

## Long-Term Trends in Gasoline Prices

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**G**asoline prices have been the subject of significant news coverage in recent weeks. According to the American Automobile Association, from February 25 to March 25, 2022, these increases ranged from \$0.22 in Maryland to \$1.20 in Nevada.

Average annual CPI inflation from 1990 to 2021 was 2.4%, while average annual gasoline price inflation was 3.9%.

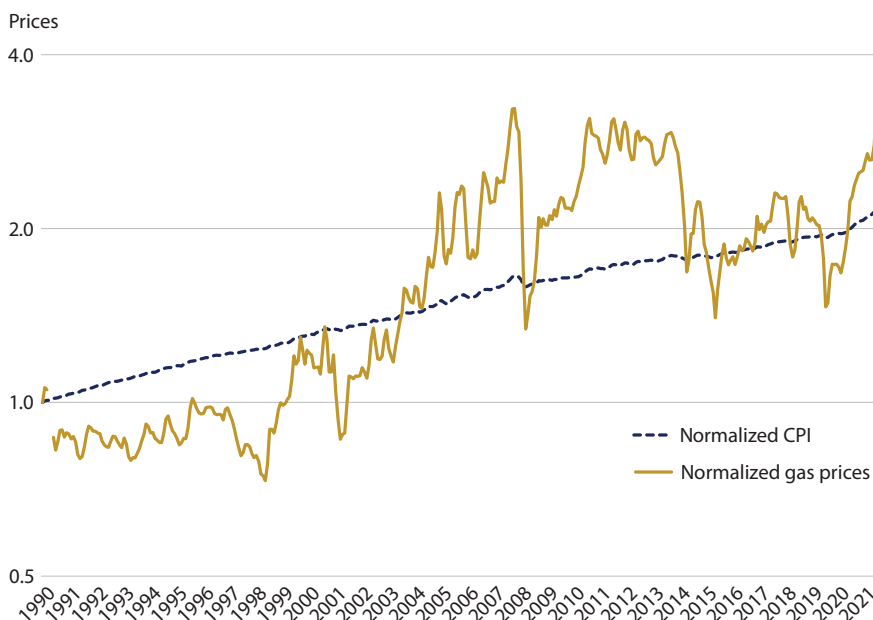
There could be many reasons for these increases in gasoline prices. News articles cite a tighter gasoline supply after Russia's invasion of Ukraine and increased demand that has reached pre-pandemic levels faster than supply.<sup>1</sup>

This essay looks at long-term demand for gasoline and expenditures on gasoline as a percentage of GDP.

Figure 1 plots consumer price index (CPI) and regular gasoline prices. Both CPI and gasoline prices are normalized to equal 1 in 1990 so that we can track price growth from 1990 onward. Average annual CPI inflation from 1990 to 2021 was 2.4%, while average annual gasoline price inflation was 3.9%. Gasoline prices were significantly higher than CPI from 2004 to 2014, except for the short period from December 2008 to March 2009. There was also a large spike in gasoline prices in March 2022.

Increased demand for gasoline is not likely the primary reason for gasoline price increases over the past decade, however. Figure 2 shows annual consumption of motor gasoline in the U.S. It increased from 62.9 million gallons in 1990 to 80.4 million gallons in 2006 but began to decrease

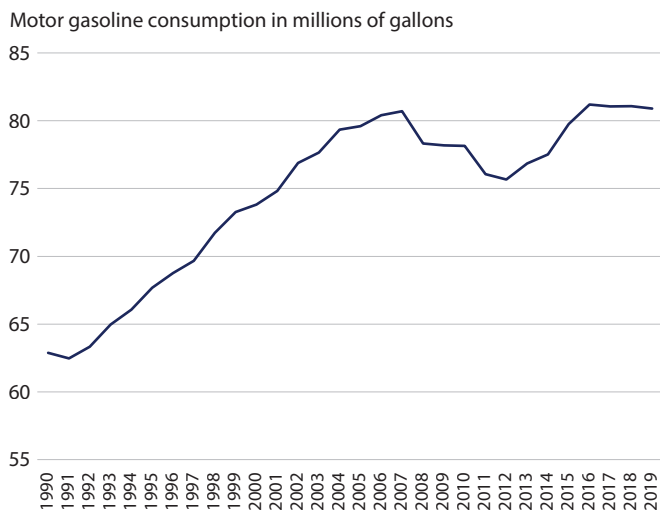
Figure 1  
**Monthly U.S. Regular Gasoline and CPI Price Comparison**



NOTE: Prices are normalized to 1 in 1990 and plotted on a logarithmic scale with base 2. Plotting on a log scale makes the chart more compact. If two variables are related according to  $x = a^y$ , then taking logs of both sides to base  $a$  gives  $\log_a x = y$ . If  $a = 2$ , we take logs with base 2, in which case  $\log_2 2 = 1$ .

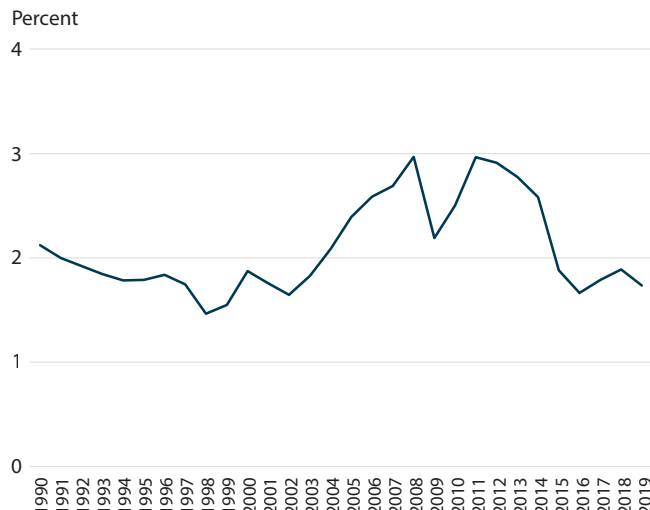
SOURCE: U.S. Energy Information Administration, Bureau of Labor Statistics, and authors' calculations.

Figure 2  
Annual U.S. Motor Gasoline Consumption



SOURCE: U.S. Energy Information Administration and authors' calculations.

Figure 3  
Annual U.S. Motor Gasoline Expenditures as a Percentage of GDP



NOTE: We examine total motor gasoline in this figure, which includes regular, midgrade, and premium gasoline but excludes aviation gasoline.

SOURCE: U.S. Energy Information Administration, Bureau of Economic Analysis, and authors' calculations.

in 2006. In 2019, U.S. motor gasoline consumption was 80.9 million gallons—only 0.5 million gallons more than motor gasoline consumption in 2006.<sup>2</sup>

Figure 3 shows the ratio of motor gasoline expenditures to GDP. Expenditures on motor gasoline made up a smaller percentage of GDP in 2019 (1.7%) than they did in 1990 (2.1%). We conclude that gasoline price increases over the past decade have not been driven by a long-term increase in demand, nor have they led to a significant increase in gasoline expenditures as a proportion of GDP. ■

Notes

<sup>1</sup> See [“Gasoline Prices Shoot Up at Fastest Rate on Record.”](#) *Wall Street Journal*; and [“March Madness at the Pump: Gasoline Prices Sink Slowly but Will They Rebound?”](#) *American Automobile Association*.

<sup>2</sup> Motor gasoline consumption changes were likely not driven by drivers shifting their transportation choice to flying. Data from the U.S. Energy Information Administration indicate that jet fuel consumption was relatively stable over time, at 13.2 million gallons in 1990, 14.2 million gallons in 2006, and 15.2 million gallons in 2019.