

Accepted Manuscript

Title: Predicting Daily Oil Prices: Linear and Non-Linear Models

Authors: Wassim Dbouk, Ibrahim Jamali

PII: S0275-5319(17)30735-3
DOI: <https://doi.org/10.1016/j.ribaf.2018.01.003>
Reference: RIBAF 893

To appear in: *Research in International Business and Finance*

Received date: 13-10-2017
Revised date: 8-1-2018
Accepted date: 30-1-2018

Please cite this article as: Dbouk, Wassim, Jamali, Ibrahim, Predicting Daily Oil Prices: Linear and Non-Linear Models. *Research in International Business and Finance* <https://doi.org/10.1016/j.ribaf.2018.01.003>

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.



Predicting Daily Oil Prices: Linear and Non-Linear Models[†]

Wassim Dbouk*
American University of Beirut

Ibrahim Jamali**
American University of Beirut

Abstract

In this paper, we assess the accuracy of linear and nonlinear models in predicting daily crude oil prices. Competing forecasts of crude oil prices are generated from parsimonious linear models which require no parameter estimation, as well as linear and nonlinear models. Two of the linear models that we employ exploit the informational content of oil demand and the increasing correlation between oil and equity prices and are novel to the literature. The nonlinear model that we consider is an artificial neural network. More specifically, we consider a bagged neural network, a neural network trained using the genetic algorithm as well as a neural network with fuzzy logic. We find that some of the linear models outperform the random walk in terms of out-of-sample statistical forecast accuracy. Our findings also suggest that while the buy-and-hold strategy dominates some of the models in terms of dollar payoffs and risk-adjusted returns under a *long-only* strategy, all the models that we consider generate higher dollar payoffs than the buy-and-hold strategy under the *short-only* strategy. An investor obtains the largest profits by trading based on the moving average convergence divergence which is a technical indicator.

Keywords: Forecasting, Crude Oil Market, Crude Oil Futures, Trading Strategy, Artificial Neural Network, Bootstrap Aggregation, Bagging, Genetic Algorithm, Fuzzy Logic, Error Correction Model, Transaction Costs, Autoregressive Distributed Lag, Financialization, Autoregressive Moving Average.

JEL Codes: G14, G17, Q41, Q47.

[†] We thank the Editor, Associate Editor and two anonymous referees for numerous helpful comments and insightful suggestions that greatly improved the contents and presentation of the paper. The authors gratefully acknowledge financial support from the American University of Beirut's University Research Board.

* Associate Professor, Department of Finance, Accounting and Managerial Economics, Olayan School of Business, American University of Beirut, Beirut 1107 2020, P.O. Box 11-0236, Riad El-Solh Street, Lebanon. Email: wd08@aub.edu.lb. Fax: +961-1-750 214. Tel: +961-1-340 460 (ext. 3762).

** Associate Professor, Department of Finance, Accounting and Managerial Economics, Olayan School of Business, American University of Beirut, Beirut 1107 2020, P.O. Box 11-0236, Riad El-Solh Street, Lebanon. Email: wd08@aub.edu.lb. Fax: +961-1-750 214. Tel: +961-1-340 460 (ext. 3770).

Download English Version:

<https://daneshyari.com/en/article/10226875>

Download Persian Version:

<https://daneshyari.com/article/10226875>

[Daneshyari.com](https://daneshyari.com)