



Pain in the Gas

*Volatile Gas Prices Wreak Havoc on
Household Financial Planning*

Amanda M. Logan and Christian E. Weller

PAIN IN THE GAS

**Volatile Gas Prices Wreak
Havoc on Household
Financial Planning**

**Amanda M. Logan, Special Assistant
for Economic Policy,
and
Christian E. Weller, Senior Fellow,
Center for American Progress**

Center for American Progress

May 2007

Overview

You've felt it in your wallet: Gas prices are on the rise again. Prices at the pump rose a whopping 32 percent in inflation-adjusted terms between December 2006 and the middle of May this year—just as the summer driving season is about to kick off this coming Memorial Day weekend.

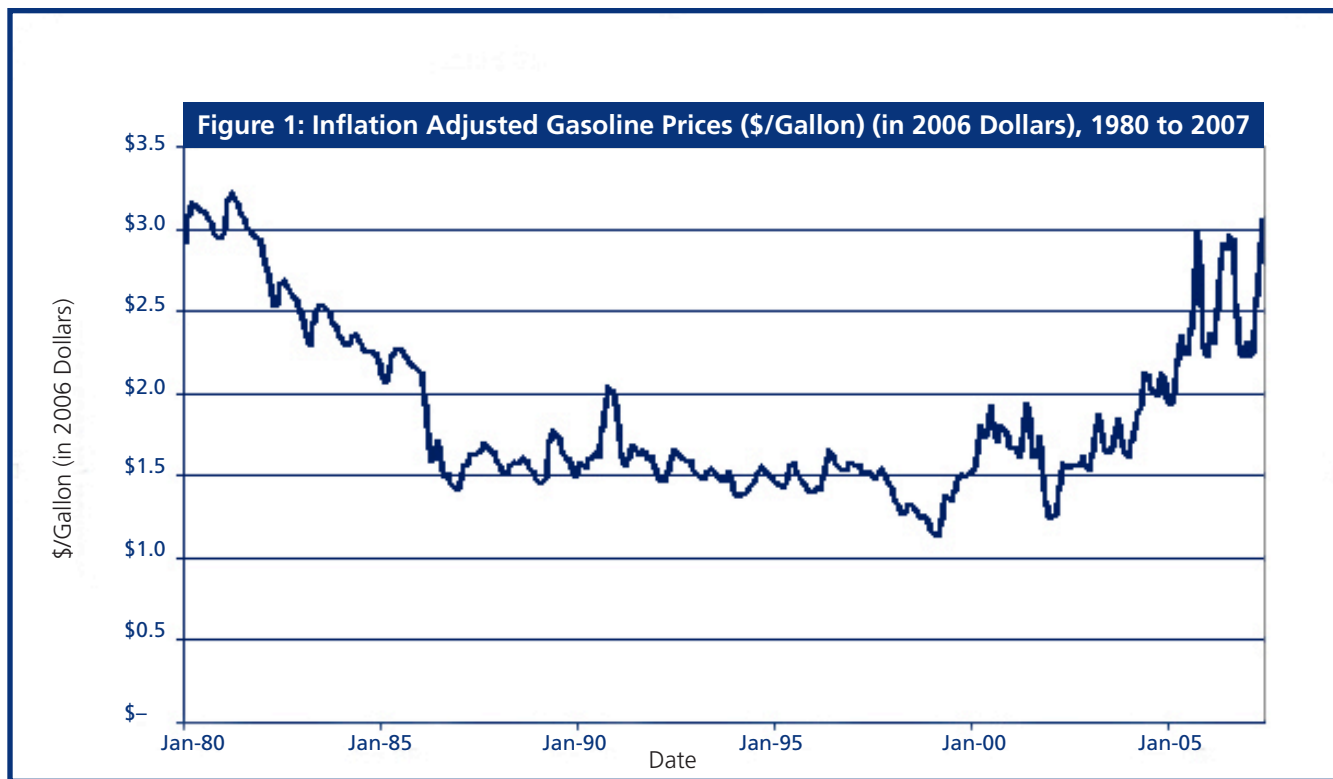
This sharp increase is nothing new. Since March 2001, when the current business cycle began, gas prices have been climbing steadily amid volatile price swings. In inflation-adjusted, or real terms, gas prices in mid-May 2007 were the highest since June 1981.

Rising yet highly volatile gas prices make it difficult for anyone—whether an economist or a typical American driver—to predict where gas prices will be in the future. That makes it even harder to budget commuting expenses for the year, plan a summer vacation, or even guess how much money will need to put on your credit card next week. Now, as gas prices surge again, families will have to make ad hoc adjustments. They may drive less, taking fewer trips, particularly for vacations; spend less on other items, such as going out in the evening; and save less money.

Indeed, there are indications that the effects of sharp and unexpected increases in gas prices are now spilling over into the rest of the economy as consumers adjust to higher prices and higher volatility by reining in spending on other goods and services. According to BIGresearch's April Consumer Intentions and Actions Survey, uncertainty over the recent unpredictable nature of gas prices is causing consumers to drive less, cut back on vacation travel, and feel more anxious about the economy overall.¹

Getting to work becomes a bigger burden

Beginning with the morning and evening commute. People need to get to work, and for most Americans, this means driving. Census Bureau data show that 79.3 percent of workers drive themselves to work.² Since most workers cannot switch jobs or buy a new, more fuel-efficient car in the space of a few weeks just to handle a spike in gas prices, a price surge will quickly take a bite out of their wallets as the commute suddenly becomes far more expensive than expected. And that's exactly what's happening—since December 2006, the national average price for a gallon of regular gasoline rose (in 2006 dollars) by \$0.74 (see Figure 1, on page 2)



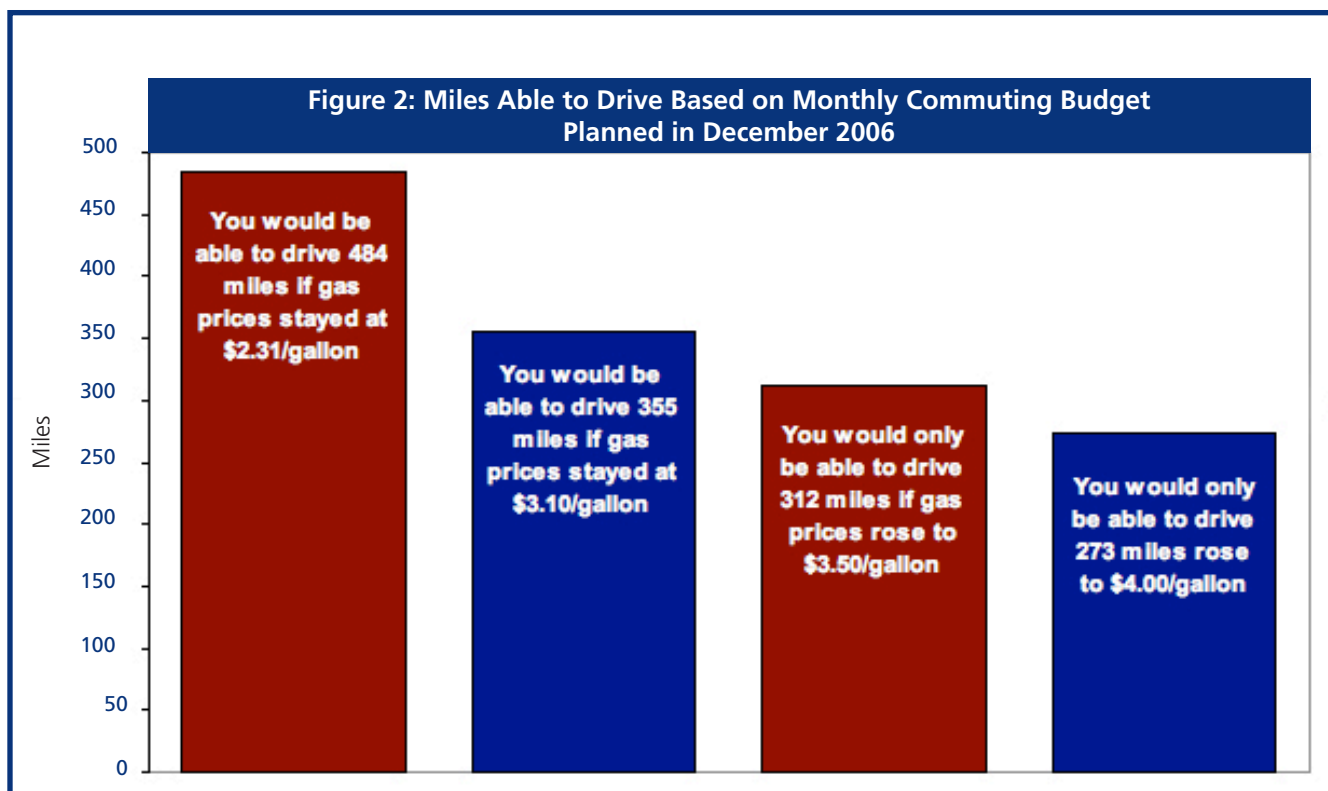
Notes: Source is Energy Information Administration, Department of Energy, 2007, Short-Term Energy Outlook, Washington, D.C.: EIA. Consumer Price Index for April is EIA forecasts. Gasoline price for May is for second Monday in May.

To see how the rapid increase in gasoline prices may have affected the typical worker's commute, consider the following figures. According to the most recent data available, the average fuel efficiency of passenger cars driven in America is 22.9 miles per gallon.³ Data from the Census Bureau show that the median distance from home to work is 11 miles.⁴ Assuming the typical worker drives 484 miles to and from work over the course of a month,⁵ this commute cost \$48.83 in December 2006.

Assuming this \$48.83 is the monthly amount a worker budgeted for commuting expenditures at the beginning of 2007, then it is reasonable to assume that a typical worker will have to cut other expenditures or dip into savings to cover the increasing cost of commuting 484 miles a month to and from work. At the average price of \$3.10 per gallon recorded in early May, this point would have come at 355 miles (see Figure 2, below).⁶

The upshot: A typical worker could afford only three quarters of that monthly commute on the money budgeted for the drive at the beginning of this year. On the 16th work day, a full week before the end of the month, workers would have to pay for the commute by dipping into their savings or cutting out other expenditures.

Such a development is a real wage loss for American workers. But this may not be the end of it since the current surge in gasoline prices has already been larger than expected. The U.S. Energy Information Administration last month warned that national gasoline prices will hover around \$3.00 on average over the summer of 2007.⁷ Yet May's prices have already surpassed this prediction, and Energy Secretary Samuel Bodman recently speculated that gasoline prices may hit record highs this summer,⁸ an expectation shared by most Americans. In a CNN poll in early May, 79 percent of respondents said they are either "very likely" or "somewhat likely" to pay over \$4 a gallon this year.⁹



Notes: Authors' calculations based on U.S. Department of Transportation (2007), Census Bureau (2005), and BLS (2007). Calculations are based on inflation-adjusted gasoline prices.

If gasoline prices rose to \$3.50 per gallon or even \$4.00 dollars per gallon, the distance that workers could drive on the money they had budgeted at the beginning of this year would fall even further short of expectations. If gas prices increase to \$3.50 per gallon by August, then the typical commuter would be able to drive only 312 miles, or 64.6 percent of that monthly commute, before running out of budgeted gas funds. If prices were to hit \$4.00 per gallon by August, then that monthly commuting budget would only cover 273 miles, or just under 55 percent of the month's distance. People would have to start making cuts elsewhere, perhaps in their summer vacation driving plans.

Bump in the road on the summer vacation drive

Summer family vacations are an American tradition; summer road trips a classic American experience. In a nation as vast and geographically diverse as the

United States, families frequently hop in the car to go to parks, beaches, forests, or mountains. These family vacations require a good amount of planning, and the vacation budget is no exception. Volatile gas prices, however, can throw families a curve ball.

If at the end of 2006 a family began to plan its vacation for the upcoming summer based on gas prices prevailing in December, then that family would be in for an unpleasant surprise this May. Table 1 below lists seven hypothetical summer vacations and how far a budget based on December 2006 gas prices would take them at gas prices in May, or if gas prices went up to \$3.50 or \$4.00 per gallon this August. At \$3.50 per gallon, for instance, a family leaving from Chicago would not make it to Nashville. They would only make it as far as eastern Kentucky on the money originally set aside for the drive.

Of course, a family traveling from Chicago to Nashville on vacation would not pull over between Upton

Table 1: Effects of Gas Price Increases on Family Vacations

	If gas prices stayed at \$3.10/gal, you would "run out" of gas...	If gas prices rose to \$3.50/gal, you would "run out" of gas...	If gas prices rose to \$4.00/gal, you would "run out" of gas...
Chicago, IL → Nashville, TN (473 miles)	...between Upton and Bonnieville, KY (after driving 358 miles)	...near Brooks, KY (after driving 316 miles)	...between Henryville and Memphis, IN (after driving 279 miles)
New York, NY → Outer Banks, NC (436 miles)	...in the middle of the Chesapeake Bay Bridge Tunnel (after driving 355 miles)	...near Keller, VA (after driving 292 miles)	...near St. James, MD (after driving 257 miles)
Boston, MA → Washington, DC (442 miles)	...near Wilmington, DE (after driving 334 miles)	...near Moorestown, NJ (after driving 296 miles)	...just past Hightstown, NJ (after driving 261 miles)
Baltimore, MD → Myrtle Beach, SC (470 miles)	...near Fayetteville, NC (after driving 355 miles)	...near Selma, NC (after driving 314 miles)	...near Rocky Mt., NC (after driving 278 miles)
Los Angeles, CA → Lake Tahoe (airport) (480 miles)	...near Hood, CA (after driving 363 miles)	...near Tracy, CA (after driving 321 miles)	...near Gustine, CA (after driving 283 miles)
Detroit → Michigan's Upper Peninsula (Marquette, MI) (458 miles)	...between St. Ignace and Newberry, MI (after driving 346 miles)	...near Moran, MI (after driving 306 miles)	...between Indian River and Hebron, MI (after driving 270 miles)
Atlanta, GA → Tampa, FL (456 miles)	...near Reddick, FL (after driving 344 miles)	...between Lake City and Alachua, FL (after driving 305 miles)	...between Jasper and White Springs, FL (after driving 269 miles)

Notes: Authors' calculations based on U.S. Department of Transportation (2007), BLS (2007), and <http://maps.google.com/>. All calculations are based on inflation-adjusted gasoline prices (in 2006 dollars).

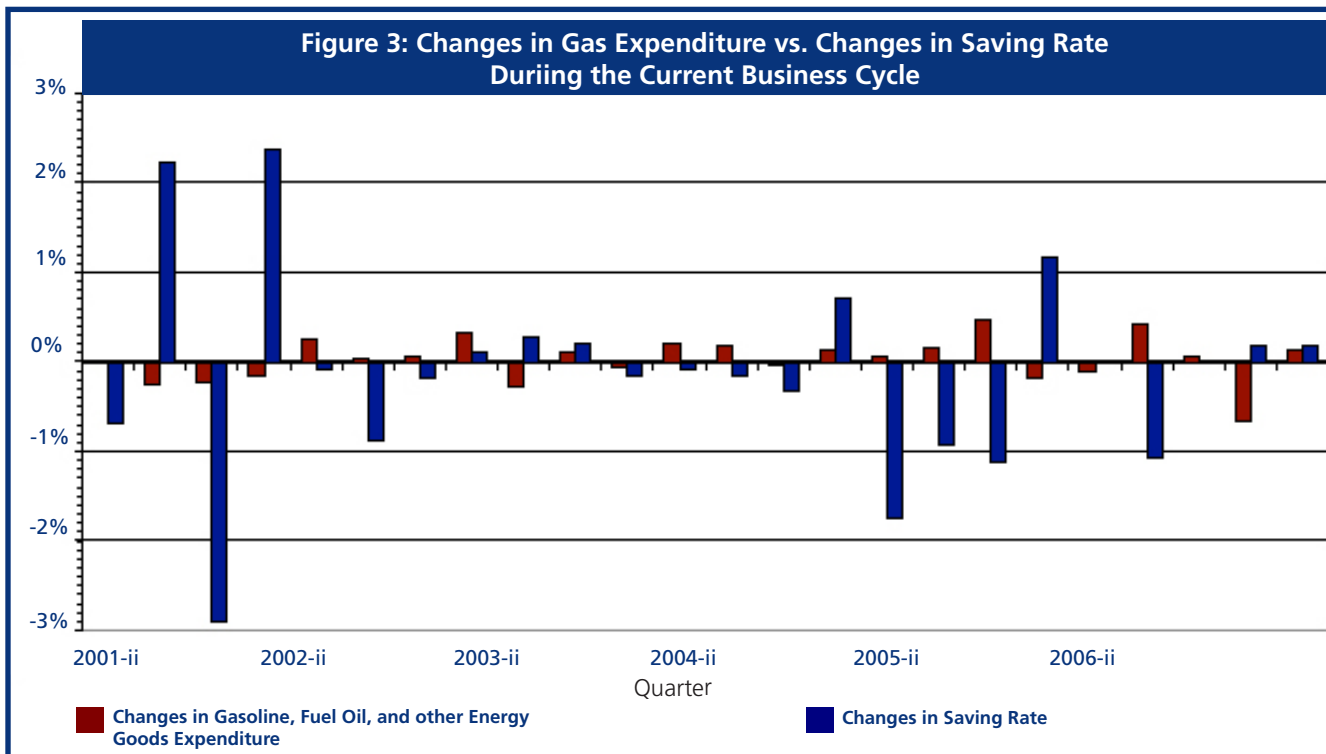
and Bonnierville, Kentucky once the gas money the family had budgeted for the trip in December runs out. But the family would need to adjust its spending in some way, perhaps by shaving a day or two off the trip or instead dipping into savings or other funds to cover the added cost of gasoline. Alternatively, the family might decide to cut its spending elsewhere, perhaps on other consumer items, or even change its vacation destination at the last moment. According to a recent USA TODAY analysis of federal highway data, American drivers are driving substantially fewer miles for the first time in 26 years. Gas prices are clearly one factor contributing to this decline. It remains to be seen whether consumers are willing to ride out this summer's gas prices or if they are no longer willing to cut back in other areas to keep on driving.

Volatile gas prices mean fewer household saving and expenditures

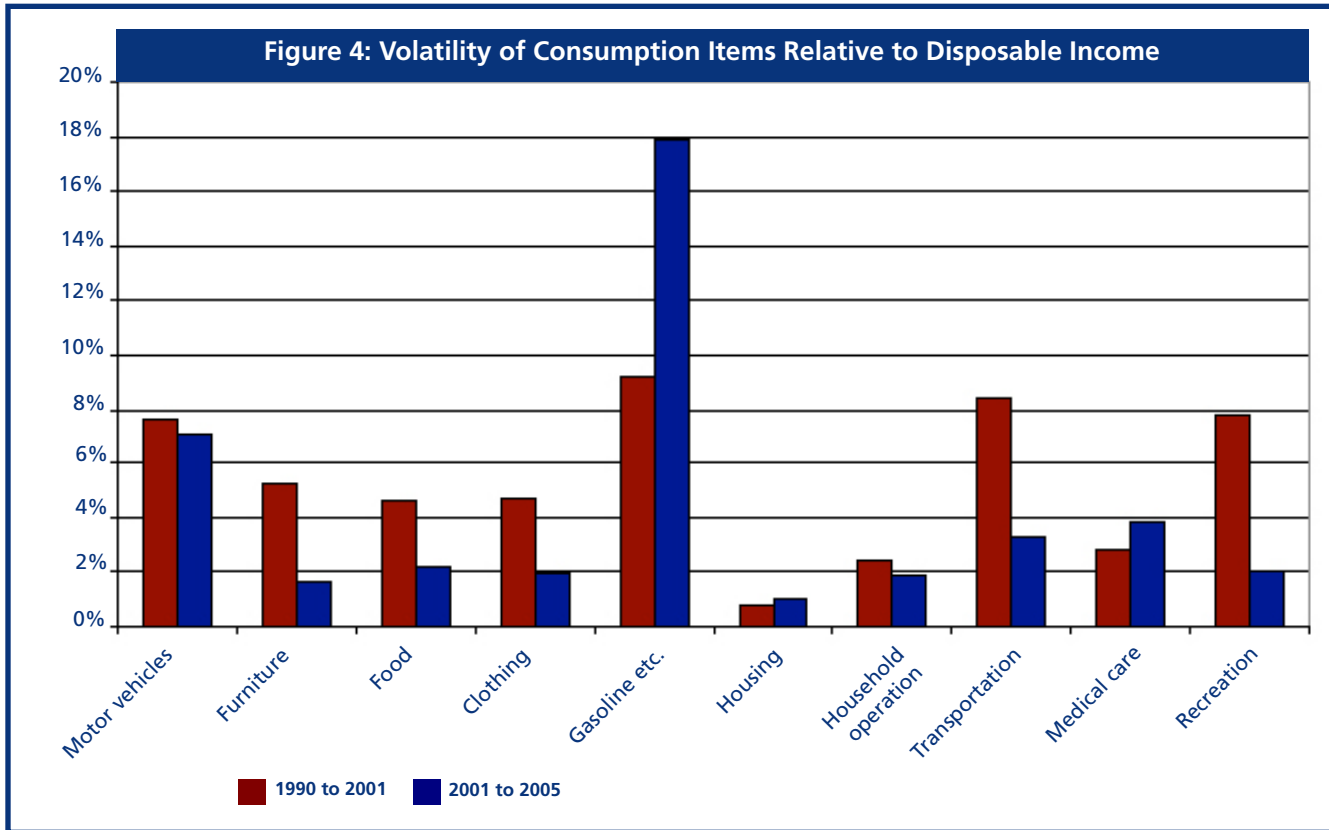
Despite relatively high gas prices last summer, families overwhelmingly chose to spend the extra money

rather than give up their vacation plans.¹¹ The added funds necessary to pay for this price spike need to come out of other spending or people's saving. In the past, jumps in gas prices have occurred hand in hand with dips in consumer spending on other items.¹²

In addition, the personal saving rate (although influenced by many factors) seems to move with gasoline expenditures. Specifically, since 2001—when the current business cycle began—household gasoline expenditures and personal saving rates tended to move in opposite directions. When families were forced to spend more to fill up their gas tank, they often put less money in the bank (see Figure 3, below). In 15 out of 24 quarters, or 63 percent of the time between the second quarter of 2001 and the first quarter of 2007, saving relative to disposable income changed in the opposite direction as gasoline expenditures relative to disposable income. That means during almost two-thirds of this business cycle, larger gasoline expenditures went along with lower personal saving rates, which are already dangerously low.



Notes: Authors' calculations based on BEA (2007). Calculations are based on inflation-adjusted gasoline prices



Notes: Volatility is measured as standard deviation relative to the average for each series during the respective time period. Authors' calculations based on BEA (2007).

Rising gasoline prices can clearly wreak havoc on family finances, but adding to the confusion is the high volatility of gas prices. Volatility makes it difficult to plan for the future; extreme volatility even more so. And that trend has also plagued consumers for the past six years.

Even in the 1990s, when gasoline prices swung less wildly than they have since 2001, the volatility in gasoline expenditures was greater than for any of the other top ten consumption items (see Figure 4, above). Since March 2001, however, this volatility has surged in line with large swings of gasoline prices. The typical expenditure swing for gasoline purchases between June 2001 and March 2007 equaled

17.9 percent of the average, or two and a half times the ratio of the next most volatile item, cars.

In fact, gasoline prices have been more volatile than stock prices—even though the stock market underwent one of its largest corrections in history during the business cycle that began in March 2001. Table 2 below lists the frequency of increases and decreases in gas prices and the stock market that were greater than 10 percent, greater than 15 percent, and greater than 20 percent over six-month periods. Gas prices experienced significantly more increases and decreases than stock prices. From March 2001 to April 2007, gas prices saw 28 increases and 12 decreases that were greater than 10 percent over a six-month period, while stocks only experienced 13 increases and 11 decreases of similar magnitudes.

Table 2: Frequency of Gas Price and Stock Increases and Decreases During the Current Business Cycle, Over Six-Month Periods

> 10% Increase		> 10% Decrease		> 15% Increase		> 15% Decrease		> 20% Increase		> 20% Decrease	
Gas	Stock	Gas	Stock	Gas	Stock	Gas	Stock	Gas	Stock	Gas	Stock
28	13	12	11	20	3	12	5	17	0	7	1

Authors' calculations based on BEA (2007) and Yahoo!Finance (2007).

When comparing the volatility of gas prices to the volatility of stocks over three-month periods, it becomes even more apparent that gas prices experience more ups and downs than the rollercoaster ride on Wall Street. Table 3 below lists the frequency of increases and decreases in gas prices and the stock market that were greater than 10 percent, greater

than 15 percent, and greater than 20 percent over three-month periods. Gas prices experienced significantly more increases and decreases across the board. Since March 2001, gas prices underwent 26 increases and 11 decreases that were greater than 10 percent over a three-month period, while stocks only experienced four increases and seven decreases of similar magnitudes.¹³

Table 3: Frequency of Gas Price and Stock Increases and Decreases During the Current Business Cycle, Over Three-Month Periods

> 10% Increase		> 10% Decrease		> 15% Increase		> 15% Decrease		> 20% Increase		> 20% Decrease	
Gas	Stock	Gas	Stock	Gas	Stock	Gas	Stock	Gas	Stock	Gas	Stock
26	4	11	7	16	0	7	2	9	0	4	0

Authors' calculations based on BEA (2007) and Yahoo!Finance (2007).

Since March 2007, gas prices have experienced an average change equal to 27 percent of the average gas price while the stock market has seen an average change of only 14 percent of the average stock price.

Conclusion

Gasoline prices at the pump are wreaking havoc on household finances. Rising yet volatile gasoline prices at the pump leave Americans today paying more for gas than at any time in the past quarter century—and leaving families unable to accurately plan their weekly, monthly, and yearly expenditures. As commutes and other drives remain fairly constant, families have to adjust to large price swings at the gas station by buying fewer other items or by dipping into their savings. More stable gasoline prices would make it easier for families to plan their daily lives and expenditures and maintain savings. They would also likely contribute to greater economic security for American families.

Endnotes

- 1 See BIGResearch (2007) for details.
- 2 See U.S. Census Bureau (2005) for details.
- 3 See U.S. Department of Transportation (2007) for details.
- 4 See U.S. Census Bureau (2005) for details.
- 5 We assume an average of 22 work days in a given month.
- 6 We allow for price increases in line with overall inflation.
- 7 Ivey (2007); This predicted level does not include disruptions in oil supply from unstable regimes.
- 8 Bloomberg News (2007)
- 9 CNNMoney (2007).
- 10 See Overberg et al. (2007) for details.
- 11 See Ivey (2007) for details.
- 12 See Ivey (2007) for details.
- 13 The standard deviation of stock prices for the period from March 2001 to April 2007 was equal to 14 percent of the average stock price, while the same ratio for gasoline prices was 27 percent. In other words, gasoline prices were almost twice as volatile as stock prices during a period when the stock market underwent one of its largest corrections in history.

References

BIGresearch, LLC. Gas Price Volatility Puts Halt to Consumer Confidence: BIGresearch's Monthly Survey Identifies Key Drivers of Consumer Confidence (May 14, 2007), available at <http://www.bigresearch.com/>.

BIGresearch, LLC. BIGresearch's May Survey: Consumers Expect Further Gas Price Hikes and Confidence Drops (May 14, 2007), available at <http://www.bigresearch.com/>.

Bureau of Economic Analysis, U.S. Department of Commerce, National Income and Product Accounts Table, Table 2.1: Personal Income and Its Disposition (2007), available at <http://www.bea.gov/national/nipaweb/TableView.asp#Mid>. Billions of dollars; seasonally adjusted at annual rates.

Bureau of Labor Statistics, Consumer Price Index (2007).

"Energy Dept. chief says gas prices may hit record," Bloomberg News, April 19, 2007.

Ivey, Mike. "Pinched at the pump: Consumers feel sting of skyrocketing gas prices." The Capital Times, May 16, 2007, available at <http://www.madison.com/tct/mad/topstories/134565>.

Overberg, Paul and Larry Copeland. "Drivers cut back – a first in 26 years," USA TODAY, May 18, 2007, at A1.

"Poll: Most Americans expect \$4 gasoline: Almost 80 percent think they will pay that much at the pump this year, and they think it's 'unreasonable,'" CNNMoney, May 7, 2007.

"S&P 500 INDEX,RTH (^GSPC)," Yahoo!Finance Historical Prices, Monthly, January 1980 – May 2007, available at <http://finance.yahoo.com/q/hp?s=%5EGSPC>.

U.S. Census, American Housing Survey for the United States, Table 2-24: Journey to Work-Occupied Units (2005), available at <http://www.census.gov/hhes/www/housing/ahs/ahs05/ahs05.html>. Numbers in thousands; weighting consistent with Census 2000.

U.S. Department of Transportation, Bureau of Transportation Statistics, Table E-9 Average Fuel Efficiency of U.S. Passenger Cars and Light Trucks: 1995-2005, available at http://www.bts.gov/publications/transportation_statistics_annual_report/2006/html/chapter_02/table_e_09.html.

U.S. Department of Transportation, Energy Information Administration, Projected Summer Gasoline Prices Are Near Last Summer's Level (April 10, 2007), available at <http://www.eia.doe.gov/ncic/press/press281.html>.

About the Authors

Amanda Logan is the Special Assistant for Economic Policy at the Center for American Progress. Logan graduated summa cum laude from Moravian College in 2006 with a bachelor's degree in economics and political science.

Dr. Christian E. Weller is a Senior Fellow at the Center for American Progress. His expertise is in the area of retirement income security, macroeconomics, and international finance. Prior to joining the Center, he was on the research staff at the Economic Policy Institute, where he remains a research associate. Weller has also worked at the Center for European Integration Studies at the University of Bonn in Germany, under the Department of Public Policy of the AFL-CIO in Washington, D.C., and in banking in Germany, Belgium, and Poland. Weller is a respected academic with close to 100 publications in academic and popular publications. He holds a Ph.D. in economics from the University of Massachusetts at Amherst.

Center for American Progress



ABOUT THE CENTER FOR AMERICAN PROGRESS

The Center for American Progress is a nonpartisan research and educational institute dedicated to promoting a strong, just and free America that ensures opportunity for all. We believe that Americans are bound together by a common commitment to these values and we aspire to ensure that our national policies reflect these values. We work to find progressive and pragmatic solutions to significant domestic and international problems and develop policy proposals that foster a government that is “of the people, by the people, and for the people.”

Center for American Progress
1333 H Street, NW, 10th Floor
Washington, DC 20005
Tel: 202.682.1611 • Fax: 202.682.1867
www.americanprogress.org