TIME-SERIES MOMENTUM PROFITS AND MARKET VOLATILITY EVIDENCE FROM KOREAN STOCK MARKET

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Abstract: This research examines the time- series profitability in the Korean stock market. This research demonstrates the difference between momentum of the time-series and momentum of the cross-sectional and answers for the following questions. First, does the momentum of the time-series strategy generate profits in the Korean stock market? Second, how volatility impact time-series momentum profitability? In this study, we can see that momentum of the time-series is dominating and fully explains momentum of the cross-sectional. Research also finds that volatility has significant power in momentum of the time-series profits.

Keywords: Time series momentum, Cross sectional momentum, volatility and Korean stock market.

INTRODUCTION

The momentum literature has received significant attention because of the persistent profitability of the strategy presents a strong challenge to the efficient market hypothesis. Jegadeesh and Titman's(1993)studywas the earliest research that demonstrate the profitability of momentum as an investing strategy during their examination of efficiency of equally-weighted stock portfolios selected on the base of their efficiency over a number of combinations of evolution periods and retained for a variety of holding periods.

The predicted intensity of the negative or positive market price movements is the momentum of the market.It remains a topic of discussion how prices move over a given time versus volume over the period.Traders that don't know how to use momentum and volatility are always found in transactions in which the risk could be managed or reach the markets at incorrect points.Investors can overcome the market by momentum method and hold themselves safe from losses (Khan et al., 2017).

Several studies have demonstrated that momentum is the phenomenon that cannot be explained by the theory of an “Efficient Market”. Momentum is also pointed to as the power of trend. Momentum strategy assumes that the stock acted well will do so in the future as well (Jegadeesh and Titman, 1993). So it's based on buying stocks that have previous success and selling stocks that have done poorly. Market momentum is the predicted transition in the market that is projected to happen in the foreseeable future. Strongly significant average returns and a high sharp ratio of momentum methods are included with occasional crashes(Khan et al., 2017). The bad returns are determined and established by Brunnermeier et al., (2008).Cooper et al., (2004) and Stivers and Sun(2010) demonstrated that when moving down states in the last three years, the premium of the momentum falls and the volatility of the sector is strong when the stability premium is high. Cooper et al., (2004) recommended behavioral explanation for this proof that stable momentum, which has been ineffective in the economy, is recovering while others are still in time when stocks are mispriced.

The asset-specific level of risk significantly impacts the time-series momentum profitability. Scholars (Antoniou et al., 2007;Cooper et al., 2004)had a conclusion that momentum returns are found based on the state of the market and consistent with the under reaction theory, they demonstrate that momentum pro can only be gained in markets upwards. On the other hand,Griffin et al., (2003) conclude that if the return of global momentum is motivated by risk, then the risk must be specific to the region.

For anyone who is interested in the stock markets, even as an observer, uncertainty has become an highly significant subject.The term is clearly associated with risk for much of the general public; high uncertainty must be deplored because it indicates that equity values are unreliable and stock markets don't work as good as they could.However it is important for those concerned with derivative equities to develop a more thorough understanding of volatility, to effectively predict volatility and monitoring their investment portfolio's exposure to its consequences are essential to trading performance(Figlewski, 1997).

The prices for equities with greater residual volatility, Hou and Moskowitz (2005) have shown delays in the integration of information. The risk is calculated by market fluctuations in many price model models, and movements in market volatility have been shown to impact future revenues on all securities. An explanation of the changed expected profits over a period, the function of volatility movements is helpful (Harvey and Whaley, 1992).

A number of previous theoretical and empirical researches studied volatility on the basis volatility weighted. Hallerbach (2014, 2012) use a weighting method focused on their own volatility by using normalized returns with the same purpose. Barroso and Santa-Clara (2015) studied that the risk-adjusted performance is improved by volatility in the method of weighting cross-sectional stock momentum. And method of volatility-weighting is doubling the ratio of Sharpe (Khan et al., 2017).

The time-series relationship between market volatility and the expected market returns has been studied by past researchers. Their results extend this distinctive line of research by analyzing the time-series relationship between market volatility and momentum profitability(Pettersson, 2014). According to Pettersson (2014), volatility states steer the time-series momentum returns. Managing for standard risk factors, securities generate significant and positive time-series alphas in low volatility while securities in high volatility don't. And the state of low volatility can be defined as a state of declining volatility or a low-risk level for the short term. On the other hand, the high volatility condition can be characterized as a time of rising risk or a high degree of risk for the short term.Pettersson (2014) demonstrates that in a low volatility condition, momentum of the time-series to be driven by futures stock index. Controlling momentum strategy of the time-series on volatility condition raises ratios ofSharpe and reduces trading cost.Wang and Xu(2015) have showed that volatility has a strong effect on estimating momentum payoff.

Moskowitz et al., (2012), refers to the trading strategy arising from the integration on a volatility-adjusted basis of a variety of univariate momentum strategies, each of which is created trivially using any binary trading signal computed over a specific lookback span. Obviously, the momentum of the time-series is strongly dependent on the serial correlation and predictability of the set equities return (Baltas, 2011).

Some previous research has estimated the profitability of the methodology for global equity.In twelve European markets, Rouwenhorst(1998)found that momentum methodology has been profitable for equities and further Rouwenhorst(1999)demonstrated that up market equities show momentum.Bekaert et al., (1997)notice that momentum methodology for up markets does not consistently effective, but when analyzing investment indexes they are much better performing.The confirmation of global markets has solely estimated the discussion.According to Hong et al., (2003), many subsequent types of research demonstrated that momentum methodology in some up markets and in the Pacific

Basin markets are not reliably successful.Hameed and Kusnadi(2002)found that neither of the 6 Asian countries displayed price momentum in their example, even though a diverse country-neutral approach produces little but significant statistical returns.Lee and Swaminathan, (2000)found that a zero investment momentum approach in eight Asian markets is statistically efficient only in Hong Kong, while it is profitable when applied concurrently on seven equity markets outside Japan.Hong et al., (2003) demonstrated that the finding that momentum occurs in some areas but not in all is problematic both for behavioral and theories based on risk.

Certain searches studied the relationship between momentum and volatility in Korean stock market evidence. Pyun et al., (2000)finds that The expected influence of shocks by larger companies on smaller companies' volatility is almost five times that of shocks by smaller on larger firms' volatility. Because the volatility of returns is closely related to the rate of flow of information, the potential reason for asymmetry in the predictability of volatility is that aggregate information that first affects large firms is greatly impacted by the price lag of small-capitalization businesses, whereas aggregate information that first affects small firms is taxed on small firms(Pyun et al., 2000).

This research examines the connection between market volatility and profitability of momentum. Also shows that volatility in market states has substantial power to predict momentum returns. Notice that if stocks demonstrate time-varying expected returns, then momentum gains may describe compensation for time-variable bearing risk, which is not matched with a rational asset pricing model (Baltas, 2011).

Wang and Xu (2015), search for momentum for the prognostic advantages of market volatility. They demonstrated their theory with results: 1) Market volatility has a significant potential to forecast momentum payoff, it is effective later than controlling on behalf of business cycle factors and market state; 2) The volatility of the market is generally attracted by the prognostic power of the market state; 3) Time series predicting market volatility gains will be dedicated to the loss of the stock; 4) Additionally the predicting volatility of market pro momentum described by defaulting probability;Together all this findings demonstrate a significant defy to present hypothesis lying on momentum.

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