International Review of Financial Analysis 26 (2013) 1–17

Contents lists available at SciVerse ScienceDirect

International Review of Financial Analysis

Review

A review of the international literature on the short term predictability of stock prices conditional on large prior price changes: Microstructure, behavioral and risk related explanations

Shima Amini [a], Bartosz Gebka [b], Robert Hudson [b,*], Kevin Keasey [a]

[a] Leeds University Business School, University of Leeds, Leeds, UK
[b] Newcastle University Business School, Newcastle University, Newcastle upon Tyne, UK

ARTICLE INFO

Article history:
Received 3 April 2012
Accepted 11 April 2012
Available online 21 April 2012

JEL classification:
G1
G14

Keywords:
Stock reaction
Predictability
Large price changes
Microstructure
Behavioral
Risk

ABSTRACT

In this paper we review the literature on the short term predictability of stock prices conditional on large prior price changes. This research area is characterized by a large number of studies reflecting different markets, time periods, methodologies and model parameters. While most of the papers do find elements of predictability in markets subsequent to large price changes the wide diversity in research approaches makes it very difficult to draw general conclusions from past studies. In addition there is little consensus within the literature regarding the causes of predictability with papers variously favoring explanations based around market microstructure, behavioral anomalies and the response of market participants to changing risk. We identify the key empirical findings from the literature, evaluate the explanations for the cause of the effects, discuss the links of the research program to other areas of finance and finally review possible topics for future research in the area.

Contents

* Corresponding author at: Newcastle University Business School, 5 Barrack Road, Newcastle upon Tyne, NE1 4SE, UK. Tel.: +44 191 208 1642.
E-mail address: robert.hudson@ncl.ac.uk (R. Hudson).

1057-5219/$ – see front matter
doi:10.1016/j.irfa.2012.04.002

1. Introduction

Many papers have investigated the short term reaction of stock market securities to large preceding price movements. In this literature review we have found over sixty studies of this nature and there is no sign of the research output in this area abating. Both individual stocks and market indices have received extensive examination in many different world markets. This ongoing research effort has been motivated by the fact that these papers have frequently found strong elements of predictability among security returns after large price changes. These findings are clearly difficult to reconcile with the efficient markets paradigm. It is important, for both theoretical and practical reasons, to explain this significant departure from mainstream finance theory. A number of explanations have been proposed in the literature and these tie directly into the ongoing debate in finance about the necessity of considering behavioral anomalies to supplement the assumption of fully rational behavior. The main rational explanations proposed in the literature include the influence of market microstructure and the response of market participants to changing risk. The less rational explanations include underreaction and overreaction to previous large price moves.

In this paper we critically review the literature in this research area. The field is characterized by a large number of rather heterogeneous studies reflecting different markets, time periods, methodologies and model parameters. While most of the papers do find significant predictability in markets subsequent to large price changes there are some troubling features of the literature. The wide diversity in research approaches makes it very difficult to draw general conclusions about the size and even direction of any predictability from past research. Indeed, not infrequently papers appear to report broadly contradictory findings. For example, some studies of US stocks report significant positive returns after large market drops whereas others report significant negative returns. One particularly problematic feature of the literature is that there is no commonly used definition of a large price movement making it difficult to compare the findings of different papers as observed differences may be due to either different data or different investigation parameters. The situation is equally unclear about possible explanations for the observed phenomena. There is no consensus about the explanation of the observed phenomena. All the main proposed explanations have received support in some studies and no support or even rejection in other studies. Moreover, many studies have tended to focus on one particular possible explanation without much consideration of other possibilities. In this paper, we aim to clarify matters by systematically classifying the extant research in order to summarize and give a broad overview of the literature. This allows us to outline what can reasonably be deduced from prior research and what is still unclear.

The plan of the paper is as follows. The next section describes the general research approach used in the literature. Section 3 outlines the possible explanations proposed for any findings. Section 4 summarizes the existing literature. Finally Section 5 discusses the work and presents our conclusions.

2. General research approach

In many respects the existing papers have followed a fairly fixed general pattern with a particular set of securities or indices being examined and their behavior after what is defined as a large price movement being analyzed.

As a straightforward example of this approach we can consider the early and influential paper of Bremer and Sweeney (1991). The authors look at the firms listed in the Fortune 500 which are included in the daily CRSP (Center for Research in Security Prices) data for the period 1962 to 1986. They investigate stocks with daily returns of less than −10% (so the sample includes 1373 events). They find that these large negative daily rates of return are followed on average by larger-than-expected positive rates of return over following days. They also come to the same result for the stocks with daily returns of less than −7.5% and less than −15%. Within this general pattern we do see great variations in the details of the parameters used in studies. These variations are examined in more detail below.

2.1. Variations in the definition of a large price change

The definition of a large price change worthy of investigation has been determined in many ways. Many studies have looked at raw percentage return to trigger an investigation but there is no consensus as to what the appropriate size of a return should be. A figure of 10% has often been used (see for example, Choi & Jayaraman, 2009; Peterson, 1995) but many other triggers appear in the literature. A few papers have made some effort to generalize this approach by looking at returns of all sizes (Amini, Hudson, & Keasey, 2010; Atanasova & Hudson, 2007).

Numerous studies have set the definition of a large return in ways other than by reference to simple percentage price movements. Approaches used include looking at the size of the residuals from a particular market model of returns (see for example, Brown, Harlow, & Tinic, 1988, 1993) or at returns that exceed some multiple of past standard deviations of returns (see for example, Lasfer, Melnik, & Thomas, 2003; Pritamani & Singal, 2001). Many papers have not concentrated directly on the size of returns but have looked at the best and/or worst performing instruments in a particular time period (see for example, Atkins & Dyl, 1990; Bali, Demirtas, & Levy, 2008). This cross-sectional approach is not unlike that found in the extensive literature on momentum (see Jegadeesh & Titman, 1993, for the seminal paper in this area). Other papers have considered the impact of important news on the market.