Why is there no momentum in the Taiwan stock market?

Ding Du [a,1], Zhaodan Huang [b,*], Bih-shuang Liao [c]

[a] *Economics Department, Box 504, South Dakota State University, Brookings, SD 57007-0895, USA*
[b] *Department of Business and Economics, Utica College, Utica, NY 13502, USA*
[c] *Department of Finance, Chihlee Institute of Technology, Taiwan*

A B S T R A C T

Momentum strategies usually do not produce significant profits in emerging stock markets. Chui, Titman, and Wei [Chui, A. C. W., Titman, S., & Wei, K. C. J. (2000). *Momentum, legal systems and ownership structure: An analysis of Asian stock markets*. Working paper, Hong Kong Polytechnic University, Chui, A. C. W., Titman, S., & Wei, K. C. J. (2006). *Individualism and momentum around the World*. Working Paper, Hong Kong Polytechnic University] argue that the lack of profitability is due to cultural differences. In this paper, we look at one of the largest emerging markets, the Taiwan stock market. We find that DOWN markets occur more frequently and momentum profits are more negative following DOWN markets in Taiwan than in the US. Taken together, our findings suggest that the lack of profits from momentum strategies in emerging markets may be due more to the state-dependence of momentum discovered by Cooper, Gutierrez, and Hameed [Cooper, M. J., Gutierrez R. C., & Hameed, A. (2004). Market states and momentum. *Journal of Finance*, *59*, 1345–1365] rather than to cultural differences.

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1. Introduction

Cooper, Gutierrez and Hameed (2004) (CGH) argue that the behavioral models of Daniel, Hirshleifer and Subrahmanyam (1998) (DHS) and Hong and Stein (1999) (HS) imply that momentum profits depend on the market state: momentum profits should be strong following "UP" states and weak

* Corresponding author. Tel.: +1 315 792 3247.
  E-mail addresses: ding.du@sdstate.edu (D. Du), zhuang@utica.edu (Z. Huang), sunny@mail.chihlee.edu.tw (B.-s. Liao).

[1] Tel.: +1 605 688 4844; fax: +1 605 688 6386.

following "DOWN" states.[2] They find supporting evidence of this relationship in the US data. From 1929 to 1995, about 84% of their sample months are in UP states and 16% in DOWN states (based on the 36-month measurement interval), and the mean momentum profit is 0.93% per month following UP market states but −0.37% following DOWN states.

In this paper, we hypothesize that the state-dependence of momentum profits discovered by CGH may explain an interesting yet not well-studied issue in the momentum literature: Why is momentum usually weak in emerging markets but strong in developed markets? The mean momentum profit (based on the six-month/six-month strategy) is 0.95% per month for the US market Jegadeesh and Titman (1993), and on average 0.91% per month for 12 European markets with only one national market having statistically insignificant momentum profits [Rouwenhorst (1998)].[3] In contrast, only 6 out of 20 emerging markets exhibit momentum profits (average 0.39% per month) [Rouwenhorst (1999)]. Further, none of the six Asian emerging markets evidenced significant momentum profits [Chui, Titman and Wei (2000)].

This profitability difference between emerging and developed markets is interesting, because it seems to pose a serious challenge to popular behavioral models used in, for example, DHS and HS to explain momentum.[4] If DHS and HS are correct concerning cognitive investor biases or gradual information diffusion as the driving force of momentum, this profitability difference between developed and emerging markets would seem to imply that either information is better in emerging markets or investors in emerging markets have less cognitive bias. The first position is clearly not persuasive. As Chan and Hameed (2006) point out, emerging markets (compared to developed markets) usually have poorer information because there are fewer regulations and less enforcement of information disclosure, and lower degrees of voluntary disclosure and corporate transparency.

The second view of less cognitive bias in emerging markets has received support from Chui et al., 2000; Chui, Titman and Wei (2006). They argue that certain cultural or institutional structures in emerging markets may lead to less overconfidence/cognitive bias and therefore weaker momentum. However, a recent study by Bohl and Siklos (2004) shows that feedback-trading strategies yield greater profits in emerging stock markets. This indicates that investors in emerging markets may be more irrational or have greater cognitive bias than those in developed markets.[5] Therefore, the idea of less cognitive bias in emerging markets is not convincing either.

In this paper, we provide an alternative explanation for the lack of momentum profits in emerging markets. We believe that this lack is due to the state-dependence of momentum discovered by CGH rather than to cultural differences discussed by Chui et al. (2000, 2006) Consider the following profit decomposition,

$$WML = s_{\text{DOWN}}WML_{\text{DOWN}} + s_{\text{UP}}WML_{\text{UP}} \qquad (1)$$

where WML denotes the overall momentum profit; WML_{DOWN} and WML_{UP} denote the momentum profits following DOWN and UP states, respectively; and S_{DOWN} and S_{UP} denote the percentages of the sample in DOWN and UP states, respectively. If there are more DOWN states, and/or if momentum

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[2] The theory in DHS implies that investors on the whole are more overconfident following an UP market since they hold long positions in the aggregate. This relative overconfidence then results in stronger overreaction and greater momentum profits. The model in HS predicts that investors are less risk averse following an UP market since their wealth increases. A decrease in risk aversion then leads to greater delayed overreaction and higher momentum profits.

[3] See Jegadeesh and Titman (2001), Moskowitz and Grinblatt (1999), Chan, Hameed and Tong (2000), and Lewellen (2002) for more evidence.

[4] Jegadeesh and Titman (1993), Fama and French (1996), and Grundy and Martin (2001) show that momentum is not due to common risk. Although Chordia and Shivakumar (2002) suggest that momentum can be explained by common macro variables that are related to the business cycle, Griffin, Ji and Martin (2003) find that momentum has little relation to those macro variables. Contrary to Conrad and Kaul (1988) who find evidence that momentum is explained by the cross-sectional dispersion in unconditional means (a proxy for expected returns), Jegadeesh and Titman (2002) reject their claim and find that their results are driven by small sample bias. Therefore, literature generally does not attribute momentum to risk. Recently, Hong, Lim and Stein (2000), Lee and Swaminathan (2000), and Balvers and Wu (2006) find more empirical evidence in support of the popular behavioral models. However, Du and Denning (2005) find that common risk based on a delayed-reaction model can largely explain industry momentum. Du and Boyce (2007) further find that sources of momentum are time varying.

[5] This seems to be plausible given the short history of emerging markets and weak integration with developed markets.