

國立臺北大學九十六學年度第二學期碩士學位論文提要

論文題目：台灣 TFT-LCD 產業上中下游股價之長期記憶、關聯性與波動外溢效果之研究
—FIEC—FIGARCH 模型之應用

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研究生：劉浩宇 指導教授：國立臺北大學國際企業研究所教授兼所長 劉祥熹 博士

論文提要內容：

許多文獻證明長期記憶模型在模擬財務資料之波動有相當好的表現，因此本研究建構 FIEC-FIGARCH 模型分析台灣 TFT-LCD 產業上中下游股價指數之連動性，而樣本期間為 2003 年 1 月 1 日 2007 年 9 月 30 日。

實證結果證明 FIGARCH 模型可以正確的捕捉長期之波動。台灣 TFT-LCD 面板產業上中下游股價指數報酬率具有自身外溢效果，而任何一產業之 TFT-LCD 面板產業指數報酬率皆為非效率市場亦可以使用過去的資訊來預測任何一產業之 TFT-LCD 面板產業指數報酬率。

實證結果也顯示出波動外溢效果方面，上游 TFT-LCD 面板產業股價指數報酬率會受到中游 TFT-LCD 面板產業指數報酬率波動外溢效果之影響，中游 TFT-LCD 面板產業指數報酬率也會受到上游 TFT-LCD 面板產業指數報酬率波動外溢效果之影響；中游與下游亦有相同之關係，中游 TFT-LCD 面板產業指數報酬率受到下游 TFT-LCD 面板產業指數報酬率波動外溢效果之影響，下游 TFT-LCD 面板產業指數報酬率受到中游 TFT-LCD 面板產業指數報酬率波動外溢效果之影響。而最後至於 FIEC-FIGARCH 模型條件變異方程式方面，TFT-LCD 面板產業股價指數報酬率任兩產業之間具有態相關性。

關鍵詞：長期記憶、共整合、分數共整合誤差修正模型、FIGARCH 模型、波動外溢

ABSTRACT

A Study on the Long Memory, Interrelationships and Volatility Spillovers for Stock Indexes of Taiwanese TFT-LCD Upper, Middle and Down Stream: An Application of FIEC – FIGARCH Model

by
LIU, HAO-YU

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ADVISOR(S): Dr. LIU, HSIANG-HSI

DEPARTMENT: GRADUATE INSTITUTE OF INTERNATIONAL BUSINESS

MAJOR : INTERNATIONAL BUSINESS

DEGREE: MASTER OF BUSINESS ADMINISTRATION

Most literature proves that the long-memory model can simulate the volatility of financial data well. Therefore, this study formulates a FIEC-FIGARCH Model by incorporating a FIGARCH Model into a Fractionally Cointegrated Error Correction Model (FICEM), to analyze the interrelationship among the price indexes of Taiwanese TFT-LCD upper, middle and down stream. The sample period of this study is from January 1, 2003 to September 30, 2007. We construct in this study the stock price indexes of TFT-LCD panel industry of these equity markets for empirical analysis.

The empirical results verify that the FIGARCH model can capture the long-term volatility behavior. The TFT-LCD panel industries for Taiwan market have shown its own-volatility spillover effects. The TFT-LCD panel market for each industry is not efficient in the sense that the rate of returns of the TFT-LCD panel indexes for those industries can be predicted by using past information.

The empirical results also reveal that the volatility spillover effects of the rate of returns of the TFT-LCD panel industry are from the upper stream TFT-LCD panel market to middle stream market, from the middle stream TFT-LCD panel market to upper stream market, from the middle stream TFT-LCD panel market to down stream market and from the middle stream TFT-LCD panel market to down stream market. As for the conditional covariance equation of the FIEC-FIGARCH model, there does exist dynamic interrelationship among the price indexes of these three TFT-LCD markets.

Keywords: Long Memory, Cointegration, Fractionally Cointegrated Error Correction Model, FIGARCH Model, Volatility Spillove