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Stock price synchronicity and tails of return distribution

Mohamed Douch[a], Omar Farooq[b], Mohammed Bouaddi[c]

[a] Department of Management and Economics, RMCC, Kingston, Canada
[b] Department of Management, American University in Cairo, Cairo, Egypt
[c] Department of Economics, American University in Cairo, Cairo, Egypt

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ABSTRACT

This paper uses stock price synchronicity to explain the cross-sectional variation in return asymmetries for firms listed in Finland, Sweden, Norway, and Denmark during the period between 2000 and 2012. Our results show that firms with high synchronicity have higher probability of generating heavier positive tails than firms with low synchronicity. We consider better information environment associated with these firms as the main reason behind this result. We argue that investors in these firms react less severely to negative news than investors in firms with low synchronicity. As a result of this asymmetric reaction to negative news, firms with high stock price synchronicity have higher probability of generating heavier positive tails than firms with low synchronicity. Our results are robust across sub-samples of large and small firms and across sub-samples based on geographic boundaries.

1. Introduction

Traditional finance theory assumes that financial asset returns exhibit normal distribution. However, plentiful of empirical evidence suggests the opposite. Hwang and Satchell (1999), for instance, document the presence of higher moments in emerging market returns, while Fang and Lai (1997) report extreme tails for returns in the United States. Given the frequent occurrence of higher moments, it is worthwhile asking: What can explain cross-sectional differences in higher moments observed in stock returns? This paper seeks to answer this question by documenting the impact of stock price synchronicity on the tails of return distribution—probability of heavier positive tail relative to negative tail. Stock price synchronicity measure the extent to which stock prices co-move with the market. Prior literature argues that stock price synchronicity is an increasing function of governance environment of a firm. Firms with better governance mechanisms exhibit higher synchronicity than firms with poor governance mechanisms. Barberis et al. (2005), for instance, document that inclusion in the S&P 500 index – an event that improves governance environment of a firm – increases stock price synchronicity. In another related study, Chan and Hameed (2006) associate analyst following – proxy for governance environment of a firm – with high stock price synchronicity. Farooq and Ahmed (2015) also compliment the above findings by documenting that low stock price synchronicity indicates poor governance and information environment.

Dasgupta et al. (2010) argue that better governance environment leads to higher stock price synchronicity because it improves the forecasting ability of investors. They note that improvement in governance environment results in increasing the accuracy of forecasts that investors make about the future firm-specific events. Given that stock prices respond only

E-mail addresses: mdouch@mdouch.net (M. Douch), omar.farooq.awan@gmail.com (O. Farooq), m.bouaddi@aucegypt.edu (M. Bouaddi).

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to unanticipated events, accurate forecasts increase the likelihood that prevailing stock prices have already factored in the occurrence of future events. Therefore, when events actually happen, prices do not react significantly to such news. In other words, more informative current stock prices (that result from better governance environment) should be associated with less firm-specific variation in stock prices in future. Lower firm-specific variation in stock prices, essentially, leads to higher correlation between stock returns and market returns, thereby causing high stock price synchronicity.

This paper argues that superior governance environment associated with firms exhibiting high synchronicity has significant impact on the relationship between synchronicity and tail distribution for a number of reasons. First, in the presence of inadequate governance mechanisms, it becomes hard to monitor managerial discretion. Therefore, managers of these firms they do not always disclose true information about their firms (Leuz et al., 2003). Poor disclosure introduces increased information asymmetries for investors. Investors, generally, respond to this increased uncertainty by overreacting to negative news and under reacting to positive news. Prior literature suggests that investors' reaction to negative news is more pronounced for firms with higher information asymmetries than for firms with lower information asymmetries. Mitton (2002), for instance, shows that firms with poor governance mechanisms react more severely to negative shocks, such as financial crisis, than firms with better governance mechanisms. We argue that this asymmetric reaction to negative news may result in a situation where positive tail dominates negative tail in return distribution. Given that low stock price synchronicity is associated with relatively poor governance environment, it is possible that firms with low synchronicity may have higher probability of dominant negative tails than positive tails[1].

Second, we argue that the relationship between stock price synchronicity and probability of dominant positive tail is a function of the type of marginal investors that invest in firms with high synchronicity. Kelly (2007) documents that firms exhibiting high synchronicity attract greater institutional ownership[2]. Given that institutional investors are, generally, the long-term investors, they are less likely to overreact to negative information. De Long et al. (1990) document that when stock prices fall, investors with long investment horizons are less likely to sell than investors with short investment horizons. Bernardo and Welch (2004) and Morris and Shin (2004) compliment these findings by showing that investors with short investment horizon are more likely to sell than other market participants whenever they face negative shocks. Since a short investment horizon implies that investor will have to sell in immediate future, not selling right away may involve selling behind the rest of the market at lower prices. Hence, for an investor with shorter investment horizon, the optimal strategy is to beat the rest of the market by selling immediately. However, this is not the case for investors with long investment horizon. These investors tend not to exit in haste in response to negative news. Given that investors with long investment horizon do not overreact to negative news as much as investor with short investment horizon, it is very likely that such an under reaction to negative news may increase the probability of obtaining returns that have dominant positive tails. Assuming that firms with institutional investors as marginal investors are more likely to have high stock price synchronicity, it is possible that these firms exhibit dominant positive tails in their return distribution.

Third, we argue that behavior of undiversified marginal investors, most of which are individuals and are associated with firms exhibiting low stock price synchronicity, can also lead to lower probability of dominant positive tails. Individuals have shown to exhibit excessive overconfidence (or lower prudence). Prior literature shows that overconfidence may result in over-reaction to bad news (Barber and Odean, 2001; Daniel et al., 1998)[3]. We believe that such behavioral biases may result in excessive downside risk in firms where individual investors are marginal investors—firms with low stock price synchronicity. Consequently, we should expect to observe lower probability of positive tail for these firms.

Fourth, Dasgupta et al. (2010) argue that high stock price synchronicity is an outcome of more informative current equity prices. We posit that investors trading in firms with more informative stock prices react more rationally to negative news. Their behavior is contrary to the behavior of investors who invest in firms with low synchronicity. These investors are, generally, exposed to higher information asymmetries and lower informative prices. Consequently, they may overreact to negative shocks. We argue that this asymmetric response may result in lower probability of positive tail for firms with low synchronicity.

Consistent with our arguments, this paper shows that firms with high stock price synchronicity have higher probability of dominant positive tail than negative tail in North Europe (Finland, Sweden, Norway, and Denmark) during the period

[1] Our arguments contradict the findings of Bae et al. (2006) who show positive skewness for firms characterized by poor governance mechanisms. They document that firms with poor governance environment have positively skewed returns. They argue that firms with poor governance mechanisms hide bad information or slowly release bad information. As a result of this behavior (hiding bad information), returns of firms with poor governance mechanisms are more positively skewed. We believe that, even in the less efficient markets, investors would see through this behavior and would penalize such firms. Therefore, stock returns of such firms should exhibit negative skewness.

[2] We argue that institutional investors are attracted toward these firms because of their superior governance environment. Chung and Zhang (2011) document that the fraction of shares held by institutional investors increase with the quality of firm's governance structure. A number of reasons can be cited for the positive relationship between institutional investors' decision to invest and corporate governance mechanisms. First, institutional investors prefer firms with better governance mechanisms because it lowers the monitoring costs. Bushee and Noe (2000) document that institutions with a large number of portfolios prefer higher quality disclosure as a way to offset monitoring costs. Second, institutional investors have to be prudent while making their investment decisions. Prudent behaviour requires that they make those decisions that are not only practically sound but also considered by others as decisions which are reasonable, well-informed, and prudent (Badrinath et al., 1989). Failing to justify their wrong decisions may result in severe penalties, loss of job, and tainted reputation.

[3] Such behavioral biases may also be present in institutional investors. However, institutional investors have to be more prudent than individual investors. Consequently, behavioral biases are less pronounced in institutional investors than in individual investors.