2023 HOUSE FINANCE AND TAXATION

HB 1399

2023 HOUSE STANDING COMMITTEE MINUTES

Finance and Taxation Committee
Room JW327E, State Capitol

HB 1399
1/25/2023

A bill relating to oil and gas tax revenue hedging.

Chairman Headland opened the hearing at 9:29AM.

Members present: Chairman Headland, Vice Chairman Hagert, Representative Anderson, Representative Bosch, Representative Dockter, Representative Fisher, Representative Hatlestad, Representative Motschenbacher, Representative Olson, Representative Toman, Representative Finley-DeVille, and Representative Ista. Members absent: Representative Grueneich, Representative Steiner.

Discussion Topics:
- Oil and gas hedge fund
- Advisory committee for the fund

Representative Kempenich introduced the bill in support (#16220).

Rob Pfennig, Chief Financial Officer for the Bank of North Dakota, verbally testified in a neutral capacity.

Representative Kempenich answered questions from the committee.

Kelvin Hullet, Chief Business Development Officer with the Bank of North Dakota, verbally testified in a neutral capacity.

Rob Pfennig, Bank of North Dakota, answered questions from the committee.

Representative Kempenich continued answering questions from the committee.

Chairman Headland closed the hearing at 10:04AM.

Mary Brucker, Committee Clerk

2023 HOUSE STANDING COMMITTEE MINUTES

Finance and Taxation Committee
Room JW327E, State Capitol

HB 1399
1/25/2023

A bill relating to oil and gas tax revenue hedging.

Chairman Headland opened the meeting at 10:49AM.

Members present: Chairman Headland, Vice Chairman Hagert, Representative Anderson, Representative Bosch, Representative Dockter, Representative Fisher, Representative Grueneich, Representative Hatlestad, Representative Motschenbacher, Representative Olson, Representative Steiner, Representative Toman, Representative Finley-DeVille, and Representative Ista. No members absent.

Discussion Topics:
- Committee discussion
- Advisory committee

Committee discussion.

Chairman Headland distributed written testimony he received from Kelvin Hullet, Bank of North Dakota (#16736).

Chairman Headland closed the meeting at 10:57AM.

Mary Brucker, Committee Clerk

2023 HOUSE STANDING COMMITTEE MINUTES

Finance and Taxation Committee
Room JW327E, State Capitol

HB 1399
1/31/2023

A bill relating to oil and gas tax revenue hedging.

Chairman Headland opened the meeting at 11:27AM.

Members present: Chairman Headland, Vice Chairman Hagert, Representative Anderson, Representative Bosch, Representative Dockter, Representative Fisher, Representative Grueneich, Representative Hatlestad, Representative Motschenbacher, Representative Olson, Representative Steiner, Representative Toman, Representative Finley-DeVille, and Representative Ista. No members absent.

Discussion Topics:
- Advisory committee
- Appropriation of funds

Representative Bosch and **Representative Dockter** are working on a possible amendment.

Committee discussion.

Chairman Headland adjourned at 11:32AM.

Mary Brucker, Committee Clerk

2023 HOUSE STANDING COMMITTEE MINUTES

Finance and Taxation Committee
Room JW327E, State Capitol

HB 1399
1/31/2023

A bill relating to oil and gas tax revenue hedging.

Chairman Headland opened the meeting at 2:47PM.

Members present: Chairman Headland, Vice Chairman Hagert, Representative Anderson, Representative Bosch, Representative Dockter, Representative Fisher, Representative Grueneich, Representative Hatlestad, Representative Motschenbacher, Representative Steiner, Representative Toman, Representative Finley-DeVille, and Representative Ista. Members absent: Representative Olson.

Discussion Topics:
- Oil hedging
- Committee vote

Representative Bosch updated the committee on conversation with the Retirement Investment Office.

Representative D. Anderson moved a Do Not Pass.

Representative Hagert seconded the motion.

Roll call vote:

Representatives	Vote
Representative Craig Headland	Y
Representative Jared Hagert	Y
Representative Dick Anderson	Y
Representative Glenn Bosch	Y
Representative Jason Dockter	N
Representative Lisa Finley-DeVille	N
Representative Jay Fisher	Y
Representative Jim Grueneich	Y
Representative Patrick Hatlestad	Y
Representative Zachary Ista	N
Representative Mike Motschenbacher	Y
Representative Jeremy Olson	AB
Representative Vicky Steiner	Y
Representative Nathan Toman	N

Motion carried 9-4-1

Representative D. Anderson is the bill carrier.

Chairman Headland adjourned at 2:59PM.

Mary Brucker, Committee Clerk

REPORT OF STANDING COMMITTEE

HB 1399: Finance and Taxation Committee (Rep. Headland, Chairman) recommends
DO NOT PASS (9 YEAS, 4 NAYS, 1 ABSENT AND NOT VOTING). HB 1399 was
placed on the Eleventh order on the calendar.

TESTIMONY

HB 1399

chapter 1

Option Basics: A Crash Course in Option Mechanics

The concept of options has been around for a long time. Ancient Romans, Greeks, and Phoenicians traded options based on outgoing cargoes from their local seaports. When used as a derivative of a financial instrument, an *option* is generally defined as a contract between two parties, a buyer and a seller, in which the buyer has the right but not the obligation to buy or sell the underlying asset at the denoted strike price. In the world of finance and trading, a *derivative* is defined as any asset in which its value is derived, or resulting, from the value of another asset. Likewise, the *underlying asset* is an asset on which the value of the derivative is dependent.

What Is an Option?

There are two types of options, a *call* option and a *put* option. Understanding what each of these is and how they work will help you determine when and how to use them. The buyer of an option pays a premium (payment) to the seller of an option for the right, not the obligation, to take delivery of the underlying futures contract (exercise). This financial value is treated as an asset, although eroding, to the option buyer and a liability to the seller.

There are two sides to every option trade, a buyer and a seller. Traders willing to accept considerable amounts of risk can write (or sell) options, collecting the premium and taking advantage of the well-known belief that more options than not expire worthless. The premium collected by a seller is seen as a liability until the option either is offset (by buying it back) or expires.

- **Call options**—Give the buyer the right, but not the obligation, to buy the underlying at the stated strike price within a specific period of time. Conversely, the seller of a call option is obligated to deliver a long position in the underlying futures contract from the strike price should the buyer choose to exercise the option. Essentially, this means that the seller would be forced to take a short position in the market upon expiration.

- **Put options**—Give the buyer the right, but not the obligation, to sell the underlying at the stated strike price within a specific period of time. The seller of a put option is obligated to deliver a short position from the strike price (accept a long futures position) in the case that the buyer chooses to exercise the option. Keep in mind that delivering a short futures contract simply means being long from the strike price.

	Call	**Put**	
Buy			Limited Risk
Sell			Unlimited Risk

To understand what an option is, you need to know the various components that comprise it. This next section explains the following:

- Strike price

- Intrinsic and extrinsic value

- Time value, volatility, and demand

Strike Price

Most literature doesn't include strike price as a factor of determining the extrinsic value of an option. It is assumed that the strike price is built into the supply and demand equation of the option. Naturally, a strike price closer-to-the-money will be in higher demand.

The *strike price* is the price at which the buyer of a call option has the right to purchase the futures contract, or the buyer of a put option has the right to sell a futures contract. This is also referred to as the *exercise price*.

The strike price is one of the biggest factors in determining both the extrinsic and intrinsic value of an option. Obviously, the closer the strike price is to the underlying futures contract the more valuable the option will be, even if there is no intrinsic value. This makes sense, because the closer the strike

price is to the underlying market the better the odds are that the option will expire in-the-money and the higher the demand will be for the contract.

Intrinsic and Extrinsic Value: Components of an Option Price

The value of any given option is composed of two components:

● Intrinsic value

● Extrinsic value

Option Price=Intrinsic Value+Extrinsic Value

Intrinsic Value

Intrinsic value is what you would have if the option expiration was today.

The intrinsic value of an option is the amount that the market price is higher than the strike price for a call and lower than the strike for a put. In other words, the intrinsic value is the amount of money that the option would be worth if it expired today. For the option to have intrinsic value, the option must be in-the-money.

In-the-money and *out-of-the-money* are often falsely used by beginning traders. Many traders refer to a profitable option trade as being in-the-money. However, this is not the case. An option can be in-the-money and not profitable. Likewise it can be out-of-the-money and be a profitable trade.

Call options are described in the following way (see Figure 1.1):

● **In-the-money**—The futures price is above the strike price.

● **At-the-money**—The futures price is at the strike price.

● **Out-of-the-money**—The futures price is below the strike price.

It is important to know and understand the terminology involved in commodity trading; this could help to avoid costly mistakes stemming from miscommunication between you and your broker. In-the-money is a commonly misused term. Many beginning traders use this phrase to refer to a profitable trade rather than the intrinsic value of the position.
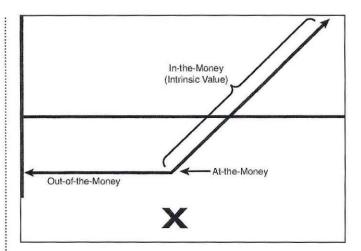
Figure 1.1 The intrinsic value of a call option

Put options are described in the following way (see Figure 1.2):

● **In-the-money**—The futures price is below the strike price.

● **At-the-money**—The futures price equals the strike price.

● **Out-of-the-money**—The futures price is above the strike price.
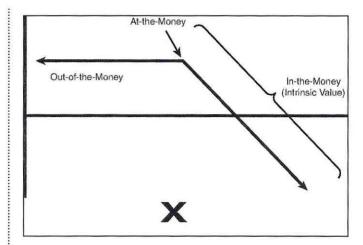

Figure 1.2 The intrinsic value of a put option

As shown in the Figure 1.3, the intrinsic value increases tick for tick as the market moves beyond the strike price of the option. In this case, it is a corn call option with a strike price of $2.70. With the market at $2.80 the option has an intrinsic value of 10 cents; with the market at $2.90 the option has an intrinsic value of 20 cents, and so on. It is important to realize that before expiration the option value will not be equal to the intrinsic value because it will also have extrinsic, or time, value.

The intrinsic value of an option can easily be calculated, but the extrinsic value of an option is impossible to estimate at any given time in the future other than expiration. This is because the extrinsic value is made of a combination of time, volatility, and demand.
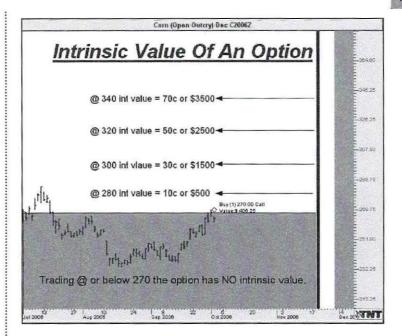

Figure 1.3 The intrinsic value of a $2.70 corn call with the market at various prices

Extrinsic Value

Extrinsic value is based on a combination of the strike price, time, volatility, and demand. We like to think of extrinsic value as the "icing on the cake." Due to the nature of its components, it is impossible to estimate extrinsic value. Beginning traders often ask questions such as, "If I buy a call and the market goes up *x* number of points, what will it be worth?" Unfortunately, the answer depends on factors that can't necessarily be measured quantitatively.

Extrinsic value is like "icing on the cake."

Example

If a trader buys a September $6.00 soybean call option for 10 cents in June with the underlying futures price at $5.80 and the market rallies to $6.00 by the beginning of July, the option will likely be worth much more than the original premium paid. After all, there will still be a lot of time value left on the option and the option is now at-the-money.

Example II

If a trader buys the same option, in the same circumstances, but it takes the underlying futures until August to reach $6.00, the trade will likely be a loser. More time premium would have eroded from the option value than it would have benefitted from the market being closer to the strike price.

As you can see, it is possible to be right in the direction of the market and still lose money on a long option trade. This is exactly why it is so difficult to make money as an option buyer. It is hard enough to be right, but direction is only the first obstacle.

The *extrinsic value* of an option is based on a combination of the following factors:

● Time
● Volatility
● Demand

Of these factors, time is the only predictable element. You know what they say, "Time waits for no man."

Throughout this book we will cover several hands-on examples to illustrate the risks and potential rewards involved with each strategy and scenario. It is important to realize that all calculations are based on the assumption that the trade is held until expiration. This is because at expiration the options will have no extrinsic value, which is nearly impossible to predict at any given point. At any time prior to expiration, the profit or loss experienced on the trade may be outside the original profit and loss parameters based on the price of the underlying contract at option expiration. This is especially true in the case of option spreads.

Time Value

The longer the amount of time until an option's expiration, the greater the time value of a particular option will be. This makes sense, because the longer the

buyer possesses the right to exercise the option the more valuable that right is. Remember, in commodity trading anything can happen. It is not out of the question for a relatively worthless option to come to life and post abnormal gains (or losses for the seller) by expiration. Keep in mind that this is the exception rather than the rule, but it can and does happen.

Time value works against the buyer of an option, but works for the seller. This is because the time value portion of the option is constantly eroding until reaching zero at the time of expiration.

Volatility

If the price of the underlying futures contract is fluctuating considerably, there is both a greater profit and a greater loss potential. Thus options tend to be more expensive to buy when volatility is high. Likewise, sellers will collect more premium for a short option during times of inflated volatility. Of course, premiums are high for a reason—the risk and reward are equally magnified.

Volatility can be a double-edged sword. It can be lucrative if you are in a favorable position, but losses may be substantial if you happen to be on the opposite side. This is the case whether you are holding long or short options.

Trading Volatility

Because of the effect volatility has on option premium, it is a good idea to buy options when the market is quiet and sell them in times of high volatility. Those holding long options during an explosion in volatility have been known to enjoy impressive profits. On the other hand, short option traders may find themselves in a less than desirable position should they be in a market that experiences significant increases in volatility after they have entered a position.

Demand

If the number of traders willing to buy an option at a given price is greater than the number of traders willing to sell the same option, the value of that option appreciates. It is the nature of the option markets to experience high demand of call options in a market that is in an uptrend and high demand of put options in a downtrend. Thus, it is not uncommon to see overpriced options in such scenarios. An interesting phenomenon in the equity indices, put options are almost always priced high to comparative calls. This

Some traders look to be the contrarians of the masses. If everyone else seems to be buying the option, it may be time to sell it.

is partly due to equity holders hedging their portfolios along with the expectation that markets drop faster than they go up. You may have heard the concept of higher put valuation referred to in the context of a "volatility smile" or "skewed volatility." In the case of equity indices the implied volatility of an at-the-money option is often less than that of an out-of-the-money option, or negatively skewed. This is especially true in the case of distant strike priced puts; interestingly, this didn't seem to be the case until after the crash of 1987.

If you are unfamiliar with the term *implied volatility*, it is important to note that the term differs greatly from *market volatility* (often referred to as *historical volatility*). Historical or market volatility is a direct measure of price movement, while implied volatility is a function of the derivative value (option premium) itself rather than the underlier. Therefore, options with differing strike prices or expiration dates but based on the same underlier may have differing levels of implied volatility. The formal definition of implied volatility is, in its simplest form, the volatility implied by the market price of the option

Another component of demand is strike price.

Strike price is obviously one of the biggest factors in the market's determination of option value. The closer to the money an option is, the more valuable it is to the buyer and the riskier it is to the seller. This makes sense; people are willing to pay more for an option that seems to have a better chance of paying out than they would for an option that will most likely expire worthless. As we cover in great detail throughout this book, the delta value of an at-the-money option is 50 and has roughly 50 percent odds of expiring in-the-money.

The Art of Option Trading

> It doesn't matter how you trade, or which indicators you use. The only thing that matters is whether you make money.

In options trading the infamous adage "There is more than one way to skin a cat" holds true. Many traders choose to ignore technical or charting tools and focus on market fundamentals. Yet others look strictly at chart formations to construct trades. Regardless of the market analysis tools used, we have found that traders can increase their odds of success by becoming familiar with option strategies other than buying outright calls or puts.

Over the next several chapters we outline and analyze many of the commonly used option strategies. We offer our opinion on when each strategy should be used and the manner in which we recommend using them. Additionally, we cover the associated risks and rewards of each of the differing

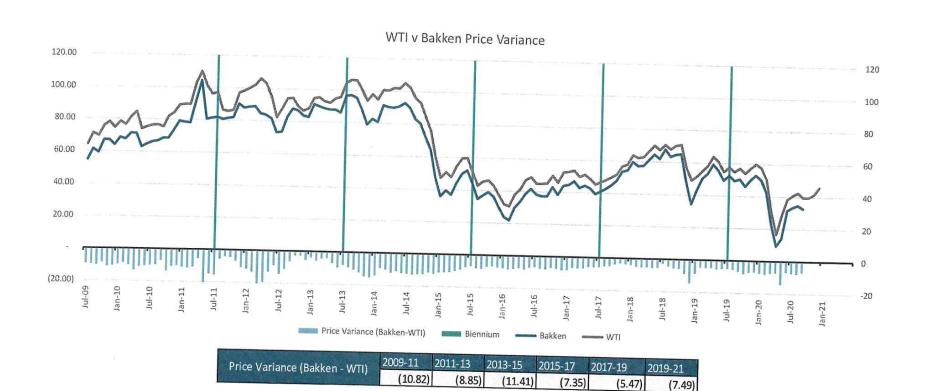approaches. As you will find, our interpretation of risk may be different than what you might find in alternative literature. For instance, in our opinion limited risk is not necessarily synonymous with less risk. In fact, in most cases limited risk, although it provides a cap to potential losses, may create a scenario in which your probability of loss is extremely great.
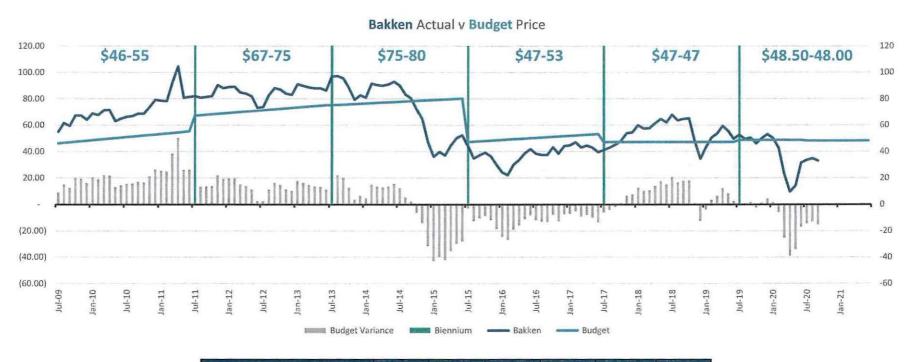
Although there are only four basic instruments in trading (long, short, call, put), there is a seemingly unlimited number of combinations of these components resulting in various levels of risk and reward. Throughout this book, we highlight some of the most common forms.

Each of the option trading styles mentioned throughout this text may or may not be appropriate for your risk tolerance. It is our goal to provide you with the information that you need to skew the odds away from the market insiders and toward you as a retail trader. Remember, roughly three out of four independent speculators walk away from the futures and options market with less money than he came with. However, only you can decide whether any of these trading methods are suitable for you and your piece of mind.

Historical Price Perspective – WTI v Bakken

WTI v Bakken Price Variance

Price Variance (Bakken - WTI)	2009-11	2011-13	2013-15	2015-17	2017-19	2019-21
	(10.82)	(8.85)	(11.41)	(7.35)	(5.47)	(7.49)

Historical Price Perspective – Biennial Budget Oil Price v Actual

Bakken Actual v **Budget** Price

Price Variance (Actual - Budget)	2009-11	2011-13	2013-15	2015-17	2017-19	2019-21
	21.09	13.80	(3.68)	(12.09)	7.21	(10.22)

Hedging Instruments Primarily Used in Project

- **Put Option**
  - Pay a premium, and establish a floor
    - May not receive any payment if price does not reach floor
  - Minimize downside risk while still participating in upside

- **Costless Collar**
  - No upfront cost or premium
  - Lock in a ceiling and floor price
    - Minimizes downside risk and upside opportunity

Payment summary

The hedge portfolio has so far earned BND more than $94 million in payouts

- The drop in oil prices led to significant payouts on hedges between April and September.

- In total, employing the hypothetical hedging program would have netted **~$80mm over 12 months**, mitigating the losses caused by declining oil prices.

- *If oil instead had a strong year, BND would not have recovered any of the $14mm in premium payments, but this cost may be offset by increasing oil-related revenues.*

- In addition to payouts already received, the portfolio of remaining active trades has a value of **$29.6 million**, with coverage extending to September 2022.

Date	Premiums	Settlements	Additional notes
Sep-19	-5,597,640	0	Purchased put option
Oct-19	0	0	
Nov-19	0	0	
Dec-19	-1,379,974	0	Purchased put option
Jan-20	0	0	
Feb-20	0	0	New costless collars (no premiums)
Mar-20	0	20,472,202	First payout following WTI collapse
Apr-20	0	33,910,944	
May-20	0	20,116,260	
Jun-20	-7,774,500	6,275,317	Purchased put option
Jul-20	0	4,686,728	
Aug-20	0	3,434,774	
Sep-20	0	5,425,305	
Total	**-14,752,114**	**94,321,530**	