

# 臺灣公債期貨實物交割與現金交割 在避險績效之比較研究

葉仕國 林丙輝 陳嘉蘭\*

臺灣期貨交易所之十年期公債期貨契約設計係以實物交割為主，自上市以來交易量即不如預期，且每況愈下。雖然歷經契約規格之修改，與稅制上的調整，然而效果有限，因此引發國內對原先實物交割方式是否要改為現金結算的討論。本研究即從避險績效的觀點，探討臺灣十年期公債期貨契約是否合適採取現金交割的方式。首先，使用二因子 Hull and White(1994)模型估算可交割債券在到期時之理論價格，並模擬出各種現金交割之價格，再以 DCC GARCH 模型分別估計在不同避險期間之避險比例與避險效率，且進行基差分析，來比較各種模擬之現金交割方法與實物交割方式在基差風險上之效果。根據實證結果發現，平均而言，模擬之現金交割方式在避險績效上較佳，但相較於實物交割方式會面臨稍大的基差波動。

**關鍵字：**公債期貨契約、避險比例、動態條件變異一般化條件變異數異質模型、實物交割、現金結算。

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\* 作者依序為國立中興大學財務金融系教授、國立中興大學財務金融系教授、資誠會計師事務所資深稅務員。作者感謝主編及兩位匿名審稿人的寶貴意見。本篇論文研究經費由行政院國科會補助(計畫編號：97-2752-H-005-001-PAE)

# **The Hedging Performance of Taiwan Government Bond Futures: Physical Delivery v.s. Cash Settlement**

**Shih-Kuo Yeh**

Professor, Department of Finance, National Chung-Hsing University

**Bing-Huei Lin**

Professor, Department of Finance, National Chung-Hsing University

**Cha-Lan Chen**

Tax Senior Associate, PricewaterhouseCoopers Taiwan

The trading volumes of Taiwan's 10-year Government Bond Futures went lower and lower since the contract was listed. Although the authority altered the specifications of this contract and adjusted the trading tax rate, the resultant effect was quite limited. Accordingly, it aroused an extensive discussion regarding whether or not the original physical delivery adopted so far should be changed into the cash settlement. This article tries to compare the hedging effectiveness between different settlement systems. First, we use the two-factor Hull and White model to calculate the theoretical prices of the deliverable bonds at maturities and simulate different possible cash settlement prices under different hypothetical scenarios. Then, the DCC-GARCH Model is used to estimate the hedge ratio and hedging performances under different hedging period. Also, we implement the basis risk analysis to investigate the impact caused by different settlement systems. The results show that the hedging performance assessed by simulated cash settlement price is better, on average, than physical settlement. However, its associated basis risk would be a little higher.

**Keywords:** Bond Futures Contract, Hedge Ratio, DCC-GARCH Model, Physical Delivery, Cash Settlement.