

Crude Oil (Continued from 2)

that motor gasoline could reach \$4.00 per gallon at some point in the June to August period. Remember, this is without any further rise in the price of crude oil.

The Basics

A barrel of oil contains 42 gallons. Assuming there is a straight pass-through of higher crude oil costs to petroleum product prices, in simple terms every \$1.00 increase in the price of crude oil raises the price of gasoline and other products by 2.4 cents a gallon. In round numbers then, a \$10 increase in crude oil prices raises gasoline by \$0.25 per gallon. In reality, it's much more complicated than that. Local, seasonal and cyclical market conditions come into play, affecting the supply and demand for individual petroleum products, which can affect the ability of refiners to pass through any given change in crude oil costs. For example, in the summer time, an increase in crude oil costs might flow through faster to higher gasoline prices on more than a dollar for dollar basis, because demand is high during the summer driving season, while the flow through to home heating oil prices may be constrained by a weak market. The opposite would be true in winter. Inventory levels and competition also play a role.

In round numbers, the U.S. consumes about 20 mmbd of liquid petroleum products every day, consisting of motor gasoline (46%), jet fuel (9%), diesel fuel, heating oil, other middle distillates (25%), and other petroleum products like heavy fuel oil and liquefied petroleum gases (20%). Altogether, transportation fuels (jet fuel, diesel, and gasoline) account for about 75% of all U.S. petroleum consumption. So the price of oil, working through the distribution system, has an immediate impact on the price of almost everything, especially food. An increase in the cost of gasoline or other petroleum products affects consumers in the same way as a tax increase. It leaves consumers with less money to spend on other things, and the economy suffers. The average price of gasoline is projected to be about \$1.00 per gallon higher this summer than last, and if these higher prices persist, the EIA estimates that vehicle-fueling costs for the average U.S. household (which owns 1.6 cars) will be about \$700 higher in 2011 than they

were last year. If the price of all petroleum products rises by \$1.00 per gallon and stays there, U.S. consumers will spend an additional \$840 million per day, and \$306 billion per year on oil. In macroeconomic terms, this is equal to about 2 percent of our GDP, an amount equal to roughly one-half of the massive economic stimulus plan signed in March 2009.

What's in the Price of Gasoline?

There are about 250 million vehicles that use gasoline in the U.S., each traveling an average of about 12,000 miles per year, with an average fuel efficiency of 22.6 miles per gallon (mpg). Gasoline is delivered from oil refineries and import terminals mainly through pipelines to a massive distribution system, where it is finally trucked to about 168,000 retail outlets throughout the U.S. The price you pay at the pump is made up of four main components: crude oil cost, refining, distribution and marketing and taxes. To illustrate by example, on March 7, the national average retail price of regular grade gasoline at self-service gas stations, including taxes was \$3.52 per gallon. About 66% of this (or \$2.40 per gallon) was the refiner's cost of crude oil, about 11% (or \$0.38 per gallon) was refinery processing costs, 9% (or \$0.32 per gallon) was marketing and distribution costs (that include delivery by pipeline and truck, storage and retail markup), and 14% (or \$0.42 per gallon) was federal, state and local taxes and fees combined. These percentages are not fixed, and they can vary significantly over time.

Price levels are not equal everywhere, and there can be significant regional, state, and local differences. Greater distances from the source of supply usually mean higher prices. Gasoline prices in the Gulf Coast states where most of our oil is produced, imported and refined are among the lowest in the nation. Winter gasoline blends are different than summer gasoline blends. Some parts of the country require "reformulated" gasoline to reduce air pollutants during combustion and evaporation during refueling, and that reformulated gas is more expensive. Other parts of the country put different levels of restrictions on fuel transportation and storage, raising costs. Ethanol is blended into some gasoline streams (up to 10%), while others are ethanol-free, depending instead on different additives (called oxygenates) to raise

octane and promote clean burning. Keeping separate all these different fuels, in three grades and winter and summer blends, raises distribution and storage costs. Finally, let's not forget taxes. The federal excise tax on motor gasoline is 18.4 cents per gallon, and it hasn't changed in years. The average state tax is about 22 cents per gallon, and the average local tax (including other fees) is about 2 cents. North Carolina ranks 13th in the nation on gasoline taxes, with combined federal and state taxes of 51.2 cents per gallon (18.4 cents federal, 32.8 cents state). California, Hawaii, Indiana, Illinois and New York, at 70 cents per gallon or more, have the highest gasoline taxes in the nation.

Our Local Stations

In times of extreme price volatility, some retail outlets, especially those in high traffic areas, will change their prices daily or even hourly. Most of our local station operators generally change their prices each time they get a delivery, and many low volume dealers may get deliveries only once or twice a week. In this case, with rapid price movements, a low volume dealer who hasn't received a shipment in five or six days may be behind the curve compared to the station across the street that just took delivery of a higher priced load. There are other things that can account for differences too. For example, there are two stations next to each other directly across the Atlantic Beach causeway. At the time I wrote this article, the stations had a price differential of five cents per gallon for regular grade gasoline. Upon closer examination, however, I discovered that the higher-priced station was offering ethanol-free gasoline. Ethanol-free is more expensive to produce, but it gets better mileage (ethanol has a 33% lower energy content than gasoline), and ethanol-free gas is preferred by many boaters because ethanol is a magnet for water. It soaks up water like a sponge, and we all know what water can do to a boat's fuel system.

So What's a Person to Do?

Suck it up and put a brick in your gas tank (just kidding). While this may save water in your toilet, it won't work to save gas. While an individual acting alone won't have much influence on the global forces at work in the oil market, there are a number of common sense measures you can take to save money. For example, before you fill up, go to www.gasbuddy.com, put in your zip

code, and you will get the prices being charged by local stations that day. You can also plan your errands ahead, consolidate tasks and minimize the number of miles you have to drive to get things done. If you have more than one car, use the smallest one you need to do the job. Also, keep your car in tune, check tire pressures often, clean your air filter, and get the "junk out of the trunk." If you are in the market for a new car, remember, weight is the enemy of efficiency. You could consider a clean diesel, a hybrid (gas-electric) or one of the new plug-in electric vehicles (pev's) if you have a round-trip commute of 50 miles or less. Sure they cost more, and you will need to hire an electrician to install a recharging station in your garage, but you get a \$7,500 tax deduction. And remember, technology marches on. The sporty versions of today's compact cars (like the Mini Cooper S, Civic Si, and the VW GTI) have all the same bells and whistles as luxury vehicles, and they outperform the muscle cars of the '60s and '70s in speed, acceleration and handling, all while returning 30 plus MPG.

The Answer to High Oil Prices is High Oil Prices

Oil is traded 24/7 on electronically-linked commodities exchanges around the world. The volume of "paper barrels" traded daily exceeds actual consumption by many multiples. This large volume of trades is an efficient price discovery mechanism and a guarantee that no one group can ever have sufficient clout to manipulate the market. We, and the rest of the world, are "price takers," meaning that the price is what the price is. High oil prices sow the seeds of their own demise, as they always have. They signal consumers to conserve, switch to alternatives or do without, which leads to demand reduction. At the same time, high prices encourage producers to produce more oil and earn more income. High prices also make it possible to produce more high-cost reserves, from deep water for example, Arctic seas or oil shale. High oil prices also pave the way for alternative energy supplies. If the U.S. is indeed the Saudi Arabia of solar and wind energy and shale oil, why aren't we using more of them? Because they are too expensive, and they can't compete with cheaper oil. But as oil prices rise, they gradually look better and better.