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Investor Sentiment and Sectoral Stock Returns: Evidence from World Cup Games

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ABSTRACT

It is well known that investor sentiment affects aggregate stock returns. We investigate the economic link between sport sentiment and US sectoral stock returns. We find that sport sentiment affects only the financial sector. We argue that this result might be explained by the high liquidity that makes the financial sector more attractive to foreign investors who in turn are more prone to sport sentiment than local investors in the US. Accordingly, an arbitrageur can build a profitable trading strategy by selling short the financial sector during the FIFA World cup periods and buying it back afterwards.

1. Introduction

An increasing number of empirical works suggests that investor sentiment has strong effects on asset prices. In these studies, different empirical measures of investor sentiment have been proposed. For instance, Saunders (1993) and Hirshleifer and Shumway (2003) consider sentiment effects driven by meteorological conditions. Kamstra et al. (2003) analyze the implication of seasonal affective diseases on asset prices while Bollena et al. (2011) propose to measure sentiment by using Twitter feeds. Edmans et al. (2007), Palomino et al. (2009), Kaplanski and Levy (2010a), Kaplanski and Levy (2010b), Kaplanski and Levy (2012) and Kaplanski and Levy (2014) measure investor sentiment using soccer results. Brown and Cliff (2004), Brown and Cliff (2005) and Lux (2011) identify sentiment using survey measures. Cao and Wei (2005) investigate the relation between stock market returns and temperature while Yuan et al. (2006) consider moon phases as a possible determinant of investor sentiment and study their impact on asset prices. Da et al. (2015) build an index of investors' fear using internet search volume.

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The empirical asset pricing literature typically studies the effect of different mood variables (i.e., variables capturing meteorological conditions, seasonal diseases, sport outcomes, etc.) on aggregate stock returns. However, it is reasonable to assume that different investors are prone to different kinds of sentiment. To the extent that different investors have different preferences for stocks trading, we expect that a given mood variable captures a particular relationship between sentiment and prices that is stronger for some stocks (or sectors) than others. In fact, Baker and Wurgler (2006) argue that investors "simply demand stocks that have the bundle of salient characteristics compatible with their sentiment".

Motivated by these observations we ask ourselves whether different US sectors are affected differently by investor sentiment. As a measure of investor sentiment we use results of World Cup games as in Kaplanski and Levy (2010a). We find a significant sentiment effect only for the financial industry while other sectors do not react significantly to changes in the investors' sport sentiment. To investigate the economic reasons behind this result we classify the US sectors according to different measures of liquidity and we find that the financial sector is consistently one of the most (if not the most) liquid sectors in our sample. To the extent that the sentiment effect is mainly induced by foreign investors, as suggested by Kaplanski and Levy (2010a), our finding is consistent with the observed preference of foreign investors for more liquid stocks (Dahlquist and Robertsson (2001)). Thus, one way to interpret our results in light of the argument of Baker and Wurgler (2006) is that foreign investors demand more financial stocks because their salient characteristic (i.e., high liquidity) is compatible with sport sentiment.

The rest of the paper is structured as follows: Section 2 summarizes the background for our analysis; Section 3 describes our econometric approach; Section 4 presents the results of our regression analysis; Section 5 illustrates a trading strategy that exploits the effect of sport sentiment; Section 6 concludes.

2. Background and Motivation

We seek to test the hypothesis that different sectors are affected differently by investor sentiment. Chen et al. (2013) analyse the effect of optimism and pessimism on stock returns of 11 Asian countries during the period 1996-2010. They find that sectoral stock returns react in different ways to local sentiment (measured as turnover by volume in local stock markets) and global sentiment (measured as turnover by volume in global stock markets). Similarly, Huang et al. (2014) build proxies for investor pessimism and optimism and find that optimism affects stock returns in most (but not all) US industries while pessimism has no effect on sectoral stock returns. Uygur and Tas (2014) use weekly trading volume of Istanbul Stock Exchange 100 as a proxy for investor sentiment and show that sentiment has a greater influence on industry, banking, and food and beverage sectors than on other sectors in Turkey. Admittedly, this literature is still fragmented to draw an educated conclusion. However, these results suggest that – despite investor sentiment being shown to affect the behavior of the aggregate stock market – it is plausible that this effect originates from individual sectors and then spills over to the entire market.

3. Data and Methodology

We employ Datastream Global Equity Indices (DGEI). In particular, we retrieve our ten sectoral stock indexes from level 2 of DGEI which divides the market into the following sectors: Basic Materials, Consumer Goods, Consumer Services, Financials, Health Care, Industrials, Oil & Gas, Technology, Telecommunications and Utilities.[4] Our sample covers 10,958 trading days, from January 1973 to December 2014.[5] We compute continuously compounded day-to-day percentage returns and summarize their descriptive statistics in Table 1 below.

The empirical methodology is based on Kaplanski and Levy (2010a). Our sample includes 11 FIFA World Cups, with a total of 234 event effect days (EED) and 255 event period effect days (EPED) defined as follows: EED accounts for match days – which are also trading days – and the subsequent trading days;[6] EPED covers the whole World Cup period, beginning on the day of the first match and continuing until the first day after the final match. The break days before the final game plus two additional trading days are also included[7].

Our null hypothesis is thus that the US stock market – in each sector – is efficient and does not allow for exploitable arbitrage. The alternative hypothesis is that the World Cup effect – captured by EED and EPED – is statistically significant.

[4] The use of DGEI represents a ubiquitous practice in empirical studies of international financial markets focused mainly on sectors (see, among others, Baca et al. (2000), Griffin and Stulz (2001), Brooks and Negro (2004), Nandha and Faff (2008), Donadelli and Paradiso (2014) and Donadelli and Persha (2014)).

[5] Notice that our sample is consistent with the analysis carried out by Edmans et al. (2007) who collect international soccer results from January 1973 through December 2004.

[6] This is based on Edmans et al. (2007) who suggest that the local effect of a soccer game occurs the day after the game ends. We also implement tests when only days after the games are considered as EED. Results are almost identical and available upon request. The day of the game is included for the following reason: depending on where the games are hosted, the US market may still be open when the game ends. For all those games played during the week-end we assume they could have an effect on Monday (or the first available trading day).

[7] The data for the World Cup are taken from www.worldcup-history.com.