

An empirical study of financial securities market based on three factor model

Xueni Tian

kansai university

shirleyrrrrrrrr@icloud.com

Abstract

Recent years, with the continuous development and regulation of Chinese security market, the influence of Chinese financial security market income factor is also being improved, but how to guide the correct operation of Chinese security market and improve the stock income, has become the main analysis research content of Chinese security market. Three-factor model technology provides a certain basis for the selection, prediction, decision and evaluation of financial portfolio. The three-factor model is not only widely used in our financial security market, but also can help listed enterprises to analyze and forecast our financial security market in a convenient tool form, such as: In our country's financial security market, the stock yield of small-scale companies is obviously higher than that of large-scale companies, or even value stock is higher than that of growth stock. This paper mainly analyzes and studies the operating direction of financial securities market through the three-factor model technology.

Keywords

Three-factor model; Finance; The securities market; research

1. Introduction

In order to apply the three-factor model in the financial securities market, this paper divides the number of book market value of listed companies in our province, and removes the enterprises with assets and liabilities at the end of the year according to different types of listed companies. The market value of the same type of enterprises is the same, and the average annual return of small listed companies will be much higher than that of large listed companies. Similarly, the average annual return of a mid-sized public company will be higher than that of a large company; Similarly, the comparison shows that the average annual return rate of small listed companies is higher than that of medium-sized listed companies. It can be concluded that the average annual return rate of small listed companies is higher than that of medium-sized companies and large companies. The specific data are shown in Table 1 below:^[1]

Table 1 Annual rate of return statistics

Book-to-market ratio of size	Rate of information		
	low	medium	high
Small scale enterprise	6.02	5.61	5.82
Medium sized enterprise	9.73	5.84	4.64
Large scale enterprise	13.83	7.96	5.93

The information rate mentioned in the above table refers to the probability that the listed company may take risks in the operation process, which can be calculated by dividing the standard deviation of the return rate obtained by the listed company in the operation process by the corresponding return rate. In the same market environment, the trend of information rate of small scale enterprises, medium scale enterprises and large scale enterprises gradually shows an increasing phenomenon. It can be concluded that the larger the enterprise scale, the more risk factors will be borne by the enterprise. The following table 2 analyzes explanatory variables of medium-sized enterprises during the operation period, and the specific contents are shown as follows:^[2]

Table 2 Statistical description of explanatory variables

factors	The mean	Standard equation	Rate of information
The size of the	0.003	0.044	11.831
Book-to-market ratio	0.006	0.042	7.119
Excess market return	0.007	0.103	13.001

It can be concluded from the above content that the three-factor model is very important in the Chinese financial securities market, which not only affects the stock return rate, price-earnings ratio, price, circulating market value and other contents of the Chinese financial securities market, but also affects the future management direction of listed companies. However, there are different degrees of problems between different variables, and these problem factors may reduce the credibility of the three-factor model. Therefore, if the practicability and convenience of the three-factor model are improved, the form of tools can help enterprise managers to analyze and predict the financial securities market, so as to effectively avoid some investment risk factors.^[3]

2. Stability study of combined three-factor model

In the financial securities market portfolio of our province, a three-factor model is established to analyze and study the stability of the financial securities market according to different time periods. This paper mainly calculates the monthly return rate of listed enterprises in our province from January 2021 to December 2022 by regression, and returns the earnings of enterprises in chronological order. In the research process, it can be found that the return rate of small enterprises gradually increases, while the return rate of large enterprises gradually decreases. In the enterprises with the same account market value ratio, it can be found that the average annual return rate of small-scale enterprises is higher than that of medium-sized enterprises and large-scale enterprises, but there is no significant difference in the return rate between medium-sized enterprises and large-scale enterprises. Through this, it can be proved that the size of enterprises can directly affect the stock returns, and medium-sized enterprises are at the intersection between small enterprises and large enterprises, so the overall return rate characteristics of medium-sized enterprises are ambiguous and unstable. When the size of listed enterprises is the same, it can be found that the stock return rate of enterprises with high book market value is significantly higher than that of enterprises with low book market value, while the stock return rate of enterprises with high medium book market value does not fluctuate significantly. Therefore, this just confirms that the market value of accounts directly affects the corporate stock yield.^[4]

3. Research on the predictive ability of the three-factor model

Based on the analysis and research of the prediction ability of the three-factor model, this paper adopts the regression model technology for the listed enterprises in our province according to the time sequence, and adopts the three-factor model technology on the basis of the regression model technology, so as to predict the return order of the listed enterprises in our province within 12 months. This paper mainly forecasts the return rate of the portfolio from January 2021 to December 2021, and these predicted values are presented in the following table, the specific content is shown in Table 3:

Table 3 Deviation between predicted value and actual value

Scale of scale	Minimum value	Maximum value	The mean	Standard deviation
S/L	0.00019	0.04611	0.01432	0.01049
S/M	0.00068	0.04513	0.01614	0.01076
S/M	0.00053	0.04899	0.02678	0.01881
M/L	0.00015	0.04811	0.01775	0.01581

As can be seen from the above table, the greater the fluctuation of the actual rate of return, the error will lead to the predicted value of the three-factor model. When the error between the predicted value and the actual value is within 3%, it means that the predicted value is within a certain range, indicating that the prediction is accurate. Otherwise, the predicted value is inaccurate.^[5]

4. Closing Remarks

This paper mainly analyzes and describes the application of the three-factor model in the financial security market, and analyzes the stability and predictive ability of the three-factor model in the application process of listed enterprises in our country. Based on the above analysis, it can be found that the three-factor model technology is applicable to the financial securities market in China, and the management personnel of listed enterprises can timely discover the business problems according to the volatility of the stock rate of return, thus achieving the purpose of predicting the market financial securities. At the same time, our country's financial securities market has a certain scale. The yield on stocks of small-scale enterprises is significantly higher than that of large-scale enterprises, and the yield on stocks of enterprises with high book market value is significantly higher than that of enterprises with low book market value.

To sum up, the three factors model is applicable to Chinese financial securities, can provide certain basis for Chinese listed enterprises in the process of financial investment, has a certain theoretical value and application value.

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