

Fundamentals of  
**TRADING  
ENERGY  
FUTURES**

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# Important Information About Trading Futures and Options on Futures

This communication is intended as a solicitation. Futures trading involves the substantial risk of loss and is not suitable for all investors. Trading advice is based on information taken from trades and statistical services and other sources which RJ O'Brien believes are reliable. We do not guarantee that such information is accurate or complete and it should be relied upon as such. Trading advice reflects our good faith judgment at a specific time and is subject to change without notice. There is no guarantee that the advice we give will result in profitable trades. All trading decisions will be made by the account holder. Past performance is not necessarily indicative of future trading results.

When analyzing option strategies, it is important to take into account the commission and fees associated with making a trade. Similar to trading futures, each contract executed in an option strategy is charged commission and fees. Commissions and fees from brokerage firms can be up to \$99 per round turn with the vast majority of people paying significantly less. Your actual charges may vary based on the service level you choose. The two primary factors investors tend to overlook when trading options include:

- Each contract traded is charged a commission. This is often misinterpreted as each spread or strategy that is charged a commission. If you trade one bull call spread, your account would be charged for 2 contracts rather than 1 spread.
- Customers often try to sell or collect premium on options that are far out of the money with the belief that they are collecting "easy money." The further away an option strike price is from the current market price, the lower the value of the option. Make sure that you are not paying more in commission and fees than what you are collecting. Keep in mind that until an option expires, you do hold risk in the positions. Is the net premium collected after paying commission and fees worth the risk?



# Table of Contents

<b>Crude Oil .....</b>	<b>4</b>
Supply.....	4
Demand.....	5
<b>Heating Oil .....</b>	<b>7</b>
Supply.....	7
Demand.....	7
<b>RBOB.....</b>	<b>9</b>
Supply.....	9
Demand.....	9
<b>Natural Gas .....</b>	<b>11</b>
Supply.....	11
Demand.....	11
<b>Additional Resources.....</b>	<b>13</b>



# Crude Oil

Crude oil is the most widely used natural resource of energy in the world with countries extracting millions of barrels of oil from the earth each day.

It is a non-renewable resource; meaning there is a finite amount of crude oil on this planet, and there is no way to replenish the supply. Scientists are working furiously to develop alternative energy sources, but at this time crude oil is the most efficient and cost-effective resource. As technology advances, engineers are finding new and more efficient ways to extract the oil, creating opportunity where it was previously believed there was none. Ocean floors and the desert sands are no longer obstacles to obtaining oil. The concern with tightened supply has been delayed for a few generations to come.

## Supply

There are two different divisions of oil producers: members of the Organization of the Petroleum Exporting Countries (OPEC) and non-members. Most, but not all, OPEC members are located in the Middle East. OPEC members produce the majority of the world's oil and so the organization has hefty leveraging power over the price of oil. Quotas are set for each member, depending on the amount of resources they have available. At quarterly meetings, representatives from

each country discuss production levels and crude oil prices. If the committee believes oil prices are too low, they might reduce member quotas to tighten oil supply and drive prices higher. But by the very nature of the organization restricting production, it is an incentive for member countries to sell more than their allotted amount when oil prices are high—to boost their economy's oil revenue.

The US, which is the largest consumer of oil, imports the majority of its oil from OPEC members, Canada and Mexico. The non-member oil producing countries are without a common organization representing their interests. They do not have quotas on their output and sell as much oil as they see fit.

Most of the oil reserves are found in the Middle East and in Africa, which are areas known for political unrest. Because oil is such a sought-after commodity, it is the main source of income for many nations and is also a powerful negotiation tool for rebels. Nigeria is a prime example. The region where oil is produced in that country is along the Niger River Delta, but all of the proceeds from the oil go straight to the national government (which is known for corruption



and mishandling of funds). As a result, Movement for the Emancipation of the Niger River Delta (MEND) has been known to kidnap international oil workers and cause damage to oil facilities—in an effort to bring more of the profits from oil production back to the producing region. This kind of disruption causes concern for crude oil supply.

Middle Eastern countries are constantly at odds and use oil production as leverage. Suicide bombers, threats of war, and mobilization of troops are all threats to the oil supply. In the most recent instance, Rebels in Libya fought loyalists of Moammar Gaddafi's regime. The North Atlantic Treaty Organization (NATO) forces assisted rebels in an attempt to overthrow the Gaddafi regime. This is part of the reason why the crude oil market is so volatile: Even if in every other respect the market appears to be heading lower, one rebel attack or bomb in an oil-producing region can send prices skyrocketing.

An additional threat to supply in the US is the hurricane season, beginning in June and continuing through November. These storms can pose a direct threat to the storage facilities and ports. Even if the storms don't materialize the fear of a hurricane creates a buzz that plays along with the old trading adage: "Buy the rumor, sell the fact." The predictions or forecasts for hurricanes often have more of an impact on the market than the storm itself. Severe storms, such as Andrew in the late '90s and Katrina and Rita in 2005, have devastating effects to the crude

oil supply, and can cause prices to reach previously unheard of levels. However, there is also the possibility that storms will change course and not reach land as violently as expected, putting pressure on oil prices.

The world has a healthy supply of oil, and should for generations to come. However, because it is such a precious commodity and so widely used, any threat to supply is taken very seriously in the trading world.

## **Demand**

Though demand is relatively inelastic due to its use as the largest supply of energy for the world, there comes a point when the price is too high and people begin to decrease their use of the material. OPEC representatives take this into account when they determine production quotas, attempting to keep oil prices at a reasonable level for both producer and consumer. However, as the world economic growth increases as countries continue to develop and expand, the demand for crude oil expands as well.

Recently in the US, there has been a decline in economic growth as well as a decline in consumer confidence. This has an effect on the demand for crude oil in the US. Crude oil is predominantly priced in terms of US dollars on the world cash market; therefore US demand has an effect on prices. However, the continued growth in nations such as China and India outweighs the weakening US demand.



The economy in China has seen more growth over the past several years than any other single country. As countries such as China continue to industrialize, the demand for oil grows as well. Environmental and preservation concerns are not at the top of the list for most of these developing

countries, and so perhaps they are not using the oil as efficiently as a more environmentally conscious nation.

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Contract Symbol	Exchange	Contract Size	Tick Value
<b>GCL</b>	<b>Globex</b>	1000 Barrels	1 tick = .01 = \$10

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# Heating Oil

Another form of energy used for heating, used mostly in residential homes, is heating oil (a distillate product of crude oil).

Older homes and buildings in the US are adept at using heating oil, which is why the Northeast is where heating oil is used most prevalently. The percentage of homes using heating oil as their primary heating source has declined over the past few decades as most homes built after 1950 are using natural gas. Because heating oil is made by refining crude oil, it is closely tied to crude oil prices. Heating oil is also tied to gasoline prices, because gasoline is a refined crude product as well; refiners choose which material to produce based on which is most profitable.

## Supply

Heating oil refineries and storage facilities are located along the Gulf Coast. This is near the ports where crude oil is brought in from overseas, and heating oil supply depends upon the efficiency of the refineries, the cost of crude oil, and the price of other refined products in relation to heating oil prices.

The Energy Information Administration (EIA) stocks and inventory reports for heating oil, as well as the report on refinery capacity, are released each Wednesday. Refineries in the

US have been around for a long time, and were not originally designed to process the amount of crude oil that is now necessary to meet increased demand. Not only do heating oil supplies suffer when refineries must be shut down for repair, but also when gasoline is more profitable to produce than heating oil. For example, after hurricane Katrina, the price of gasoline per gallon soared approximately 15% higher overnight and so refiners were more profitable producing gasoline than heating oil.

Obviously, as is the case with natural gas, hurricane season is closely watched by heating oil traders as well. Since most of the heating oil facilities are along the Gulf Coast, and some storage facilities are along the East Coast, this makes the market particularly vulnerable to hurricane activity.

## Demand

Of the homes in the US that use heating oil as their heating source, 82% are located in the Northeast. Similar to natural gas, most heating oil users cannot store the entire amount of heating oil they will demand over



the course of the year. Typically, heating oil customers must replenish their supply four to five times per winter. The major heating oil season is typically from October to May. But again, the market is subject to milder or more extreme weather conditions to determine the amount of heating oil needed.

The heating oil futures market is also considered to be the most closely related to diesel fuel. Therefore, it is used to hedge diesel fuel interests for transportation firms because there is no direct liquid futures market to hedge diesel fuel.

Contract Symbol	Exchange	Contract Size	Tick Value
<b>GHO</b>	<b>Globex</b>	42,000 Gallons	1 tick = .0001 = \$4.20

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# Reformulated Gasoline Blendstock for Oxygen Blending (RBOB)

Reformulated Gasoline Blendstock for Oxygenated Blending (RBOB) is a refined crude oil product primarily used for transporting ethanol.

Ethanol, when made from corn, is highly corrosive to the pipelines currently used for transporting gasoline in the US. Because there is now ethanol in almost every type of refined gasoline, the price of RBOB is closely linked to the price of unleaded gasoline, as well as jet fuel. Gasoline is the largest single refined product in the US, and probably the world. The RBOB product is not blended with oxygen when it is sold outright.

## Supply

Gasoline prices are dependent on crude oil prices, refinery productivity, and storm activity. Many regions that produce and distribute crude oil must import gasoline because they do not have the capabilities to refine the oil. This serves as a sort of check and balance system: If the price of oil increases, the price of gasoline increases. Although the oil producing nation earns more for the crude oil it exports, it must pay higher prices for the gasoline it imports.

As discussed in the section about heating oil, RBOB gasoline is a refined product and so

is dependent upon the refineries where the gasoline is being produced. When refineries break down or are in need of repair there is a bigger draw on the gasoline stocks and inventories. The Wednesday EIA reports on the weekly stocks and inventory status, along with distillates and crude oil and refinery rates. On average, refinery runs are typically between 87% and 93% of full capacity.

Hurricane season, from the beginning of June through the end of November, can affect the price of RBOB gasoline due to the location of the oil ports and refinery facilities. The threat of hurricanes can have an effect on the markets, almost as much as an actual storm. The “risk premium” is usually priced into the market before the season, due to the threat to supply of gasoline.

## Demand

The demand for gasoline is relatively inelastic. Though there is a point where demand is forced to recede, most people and industries depend on gasoline to get them to where they are going on a daily basis.



Whether using personal or public transport, gasoline is involved and most people depend on it to get to work—where they make money to pay for the gasoline. There is constant talk of alternative fuels, including ethanol. But until those alternatives are made readily available and as efficient as gasoline, it is unlikely the demand for gasoline will subside significantly. However, at some point the price must reach a point that the consumer will seek an alternative. When consumer confidence and economic growth are down they can have an effect on the demand for gasoline, and therefore the price.

The typical driving season in the US begins over Memorial Day weekend and concludes on Labor Day. This is a time when the amount of driving typically increases due to the increased number of vacations during the summer months. This increase in demand puts a strain on the refineries and can cause a tightened supply situation.

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Contract Symbol	Exchange	Contract Size	Tick Value
<b>GRB</b>	<b>Globex</b>	42,000 Gallons	1 tick = .0001 = \$4.20

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# Natural Gas

Natural gas is mainly used for heating, cooling and generating electricity. It can also be an element used in the production of paint, petrochemicals and plastics.

The US and Russia are the largest producers and consumers of natural gas, making up about 40% of the market. The use of natural gas as a source of energy is becoming more widespread both in residential and industrial usage across the globe. As countries continue to develop, there is a push to switch from coal to natural gas for their electrical and heating/cooling needs because of the availability and efficiency of natural gas.

## Supply

Most often natural gas is produced nationally to meet demand; intercontinental transport is rare due to the nature of the product. Transport from the producer to the consumer is usually by truck. The production of natural gas can be performed year round and any excess is kept in storage. The EIA's weekly report details the amount of natural gas pumped into, or taken out of, the US stocks and inventory. The report is released on Wednesday mornings and can have an effect on the futures market prices.

Natural gas is one of the only energy markets not directly tied to the cost of crude oil, with only a minor interest due to the cost of transport. The only real factor that affects the supply and the ability to produce the product is the threat of hurricanes destroying the stocks and inventory. Most natural gas is stored near the Gulf of Mexico: the heart of hurricane country. The hurricane season, from the beginning of June through the end of November, is a time when natural gas futures traders watch the weather forecasts closely - trying to determine if/when a hurricane might hit the Gulf Coast. Typically, there is a spike in prices because of predicted hurricanes - a "risk premium" built into the market. In 2005, the US saw a barrage of storms, with the most damage done by Katrina and Rita. But like 2007, the predicted storms did not materialize, sending natural gas futures prices lower.

## Demand

The uses of natural gas include meeting heating and cooling needs, both residentially



and industrially. Though heating oil is widely used for homes in the Northeast US, homes in the Midwest and Northwest primarily use natural gas for their heating needs. Industries also use natural gas for their heating and cooling needs, because it is more efficient and more easily accessible than other sources. As countries around the world continue to develop and advance their technologies, the demand for natural gas should increase. Natural gas is a very efficient source of energy. In measuring energy produced for approximately equal amounts of natural gas and crude oil, the natural gas exudes six times more energy to every one unit of crude oil.

In 1992, the European Commission began a push for its members to switch away from fossil fuels (such as coal) over to natural gas for the main source for heating. Developing countries will likely do the same, favoring the efficiency of natural gas to alternative fuels for heating - as well as applying natural gas to many other uses.

Therefore, the natural gas market is affected by the world economic growth to increase demand, but mostly on a longer-term basis. Once an area switches to using natural gas, the fluctuation in demand is dependent more upon the weather. The natural gas market is a seasonal market, with a lot of volatility in the market based on forecasts. When a winter is colder than expected or a summer is hotter than expected, the demand for natural gas increases. Typically, neither residential nor industrial venues are capable of storing the entire amount of natural gas they will use throughout the year and so must refill several times in any given season. On the other hand, when the weather is more mild than forecasted, there is less need to restock and the product is added to the national stocks and inventory, putting pressure on prices.

Contract Symbol	Exchange	Contract Size	Tick Value
<b>GNG</b>	<b>Globex</b>	10,000 MMBtu	1 tick = .001 = \$10



# Additional Resources

Thank you for the opportunity to provide you with this educational material. Anyone can offer online trading in online markets, but RJO Futures is not just anyone. We are specialists devoted to delivering the best possible trading experience for our clients. Whether you want to trade on your own, tap into the experience of our brokers or let a professional money manager make the calls, you can do it all at RJO Futures, the premier provider of futures brokerage services.

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