On the Eve *of* Destruction

By Philip K. Verleger, Jr.

How the Saudis are killing world oil markets.

Saudi Arabia is destroying the oil market. The policies adopted after Saudi Prince Abdulaziz bin Salman became oil minister have made it difficult financially for companies to expand oil exploration and production, which fossil fuel proponents believe we will need over the next thirty years.

A 2023 S&P Global Commodity Insights report commissioned by the International Energy Forum, a nongovernmental organization headquartered in Saudi Arabia, argues for increased investment in oil production. As the authors assert,

> *Adequate investment is needed for stable markets now and in the future. If investment falls short, it increases the risk of high prices and high volatility becoming the new standard. Underinvestment threatens to undermine energy security in the short and medium term and it can also stall progress on climate goals.*

Failure to invest sufficiently in finding and developing additional oil reserves will have a negative "knock-on" effect on the global economy, according to the S&P Global report: "At the macroeconomic level, volatile oil prices fan inflation, hinder investment, delay consumption of durable goods, reduce total economic output, dent equity returns, and entrench energy poverty."

The forecasters at the International Energy Agency doubt that the investment amounts S&P Global thinks are necessary will be

Philip K. Verleger, Jr., is president of PKVerleger LLC.

THE INTERNATIONAL ECONOMY
THE MAGAZINE OF INTERNATIONAL ECONOMIC POLICY
220 I Street, N.E., Suite 200
Washington, D.C. 20002
Phone: 202-861-0791
Fax: 202-861-0790
www.international-economy.com
editor@international-economy.com

forthcoming. While they note that companies increased capital budgets in 2023 from their 2022 and 2021 spending,

> *[U]ncertainties over longer-term demand, worries about costs, and pressure from many investors and owners to focus on returns rather than production growth mean only large Middle Eastern national oil companies are spending much more in 2023 than they did in 2022, and they are the only subset of the industry spending more than pre-pandemic levels.*

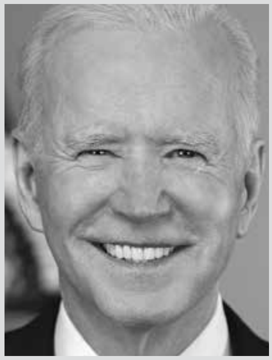
The IEA authors add that companies reinvested three out of every four cash flow dollars in finding and developing new supplies between 2010 and 2019, but today allocate more than half of their cash flow to dividends and buybacks.

The policies described below that Saudi Arabia adopted after Prince Abdulaziz became oil minister in 2019 partly explain the reluctance to invest. These actions have made it impossible for most companies to spend money safely on exploration. Unless smaller firms can find a low-risk way to hedge against the financial uncertainties linked to the Saudis' erratic market behavior, only the dominant public companies—principally the five remaining multinationals and one or two Chinese firms—will have the financial resources to continue locating and developing reserves.

Hedging, a critical insurance technique used by smaller firms, has become expensive because the Saudis now see oil futures sales, the primary way of hedging production, as a speculative activity. Thus, prudent medium-sized and even large oil producers face a hard

Today, investors in oil and gas projects must worry that oil prices, as governed by the Saudis, will make even the best projects money losers.

choice today if they want to expand their investment in exploration and production. They can eschew hedging and accept the risk of being bankrupted by price volatility, or they can pay the high costs that now come with



U.S. President
Joe Biden

Saudi Energy Minister
Prince Abdulaziz bin Salman

The price volatility created by Saudi Energy Minister Prince Abdulaziz and Crown Prince Mohammed bin Salman (and U.S. President Biden) makes it almost impossible to invest in short-term projects such as fracking. Their actions also make the oil industry unattractive to most investors unless a company promises large dividends that include a return on capital and the return of capital.

The lack of sufficient investment will likely lead to higher oil prices over the next ten years

—P. Verleger

the practice. (Note that banks or other institutions lending to oil firms to fund exploration and production require the firms to hedge.) Stuck between this rock and a hard place, many companies are avoiding risk and higher costs by returning money to investors instead of putting it into oil and gas production.

To the global market's detriment, the recent Saudi actions have boosted price volatility, which has made the kingdom and other OPEC members less-dependable suppliers of a commodity that is critical to the global economy. Indeed, current Saudi policy represents a distinct reversal of past practices. Saudi Arabia's first oil minister, Sheik Zaki Yamani, tried for years to maintain stable oil prices.

The success of Yamani's efforts is evident in the standard deviation in monthly oil prices from 1980 to when King Fahd dismissed him in 1986. This illustration begins with Figure 1, which compares the year-over-year percentage change in oil prices to the year-over-year percentage change in the U.S. Consumer Price Index from 1980 to 2023. Notice that while the oil price variations are substantial, in comparison, no movement is obvious in the CPI.

The maximum change in the CPI from the same month in the prior year is 11.79 percent, a figure recorded in January 1981, the first observation in our sample.

The maximum variation in oil prices is 245.58 percent, recorded in April 2021.

These data were then used to compute the standard deviation in the percentage change for Brent prices, the U.S. CPI, and Saudi oil production. The standard deviation (or standard error) is a critical measure for companies investing in oil production or thinking about investing because it can be used to determine the likely price range going forward. A firm can invest with relative certainty if the standard deviation is low, assuming no changes in general economic conditions, because the statistical probabilities dictate that the price a year later will be close to the current price. There is much less certainty, though, if the standard deviation is high. If, for example, the standard deviation is 50 percent, the firm knows there is a nontrivial chance of oil prices falling by half within the next year.

Table 1 presents these computations for the consecutive oil ministry periods of Zaki Yamani, Hisham Nazar, Ali Al-Naimi, Khalid Al-Falih, and Prince Abdulaziz.

The Yamani data stand out. The standard error for the price fluctuations during his time as minister was 6.35 percent, three times as large as the standard deviation in the U.S. CPI. The standard deviation in Saudi production during Yamani's term was 22.78 percent.

The data for Yamani illustrate his efforts to maintain oil market stability. Oil prices varied little from 1962 to 1986 as Saudi production swung widely. As noted, the standard error of the year-over-year percentage change in Saudi output was nearly 23 percent. Observing these data from afar, one can conclude that Saudi Arabia was attempting to be the "central bank of oil," a term one hears on occasion today. The Saudi production adjustments limited oil price fluctuations.

The Saudi efforts to keep prices stable failed in 1985 because global oil production increased to where demand for Saudi Arabia's production vanished. In fact, one analyst stated that Saudi Arabia would need to become an oil importer to maintain prices. Saudi Arabia responded to the changed circumstances by adopting an aggressive pricing system that boosted its exports but sent prices plunging to $10 per barrel.

A critical insurance technique used by smaller firms has become expensive because the Saudis now see oil futures sales, the primary way of hedging production, as a speculative activity.

Oil prices were less stable under Yamani's successor, Hisham Nazar, who was minister from 1986 to July 1995. Iraq's invasion of Kuwait contributed to the increase.

Ali al-Naimi followed Nazar as minister, leading oil markets through the Asian debt crisis, the 2007–2008 rise in oil prices caused by tightened environmental regulations limiting sulfur content in diesel, the 2008 financial crisis, and then the emergence of an energy-independent United States linked to the fracking boom (see "The Amazing Tale of U.S. Energy Independence," Spring 2012 *TIE*). Despite these various disruptions, Naimi managed to keep the standard error of price fluctuations to 40 percent. The variation in prices might have been lower had Saudi Arabia allowed more variation in its production. The standard deviation in production under Naimi was less than half that under his two predecessors.

The standard deviation in prices declined to 26 percent under Khalid al-Falih's short reign from 2016 to 2019. The standard deviation in output dropped to under 5 percent. One might call this a stable period. It was also a time when the kingdom's income did not satisfy the revenue desires of Mohammed bin Salman, who became crown prince in 2017, at least as subsequent events seem to indicate.

MBS began addressing the revenue shortfall by appointing his half-brother as oil minister in September 2019. The *New York Times* reported at the time that "the removal of Mr. al-Falih appears to indicate dissatisfaction

A Sobering Thought

Unless smaller firms can find a low-risk way to hedge against the financial uncertainties linked to the Saudis' erratic market behavior, only the dominant public companies—principally the five remaining multinationals and one or two Chinese firms—will have the financial resources to continue locating and developing reserves.

—P. Verleger

on the part of the Saudi leadership with oil prices." The authors pointed out, however, that the prince would have the same problems in persuading OPEC members to cut production as his predecessor.

Reflecting on al-Falih's dismissal and Prince Abdulaziz's appointment, Bloomberg's Julian Lee compared the action to Yamani's ouster twenty-three years earlier:

> *A Saudi ruler replaces his oil minister for failing to deliver high enough prices as demand growth weakens and non-OPEC supply soars. I thought I'd woken up in 1986.*
>
> *My former boss, Sheikh Zaki Yamani, was removed from his role as energy minister by King Fahd that year, after failing to deliver the impossible combination of higher oil prices—$18 a barrel was what the king wanted—and higher production for the kingdom. Outgoing minister Khalid Al-Falih seems to have faced a similar challenge. Except now the kingdom needs an oil price closer to $85 to balance its budget and, as ever, that seems to take priority over long-term considerations of market share.*

Table 1 Standard error of year-over-year percentage change in monthly dated Brent price, U.S. CPI, and Saudi oil production during tenure of five Saudi oil ministers (percent)

Saudi Oil Minister	Service Period	Brent	CPI	Saudi Output
Yamani	January 1962–October 1986	6.35	2.78	22.78
Nazar	October 1986–July 1995	29.06	1.11	24.63
Al-Naimi	August 1995–April 2016	39.43	0.76	9.93
Al-Falih	May 2016–August 2019	26.54	0.5	4.44
Abdulaziz	September 2019–present	61.99	2.87	14.11
Entire Period		37.79	2.01	

Source: PKVerleger LLC.

The prince was less successful than his predecessor in achieving the Saudi revenue goals from the summer of 2019 to December 2020. The global oil price barely rose. Meanwhile, Saudi production (and presumably exports) declined by 11 percent.

Three months after he became minister, Prince Abdulaziz threatened to "open the taps" at meetings with other OPEC members prior to a December 2019 meeting to discuss individual country quotas, according to the *Wall Street Journal*. The *Journal* authors added that a Saudi delegate had told representatives from other nations that Saudi Arabia was tired of "indirectly" supporting the budgets of countries producing above their quotas, singling out Iraq, Russia, and Nigeria for blame. Three months later, Saudi Arabia made good on the prince's promise.

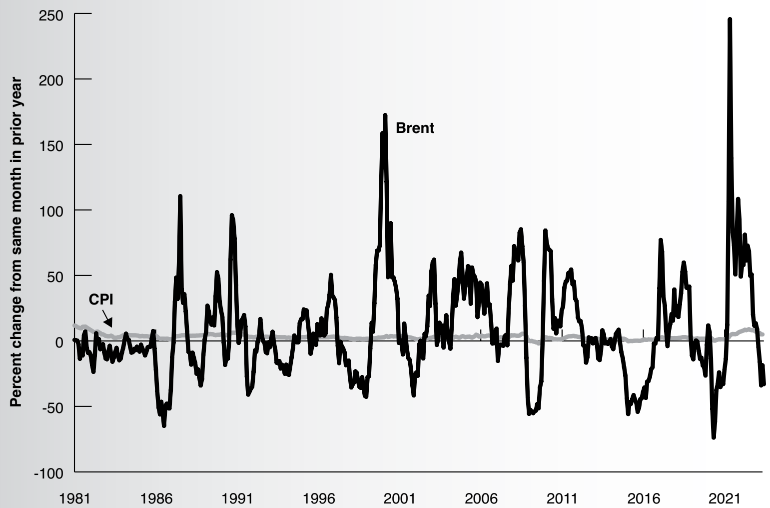
Many companies are avoiding risk and higher costs by returning money to investors instead of putting it into oil and gas production.

The price war started by the crown prince and his oil minister Abdulaziz ended two months later. However, the instability they created still exists. As Table 1 illustrates, the standard error of prices during Prince Abdulaziz's tenure is 62 percent, ten times that of the Yamani period, and the standard error of output is 14 percent, two-thirds of Yamani's percentage. MBS's obsession with generating "funding for his economic reforms," noted by *Wall Street Journal* reporters Summer Said and Benoit Faucon, accounts for much of the difference. Yamani operated when the kingdom was not pursuing such expensive development plans.

The three years following the March 2020 price collapse have failed to return any real stability to global oil markets. Saudi Arabia has resisted pressure from the United States to boost production on several occasions to keep prices higher. Then, following Russia's invasion of Ukraine in February 2022, the Saudi oil minister ignored pleas from the United States, Europe, and others to boost its production. As oil prices rose to $125 from $77 per barrel in January, Abdulaziz and his counterpart in the United Arab Emirates did nothing while the prince attempted to justify their inaction as reported by Faucon and Said in the *Wall Street Journal*:

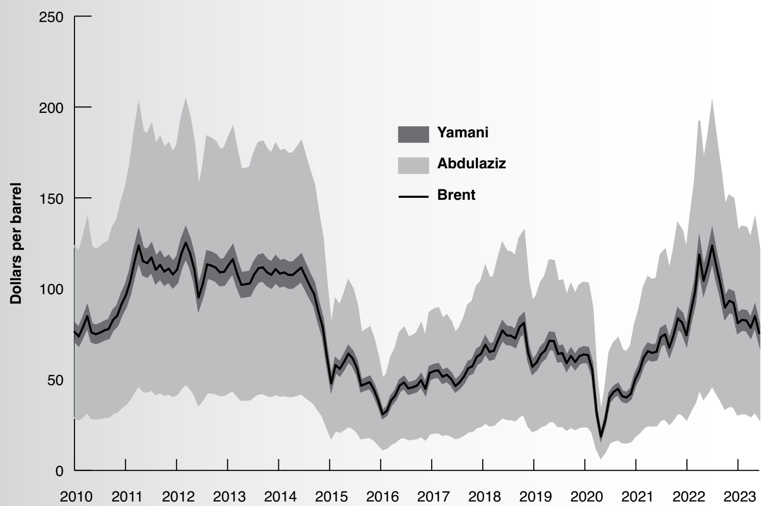
> *Saudi Energy Minister Prince Abdulaziz bin Salman framed OPEC's decision to stick with Russia as the group's way of looking past disagreements among*

Figure 1 Year-over-year percent change in U.S. CPI vs. dated Brent price, 1981–2023



Source: PKVerleger LLC.

Figure 2 Dated Brent price, 2011–2023, graphed against Yamani and Abdulaziz standard errors



Source: PKVerleger LLC.

members. The Saudis and Emiratis have condemned Russia's invasion of Ukraine in votes at the United Nations General Assembly.

"When it comes to OPEC+, everyone leaves politics outside the door," said Prince Abdulaziz at a conference in Dubai on Tuesday. "We managed to compartmentalize our political differences from what is for the common good of all of us."

The UAE minister told reporters that he and the Saudi prince were the experts and that they were trying to balance the market. He called on consumers to "trust us."

U.S. President Joe Biden had other ideas. Two days after the meeting, Biden announced the release of three hundred million barrels from the United States' strategic reserves. The release drove down prices, depriving Saudi Arabia of $90 billion and the UAE of $30 billion in oil revenues.

Over the last ten years, the chaotic oil price swings have sometimes boosted the incomes of Saudi Arabia and the United Arab Emirates and sometimes created shortfalls. This volatility has increased the uncertainty associated with investing in oil and gas production. Historically, investors have always faced the risk that exploration efforts would produce no oil or too little oil to make a project viable. However, the greater oil price volatility linked particularly to the Saudi actions since Prince Abdulaziz became oil minister and augmented by the actions of consuming countries poses a new danger. Today, investors in oil and gas projects must worry that oil prices, as governed by the Saudis, will make even the best projects money losers. The risk is increased by the possibility that consuming nations will act to drive down prices.

Figure 2 highlights today's uncertainty. The graph traces the Dated Brent price by month from 2011 to 2022 and the two-standard-deviation range of prices during the ministries of Sheik Yamani and Prince Abdulaziz.

The deviation associated with Sheik Yamani's tenure (dark gray shading) as oil minister is around 7 percent. An oil exploration firm executive armed with this information could be confident that a project that promised to be profitable at today's prices would likely be profitable in one or two years. In short, Yamani created a stable investment environment.

Figure 2 also shows the two-standard-deviation range of the year-over-year percent change in prices during Prince Abdulaziz's tenure (light gray shading), a much wider potential price band. With this information, the same executive—or an oil company investor—would have no assurance that a project that promised to be profitable today would be profitable when it came onstream. Indeed, the Abdulaziz range in Figure 2 is the kiss of death for almost any fracking project because such wells are drilled in a year and produce most of their output in the first producing year.

The price volatility created by Prince Abdulaziz and MBS (and President Biden) makes it almost impossible to invest in such short-term projects. Their actions also make the oil industry unattractive to most investors unless a company promises large dividends that include a return on capital and the return of capital.

The lack of sufficient investment will likely lead to higher oil prices over the next ten years than would be expected if oil-exporting countries had copied the policies established by Yamani more than forty years ago. The higher prices will lead to a larger income transfer to oil exporters. They will also accelerate the world's abandonment of oil, leaving nations that rely on petroleum revenues with stranded reserves and no market to sell to in fifteen or twenty years. ◆

Saudi Arabia was attempting to be the "central bank of oil."