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RIV 與 OJ 評價模型之實證研究
An Empirical Investigation of the RIV and OJ Valuation Models

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中文摘要

RIV 評價模型已成為現今會計評價模型中最普遍且廣為使用之模型，而 Ohlson 和 Juettner-Nauroth (2005) (文後記為 OJ) 修正了 RIV 模型中會產生的一些問題 (如：Dirty Surplus Relation...)，發展出 OJ 評價模型。然而，過去的實證研究一般都是在模型下就直接估計，而沒有考慮到變數的時間序列的性質，因為模型一般都假設所有變數為定態 (stationary)，所以若以非定態 (non-stationary) 變數對其他非定態 (non-stationary) 變數進行迴歸分析，則可能產生虛偽迴歸 (spurious regression) 的現象而影響真正的實證結果。

本研究主要目的在測試股東權益的市場價值與公司的理論價值 (包含 RIV 評價模型及 OJ 評價模型) 之間是否存在長期均衡關係，即驗證 RIV 和 OJ 這兩個會計評價模型是否成立。由於傳統單一時間序列檢定方法檢定力 (power) 過低，故本研究採用結合了時間數列和橫斷面的 Panel Data 方法來研究，以提升檢定力 (power) 及改善小樣本的限制，並發展出橫斷面的單根檢定 (Panel Unit Root Test)、共整合測試 (Panel Cointegration Test) 和完全修正普通最小平方法 (Panel FMOLS)。同時我們也進一步利用 RIV 和 OJ 會計評價模型所計算出來的公司理論價值，探討何者較有檢定力 (Power)。

本研究以美國 1997 年至 2003 年共 46 家股票上市公司作為分析樣本。實証結果發現，在 Panel 共整合檢定方式和 Panel 完全修正普通最小平方法下，兩期間的 RIV 和 OJ 會計評價模型皆成立且兩期間的 OJ 模型較 RIV 模型優。在檢定力方面，採用檢定力曲線 (Power Curve) 來衡量模型的檢定力，實証結果顯示，也是兩期間的 RIV 和 OJ 會計評價模型所得出理論值解釋股價變動之能力優於五期的 RIV 和 OJ 會計評價模型。

關鍵字：RIV 模型；OJ 模型；Panel 單根檢定；Panel 共整合；Panel 完全修正普通最小平方法；檢定力曲線

Abstract

RIV valuation model is the most pervasively and widely adopted model in the valuation models. And then Ohlson and Juettner-Nauroth (2005) recently provide an alternative model (hereafter, the OJ model) to mitigate the RIV model's potential problems (e.g., Dirty Surplus Relation...). In general, many models assume that all variables are stationary. However, we found cases where empirical research based on time-series data do not explicitly account for time-series properties of the RIV model. For example, Granger and Newbold (1974) convincingly show that OLS regressions with non-stationary time-series data generally lead to spurious results.

The main purpose of research attempts to improve understanding of the long-run equilibrium relationship between market value and theory value (including: RIV and OJ valuation models). Firstly, we concern the power deficiency of Unit Root Test, Cointegration Test and Fully Modified Ordinary Least Squares, many researches have adopted the combination time-series and cross-section Panel Data Model in order to improve the power and limitation of small samples. Secondly, we also examine the valuation accuracy and the power of the OJ model relative to that of the RIV model.

Sample firms were selected from U.S. A total of 47 firms that had fulfilled our requirements were identified between 1997 and 2003. Our empirical results indicate that the existence of a long-run equilibrium relationship between market value and theoretical value of the two-period OJ and RIV model. Especially, empirical results further confirm that theoretical value of the two-period OJ model is approach to market value of the firm, as well as, the two-period OJ model is better than RIV model. After that we re-examine the power for theoretical value which resulted from these five models and market value through power curve. We then find that the two-period OJ and RIV models are uniformly powerful than the PEG, the five-period OJ and RIV models.

Key words : RIV model; OJ model; Panel Unit Root; Panel Cointegration;
Panel Fully Modified Ordinary Least Squares; Power Curve