	4.1	6.24	8.19
Value – Glamour (pps)		–0.69***	0.55**	1.60***	2.68***	4.39***	6.22***
D. Calendar-time portfolio; earnings surprises < 0 and EAARs < 0							
1 (Glamour)	111	–6.6	–0.13	–1.54	–2.44	–2.65	–1.49
2	112	–5.92	–0.04	–1.04	–1.57	–1.25	–0.01
3	121	–5.19	0.2	–0.31	–0.34	0.22	1.67
4	128	–4.77	0.04	–0.33	–0.12	0.48	1.89
5 (Value)	142	–5.25	–0.1	–0.45	0.27	1.87	5.1
Value – Glamour (pps)		1.35***	0.03	1.09***	2.71***	4.53***	6.58***
Spread = Value in Panel C – Glamour in Panel D (pps)		11.91***	1.46***	3.69***	6.54***	8.89***	9.68***

Notes: See notes to Table 3. This table presents initial and subsequent abnormal returns of BM-sorted portfolios contingent on the signs of earnings surprises and EAARs. Panels A and B report returns when the mean analyst forecast is used as a measure of expected earnings. Panels C and D report calendar-time returns. We formed portfolios on the first day of each calendar quarter; after a company announced its earnings, we allocated the company into a portfolio in the next calendar quarter according to its BM and the signs of its earnings surprise and EAAR.

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

and the post–earnings announcement drift, first documented by Ball and Brown (1968). The goal of our research was to link these two anomalies directly by studying the different initial market reactions to earnings announcements and the drift patterns of various value and glamour portfolios and to design a new trading strategy based on the signs of earnings surprises and EAARs.

Following prior research that explored rational and behavioral explanations for the existence of both the value–glamour anomaly and the post–earnings announcement drift, we developed several testable predictions. We first predicted that value stocks have greater information uncertainty than glamour stocks. We then predicted that, owing to greater information uncertainty, value stocks have

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Table 6. Robustness Tests: Other Value Proxies, June 1984–December 2008

Portfolios	*N*	EAARs (%)	1 Mo. (%)	3 Mo. (%)	6 Mo. (%)	9 Mo. (%)	1 Year (%)
A. EP rankings; earnings surprises > 0 and EAARs > 0							
Glamour	119	6.99	0.42	1.47	1.84	3.2	4.84
Value	153	4.65	1.21	2.78	4.82	6.54	8.68
Value – Glamour (pps)		–2.34***	0.79***	1.30***	2.98***	3.33***	3.84***
B. EP rankings; earnings surprises < 0 and EAARs < 0							
Glamour	141	–6.77	–0.46	–1.7	–2.87	–3.08	–1.03
Value	119	–4.71	–0.25	–1.01	–0.65	–0.09	1.17
Value – Glamour (pps)		2.06***	0.2	0.69	2.23***	2.99***	2.19***
Spread = Value in Panel A – Glamour in Panel B (pps)		11.43***	1.66**	4.48***	7.69***	9.62***	9.71***
C. CP rankings; earnings surprises > 0 and EAARs > 0							
Glamour	119	6.97	0.39	1.37	1.19	2.51	3.8
Value	143	5	1.15	2.9	5.07	6.76	9.16
Value – Glamour (pps)		–1.97***	0.76**	1.53***	3.88***	4.25***	5.36***
D. CP rankings; earnings surprises < 0 and EAARs < 0							
Glamour	126	–6.95	–0.34	–1.82	–3.58	–4.36	–2.69
Value	122	–5.01	–0.35	–0.96	–0.69	0.2	2.02
Value – Glamour (pps)		1.94***	–0.01	0.86	2.89**	4.55***	4.71***
Spread = Value in Panel C – Glamour in Panel D (pps)		11.95***	1.50**	4.71***	8.65***	11.12***	11.85***
E. SG rankings; earnings surprises > 0 and EAARs > 0							
Value	129	4.97	1.17	2.28	3.35	4.66	5.73
Glamour	126	6.39	0.79	2.44	3.8	5.29	6.89
Value – Glamour (pps)		–1.42***	0.38**	–0.16	–0.45	–0.62*	–1.16**
F. SG rankings; earnings surprises < 0 and EAARs < 0							
Value	117	–5	–0.35	–1.04	–1.64	–1.23	0.17
Glamour	113	–6.75	–0.18	–1.87	–3.17	–3.85	–2.49
Value – Glamour (pps)		1.75***	–0.17	0.83**	1.53**	2.62**	2.67***
Spread = Value in Panel E – Glamour in Panel F (pps)		11.72***	1.35**	4.15***	6.52***	8.51***	8.22***

Notes: See notes to Table 3. This table presents initial and subsequent abnormal returns of portfolios sorted by three different value measures (CP, EP, and SG), contingent on the signs of earnings surprises and EAARs.

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

more-muted initial reactions to earnings surprises than do glamour stocks. Finally, we predicted that when earnings news is good, value stocks have better (more positive) post-announcement drifts than glamour stocks; but when earnings news is bad, whether value stocks have better (less negative) drifts than glamour stocks owing to the two opposite effects—the risk premium effect and the delayed reaction effect—is unknown *ex ante*.

We found strong support for our predictions and also found evidence showing, *ex post*, that when earnings news is bad, value stocks still have better (less negative) drifts than glamour stocks. For value stocks, the risk premium effect induced by high information uncertainty signals apparently dominates the delayed reaction effect arising from the uncertainty.

A trading strategy of taking a long position in value stocks when both earnings surprises and EAARs are positive and a short position in glamour stocks when both are negative can generate annual returns (before transaction costs) of 16.6 percent (SG) to 18.8 percent (CP). This anomaly is mainly a long-side phenomenon; preventing

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investors from short selling glamour stocks will not prevent them from earning a value premium. On the basis of our robustness tests, we found that drift patterns are consistent.

Although we relied on information uncertainty to motivate our study of the two anomalies, we did not attempt to claim that information uncertainty is the only explanation. Other factors, such as transaction costs (Ng et al. 2008), investor attention (Hou, Peng, and Xiong 2009), and expectational errors (Skinner and Sloan 2002), may also explain some of our results. We also did not attempt to distinguish between behavioral and rational models of information uncertainty because doing so is empirically *impossible* given that the predictions from both types of models are identical (Brav and Heaton 2002).

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This article qualifies for 1 CE credit.

Notes

1. Michael Rawson, "ETFs with Style: Defining Value and Growth and Investing Based on Style Using ETFs," Morningstar (13 October 2010): http://news.morningstar.com/articlenet/article.aspx?id=355113.
2. Shon and Zhou (2010), however, found no evidence that value (growth) stocks with higher divergent opinions earn higher returns than those with lower divergent opinions.
3. According to Shivakumar (2007, p. 436), "Most popular theories for stock market anomalies, rational or otherwise, seem to rely upon information uncertainty."
4. We are grateful to Jay Ritter for the use of his data on incorporation dates.
5. Available at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.
6. This computation is the same as that used by Zacks Investment Research.
7. Jan and Ou (2008) found that both the frequency and the magnitude of negative book value of equity have grown substantially over time. R&D—especially R&D cumulated over time—not only contributes to the increasing trend of negative book value incidences but also plays an important role in the market's valuation of these companies.
8. That drift is over a roughly three-month window ($t_q + 2$, $t_{q+1} - 2$), where q represents the quarter and t represents the earnings announcement day.
9. To our knowledge, Zhang (2006) did not Winsorize the variables in his Table I.
10. We arrived at this number on the basis of abnormal returns (adjusted for size). If total returns are used, the average quarterly return for our portfolio is 4.77 percent.
11. Carhart (1997) reported that the trading costs for open-end mutual funds over 1993–1996 were 0.22 percent for purchases and 0.63 percent for sales.
12. We offer two caveats for practitioners who plan to implement this trading strategy. First, because not all companies announce quarterly earnings on the same day, investors must balance their portfolios dynamically. Fortunately, because we know whether a stock is a value stock or a glamour stock (or neither) beforehand, so long as the signs of its earnings surprise and EAAR are available (both are available at the end of the second day after the earnings announcement), we should be able to know whether to long or short the stock or do nothing. Second, for 2 out of 95 quarters, this strategy generated rather large negative returns (the loss is greater than 10 percent). We suggest that practitioners monitor their portfolios closely and put some risk control mechanisms in place.
13. One practitioner reported that his firm initiates trades within "30 seconds of the earnings announcement" (Battalio and Mendenhall 2007, p. 1, Note 2).

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