

# The Relationship between US Rig Count and BRENT WTI Spread

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## **(1) Overview**

The magnitude of rig count is used to judge the activities of upstream oil companies. Usually, the oil production will increase as the rotary rig count increases if oil price is moving up, and vice versa. Thus, some literature use rig count as an important independent variables to explain the oil production (Apergis et al., 2016). However, these authors would like to argue that the linkage (oil price  $\uparrow$   $\rightarrow$  rig count  $\uparrow$   $\rightarrow$  oil production  $\uparrow$ ) above may be suitable in explaining the past history but not current world due to the rapid information transition and the fast trade mechanism in the financial market today. In fact, rather than the positive linkage above (oil price  $\uparrow$   $\rightarrow$  rig count  $\uparrow$ ), these authors find negative linkage in the more recent data (rig count  $\uparrow$   $\rightarrow$  oil production  $\uparrow$   $\rightarrow$  oil price  $\downarrow$ ).

## **(2) Methods**

After reviewing all related articles, we tackle this issue step by step as below:

1. Draw some trend figures for WTI & Brent prices and BRENT WTI Spread.
2. Implement some simple statistical analysis.
3. Draw some trend figures for US rig count.
4. Implement some simple statistical analysis for US rig count.
5. Implement some simple regression analysis for US rig count, WTI, Brent, and BRENT WTI Spread.
6. Evaluate the relationship among US rig count, WTI, Brent, and BRENT WTI Spread.
7. Conclude and make some suggestions.

## **(3) Results**

Using weekly data from January 7, 2000 to December 23, 2016 for all above data, our preliminary data analysis results show that the time series data of rig count has positive and significant relationship with BRENT WTI spread in the above whole observing period, while negative and significant relationship with BRENT WTI spread from 2014 to 2016.

## **(4) Conclusions**

WTI and Brent are two important benchmark prices for both the oil spot market, futures market and the derivative market. In order to reduce the holding risk, many people use different kinds of financial tools to hedge. In recent years, the option of BRENT WTI Spread is also very popular especially in the period from 2011 to 2013 due to the shale production boom in US. It is believed by these authors that the shale production boom is very likely to occur again because of the claim of the new US president Trump. This paper examines all related articles and use some econometric techniques to find the relationship between US rig count and the BRENT WTI spread. Our preliminary results find the time series data of rig count has negative and significant relationship with BRENT WTI spread from 2014 to 2016. Hope these findings can shed some light for explaining the changing differential between WTI and Brent.

## Major References

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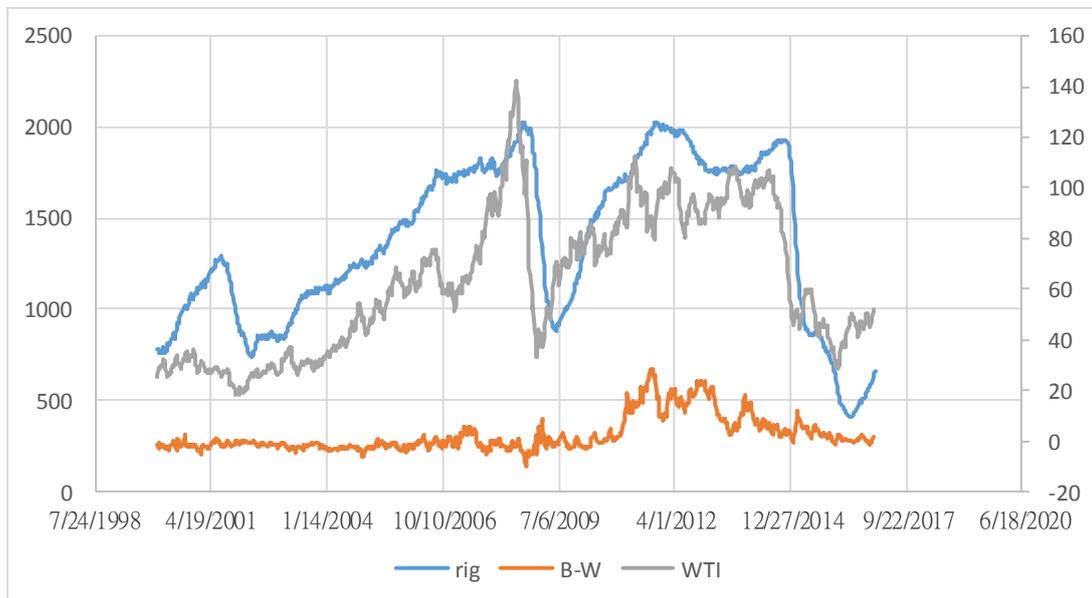


Figure 1: US Rig Count, WTI and BRENT WTI Spread