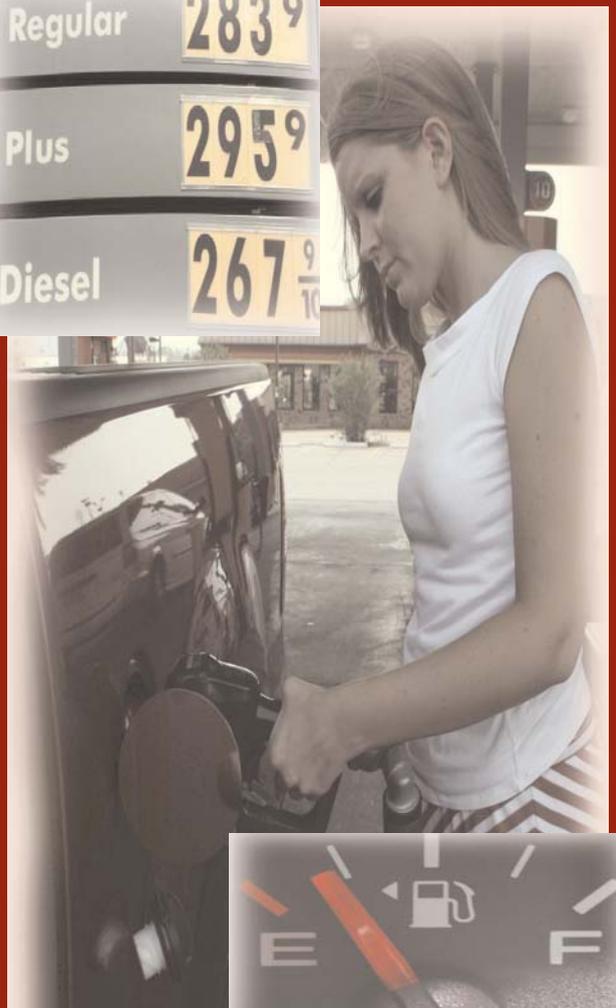


Regular	283 ⁹
Plus	295 ⁹
Diesel	267 ⁹ / ₁₀



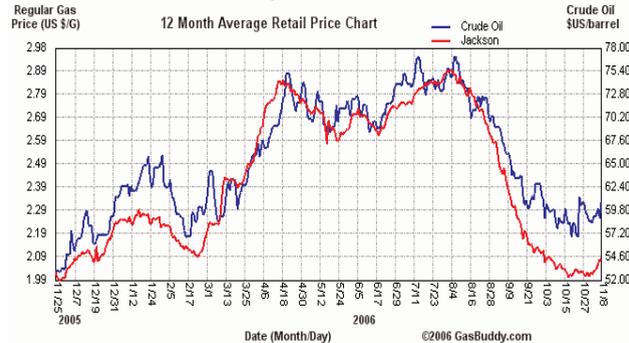
What Determines the Price I Pay for Gasoline?

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In recent times Mississippians have experienced dramatic changes in the price per gallon of gasoline. As illustrated in the graph below, prices in the Jackson area have ranged from 2 to 3 dollars per gallon. Other areas of the state have seen even greater volatility.

These dramatic price changes have led to charges of price gouging and profiteering by oil companies, refiners, and local gasoline retailers. The purpose of this brief is to describe some of the factors that affect the price consumers pay at the pump.

Figure 1.1



Local gasoline prices are affected by the world crude oil market, changes in the refining industry, taxes, competition, weather, seasonal factors, regulations, and transportation costs. We discuss each of these factors below.

Mississippi Fun Facts

- Refined petroleum products transported from refineries to storage terminals throughout the United States by a series of pipelines. Two major pipelines run through Mississippi; these are the Colonial and Plantation pipelines.
- The major distribution terminals in Mississippi are located in Collins, Purvis, Greenville, and Meridian.
- Mississippians consume approximately 4.5 million gallons of gasoline per day.⁷

The World Oil Market

Gasoline is made from crude oil through a refining process. Crude oil is traded and shipped to refineries throughout the world. One barrel contains 42 gallons of crude oil from which 19.6 gallons of gasoline can be refined. The remaining crude oil is refined into diesel fuel, jet fuel, and other petroleum products. The Organization of Petroleum Exporting Countries (OPEC) controls approximately 40% of the world output of crude oil. OPEC leaders meet periodically to increase or decrease output in order to cause the price of crude oil to reach some "target" price which will maximize OPEC's profit. The map below illustrates the 11 member countries of OPEC.

Figure 1.2



In 2005, the U.S. consumed 20.80 million barrels of oil per day; approximately one-half of this oil is imported. Approximately one-half of imported oil comes from OPEC countries. Given this high percentage of imports, anything that slows or stops the flow of oil in foreign countries will eventually affect the price that refiners in the U.S. have to pay for the oil they use to produce gasoline, and ultimately affect the price that consumers pay at the pump. This close relationship between crude oil prices (blue line) and gasoline prices (red line) can be seen in figure 1.1.

World Oil Prices are Affected By:

OPEC's production decisions. A decision to lower production will raise crude oil prices.

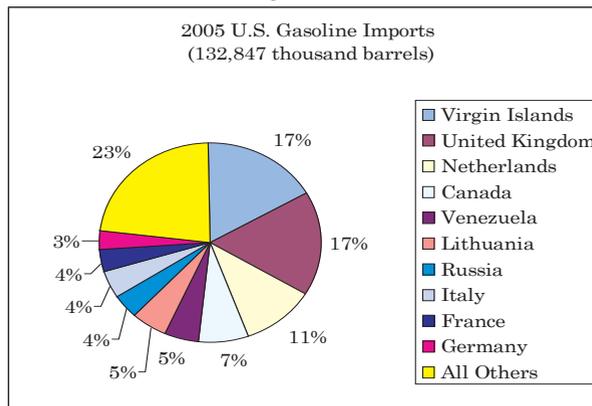
- Political instability in any major oil exporting country. Recent political events that have caused the crude oil price to rise include an increase in political violence in Nigeria and uncertainty about how the flow of oil out of Iran will be affected by pressure from the world to halt the development of the their nuclear program. Uncertainty surrounding supplies from Venezuela and Iraq also affect prices.
- Weather. A large portion of the U.S. production of crude oil comes from off-shore drilling rigs in the Gulf of Mexico. Any weather situation, such as hurricanes and tropical depressions that threaten to shut down this production will cause a temporary increase in crude oil prices.
- Economic growth around the world. As countries develop economically, their demand for fuel increases. This is especially true in the rapidly growing economies of China and India.

The Refining Industry

The U.S. is by far the largest producer of refined petroleum products in the world. Crude oil is refined into gasoline and many other petroleum products in over thirty states, but over half of the U.S. refining capacity is located in the Gulf Coast region. The map in figure 1.2 illustrates the location of major crude oil refineries in the U.S.

The U.S. produces 17,794 thousand barrels of refined petroleum products per day. This is more than 3 times as much as its nearest competitor (China).⁵ However, due to our large consumption, the U.S. remains a net importer of gasoline. The major importers of gasoline to the U.S. are shown in the pie-chart in figure 1.3.

Figure 1.3



At the refinery, one barrel (42 gallons) of crude oil is actually turned into over 48 gallons of petroleum products. These products include not only gasoline but also diesel fuel, jet fuel, liquefied petroleum gasses, asphalt, and many others.

There are four refineries located in Mississippi. The following table describes their location and daily output of refined products.

Refinery	Location	Output*
Chevron, USA Inc.	Pascagoula	330,000
Ergon Refining, Inc.	Vicksburg	23,000
Hunt Southland Refining Co.	Sandersville	11,000
Hunt Southland Refining Co.	Lumberton	5,800

*Measured in barrels of refined products per day.

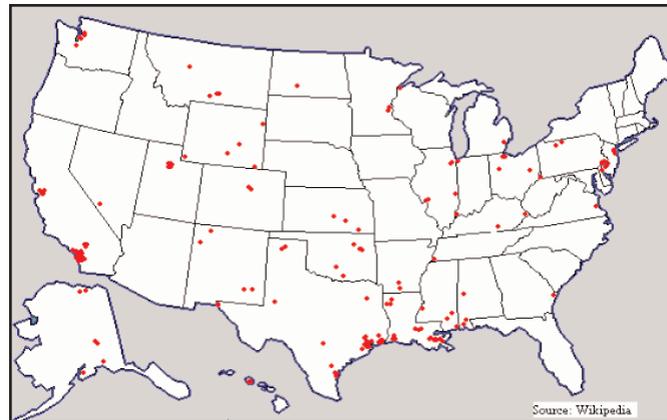
More Fun Facts

- Due to an increase in driving, the demand for gasoline increases during the summer which causes a 5% increase in the price of gasoline on average.
- In 2005, Mississippi produced an average of 49,000 barrels per day in crude oil. This ranked 12th among all states and accounted for 1% of total US production.⁷
- Mississippi has 1,531 producing oil wells (2005).⁷

Any factor that affects the costs of the refiners will eventually affect gasoline prices at the pump. These include:

- The Cost of Crude Oil. Since crude oil is an input to making gasoline, as the price of crude oil increases, the price of the refined products such as gasoline will increase also.
- The Cost of Reformulations. The Clean Air Amendments of 1990 required the use of oxygenated fuel in some areas in order to reduce pollutants resulting from gasoline engines. In the past, refiners have used an additive known as MTBE. However, recent questions about the environmental effects of MTBE have forced refiners to switch to ethanol as an additive. Due to the chemical properties of ethanol, especially its more corrosive properties, the use of ethanol as an additive will increase costs to refiners.

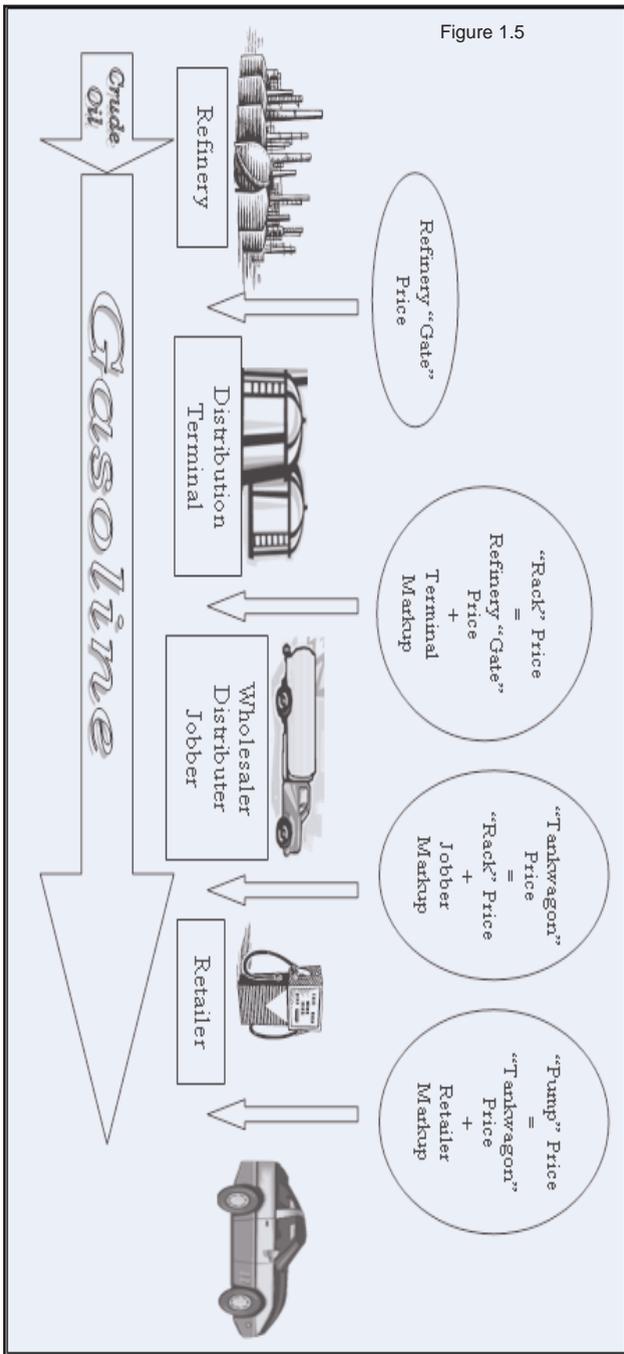
Figure 1.4



Distribution from Refinery to Retail Outlet and the Effect on Price

Refined gasoline generally gets to the pump through a series of marketing stages. These stages are illustrated in figure 1.5.

Figure 1.5



At each stage, the gasoline is traded at an intermediate price which includes a markup from the previous stage. For example, the price at the distribution terminal (the rack price) is determined by the "refinery gate price" plus a markup by the terminal operator. The "tankwagon" price is determined by the rack price plus a markup by the wholesaler, distributor, or "jobber". The size of the markup depends upon the costs associated with moving the gasoline from stage to stage as well as a profit margin for the owners of that stage. The size of the profit margin is determined by the degree of competition at that stage; the more competition, the lower the profit margin, and the lower the price.

The diagram in figure 1.5 illustrates that the "retail" or "pump" price of gasoline is determined by the prices of gasoline at the intermediate stages, the markups at these stages, and the markup at the retailer stage. The U.S. Energy Information Agency estimates that the cost of crude oil makes up 47% of the cost of a gallon of gas. The remaining 53% of the cost comes from the various markups along the stages of distribution.

Gasoline Taxes

The federal government imposes an 18.4 cent/gallon tax on each gallon of gasoline throughout the U.S.⁸ In addition to these taxes, there are state and sometimes local taxes imposed on each gallon of gas sold. These taxes are included in the price at the pump. In Mississippi, the state levies a tax of 18.8 cents per gallon in addition to the federal tax. The coastal counties of Hancock, Harrison, and Jackson levy an additional 3¢ per gallon tax to help provide funds for the seawall. Other counties and municipalities are prohibited by the Mississippi Code from levying additional taxes on gasoline. The state gasoline tax revenues are used to fund highway and road projects throughout the state. The table describes the total per-gallon gasoline tax in the Southeastern region.⁸

figure 1.6

State	Total Gasoline Tax (¢/gallon)
Alabama	38.7
Arkansas	40.2
Florida	50.3
Georgia	39.7
Louisiana	38.4
Mississippi	37.2
Tennessee	39.8

Local Competition and Prices

The degree of competition at each stage in the distribution network, including the retail market, also affects gas prices. The greater the competition, the lower the price paid by consumers at the pump. Many towns have a multitude of retail outlets where consumers purchase their gasoline. However, a large number of retail outlets does not always signal that the market is competitive.

In Mississippi, there are over 3,559 retail gasoline outlets.⁷ But the fuel facility assets (the pumps, storage tanks, and other equipment needed to facilitate the sale of gasoline) at these retail outlets are generally not owned by the owner of the retail store. The ownership structure of the assets can take on many different forms. For example, they may be

- owned and operated by a major oil company or refinery.
- leased as a franchised outlet from a major oil company or refinery.
- privately owned as a franchised outlet from a major oil company or refinery.
- leased from a third party who owns a franchised outlet from a major oil company or refinery.
- owned and operated by a jobber.
- leased from a jobber.
- independently owned and operated by an entrepreneur who has no ties to a jobber or oil company.

In addition to these ownership structures, retail outlets may sell gasoline that is either "branded" (Chevron, Shell, BP, etc.) or "unbranded". Any area will have a mixture of these types of outlets.

Ownership of the fuel facilities is important when examining the degree of competition in a local area. A large number of facilities may indicate a competitive market. However, if the underlying ownership of the facilities is in the hands of only a few, competition may be severely curtailed. For example one geographic area in Mississippi has a total of 44 fuel facilities; however, only one of them is independently owned and operated, while over half of the facilities are operated by only 5 distributors. As fuel facility ownership becomes more concentrated, competition is diminished and prices tend to rise.

The price of gasoline is perhaps the most visible of all prices in the economy. Large signs out in front of retail outlets provide daily information on prices, and price changes and differences among outlets are easily noticed. This transparency of price information can be both beneficial and detrimental. Having readily available information about prices, especially when the product is essentially identical from store to store, benefits consumers who can reduce their search costs of finding the store with the lowest price. However, in a market that is not as competitive, transparent prices may allow owner/operators to "fix" prices merely by reviewing their competitors' signs. While setting prices in this manner may result in less competition, higher overall prices, and increased profitability at the expense of consumers, it is not illegal.

Enforcement of Mississippi Consumer Protection Laws

The Mississippi Consumer Protection Division enforces the Mississippi Consumer Protection Act and the Mississippi Antitrust Act against gasoline industry participants when they violate these laws. The following are examples of illegal actions under these laws.

- Communicating with competitors about what prices or services should be offered.
- Selling gasoline below cost in order to drive competitors out of business.
- Advertising gasoline for sale at one price and then charging a higher price without notifying customers of the increase.
- Selling fuel as "premium unleaded" when it is not a premium product.

*Note a dramatic increase in gasoline prices, commonly referred to as "price gouging" is not necessarily illegal. Such an increase in prices is illegal when a catastrophic event has occurred and the Governor has declared a "state of emergency" for that area. During such a state of emergency it is illegal to sell gasoline for a higher profit margin than immediately prior to the state of emergency.

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- 3.The views and opinions expressed in this document are strictly those of the authors. The content of this document has not been reviewed or approved by Mississippi State University.
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