



# Testing behavioral finance theories using trends and consistency in financial performance<sup>☆</sup>

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## Abstract

Assessing the predictive ability of behavioral finance theories using out-of-sample data is important. Otherwise, the potentially boundless set of psychological biases underlying the behavioral explanations for security price behavior can lead to overfitting of theories to data. We test pricing effects attributed to two psychological biases, representativeness and conservatism, which underlie many behavioral finance theories. Using trends and consistency of accounting performance, we look for the pricing consequences of representativeness and conservatism. We find mixed evidence consistent with behavioral finance. Specifically, the theories based on representativeness are not supported, but we find some evidence of the pricing implications of conservatism.

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## 1. Introduction

Several studies document momentum (i.e., positive autocorrelation) in stock returns at horizons ranging from 3 to 12 months (e.g., Jegadeesh and Titman, 1993, 2001) and return reversals at longer horizons (e.g., DeBondt and Thaler, 1985, 1987). Whether this predictability of returns, particularly at long horizons, results from time-varying discount rates in an efficient market or systematic mispricing is widely debated (e.g., Fama, 1998; Malkiel, 2003). However, the notion that it indicates market inefficiency as a result of investors' information processing biases is rapidly gaining currency in the literature (e.g., Shleifer, 2000; Shiller, 2003).

Our goal in this study is to test the predictions of market inefficiency theories (known as behavioral finance) based on investors' biased processing of patterns in firms' financial information. We explain that in many of the behavioral finance theories return predictability stems from investors' over- or under-reaction to patterns, i.e., trends and consistency in recent financial information. Throughout the paper, financial performance (or financial information) refers to a firm's various operating performance measures such as sales and earnings. Trends and consistency in financial performance are identified using time-series observations of quarterly and annual operating performance data. We distinguish financial performance from the firm's share-price performance, which is measured using stock returns.

*Importance of the tests:* Behavioral finance theories of inefficient markets have become a serious alternative to the efficient markets hypothesis, creating a need for tests to discriminate between the two. As Barberis and Thaler (2002, p. 61) observe, "There is only one scientific way to compare alternative theories, behavioral or rational, and that is with empirical tests." In this respect, assessing the predictive ability of behavioral hypotheses using out-of-sample data is important.<sup>1</sup> Absent such out-of-sample tests, theorists can use the potentially boundless set of psychological biases to build behavioral models and explain observed phenomena. Such attempts run the risk of over-fitting theories to observed results. Thus, by identifying pervasive psychological biases, forming empirically rejectable hypotheses, and testing for their validity, we aid behavioral theorists in isolating the fundamental behavioral phenomena, if any, influencing asset prices. In this spirit, we distill behavioral underpinnings of the theories and test for the predicted systematic mispricing. Our tests of return predictability on the basis of patterns (i.e., trends and consistency) in financial information are among the first set of out-of-sample tests of the behavioral finance theories. Previous research by Barth et al. (1999) examines whether the price-earnings ratios of firms reporting patterns of increasing earnings exceed those of other firms. However, they do not study subsequent share-price performance of such stocks to ascertain whether the stocks were overvalued. Thus, they cannot distinguish between rational valuation and excessive valuation resulting from

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<sup>1</sup>See Fama (1991), Rubinstein (2001), Hirshleifer (2001), Hong and Stein (1999), Shiller (1999), Fama (1998), and Barberis et al. (1998).

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