Notes at the Margin

Philip K. Verleger, Jr. **Volume XVIII, No. 1** **January 6, 2014**

In Praise of Futures Markets

The New York Times and other publications have marked Gary Gensler's departure from the Commodity Futures Trading Commission with long, convoluted articles praising his tenure there. Under his "leadership," the Commission has moved aggressively to limit speculator participation in commodity markets. The *Times* writers welcomed and supported this effort. At the same time, they stigmatized those who take issue with it. In a December 31 article, the paper directly attacked two academics and others who criticized Gensler's actions. One paragraph summarized the author's view:

> The efforts by the financial players, the interviews show, are part of a sweeping campaign to beat back regulation and shape policies that affect the prices that people around the world pay for essentials like food, fuel and cotton.[1]

The article masquerades as investigative journalism. In it, *Times* writer David Kocieniewski examines the work of Craig Pirrong and Scott Irwin as a way to lambast the financial community's efforts to moderate the impact of Dodd-Frank regulation on markets. The author most likely took this approach as a way to obtain information from academic institutions using the Freedom of Information Act that he could not obtain directly from the financial community. The author focuses on Pirrong and Irwin because of their prominence in commodity research and their association with and paid support of organizations opposing constraints on commodity trading. As Kocieniewski explains,

> interviews with dozens of academics and traders, and a review of hundreds of emails and other documents involving two highly visible professors in the commodities field — Mr. Pirrong and Professor Scott H. Irwin at the University of Illinois — show how major players on Wall Street and elsewhere have been aggressive in underwriting and promoting academic work.

These academics have fallen victim to the reporter's stilted attempt to defend Gensler's record. They are ground under the *Times*' wheels in a last-ditch effort to achieve the impossible: make the former CFTC chairman's policies and initiatives appear successful. In a further effort to defend the undefendable, the top sixteen comments selected by the editors from the four hundred forty responses submitted by readers all support the *Times* view.

Unfortunately, the *Times* and the ill-informed author will be proven wrong. Gensler's stint at the Commission was a disaster. Consumers will pay dearly in the future if the rules and regulations enacted at his behest are not reversed. With the possible exception of Herbert Hoover's Secretary

[1] David Kocieniewski, "Academics Who Defend Wall St. Reap Reward," *The New York Times*, December 27, 2013 [http://goo.gl/iI2vp8].

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of Treasury Andrew Mellon, who advocated liquidating everything in 1933—labor, capital, everything—to deal with the Great Depression, we cannot think of any government official whose actions could do more damage to the US and global economies than Gensler's.

Here is why.

The Great Success of Futures Markets

Consumers paid $3.30 per gallon on average for gasoline during the first week of January 2014.[2] Had oil futures not been introduced in 1986 and become so successful, consumers likely would have paid $5 or more.

New York customers paid $19.67 per million cubic feet for natural gas purchased in September 2013. Had natural gas futures not been created at the end of the 1980s, these buyers could easily have spent $25 per mcf for that gas.

The nation's consumers paid approximately $650 billion for energy ($375 billion for gasoline and $275 billion for natural gas and electricity) in 2013. Had oil and gas futures trading not existed, expenditures would have likely surpassed $1 trillion. Had nothing else changed, consumers would have spent almost nine percent of income on energy rather than less than six percent. Of course, other things would have changed. Economic activity would have been lower had energy prices been higher.

(Economic research shows a negative relationship between higher energy prices and real GDP. The linkage is so obvious that the average person on the street, the one suffering the financial consequences, might ask why economists even bother with such studies.)

The United States' lower energy prices have resulted from the achievements of US enterprises exploring for oil and gas. As noted in last week's report, US production has surprised forecasters. Comparing the Energy Information Administration's most recent projection with past forecasts makes this clear. We repeat Figures 1 and 2 (page 3) from the December 23, 2013 *Notes at the Margin*. These graphs trace the evolution of EIA's view of the future. Its 2005 forecast projected 2013 liquids output at 7.7 million barrels per day. The forecast issued in December 2013 puts that volume at 10.2 million barrels per day, a whopping 2.5 million barrels per day increase.

The natural gas story is the same. The 2005 EIA forecast put 2013 output at twenty-one trillion cubic feet. The most recent prediction is 24.1 trillion cubic feet, fifteen percent more than the 2005 projected level.

The higher crude and natural gas output puts downward pressure on prices. As Jim Hamilton has noted in his often-cited Econbrowser blog, world oil production would have been much lower absent these developments.[3] He is correct on this and, even though I am not a fan of his oil market analysis[4], I must give him credit here. I also will now break a longstanding self-imposed prohibition and, as Hamilton does often, cite my own papers. One of these proved to be very wrong.

[2] AAA Daily Fuel Gauge Report [http://goo.gl/Tml6Hp].

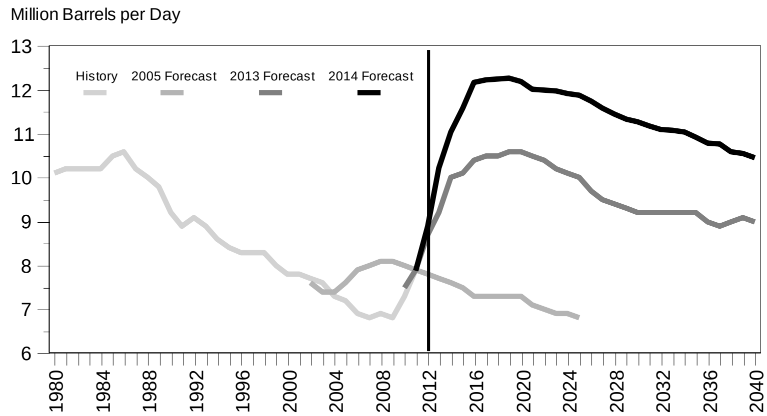
[3] See "US Tight Oil Production Surging," Econbrowser, December 22, 2013 [http://goo.gl/uJMlfc].

[4] Hamilton does not understand the complicated details of oil markets and bullheadedly pushes extraordinarily simple—and wrong—explanations for their behavior.

In fall 2006, I warned that environmental regulations restricting the sulfur content of diesel fuel imposed hastily by the Europeans would likely drive crude prices over $100 per barrel by forcing refiners to shift to light sweet crudes, which were in limited supply.[5] The article's title was "Hundred Dollar Oil, Five Percent Inflation, and the Coming Recession." I got it right for the right reasons.

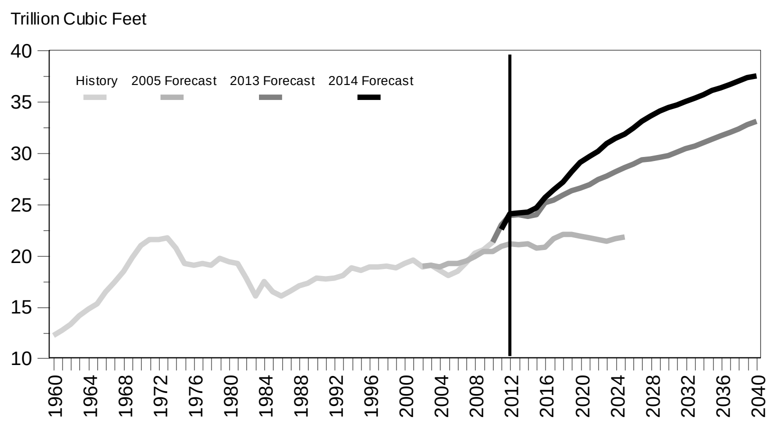
In late 2007, I testified before a Senate committee on rising oil prices, explaining again that the EU regulations had created artificial demand for light sweet crude that would push prices up. I added that the Department of Energy was idiotically boosting the price increase by sequestering sweet crude supplies for the Strategic Petroleum Reserve.[6] Again, I was correct. Again, my views were ignored.

Figure 1
US Crude Oil and NGL Production History, 1980-2012, and EIA's 2005, 2013, and 2014 Forecasts



Source: US EIA Annual Energy Outlooks.

Figure 2
US Natural Gas Production History, 1960-2012, and EIA's 2005, 2013, and 2014 Forecasts



Source: US EIA Annual Energy Outlooks.

In summer 2009, I testified to the CFTC that the crude price rise to $150 per barrel had been caused by environmental regulations, not speculation. My testimony, although correct, was disregarded.[7]

In summer 2009, I warned that crude prices could rise to $200. The article,

[5] Philip K. Verleger, Jr., "Hundred Dollar Oil, Five Percent Inflation, and the Coming Recession, *The International Economy*, Winter 2006, pp. 16-19, 58-63 [http://goo.gl/Fz56AI].
[6] See "Prepared Testimony of Philip K. Verleger, Jr.," December 11, 2007 [http://goo.gl/N7WqKG].

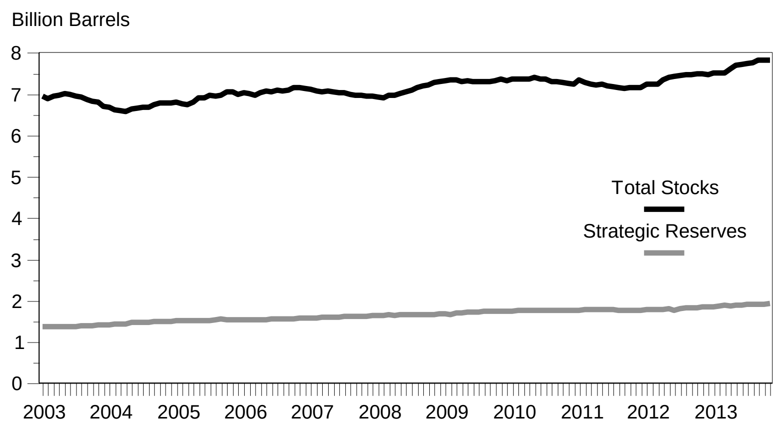
[7] See "Prepared Testimony of Philip K. Verleger, Jr. to the US Commodity Futures Trading Commission on the Role of Speculators in Setting the Price of Oil," August 5, 2009 [http://goo.gl/L7iV52].

"The Global Economy's Soft Underbelly," was subtitled "How Sweet Crude Could Rise to $200 per Barrel, Dooming the Recovery."[8] Here I was wrong. At that time I had not yet grasped the magnitude of fracking's success.

My failure to anticipate fracking's impact led to the error in my forecast. Prices likely would have risen to $200 had US production not increased, especially if additional ethanol supplies had not been forced into the market through President Bush's renewable fuels program. This can be best illustrated by examining the impact on global balances using an approach I introduced in the September 9 *Notes at the Margin*. In that issue, I criticized the IEA and energy policy officials for sterilizing oil through strategic stock additions.[9] I noted that strategic stocks account for a significant portion of global inventory holdings. I also noted that days of coverage of commercial stocks (commercial inventories divided by consumption) were closely related to the Dated Brent price. Finally, I showed that the days of coverage of commercial stocks would have been much lower absent the US renewable fuels program.

Here I repeat the exercise with a twist. My purpose is to show the likely level of commercial stocks had fracking not taken off as it has. I then show that Brent might have achieved my $200 target under such circumstances. Later I will argue that futures markets made the success of fracking possible (hence the title "In Praise of Futures Markets"). I conclude by asserting that the fracking explosion would never have occurred had Gensler's position limits been in effect in 2008. This explains my disdain for the former chairman and *The New York Times*.

Figure 3
Monthly Global Commercial and Strategic Inventories of Crude Oil and Products, 2003-2013



Source: EIG.

Global Inventories: Strategic and Commercial

Figure 3 above tracks global inventory levels divided into "strategic" and "commercial" stocks using the Energy Intelligence Group inventory data published each

[8] Verleger, "The Global Recovery's Soft Underbelly," *The International Economy*, Summer 2009, pp. 28-30 [http://goo.gl/Jz0ieS].
[9] Philip K. Verleger, Jr., "Strategic Stocks: The Best Defender of High Prices and the IEA as a Cause of Recessions," *Notes at the Margin*, September 9, 2013 [http://goo.gl/WJ1ncj].

month in *Oil Market Intelligence*.[10] Strategic stocks account for twenty-one percent of global inventories. These holdings are sterilized. Consuming-nation governments rarely release them. Furthermore, as we saw in 2011, international energy agencies are really "the gang that cannot shoot straight." In June of that year, the IEA orchestrated a coordinated strategic stock draw in response to Libya's production collapse. The action had no impact on prices because it was so poorly managed.

Today one must view strategic inventories as contaminated and unusable. They have no market influence.

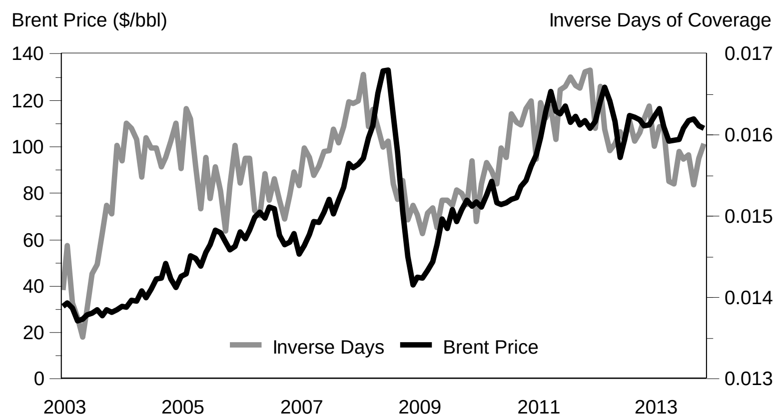
Commercial stocks, in contrast, are important. Their location affects prices. As Figure 4 shows, a direct correlation exists between the movement of Brent prices and days of coverage of commercial stocks. Prices tend to fall as coverage rises and rise when coverage falls.

Fracking's Price Impact

Suppose US firms had not succeeded in boosting production. I call this the "but for" case. Figure 5 (page 6) tracks the oil production trend that would have occurred if fracking had not succeeded. The graph shows monthly actual crude oil output volumes and the volumes we estimate would have occurred with no fracking.

In the latter case, US production would have been at least 1.8 and possibly 2.5 million barrels per day lower than actual output. In my view, global production would also be lower by an equal amount. I make this assertion because disruptions within OPEC nations have essentially eliminated all surplus productive capacity in oil-exporting countries. In September, the EIA issued a report noting that more than three million barrels per day of global production capacity were shut and had been shut for almost three years. These closings contributed to higher prices.[11]

Figure 4
Inverse Days of Coverage of Commercial Stocks vs. Dated Brent Prices, 2003-2013



Source: PKVerleger LLC.

Based on this analysis, in Figure 6 (page 6) I track global commercial stocks from 2011 as published by EIG and as they might have been sans US fracking. In projecting stocks, I assume increased production from other sources would have been available until January 2011 when Libyan

[10] This publication has evolved over the years. The efforts of my former student David Knapp have continually improved the data.

[11] US EIA, "Global Crude Oil Supply Disruptions and Strong Demand Support High Oil Prices," September 10, 2013 [http://goo.gl/4ptZ11].

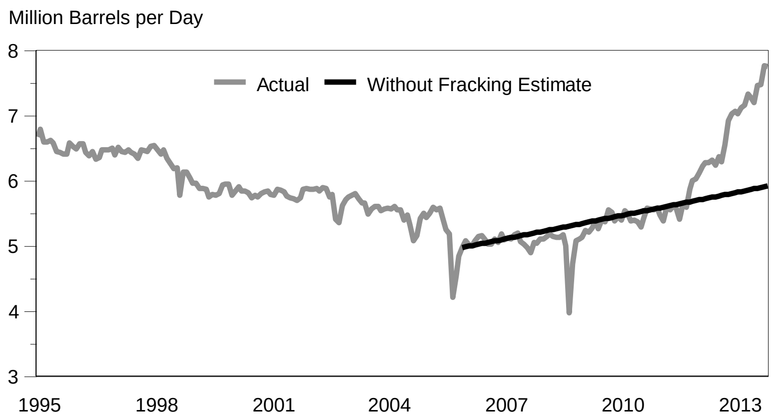
output collapsed. Fracking's impact did not begin to appear until October of that year.

Figure 7 (page 7) shows my "but for" crude price calculation. I developed this using the inverse of commercial days of supply calculated from Figure 4, assuming no incremental US production from fracking. As the graph illustrates, days of supply would have been far lower than what actually occurred. Indeed, stocks would have fallen to the low levels last seen when prices peaked in 2008. Prices accordingly would have been much higher.

The analysis suggests that Dated Brent today would trade for $250 per barrel or more in the absence of a recession (which would have occurred had prices increased) or a strategic stock release. Since government officials managing global strategic reserves, particularly those of the International Energy Agency and the US Department of Energy, have demonstrated zero competence for the last forty years, I rule the second possibility out. Only an economic slump would have held oil prices down.

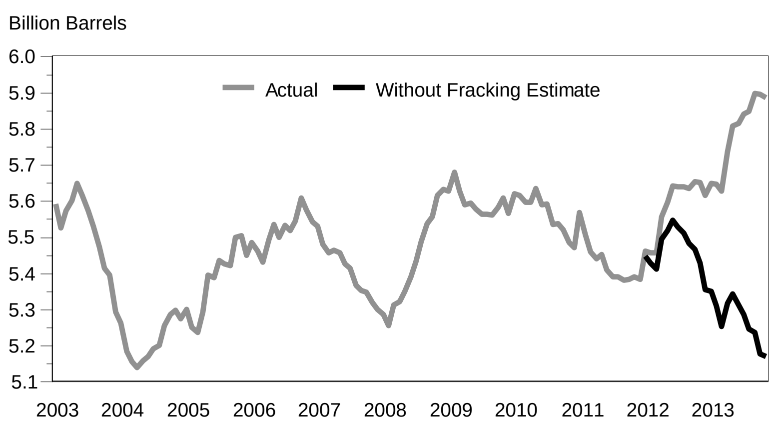
The conclusion, then, as Professor Hamilton suggests, is that US fracking has saved the world from a major recession.

Figure 5
Actual US Monthly Crude Oil Production vs. Levels that Would Likely Occur without Fracking, 1995-2013



Source: US EIA; PKVerleger LLC.

Figure 6
Actual Global Monthly Crude Oil Stocks vs. Levels that Would Likely Occur without Fracking, 2003-2013



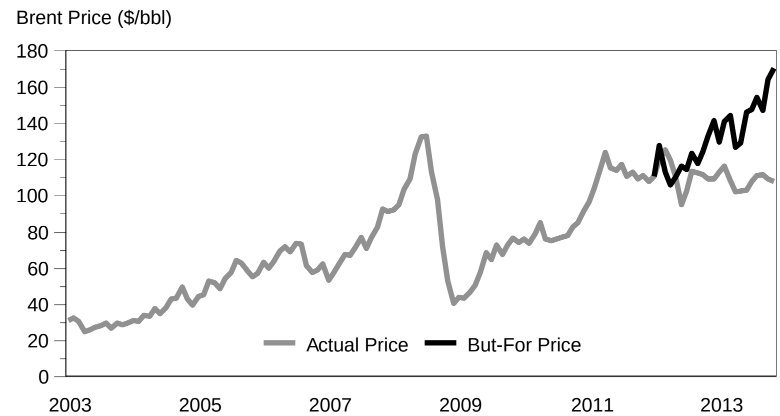
Source: US EIA; PKVerleger LLC.

Futures and Fracking

The American Petroleum Institute would like the public to think the fracking revolution was planned. Rod Cavaney, the API's president, wants everyone to believe that Exxon (which has seen its enterprise value cut in half by fracking) and other large companies made it happen. This is fiction.

Fracking's success—and the destruction of the shareholder value of integrated companies—stems directly from the work of independent producers who refused to view the US as an exhausted oil and gas province. Gregory Zuckerman's excellent *The Frackers*[12] traces the history of their efforts. The US energy sector would not be enjoying the current boom without the determination of individuals like Harold Hamm and Mark Papa.

Figure 7
Dated Brent Price as Reported and in "But-For" Case, 2003-2013



Source: PKVerleger LLC.

Missing from Zuckerman's book, though, is an explanation of the role played by futures markets. Hamm's Continental Oil and Papa's EOG Resources have profited because they hedged. A cursory comparison of their financial statements for 2010 and 2012 shows the companies tripled oil production over that period. Both companies also seem to have hedged almost all of their output. The same is probably true for the other enterprises contributing to the surge in US supply.

The hedging activity was likely required by the financial institutions lending to these firms. Banks—the organizations so roundly criticized by *The New York Times*—prefer not to take risks. They like to lend to individuals and firms with proven track records, that is, those who can repay loans regardless of developments in commodity markets. Lenders clearly worry that prices may collapse as they did in 1986, an event that did in cities such as Midland, Texas, and banks such as Continental Illinois. By demanding hedging, loan makers protect themselves and the producers from such a calamitous occurrence. So the futures markets are directly responsible for the frackers' ongoing success, which has reduced oil prices to the benefit of American consumers but not to the extent where banks feel threatened.

The same is true for natural gas. In January 2000, *The New York Times* noted that US heating oil and natural gas prices had nearly doubled in the Northeast because of an extreme cold spell.[13] The US East Coast is experiencing similar cold this year. Consumers are not, however, being harmed economically because futures markets have assured them of increased supplies of heating oil and natural gas in most of the country. Instead, Exxon shareholders are suffering.

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[12] Gregory Zuckerman, *The Frackers* (New York: Penguin Press, 2013) [http://goo.gl/lpA0O0].

[13] Keith Bradsher, "Consumers Hit as Fuel Prices Climb Sharply," *The New York Times*, January 30, 2000 [http://goo.gl/qZ7mQ4].

This change could not have occurred had futures markets remained small, isolated platforms where producers and a few speculators traded. These markets are bilateral. There must be an incremental buyer for every additional one hundred thousand barrels of future production sold by frackers to keep forward prices from diving into backwardation and making fracking economics less attractive. Over the last few years, the buyers have come from the investment community, encouraged to participate by academics such as Scott Irwin and Craig Pirrong.

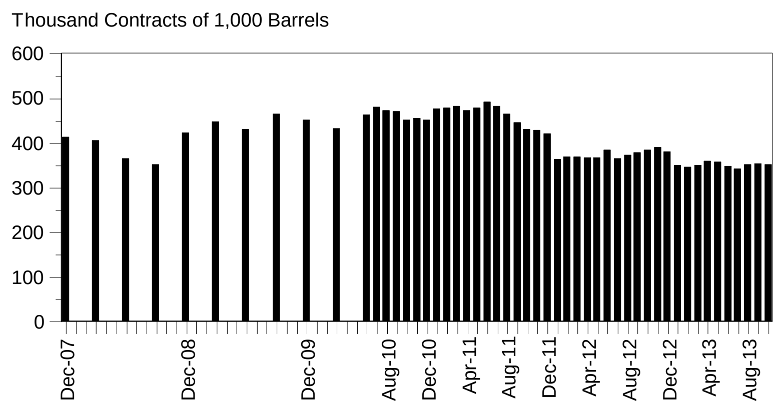
CFTC data on the position of index investors in crude oil provides an imperfect indication of this activity. Since early 2008, the CFTC has published these data. Figure 8 tracks the net long index investor position in WTI as reported by the Commission. These data are probably incomplete. Other organizations such as Barclays publish reports suggesting the long position is larger. Still, the data provide one indicator of passive investment's role in futures.

This investment occurred just as the frackers were expanding. It thus contributed directly to lower oil prices. Consumers gained enormously from the activity.

Unfortunately, *The New York Times* and Gary Gensler do not understand this. Gensler actively opposed passive investment, as this 2010 statement to Congress clearly shows:

> Over the past few years, price spikes and unprecedented volatility in the commodity markets have hurt farmers, consumers and businesses. Record-high prices have not only inflicted costs upon American consumers and businesses, but record-high volatility has impaired the ability of many farmers and other businesses to use the futures markets to manage their price risks. As Chairman, I intend to ensure that the CFTC vigorously protects the integrity of the price discovery process in the futures markets and protects the public against fraud, manipulation and other abuses. I intend to ensure the agency does all it can to prevent excessive speculation from causing an undue burden on interstate commerce.[14]

Figure 8
Net Long Position of Passive Investors in WTI Futures, 2007-2013



Note: Data were published quarterly until June 2010 and monthly thereafter.
Source: CFTC.

Gensler zealously pursued his efforts to block speculation and constrain futures markets for the last four years. Behind the scenes, he negotiated with legislators writing

[14] See "Statement of Gary Gensler, Chairman, Commodity Futures Trading Commission, before the Senate Committee on Agriculture, Nutrition, and Forestry," June 4, 2009 [http://goo.gl/EmvINO].

the Dodd-Frank financial reform to be sure the CFTC's authority to limit futures positions was in the law along with an extremely tight timeframe. Then, having succeeded in this, he insisted on the CFTC meeting the schedule he pushed Congress to adopt. In my view, this is the height of hypocrisy, given that Gensler's efforts to protect consumers from high prices will have the opposite effect. On the other hand, I must admit that really good regulators follow precisely this program: getting Congress to pass laws that force their agencies to act quickly.

Tragically, the *Times* reporters and editors have chosen not to write this story. Instead, they publish incorrect, underhanded attacks on two academics that deserve much credit for the success of futures markets and lower crude prices.

We just wonder whether Gensler's actions will be rewarded by his being named to the board of major oil producers such as Shell or ExxonMobil. It is the least they can do. Gensler did their bidding and did it well. Oil prices will be higher and consumer pain greater if his "reforms" are not undone.

Market Commentary

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