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Good News for Value Stocks: Further Evidence on Market Efficiency

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ABSTRACT

This article examines the hypothesis that the superior return to so-called value stocks is the result of expectational errors made by investors. We study stock price reactions around earnings announcements for value and glamour stocks over a 5-year period after portfolio formation. The announcement returns suggest that a significant portion of the return difference between value and glamour stocks is attributable to earnings surprises that are systematically more positive for value stocks. The evidence is inconsistent with a risk-based explanation for the return differential.

MOST FINANCE RESEARCHERS AGREE that simple value strategies based on such ratios as book-to-market, earnings-to-price and cash flow-to-price have produced superior returns over a long period of time.[1] Interpreting these superior returns, however, has been more controversial. On one side, Fama–French (1992) argue that these superior returns represent compensation for risk along the lines of the Merton (1973) intertemporal capital asset pricing model (ICAPM) where portfolios formed on book-to-market ratios are interpreted as mimicking portfolios whose returns are correlated with relevant state variables representing consumption or production opportunities. On the other side, Lakonishok, Shleifer, and Vishny (LSV, 1994) contend that there is little evidence that high book-to-market and high cash-flow-to-price stocks are riskier based on conventional notions of systematic risk. LSV argue instead that value stocks have been underpriced relative to their risk and return characteristics for various behavioral and institutional reasons.

A specific behavioral explanation pursued in more depth by LSV (1994) is that the superior return on value stocks is due to expectational errors made by investors. In particular, investors tend to extrapolate past growth rates too far into the future. Evidence going back to Little (1962) suggests that company

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[1] For example, see Basu (1977); Rosenberg, Reid, and Lanstein (1984); De Bondt and Thaler (1985, 1987); Jaffe, Keim, and Westerfield (1989); Chan, Hamao, and Lakonishok (1991); Fama and French (1992); Lakonishok, Shleifer, and Vishny (1994); and Davis (1994). For an alternative view that the superior returns are the result of survivor biases, see Banz and Breen (1986) and Kothari, Shanken, and Sloan (1995).

earnings are close to a random walk, with earnings growth rates being predictable only one to two years into the future. Yet the large price-earnings ratio differences between value and glamour stocks seem to reflect an expectation that past growth differences will persist much longer than is reliably predictable from past data. Value stocks provide superior returns because the market slowly realizes that earnings growth rates for value stocks are higher than it initially expected and conversely for glamour stocks. While such extrapolative expectations may not be the only source of mispricing, at least they represent a testable alternative hypothesis.[2]

In this article, we examine the role of expectational errors in explaining the superior return to value stocks. As in Chopra, Lakonishok, and Ritter (1992) and La Porta (1996), we examine the market's reaction to earnings announcements to determine whether investors make systematic errors in pricing. We test whether earnings surprises in the 5 years after portfolio formation are systematically positive for value firms and negative for glamour firms. This is a direct test of the expectational errors hypothesis. Earnings announcement price reactions also reveal the time pattern of the resolution of uncertainty about the relative prospects of value and glamour firms. Because the superior returns to value strategies persist for at least 5 years (perhaps with some petering out toward years 4 and 5), we would expect a correspondingly long period of positive earnings surprises for value stocks.

Section I describes our earnings surprise methodology. Section II presents the basic results. Section III asks whether the earnings surprise results are consistent with a risk-based explanation of the return differential between value and glamour stocks. Section IV concludes.

I. Methodology

Data on *Wall Street Journal* quarterly earnings announcement days (event days) become available on COMPUSTAT in 1971. For this reason, our sample period runs from 1971:2 through 1993:1. Our universe of firms consists of New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and Nasdaq firms that appear on the Center for Research in Securities Prices (CRSP) and COMPUSTAT tapes with data available for certain income statement and balance sheet items. We exclude real estate investment trusts (REITs), American Depository Receipts (ADRs), closed-end mutual funds, foreign stocks, unit investment trusts, and American trusts.

To be included in our sample, the common stock of a U.S. firm must have a CRSP value of equity in December of year $t - 1$ and June of year t. The firm must also have COMPUSTAT data on sales, earnings (before extraordinary items), cash flow, and book equity, where cash flow is defined as earnings

[2] A recent article by Daniel and Titman (1997) casts doubt on the risk factor interpretation of the superior returns to high book-to-market stocks. In particular, they find that, while high book-to-market stocks do have higher expected returns, expected returns are not significantly higher for stocks whose returns are more highly correlated with the book-to-market factor. In other words, comovement with the proposed risk factor does not explain expected returns.

(before extraordinary items) plus depreciation. To minimize the possible impact of COMPUSTAT look-ahead bias (see Kothari, Shanken, and Sloan (1995) and Chan, Jegadeesh, and Lakonishok (1995)), we require the firm to have COMPUSTAT data on sales and earnings for fiscal years ending in calendar $t - 1$ through $t - 5$. This ensures that we do not measure stock returns for the first 5 years that a firm appears in COMPUSTAT, since this data may have been back-filled and could not therefore serve as the basis for a measurable trading strategy available to market participants.

To examine earnings announcement return differences between value and glamour stocks, we form portfolios on the basis of two classifications: the book-to-market ratio favored by Fama–French (1992) and a two-way classification based on cash-flow-to-price and past growth-in-sales introduced by LSV (1994). Portfolios are formed in June of each year t using accounting data for fiscal year end in year $t - 1$ and market value of equity from December of year $t - 1$. For the purposes of size classifications, market value of equity is measured at the end of June of year t.

Using the ratio of book equity to market value of equity in December of $t - 1$, we sort stocks into deciles using all firms except those with negative book values of equity. The value portfolio consists of stocks in the highest decile of book-to-market (BM10) and the glamour portfolio consists of stocks in the lowest decile of book-to-market (BM1).

According to the two-way classification of LSV (1994), value stocks are defined as those that have shown poor growth in the past and are expected by the market to continue growing slowly. Specifically, value stocks have had low sales growth over the previous five years and currently trade for low multiples of current cash flow, presumably because of the market's pessimistic expectations for future growth (LSV, 1994). Each stock is ranked on cash-flow-to-price (CP) and on a weighted average of sales growth ranks (GS). The weighted sales growth measure starts by ranking each firm based on its sales growth in each year $t - 5$ through $t - 1$. The weighted average sales rank is then obtained by giving the weight of 5 to its sales growth rank in year $t - 1$, the weight of 4 to its growth rate rank in year $t - 2$, etc. All stocks are divided into 3 groups (bottom 30 percent (1), middle 40 percent (2) and top 30 percent (3)) based on CP and, independently, 3 groups based on GS. Groups formed on CP are based only on firms with nonnegative cash flows at the time of formation. The glamour portfolio consists of stocks ranked lowest on cash-flow-to-price (CP1) and highest on growth-in-sales (GS3), while the value portfolio consists of stocks ranked highest on cash-flow-to-price (CP3) and lowest on sales growth (GS1).

For each of our portfolios, we present annual buy-and-hold returns and earnings announcement returns. Annual buy-and-hold returns are reported for 5 years after formation with year 1 beginning in July of year t and ending in June of year $t + 1$. For stocks where returns data become unavailable between July of year t and the end of June of year $t + 1$, we replace the remainder of that period's return by the equally-weighted return on the re-

maining stocks in the portfolio. The stock does not appear in the portfolio in the following year. Annual portfolio returns are obtained by *equally-weighting* the returns on all stocks that belong to the portfolio at the beginning of July in year t. Portfolios are rebalanced to equal weights at the end of each year.

The focus of this article is on the earnings announcement returns. These are measured quarterly over a 3-day window $(t - 1, t + 1)$ around *The Wall Street Journal* publication dates over a period of 5 years after portfolio formation. For each quarter, the 3-day, buy-and-hold event returns are equally-weighted across all stocks in the portfolio to compute a portfolio event return.

As a benchmark for the annual buy-and-hold returns, size-adjusted returns are calculated as follows. For each year, each stock in the sample is sorted into a size decile where size is measured as market capitalization of equity at the end of June of year t, and decile breakpoints are based on NYSE size decile breakpoints (excluding REITs, ADRs, etc.). Since a given size decile may contain a disproportionate number of value or glamour stocks (with the smallest size deciles typically containing a disproportionate number of value stocks), we make an attempt to purge any confounding value effects from our estimates of size-based returns (see Chopra, Lakonishok, and Ritter (1992)). This is done by forming size decile benchmark portfolios using only firms that are classified as neither value nor glamour firms. For the book-to-market analysis, the size decile benchmark portfolios are equally-weighted portfolios consisting of all firms in that size decile that are also in deciles 4, 5, 6, and 7 according to BM. For the (CP, GS) analysis, the size decile benchmark portfolios returns include all firms in the size decile except those classified as value (top 30 percent according to CP and bottom 30 percent according to GS) or glamour (bottom 30 percent according to CP and top 30 percent according to GS). Annual size-adjusted returns are calculated for each stock by subtracting off the return on its corresponding size decile benchmark portfolio for year t. The annual size-adjusted return for a portfolio is then obtained by equally-weighting the size-adjusted returns for all stocks in that portfolio.

Size-adjusted earnings announcement returns are calculated in a similar manner. For each quarter in the sample, a size-decile earnings announcement benchmark portfolio is formed using all stocks in that size decile for which earnings announcement dates are available and which are neither classified as value nor glamour firms. The size-benchmark return is then just an equally-weighted average of these earnings announcement returns. In other words, the benchmark used is not the average 3-day return for a firm of comparable size, but rather, the average 3-day return in a $(-1, +1)$ window around that quarter's earnings announcements for firms in that size decile. Size-adjusted earnings announcement returns for each stock are calculated by subtracting off the return on its corresponding size decile earnings announcement benchmark. The size-adjusted earnings announcement return for a portfolio is then obtained by equally-weighting the size-adjusted return for all stocks in that portfolio.

II. Earnings Surprises for Value and Glamour Portfolios

Table I reports results on earnings announcement returns and annual buy-and-hold returns for value and glamour portfolios using the BM classification. Panel A contains the key results on earnings announcement returns over the 5 years after portfolio formation. The 20 quarterly portfolio earnings announcement returns (Q01–Q20) are equally-weighted 3-day, buy-and-hold returns calculated on all stocks for which data are available for that quarter. These are aggregated into annual intervals by summing up the four quarterly earnings announcement returns in each of the five postformation years. For example, Q01–Q04 is the sample average over 22 formation periods (June 1971–June 1992) of the sum of the 4 quarterly earnings announcement returns occurring in the first year after portfolio formation, while Q17–Q20 is the analogous return for year 5 after formation.

The results indicate that event returns are substantially higher for the value portfolio than for the glamour portfolio. In year +1, the cumulative event return is −0.5 percent for the glamour portfolio and +3.5 percent for the value portfolio, indicating a relative disappointment in the earnings performance of glamour stocks. The difference of +4 percent, realized over only 12 trading days, represents one-third of the 12.2 percent total difference in first-year returns between the value and glamour portfolios reported in Panel C. The difference in year +1 event returns between the value and glamour portfolios is statistically significant. The *t*-statistics are calculated using the method of Fama-MacBeth (1973) and assuming year-to-year independence of the earnings announcement return differences. For example, we have 22 independent observations on the difference between Q01–Q04 of the value and glamour portfolios, so we just perform a *t*-test with standard errors calculated from this time series.

Quantitatively similar results also obtain for year +2. Substantially higher relative event returns for the value portfolio persist even 5 years after portfolio formation, although the magnitude of the difference in years +4 and +5 is approximately half that in years +1 and +2. This evidence suggests that the positive updating on the earnings prospects of value stocks relative to glamour stocks takes place quite slowly. This fits well with the evidence on annual buy and hold returns, since those return differences between value and glamour portfolios also persist for 5 years. Annual buy-and-hold return differences appear to peter out more slowly than the earnings surprises, an issue we revisit shortly.

Size-adjusted event returns tell a very similar story, but with somewhat smaller magnitudes in every case. In year +1, the difference in size-adjusted event returns between value and glamour portfolios is +3.2 percent, representing approximately 28 percent of the 11 percent total difference in annual size-adjusted returns. The size-adjusted event return differences and the size-adjusted annual buy-and-hold return differences appear to peter out a little more quickly over time than the raw return differences.

Table I

Annual Cumulative Earnings Announcement Returns and Annual Buy-and-Hold Returns on Value and Glamour Portfolios Classified by Book-to-Market Ratios, 1971–1992 (Full Sample)

At the end of each June between 1971 and 1992, 10 decile portfolios are formed in ascending order based on the ratio of the book value of equity to market value of equity (BM). The glamour portfolio refers to the decile portfolio containing stocks ranking lowest on BM. The value portfolio refers to the decile portfolio containing stocks ranking highest on BM. The returns presented in the table are averages over all formation periods. Panel A contains (equally-weighted) earnings announcement returns for each portfolio. These are measured quarterly over a 3-day window $(t - 1, t + 1)$ around *The Wall Street Journal* publication date and then summed up over the four quarters in each of the first five post-formation years (Q01–Q04, . . . , Q17–Q20). Panel B contains the (equally-weighted) size-adjusted earnings announcement returns. For each stock in the portfolio, size-adjusted earnings announcement returns are obtained by subtracting off the earnings announcement return on a benchmark portfolio consisting of stocks in the same size decile. Panel C contains (equally-weighted) annual portfolio returns in year t after formation, $t = 1, 2, 3, 4, 5$. Panel D contains (equally-weighted) size-adjusted annual portfolio returns. For each stock in the portfolio, size-adjusted annual returns are obtained by subtracting off the annual return on a benchmark portfolio consisting of stocks in the same decile.

	Glamour			Value	Mean Difference	*t*-Stat for Mean
BM	1	2	9	10	10–1	Difference 10–1
			Panel A: Event Returns			
Q01–Q04	−0.00472	0.00772	0.03200	0.03532	0.04004	5.65
Q05–Q08	−0.00428	0.00688	0.02828	0.03012	0.03440	7.14
Q09–Q12	0.00312	0.00796	0.02492	0.03136	0.02824	5.12
Q13–Q16	0.00804	0.00812	0.02176	0.02644	0.01840	3.67
Q17–Q20	0.00424	0.01024	0.01368	0.02432	0.02008	4.49
			Panel B: Size-Adjusted Event Returns			
Q01–Q04	−0.01595	−0.00334	0.01533	0.01610	0.03205	5.03
Q05–Q08	−0.01484	−0.00419	0.01185	0.01216	0.02699	5.90
Q09–Q12	−0.00822	−0.00411	0.00812	0.01341	0.02162	4.18
Q13–Q16	−0.00296	−0.00318	0.00578	0.00945	0.01240	3.05
Q17–Q20	−0.00484	0.00062	0.00013	0.00987	0.01471	3.39
			Panel C: Annual Returns			
YR1	0.09254	0.14811	0.22534	0.21547	0.12292	3.84
YR2	0.09284	0.14590	0.20085	0.21971	0.12686	3.88
YR3	0.11979	0.14835	0.24195	0.24496	0.12517	4.27
YR4	0.13063	0.16836	0.23149	0.25141	0.12078	3.82
YR5	0.12274	0.17032	0.22329	0.23518	0.11244	3.11
			Panel D: Size-Adjusted Annual Returns			
YR1	−0.07810	−0.02196	0.04412	0.03213	0.11023	3.50
YR2	−0.08011	−0.02824	0.01569	0.03279	0.11289	3.91
YR3	−0.06160	−0.03947	0.03402	0.03426	0.09585	4.00
YR4	−0.06130	−0.03217	0.00610	0.02467	0.08597	2.78
YR5	−0.05659	−0.02101	0.00442	0.01803	0.07461	1.96

Table II contains analogous numbers for the (CP, GS) classification. The results are similar. In year +1, the difference in event returns between value and glamour portfolios is +3.2 percent, which represents approximately 27 percent of the difference in total year +1 returns. This difference is significant at the 1 percent level. The difference in event returns is still 2.0 percent in year +3 and represents approximately 20 percent of the 9.6 percent difference in annual returns between the two portfolios. Interestingly, the differences in both event returns and annual buy-and-hold returns die out more rapidly over time using the (CP, GS) classification. In fact, deterioration of annual return differences for the (CP, GS) classification is much more pronounced here than in the original LSV article. We believe that this is due to the addition of Nasdaq firms as well as to a different sample period. In any case, the petering out of the earnings surprises is consistent with the petering out of annual return differences between the two portfolios. This is especially evident in the size-adjusted annual return differences, where year +5 return differences are significantly less than half those for year +1.

Reconciling the time pattern of earnings surprises with the time pattern of annual buy-and-hold returns is an interesting exercise. The finding that positive relative earnings surprises for value stocks, while relatively long-lived, appear to die out faster than annual buy and hold return differences suggests that earnings surprises are not the whole story behind the superior returns to value stocks. Other behavioral and institutional factors may play a role in the superior returns to value strategies (LSV, 1994).

So far, we have focused on earnings announcement results for our entire NYSE/AMEX/Nasdaq universe of firms. One interesting question is whether these results apply equally well to the larger firms that are more closely followed by market participants. These stocks would presumably be less vulnerable to the sort of mispricing discussed by LSV (1994). In fact, in a sample of NYSE and AMEX stocks only, LSV (1994) *do* find that the return differences between value and glamour stocks are approximately 30 percent lower on a subsample of firms with market capitalization above the median for the NYSE/CRSP universe.

Tables III and IV present numbers analogous to those of Tables I and II for the subsample of the largest firms with market capitalization above the NYSE median in the year of portfolio formation. The difference in earnings announcement returns between value and glamour firms is substantially lower than in the full sample and also accounts for a lower fraction of the annual return difference between value and glamour portfolios. For example, using the book-to-market classification in Table III, we see that the earnings announcement return difference between the value and glamour portfolios is 1.0 percent in year +1, 1.5 percent in year +2, and 1.2 percent in year +3. These differences represent approximately 12 percent, 14 percent, and 11 percent respectively of the annual buy-and-hold return differences reported in Panel C of Table III. Recall that for the full sample, the announcement return differences were 4.0 percent in year +1, 3.4 percent in year +2, and 2.8 percent in year +3, and

Table II

Earnings Announcement Returns and Annual Buy-and-Hold Returns on Value and Glamour Portfolios Classified by Cash-Flow-to-Price and Growth-in-Sales, 1971–1992 (Full Sample)

At the end of each June between 1971 and 1992, 9 groups of stocks are formed. The stocks are independently sorted in ascending order into 3 groups ((1) bottom 30 percent, (2) middle 40 percent, and (3) top 30 percent) based on each of two variables, the ratio of cash flow to market value of equity (CP) and preformation 5-year average growth rate of sales (GS). The value portfolio contains stocks ranked in the top group (3) on CP and in the bottom group (1) on GS. The glamour portfolio contains stocks ranked in the bottom group (1) on CP and in the top group (3) on GS. The returns presented in the table are averages over all formation periods. Panel A contains (equally-weighted) earnings announcement returns for each portfolio. These are measured quarterly over a 3-day window $(t - 1, t + 1)$ around *The Wall Street Journal* publication date and then summed up over the four quarters in each of the first five post-formation years (Q01–Q04, . . . , Q17–Q20). Panel B contains the (equally-weighted) size-adjusted earnings announcement returns. For each stock in the portfolio, size-adjusted earnings announcement returns are obtained by subtracting off the earnings announcement return on a benchmark portfolio consisting of stocks in the same size decile. Panel C contains (equally-weighted) annual portfolio returns in year t after formation, $t = 1, 2, 3, 4, 5$. Panel D contains (equally-weighted) size-adjusted annual portfolio returns. For each stock in the portfolio, size-adjusted annual returns are obtained by subtracting off the annual return on a benchmark portfolio consisting of stocks in the same decile.

	Glamour	Value		
GP	1	3	Mean	t-Stat for Mean
GS	3	1	Difference	Difference
		Panel A: Event Returns		
Q01–Q04	−0.00019	0.03201	0.03220	6.62
Q05–Q08	0.00122	0.02922	0.02800	4.14
Q09–Q12	0.00581	0.02589	0.02008	4.20
Q13–Q16	0.00843	0.02056	0.01213	3.69
Q17–Q20	0.00898	0.01966	0.01068	2.89
		Panel B: Size-Adjusted Event Returns		
Q01–Q04	−0.01130	0.01285	0.02415	5.31
Q05–Q08	−0.00997	0.01112	0.02110	3.21
Q09–Q12	−0.00526	0.00864	0.01389	3.08
Q13–Q16	−0.00202	0.00444	0.00646	2.45
Q17–Q20	0.00025	0.00567	0.00542	1.66
		Panel C: Annual Returns		
YR1	0.11790	0.23700	0.11909	4.25
YR2	0.12349	0.24333	0.11983	4.17
YR3	0.13979	0.23534	0.09555	3.99
YR4	0.15757	0.24452	0.08695	2.83
YR5	0.15758	0.22269	0.06510	2.13
		Panel D: Size-Adjusted Annual Returns		
YR1	−0.04562	0.05102	0.09663	3.56
YR2	−0.04064	0.05436	0.09499	3.62
YR3	−0.03826	0.02934	0.06759	2.86
YR4	−0.03185	0.02511	0.05696	1.90
YR5	−0.02262	0.01531	0.03793	1.18

Table III

Annual Cumulative Earnings Announcement Returns and Annual Buy-and-Hold Returns on Value and Glamour Portfolios Classified by Book-to-Market Ratios, 1971–1992 (Firms with Market Cap > NYSE Median)

At the end of each June between 1971 and 1992, 10 decile portfolios are formed in ascending order based on the ratio of the book value of equity to market value of equity (BM) from among all stocks with market capitalization greater than the New York Stock Exchange (NYSE) median. The glamour portfolio refers to the decile portfolio containing stocks ranking lowest on BM. The value portfolio refers to the decile portfolio containing stocks ranking highest on BM. The returns presented in the table are averages over all formation periods. Panel A contains (equally-weighted) earnings announcement returns for each portfolio. These are measured quarterly over a 3-day window $(t - 1, t + 1)$ around *The Wall Street Journal* publication date and then summed up over the four quarters in each of the first five post-formation years (Q01–Q04, . . . , Q17–Q20). Panel B contains the (equally-weighted) size-adjusted earnings announcement returns. For each stock in the portfolio, size-adjusted earnings announcement returns are obtained by subtracting off the earnings announcement return on a benchmark portfolio consisting of stocks in the same size decile. Panel C contains (equally-weighted) annual portfolio returns in year t after formation, t = 1, 2, 3, 4, 5. Panel D contains (equally-weighted) size-adjusted annual portfolio returns. For each stock in the portfolio, size-adjusted annual returns are obtained by subtracting off the annual return on a benchmark portfolio consisting of stocks in the same decile.

	Glamour			Value	Mean Difference	*t*-Stat for Mean Difference
BM	1	2	9	10	10–1	10–1
			Panel A: Event Returns			
Q01–Q04	0.00315	0.00976	0.01840	0.01348	0.01033	0.80
Q05–Q08	0.00189	0.00662	0.01819	0.01717	0.01528	2.09
Q09–Q12	0.00265	0.00649	0.01341	0.01468	0.01203	1.55
Q13–Q16	0.00474	0.00633	0.00757	0.01172	0.00698	0.93
Q17–Q20	0.00230	0.00569	0.00498	0.00182	−0.00048	−0.08
			Panel B: Size-Adjusted Event Returns			
Q01–Q04	−0.00417	0.00267	0.01118	0.00476	0.00893	0.69
Q05–Q08	−0.00561	−0.00056	0.01060	0.00946	0.01508	2.06
Q09–Q12	−0.00566	−0.00176	0.00545	0.00741	0.01296	1.71
Q13–Q16	−0.00290	−0.00110	0.00019	0.00470	0.00760	1.03
Q17–Q20	−0.00321	0.00021	−0.00091	−0.00346	−0.00025	−0.04
			Panel C: Annual Returns			
YR1	0.11850	0.13855	0.17810	0.19898	0.08047	1.77
YR2	0.09456	0.13442	0.18220	0.20341	0.10884	2.83
YR3	0.11630	0.14040	0.19985	0.22462	0.10831	2.97
YR4	0.12053	0.15511	0.18150	0.21296	0.09243	3.32
YR5	0.10921	0.15368	0.20022	0.20082	0.09160	2.76
			Panel D: Size-Adjusted Annual Returns			
YR1	−0.03286	−0.01312	0.02334	0.04211	0.07497	1.68
YR2	−0.06261	−0.02261	0.02557	0.04220	0.10481	2.84
YR3	−0.04951	−0.02794	0.02596	0.05322	0.10272	2.99
YR4	−0.05814	−0.02656	−0.00752	0.02648	0.08462	3.19
YR5	−0.06009	−0.01887	0.02488	0.02892	0.08901	2.93

Table IV

Earnings Announcement Returns and Annual Buy-and-Hold Returns on Value and Glamour Portfolios Classified by Cash-Flow-to-Price and Growth-in-Sales, 1971–1992 (Firms with Market Cap > NYSE Median)

At the end of each June between 1971 and 1992, 9 groups of stocks are formed from among all stocks with market capitalization greater than the New York Stock Exchange (NYSE) median. The stocks are independently sorted in ascending order into 3 groups ((1) bottom 30 percent, (2) middle 40 percent, and (3) top 30 percent) based on each of two variables, the ratio of cash flow to market value of equity (CP) and preformation 5-year average growth rate of sales (GS). The value portfolio contains stocks ranked in the top group (3) on CP and in the bottom group (1) on GS. The glamour portfolio contains stocks ranked in the bottom group (1) on CP and in the top group (3) on GS. The returns presented in the table are averages over all formation periods. Panel A contains (equally-weighted) earnings announcement returns for each portfolio. These are measured quarterly over a 3-day window $(t - 1, t + 1)$ around *The Wall Street Journal* publication date and then summed up over the four quarters in each of the first five post-formation years (Q01–Q04, . . . , Q17–Q20). Panel B contains the (equally-weighted) size-adjusted earnings announcement returns. For each stock in the portfolio, size-adjusted earnings announcement returns are obtained by subtracting off the earnings announcement return on a benchmark portfolio consisting of stocks in the same size decile. Panel C contains (equally-weighted) annual portfolio returns in year t after formation, $t = 1, 2, 3, 4, 5$. Panel D contains (equally-weighted) size-adjusted annual portfolio returns. For each stock in the portfolio, size-adjusted annual returns are obtained by subtracting off the annual return on a benchmark portfolio consisting of stocks in the same decile.

	Glamour	Value		
GP	1	3	Mean	t-Stat for Mean
GS	3	1	Difference	Difference
		Panel A: Event Returns		
Q01–Q04	0.00456	0.01683	0.01228	2.13
Q05–Q08	0.00245	0.02634	0.02389	3.80
Q09–Q12	0.00445	0.01337	0.00892	1.25
Q13–Q16	0.00374	0.00798	0.00424	0.83
Q17–Q20	0.00388	0.00459	0.00072	0.16
		Panel B: Size-Adjusted Event Returns		
Q01–Q04	−0.00252	0.00872	0.01124	2.06
Q05–Q08	−0.00487	0.01813	0.02300	3.68
Q09–Q12	−0.00278	0.00544	0.00821	1.14
Q13–Q16	−0.00308	0.00020	0.00328	0.63
Q17–Q20	−0.00089	−0.00145	−0.00056	−0.13
		Panel C: Annual Returns		
YR1	0.11840	0.19950	0.08109	2.58
YR2	0.11089	0.19257	0.08168	2.61
YR3	0.11857	0.19773	0.07916	3.45
YR4	0.13551	0.20017	0.06465	2.11
YR5	0.12846	0.20431	0.07584	2.57
		Panel D: Size-Adjusted Annual Returns		
YR1	−0.02959	0.04722	0.07680	2.57
YR2	−0.03972	0.03650	0.07622	2.55
YR3	−0.04412	0.03377	0.07789	3.57
YR4	−0.04048	0.02209	0.06257	2.05
YR5	−0.03987	0.03480	0.07467	2.58

represent approximately 33 percent, 27 percent, and 22 percent of the annual return differences reported in Panel C of Table I.

One interpretation of these results is that the pricing of the larger firms is more efficient, leaving less systematic bias in the earnings surprises for value versus glamour firms. On the other hand, since these firms are followed more extensively by analysts and get much more coverage in the financial press, it may just be that a greater fraction of fundamental news about the larger firms is impounded into prices outside of quarterly earnings announcements.

A related problem is that of late earnings announcements. It is widely believed that when a firm does not announce earnings when it is expected to, the news is more likely to be bad. Hence, for firms announcing late, the earnings news may dribble out before the actual announcement date as the market realizes that "the dog hasn't barked." This could be a source of potential bias in our results if value firms systematically announce bad earnings late more often than glamour firms, and this channel for bad news to be communicated to the market is not captured in the $(-1, +1)$ window around the earnings announcement.

To evaluate this possibility, we define firms announcing late as those announcing more than 2 trading days after the calendar date of the announcement for the previous year (the expected date). For these firm-quarters, instead of using the $(-1, +1)$ return, we plug in the return from *4 days before the expected date to 1 day after the actual announcement date* to capture the effect of the market's learning from the announcement delay. While this introduces additional noise, the results give some indication of whether a delayed announcement bias can account for our results. For the BM classification in Table I, we find that 32 percent of value firms and 29 percent of glamour firms announce late. When we plug in the return over the extended window for all firms announcing late, we get an annual earnings announcement return for the value firms in year $+1$ of 3.2 percent compared to the 3.5 percent return reported in Table I, indicating that the bias adjustment makes little difference. Extending the event window for the late announcing glamour firms, we get an average event return of $+0.4$ percent compared to the -0.5 percent return reported in Table I. Extending the event window for late announcing glamour firms actually *increases* the event returns, which is contrary to the theory that late announcement typically means bad news. After extending the event window for late announcers, the event return difference between value and glamour firms is still $+2.8$ percent with a standard error of 1.1 percent.

When we perform the same procedure for late announcers on the (CP, GS) portfolios of Table II, we obtain similar results. Extending the window for late announcers results in an event return of $+3.5$ percent for the value portfolio in year $+1$, compared to $+3.2$ percent reported in Table II, and an event return of -0.3 percent for the glamour portfolio, compared to 0.0 percent in Table II. The event return difference is $+3.8$ percent with a standard error of 0.6 percent. The delayed announcement bias does not appear to explain the return difference between value and glamour firms around earnings announcements.

As with most event studies, our measure of earnings surprises focuses on actual announcement dates that are often not available to investors in advance. This means that the announcement returns we measure are not realizable as part of an implementable trading strategy. For readers interested in an implementable trading strategy, we do have results for a strategy that does not require advance knowledge of the announcement dates. We begin by estimating the expected announcement date simply as the calendar date of the announcement for the previous year. We then measure event returns beginning four days before the expected date, but we only include firms that have not already announced earlier than day −4 (since this is observable by investors at the time). Returns are cumulated through one day after the actual announcement takes place. This event window (expected date −4, actual date +1) is of variable length depending on the timing of the actual announcement. The median holding period is five days for all of the BM and (CP, GS) portfolios, with a mean of seven days for the BM portfolios and eight days for the (CP, GS) portfolios. The results for this trading strategy are consistent with the results obtained in Tables I and II. For the BM classification, the year +1 earnings announcement returns are 2.2 percent for the value portfolio and 0.4 percent for the glamour portfolio, with a difference of 1.8 percent and a standard error of 1.3 percent. For the (CP, GS) classification, the returns are 2.7 percent for the value portfolio, −0.3 percent for the glamour portfolio, with a difference of 3.0 percent and a standard error of 0.7 percent. These results are consistent with our earlier findings and suggest that the earlier results are not driven by a selection bias from using ex post announcement dates.

In sum, the evidence indicates that a significant portion of the return difference between value and glamour stocks is attributable to earnings surprises that are systematically more positive for value stocks.

III. Do Differences in Event Returns Represent Differences in Risk Premia?

An ardent defender of the risk premium story might argue at this point that the foregoing event returns evidence is inconclusive. The sizeable differences in event returns between value and glamour portfolios may just represent differences in ex ante risk premia realized around a small number of important information events. If a disproportionately high fraction of the annual uncertainty about a stock is realized around quarterly earnings announcements, then perhaps a disproportionate share of the risk premium is as well. Since the risk premium for value stocks is higher, these stocks should exhibit higher event returns than glamour stocks.

Do the data support such an explanation? It does not appear so. Recall that the return on glamour stocks around earnings announcements in both years +1 and +2 after portfolio formation is actually negative. This is clearly not supportive of the risk view, unless one believes in ex ante negative risk premia on a large subset of stocks. On the other hand, the estimates are not sufficiently precise to reject the null hypothesis that the event return on glamour

Table V

Cross-Section Regression Tests of Difference between Event and Nonevent Returns for Value and Glamour Portfolios, 1971:2–1993:1 (Full Sample)

For each quarter in the sample (1971:2–1993:1), we run cross-sectional regressions of the daily return for each portfolio on the Center for Research in Securities Prices (CRSP) value-weighted market return and a dummy variable for whether the day belongs to the (−1, +1) window around that quarter's earnings announcement. Regressions are run separately for value and glamour portfolios, with new value and glamour portfolios formed at the end of each June. As in Fama-MacBeth (1973), the coefficients reported are the averages of the coefficients from the 88 quarterly cross-sectional regressions with standard errors computed according to the time series of those coefficients. In Panel A, portfolio formation is based on the book-to-market ratio (BM). The glamour portfolio consists of firms in the bottom decile based on BM and the value portfolio consists of firms in the top decile according to BM. In Panel B, portfolios are formed on the ratio of cash flow to market value (CP) and on the preformation 5 year growth rate in sales (GS). The glamour portfolio consists of firms ranked in the bottom 30 percent on CP and in the top 30 percent on GS. The value portfolio consists of those stocks ranked in the top 30 percent on CP and in the bottom 30 percent on GS.

	Intercept	Event Day Dummy	Market Return
Panel A: Regressions for Portfolios Formed on BM			
Low BM Portfolio Return	0.000128	−0.000661	1.0670
(Glamour)	(2.00)	(−3.44)	(73.08)
High BM Portfolio Return	0.001104	0.001945	0.6502
(Value)	(6.77)	(5.45)	(30.67)
Panel B: Regressions for Portfolios Formed on (CP, GS)			
Low CP, High GS Portfolio Return	0.000161	−0.000399	1.0276
(Glamour)	(2.40)	(−2.56)	(76.12)
High CP, Low GS Portfolio Return	0.000764	0.001769	0.6751
(Value)	(7.35)	(7.05)	(32.30)

stocks is equal to the T-bill return. There is a more powerful test of the risk premium hypothesis, however. The risk premium view, that maintains that earnings announcement days contain a disproportionately large fraction of a stock's risk premium, implies that, *for both glamour and value stocks*, event returns should be higher than nonevent returns. In contrast, if the behavioral view is correct, and the information revealed about glamour stocks on event days is sufficiently negative, event returns could be significantly lower than nonevent returns, despite a higher ex ante risk premium. A comparison of event returns and nonevent returns for glamour stocks can potentially discriminate between these two views.

Table V presents the numbers for this test using both BM and (CP, GS) classifications. For each quarter in the sample, we run cross-sectional regressions of the daily return for each stock on the value-weighted market return and a dummy variable for whether the day belongs to the (−1, +1) window around that quarter's earnings announcement. Regressions are run separately for value and glamour stocks, with new value and glamour portfolios formed at

the end of each June. As in Fama–MacBeth (1973), the coefficients reported are the averages of the coefficients from the 88 quarterly cross-sectional regressions (1971:2–1993:1) with standard errors computed according to the time series of those coefficients.

We begin with the results for the BM classification. Regressions for low BM (glamour firms) show an intercept of 1.3 basis points per day and a coefficient of 1.07 on the market return (beta). More importantly, the coefficient on the event dummy is −6.6 basis points per day with a standard error of 1.9 basis points. On an annualized basis, this difference in return is approximately 16 percent per year. Event day returns are significantly below nonevent day returns despite the higher ex ante risk premium that should be required to hold stocks over event days. This result can only be explained by the hypothesis that, on average, the market receives negative surprises for glamour stocks on earnings announcement days. Results for value stocks are also quite interesting. The mean event return for value stocks on event days is 19.4 basis points higher than the nonevent return with a standard error of 3.6 basis points. On an annualized basis this difference is approximately 50 percent per year. This result is consistent with either a very high risk premium realized on event days or positive earnings surprises for value stocks or some combination of the two.

Results for the (CP, GS) classification are similar, but less dramatic. Regressions for glamour stocks (low CP, high GS) show an intercept of 1.6 basis points per day, and a coefficient on the market return of 1.03 (beta). The estimated return on event days is 4.0 basis points below the return on nonevent days, with a standard error of 1.6 basis points. Regressions for value stocks show an estimated event day return that is 17.7 basis points above the nonevent day return with a standard error of 2.5 basis points.

In sum, comparisons of event and nonevent day returns do not support the risk premium explanation of the superior return on value stocks. The risk premium hypothesis implies that event returns should be higher than nonevent returns for both glamour and value stocks. The data show that event returns are lower than nonevent returns for glamour stocks despite the higher ex ante risk premium posited by the theory. This can only be explained by negative earnings surprises for glamour stocks.

IV. Conclusion

The evidence in this article suggests that expectational errors about future earnings prospects play an important role in the superior return to value stocks. Postformation earnings announcement returns are substantially higher for value stocks than for glamour stocks. Event returns for glamour stocks are significantly lower than glamour returns on an average day, which is inconsistent with the risk premium explanation for the return differences between value and glamour stocks. In the full sample of NYSE, AMEX, and Nasdaq firms, earnings announcement return differences account for approximately 25–30 percent of the annual return differences between value and

glamour stocks in the first two to three years after portfolio formation and approximately 15–20 percent of return differences over years four and five after formation. Results for firms larger than the NYSE median are weaker, which may be due to a tendency of widely-followed stocks to adjust to news more continuously rather than have information events heavily concentrated on quarterly earnings announcement days.

The persistence of positive relative earnings surprises for value stocks long after portfolio formation is consistent with the finding of various researchers that the superior returns to value stocks persist long after portfolio formation. However, the magnitude of earnings surprises does diminish more rapidly than the annual return differences, indicating that learning about future earnings prospects may not explain all of the difference in returns between value and glamour stocks.

What *does* explain the long-lived component of these differences in average return? LSV (1994) suggest various possibilities. First, investors may simply have a preference for investing in "good" companies with high levels of profitability and superior management. Unsophisticated investors may equate a good company with a good investment irrespective of price. They may even *perceive* such stocks to be less risky, as allegedly was the case with IBM before investors were exposed to its vulnerability. Finally, sophisticated institutional investors may gravitate toward well-known, glamour stocks because these stocks are easier to justify to clients and superiors as prudent investments. Although a complete and satisfying explanation for the superior return to value stocks is beyond the scope of the present article, our evidence suggests that behavioral factors (and expectational errors in particular) play an important role.

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