



What Drives Gas Prices: Cartels, Speculators, or Supply and Demand?

By Kenneth P. Green

Once again, high gasoline prices are in the news. As of this writing, the national average gasoline price per gallon is hovering around \$3.50.¹ The public is unhappy with these high gas prices, and politicians are scrambling to find ways to reduce the pain—or, failing that, to publicly shoot the messenger by investigating, penalizing, or punitively taxing oil companies. This Outlook explores the true causes of oil price fluctuation and explains how policymakers can help lower gasoline prices.

In addition to triggering a gusher of newspaper editorials, the price pinch at the pump is sparking serious consumer discomfort. Market research firm SymphonyIRI reports that “57% of consumers are feeling increased financial strain when gas prices increase, and more than four in ten say high gas prices make it difficult to meet monthly expenses.” Further, the group finds that 49 percent of consumers plan to reduce grocery spending if gas prices climb another fifty cents.² Figure 1 shows how consumers respond to higher gasoline prices, and figure 2 shows gas price trends since 1980, adjusted for inflation.

Why Are Gasoline Prices High?

Oil Supply and Demand. Setting aside conspiracy theories about oil-company collusion—a perennial favorite of politicians of all stripes—the primary reason for high gasoline prices, as any economist will tell you, is very simple: world demand for oil (from which gasoline is made) is high, and the available supply is limited. In 2005, the US Federal Trade Commission attributed about 85 percent of the surge in gasoline prices over the

previous twenty years to increases in the price of crude oil.³

But what drives the price of oil? According to the Energy Information Administration (EIA):

World oil prices are influenced by a number of factors, some of which have mainly short-term impacts. Others, such as expectations about world oil demand and OPEC [Organization of Petroleum Exporting Countries] production decisions, affect

Key points in this Outlook:

- High gas prices are inducing consumers to tighten their belts and politicians to call for taxes on oil companies.
- About 85 percent of oil price hikes are due to supply and demand, and the remaining 15 percent is likely attributable to environment-conscious regulations.
- To help lower gas prices and promote domestic employment and trade benefits in the future, policymakers should facilitate drilling offshore and in the Arctic National Wildlife Refuge, and lift boutique-fuel requirements.

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FIGURE 1
CONSUMER RESPONSE TO HIGHER GASOLINE PRICES



SOURCE: SymphonyIRI, *MarketPulse Survey* (Chicago, IL, Q2 2011).

FIGURE 2
REAL GASOLINE PRICES, 1976–2012 (AUGUST 2011 DOLLARS)



SOURCE: US Energy Information Administration, "Short-Term Energy Outlook—Real Energy Prices," www.eia.gov/emeu/steo/realprices (accessed August 15, 2011).

prices in the longer term. Supply and demand in the world oil market are balanced through responses to price movements, and the factors underlying expectations for supply and demand are both numerous and complex. The key factors determining long-term expectations for oil supply, demand, and prices can be summarized in four broad categories: the economics of non-OPEC conventional liquids supply; OPEC investment and production decisions; the economics of unconventional liquids supply; and world demand for liquids.⁴

Back in 2006, the EIA observed that prices had risen since 2000 as a result of strong demand growth

in developing economies (such as China), coming on top of supply disruptions and "inadequate investment to meet demand growth."⁵

The causes of supply disruptions are fairly obvious—9/11, Afghanistan, and the Iraq War undoubtedly played a role. In 2003, Iraq had the third-highest proven oil reserves (after Saudi Arabia and Canada),⁶ an outflow already lowered by United Nations sanctions before the war. Iraqi prewar exports accounted for 19 percent of US oil imports from the Persian Gulf.⁷ At the end of 2009, however, total Iraqi oil exports amounted to 1.9 million barrels per day—a regrowth, to be sure, but not matching the growth in global demand over that same period of time.⁸

A more recent disruption, of course, is the moratorium that the Obama administration placed on US development of domestic oil production in the last two years. Since the *Deepwater Horizon* oil-rig disaster, US domestic oil production has slowed significantly, especially in the Gulf of Mexico. The slowdown in issuing oil and gas drilling permits as a result of the *Deepwater Horizon* spill is estimated to have cost the United States \$4.4 billion in output costs, nineteen thousand jobs, \$1.1 billion in wages, and over \$500 million in lost federal, state, and

local government tax revenues.⁹ The Gulf oil spill also caused a slowdown in the allotment of shallow-water drilling permits. A study by Bernard L. Weinstein at Southern Methodist University looked at the effects of the slowdown in shallow-water permitting and found that it will cost fifty thousand jobs and that US income losses could exceed \$12.5 billion.¹⁰

Though the United States cannot do much to change the world oil price rapidly, that's not to say we are incapable of taking a bit off the top. According to the Department of the Interior, there are 102 billion barrels of oil under the Outer Continental Shelf of the United States. That is enough oil to fuel 85 million cars for thirty-five years. Regrettably, most of that oil has been placed off-limits to production by presidential,

congressional, and state moratoria on exploration and development.

The primary reason for high gasoline prices, as any economist will tell you, is very simple: world demand for oil is high, and the available supply is limited.

And we may soon put another promising source of oil off-limits to US consumers: resistance to the completion of Canada's Keystone XL pipeline could deny US consumers access to Canada's voluminous supply of oil produced from oil sands, as well as the jobs that would attend creation and operation of the pipeline. Two studies suggest the potential scope of such benefits. The first, by independent economic modeling group the Perryman Group, estimates that the proposed Keystone XL pipeline would create 13,000 construction jobs, 7,000 manufacturing jobs, and over 118,000 spin-off jobs in other parts of the economy.¹¹ Another study, by the Canadian Energy Research Institute, estimates the following:

Total GDP impact of oil sands investment and operations over a 25-year period is estimated to be \$521 billion for the US. Employment in the United States (direct, indirect, induced) as a result of new oil sands investments is expected to grow from 21,000 jobs in 2010 to 465,000 jobs in 2035. This type of employment includes new and preserved jobs and also consists of full-time and part-time jobs.¹²

A Patchwork Market. But if 85 percent of the cost of gasoline is due to fluctuations in the price of crude, then 15 percent is due to something else, or a bunch of something else. The Federal Trade Commission suggests that the other 15 percent of the cost of gasoline is influenced by a variety of supply and public policy factors, including the proliferation of boutique fuels.¹³

To fulfill air-pollution reduction plans in states and localities across the country, gasoline sold in the United States has been fractionated into about seventeen different boutique fuels sold in dozens of discrete markets. With three grades of gasoline per fuel, refiners are producing over fifty separate blends. Such boutique-fuel

requirements increase both price volatility and the height of price spikes as a function of the distance-to-market of boutique-fuel producers and consumers, according to the EIA.¹⁴ When boutique fuels have to be crafted far away from consumers, the transportation costs are reflected in the final price. Boutique-fuel requirements also increase the absolute price of gasoline sold in boutique markets, according to the US Government Accountability Office:

The proliferation of special gasoline blends has made it more complicated to supply gasoline and has raised costs, significantly affecting operations at refineries, pipelines, and storage terminals. At refineries, making these blends can require additional investment such as installing new processing equipment and the use of larger amounts of valuable components in the blending process—making it more costly to produce special gasoline blends. Once produced, different blends of gasoline must be kept separate throughout the shipping and delivery process, and the increased number of gasoline blends has reduced the capacity of pipelines and storage terminal facilities, which were originally designed to handle fewer products. For example, several pipeline companies reported that the capacity of their systems has been reduced because they have had to slow the speed of products through the pipelines in order to off-load special blends at specific locations, which raises the average cost of shipping gasoline. Similarly, storage terminals have not been able to fully utilize the volume of their storage tanks because the tanks were designed to handle fewer types of fuel and are often larger in size and fewer in number than necessary for handling smaller batches of special gasoline blends. Further, the proliferation of special blends has, according to several buyers from these wholesale markets, limited the number of suppliers of some of these fuels, posing challenges when traditional supplies are disrupted, such as during a refinery outage or pipeline delay. In the past, local supply disruptions could be addressed relatively quickly by bringing fuel from nearby locations; now, however, additional supplies of special gasoline blends may be hundreds of miles away.¹⁵

Refineries. Another policy factor that may have contributed to the increased price of gasoline is the reduction in the number of operating refineries in the United

States over the last thirty years. The number and capacity of US refineries peaked in 1981, and 171 plants have closed since then, although the remaining plants have increased output to offset a loss of production.¹⁶ Though most of this reduction has been caused by the low profit potential of refineries, others see a significant cause in “extremely tight environmental restrictions, not-in-my-back-yard community opposition, and the high cost of new construction.”¹⁷ Refinery profit margins have played a role in recent gasoline price hikes. According to the EIA:

The sizable jump in retail prices this year reflects not only the higher average cost of crude oil compared to previous years, but also an increase in US refining margins on gasoline (the difference between refinery wholesale gasoline prices and the average cost of crude oil) from an average of \$0.34 per gallon in 2010 to \$0.45 per gallon in 2011 and \$0.42 per gallon in 2012.¹⁸

Resistance to the completion of Canada’s Keystone XL pipeline could deny US consumers access to a voluminous supply of oil and the jobs that would attend its creation and operation.

Speculators. When explaining gasoline price hikes, policymakers point first to oil company profits, but lately, more attention has been paid to so-called speculators, people who buy oil futures as an investment, never intending to actually take possession of the oil. Jerry Taylor and Peter Van Doren summarize the arguments for and against oil speculation in a *Forbes* article entitled “Oil Speculators Are Your Friends.” In the article, Taylor and Van Doren observe that while speculation has been shown capable of causing past short-term price spikes, there is little evidence for speculation as a cause of oil price hikes since 2005. First, they observe, no evidence has emerged linking the real prices of oil to the prices set in futures markets. Second, they point out that a sharp increase in the number of speculators also fails to correlate with real prices. Third, they find that rather than increasing price volatility, speculation increases after price volatility manifests and tends to damp it down:

only two out of twenty-four studies of speculation showed increased price volatility after the onset of futures trading in commodity markets, while fourteen out of twenty-six studies showed a decrease in commodity price volatility after trading markets were introduced.¹⁹

Policy Options

In light of the above considerations, policymakers should consider:

- *Opening the Arctic National Wildlife Refuge (ANWR) to development.* Opening ANWR for oil exploration and eventual oil production would not, of course, lower gasoline prices immediately. But over time, by decreasing US imports, it could provide a supply to help buffer fluctuations in world oil prices. Modern technology would allow this to be done with environmental sensitivity. More importantly, increasing domestic production would change the balance of trade when it comes to oil and the myriad jobs associated with its production and supply. Importing oil creates jobs abroad; producing it domestically creates jobs at home.
- *Facilitating exploration and development of offshore oil reserves.* Exploration and development of Outer Continental Shelf reserves was supported by 60 percent of the respondents to a poll taken by the Consumer Alliance for Energy Security, a coalition of industrial and institutional energy users.²⁰ As the EIA observes, “Today, natural gas and oil drilling is prohibited in all offshore regions along the North Atlantic coast, most of the Pacific coast, parts of the Alaska coast, and most of the eastern Gulf of Mexico.”²¹ Again, modern technology allows for the environmentally conscientious development of offshore oil and gas. The increased supply would not lower prices by much, but the increase in domestic job opportunities would surely be welcome.
- *Unblocking the Keystone XL project.* Canada, America’s leading source of imported oil, has vast oil reserves that could benefit the US market. Canadian oil from oil sands constitutes a growing share of Canada’s oil exports to the United States. Whether or not one believes

that oil-sand oil is sufficient to serve as a check on the world oil price, it is hard to argue that a pipeline supply from Canada is not more physically secure than imported oil from abroad, and it would also create more domestic employment in the energy sector. Mark Milke, at Canada's Fraser Institute, points out that it is also a somewhat moral choice: when compared with other potential sources of oil imports, Canada ranks far higher on international indices of market freedom and adherence to a strong regime of civil rights.²²

- *Lifting federal boutique-fuel requirements permanently.* Congress's removal of the oxygenate requirement from reformulated gasoline was a good step, though it fell far short of ending the fragmentation of US gasoline markets. Removing all the reformulated gasoline requirements, on the other hand, could defragment the market considerably, eventually lowering the absolute cost of gasoline as well as smoothing out geographical spikes in gasoline prices. The federal government cannot end the state-based fragmentation of gasoline markets (absent the will to further amend the Clean Air Act, which allows California and copycat states to set higher environmental standards than the federal government's), but it can at least alleviate the problems for which it is directly responsible. Federal mandates for boutique fuels (reformulated gasoline) in the Clean Air Act should be permanently suspended or eliminated.
- *Increasing the number of drilling permits.* An increase in drilling permits could create 230,000 jobs and add more than \$44 billion to the US gross domestic product by 2012, estimates a recent study by IHS Global Insights.²³ The study also finds that the permit increase would add nearly \$12 billion in tax and royalty revenue to state and federal government budgets, and would reduce spending on foreign oil by \$15 billion.

Notes

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15. US Government Accountability Office, *Special Gasoline Blends Reduce Emissions and Improve Air Quality, but Complicate Supply and Contribute to Higher Prices*, GAO-05-421 (Washington, DC, June 2005), www.gao.gov/new.items/d05421.pdf (accessed August 15, 2011). My thanks to energy analyst Lynne Kiesling and her excellent blog (www.knowledgeproblem.com) for identifying and keying in this quotation.

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