Idiosyncratic Risk and Asset Returns

Pithak Srisuksai

http://eprints.utcc.ac.th/id/eprint/1321
ABSTRACT

This study shows the relationship between idiosyncratic risk and expected returns on stock regarding theoretical and empirical results. By introducing idiosyncratic stochastic productivity level in production function of heterogeneous firms, the dynamic stochastic general equilibrium is derived to come up with a new asset pricing model. Given any state $s$, the main finding states that expected stock returns depends on the rate of time preference, depreciation rate, capital share, expected idiosyncratic productivity level at time $t+1$, the percentage deviation of capital from steady state at time $t+1$, and the percentage deviation of labor from steady state at time $t+1$. In fact, expected idiosyncratic productivity level, expected capital, and expected labor are the determinant factors that affect on expected stock returns. Eventually, expected idiosyncratic stochastic productivity level is positively related to expected stock returns similar to expected labor. In contrast, expected capital has a negative effect on expected stock returns.

The empirical evidence also demonstrates the findings that time-varying expected idiosyncratic volatility has a significant and positive effect on expected stock returns for individual stocks as well as stock sectors. The positive relation remains after controlling for liquidity variables. The another finding is that time-varying expected market volatility has a significant effect on expected stock returns for both individual stocks and stock sectors, which is consistent with the traditional capital asset pricing model. Although the models control for liquidity variables, the
significantly positive relation still exists. In addition, expected idiosyncratic volatility plays a more important role than expected market volatility in determining expected stock returns in the case of individual stocks in SET50 index. In contrast, the coefficients of expected market volatility are larger than those of expected idiosyncratic volatility in the case of individual stocks in SET and stock sectors.

In addition, the results imply that expected idiosyncratic volatility conditional on information set at time \( t-1 \) estimated by the EGARCH (1, 1) model and expected market volatility conditional on information set at time \( t-1 \) estimated by the GARCH (2, 2) model are the appropriate proxies for market and idiosyncratic volatility. It is because such volatilities have not constant variance.

In particular, stock value and turnover ratio have significantly positive effects on expected stock returns for individual stocks. In contrast, relative bid-ask spread is negatively related to expected stock returns for individual stocks in SET50 and SET. It implies that the higher the relative bid-ask spread is, the lower the expected stock return to investors. However, illiquidity ratio does not provide any clear evidence for empirical relation. That is, it has a positive effect for individual stocks in SET index, and a negative effect for individual stocks in SET50 index. Yet, such variable has no significant effect in case of stock sectors. Similarly, value of stock sector and turnover ratio of stock sector have significantly positive effects on expected stock returns. It implies that investors are able to earn the liquidity premium by investing in a frictionless stock market.