

摘要

本研究主要目的在採用指數基礎樣條函數模型與 Nelson and Siegel (1987) 模型，配適台灣公債市場利率期限結構，並搭配 Jankowitsch and Nettekoven(2005)所提出的兩種交易策略：移動平均法(Moving Average)及自我迴歸整合移動平均模型(Autoregressive Integrated Moving Average Model)，交易台灣公債市場十年期指標公債，並與買入持有策略比較其投資績效之優劣。

實證結果顯示：(1) 指數基礎樣條函數模型，較國內學者常用之 Nelson and Siegel (1987)模型，對台灣公債市場的利率期限結構估計，具有更佳的配適能力。(2)移動平均法與 ARIMA 預測模型交易策略之績效，在殖利率呈現上升趨勢時，能顯著優於買入持有策略。(3) 在移動平均交易策略下，搭配指數基礎樣條函數模型，會得到最佳之投資績效。(4) 若串聯所有十年期指標公債，在指數基礎樣條函數模型與 Nelson and Siegel (1987)模型下，利用五日、七日、十日移動平均交易策略的總和績效表現，不論在何種標準差設定下，累積總報酬率大致優於買入持有策略。然而若考慮風險調整後之夏普指數，則不論何種利率期限結構估計模型搭配何種交易策略，皆劣於買入持有策略。

關鍵字：利率期限結構、指數基礎樣條函數模型、Nelson and Siegel 模型、夏普指數

Abstract

This paper first used the Exponential B-spline model and Nelson and Siegel (1987) model to fit the term structure of Taiwan Government Bonds market. The pricing errors refer to the deviations between the models' prices and the observed market prices. Based on the pricing errors, we calculated the abnormal returns by using the trading rules of Moving Average (MA) and Autoregressive Integrated Moving Average (ARIMA) strategies proposed by Jankowitsch and Nettekoven (2005). The on-the-run government bonds with 10-year maturities were used to test their relative investment performances. Meanwhile, the performance of a buy-and-hold market portfolio was used as a benchmark.

The empirical results indicated that: first, the fitting performance of Exponential B-spline is better than that of the Nelson and Siegel (1987) according to three judgment criteria. Second, both the MA and ARIMA strategies can significantly outperform the buy-and-hold strategy when the yield curve shows an increasing trend. Third, the MA strategy may have the best performance if being accompanied by the Exponential B-spline term structure fitting model. Fourth, if we connect all the on-the-run government bonds with 10-year maturities, the total returns of 5, 7 and 10 days MA strategies based on the Exponential B-spline model and Nelson and Siegel (1987) are greater than those of the buy-and-hold strategy. However, when the risk-adjusted Sharpe Index is taken into account, the buy-and-hold strategy is superior to all the combinations of investment strategies and term structure fitting models.

Keywords : term structure of interest rates, Exponential B-spline model, Nelson and Siegel model, Sharpe Index