Full length article

Index shocks, investor action and long-run stock performance in Japan: A case of cultural behaviouralism?

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ABSTRACT

Building on prior literature which suggests that investors in most countries, but not Japan, are subject to behavioural biases that cause momentum, and informed by the shared cultural values in Japan which leans heavily in favour of collective action, this paper asks whether stock return patterns following revisions to the country’s flagship index are driven by behavioural manifestations of cultural traits specific to investors there. We find that herd-like overreaction, accompanied by strong reversals, cause stocks added to the index to underperform the market over the long term. Our findings contrast sharply with existing evidence that momentum effects drive the outperformance of stocks added to U.S.-domiciled indexes over similar horizons. Overall, the findings not only offer support to the notion that investors in different national cultures respond differently to an information shock and are subject to different cognitive biases, but also highlight the role of collective sentiment in investor decision-making around index revisions.

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1. Introduction

Recent research has brought increased attention to the notion that culture as a national trait not only varies across countries but can also be important in influencing investor behaviour and stock returns (Chui et al., 2010; Aggarwal and Goodell, 2014; Chang and Lin, 2015; Aggarwal et al., 2016; Karolyi, 2016). In an interesting application of country cultural dimensions, Chui et al. (2010) examine the link between national cultural values and the behavioural biases of investor overconfidence and attribution bias that lead to market momentum. They show that investors in less individualistic, or conversely more collectivistic, cultures tend to be less overconfident. Consistent with this view, Fama and French (2012) show that cross-country diversity in anomalous return patterns can be significant, which further implies that asset pricing models that work well to explain return patterns in US or European stocks, for example, may not be relevant for stocks in other regions.

Motivated by existing studies on the connections between national culture, collective/individual decision-making and stock return behaviour, this paper examines the long run trajectory of stocks that enter or leave the Nikkei 225 index, and the extent to which their prices are affected by behavioural manifestations of cultural traits specific to Japanese investors. We then consider whether the observed pricing anomalies are related to firm-specific risk factors. Furthermore, we investigate whether investment strategies that systematically beat the market can be designed around the observed return patterns.

Some particular features of Japan makes it an attractive choice for this study. The special characteristic arises from two main factors: the predominance of domestic equity investors over foreign ones, and the shared cultural values within the country which strongly favours collective action over individual choices. In buttressing the latter point, Markus and Kitayama (1991) and Heine et al. (1999) (as cited in Chui et al., 2010, p. 365) assert that people in collectivistic Confucian cultures such as Japan tend to exhibit underconfidence in their abilities/judgement, whereas people in individualistic cultures such as the U.S. tend to exhibit overconfidence. Similarly, Chang and Lin (2015) note that investors in collectivistic “eastern” cultures, unlike those in individualistic “western” cultures, tend to exhibit significant herd-like overreaction to prevailing market sentiment. This in fact suggests that stocks that trade in markets domiciled in collectivistic countries – where investors by virtue of national culture are more likely to demonstrate collective herding behaviour – are more likely to
exhibit market overreaction to information shocks leading to early reversals. In contrast, stocks that trade in markets in individualistic countries such as the U.S., for example, are more likely to exhibit market momentum due to the inherent tendency of investors in those countries to exhibit overconfidence and self-attribute bias (Barberis et al., 1998).

The behavioural finance literature has traditionally focused on the psychology of the individual and as a result overlooked social or group psychology (Tourani-Rad and Kirkby, 2005). Despite a growing consensus in academic finance that culture, as a national or group trait, matters, empirical perspectives on the connection between national culture, behavioural anomalies and return predictability are still nascent.

By documenting evidence that herd-like overreaction accompanied by strong reversals around index revisions are dominant in Japan, our study contributes to and advances current debates in the literature regarding country-level differences in psychological biases and their implications for decision making and return predictability. Further, our finding that the reversal effect is not confined to the difficult-to-arbitrage sample of stocks (deletions) but also present in the sample of large liquid stocks (additions) is of particular interest, and offers support to recent arguments (for example Jacobs, 2015) that market-level sentiment can be an important driver of anomalous return behaviour. Our findings also echo recent studies (for example Fama and French, 2012; Asness et al., 2013) that examine size, value and momentum patterns in average returns in North America, Europe, Japan and Asia-Pacific, and find no evidence whatsoever of momentum in Japanese stock returns.

In addition, we contribute to the literature on the index effect. To our knowledge this is the first attempt to link the price impact of Nikkei 225 index changes to country-level behavioural biases, and one of the first to consider the long term effects of changes to a major non-U.S. index. The remainder of the paper is organized as follows. Section 2 briefly reviews the related literature. Section 3 provides some institutional background to the Nikkei 225 index revision framework, including the proportion of foreign and domestic equity ownership in the Japanese stock market. The section also describes the development of our hypothesis. Section 4 presents details of the research design and test methodologies employed. Section 5 presents and discusses the empirical results. Section 6 provides some conclusions.

2. Related literature

2.1. Return anomalies: rational (risk-based) vs. behavioural explanations

Attempts to explain anomalous patterns in stock returns generally follow one of two broad paradigms: rational (risk-based) or behavioural explanations. Rational explanations rely on the assumption that investors process information in a rational and efficient manner, and that stocks are sensitive to fundamental risk factors for which investors demand compensation (Waszczyk, 2013). The Fama and French (1993) and Carhart (1997) asset pricing models dominate among risk-based asset pricing models, and are widely used by finance researchers. Another strand of the rational school that has met with some success is that which introduces market friction into the risk function, so that return patterns are not just dependent on risk factors but are also sensitive to financial market frictions (for example Campbell et al., 1993; Duffie, 2010) and liquidity (for example Pástor and Stambaugh, 2003; Achariya and Pedersen, 2005; Avramov et al., 2006). According to Campbell et al. (1993), short-term price pressures caused by demand for immediacy (for risk-sharing, portfolio rebalancing or cash needs) from uninformed investors can lead to temporary mispricing that, when absorbed by liquidity suppliers, results in a reversal in prices. The later price reversal, they note, serves as compensation to liquidity providers.

Behavioural explanations on the other hand put forward the argument that if mispricing occurs for reasons other than risk, then arbitrage constraints and investor irrationality are the likely causes. Specifically, Baker and Wurgler (2006) find that small, less liquid stocks exhibit stronger mispricing/predictability as they are more difficult to arbitrage, consistent with Nagel’s (2005) argument that mispricing is more of an issue for stocks with short-sale constraints. The other strand investigating the relationship between anomalous returns and irrationality focuses mainly on the cognitive aspects of investors’ decision-making process given a particular information set. For instance Thaler (1993) (as cited in Brav and Heaton, 2002, p.576) argues that irrationality arises due to investors’ tendency to exhibit erroneous beliefs and cognitive biases in the way they process or act on available information. The paper by Chang and Lin (2015) follows up by suggesting that cognitive biases leading to herding behaviour in the stock market can be a result of country-level behavioural norms and beliefs. Herding refers to the tendency for majority of investors to follow the same investment strategies at the same time.

2.2. National culture, social norms and investor behaviour

Investment decisions and, by extension, stock returns can be affected by national culture traits. Culture is defined by Guiso et al. (2006, p. 23) as representing “those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation”. Durand et al. (2013) investigate the impact of national culture on investor behaviour and stock price behaviour using Hofstede’s (2001) cultural index, which distinguishes between ‘individualistic’ cultures and ‘collectivistic’ cultures. They argue that different social norms influence investor behaviour differently, and lead to different outcomes on stock valuation. They show that the performance of “sin stocks” (mainly alcohol, tobacco, gaming and defence stocks) across national stock exchanges vary considerably, depending on the cultural orientation of a country. Specifically, investors in collectivistic Confucian countries of Japan and South Korea exhibit a different attitude to those stocks relative to investors in the more culturally individualist countries of Australia and New Zealand.

Chang and Lin (2015, p. 386) assert the following about Confucian cultural norms and how it may influence investor behaviour: “Confucian cultural characteristics may lead to the tendency among investors to follow others’ investment strategies and develop herding behaviours...[whereas] values under the influence of Western culture may prevent the exhibition of herding behaviour for investors in the stock market”. Similarly, Chui et al. (2010) argue that there is a relationship between the low individualism scores for East Asian countries and the weak, or complete absence of, market momentum in those countries. They suggest that investors in less individualistic cultures such as Japan “place too much credence on consensus opinions, and may thus exhibit herd-like overreaction to the conventional wisdom” (p. 389). Indeed, of the 41 countries they investigate, only Japan, Korea, Taiwan and Turkey fail to exhibit positive momentum profits. Consistent with these views, Griffin et al. (2003) in a study of 39 geographically diverse international markets find that Asian stock markets exhibit the weakest momentum returns. Chui et al. (2000) reach a similar conclusion regarding East Asian markets. The evidence that momentum effects are absent in Japanese stocks is further confirmed by Fama and French (2012) in an international study comprising Japan and 22 other developed countries drawn from North America, Europe and Asia-Pacific. They find momentum effects in all countries except Japan.
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