Papers

The case for market inefficiency: Investment style and market pricing

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Abstract   The level of informational efficiency of security markets has been a contentious issue among the academic and broader community over the last 35 years. This study highlights the growth in popularity in investment styles over this period, where investment decisions are made with only limited reference to available information and no concern with fair value (eg momentum investors and index investors). This paper models the market behaviour of fundamental, momentum and index investors and then simulates the behaviour of security prices in a market composed of investors following these three styles. Evidence is found to suggest that compositions of investment styles that are fairly typical of the mix of investors in current-day markets will lead to anomalous price behaviour similar to that found by other writers: an underreaction to new information which often gives rise to a subsequent overreaction.

Keywords: investment styles, market efficiency, Monte Carlo simulation

Introduction   One of the important conditions required to ensure efficiency in market pricing is that investors actively compete in the market based upon perceived mispricing derived from an analysis of available information. In such a world, it is assumed that prices are soon driven to
their fair value or, at least, to a level where investors, based upon the available information set, cannot consistently identify stocks whose prices are at variance with fair value. The focus in this paper is on investigating the potential for efficiency within markets where many market participants pursue investment styles that pay little or no attention to either fair pricing or available information. Index and momentum investing represent two instances of such investment styles that have become more popular in recent years.

Index investing actually stems from a belief that markets are efficient, and so active management cannot add value. As a consequence, it has become progressively more popular to invest with the objective of replicating a particular market index. The investment decision under this investment style (whether it be implemented by full replication or some statistical matching process) is driven by the proportion that a particular stock represents of the index. Therefore, these investors pay no attention to information about a company (other than its market capitalisation), much less whether it is fairly priced. Momentum investing would also seem to have increased in popularity in recent years. This investment style can come in several forms but it is generally driven by some trend in market sentiment as measured by signals such as price movements or analyst revisions. Again, the decision rules followed by momentum investors ignore most of the information available about a company and make no attempt to identify the company’s fair value. Whereas index investing is somewhat neutral in terms of its impact on current prices, momentum investing has the potential for accelerating any existing price trends and so may well exacerbate any market mispricings.

It is important to consider the impact of these various popular investment styles on pricing, given the ever increasing evidence on market anomalies and particularly the economic impact of bubbles, which may be one artefact of such anomalies. It may well be that markets are becoming less efficient with changes in the composition of investors, who follow disparate investment styles.

In order to provide insights into the potential impact on market pricing of different combinations of fundamental, index and momentum investor, this paper first models the market behaviour of each of these types of investors. Monte Carlo simulations of markets composed of different combinations of the three types of investors are then conducted, which involves introducing random earnings announcements at quarterly intervals and then tracing the stocks prices that evolve over an extended period of time. By running this experiment thousands of times, one is able to observe the typical price behaviour within markets with differing compositions of investors and so arrive at an assessment of the efficiency of these markets.

In the first section, the paper reviews the literature in terms of both the development of different investment styles and the growing evidence on market anomalies, in order to introduce the possibility that the change in composition of investment styles may provide an important explanation for much of the abnormal pricing behaviour currently seen in markets. The second section specifies the behaviour of the different types of investors in a way that enables the pricing mechanism to be modelled, given different combinations of the various types of investing. The results of the Monte Carlo simulations are reported in the third section, with special emphasis on the insights that they