International Business Research; Vol. 11, No. 5; 2018
ISSN 1913-9004 E-ISSN 1913-9012
Published by Canadian Center of Science and Education

Constructing a Composite Leading Indicator for the Global Crude Oil Price

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Received: March 9, 2018 Accepted: April 17, 2018 Online Published: April 23, 2018

doi:10.5539/ibr.v11n5p129 URL: https://doi.org/10.5539/ibr.v11n5p129

Abstract

Crude oil, as the most traded commodity in the world, exhibits prices with a clear influence on other commodities in the worldwide market. It also poses implications regarding the economic growth of oil-exporting and oil-importing nations. This study provides an unprecedented method of employing the indicator approach as proposed by the Conference Board, National Bureau of Economic Research, to construct a leading indicator for the global crude oil price. The results reveal that the constructed oil price indicator can predict the cyclical movement of the oil price by moving in advance of 3.5 months on average. This finding could provide better signaling to oil-related nations as well as other commodities that consider crude oil to be a leader in the market.

Keywords: crude oil price, forecasting, indicator approach

1. Introduction

Six years after the previous slump of crude oil prices (COPs) in 2008, the mid-2014 crude oil glut has written another page in the oil price shocks history. Unlike the depressive 2008 global financial crisis that caused many stocks to take a nosedive, oil market players claim the ongoing-markdown since mid-2014 is caused by the lead players in the field who are actually pulling the strings. After the COPs per barrel peaked in June 2014, where West Texas Intermediate (WTI) recorded at US $105.79 and Europe Brent (Brent) tracked at US $111.80, the overall COPs outlook will apparently remain bearish or less sanguine to bounce back in the short term. The November 2014 report by the International Energy Agency (IEA) offers no hope for an oil price recovery any time soon, suggesting that the bearish market might extend throughout the year 2016. Wall Street oil experts even believe that the already tense COPs will be exacerbated before rebalancing occurs in late 2016. Translating belief into fact, in January 2016, the WTI and Brent per barrel then dropped to US $31.68 and US $30.70, respectively. Many oil industry players worry that the oil price is dropping into a bottomless pit, and the worst is yet to come.

In the face of the sudden oil price collapse along with the volatility of the global crude oil market and country's dependency on oil exportations and energy-related industries, many have voiced their infinite concerns regarding the sustainability of the falling oil prices as well as how their government can tackle the underpinning forces of oil market fluctuations. Likewise, renewed interest in the oil market forecasting is resurging, as many are eagerly seeking insight into the future direction of the COPs. Almost all forecasting analyses on COPs and the oil futures market rely on complex computational modelling that requires heavy assumptions, modelling bias, and high cost of computational analysis. Complex computational modelling is not as cost-efficient and policy effective as the modelling bias, and a great deal of assumptions undermine the forecast accuracy. Therefore, it casts doubt on the ability of the globe to provide a timely response to any impending shocks in the absence of a well-defined and responsive forecasting mechanism.

During this century, when industrialized and developing nations lead world commerce, crude oil plays a vital role in the world economy as the backbone of all energy-related industries and downstream activities that make abundant use of the energy supply. In fact, crude oil is one of the exceedingly traded commodities in the worldwide marketplace and the most actively traded commodity in the future markets, consequently enabling it to be a focal source of income for major oil-exporting nations. Thus, market evolution and future scenarios of the crude oil market in the globe remain an indispensable learning to the policymakers and oil market players.