

Profitability of momentum strategies in international markets: The role of business cycle variables and behavioural biases

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Abstract

The paper investigates whether business cycle variables and behavioural biases can explain the profitability of momentum trading in three major European markets. Unlike previous studies, the paper nests both risk-based and behavioural-based variables in a two-stage model specification in an attempt to explain momentum profits. The findings show that, although momentum profitability in European markets is unexplained by conditional asset pricing models, it is attributable to asset mispricing that systematically varies with global business conditions. In addition, behavioural variables do not appear to matter much. Thus risk factors, which are undetected thus far and are largely attributable to the business cycle, could explain the momentum payoffs in European stock markets. © 2006 Elsevier B.V. All rights reserved.

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1. Introduction

Jegadeesh and Titman (1993) report that a trading strategy that buys stocks that have recently performed well and shorts stocks that have recently performed poorly can generate significant positive returns. The successes of momentum trading strategies have been challenging the rational expectations based predictions of modern finance theory as they violate the central theme of the efficient market hypothesis that past stock returns cannot be used in generating excess returns. Fama and French (1996) concede that momentum trading is the only CAPM-related anomaly that their three-factor model fails to explain. The profitability of momentum strategy is not limited to the US market; it has been evident in many markets around the world. For instance, Rouwenhorst (1998) examines twelve European countries from 1980 to 1995 and reports that taking long positions on winner portfolios and short position on loser portfolios can generate a risk-adjusted return of more than 1% per month.¹

While the existence of momentum in stock returns is well documented, there is considerable controversy in the literature about the sources and the interpretations of the apparent profits. In particular, both the risk and the investor behaviour based explanations have been put forward. Regarding the risk-based explanations, Grundy and Martin (2001) use the Fama and French three-factor model to adjust for cross-sectional differences in risk. They report that neither the cross-sectional variability in required returns nor the reward for bearing industry risk can fully explain momentum profits. Apparently at odds, Chordia and Shivakumar (2002) find that momentum is driven by business cycle variables. By applying a predictive regression framework, they identified a possible path for rational pricing theories to explain momentum profits. They show that the profitability of momentum strategies is due to the cross-sectional differences in expected returns and that momentum profits are only a compensation for bearing business cycle risk. However, Cooper et al. (2004) show that the predictive regression model of Chordia and Shivakumar (2002) cannot explain momentum profits following up-turns, even though it, to some extent, explains the cross-section of stock returns following down-turns. Therefore, the ability of business cycle to explain momentum profits remains unresolved.

Although the findings of Grundy and Martin (2001) and Chordia and Shivakumar (2002) are apparently at odds, they are not inconsistent. In particular, Avramov (2004) shows that return predictability based on explanatory variables in predictive regressions can be attributable to either predictable asset mispricing or predictable risk premium or both. As a result, the findings of Chordia and Shivakumar (2002) do not necessarily trace momentum profitability to risk-based asset-pricing models.² Avramov and Chordia (2006) overcome the limitations of Chordia and Shivakumar (2002) model and extend the literature further by examining "...the empirical performance of conditional asset pricing models in a framework where factor loadings may vary with firm specific market capitalisation and the book-to-market ratio as well as with business cycle related variables" (p. 1). Based on such a model they report a business cycle pattern to momentum profits and conclude that the profitability of momentum strategies is attributable to a systematic rather than idiosyncratic component of stock returns. Overall, they show that momentum profit

¹ The literature on the profitability of momentum trading is very extensive. Interested readers are suggested to consult Swinkels (2004) for an excellent survey of the literature on this issue.

² We are grateful to an anonymous referee for guidance on this reconciliation between these studies.

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