125.799
Research Report

Does Cross-Sectional Variances of Fama-French Factors Improve Predictability of Stock Returns?

A research report submitted in partial fulfillment of the requirements for the Degree of Master of Finance at Massey University.

November 2007

Supervisor: Associate Prof. Russell Gregory-Allen
Student: ShanShan Luo
Student ID: 02115476

A

Acknowledgment

I wish to acknowledge and express my sincerest thank to my supervisor, Associate Professor Russell Gregory-Allen, who has provided the inspiration for this research, and also provide invaluable encouragement and guidance in the completion of this research report.

I would also like to thank Prof. Henk Berkman, Dr. John Pinfold, and Jeffrey Stangl who have provided me professional advices on the data analysis and acted as sounding boards for my ideas on various occasions.

Abstract

This research report aims to lend a better understanding of the predictability of Fama-French factors (book-to-market ratio, price-earning ratio and size) to stock returns over a wider dimension by taking into consideration the influence from the cross-sectional variances of each factor.

Unlike previous studies, which have been largely based on the joint effect of these factors in testing stock average returns, this study emphasizes how each factor's cross-sectional variance can improve predictability of stock returns in the US market over the period from 1988 to 2005. It is believed that the larger the cross-sectional volatility of a factor, the stronger its explanatory power.

This research reveals that, of the three Fama-French factors, the book-to-market factor and the size factor show significant improvement in the explanatory power of stock returns by integrating their cross-sectional variance in the regressions, while the results show little evidence of this with regard to the price-earning factor. Moreover, the findings also reveal that the positive relationship of the book-to-market factor to stock return is no longer unswervingly positive. This study finds evidence that the book-to-market ratio had a significant positive relationship with stock returns during the period from 1988 to 1996, while it had a significantly negative relationship to stock returns from 1997 to 2005, due to value stocks and growth stocks reacting differently across these different business cycles.

Table of Contents