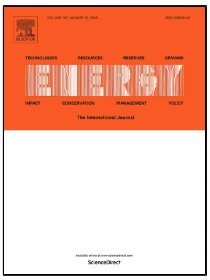
Accepted Manuscript



Investigating Dependencies among Oil Price and Tanker Market Variables by Copula-based Multivariate Models

Yi Zhang, Jasmine Siu Lee Lam

PII:	S0360-5442(18)31462-2
DOI:	10.1016/j.energy.2018.07.165
Reference:	EGY 13430
To appear in:	*Energy*
Received Date:	09 January 2018
Accepted Date:	24 July 2018

Please cite this article as: Yi Zhang, Jasmine Siu Lee Lam, Investigating Dependencies among Oil Price and Tanker Market Variables by Copula-based Multivariate Models, *Energy* (2018), doi: 10.1016/j.energy.2018.07.165

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Investigating Dependencies among Oil Price and Tanker Market Variables by Copula-based Multivariate Models

Yi Zhang[a,*], *Jasmine Siu Lee Lam*[b]

[a] Department of Civil Engineering, Tsinghua University, Beijing 100084, People's Republic of China

[b] School of Civil and Environmental Engineering, Nanyang Technological University, Singapore

Abstract

Crude oil price, bunker price, and tanker freight rate are very volatile in recent years. Uncertainties about the complicated relationships among these market variables could impose substantial business risks on investors, shipowners, ship operators, and charterers in oil transportation by tankers. A better understanding of the dependencies among these variables can help improve investment and operational decisions. This study aims to develop copula-based multivariate models for analyzing oil price and tanker market variables, and associated efficient approaches to reveal the time varying effects for the relationships. Given the volatilities in oil prices over the recent years, this study analyzes the impact that the changes in oil price has on bunker price and tanker freight rates. The West Texas Intermediate, Bloomberg Weighted Average Bunker Fuel Price, Baltic Handysize Index, Baltic Supramax Index and Baltic Panamax Index are analyzed using various selected copula models, from 2008 through 2015. Findings reveal that high oil price is a factor causing a weak dependence among the studied variables in the tanker market. The use of copula has more advantages over the conventional methods and can best characterize the relationships for the tanker market variables. The time varying effects in the dependences can be well identified in the copula modeling. The results could provide valuable information for the policy makers and participants in the maritime industry. The understanding of the dynamic relationships among the oil market could help the participants to foresee the potential risks and the policy makers to organize a more efficient market.

* Corresponding author.
E-mail address: zhang_yi87@163.com

Download English Version:

https://daneshyari.com/en/article/8070865

Download Persian Version:

https://daneshyari.com/article/8070865

Daneshyari.com