



## Value investing anomalies in the European stock market: Multiple Value, Consistent Earner, and Recognized Value

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### ABSTRACT

Empirical academic studies have consistently found that value stocks outperform glamour stocks and the market as a whole. This article extends prevailing research on existing value anomalies. It evaluates simple value strategies for the European stock market (compared to many other studies that test market data on a country-by-country basis) as well as sophisticated multi-dimensional value strategies that also include capital return variables (Consistent Earner Strategy) and momentum factors (Recognized Value Strategy), the latter reconciling intermediate horizon momentum and long-term reversals of behavioral finance theories. It can be shown that these “enhanced” value strategies can produce superior returns compared to returns of the whole market or “simple” value strategies without capturing higher risks applying traditional risk measures.

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### 1. Introduction

In their 1934 book, *Security Analysis*<sup>1</sup>, Benjamin Graham and David Dodd argued that out-of-favor stocks are sometimes underpriced in the marketplace, and that investors cognizant of this phenomenon could capture strong returns. This philosophy is now widely known as value investing. Although value investing has taken many forms since its inception, it generally involves buying shares which appear underpriced based on some form(s) of fundamental analysis. Value shares typically feature low price-to-book, price-to-earnings, or price-to-cash flow ratios, while glamour stocks generally are characterized by valuation metrics at the opposite end of the spectrum.

As early as 1977, academic studies have used share price and earning per share data to classify stocks into the value or glamour categories and compare historical performance. Stocks with low price-to-earnings multiples (often called “value” stocks) appear to provide higher rates of return than stocks with high price-to-earnings ratios as first shown by Nicholson (1960) and later confirmed by Ball (1978), Basu (1977, 1983), and Fama and MacBeth

(1973).<sup>2</sup> De Bondt and Thaler (1985) obtain a similar result for their contrarian strategy based on buying stocks with low past returns because of the behavioral hypothesis of investor overreaction. A stock’s price-to-book value ratio has also been found to be a useful predictor of future returns. Fama and French (1992) concluded that size and price-to-book value together provide considerable explanatory power for future returns in U.S. markets.

These results raised questions about the efficiency of the market if one accepts the capital asset pricing model, as Lakonishok, Schleifer and Vishny pointed out. In 1994, they published “Contrarian Investment, Extrapolation, and Risk<sup>3</sup>”. Using data from 1968 to 1994, they grouped U.S. stocks into value and glamour segments based on price-to-book, price-to-cash flow, and price-to-earnings ratios, as well as sales growth. The researchers concluded that, for a broad range of definitions of “value” and “glamour”, value stocks consistently outperformed glamour stocks by wide margins.

In their 1998 study, “Value versus Growth: The International Evidence”, Fama and French tackled the question of whether value stocks tended to outperform glamour stocks in markets outside the U.S. The researchers found that, from 1975 to 1995, value

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<sup>1</sup> Graham and Dodd (2005).

<sup>2</sup> Papers are cited in detail at the end of this article.

<sup>3</sup> An update was published in 2004: Chan, L., & Lakonishok, J. (2004).

stocks outperformed glamour stocks in 12 of 13 major national equity markets. In their opinion, this laid to rest the possibility that the value outperformance seen by Lakonishok, Schleifer and Vishny was simply a sample-specific happenstance within the U.S. market.<sup>4</sup>

While there is some agreement that value strategies have produced superior returns, the interpretation of why they have done so is more controversial. “Behavioralists” believe that investors consistently tend to overpay for “growth” stocks that subsequently fail to live up to expectations (for example, Kahneman & Riepe, 1998 and Gilovich, Griffin, and Kahneman (2002)). In their view value strategies produce higher returns because they are contrarian to “naive” strategies followed by other investors. These naive strategies might range from extrapolating past earnings growth too far into the future, to assuming a trend in stock prices, to overreacting to good or bad news, or to simply equating a good investment with a well-run company irrespective of price. Regardless of the reason, some investors tend to get overly excited about stocks that have done very well in the past and buy them up, so that these “glamour” stocks become overpriced. Similarly, they overreact to stocks that have done very poorly, oversell them, and these out-of-favor “value” stocks become underpriced.

This article is based on prevailing research on existing value anomalies.<sup>5</sup> It evaluates simple value strategies for the European stock market as well as sophisticated multi-dimensional value strategies that also include capital return variables (Consistent Earner Strategy) and momentum factors (Recognized Value Strategy).

In Section 2 of the article our methodology is briefly discussed. Section 3 (a) examines a variety of simple classification schemes for value and glamour stocks based on dividend yield, price-to-book and price-to-earnings ratio. Contrary to many studies that test market data on a country-by-country basis, all strategies are applied and modulated for the European stock market. The EuroStoxx index has been selected as the market proxy. It can be shown that simple value strategies have produced superior returns motivating our subsequent use of variable combinations.

Section 3.1 (b) evaluates strategies based on multi-dimensional selection criteria. First, simple value measures are combined (Multi Value Strategy). In a second step we combine more sophisticated multi-dimensional value strategies that also include capital return variables (Consistent Earner Strategy) and momentum factors (Recognized Value Strategy). It can be shown that while multi-dimensional value strategies based on a combination of simple value variables do not further improve investment performance and statistical significance, strategies based on combinations of value and capital return variables (e.g. Return on Equity) improve the statistical significance of results (while generating compatible investment returns). Strategies based on combinations of value and momentum variables improve both investment performance and significance compared to simple value strategies.

Finally in Section 4 the question of whether strategies based on our investment selection criteria are fundamentally riskier is evaluated. Evidence is provided that, in general, value strategies have outperformed glamour strategies quite consistently without support for the hypothesis that value strategies are fundamentally riskier than glamour strategies. Conclusions are drawn in Section 5.

## 2. Methodology

The sample period covered in this study starts on July 1, 1994<sup>6</sup> and ends June 30, 2009.<sup>7</sup> For portfolio strategies that are tested over 2-year (3-year) performance horizons the last reformation date is July 1, 2007 (July 1, 2006). As market proxy for the European stock market the EuroStoxx index has been selected. Results are also verified for the EuroStoxx50 in order to verify that results still hold if only large capitalization equities are examined. Results for stock returns of indices containing only large firms are less contaminated by significant look-ahead or survivorship bias.<sup>8,9</sup>

Based on the index we form our model portfolios using as a first step one-dimensional (single) accounting ratios, such as dividend yield (DY), price-to-book<sup>10</sup> (P/B) and price-to-earnings<sup>11</sup> (P/E). In addition, corporate return (RoE) and momentum (Levy27<sup>12</sup>, Relative Strength – 3 months) ratios<sup>13</sup> are computed for a Consistent Earner Strategy (trying to mimic investment styles of successful and well-known value investors who focus on “outstanding companies at a sensible price”)<sup>14</sup> and a Recognized Value Strategy (trying to further improve performance by timing reversals better based on the stock momentum life cycle hypothesis).<sup>15</sup> Then ratios and historical performance data are used to sort individual stocks into portfolios.<sup>16</sup> Based on the investment strategy chosen, deciles are formed for which performance is measured for 1–3-year time horizons. Within each of our portfolios, we equally weight all stocks and compute returns using a buy-and-hold strategy for years  $t + 1$ ,  $t + 2$  and  $t + 3$  relative to the time of formation. If a stock is delisted from the stock exchange during a year, we continue with the same portfolio using the return of that stock at the time it was last traded

<sup>6</sup> Results for starting dates on January 1, April 1 and October 1 were also tested and results are comparable to conclusions drawn from yearly starting dates on July 1.

<sup>7</sup> If the 30th is not a weekday, then the last trading day of the month is used. Years in tables and graphs refer to a time period from July 1 that year until June 30 of the subsequent year. Formation and reformation occur based on publicly available price and accounting data from the previous year ( $t - 1$ ). Results for current year estimates as accessible at formation and reformation dates were comparable. Reformation at the beginning of the second quarter was chosen in order to ensure that fundamental company information for the entire previous year published in annual reports, SEC filings or by the financial media was available to investors and incorporated into valuation ratios. 1994 was chosen as the first formation year because the EuroStoxx was created in 1999 and index constituents were recalculated back to this time.

<sup>8</sup> Look-ahead and survivorship bias are common types of sample selection biases. The first is created by the use of information or data in a study or simulation that would not have been known or available during the period being analyzed. This will usually lead to inaccurate results in the study or simulation. To avoid this bias we calculated ratios based on data available at the time of portfolio formation and reformation, not from revisions published thereafter. The second bias occurs, for example, when backtesting an investment strategy on a large group of stocks. Then it may be convenient to look for securities that have data for the entire sample period. However, eliminating a stock that stopped trading, or shortly left the market, would input a bias in data samples. To avoid this problem we used historical constituent lists for the EuroStoxx when we constructed our quantile portfolios.

<sup>9</sup> Banz and Breen (1986), Kothari, Shanken, and Sloan (1992). La Porta (1993) also points out that the selection bias is less serious among larger firms.

<sup>10</sup> Rosenberg, Reid and Lanstein (1984) and Lee and Swaminathan (2000) published the first cited study that evaluated the performance of the book-to-market strategy.

<sup>11</sup> Basu (1977) first looked at the relationship between common stocks and their price-to-earnings ratios. He found that a low P/E ratio portfolio earned 6% more per year than a high P/E portfolio in the 14-year sample.

<sup>12</sup> Levy, R. (1967).

<sup>13</sup> RoE = Return on Equity, Levy27 = a stock’s price divided by its price 27 weeks earlier, Relative Strength – 3 months = performance of a stock compared to the index during the last 3 months (MO3m).

<sup>14</sup> Greenblatt (2006).

<sup>15</sup> Oyefeso (2004), Lee, C., & Swaminathan, B. (2000). Price momentum & trading value. *Journal of Finance*.

<sup>16</sup> As Lakonishok et al. (1994) we consider only positive ratios.

<sup>4</sup> Similar results had been shown by Lakonishok, Hamao, and Chan (1991) for Japan.

<sup>5</sup> We widely follow Lakonishok et al. (1994) in the structure of our analysis.

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