Int. Fin. Markets, Inst. and Money 29 (2014) 92–108

Contents lists available at ScienceDirect

Journal of International Financial Markets, Institutions & Money

journal homepage: www.elsevier.com/locate/intfin

New evidence on turn-of-the-month effects

Susan Sunila Sharma*, Paresh Kumar Narayan

Centre for Financial Econometrics, School of Accounting, Economics and Finance, Faculty of Business and Law, 70 Elgar Road, Burwood Highway, Burwood, Victoria 312, Australia

ARTICLE INFO

Article history:
Received 3 March 2013
Received in revised form 3 December 2013
Accepted 4 December 2013
Available online 18 December 2013

JEL classification:
G12
G15

Keywords:
Firm returns
Volatility
Sector
Heterogeneous
Turn-of-the-month

ABSTRACT

In this paper, we test whether the turn-of-the-month (TOM) affects firm returns and firm return volatility differently depending on their sector and size. We use time series data for 560 firms listed on the NYSE and find evidence that the TOM affects returns and return volatility of firms. The effects are, however, different for different firms and are dependent on the sectoral location of firms and on firm sizes. These findings imply that the TOM has a heterogeneous effect on firm returns and firm return volatility.

1. Introduction

A considerable body of empirical evidence documents the behaviour of calendar anomalies in the US and developed country stock returns. Some studies have shown that returns are higher during the first few trading days of each month.[1] This type of behaviour is consistent with the turn-of-the-month (TOM) effect (see, for instance, Lakonishok and Smidt, 1988; McConnell and Xu, 2008; Nikkinen et al., 2007; Holden et al., 2005; Cadsby and Ratner, 1992; Ogden, 1990).

Our aim is to re-examine the impact of the TOM on firm returns and firm return volatility for firms categorised into different sectors and sizes. We consider firms listed on the NYSE. While this

* Corresponding author. Tel.: +61 3 924 46871; fax: +61 3 924 46034.
E-mail address: s.sharma@deakin.edu.au (S.S. Sharma).

[1] In this paper, we take issue with the literature that considers the turn-of-the-month as a calendar anomaly. Indeed, other studies have considered different aspects of the calendar, such as the impact of holidays on returns (see Tsiakas, 2010 and Barone, 1990) and the week-of-the-year effect (see Levy and Yagil, 2012).

1042-4431/$ – see front matter
http://dx.doi.org/10.1016/j.intfin.2013.12.002

is considered to be a traditional topic of research in financial economics, the research gap emanates from the literature's assumption that firms are homogenous. This is relevant because a related branch (see, *inter alia*, Narayan and Sharma, 2011; Beltratti, 2005; Hanson et al., 2008; Pennings and Garcia, 2004) of research has demonstrated that firms are heterogeneous. Previous studies have considered the impact of the TOM on market and firm returns but not on sectoral returns or sectoral return volatility. We take the position, motivated by the literature that has shown firm heterogeneity, in particular a recent study by Narayan and Sharma (2011), that if firms are indeed heterogeneous then TOM will have different effects on firms depending on their sectoral location as well as on their size. For example, we believe that firms belonging to the financial sector or the banking sector may be differently impacted by the TOM compared to firms belonging to the agricultural sector or the textiles sector. In the next section, we confirm this through presenting selected firm-level characteristics for each of the sectors over the TOM period. We find that firm characteristics are TOM dependent and vary from sector-to-sector, suggesting that the behaviour of sectors during the TOM with respect to firm characteristics is heterogeneous. Therefore, our main contribution is that we search for the TOM effect at the sector-level. In the next section, we provide a detailed motivation on why it is important to take a sectoral perspective on testing the TOM effects.

In addition, we also believe that small size firms maybe differently impacted by TOM effects compared to large size firms. This idea is motivated by two sets of studies. First, Narayan and Sharma (2011) show that oil price has a positive effect on firm returns for the smallest sized firms and a negative effect on returns for large sized firms. Second, an influential branch of research (see, *inter alia*, Froot et al., 1993; Petersen and Rajan, 1995; Vickery, 2008; Moeller et al., 2004) in financial economics has demonstrated that the behaviour of small size firms differs from large size firms. In this paper, we, thus, relax the assumption of homogeneity of firms and conduct an analysis of the TOM effect on returns for each of the 560 firms listed on the NYSE.

The second limitation of the literature, which motivates us for the present study, is that none of the studies have considered the effect of the TOM on firm return volatility, although there are studies that have considered the effect of these calendar anomalies on stocks of different size and price (see McConnell and Xu, 2008). We believe that if the TOM impacts returns of sectors and sizes of firms differently, then it should also have a heterogeneous impact on the return volatility of these sectors and sizes of firms. Whether or not this is the case is an empirical issue and has not been investigated to-date. Based on these motivations, we propose to examine three hypotheses:

Hypothesis 1. The TOM affects firm returns differently depending on the sectoral location of firms.

Hypothesis 2. The TOM affects firm return volatility differently depending on the sectoral location.

Hypothesis 3. The TOM affects firm return and firm return volatility differently depending on the firm size.

The rest of the paper is organised as follows. In Section 2, we present our motivation. In particular, in this section, the question of why there is a need for a sector-level analysis is entertained. Section 3 discusses the hypotheses and empirical framework, and concludes with a discussion of the results. The paper concludes with a brief summary of the main findings.

2. Motivation: why is there a need for a sector-level analysis?

In this paper, we argue that the TOM effect is industry or sector-specific. This is our main contribution to the literature. Therefore, it is imperative to provide a clear motivation as to why an industry-based approach to testing this traditional hypothesis in financial economics is needed. This is a relevant part of our paper as it has implications for hypotheses testing in financial economics, not only in this literature but more broadly in other literatures. Our argument is that in testing any hypotheses one should consider as homogenous a set of stocks/firms as possible, in addition to examining hypotheses using market-level data. We are not alone in this quest. Several studies, although in other strands of the literature, make this point; we will review the relevant studies soon. The key point here is that if one only emphasises on market-level data one ends up making a strong assumption that all stocks that comprise the market are homogeneous. This criticism is not new. It deserves respect;