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# The Role of Expectations in Value and Glamour Stock Returns

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## Abstract

What happens when value and glamour stocks miss earnings expectation targets? Although, as expected, prices for glamour stocks have historically fallen, prices for value stocks have gone up – even when business fundamentals deteriorated, based on results found in this study of global equities. These results suggest the superior returns delivered by value stocks may not be a result of positive developments relative to expectations, but instead are more likely due to a gradual and corrective reversal of earlier overreaction and mispricing. This augments research by select scholars and provides fresh evidence explaining why value investing historically has been a successful long-term strategy.

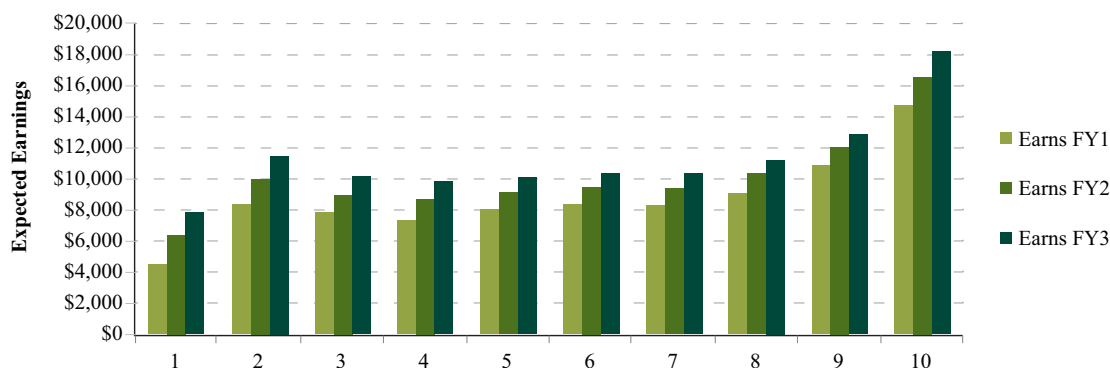
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## Introduction

Let's consider 10 local but hypothetical businesses in which you have the opportunity to invest. Because they are local, you know them reasonably well, but have no greater insight than the average resident of the community. They are not big businesses, but small businesses that are generally well regarded.

The chart below profiles the expected earnings of these 10 businesses over the next three years (fiscal years 1, 2, & 3). Given this information and all else being equal, for which business would you be willing to pay the most?

### Exhibit 1: Expected Earnings of 10 Hypothetical Businesses Over the Next 3 Fiscal Years

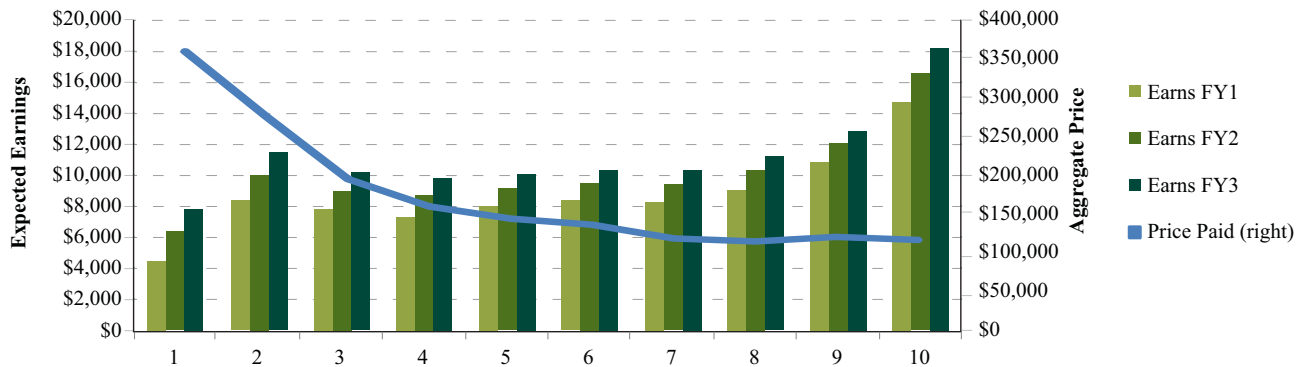


Source: Brandes Investment Partners. This hypothetical example is intended for illustrative purposes only. It does not represent the performance of any particular investments.

For many, the obvious answer is Business #10. As it offers the greatest expected earnings over the next three years, it logically would command a higher price. In contrast, Business #1 expects to earn about \$19,000 cumulatively over the next three years, a small fraction of the nearly \$50,000 expected of Business #10.

However, given similar investment choices, the broader stock market reflects a remarkably different viewpoint. Exhibit 2 features the same expected earnings data as Exhibit 1 plus an indication of the prices the market is willing to pay for each of these businesses (effectively price-to-forecasted earnings ratios). Most interestingly, the market is willing to pay the most for Business #1. In fact, it is willing to pay 2.7x more for a business (relative to #10) with four-tenths the earning power over the next three years. How can the market have such a contradictory perspective?

## Exhibit 2: Expected Earnings and Prices Paid for 10 Hypothetical “Businesses”



Source: IBES via Thomson, Brandes Investment Partners as of 6/30/09. This hypothetical example is intended for illustrative purposes only. It does not represent the performance of any particular investments.

Business #1 does offer substantially higher earnings growth. FY3 earnings are expected to be nearly twice that expected in FY1, which cannot be said of any other company. If that growth continued, Business #1 would produce an equivalent, if not greater, level of earnings than Business #10 at some point in the future. That point on the horizon, however, is farther away than most investors might imagine. If we extrapolate the earnings expected of Business #1 for another 17 years based on the growth implied in FY1-FY3 (20 years of earnings in total), it would expect to earn roughly \$37,000 in that final year, all the while growing earnings at an average pace of 12% annually. Clearly a crude estimate, but applying the same assumptions to the other businesses in this example, #1’s long-term growth would easily trump all others including Business #10 (6%). Yet, because the earning power of Business #10 is so much larger initially, it would still out earn Business #1 in its 20th year with income of \$48,801 and cumulatively produce 1.5x the earnings.

To be fair, these 10 “businesses” are not actually individual companies but represent a single share in a global pool of publicly traded equities.<sup>1</sup> Companies were grouped based on their forward P/E ratios such that #1 represents the 10% of companies with the highest forward P/E ratios. Conversely, #10 represents companies with the lowest forward P/Es. The expected earnings (on the left axis) are the aggregate earnings expected from holding a single share for each company in the pool, year after year, for 20 years. The same applies to price; the right axis represents the aggregate price paid over 20 years. So, this chart has unraveled the “P” from the “E” in the traditional value versus glamour story (see the Brandes Institute’s “Value vs. Glamour: A Global Phenomenon” for more information). Value stocks tend to have lower P/Es vs. glamour stocks and have historically outperformed glamour over the long term. Ironically, this simple exercise provides an interesting twist to the story and invokes the question “why?” Why do investors pay more for companies such as #1 and why have value stocks outperformed glamour over the long term?

In this study, we explore the contributing factors to this value premium. We chronicle what transpired with value and glamour stocks from their initial identification, subsequent financial results, and how they were priced in the market with a specific emphasis on the role expectations played. We find a manifest chronology of overreaction, revision, sentiment shift, and multiple expansion in value stocks. In glamour stocks, a similar record of overoptimism, revision, disappointment, and multiple *contraction* existed. Through time, the value/glamour cycle

<sup>1</sup> For a detailed description of this universe of securities, see the “Data & Methodologies” section of this report.

has been surprisingly persistent, bordering on predictable perhaps because the purchase of value stocks tends to exploit, rather than succumb to, behavioral biases such as overoptimism, overreaction, and anchoring. These biases tend to push prices for securities above or below their inherent worth. Over time, as the influence of these biases weakens, security prices revert away from extreme levels. As prices make this reversion, we believe there are ample opportunities for profit-minded investors who can remain rational and patient.

## Background

Building on the work done by Lakonishok, Shleifer, and Vishny in the '90s (LSV, 1995), the Brandes Institute has documented the persistence and extent to which value stocks have outperformed glamour across the globe. This was true in the United States from 1968, in non-U.S. markets in aggregate since 1980, as well as in most individual, developed nations. The value effect was even prevalent in emerging markets, though the historical context in which this can be evaluated is much shorter.

Why has value investing worked? Academics and practitioners have offered two competing arguments: risk and behavioral. The risk proponents suggest the excess returns represent rational compensation for the additional risk embedded in value securities. As noted in our frequent surveys of value and glamour stocks, using traditional measures of risk such as standard deviation, this does not appear to be a plausible argument. Value stocks have delivered higher returns with commensurate lower levels of volatility. There are numerous academic pieces confirming this line of thinking. At the Brandes Institute, we always have believed value stocks have delivered superior returns because their purchase capitalizes on behavioral errors. This includes errors such as extrapolation, myopia, overconfidence, loss aversion, reinforcement/confirmation, though this study points most directly to overreaction, overoptimism, and anchoring.

These errors and behavioral underpinnings prejudice expectations and sentiment about a particular type of stock. Some investors associate value stocks with companies that continually disappoint, whose stock prices recede, and appear to offer little hope of recovery. As a result, there's a perception that owning them is a direct path to poor returns. Naturally value stocks have low expectations, often accompanied by a decidedly negative sentiment. On the flipside, there are companies that have exceeded expectations in the past, appear to offer promising results, and whose stock prices have leapt with each positive past development. Such stocks bring investors comfort and confidence. Accordingly, many investors have high expectations for them and sentiment that borders on adoration.

This dichotomy in perceptions sets the table for value stocks to outperform. As Benjamin Graham noted, "It is natural and proper to prefer a business which is large and well-managed, has a good record, and is expected to show increasing earnings in the future. But these expectations, though seemingly well-founded, often fail to be realized. Many of the leading enterprises of yesterday are today far back in the ranks. Tomorrow is likely to tell a similar story" (p 36, *Security Analysis*).

This study draws on prior work that initiated the investigation of an underpinning for the value premium. In our opinion David Dreman and Michael Berry ("Dreman") put forth possibly the most practical set of results on the subject (Dreman, 1995). Dreman finds that errors in analysts' estimates have asymmetrical impacts on prices of value and glamour stocks. Specifically, positive earnings surprises for value stocks result in larger price increases than for glamour stocks, while the same is true in reverse for earnings disappointments. Rafael La Porta tested whether expectations are too extreme and finds stocks with low expected growth rates have had substantially higher subsequent returns than have stocks with high expected growth rates (La Porta, 1996).

Additionally, La Porta partnered with LSV ("LLSV") to suggest a sizeable amount of the value premium can be attributed to systematically higher earnings surprises for value stocks (La Porta, 1997). Because the surprises are systematic, they argue it rules out a risk-based explanation. On the other hand, Fama & French ("F&F") argue

value and growth returns are primarily a result of multiple expansion/contraction stemming from rational revaluations of company fundamentals. A risk-based argument is at its core. F&F recorded the movements of value and growth stocks, effectively documenting mean reversion as the cause of the value premium. The cheap got more expensive, the small got bigger, and vice versa as a consequence of changes in their valuation multiples (Fama & French, 2007).

We add to this line of literature by looking at more recent results, using a slightly different methodology, and importantly broadening the scope to a global universe of securities. Our findings suggest a behavioral explanation to the value premium, consistent with Dreman, but not as a result of systematically higher earnings surprises of value stocks, as LLSV highlighted. Though results reported in this study represent a global universe of stocks during an essentially non-overlapping period of study, when we narrowed our study to U.S.-based companies (as LLSV) we still found no evidence that value stocks had systematically higher earnings surprises. The results actually suggested the opposite is more likely true, which we will explore in greater detail. Moreover, LLSV left open the possibility of additional contributing factors, “Other behavioral and institutional factors may play a role in the superior returns to value strategies” (p 865). Likewise, we did not find evidence supporting a risk-based explanation. We found consistent multiple expansion/contraction with value/glamour stocks respectively, but it did not appear to depend on changes in company fundamentals as F&F argue. While we examine this point from multiple perspectives, our tests are structured differently than Fama & French, coupled again with a global set of security data, and could be sources for this disparity.

From these observations, we contrast the role expectations play in investors’ assessment of value and glamour stocks to better understand the sequence of events that have allowed value stocks to deliver superior long-term returns. The subsequent sections profile this chronology. Section 1 reviews data and methodology. Test results begin in Section 2, which profiles the initial set of expectations underlying value and glamour stocks and how expected earnings compare to subsequent actual results. The overall theme is disappointment, though earnings surprises for value and glamour stocks at the extreme ranges of the universe were among the worst. Section 3 reviews how investors recalibrate expectations in light of those earnings results. While investors’ near-term expectations were lowered, longer-term expectations remained relatively optimistic, suggesting anchoring to longer-term viewpoints prolongs the recalibration.

Section 4 is the most impactful in the study, highlighting the asymmetric price reactions to earnings beats/misses. Prices of value stocks increased when earnings expectations were beat and missed. Glamour stock prices rose and fell after beats/misses, respectively. Subsequent tests revealed similar mean-reverting price movements by other measures of business fundamentals as well. This suggested initial price changes were not in response to changes in fundamentals, leaving the door open to a behavioral explanation. Section 5 reviews subsequent P/E contraction of glamour stocks and P/E expansion of value stocks, noting how particularly consistent this outcome was through time. Final test results in Section 6 aggregate 5-year returns from value and glamour stocks and again highlight the years of subsequent value stock outperformance. Section 7 concludes with practical applications and a summary of the study’s findings.

## **1 - Data & Methodology**

Our study covers all developed markets from June 30, 1990 to June 30, 2009, including active and inactive issues. Institutional Brokers’ Estimate System (“IBES”) history on a global universe of securities reaches sufficient size in 1990. From this broad universe, stocks with less than \$100 million in market capitalization were eliminated. Subsequently, to derive a universe representative of that available to an institutionally sized investor, we selected only the largest 50% of companies. This represents our global, investable universe. This methodology is identical

to that employed in our prior value vs. glamour studies. Forward estimates of earnings represent the consensus estimate from IBES. Each June, the universe was segmented into deciles based on forward P/Es using the consensus FY1 EPS estimate. Prices, in forming forward P/Es, also come from IBES. The 10% of the universe with the highest forward P/Es were placed into Decile 1 (“D1”) and repeated until those with the lowest 10% were placed into Decile 10 (“D10”). Stocks at lower-numbered deciles constitute glamour stocks (higher P/Es) while those at higher deciles represent value stocks (lower P/Es).

Companies with negative expected earnings were placed in a bin by themselves before all remaining stocks were placed into their appropriate deciles. While such observations were not eliminated, their results were not included because of their limited impact on the study’s findings. The FY1 EPS estimate also served as the benchmark to compare to the actual outcome of that company’s earnings. Actual EPS figures also come from IBES. This was done to ensure a consistent application of reporting currency and timing of the filing when comparing estimated to actual EPS. Other financial statement information used in this report comes from Worldscope, as do the derivation of total returns, due to broader and longer historical coverage.

### Exhibit 3: Universe Characteristics by Country, June 30, 2009

Country	#Cos	# Neg. FY1 P/E	Median MktCap (\$M)	Minimum MktCap (\$M)	Avg. # Analysts	Median FY1 P/E
AUS	131	13	\$2,099	\$694	11	12.9
AUT	23	5	\$2,079	\$706	11	11.6
BEL	30	3	\$2,176	\$710	11	11.5
CAN	165	16	\$1,887	\$685	8	14.3
CHE	78	5	\$2,675	\$697	12	14.5
DEU	100	11	\$2,795	\$683	19	13.0
DNK	25	2	\$2,057	\$694	13	15.6
ESP	60	8	\$3,425	\$684	15	11.5
FIN	31	6	\$1,780	\$730	16	11.5
FRA	130	12	\$3,521	\$686	15	12.2
GBR	230	17	\$2,365	\$693	14	11.4
GRC	27	1	\$1,835	\$736	13	11.9
HKG	137	6	\$2,289	\$685	10	15.2
IRL	15	3	\$1,879	\$930	8	13.1
ITA	73	4	\$1,982	\$683	14	13.8
JPN	564	97	\$2,006	\$683	8	20.1
NLD	52	2	\$1,937	\$740	15	11.2
NOR	30	1	\$1,278	\$701	13	10.4
NZL	13	0	\$1,233	\$697	6	16.1
PRT	17	1	\$4,258	\$914	11	14.5
SGP	48	2	\$2,126	\$713	12	12.9
SWE	52	3	\$2,391	\$688	14	15.1
USA	1,349	146	\$2,167	\$682	11	14.0
Total	3,380	364	\$2,195	\$682	11	14.0

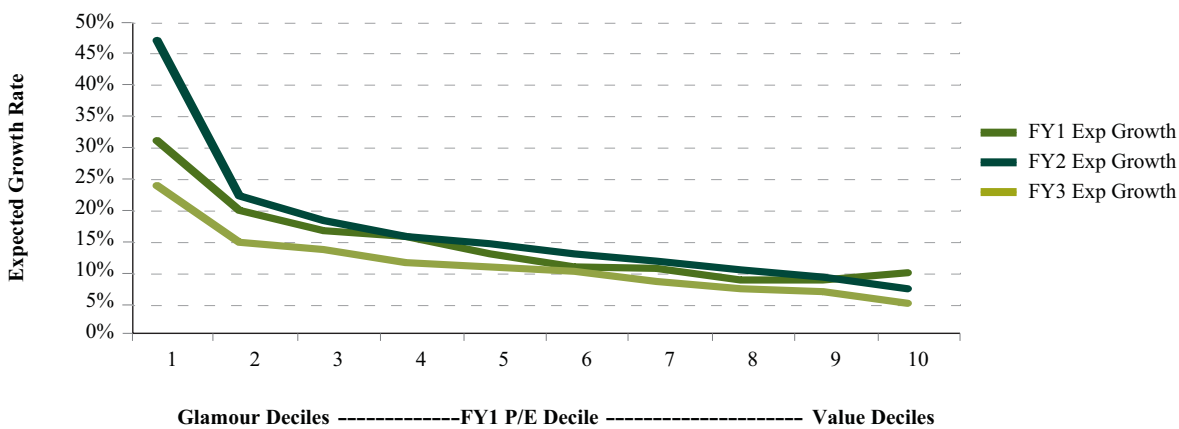
Source: IBES via Thomson, as of 6/30/10.

Exhibit 3 illustrates the composition of the universe as of the last constitution date in the study: June 30, 2009. With more than 3,000 companies to analyze, of adequate size, and with a generally large following of analysts, it comprises a robust universe for study. The latter is important to establish the consensus estimate as a fair proxy for investor expectations overall. By comparison, on June 30, 1990 the universe contained 861 stocks, median market cap of \$2,038 million, minimum market cap of \$584 million, average of 17.3 analysts covering each stock, and median forward P/E of 13.4. As in most studies of this nature, the size of the universe grew through time peaking at 3,643 companies in 2007.

## 2 - Initial Expectations & the Earnings Surprise Frown

Recalling the exercise that opened this report, why does the market pay so much for D1 stocks? Plainly, it is the prospect of near-exponential growth. D1 stocks are expected to grow earnings 3-5x as rapidly as D10 stocks, amounting to year-over-year forecasted growth of 20-45% (Exhibit 4). And this is for the typical D1 stock; there are companies for which growth is expected to exceed 100% for years.

**Exhibit 4: Median Expected Earnings Growth Rates, 1990-2009**



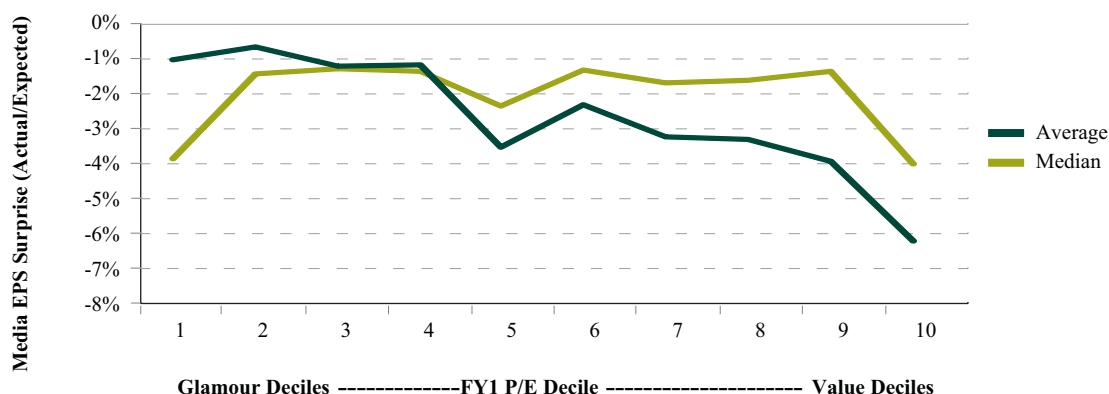
Source: IBES via Thomson, as of 6/30/10.

Such expectations for D1 companies ought to be accompanied by higher valuations; however, the eventual failure to meet those expectations implies they may have been overoptimistic. Granted, there were companies that were able to surpass such high hurdles, growing earnings rapidly for years on end. However, the vast majority did not. As detailed later, this triggers a recalibration of earlier expectations and sets the wheels of the value/glamour story in motion.

During the 12 months after earnings estimates are recorded, companies report their actual earnings results and investors have a major yardstick against which to measure earlier expectations. In our study, the overriding theme was disappointment. This is borne out in Exhibit 5: the earnings surprise “frown.”<sup>2</sup> No matter the valuation attributed to a group of stocks, the typical set of expectations was too high and companies failed to live up to their billings.

<sup>2</sup> This does not represent the traditional earnings surprise of comparing estimated EPS to actual results on the day financials are reported. Rather we record expectations each June-end and measure it relative to what a company reports on its subsequent annual filing. Cross-sectionally therefore, expectations are as of the same date, reflecting all information available on that date.

### Exhibit 5: Median & Average<sup>3</sup> Actual Earnings vs. Expected Earnings, 1990-2010



Source: IBES via Thomson, as of 6/30/10.

Tangled in this blanket disappointment across all valuation deciles was a mix of dissatisfaction with D1 and D10 stocks. At the medial level, such issues failed to meet expectations by the widest margins, suggesting expectations for these two sets of stocks were especially high. Dreman (1995) reports similar findings when measuring earnings forecasts at quarter-end, closer to the actual (quarterly) earnings release date than this annual study. He finds high and low P/E stocks have distinctly worse earnings surprises on average. As explored in subsequent sections, D1 stocks experienced particularly extreme outcomes (see Exhibit 6). Many of the extreme misses were cases in which earnings were expected to be positive but results were actually *negative*. Surprisingly, looking at averages that exclude negative and positive outliers suggested value stocks had the worst earnings surprises. Contrary to results suggested by LLSV, value stocks showed no propensity to have systematically higher earnings surprises.

### Exhibit 6: Frequency in which Actual Earnings Exceeded Expected Earnings by +/-100%, 1990-2010

	Glamour Deciles		FY1 P/E Decile				Value Deciles			
	1	2	3	4	5	6	7	8	9	10
<-100%	15%	5%	3%	3%	3%	2%	2%	2%	2%	3%
>100%	9%	3%	2%	2%	1%	1%	1%	1%	1%	1%

Source: IBES via Thomson, as of 6/30/10.

A brief review of earnings surprises through the study period suggests the outsized surprises for D1 and D10 stocks were not a result of specific periods of time (Exhibit 7). When expectations for companies across the whole universe were high and resulted in subsequent earnings misses (“misses”), misses for D1 & D10 stocks tended to be among the worst (e.g. 1998). On the other hand, occasions when companies broadly did better than expected or beat expectations (“beats”), D1 & D10 stocks were among the highest. Separately, while earnings expectations for all companies were typically too high relative to actual results, these varied widely by time period. This phenomenon was best exemplified by the lofty expectations of the late ‘90s which resulted in recurrent and broad earnings misses (1999 was possibly an exception). It wasn’t until 2003 that revisions to expectations were finally ratcheted back enough to lead to widespread earnings beats, a trend that continued until 2008.

<sup>3</sup> Averages calculated by putting a cap on earnings surprises at 100% and floor at -100% to mitigate outliers.

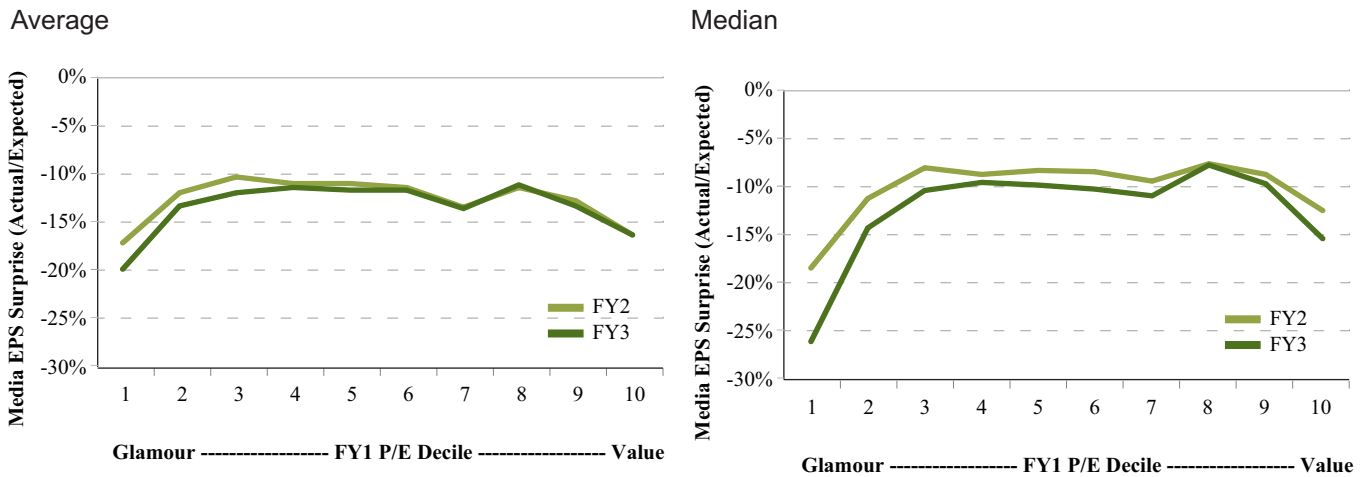
### Exhibit 7: Median Actual Earnings vs. Expected Earnings, Year by Year (1990-2010)

	Glamour Deciles			FY1 P/E Decile				Value Deciles			ALL
	1	2	3	4	5	6	7	8	9	10	
1990	-2.1%	-0.7%	-1.4%	-3.0%	-2.1%	-4.9%	-5.1%	-4.7%	-3.9%	-10.5%	-3.8%
1991	-11.3%	-2.6%	-2.3%	-0.4%	-2.4%	-2.1%	-2.4%	-0.2%	0.2%	3.4%	-1.6%
1992	-6.0%	-1.9%	-1.3%	-3.9%	-8.0%	-4.9%	-6.6%	-4.2%	-3.8%	-14.6%	-5.4%
1993	-16.4%	-2.0%	-1.6%	-1.5%	-2.4%	-1.4%	-2.5%	-3.1%	-0.6%	0.3%	-2.3%
1994	-0.2%	2.5%	2.9%	3.6%	2.7%	0.0%	1.0%	0.9%	0.4%	0.4%	1.5%
1995	-13.3%	-3.2%	-2.6%	-1.7%	-1.1%	-0.7%	-0.1%	-1.6%	0.0%	1.0%	-1.3%
1996	0.0%	-0.3%	0.4%	0.0%	-1.9%	0.7%	0.0%	-0.5%	0.0%	-0.2%	-0.2%
1997	-16.0%	-12.7%	-14.0%	-2.9%	-6.5%	-2.9%	-1.8%	-0.7%	-4.1%	-5.5%	-4.7%
1998	-29.4%	-9.7%	-8.6%	-9.0%	-9.9%	-5.7%	-6.4%	-6.6%	-5.7%	-21.5%	-9.8%
1999	4.9%	5.8%	2.4%	2.3%	0.4%	0.1%	1.1%	1.0%	-0.8%	0.0%	1.0%
2000	1.4%	-4.3%	-2.1%	-5.3%	-4.0%	-0.6%	-2.8%	-0.4%	-0.9%	-3.5%	-2.3%
2001	-20.5%	-12.6%	-16.0%	-13.3%	-14.9%	-13.3%	-10.3%	-10.0%	-6.0%	-15.3%	-12.5%
2002	-10.7%	-2.1%	0.0%	0.0%	-1.6%	0.4%	-2.8%	-0.5%	-4.0%	-4.3%	-2.1%
2003	8.8%	2.2%	6.6%	4.7%	2.8%	2.4%	3.6%	3.9%	3.0%	4.7%	4.0%
2004	8.6%	3.1%	5.5%	4.1%	4.8%	6.7%	7.8%	7.2%	9.8%	13.1%	6.4%
2005	3.8%	3.1%	1.6%	0.8%	0.7%	1.4%	0.8%	1.4%	3.8%	3.0%	1.7%
2006	2.1%	1.0%	1.6%	2.7%	2.4%	2.1%	2.0%	2.9%	3.2%	4.0%	2.2%
2007	5.1%	3.0%	3.3%	3.2%	4.6%	3.3%	4.3%	2.9%	3.1%	0.4%	3.1%
2008	-14.3%	-10.6%	-6.7%	-11.7%	-13.8%	-12.9%	-16.3%	-23.5%	-24.1%	-36.4%	-17.7%
2009	29.4%	13.0%	6.4%	4.1%	3.1%	5.7%	2.9%	3.4%	2.5%	2.7%	4.5%

Source: IBES via Thomson, as of 6/30/10.

The larger misses for D1 & D10 stocks were even more evident when comparing expectations to actual results 24 and 36 months later, as opposed to actual results during the past 12 months. Overall, these longer-term expectations were further from the actual mark, not surprising given the lack of visibility further out in time (Exhibit 8). However, the results from D1 (and to some degree D2) confirm how overly optimistic expectations truly were. The median D1 company missed expectations forecasted three years into the future by a whopping 25%. Projected growth rates implied extraordinary things were anticipated of these companies, resulting in abnormally large disappointments.

### Exhibit 8: Median & Average Actual Earnings vs. Expected Earnings in Fiscal Years 2 & 3, 1990-2010

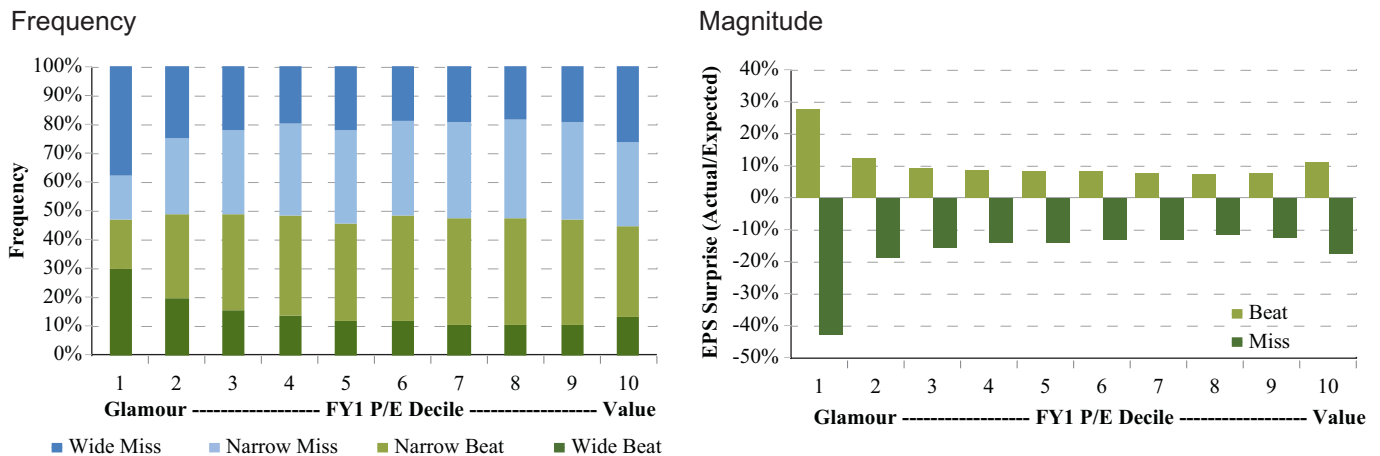


Source: IBES via Thomson, as of 6/30/10.

Focusing on value stocks, surely the expectation for these companies was excessively low, captured by their relatively low expected growth rates. In short, this was the argument put forth by LLSV, but we find that was not so. Expectations for even the most unloved of value stocks were still too high. The level of their misses exceeded more moderately rated issues in other P/E deciles (the only exception being D1). As LLSV argued, part of the value premium could have been attributed to value stocks' excessively low expectations which, when eventually exceeded, provided impetus for price appreciation and re-rating. However, this was not the case.

Moreover, value stocks were not any more likely to produce results that beat expectations. In fact, the frequency by which stocks beat/missed expected results was quite uniform across deciles (Exhibit 9). The only notable difference was the frequency by which a company would report results significantly above or below expectations (defined as beating/missing expectations by 20% or more and referred to as a "wide beat" or "wide miss"), in which case D1 appeared much like a lottery. Nearly 70% of the time a D1 company reported results it was a wide miss or beat. Additionally, when value stocks beat or missed, they generally did not do so by a margin greater than other deciles. D10 stocks were comparable to other deciles except D1, where again the results tended to be extreme.

### Exhibit 9: Frequency and Magnitude of Beats vs. Misses, 1990-2010



Source: IBES via Thomson, as of 6/30/10.

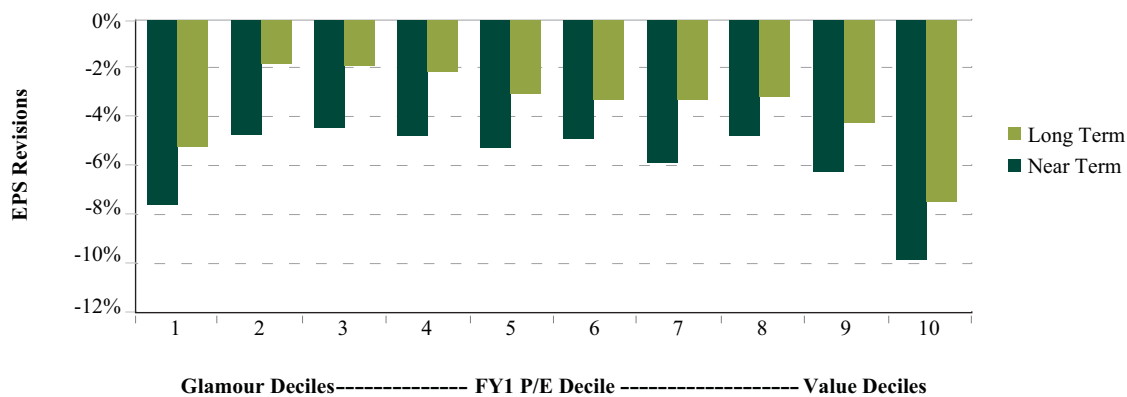
At this point then, value stocks didn't beat expectations. Relative to other stocks, they were also no more likely to do so. And when they did beat, they didn't do so by a margin substantially different than most other deciles. This all suggests the set of expectations for value stocks was not systematically lower than other stocks and thus not likely the root cause for the value premium. In fact, there's evidence suggesting earnings surprises for value stocks were systematically worse than other stocks.

This is contrary to LLSV, "...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" (p 870). Our results thus far are more consistent with the findings of Dreman, "We therefore find no evidence for the observed performance differential being attributable to analysts' [investors'] tendencies systematically to misforecast earnings on one class of stocks versus another" (p 28).

### 3 - Proportionate Revisions to Expectations

Naturally, expectations are revised given new information that comes to light over the subsequent 12 months, culminating with the release of year-end financials. It is little surprise then when investors realize the extent of their dubious expectations, they revise accordingly. In fact, the amount of revision in each decile was nearly proportionate to the magnitude by which expectations were inflated: D1 and D10 stocks received the largest downward revisions owing to their larger earnings misses.

**Exhibit 10: Median Earnings Expectations Revision, 1990-2010**



Source: IBES via Thomson, as of 6/30/10.

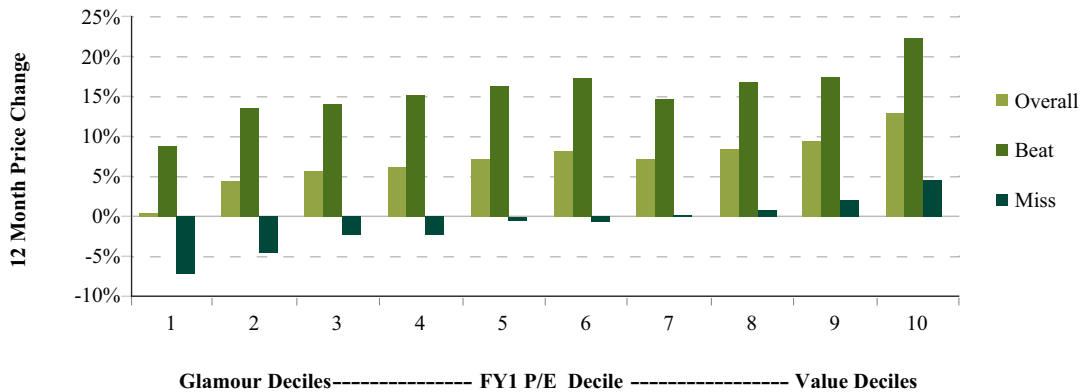
The amount of revision was not, however, uniform across forward-looking periods. Exhibit 10 records revisions by comparing the FY1 estimate at T+12 months to the FY2 estimate at T0 ("Nearer Term") and likewise for the FY2 estimate at T+12 relative to the FY3 T0 estimate ("Longer Term"). The T0 vs. T+12 comparisons reflect the consensus estimates of the same fiscal year-end, but captured at different points in time. In all deciles, longer-term earnings expectations were revised much less than nearer-term expectations. This implies that while expectations changed, investors were slow to fully embrace the extent of these changes. Longer-term estimates of earning power are anchored by prior estimates, perhaps indicating that investors are willing to concede the near term might be different than originally expected, but their longer-term view of the company generally remains overly optimistic. Because of this behavior, the recalibration process of both expectations and valuations likely takes longer than might otherwise be expected if investors acted rationally.

#### 4 - Asymmetrical Price Reactions

We now reach a fundamental shift in the chronology. To this point, the results have shown expectations were too high across the board – and particularly high with companies at extreme ends of the valuation spectrum. When those expectations were confirmed to be high, investors ratcheted them back accordingly. So how did prices react? Did investors reassess the price they were willing to pay for a particular set of expected outcomes?

Prices of value stocks rose while the prices of glamour stocks fell in the 12 months following decile formation (Exhibit 11). This reaction was largely monotonic: prices increased by greater margins at successively higher deciles. Most importantly, the relationship of price changes across deciles took the same form no matter the outcome of the earnings surprise. Prices rose for value stocks when they exceeded expectations and when they missed expectations. They produced the highest returns across deciles in either case; glamour stocks produced the lowest returns, whether they missed or beat expectations.

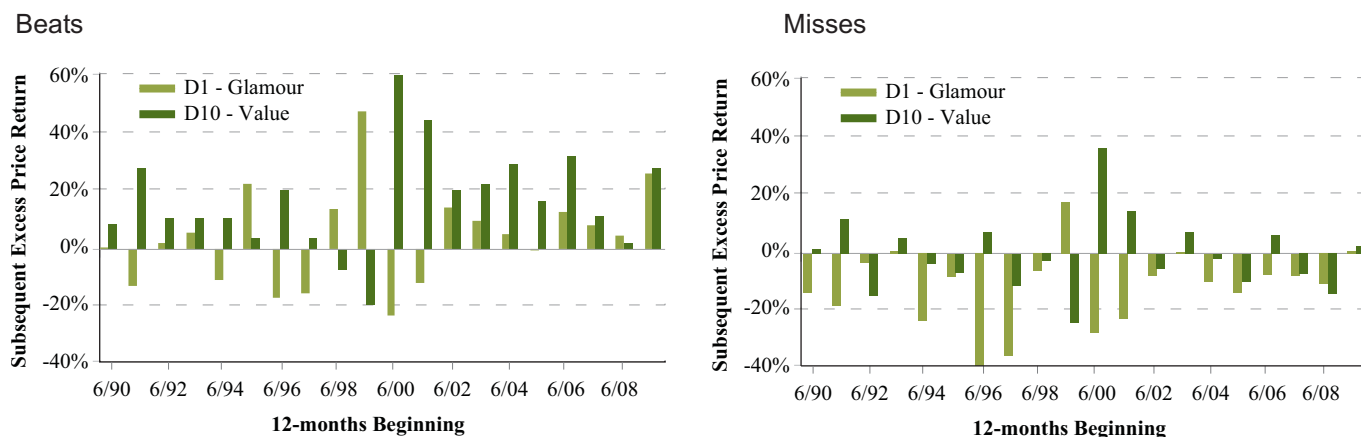
**Exhibit 11: Average Subsequent 12-month Price Change, Beats vs. Misses, 1990-2010**



Source: IBES via Thomson, as of 6/30/10. Past performance is not a guarantee of future results.

This type of reaction persisted through time, not being a byproduct of a particular market environment. D10 value stocks that beat investor expectations experienced positive 12-month excess returns in 16 of the 19 years in the study (relative to the MSCI World Index, Exhibit 12). On the other hand, even when glamour stocks beat expectations it was not necessarily enough to deliver a market-beating return. In only 12 of 19 years did glamour stocks that beat expectations also produce above-market returns. When D1 and D10 stocks missed expectations, a similar result occurred: value stocks were more likely to beat the market than were glamour. More drastically, D1 stocks occasionally fell in excess of 20% relative to the market when expectations were missed.

## Exhibit 12: Average Subsequent 12-month Excess Price Return, Year by Year, 1990-2010



Source: IBES via Thomson, as of 6/30/10. Performance shown is relative to the MSCI World Index. Past performance is not a guarantee of future results.

We hypothesized a responsible undercurrent to these price reactions might be behavioral. If this were true, then we should be able to observe this same price trajectory no matter the measure of fundamental change to the business. This was exactly what we found. Instead of measuring whether a company beat/missed expectations, we measured whether it improved profitability, increased sales, increased book value, or reduced leverage<sup>4</sup>. As expectations anticipated, glamour stocks generally experienced greater sales growth amid more widespread margin expansion compared to other value stocks (Exhibit 13). D1 stocks grew year/year sales by 13.5% compared to 7.4% for D10 stocks while expanding their net margin 52% of the time (compared to 49% for D10 stocks).

## Exhibit 13: Median Change in Fundamental Traits, 1990-2010

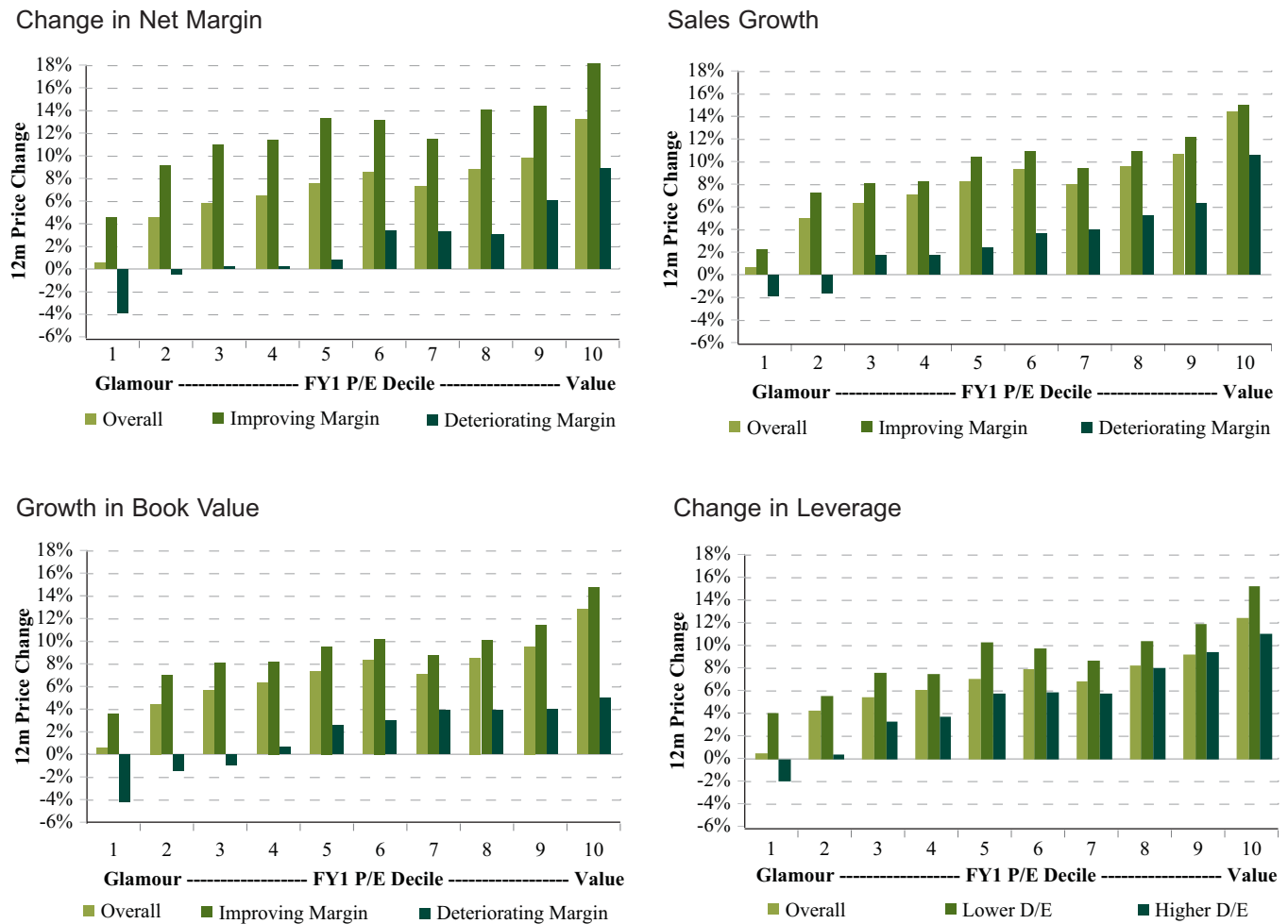
Decile	Year-over-Year Change in Factor by Decile				Frequency by Decile			
	Sales Growth	% Chg in Net Margin	Growth in Book Value	% Chg in Leverage	Increased Sales	Improved Net Margin	Increased Book Value	Decreased Leverage
<b>1 - Glamour</b>	13.5%	-18.6%	10.7%	-2.4%	73%	52%	70%	47%
<b>2</b>	12.7%	-2.3%	12.0%	-4.7%	75%	54%	75%	51%
<b>3</b>	10.3%	-0.3%	11.4%	-5.4%	74%	55%	76%	53%
<b>4</b>	9.7%	0.4%	10.8%	-4.9%	76%	56%	76%	54%
<b>5</b>	8.0%	-0.2%	9.3%	-4.0%	72%	54%	73%	54%
<b>6</b>	7.7%	-1.5%	9.2%	-3.8%	72%	52%	74%	54%
<b>7</b>	7.2%	-1.9%	8.5%	-1.6%	71%	51%	74%	52%
<b>8</b>	6.9%	-1.9%	8.7%	-1.8%	71%	51%	75%	53%
<b>9</b>	7.3%	-3.2%	9.1%	-1.8%	71%	49%	75%	52%
<b>10 - Value</b>	7.4%	-5.0%	11.1%	-3.2%	68%	49%	75%	53%

Source: IBES via Thomson, Worldscope via FactSet as of 6/30/10. Past performance is not a guarantee of future results.

<sup>4</sup> We recognize increasing or decreasing leverage can be a positive and negative development for equity holders. This of course depends on many factors including existing capital structure, industry, economic conditions, and business cycle. When evaluated in aggregate, however, we find it is a useful gauge of balance sheet health.

Gauged by each of these fundamental measures, and regardless of whether conditions got better or worse for the company, the price trajectory was up for value stocks and down for glamour (Exhibit 14). Even the most downtrodden of value stocks, whose fundamentals continued to deteriorate, experienced modest price appreciation. When compared to deteriorating issues of other deciles, they delivered the highest returns. Even when price reactions weren't decidedly positive in the case of book value, they contrasted starkly with price declines of higher P/E peers losing book value. This again suggests mean-reverting price movements underlie the value/glamour story.

**Exhibit 14: Average Subsequent 12-month Price Change by Change in Fundamental Trait, 1990-2010**



Source: IBES via Thomson, Worldscope via FactSet as of 6/30/10. Past performance is not a guarantee of future results.

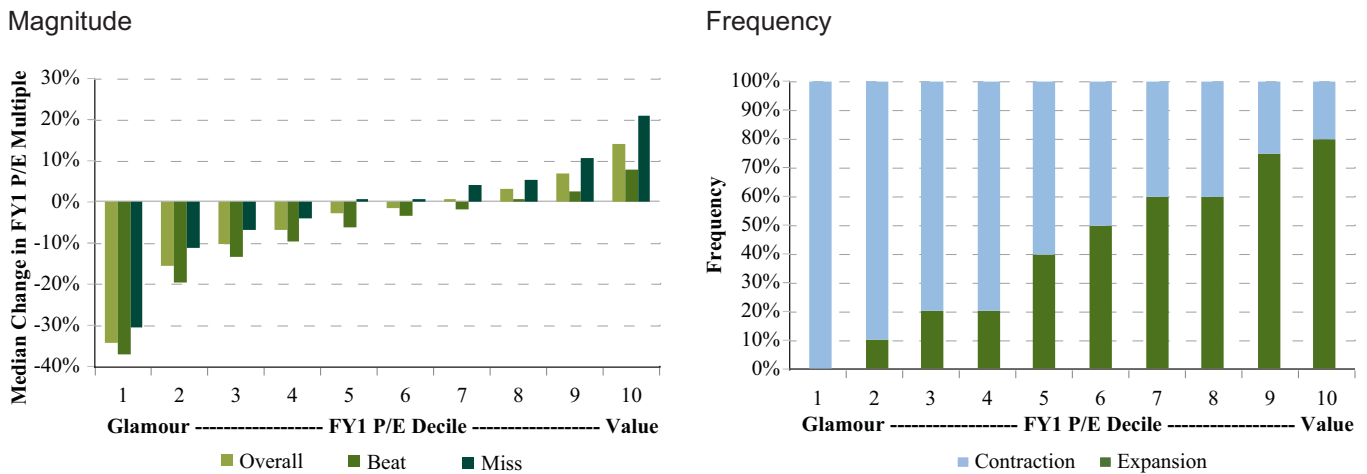
This evidence counters the intimations by F&F, "...value portfolios tend to rise in the years after portfolio formation as some value companies restructure, improve in profitability, and are rewarded by the market with lower costs of equity capital and higher stock prices" (p 45). While increasing prices for value stocks are evident in this data, an improvement in fundamentals was not required to compel investors to adjust their perception of fair value. In the first 12 months, value stocks did not experience outsized improvements in core business measures relative to other stocks, yet prices increased. This suggests a behavioral, and not a risk-based, foundation for this observation driven by overreaction (value stocks) and overoptimism (glamour stocks).

## 5 - Value Stock P/E Expansion & Glamour Stock Contraction

With revisions bringing subsequent expectations of earnings down across the board and prices reacting unequally across valuation deciles, P/Es adjusted accordingly. With prices increasing for value stocks while earnings expectations were revised down, P/E multiples naturally expanded in the subsequent 12 months. Glamour stock P/Es contracted (Exhibit 15). While prices retreated alongside earnings expectations, prices of glamour stocks generally fell by a much greater magnitude, causing P/Es to fall. As noted earlier, this occurred no matter how the company performed relative to expectations.

With 12 months of hindsight, the results suggest investors were willing to pay more for value stocks and less for glamour, perhaps as overoptimism (glamour stocks) and overreaction (value stocks) gave way to more rational assessments. The uniformity of this response was particularly telling. Of the 19 periods in the study, there was not a single year in which the same basket of glamour stocks could not be purchased more cheaply 12 months later. That is, D1's aggregate cost (price) relative to aggregate expected earnings (aggregate P/E) was always lower 12 months later (Exhibit 15). For D10 value stocks, in nearly 80% of the periods in the study they were more expensive on an aggregate P/E basis 12 months later.

**Exhibit 15: Magnitude and Frequency of Subsequent 12-month P/E Contraction/Expansion, 1990-2010**

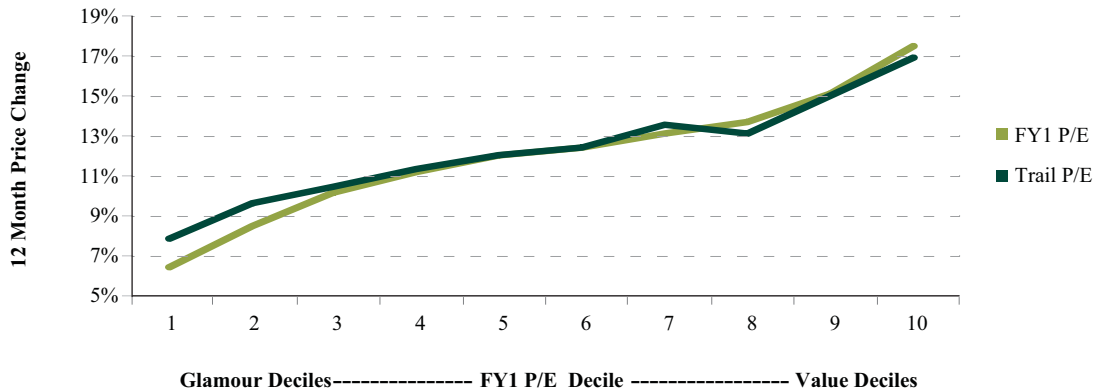


Source: IBES via Thomson, as of 6/30/10.

## 6 - Mean Reversion Manifested in Long-Term Returns

The reappraisal of fair value for value and glamour stocks was gradual, yet most evident when returns were compiled over 5-year holding periods, as is done in our traditional value versus glamour work (Exhibit 16). Stocks with low forward P/E ratios were bid up over a period of years and delivered returns substantially in excess of those with high P/E ratios. Dreman noted "...we demonstrate that stocks are not immediately priced at the appropriate level after an earnings surprise. Rather, over a prolonged period of time (at least five years), stock prices revert to their mean, with low-P/E stocks outperforming and the high-P/E stocks underperforming the market. This evidence is consistent with the assumptions of both the low-P/E and the IOH [investor overreaction hypothesis] hypotheses that investors initially misprice best and worst stocks because their expectations are too one-sided" (p22).

## Exhibit 16: Average Annualized 5-Year Returns on Trailing and Forecasted Earnings, 1990-2010



Source: IBES via Thomson, Worldscope via FactSet as of 6/30/10. Past performance is not a guarantee of future results.

While these results parallel our earlier publications, the value premium using forward P/E's was actually slightly larger than that when using a trailing P/E. This can be measured by the slope of the value/glamour curve or the D10 - D1 return spread. Though the difference was subtle, the implication is there may be greater mispricing when subscribing to forward P/E's than using a naïve trailing estimate of earnings, ironic given investors' mindset to be forward-looking. Perhaps the biases embedded in our expectations are worse than the simple assumption of a trailing result, highlighting the consequences of excessive optimism and/or the effects of investor overreaction, as Dreman noted.

### 7 - Conclusion

This study chronicled the historical fates for value and glamour stocks. Embedded with diverse sets of expectations, value and glamour stocks both failed to meet investors' anticipated results. Realizing their errors, investors revised expectations, doing so in proportion to the magnitude of their initial inaccuracy. Price reactions, on the other hand, varied. Prices of value stocks generally increased, even when fundamentals suggested further deterioration. Prices of glamour stocks receded, and even if fundamentals implied positive developments, the amount of price increase was well below like occurrences with value stocks. We believe the mean-reverting behavior of prices is an indication of the role expectations play in value and glamour stock returns and specifically highlights a behavioral undercurrent.

Value stocks underwent a behavioral progression of overreaction, revision, sentiment shift, and multiple expansion. Overreaction occurred because the initial assessment of value stocks was mired in behavioral biases that pushed prices to unwarranted lows. Expectations were revised lower, as actual results failed to meet forecasts. However, the observed price appreciation suggests investors began to recognize (implicitly or explicitly) their earlier overreaction. A 12-month "cool-down" period transpired and pacified investors into a less emotional and behaviorally biased disposition. A more balanced assessment of fair value ensued and sentiment began to shift. Most notably in this study, company fundamentals needn't immediately improve for this progression to begin. The reappraisal was a slow progression with bumps along the way, amounting to years of subsequent outperformance delivered by value stocks.

The diary of glamour stocks reads much the opposite. Overoptimism for growth prospects set incredibly difficult hurdles in order to sustain already elevated prices. Even if a company could keep pace with expectations for the first year, it became increasingly difficult over successive years. Immediately or eventually, expectations were missed and typically by a wide margin. This cultivated a storm of disappointment and expectations were slashed.

Because glamour stock valuations are so heavily dependent on long-term growth assumptions (recall the opening exercise), modest downward revisions crippled the company's perceived value. Investors became rattled and prices fell, causing multiples to contract over ensuing years.

Our results point to the behavioral makeup of investors as an important factor in why value stocks have historically outperformed. It is why we observe an upward price trajectory for value stocks and downward trajectory for glamour stocks independent of the performance of a company's business. We believe it also explains why we observe this repeated through time. Once investors perceive a company as glamour or value, their perception is anchored to initial expectations, sometimes deeply, and overrides rational thinking. Gradual changes in expectations and their manifestation in prices represent how value returns were able exceed glamour for years; psychological and behavioral forces form the origin of why they outperformed.

For investors, the results in this study underscore the importance of valuation. Focusing time on forecasting earnings and growth rates or determining which companies will improve profitability and rapidly grow sales was of secondary importance to spotting basic undervaluation. Concentrating on what is attractively valued and applying this approach across an applicable opportunity set put the odds in the investor's favor for delivering excess returns no matter how business fundamentals evolved. Of course, this was only possible if investors remained ever mindful not to fall prey to the behavioral influences they sought to exploit.

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## Appendix

### Exhibit 1: Average Subsequent 12-month Price Change, 1990-2010

*Catalogs 12-month price reactions subsequent to changes in various business factors using both an absolute and sector relative approach to decile placement. Performance is also measured relative to the sector average (as opposed to an absolute return), further neutralizing sector influences. Findings across these various approaches summarize/support results reported in the main study.*

Avg. 12m Price Change by FY1 P/E Decile													
Factor	Factor Subset	Glamour	Value	D10-D1 Spread	Slope								
		1	2	3	4	5	6	7	8	9	10		
EPS Surprise	Beat	8.5%	13.1%	13.6%	14.7%	15.8%	16.8%	14.2%	16.3%	16.8%	21.6%	13.1%**	0.95
	Miss	-6.8%	-4.3%	-2.1%	-2.1%	-0.3%	-0.6%	0.2%	0.9%	2.2%	4.5%	11.3%***	1.02
Margin	Improving	4.3%	8.6%	10.3%	10.8%	12.6%	12.4%	10.8%	13.2%	13.6%	17.1%	12.8%***	0.99
	Deteriorating	-3.7%	-0.5%	0.2%	0.1%	0.7%	3.1%	3.1%	2.9%	5.7%	8.4%	12.1%**	1.07
Sales	Increasing	1.9%	6.3%	7.0%	7.1%	9.1%	9.4%	8.1%	9.4%	10.6%	13.0%	11.1%***	0.88
	Decreasing	-1.6%	-1.5%	1.5%	1.5%	2.1%	3.1%	3.4%	4.5%	5.5%	9.2%	10.8%*	1.01
Book Value	Increasing	3.5%	6.8%	7.8%	8.0%	9.2%	9.9%	8.5%	9.8%	11.1%	14.3%	10.8%***	0.85
	Decreasing	-4.2%	-1.4%	-1.0%	0.6%	2.5%	2.8%	3.7%	3.8%	3.8%	4.8%	9.0%*	0.92
Leverage	Decreasing	4.1%	5.6%	7.7%	7.6%	10.4%	9.8%	8.7%	10.5%	12.0%	15.3%	11.2%**	0.98
	Increasing	-2.0%	0.4%	3.3%	3.8%	5.9%	5.9%	5.9%	8.1%	9.4%	11.1%	13.1%***	1.28
<b>Overall</b>		<b>0.5%</b>	<b>4.3%</b>	<b>5.5%</b>	<b>6.1%</b>	<b>7.1%</b>	<b>8.0%</b>	<b>6.9%</b>	<b>8.3%</b>	<b>9.3%</b>	<b>12.5%</b>	<b>11.9%***</b>	<b>0.97</b>

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

Source: IBES via Thomson, Worldscope via FactSet as of 6/30/10. Past performance is not a guarantee of future results.

## Exhibit 2: Average Subsequent 12-month Price Change by Geographic Region, 1990-2010

*Profiles 12-month price reactions subsequent to changes in various business factors across four geographic regions using an absolute approach to decile placement. Findings across regions reinforce those in the main study. Results for individual countries are available upon request.*

Avg. 12m Price Change by FY1 P/E Decile															
Region	Factor	Factor Subset	Glamour	1	2	3	4	5	6	7	8	9	Value 10	D10-D1 Spread	Slope
Asia Ex-Japan	EPS Surprise	Beat	Glamour	12.5%	13.6%	15.7%	15.3%	15.8%	17.3%	16.2%	16.3%	17.6%	26.6%	14.1%	0.98
		Miss	Glamour	-5.5%	4.4%	-2.6%	3.6%	1.7%	5.0%	5.0%	7.2%	5.9%	9.4%	14.9%	1.22
	Margin	Improving	Glamour	7.0%	10.6%	13.3%	11.4%	14.3%	7.8%	13.2%	17.5%	16.9%	24.0%	17.0%	1.31
		Deteriorating	Glamour	0.8%	7.4%	2.1%	5.9%	2.5%	10.1%	8.1%	6.6%	12.6%	8.9%	8.1%	0.89
	Sales	Increasing	Glamour	4.7%	10.8%	8.3%	11.7%	7.7%	10.4%	12.1%	11.2%	17.4%	19.3%	14.5%	1.18
		Decreasing	Glamour	8.1%	4.3%	6.0%	-2.4%	8.0%	8.2%	7.6%	13.8%	10.3%	14.5%	6.4%	1.02
	Book Value	Increasing	Glamour	4.0%	9.7%	8.5%	8.7%	9.4%	10.6%	13.3%	11.8%	15.4%	21.6%	17.7%	1.39
		Decreasing	Glamour	11.0%	9.7%	2.4%	11.3%	2.6%	5.5%	7.5%	11.6%	7.7%	4.2%	-6.8%	-0.23
	Leverage	Decreasing	Glamour	4.4%	10.2%	10.6%	8.5%	10.0%	11.3%	13.7%	12.6%	14.7%	16.8%	12.3%	1.02
		Increasing	Glamour	4.5%	9.1%	3.9%	7.6%	6.2%	10.9%	12.1%	11.2%	15.7%	16.9%	12.5%	1.29
<b>Overall</b>			Glamour	<b>4.0%</b>	<b>8.9%</b>	<b>7.2%</b>	<b>8.4%</b>	<b>7.8%</b>	<b>11.0%</b>	<b>12.0%</b>	<b>11.8%</b>	<b>14.6%</b>	<b>17.1%</b>	<b>13.1%</b>	<b>1.18</b>
Europe	EPS Surprise	Beat	Glamour	11.4%	8.6%	11.2%	12.0%	12.5%	14.0%	12.2%	14.5%	15.0%	16.2%	4.8%	0.65
		Miss	Glamour	-2.5%	-3.5%	-0.8%	-2.7%	-0.6%	1.4%	0.4%	-1.1%	0.6%	5.1%	7.6%	0.65
	Margin	Improving	Glamour	8.1%	6.9%	9.4%	9.8%	10.8%	12.7%	11.3%	11.9%	12.1%	15.8%	7.7%	0.75
		Deteriorating	Glamour	-0.3%	-1.5%	-0.0%	1.1%	2.2%	2.8%	0.6%	1.6%	3.6%	8.2%	8.5%	0.73
	Sales	Increasing	Glamour	4.6%	4.5%	6.9%	5.9%	7.4%	8.9%	8.0%	7.7%	8.4%	11.3%	6.6%	0.60
		Decreasing	Glamour	0.9%	-2.8%	1.6%	3.0%	4.0%	4.7%	-1.1%	3.7%	3.3%	9.1%	8.2%	0.70
	Book Value	Increasing	Glamour	5.4%	4.7%	6.2%	7.5%	8.0%	9.5%	8.4%	8.3%	8.7%	12.7%	7.3%	0.66
		Decreasing	Glamour	-1.6%	-3.2%	1.5%	0.2%	3.3%	4.3%	-0.2%	0.9%	2.2%	4.0%	5.6%	0.51
	Leverage	Decreasing	Glamour	5.4%	3.4%	7.5%	8.1%	8.0%	9.3%	8.4%	9.0%	9.8%	13.8%	8.4%	0.79
		Increasing	Glamour	2.5%	2.4%	3.8%	3.3%	5.5%	6.1%	4.3%	3.8%	5.9%	8.1%	5.6%	0.47
<b>Overall</b>			Glamour	<b>3.8%</b>	<b>3.0%</b>	<b>5.4%</b>	<b>5.2%</b>	<b>6.4%</b>	<b>7.0%</b>	<b>6.1%</b>	<b>6.5%</b>	<b>7.8%</b>	<b>11.2%</b>	<b>7.4%</b>	<b>0.66</b>

**Exhibit 2, Cont.: Average Subsequent 12-month Price Change by Geographic Region, 1990-2010**

Avg. 12m Price Change by FY1 P/E Decile															
Region	Factor	Factor Subset	Glamour										Value	D10-D1 Spread	Slope
			1	2	3	4	5	6	7	8	9	10			
Japan	EPS Surprise	Beat	6.2%	6.5%	6.6%	9.2%	5.1%	8.9%	15.1%	10.9%	8.9%	16.3%	10.1%	0.91	
		Miss	-6.8%	-2.0%	-6.5%	-6.3%	-3.1%	-4.1%	-5.9%	-2.8%	-2.2%	1.5%	8.3%	0.55	
	Margin	Improving	0.8%	6.1%	3.3%	3.7%	5.1%	5.0%	7.9%	11.3%	6.1%	15.7%	14.9%	1.13	
		Deteriorating	-6.2%	-2.4%	-5.3%	-4.0%	-1.1%	-3.7%	-5.1%	-3.2%	-1.9%	0.2%	6.4%	0.39	
	Sales	Increasing	0.7%	3.6%	1.5%	3.1%	5.8%	6.4%	3.5%	6.0%	7.7%	6.5%	5.8%	0.63	
		Decreasing	-7.7%	-3.8%	-8.0%	-8.3%	5.0%	-8.8%	-8.9%	-6.3%	0.3%	-1.7%	6.1%	0.46	
	Book Value	Increasing	4.4%	3.4%	3.0%	3.2%	5.7%	5.5%	2.9%	4.8%	4.4%	11.8%	7.4%	0.50	
		Decreasing	-3.0%	-5.4%	-10.8%	-14.2%	-8.3%	-3.8%	-12.0%	-12.5%	-10.0%	-12.5%	-9.5%	-0.70	
	Leverage	Decreasing	2.8%	4.4%	1.2%	3.0%	3.9%	3.8%	3.4%	4.8%	4.0%	10.9%	8.0%	0.53	
		Increasing	-3.6%	-1.9%	-4.9%	-1.8%	-1.5%	0.3%	-0.3%	1.0%	-0.4%	0.3%	3.9%	0.49	
	<b>Overall</b>		<b>-1.2%</b>	<b>1.8%</b>	<b>-0.9%</b>	<b>1.0%</b>	<b>3.5%</b>	<b>2.5%</b>	<b>2.3%</b>	<b>3.2%</b>	<b>2.5%</b>	<b>7.6%</b>	<b>8.7%</b>	<b>0.65</b>	
North America	EPS Surprise	Beat	15.8%	15.7%	17.0%	18.3%	17.9%	17.5%	14.8%	16.7%	17.6%	25.7%	9.9%	0.54	
		Miss	-6.0%	-4.4%	-0.7%	0.3%	-0.4%	0.0%	0.9%	1.6%	4.8%	3.5%	9.5%	0.99	
	Margin	Improving	9.8%	12.1%	12.4%	14.0%	13.9%	12.5%	11.5%	12.9%	14.9%	18.6%	8.8%	0.56	
		Deteriorating	-0.2%	0.4%	3.7%	4.0%	2.3%	4.7%	4.3%	4.7%	8.0%	7.7%	7.9%	0.80	
	Sales	Increasing	6.4%	8.2%	9.0%	10.7%	9.6%	10.3%	9.6%	9.3%	12.1%	14.5%	8.1%	0.60	
		Decreasing	3.8%	-0.7%	1.2%	1.3%	2.5%	4.3%	2.7%	6.8%	6.2%	6.0%	2.2%	0.62	
	Book Value	Increasing	8.0%	9.2%	10.6%	11.1%	10.4%	10.3%	9.3%	10.4%	12.4%	16.2%	8.2%	0.54	
		Decreasing	-3.0%	-3.9%	-1.2%	5.0%	1.8%	5.1%	4.4%	3.0%	6.3%	4.0%	7.0%	0.95	
	Leverage	Decreasing	8.7%	10.5%	10.5%	12.2%	11.5%	10.7%	9.6%	11.3%	13.5%	16.6%	7.9%	0.53	
		Increasing	1.2%	3.3%	5.6%	7.3%	5.4%	7.4%	6.0%	5.9%	8.5%	8.8%	7.6%	0.63	
	<b>Overall</b>		<b>4.8%</b>	<b>7.0%</b>	<b>8.1%</b>	<b>9.7%</b>	<b>8.3%</b>	<b>9.0%</b>	<b>7.9%</b>	<b>8.8%</b>	<b>11.1%</b>	<b>12.9%</b>	<b>8.1%</b>	<b>0.61</b>	

Source: IBES via Thomson, Worldscope via FactSet as of 6/30/10. Past performance is not a guarantee of future results.

The foregoing reflects the thoughts and opinions of the Brandes Institute.

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Price/Earn: Price per share divided by earnings per share.

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