Market Research

Crude Oil vs. Natural Gas BTU Parity

In the US, shouldn't natural gas be priced at a premium to crude oil when compared on an energy equivalent basis? Afterall, natural gas enjoys a favorable emissions profile relative to crude oil. AND the exploration, production, processing and distribution of natural gas translates into domestic jobs.

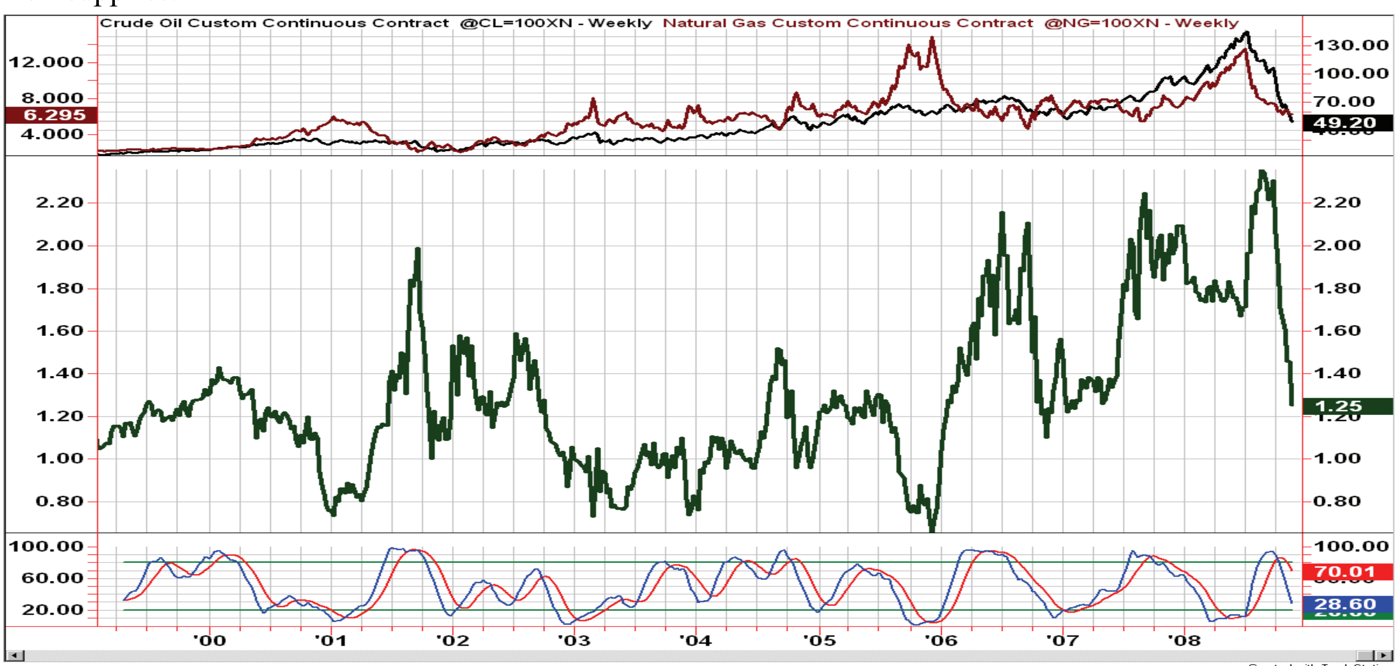
The charts below help us to examine the BTU parity between natural gas and crude oil prices dating back to 1999. The top chart provides a reference of historical NYMEX prompt month natural gas price (dark red line, left axis) and crude oil price (black line, right axis). The bottom chart is a momentum indicator of the BTU parity plot (middle graph).

The middle chart reflects the US Dollar price ratio of 1 barrel of crude oil vs. 6.2 MMBtu of natural gas. It is that ratio of 1/6.2 that provides an equivalent amount of energy between the two volumetric quantities. A price ratio of 1.0 translates to perfect BTU parity. Above 1.0 crude oil is priced at a premium, below 1.0 natural gas is priced at a premium.

A review of the periods where natural gas enjoyed a price premium relative to crude oil are explained by low natural gas inventories due to winter demand and the supply crunch caused by Hurricanes Rita and Katrina.

So why is it that crude oil normally enjoys a price premium to natural gas? 1) The US motor transportation infrastructure depends almost exclusively on petroleum, no fuel switching flexibility exists. 2) A crude oil price premium has been applied in recent years to ensure sufficient future supplies are available, i.e., crude oil has been priced at or above replacement value. 3) Erosion of the US Dollar's relative value impacts crude oil price more than natural gas price.

Any one of the following mechanisms could result in natural gas attaining BTU premium on a normal basis—utilization of natural gas as a transportation fuel, US adoption of a 'cap and trade" emissions protocol, a tax on foreign oil, a shortage of natural gas supply, or an unexpected increase in crude oil supplies.



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