

Our View: Independent Oil Producers Should Be Sued for Their Financial Stupidity

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May 3, 2022

Bloomberg revealed today that the large US shale oil producers face \$42 billion in oil and gas hedging losses.¹ The companies' shareholders should sue them and their leaders for financial imprudence. Indeed, the top executives have violated their fiduciary responsibilities.

The hedging costs were unnecessary. As I have noted before, Mexico's government has solved the hedging riddle. It has applied its well-known approach for thirty years, hedging larger volumes than the independents and never suffering such setbacks.

Mexico has succeeded where firms like Pioneer Natural Resources have failed because its government employs individuals with sophisticated financial expertise to conduct its hedging programs. In contrast, the shale company officials seem to be negotiating hedges at their golf clubs' "nineteenth hole."

One does not typically hold Mexico up as an example of success in the world oil industry. Indeed, recent stories about pollution and problems at Pemex tell a sorry tale.

Still, Mexico has been great at hedging. Its success is not accidental. It found a formula that worked thirty years ago and has used it ever since. *Washington Post* reporters Mark Potts and Thomas Lippman were the first to describe Mexico's method in a 1991 article:

Mexico has locked in much of its budgeted oil income for the next six months and picked up an additional profit of at least \$125 million by selling 100 million barrels of oil through apparently unprecedented trades on New York financial markets, according to Wall Street and Mexican government sources.²

Potts and Lippman explain that Mexico made its trades in December 1990 and January 1991, when oil prices were higher, guaranteeing a price of \$17 per barrel for low-quality oil that was now trading for much less. They noted that the hedge helped the "financially troubled Mexican government meet its budgetary projections, which are based on \$17-a-barrel oil." The country had hedged over 100 million barrels. The authors also explain how Mexico came to employ its hedging strategy: "Sources say the Mexican government, heavily dominated by **market-savvy economists**, has been considering using the futures market as a large-scale hedging tool for some time" [emphasis added].

The key phrase in that quote is "market-savvy economists." The hedge was undertaken not by Pemex or oil traders but by the Mexican central bank. Pedro Aspe, an MIT-trained economist, was the country's Secretary of Finance at the time, and many credit him with leading the hedging effort.

¹ See Devika Krishna Kumar and Paul Takahashi, "Shale Giants Dump Oil Hedges as Losses Spiral Toward \$42 Billion," Bloomberg, May 3, 2022 [<https://tinyurl.com/3v665xrc>].

² Mark Potts and Thomas W. Lippman, "Mexico Locks in a Price of \$17 a Barrel on Oil," *The Washington Post*, March 27, 1991 [<https://tinyurl.com/tspbyv7>].

An International Monetary Fund book, not your usual source for information on oil hedging, details how Mexico hedges its oil revenues.³ The practice requires the central bank to spend \$1 billion or more to acquire bespoke puts from major financial institutions. The transactions enable the country to guarantee a floor price for its production while allowing the Mexican government and Pemex, when it participates, to capture all revenue from price increases.

Mexico has tweaked its oil-hedging program through the years. Nonetheless, the one characteristic that has remained constant is its use of *put options* as the primary hedging vehicle. The rationale behind this practice is simple: options cover the risk of an oil price decline while preserving the benefits if prices increase.

As the IMF authors, Duclaud and Garcia report, the execution of Mexico's hedging plan is complicated, requiring a team of economists and mathematicians working full-time on the program. They also note that Mexico uses Asian options rather than European or American options:

Asian options have recently been a preferred alternative, because the Mexican government needs to hedge the price of its oil exports throughout the year and not only at a particular expiration date (as would be the case with European or American options). The payoff of an Asian term option is determined by the difference between the strike price and the average price of the underlying asset over a predetermined period of time. Asian term options are particularly useful because the volume of the Mexican exports is stable and they better match the average price at which oil exports are sold.⁴

Duclaud and Garcia describe the country's interaction with major financial firms. They report that pricing discrepancies between counterparties can be significant, mainly during periods of high risk aversion and extreme price volatility. For this reason, the Mexican central bank has become expert at understanding the option pricing models used to determine the cost of puts. It also has been wise enough to require the financial firms that write put options to the country to post variation margins.

Following the put option purchases, the central bank must manage the collateral associated with the options. Its objective is to minimize counterparties' credit risk through strict collateral and margin requirements. Such collateral management involves making margin calls every day to account for the hedging program's daily mark to market. In other words, if an option's value increases, Banco de México requires additional collateral from its counterparties; conversely, if an option's value decreases, the central bank returns collateral in an amount that reflects the new price.⁵

Mexico hedges around 200 million barrels per year, or 550,000 barrels per day. This volume is approximately three times what Pioneer Natural Resources and Diamondback hedge (see Table 1 below).

Mexico's execution of its hedge is vastly superior to that of either company. While the country may have paid out more than \$1 billion to hedge its 2021 production, it has probably captured \$4.5 billion in

³ Javier Duclaud and Gerardo Garcia, "Mexico's Oil Price-Hedging Program," Chapter 15 in Rabah Arezki, Catherine A. Pattillo, Marc G. Quintyn, and Min Zhu, "Commodity Price Volatility and Inclusive Growth in Low-Income Countries (IMF, 2001) [<https://tinyurl.com/4acfa2sy>], p. 302.

⁴ Duclaud and Garcia, p. 303.

⁵ Duclaud and Garcia, p. 309.

increased profits. Had US companies followed its practices for the last decade, their cumulative revenues would have been perhaps \$100 billion higher.

There is no secret to Mexico's success. However, US oil executives seem to have their heads stuck in a hole—and I don't mean a well hole. They lost \$42 billion as a result. Shareholders should demand compensation from these individuals.

Table 1. Oil Volumes Hedged for 2021 and Approximate Hedge Price for Eight Companies		
	Volume Hedged (Million Barrels)	Hedge Price (\$/bbl)
Pioneer	72	42
Diamondback	51	40
Cenovus	37	62
Hess*	51	61
Devon	35	40
Ovintiv	46	42
EOG	44	55
Marathon	27	42

*Hess uses puts.
Source: *Financial Times*.