



US Gas Prices May Hit Three-Year High in 2017, Still Below the 10-Year Average

- 1) A wide gap between global oil production and consumption has led to lower gas prices in recent years, enabling consumers to spend a greater amount of real disposable income on other discretionary items.
- 2) US gas prices in 2017 could reach their highest levels in three years, due in large part to the Organization of the Petroleum Exporting Countries' (OPEC) agreement to pare back oil production.
- 3) Industry experts project that the average US gas price will be \$2.50 per gallon this year, representing a \$0.43 (20%) increase from 2016. This would end a trend of annual price declines since 2012, when the average gas price was \$3.55.
- 4) With gas prices set to rise this year, experts believe consumers' personal consumption expenditure will fall by 1% and that big-ticket purchases, cars, travel and food services will be the categories most affected.

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Price Summary: The Era of Cheap Gas Ends

In July 2008, the price of a gallon of gas in the US hit an all-time average high of \$4.05. The price did not stay there very long. In December of the same year, the average price was \$1.59. Prices rose again in 2012, when the average price per gallon reached \$3.55. Since then, the average price of gas has declined each year.

Figure 1. Average Price per Gallon of Gas (USD)

	Price	YoY USD Change	YoY % Change
2013	\$3.44	\$(0.11)	(3.1)%
2014	\$3.30	\$(0.14)	(4.1)%
2015	\$2.33	\$(0.97)	(29.4)%
2016	\$2.07	\$(0.26)	(11.2)%

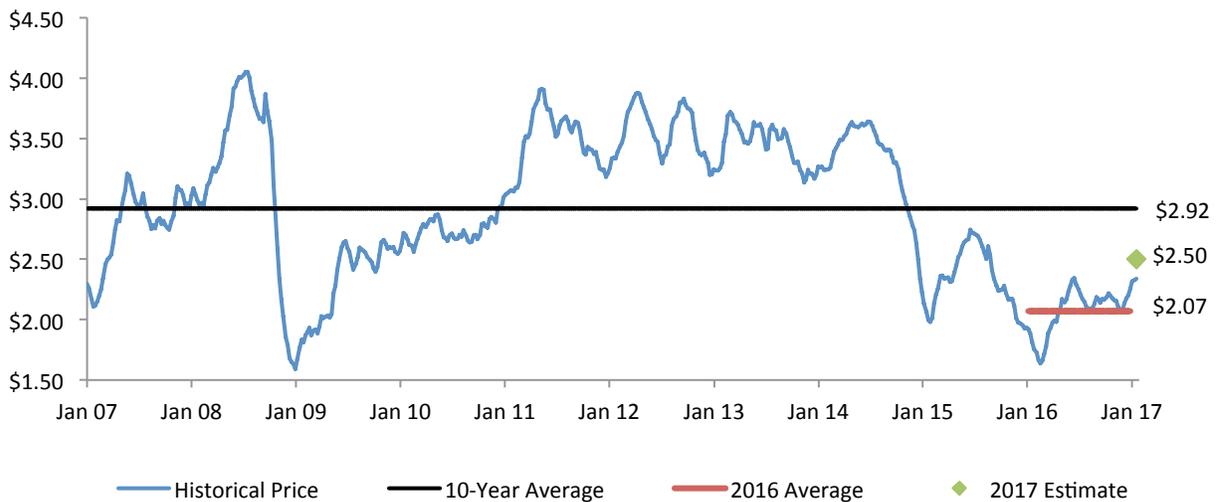
Source: US Energy Information Administration

The price of gas this year could reach its highest level since 2014, due in large part to OPEC’s agreement to pare back oil production in order to boost crude oil prices.

Gas prices have risen steadily thus far in 2017, averaging \$2.33 per gallon, up \$0.34 from a year ago, and up \$0.15 from December’s average, according to the AAA’s *Fuel Gauge Report*. For 2017, industry experts project that the average gas price will be \$2.50 per gallon, representing a \$0.43 (20%) increase from 2016. At that price, gas would still be below the 10-year average of \$2.92 per gallon.

GasBuddy, a firm that tracks gas prices in different locations, predicts that US drivers will spend \$355 billion on gas this year—\$52 billion more than last year.

Figure 2. Average Price per Gallon of Gas (USD)



Source: US Energy Information Administration

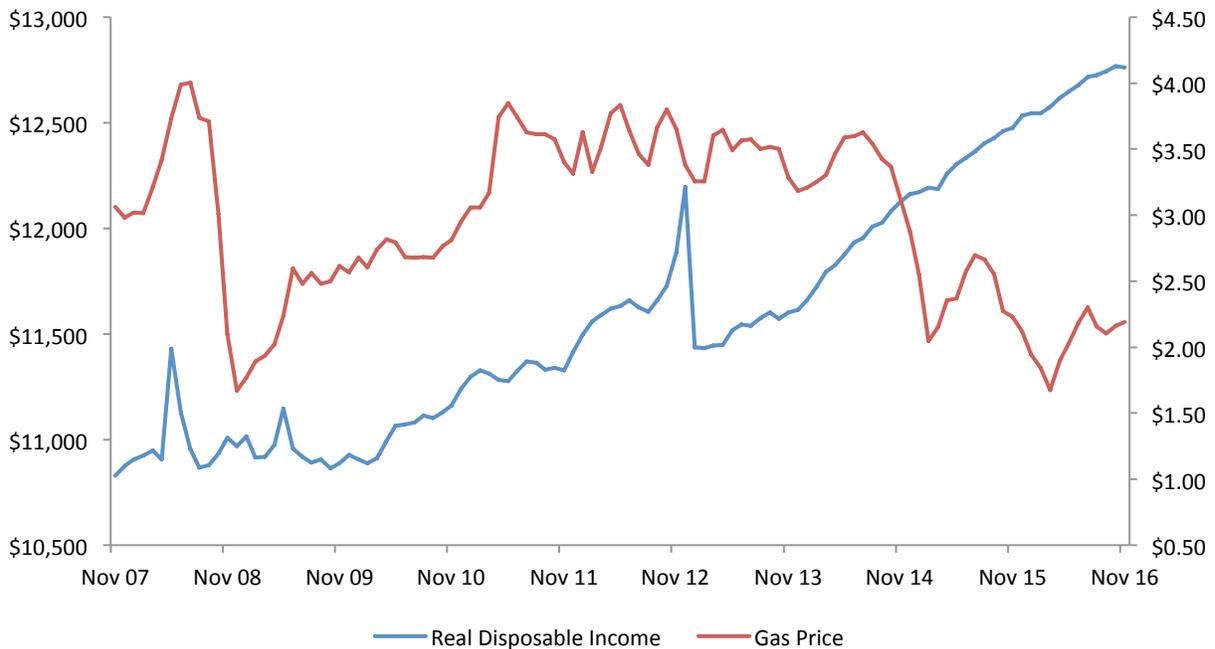
Impact of Low Gas Prices on Disposable Income

A wide gap between global crude oil production and consumption has led to lower gas prices for consumers, enabling them to spend a greater amount of their disposable income on other discretionary items. We calculate that American drivers spent \$800 less on gas, on average, in 2016 than they did two years earlier.

Economists consider gas to be a price-inelastic good, which means that its price has very little impact on the demand for it because so many people actually need it to go about their daily lives. Consumers’ lower personal expenditure on gas and related products in 2016 is attributable to both the inelasticity of gas and the price per gallon.

As gas prices decrease, consumers spend less on it, which increases the overall amount of real disposable income they have available for other purchases. The graph below depicts the increase in consumers’ disposable income (less energy goods and services) versus the decrease in the average price per gallon of gas.

Figure 3. Real Disposable Income (Left Axis, USD Bil.) vs. Average Price per Gallon of Gas (Right Axis, USD)

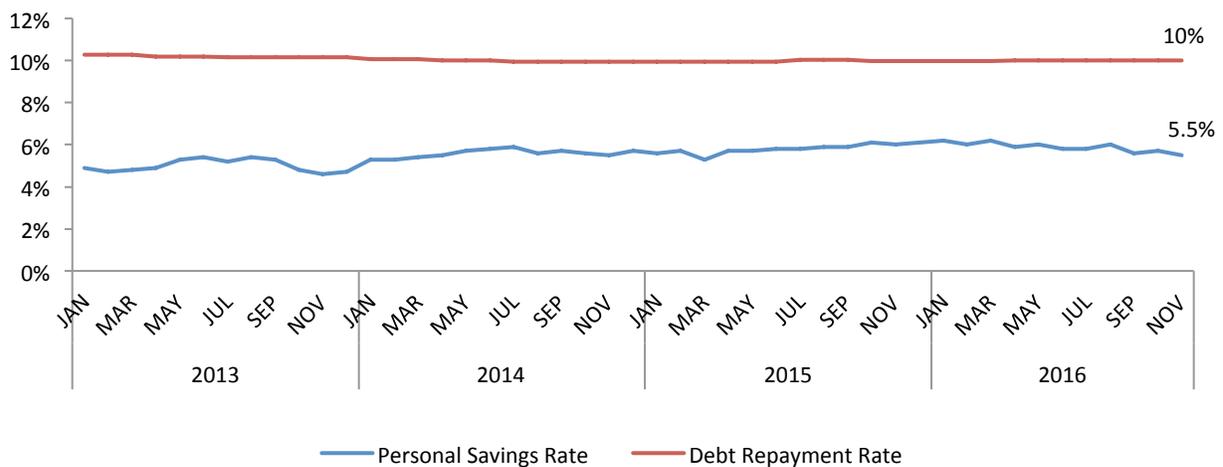


Source: Federal Reserve Bank of St. Louis/US Energy Information Administration/Fung Global Retail & Technology

Personal Consumption Increases, Savings and Debt Repayments Stay Flat

Consumers can allocate their disposable income to savings, debt repayments or personal consumption expenditures. Since the beginning of 2013, there have been net increases in total personal consumption (excluding gas and other energy goods), but the personal savings and debt repayment rates have remained relatively flat, as shown below. This means that decreasing gas prices and increasing disposable income have benefited categories of personal expenditure.

Figure 4. Savings and Debt Repayment Rates as % of Disposable Income



Source: Federal Reserve Bank of St. Louis/US Bureau of Economic Analysis

Given that the savings rate has stayed relatively flat and that increases in total personal consumption expenditures have been outpacing the Consumer Price Index, it is apparent that American consumers have been pumping their increased disposable income back into the economy. Data from the US Census Bureau suggest that consumers have been spending that extra disposable income on dining out and experiences rather than on retail:

- In 2015, clothing and accessories saw the lowest year-over-year growth of all major spending categories (excluding gas and other energy goods), up just 1.7%. Meanwhile, food services and accommodations saw some of the highest spending growth, at 7.3%.
- In 2016, food services and drinking places showed continued strong growth of 6.0%, while clothing and accessories increased by only 0.8%.

What Drove the Decline in Oil Prices?

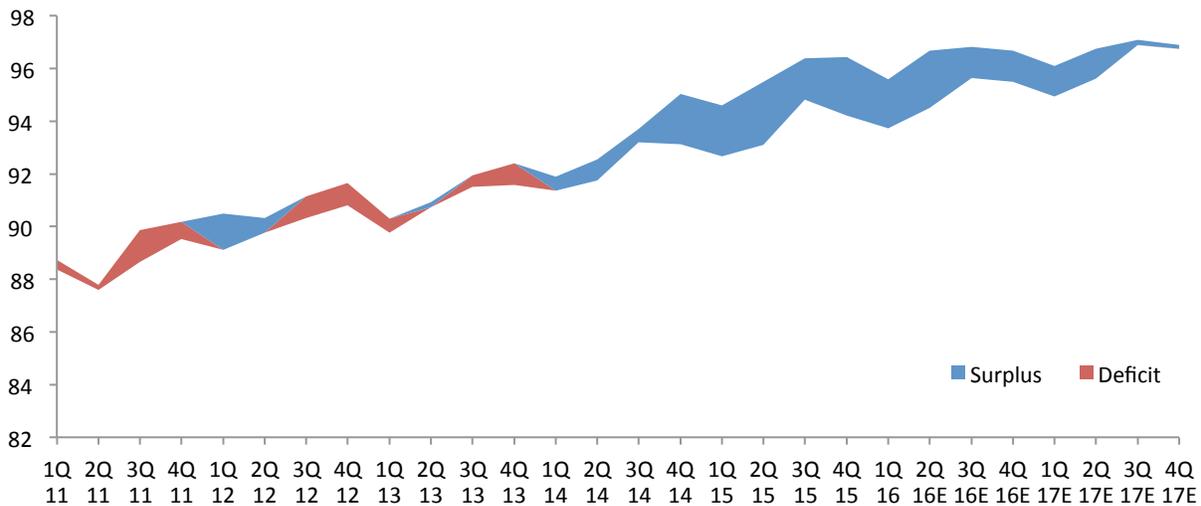
Oil prices dropped simply because supply outweighed demand. OPEC refused to cut production for a variety of reasons, including members' lack of trust that other members would cut production if they did. Additionally, relaxation of sanctions against Iran, home to the world's fourth-largest crude oil reserves and second-largest natural gas reserves, meant that the country could reenter the marketplace. Prior to the sanctions, Iran produced

approximately 4.5 million barrels of oil a day; international sanctions brought that figure down to around 2.8 million barrels a day.

Meanwhile, improvements in hydraulic-fracturing technologies led to the US becoming an oil-exporting nation, with enough production to satisfy 10% of the world’s daily needs.

The graph below shows the effect that global oil consumption and production has had on global oil inventory, with production outpacing consumption and creating a surplus.

Figure 5. Global Oil Consumption vs. Production (Mil. Barrels per Day)



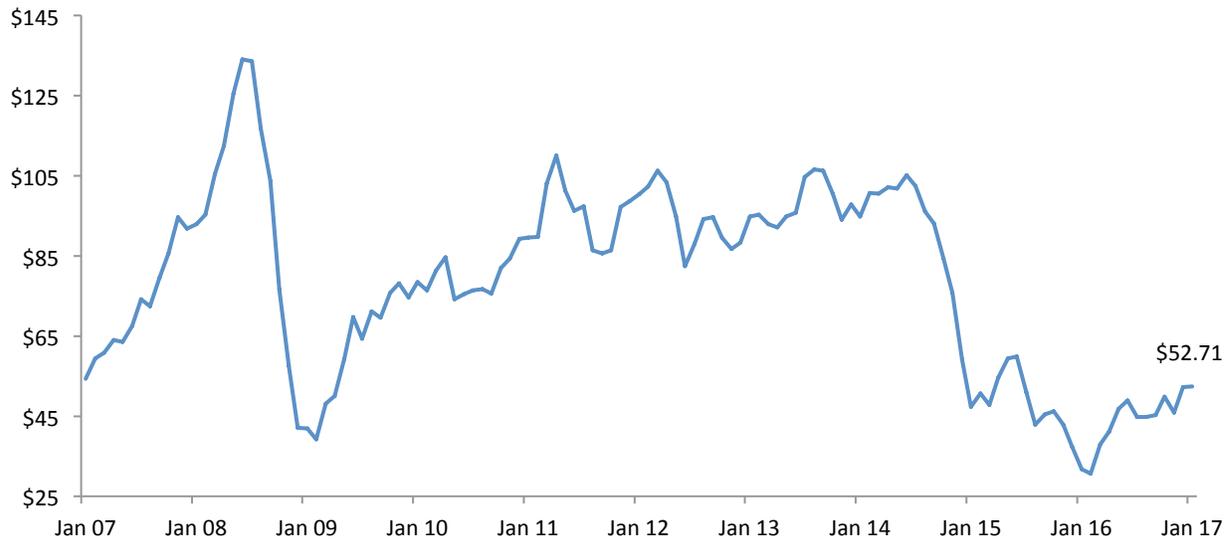
Source: US Energy Information Administration

Oversupply Drives Agreement to Bring Crude Oil Prices Higher

Due to the oversupply of crude oil, OPEC announced on November 30, 2016, that it had reached an agreement on a collective production cut of 1.2 million barrels of crude oil per day. Some oil-producing nations that are not part of OPEC, including Russia, agreed in December to cut back their output by nearly 600,000 barrels a day. By cutting back production, oil producers are attempting to balance the market and drive the cost of oil higher.

Both crude and retail gas prices have been on the upswing following the OPEC agreement:

- The national average cost of gas in the US as of January 16 was \$2.33 per gallon, up \$0.34 from a year earlier and up \$0.15 from December’s average, according to the AAA’s *Fuel Gauge Report*.
- Crude oil prices have risen by more than 15% since OPEC agreed to cut oil production output, representing the largest gain since 2009. WTI crude oil prices have averaged \$52.71 per barrel in January, up \$9.38 (21.6%) over the 2016 average.

**Figure 6. WTI Crude Oil Price (USD per Barrel)**

Through January 13, 2017

Source: US Energy Information Administration

Another factor that may result in higher gas prices in 2017 is the weather. In December, the Natural Gas Supply Association, a trade association, cited forecasts of colder weather and increased demand as potential drivers of higher natural gas prices this winter. In addition, higher gas taxes in seven US states may drive average national gas prices higher. The largest recent hike was in Pennsylvania, which saw a 7.9% (\$0.08) increase per gallon on January 1, 2017.

As Costs Rise, Consumer Spending Is Likely to Fall

When the price of gas rises significantly, consumers tend to change their spending patterns. Since gas is considered to be a price-inelastic good, unless consumers have ways to avoid purchasing it—say, by using public transportation or driving less—they have no choice but to spend less on other items, save less or increase their debt. In 2012, when the price of gas rose by 19%, consumers cut back on nonessential spending on things such as vacations, entertainment, luxury items and dining out.

Since 2011, spending on energy goods and services as a percentage of personal consumption has ranged from 4.1% to 6.0%, which is considered low compared with consumer spending on other categories, so higher fuel prices will likely take only a small bite out of consumers' discretionary income.



Rising Gas Prices Will Cost Drivers

In 2015 and 2016, the average US driver owned a vehicle that got about 20 miles per gallon, according to the US Environmental Protection Agency, and, according to the US Department of Transportation, the average US driver drives 13,000 miles per year.

Figure 7. Average Annual Cost at the Pump per US Driver

	Annual Cost per Driver	YoY USD Change
2014	\$2,145	–
2015	\$1,515	\$(630)
2016	\$1,346	\$(169)
2017E	\$1,626	\$280

Source: US Energy Information Administration/Fung Global Retail & Technology

Based on the average price per gallon in 2016, which was \$2.07, we calculate that consumers’ annual fuel costs average around \$1,346. A bump of \$0.40 per gallon in 2017, a 20% increase, would push the annual cost of filling up to \$1,626, a net increase of about \$450 from 2016. (In 2016, gas prices were lower than in 2015, leaving consumers with \$169 more in discretionary income than they had the previous year. If gas prices increase by 20% in 2017, the average driver will likely spend that \$169 plus an additional \$280 on gas over the course of the year.)

Drivers of trucks, large SUVs and vehicles that are less fuel-efficient could have to budget as much as \$600 more for gas this year. By comparison, drivers saved an average of \$630 in gas spending in 2015 and \$169 in 2016.

Conclusion

Industry experts expect gas prices to surge by 20% this year, to nearly \$2.50 a gallon, up from an average of \$2.07 last year. The higher prices will mean that motorists will spend \$52 billion more on gas over the course of year than they did in 2016. A 20% increase—which is about what we have seen so far this year—will lead to a decline of about 1% in consumer expenditures on other things. That is because gas accounts for about 5% of the typical consumer’s spending, and most people have little choice but to pay the higher price when gas prices rise. We believe big-ticket purchases, cars, travel and food services will be the categories most affected by higher gas prices.

Prices are unlikely to jump so high that consumer spending habits change very much, but we expect to see a slight change in consumer consumption.



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