關鍵詞：股票市場、資金配置、股價評價、遺傳演算法、三次方程內插法。

Abstract: Taiwan stock market has experienced higher volatility including stock prices and liquidity recently. It means that the stock investment will take higher risk with higher market volatility. Stock valuation is to calculate the required rate of return that company we are valuing. However, using different traditional valuation models will get unique risk/return combinations, even those in the same stock market or same industry. It suggests that the fair value of a stock should be a range rather than a single value. In this article, we propose a nonlinear stock investment and capital allocation model using a hybrid of Genetic algorithm (GA) and cubin spline (CS), where GA is used to optimize the fair range of stock price, and CS is used to estimate nonlinear capital allocations. From our experiments, this hybrid of GA and CS model could get better investment returns than using buy&hold generally. In addition, the mean stock price almost falls into the fair stock price range predicted by our model.

Keywords： Stock Market, Capital Allocation, Stock Valuation, Genetic Algorithms, Cubic Spline.

1. 緒論

台灣證券市場成立於民國 49 年，至民國 69 年才蓬勃發展。市值從 69 年的 219,053 (百萬元) 成長到民國 95 年的 19,376,975 (百萬元)；上市家數由 102 家成長到 688 家；大盤指數也由 549.55 成長到 7,823.72 見表 1。從市值規模來看，成長相當驚人，可見台灣證券市場的運作相當活絡。但就波動度而言，即使是近十年大盤指數成長率的標準差仍有 0.25，此凸顯出要在證券市場獲利，需要承擔不小的風險。

投資組合的意義即是藉由挑選的證券集合做適當的資產配置以達到分散投資風險的效果。股票評價可以協助挑選有效的證券集合，其目的是評估證券的合理價格以及挑選被市場低估的證券；而資產配置則是決定資金分配到那些證券以及其百分比。因此，股票評價與資金配置的比例是影響投資組合報酬與風險的重要課題。然而，股票評價與資金分配是密不可分的，從過去的研究鮮少發現同時兼具股票評價與資金分配的模型。

股票評價模型企圖從淨值折現 (net present value) (Bebchuk, 2000; Francis *et al.*, 2000; Frankel and Lee, 1998)、資產價值 (asset appraisal) (Block, 1995; Fama and French, 1995)、剩餘價值(residual income) (Bebchuk, 2000) 與市場乘數 (price multiples) (Ohlson, 1995; Ohlson, 2005) 等方向評估出企業合理的價值。即使股票評價的研究議題近十年被熱烈的討論，學術界與實務界