Sample Translation

Shipping Industry Analysis

- See below for the original Chinese manuscript.
- **A native-speaker of English who has studied this field** proofreads the translated English.
- The quality of the translated manuscript is suitable for publication in an international journal.

Freight Rate Determination Mechanism in Dry-Bulk shipping Market

Summary: The main purpose of this study is investigating factors influencing bulk shipping market sea freight as well as the flow-on effects of the volatility between the sea freight and those factors. To analyze interactions among sea freight, influential factors and other important factors (for example: price of coal, price of crude oil, and price of steel), our study first adopts the VAR(p) model to make estimations as well as investigate the relationship for interactions among variances. Secondly, if heteroscedasticity exists on each group of variances through examinations, we work them further with the multi-variate GARCH model and in turn increase precision for investigations on the dynamics of the influential mechanism of sea freight pricing. Experiments have shown that the pricing of raw materials such as crude oil price, coal price and steel price will all have effects on the pricing indexes of sea freight markets (BPI & BCI). With indications, when pricing of raw materials is up, sea freight will be up as well; that is, short-term demands on raw materials will push up shipping demands. At the same time, our study has also discovered that if the fluctuations in raw materials are becoming more severe, the fluctuations on the sea freight will become more unpredictable.

Foreword

In recent years, the industrialization and urbanization from BRIC (Brazil, Russia, India & China) and new emerging countries have increased demand of global raw materials and when supplies of raw materials are unable to keep pace with demands, an imbalance between demand and supply results and pricing rises rapidly. Basically, distribution of global resources are unequal and most raw materials possess characteristics such as substantial size and thus the exchange between supply and demand mostly relies upon sea transportation. Currently, 90% of trade volumes for global raw materials occur by way of sea transportation.[1] After 2002, the annual average growth of trade volumes of sea transportation even reached 4.9%.

[1] The statistical data for 2006 from International Maritime Organization (IMO)

摘要：本文的主要目的在探討影響散裝海運市場運價的因素，以及運價與其影響因素間的波動傳遞效果。而爲分析海運價格與影響因素及其他重要因素(如：燃煤價格、原油價格、鋼鐵價格) 之間的交互作用，本文先以 VAR(p) 模型估計並探討變數間的交互影響關係，接著，當各組變數透過檢定發現有存在異質變異的現象時，則進一步結合多變量 GARCH 模型，以更精確地探討海運價格的動態影響機制。實證結果發現，油價、煤價及鋼價等原物料價格皆會影響到海運市場的價格指數 (BPI，BCI)，顯示原物料價格上漲時，運價會隨之揚升，也意謂短期原物料的需求增加會推升海運的需求量。本文同時也發現到，原物料價格的波動加劇將會加深海運運價變動的不確定性。

1. 前言

近年來，金磚四國及新興國家的工業化與都市化帶動了全球原物料需求的緊繃，在原物料供給無法很快的跟上的時候，供需失衡所導致的結果便是價格的急速攀升。基本上，全球資源的分配並不平均，且原物料多具有體積龐大之特性，因此，供需之間的流通大多仰賴海運運輸。目前全球原物料的貿易約有 90% 的貿易量係藉由海運運送，[2] 而 2002 年以後海運貿易量的年平均成長更達到 4.9%。

[2] International Maritime Organization (IMO) 於 2006 年之統計數據。