Journal of Banking & Finance 68 (2016) 236–250

Contents lists available at ScienceDirect

Journal of Banking & Finance

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

Long-term industry reversals

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ARTICLE INFO

Article history:
Received 12 May 2015
Accepted 28 March 2016
Available online 2 April 2016

JEL classification:
G11
G12

Keywords:
Contrarian performance
Industry
Long term

ABSTRACT

This study investigates whether, how and why industry performance can drive long-term return reversals. Using data from the UK, we find that firms in losing industries significantly outperform those in winning industries over the subsequent five years. These industry reversals remain strong and persistent after controlling for stock momentum, industry momentum, seasonal effects and traditional risk factors. We find a strong influence of past industry performance on stock return reversals. Our results also show that past industry performance is the driving force behind long-term reversals. Specifically, we find that industry components drive stock reversals, while past stock performance does not explain industry reversals. Further analysis suggests that industry reversals are present in both good and bad states of the economy and are stronger in industries with high valuation uncertainty. This implies that industry reversals are more likely to be a result of mispricing.

1. Introduction

DeBondt and Thaler (1985) show that loser stocks over the past three to five years outperform winners by 25% in the next three years. Many subsequent studies also report evidence of long-term reversals in major international equity markets.[1] Despite this evidence, the causes of these reversals are highly controversial in the literature. Prominent behavioural theories suggest that reversals occur due to investors' behavioural biases in forecasting firm growth (DeBondt and Thaler, 1987; Daniel et al., 1998; Barberis et al., 1998; Hong and Stein, 1999). However, Klein (2001) and George and Hwang (2007) contend that reversals reflect investors' rational reactions to a delay in the payment of capital gains taxes. Rational asset pricing models also suggest that reversals represent compensation for risk (Fama and French, 1993, 1996; Zhang, 2005; Liu, 2006).

This study contributes to this ongoing debate by investigating whether, how and why industry performance can drive long-term return reversals. As firms in the same industry share similar fundamentals and are affected by common shocks, arising from shifts in demand and supply for their products, industry components can cause the returns of these firms to comove (e.g. Welch, 2004; Mackay and Philips, 2005). The rational view of asset pricing suggests that this comovement represents industry-specific risk. Theoretical asset pricing models demonstrate that a firm's risk and return can be a function of its industry characteristics (e.g. Berk et al., 1999; Carlson et al., 2004, 2014; Preress, 2010; Bustamante, 2015).[2] Consistent with this theoretical prediction, several empirical studies document that industry components can explain asset pricing regularities (e.g. Moskowitz and Grinblatt, 1999; Hou and Robinson, 2006; Hameed and Mian, 2015). Kogan (2001), Zhang (2005) and Hou et al. (2015) show that firms have greater investment adjustment costs in downturn industries and the potential risk associated with having irreversible investments in place can cause higher returns for firms operating in poorly performing industries than for those in well performing industries. The models of Fama and French (1997) and Cohen et al. (2003) also indicate that poor past performance represents distress risk and firms in losing industries are, therefore, expected to offer higher returns to their shareholders for bearing industry distress risk.

Market frictions and investors' irrational behaviour can also induce industry components in stock returns. Barberis et al. (2005) and Peng and Xiong (2006) argue that investors allocate funds at a category rather than individual stock level. If these category investors are noise traders with correlated sentiment, their coordinated demand may cause excess comovement in the returns of stocks in the same category. Barberis et al. (2005) also argue that

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[1] E.g. Chou et al. (2007) in Japan, Clare and Thomas (1995) in the UK and George and Hwang (2007) in the US.

[2] Fama and French (1997) find that neither the Sharp–Linter–Black capital asset pricing model (CAPM) nor their three-factor model can precisely estimate industry costs of equity. Lewellen et al. (2010) show that macro-economic (e.g. consumption, consumption-to-wealth, and investment-to-growth) based asset pricing models fail to explain cross-sectional returns for industry portfolios.

http://dx.doi.org/10.1016/j.jbankfin.2016.03.017
0378-4266/

investors trade only a subset of securities. When these investors' risk aversion, sentiment, or liquidity needs change, they alter their exposure to the securities in their habitat, thereby causing comovement beyond fundamentals. If an industry represents a category or a habitat, the coordinated demand of noise traders at the industry level can generate industry components that are unrelated to firm fundamentals.

The behavioural models proposed by Daniel et al. (1998), Barberis et al. (1998) and Hong and Stein (1999) suggest that these industry components may drive long-term return reversals. In Daniel et al.'s model, investors exhibit overconfidence and self-attribution biases. The degree of investors' overconfidence and self-attribution may vary over time and across industries, causing mispricing and subsequent reversals. For example, Moskowitz and Grinblatt (1999) argue that the difficulty in assessing the value of new or changing industries promotes overconfidence among investors who are related to these industries. They also argue that investors' conservatism bias can reduce the speed at which investors update their priors about new and changing industries. In Barberis et al.'s (1998) model, investors exhibit representativeness bias, causing them to become too optimistic (pessimistic) about firms with a sequence of good (bad) news. Moskowitz and Grinblatt (1999) argue that if investors focus more on industry than firm specific news, the representativeness bias can lead them to extrapolate performance too far from the industry as a whole, yielding long-term reversals. Finally, several studies show that analysts and institutional investors have more industry- and market-wide information than firm-specific information (e.g. Piotroski and Doulstone, 2004; Irvine and Pontiff, 2009; Preress, 2010). As analysts and institutional investors usually pay more attention to industry leaders, the prices of these leaders will reflect market- and industry-wide news more quickly than those of their followers. Similarly, industries with more analysts and institutional holdings are shown to incorporate market-wide news faster than other industries (e.g. Hong et al., 2007). When traders seek to exploit sluggish price adjustments to industry- or market-wide information, they can create excess industry momentum and subsequent industry reversals may happen as prices revert back to their equilibrium levels (e.g. Hong and Stein, 1999).

Given the above arguments, it is surprising that little attention is given to the industry reversals and their role in explaining stock reversals. This study fills the gap. Using stocks listed on the London Stock Exchange (LSE), we find significant long-term industry reversals in the UK market. Specifically, we show that stocks in losing industries outperform those in winning industries over the subsequent five years after controlling for stock momentum, industry momentum, seasonal patterns and traditional risk factors. We also show that industry reversals are much stronger than stock reversals. In particular, we find that industry reversals are present in all calendar months, in neutral (neither winner nor loser) stocks and after adjusting for past stock performance. However, stock reversals exhibit strong seasonal patterns, are non-existent in neutral (neither winning nor losing) industries and disappear when adjusting for past industry performance. This evidence supports the prediction that industry components are the main driving force behind long-term return reversals.

In the subsequent analysis, we also investigate whether the long-term industry reversals are consistent with rational explanations or are a result of mispricing. To this end, we investigate whether stock and industry reversals survive after stringent risk adjustments. By using both the Fama and French (1993, 2015) three- and five-factor model,[3] we find that stock reversals completely disappear, while industry reversals remain positive and significant, albeit weak in the five-factor model. Since industry reversals are not fully explained by risk factors, it is plausible that mispricing is also at play. To shed further light on this issue, we compare the performance of the industry contrarian strategies in different states of the economy. Lakonishok et al. (1994) argue that, if loser stocks are fundamentally riskier than winner stocks, then contrarian strategies should be profitable only in good states, as the high marginal utility of wealth in bad states makes loser stocks unattractive to risk-averse investors. However, if industry reversals represent a form of market inefficiency, one would expect them to be more pronounced in industries with high information uncertainty (see, e.g. Hirshleifer et al., 2013). We find that the profits of industry contrarian strategies exist in both good and bad states of the economy and are higher in industries with less competition, high accruals, high idiosyncratic volatility and low analyst coverage.[4] These findings suggest that industry reversals are more likely to represent mispricing rather than compensation for risk.

This study contributes to the literature in many ways. First, to the best of our knowledge, we are the first to study long-term industry reversals and their impact on the well-documented long-term stock reversals. Our study is related to the work of Moskowitz and Grinblatt (1999), who document strong industry components in the short-term stock momentum anomaly. However, while several studies argue that short-term momentum and long-term reversals are related (Hong and Stein, 1999; Jegadeesh and Titman, 2001), others show that they are two independent phenomena (George and Hwang, 2004).[5] Thus, whether industry reversals have an impact on stock reversals remains an open empirical question. In this study, we document the presence of strong industry reversals, which fully subsume the stock reversals. This finding has important implications for the asset pricing literature. Specifically, while several early studies show that contemporaneous industry returns have little impact on stock returns (e.g. Fama and French, 1997; Heston and Rouwenhorst, 1994; Griffin and Karolyi, 1998), we find that past industry performance strongly affects future stock returns. Second, we investigate whether the importance of industry returns in the conditional asset pricing is consistent with rational expectations or is better explained by behavioural biases. We find that industry reversals are more consistent with behavioural explanations and represent a challenge to the rational asset pricing models. Third, we evaluate the ability of the Fama and French (2015) five-factor model to explain anomalies outside the US. Using data from the UK, we find that the five-factor model fully explains the stock return reversals, but its ability to explain industry reversals is relatively limited. Finally, the institutional setting of the UK market provides a unique opportunity to test the role of taxes in long-term return reversals. George and Hwang (2007) show that stock reversals in the US come exclusively in January. Since the UK tax year end is 5 April, investigating stock reversals in the month of April helps us understand whether the strong January reversals in the US are caused by tax loss selling or are merely the turn-of-the-year effect. Consistent with the tax loss selling argument, we find that stock reversals in the UK are particularly strong in April. However, the finding that industry reversals are not confined to the months of January or April is inconsistent with the tax loss selling hypothesis.

The remainder of the paper is structured as follows. Section 2 describes the data and the methodology. Section 3 provides summary statistics. Section 4 provides empirical results, and Section 5 concludes.

[3] Note that it is yet to be established whether the profitability and investment factors in Fama and French (2015) reflect rational risk or mispricing. See Hou et al. (2015) for further discussions.

[4] Dhaliwal et al. (2011) use accruals as a proxy for information opacity, Hong et al. (2000) use firm size as a proxy for investors' attention, and Kumar (2009) uses idiosyncratic volatility as a proxy for valuation uncertainty.

[5] George and Hwang (2004, 2007) show that the momentum captured by the nearness of a stock's price to its 52-week high does not reverse in the long term.