POC 2026

Turning OCPO Volatility into FCPO Opportunities

Paul Bloemendal – PT: Make Trade Easy

OUR SESSION TODAY 9-2-2026

Part I: 09.30-10.30

Beyond Theory: Managing Margins & Risk

Intro

Why Hedge?

Natural Risk Exposure

Who Hedges?

Futures Markets (FCPO)

Options Basics (OCPO)

Hedge Programme

Historical Volatility & Implied Volatility

Part II: 11.00-12.00

How Volatility Shapes Opportunities

Recap Part I

Greeks

Options Strategies

Real Examples

Executing Options

Questions & Conclusions

Appendices

PT: Make trade easy

Execution • Risk • Discipline

We changed commodity trading from calls and chats to a transparent, global, digital platform for secure price discovery, execution, and control. The only marketplace you will ever need!

Market Lags

- Fragmented markets
- Low liquidity
- Wasted time
- Manual execution
- Limited risk visibility
- Rising compliance pressure.

What PT Delivers

- Live price curves
- Liquidity in niche markets
- Instant trade execution
- Freight and Commodities
- Pre-trade risk control
- Audit-ready by design.

Part I: 09.30-10.30

Beyond Theory: Managing Margins & Risk

Why Hedge?

Natural Risk Exposure

Who Hedges?

Futures Markets (FCPO)

Options Basics (OCPO)

Hedge Programme

Historical Volatility & Implied Volatility



Why Hedge with OCPO?

This is not a trading seminar, but

a risk and hedging seminar.

Beyond Theory, Managing Margins & Risk Using Palm Oil Options

Why Hedge (insure) anything?

- Life is full of risk, but the question is:

Can you handle the costs in case something happens unexpectedly?

- We deal with this by buying insurance coverage
  - Life insurance: in case you die? (Don't we all?)
  - Health insurance: costs you may not be able to cover
  - Home insurance: fire/earthquake risk
  - Car insurance: crash risk
  - So why not add price insurance on your feedstock?
    - Hedging = Insurance
    - Options are the easiest way to hedge



Why Hedge (insure) explained

Example: Buying House Insurance

- By paying the insurance premium, in effect, you are buying the **option** that if something goes **wrong**, someone else will **pay** for it.
- It can be seen as a risk transfer to protect yourself, as it avoids potential **large**-ticket costs with **low** probability but **high** impact.
- At the end of the year, your house still stands, and nothing has happened; no claims were made. Your option expires worthless, and that's fine.
- But was paying the **premium** a good or a bad decision? Was it worth it?
- Options are about **value**, not just about upfront costs.





Why Hedge Now?

- Producers want to lock in forward sales at current levels
- Consumers missed out, need to cover pipelines.
- Governments are stocking up and changing the rules
- Options are for insurance, not suited for directional bets in their core
- There is no need to price options manually, use tools like Agile or Quickstrike



Bloomberg Commodity Spot Index (BCOMSP)

Who Hedges What?

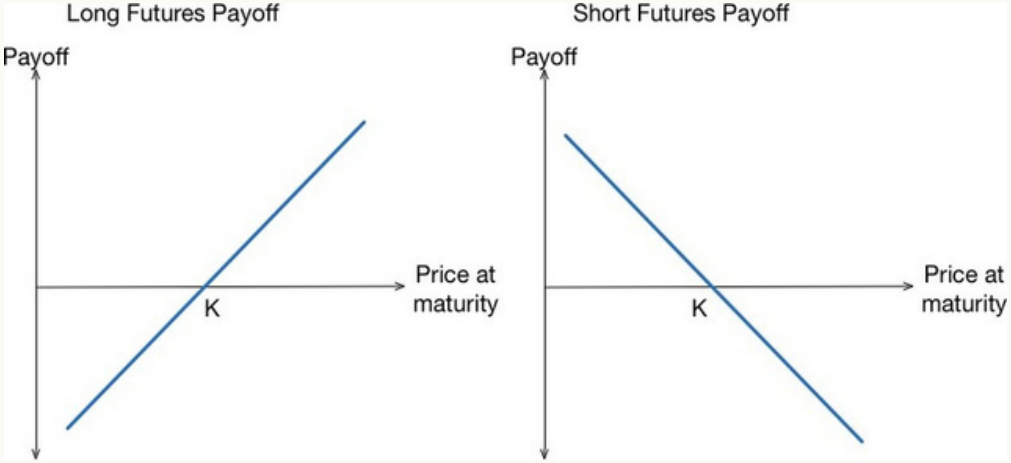
Hedge Considerations	
Refiners / Consumers / Importers	**Plantations / Producers / Exporters**
Hedge against a rise in prices as natural Short	**Hedge against a fall in prices as natural Long**
Buy physical or forward paper against sales	Sell physical paper or forwards
Buy futures, or sell against physical purchases	Sell futures, or buy against physical sales
Buy Call options, or sell Put options	Buy Put options, or sell Call options
Buy Call spreads or fences	Buy Put spreads or fences

Futures (FCPO)

FCPO -Futures

A futures contract is a financial contract, obliging the buyer to purchase or the seller to sell an asset at a future date and price.

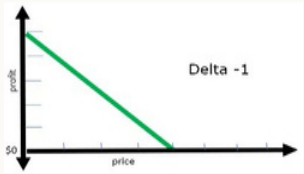
- Futures contracts detail the quality and quantity of the underlying asset; they are standardized to facilitate trading on a futures exchange. Some futures contracts require the physical delivery of the asset, while others are settled in cash.



- For a long position, the payoff is ST (settlement) -K (strike), and it will benefit from a higher underlying price



- For a short position, the payoff is K (strike) -ST (settlement), and it will benefit from a lower underlying price



FCPO -Futures

Basic Risk concepts

Cash Price - Futures Price =Basis risk

Futures Price = Cash Price - Financing Costs + Cost of Carry (storage, security, transportation)

Basis Strengthening – Cash gains relative to futures more positive or less negative -> benefits short hedgers (commodity sellers = producers)

Basis Weakening – Cash declines relative to futures, less positive or more negative -> benefits long hedgers (commodity buyers = consumers)

The shape of the curve is dictated by Supply & Demand of the underlying and is influenced by Financing Costs + Cost of Carry (storage, security, transportation)

Contango/ Carry: The forward futures price is above the expected Spot price

A market in contango reflects:

- healthy cash market
- availability is certain nearby
- the premium for longer-dated maturities

Backwardation / Inverse: The forward futures price is below the expected Spot price

A market in backwardation shows:

- participants willing to pay more upfront
- lack of availability nearby in the underlying
- the discount for longer-dated maturities





Options (OCPO)

FCPO Futures

vs

OCPO Options

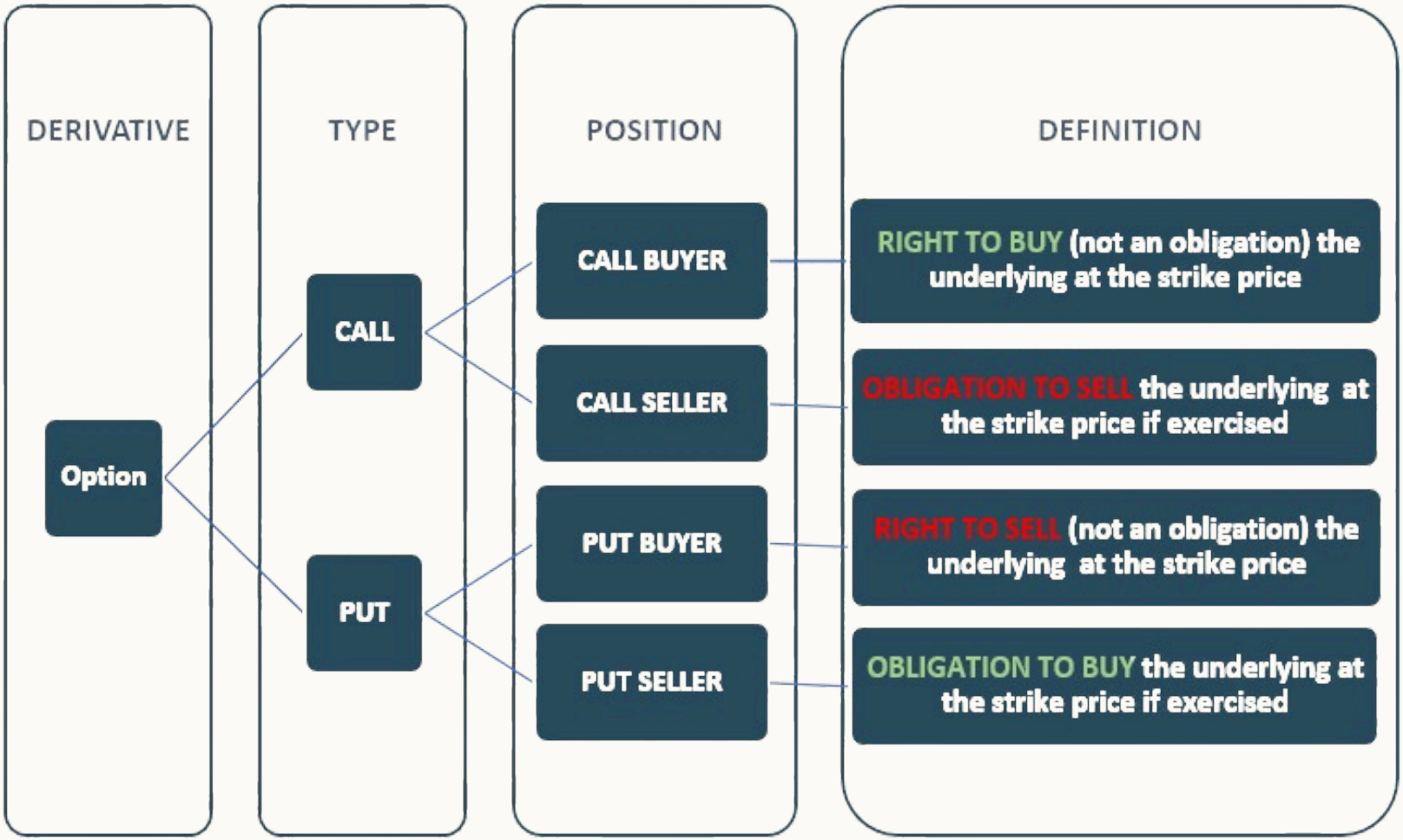
Futures (**FCPO**) are an **obligation** and have:

- Margin requirements
- Unlimited Risk
- Daily Mark-to-Market
- Best to be used for trade or position taking

Options (**OCPO**) are a **choice** and have:

- No margin requirements
- Pre-paid price (if bought)
- Unlimited risk if sold
- Best to be used as insurance or hedge

OCPO -Options



OCPO -Options explained

"Options offer the buyer the right, but not the obligation to act"

- To buy (call option) or sell (put option) the underlying asset at an agreed-upon price during a certain period of time or on a specific date
- The agreed-upon price is called the strike price
- Exercising means utilizing the right to buy or sell the underlying security
- The choice to exercise implies that a rational holder wouldn't do so unless the value is zero or positive, i.e. profitable
- Therefore, an option is always an asset to the holder and a liability to the seller.
- Because the option is an asset with a positive value, you would always expect to pay a premium for it, before expiry
- This premium is variable until expiry and depends on the underlying price, volatility, and time remaining

OCPO -Option Types and Valuation

Types of option expiry

- **European** options can only be exercised on the expiration date (exercise date) = listed options = BMD OCPO
- **American** options can be exercised at any time before the expiration date of the option = OTC BMD OCPO
- **Bermudan** options can be exercised on pre-defined dates = fixed date early expiry, not standard = OTC BMD OCPO

Option valuation at inception

- **At-the-Money (ATM)** options have a strike price where the futures are, at inception
- **In-the-Money (ITM)** options have a profitable strike price where the futures are, at inception
- **Out-of-the-Money (OTM)** options have a negative strike price compared to where the futures are, at inception, which would mean they would expire without value if settled immediately

Core Option Concepts

Premium = Intrinsic Value + Extrinsic Value

Intrinsic value changes only with the underlying price

- Call Intrinsic value = Underlying Price –Strike
- Put Intrinsic value = Strike –Underlying Price

Extrinsic value changes with all other parameters (more in part II later today)

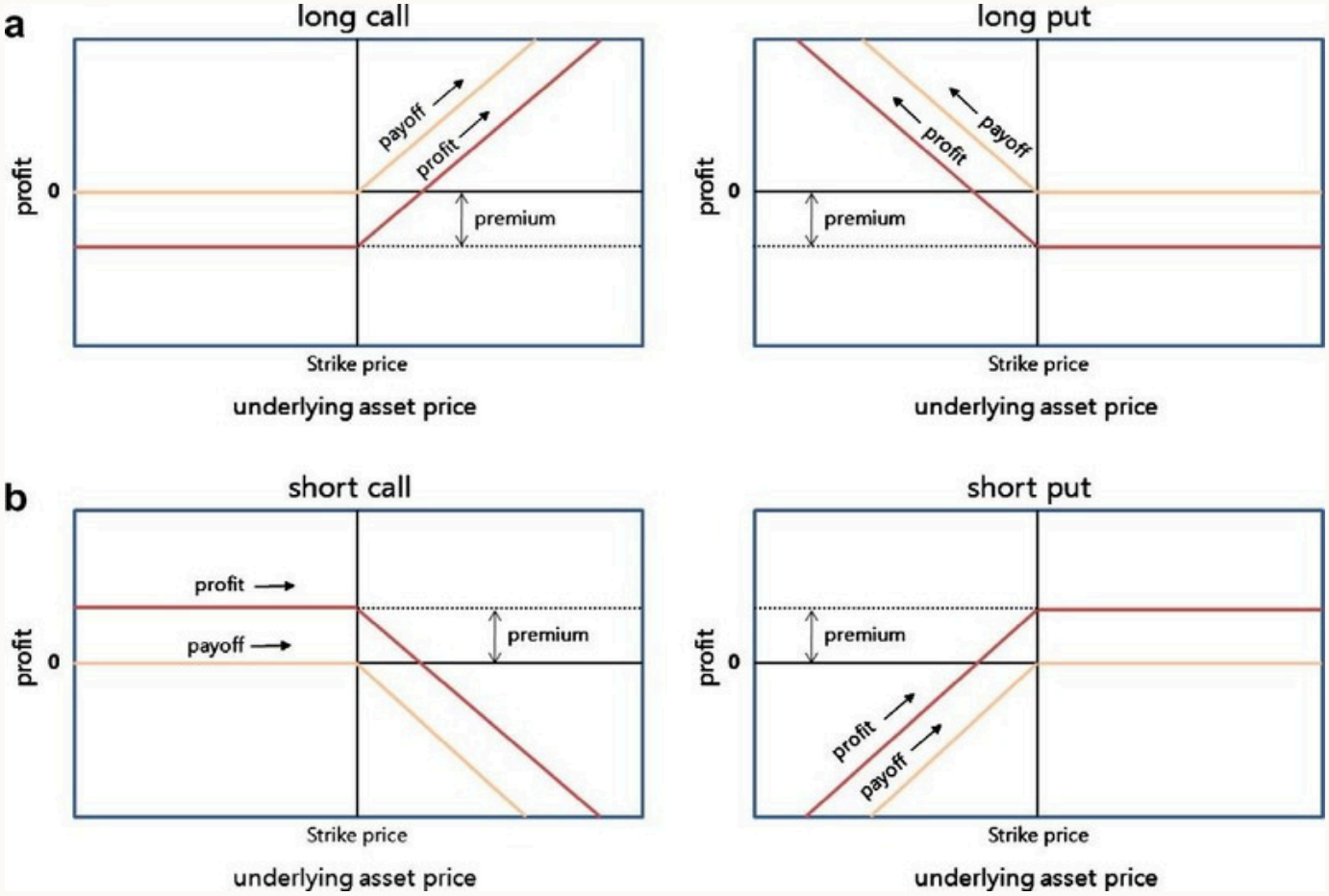
- Implied Volatility –"Vega"
- Time Decay –"Theta"
- Interest Rates –"Rho"
- Supply & Demand

The option premium = Intrinsic value + Extrinsic value

The premium remains variable until expiry and depends on the underlying price, volatility, and the time remaining

- The more price uncertainty, the more the option is worth (Delta)
- The more volatile the underlying, the more the option is worth (Vega)
- The more time to use the option, the more the option is worth (Theta)

Example Strategies - Options OCPO



Long Call
Max gain: Unlimited
Max loss: Premium

Long Put
Max gain: Strike - Premium
Max loss: Premium

Short Call
Max gain: Premium
Max loss: Unlimited

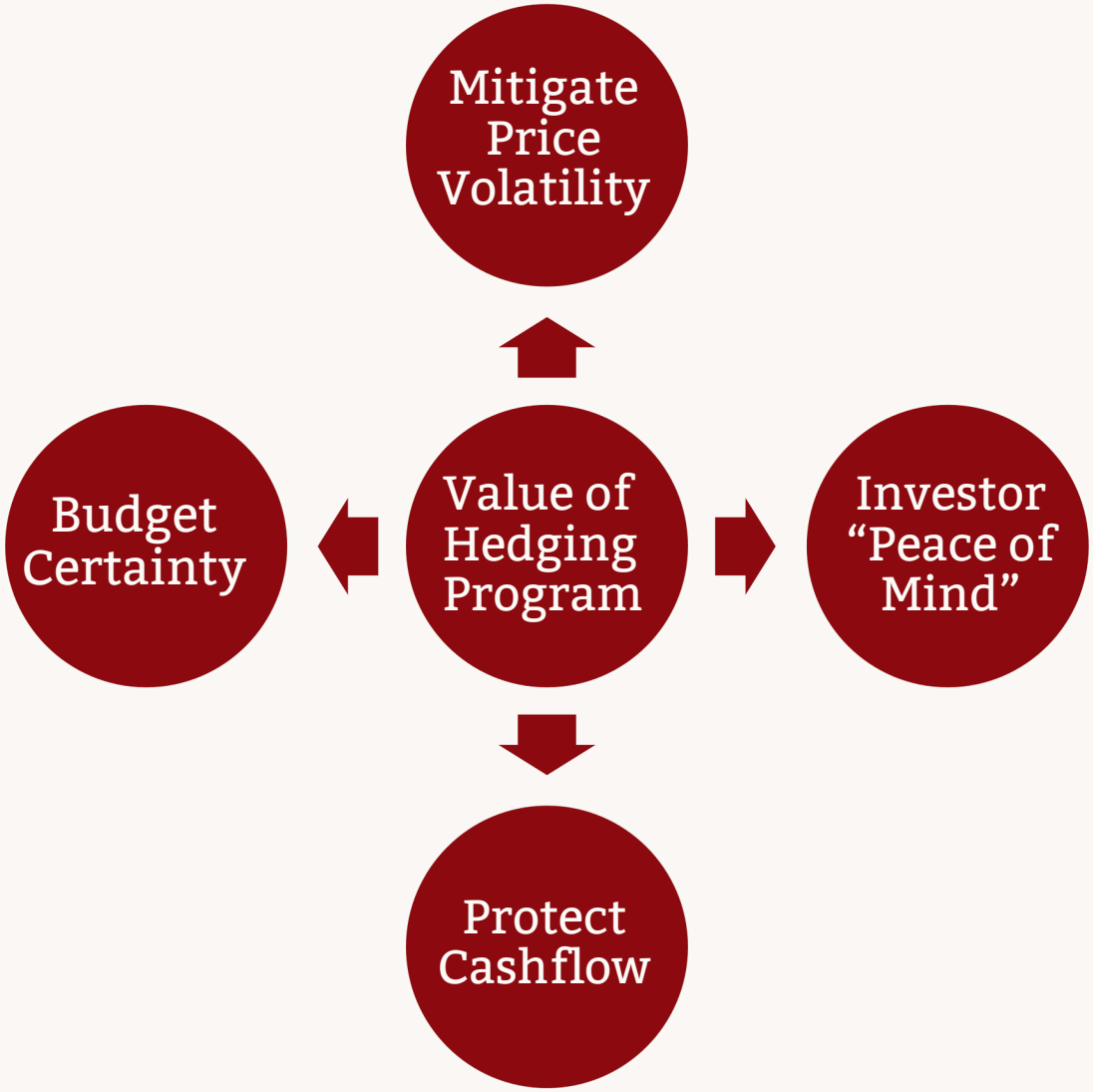
Short Put
Max gain: Premium
Max loss: Strike + Premium

Ask yourself: *"Would you exercise this today?"*

Best Practices in Option Trading:

OCPO Hedge Programme

The Hedge Program value is measured by 4 key success factors



Source: J.P.MORGANAGRICULTURALCOMMODITIES

The Hedge Program value is measured by 4 key success factors

What a Hedging Program Is (and Is Not)

- A hedging program should not be evaluated on “outperformance” versus spot or forward market prices.
- Profit maximisation is not the objective.
- The primary purpose is to provide certainty and to reduce exposure to adverse price movements arising from market volatility.
- Unmanaged price shocks can materially impact earnings, disrupt budgeting, and undermine financial stability for investors and lenders.

Why Implement a Hedging Program

- Protect and stabilise operating cash flows
- Support maintenance expenditure and capital investment (capex)
- Improve financial predictability for management, lenders, and shareholders

Typical Hedge Program Objectives

- Secure coverage of core operating costs
- Protect initial debt and equity payback
- Ensure a minimum return on investment
- Reduce the volatility of earnings and cash flows

The Hedge Program value is measured by 4 key success factors

Key Hedge Program Design Considerations

- Tenor
- Market depth and appetite
- Forward curve structure (carry vs. inverse)
- Seasonality and delivery periods

Volume

- Liquidity in the underlying market
- Ability to execute the required size without price distortion

Instruments

- Swaps vs. Options
- Basis risk between the hedge instrument and the physical exposure
- Relationship of current market prices to internal hurdle rates

Credit & Counterparty

- Availability of credit lines
- Permissible tenor and volumes
- Pricing and counterparty terms

Collateral / Margin

- Margining requirements for exchange-traded and OTC instruments

Cash Management

- Ability to fund option premiums
- Liquidity impact of margin calls or hedge restructurings

Options - Volatility

How nervous is the market really?

Options -Volatility

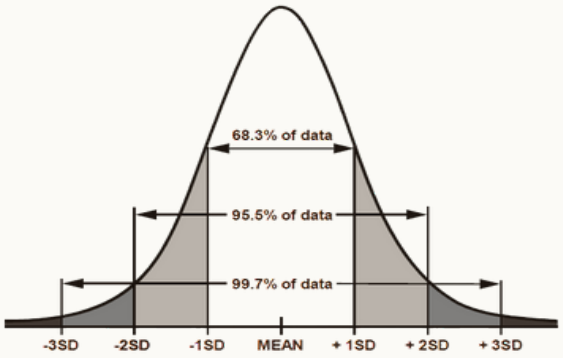
- **Volatility** is a measure of the rate and magnitude of the price change (both up and down) of the underlying. When volatility is high, the premium on an option will also be relatively high, and vice versa

- **Historical volatility,** also known as realised or statistical volatility, is a measure of the volatility of the underlying futures contract. It is considered known volatility because it is based on actual price changes in the underlying, as it is an annualised standard deviation of past price moves of the underlying.

- **Black & Scholes** defined historical volatility as:

"The standard deviation of the change in the natural logarithm of the underlying price that is expected over the life of the option, expressed as an annual rate, and obtained from a historicaltime series of underlying prices."

Areas under the normal curve that lie between 1, 2, and 3 standard deviations on each side of the mean



- Plus or minus 1 Standard Deviation from the mean takes in 68.3% of all outcomes

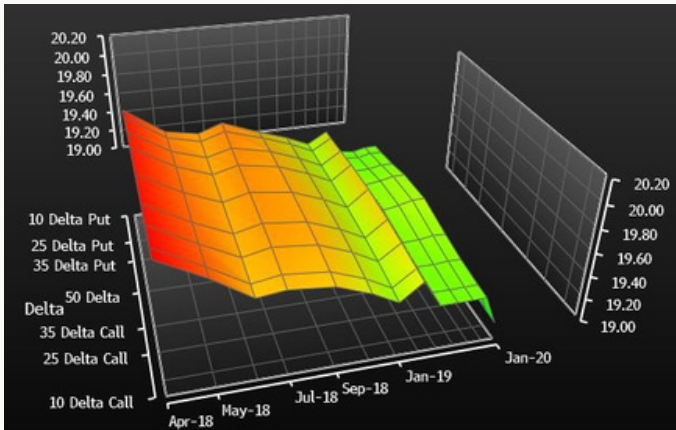
- Plus or minus 2 Standard Deviations from the mean takes in 95.4% of all outcomes

- Plus or minus 3 Standard Deviations from the mean takes in 99.7% of all outcomes

Options –Implied Volatility

Implied volatility (IV) signals the expected volatility over its lifetime

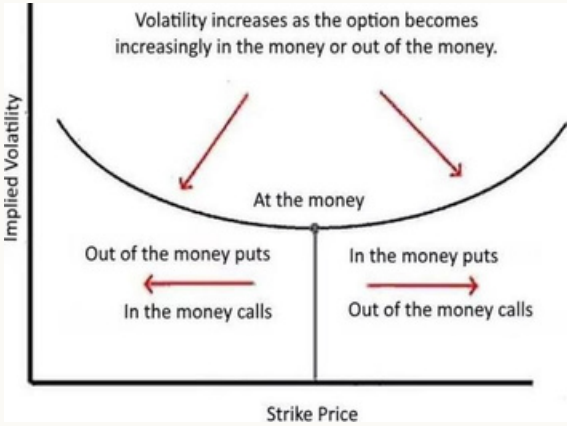
- It is an annualised volatility outputted by an option pricing model, when inputs are known option values in the market, to calculate the option price
- Usually, ATM option contracts are the most heavily traded in each expiration month. So market makers can allow supply and demand to set the ATM price for ATM option contract
- Once the ATM option prices are determined, implied volatility is the only missing variable that can be solved with simple algebra
- Once the implied volatility is determined for the ATM contracts in any given expiration month, market makers then use pricing models and advanced volatility skews to determine implied volatility at other strike prices that are less heavily traded = Vol Surface



Options –Volatility Skew

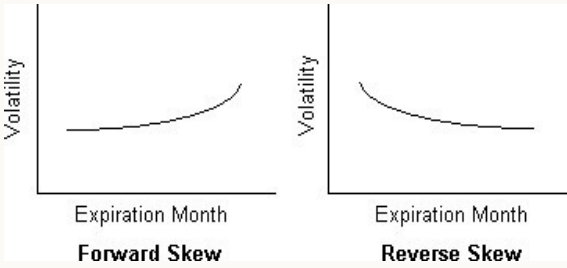
"The volatility skew is the difference in implied volatility between out-of-the-money options, at-the-money options, and in-the-money options= "vertical skew"

- If ATM options have a lower IV than OTM or ITM options, the volatility curve is called a "smile" due to the chart shape when plotting IVs against strike prices. In other words, a volatility smile occurs when the IV for both puts and calls increases as the strike price moves away from the ATM price.



- The graph is referred to as a volatility "smile" when the curve is more balanced or a volatility "smirk" if the curve is weighted to one side

- Reverse skews occur when the IV is higher on lower option strikes. It is most commonly seen in index or other longer-term options. This model is often in bear markets and involves buying puts to compensate for the perceived risks.



- Forward-skew IV values go up at higher points in correlation with the strike price

- This is best represented within friendly or bullish commodities markets, where a lack of supply can drive prices up, like in the agri markets over weather concerns







Too much / Too intense??

Coffee Break!



Trading Volatility

Riding the Waves of Opportunities Shaped by OCPO Optionality

PART II

How Volatility Shapes Opportunities

Recap / Questions / Comments Part I

Greeks

Options Strategies

Real Examples

Executing Options

Questions & Conclusions

Appendices

Options - Greeks

Options –Pricing: Greeks

Unlike futures, option values have sensitivity to more than just an up or down move in the underlying price.
Greeks are the theoretical sensitivities of an option to pricing parameters, like price, time, volatility, interest rates, and others.

The main ones to consider when offering / trading options are:

Delta (Δ) = sensitivity to Price change in the underlying product

Gamma (Γ) = sensitivity to the Delta (delta of the delta……)

Theta (θ) = sensitivity to Time till expiry

Vega (ν) = sensitivity to the Implied Volatility

Rho (ρ) = sensitivity to a change in risk-free Interest Rates

In this seminar, we focus on Delta, Theta, and Vega; other Greeks are explained in the appendices of your copy of this presentation.

Options –Pricing: Greeks

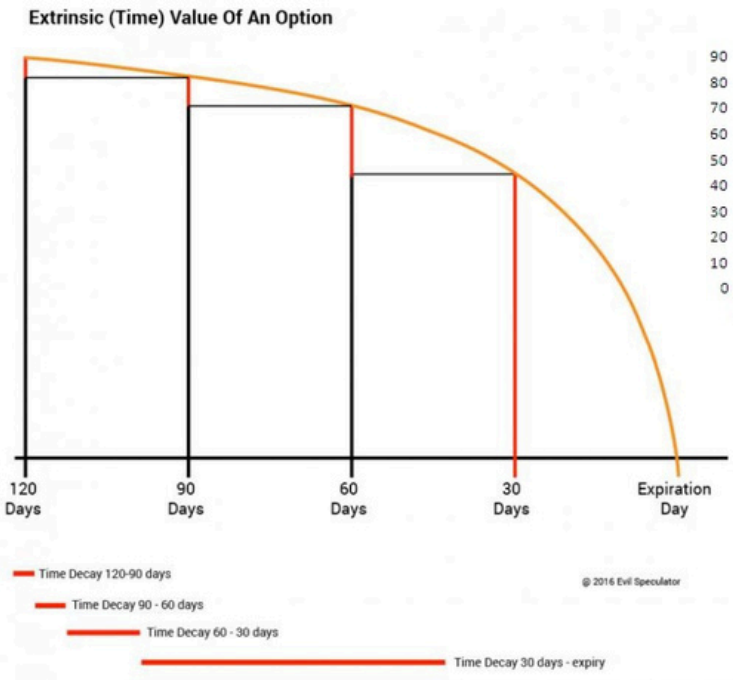
Delta = sensitivity to Price change in the underlying product

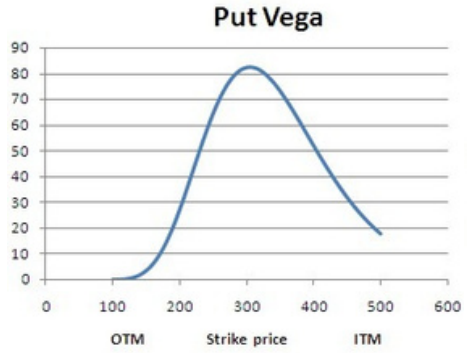
Gamma = sensitivity to the Delta (delta of the delta……)

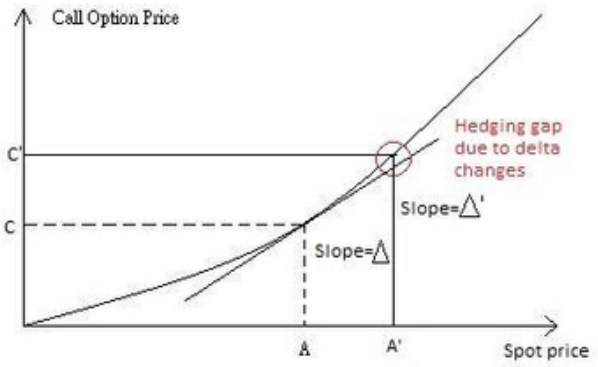
Theta = sensitivity to Time till expiry

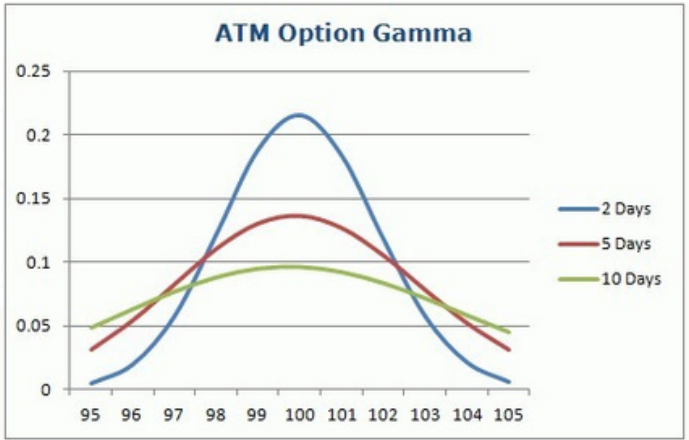
Vega = sensitivity to the Implied Volatility

Rho = sensitivity to a change in risk-free Interest Rates









Options –Pricing: Delta = futures change

Delta represents the price sensitivity of the option relative to the underlying futures

- It will give a basic idea of possible gains/losses relative to movements in the underlying
- price. Delta of a call option has a range between zero and +1, while the Delta of a put
- option has a range between zero and -1
  - Example, you are long a call option with a delta of 0.50
  - Therefore, if the underlying price increases by 100 MYR, the option's price would theoretically increase by 50 MYR

Delta will, therefore, indicate the change in the market position (volume hedged) value for a given change in the market price

- This is referred to as the hedge ratio, allowing you to hedge suitably to avoid losses on price moves in the underlying futures
  - Example, if you own 100 lots of OCPO options and are a long delta of 0.20
  - For every 100 MYR move in the underlying, you will need to re-hedge by buying or selling 20 lots

Delta can be seen as the probability of an option expiring ITM and thus the corresponding position in the underlying

- Being Long a call will result in positive Delta; being short a call results in negative Delta
- Being Long a put result in negative Delta; being short a put result in positive Delta

Options –Pricing: Delta = futures change

- Generally, in-the-money options will move more than out-of-the-money options, and short-term options will react more than longer-term options to the same price change in the underlying futures

- As expiration nears, the delta for in-the-money calls will approach +1, reflecting a one-to-one reaction to price changes in the underlying futures

- Delta for out-of-the-money calls will approach 0 and won't react at all to price changes in the underlying futures as the likelihood of value approaches zero.

- As expiration approaches, the delta for in-the-money puts will approach -1, and the Delta for out-of-the-money puts will approach 0

- Usually, an at-the-money call or put option will have a Delta of about .50, or "50 Delta". That's because there should be a 50/50 chance the option winds up in- or out-of-the-money at expiration from the time of buying the option (inception)

- Note, just like the cash markets, futures also have Delta of 1, meaning that as futures market prices change, a future position value changes by the same amount, "100 Delta."

Options –Pricing: Theta = insurance decay

Theta represents the rate of change between the option price and time, or time sensitivity

- It measures the sensitivity of the option value to passage of time (Gamma rent), by indicating the amount an option's price would decrease as the time to expiration decreases
  - Example, assume you are long an option with a theta of -1.50
  - The option's price would decrease by 1.50 MYR every day that passes up to the expiry date of the option, all else being equal
- The extrinsic value of an option always decreases with time, so theta is always negative. For this reason, theta is referred to as the time decay of an option, reflecting how much an option owner is paying for the optionality of owning the option.
- Time value represents uncertainty, and this uncertainty decreases the further away the strike price is from ATM
  - Therefore, the greatest decay is verified ATM
  - Time pushes OTM options further OTM and ITM options further ITM (increasing Delta to -1 or -1 close to expiry)

The price of an option will decay by approximately Theta x Delta x Time

Options –Pricing: Vega = fear premium

Vega represents the rate of change between an option's value and the underlying asset's implied volatility (IV)

- This is the option's sensitivity to volatility
  - Vega indicates the amount an option's price changes (in MYR) given a 1% change in IV
  - For example, an option with a Vega of 0.10 indicates the option's value is expected to change by 0.1% of the original option price in MYR if the implied volatility changes by 1%

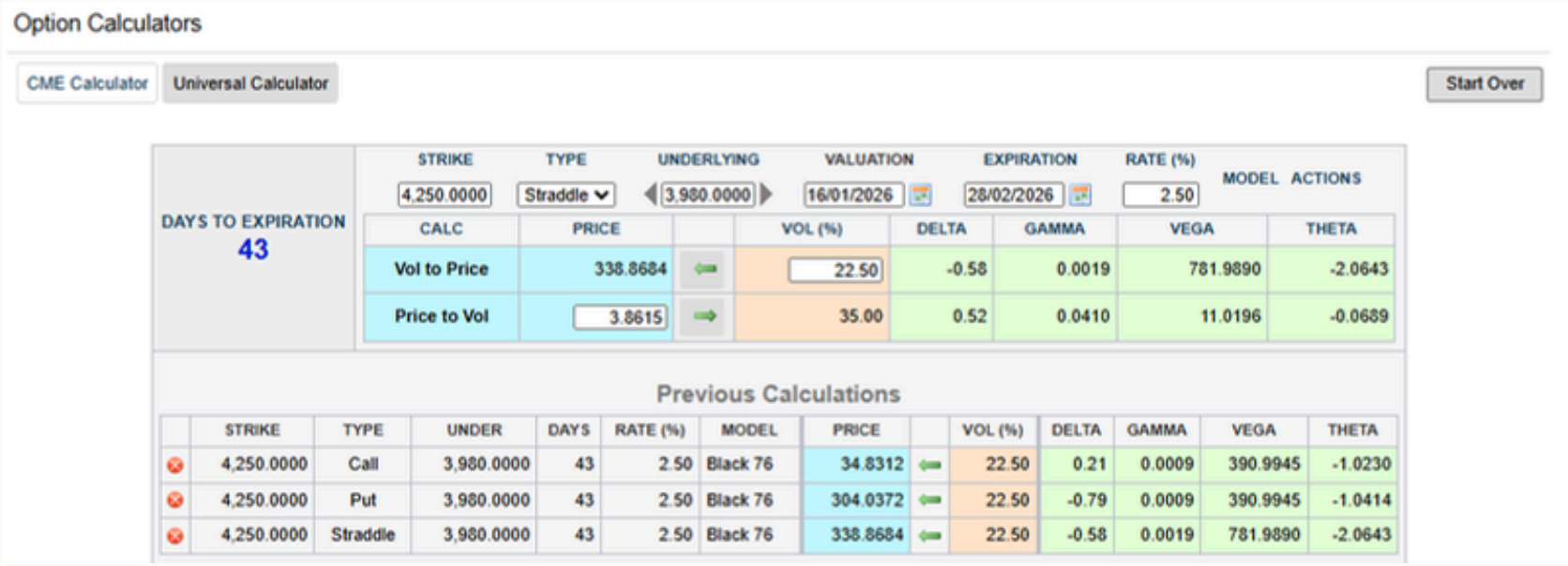
- As the option value increases with increases in volatility, the Vega of a vanilla option is, therefore, always positive

- The more time left to expiry, the more Vega an option will have

- It is the largest for ATM options, as OTM and ITM options don’t gain much from an increase in implied volatility (IV)

Option Strategies for Asian Clients in Edible Oils (OCPO)

If you can, use tools like CME Quickstrike



[CME QuickStrike Universal Calculator]

[Generic Option Price Calculator]

Option Strategies for Asian Clients

The main considerations when offering / trading options are:

- Strategies based on the direction of the market - everyone
- Strategies based on volatility – MNC's and professional option traders only
- Good strategies to hedge a physical position – most consumers, some Producers (e.g., against budget prices)
- Strategies implying a bullish or bearish bet – everybody loves to take a punt

The core fundamental rationales to consider when offering ideas:

- Pricing tools are rudimentary if at all present (generally at best an Excel sheet), search for alternatives like the CME Universal Pricer
- The downside risk of selling options is rarely considered seriously; they see it as income and not as potentially catastrophic exposure
- Leverage is not always offered, nor fully understood, so try to keep it relatively vanilla/simple or use specialized service providers
- Owners, promoters, and shareholders generally don't see the value of a hedge in tandem with the underlying risk, but as separate trades = trouble
- Companies are often poorly capitalized, so margin calls are hard to finance

Common Strategies for Asian Clients

Example ideas that are traded regularly in the edible oil space

- Available for both producers and consumers
- From basic vanilla to more complex ones are described in the coming pages
- Ideally zero costs structures in order to get your clients to buy them

Directional Trades

- Futures (swaps)
- Buying a Call
- Buying a Put
- *Put Spreads*

Physical Cargo Hedges

- *Fences*
- (Zero Cost) Collars
- *Three Ways*
- *Ratio Three Ways*

Volatility Trades

- Straddle
- Strangle

Note: In the OTC markets here, there are an almost unlimited number of ideas possible; contact your broker for it, but

- These are generally not very well developed in the edible oils space (yet) for OCPO (or in general the palm oil complex) or even for SBO
- They are with bilateral risk, so financing is included, and bring in counterparty risk = different from listed options
- Example about leveraged structures, composite structures, and spread options
- Examples in Italic above are explained in the appendix to this presentation

Directional trades: Futures (FCPO)

Objective

- To lock in a forward fixed price for a commodity

Description

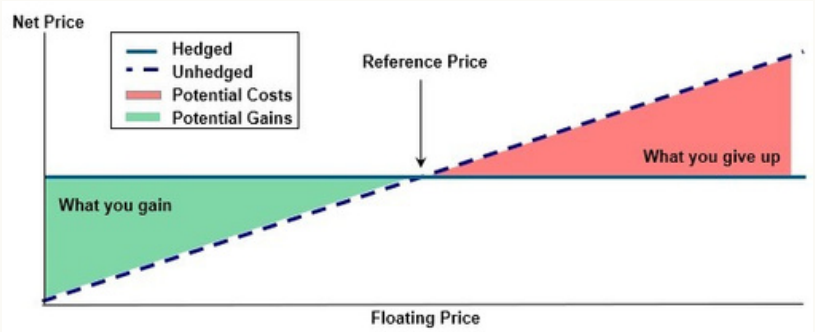
- A Producer locks in a fixed price on a fixed volume of a commodity over a predetermined period of time by selling futures
- At the end of each observation, the settlement price (as designated in the trade confirmation) is compared to the futures price
  - If the settlement price < the swap price, you receive the difference between the settlement price and the futures price
  - If the settlement price > the swap price, you pay the difference between the futures price and the settlement price

Advantages

- You, as a Producer, lock in a commodity price over a time period and are protected from any price decrease below the futures price
- This structure requires minimum monitoring cost but funding on BMD

Disadvantages

- You lose the potential gain from upside price moves above the futures price



Directional trades: Buying a Call (OCPO)

Objective

- To protect against price increases in input prices by paying an up-front premium

Description

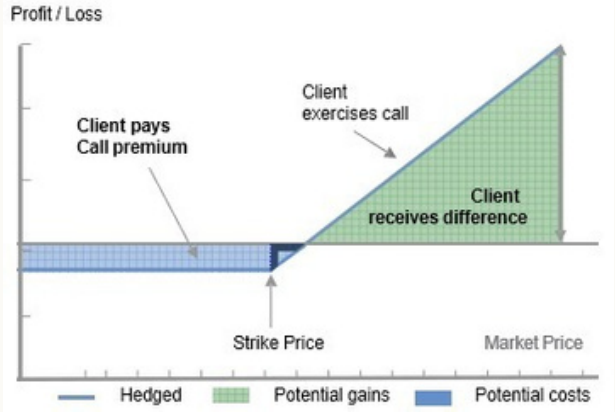
- It creates a cap price in exchange for the paid upfront premium, which reflects the likelihood that the option will be exercised
- The settlement price is compared to the call strike price
  - If the settlement price is higher than the strike price, consumers receive the difference between the strike price and the settlement price
  - If the settlement price is below the call strike, the options expire worthless

Advantages

- You participate fully in downward price movements while protecting against price increases above the call level

Disadvantages

- There is an up-front premium associated with this strategy



Directional trades: Buying a Put (OCPO)

Objective

- To protect against downward price moves by paying an up-front premium

Description

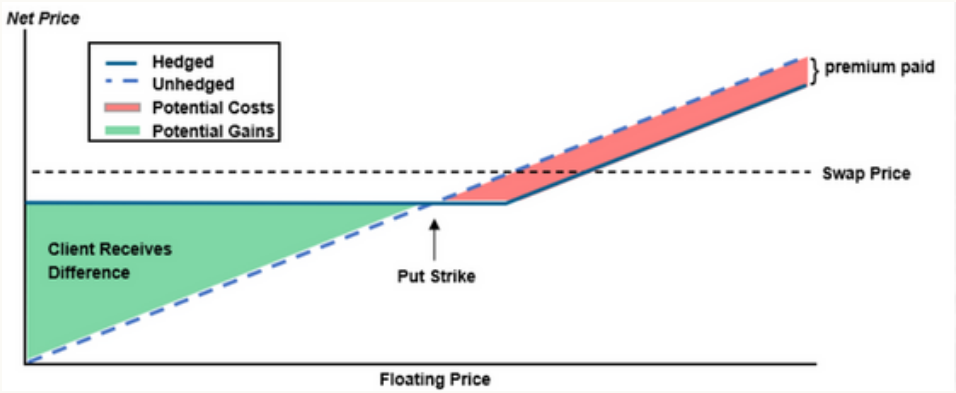
- The client creates a floor price in exchange for an upfront premium, which reflects the likelihood that the option will be exercised
- The settlement price is compared to the put strike price
  - If the settlement price is lower than the strike price, the Client receives the difference between the strike price and the settlement price
  - If the settlement price is above the call strike, the options expire worthless

Advantages

- Client participates fully in upward price movements while protecting against price decreases below the put level

Disadvantages

- There is an up-front premium associated with this strategy



Put options are often compared to buying insurance.

With the purchase of a put, the minimum sale price of the underlying commodity is known in advance.

The Producer is allowed to participate 100% in upside price moves above the put strike

Physical Cargo Hedges: Collars (OCPO)

Objective

- To hedge at zero cost and still retain some benefit from higher prices (producer)

Description

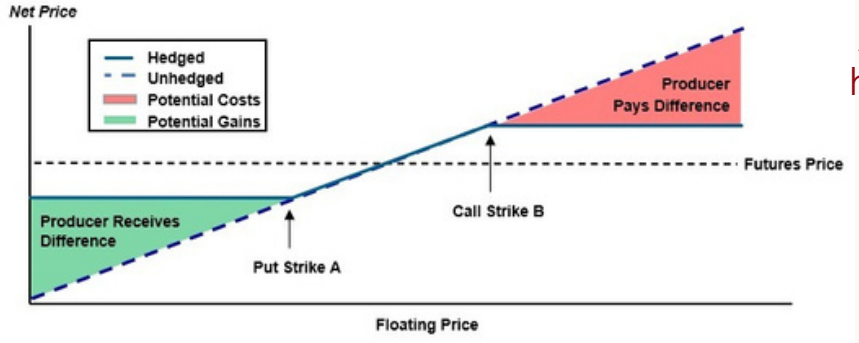
- A Producer buys an OTM Call option (B) and finances it by selling an OTM Put option (A) for the same time period at zero upfront cost
- At the option expiry, the settlement price compared to the strike levels
  - If the settle < A, Producer receives the difference between the settle and A
  - If the settle > B, Producer pays the difference between B and the settle
  - If the settlement price is between A and B, no payments are made

Advantages

- Lower upfront cost method of hedging against downward price moves while maintaining some upside participation

Disadvantages

- If the market price rises above the call strike, Producer will be selling at the call strike
- Producer has price exposure from the current swap level to the put strike



A zero-premium collar allows a Producer to hedge without paying an upfront premium.

Unlike a traditional swap, it offers the Producer the ability to take partial advantage of favourable upward price movements

Volatility Trades: Straddles =

big move coming (Delta & Vega, direction irrelevant)

Objective

- To participate in the change in volatility of the underlying commodities

Description

- Buy both an ATM Call and an ATM Put simultaneously
- With the same strike, same maturity, and same volume

Advantages

- Risk is capped to the premium paid for both options
- Reward is uncapped (unlimited for the Call, at strike value for the Put)
- Great when you expect Implied Volatility (IV) to go up (ahead of planting reports and in weather markets) or to trade for short-term goals (weekly options)

Disadvantages

- Expensive due to the cost of both option premiums at inception



"I expect a big move"

Volatility Trades: Strangles =

extreme move coming (direction irrelevant)

Objective

- To participate in the change in volatility of the underlying commodities

Description

- Buy both an OTM Call and an OTM Put simultaneously
- With different strikes, but with the same maturity and the same volume

Advantages

- Risk is capped to the premium paid for both options, but is cheaper than Straddles, need a bigger move to break even
- Reward is uncapped (unlimited for the Call, at strike value for the Put)
- Great when you expect Implied Volatility (IV) to go up (ahead of planting reports and in weather markets) or to trade for short-term goals (weekly options)

Disadvantages

- Quite expensive due to the cost of both option premiums at inception



"I expect a really big move, but I want it cheaper"

Real OCPO Option Strategies

price data provided by

MAREX

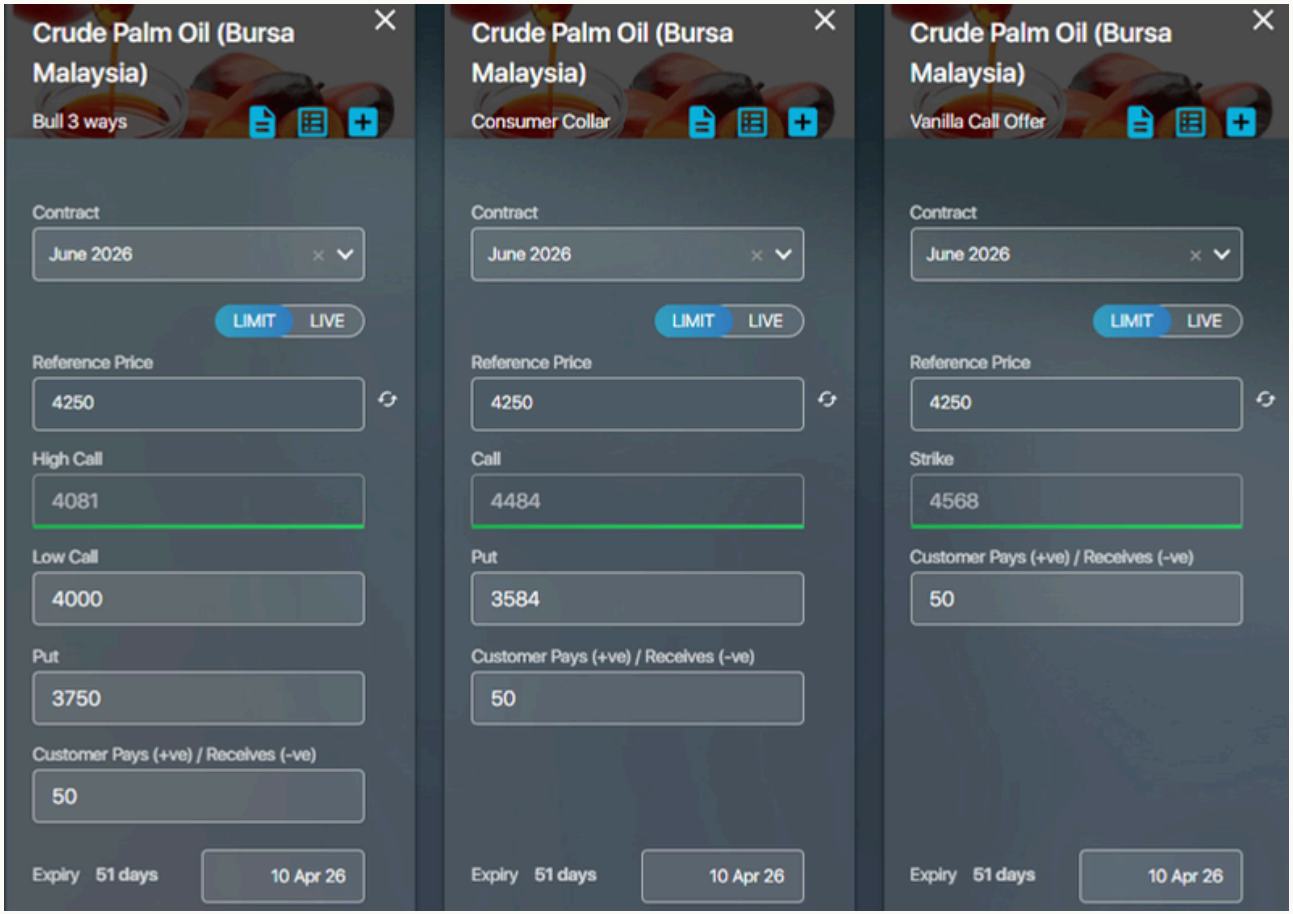
OCPO Examples and Discussion

Time GMT +8, 18:00 (close) Ref MYR 4120 KOM @ 16.84% VOL

- Why is VOL so cheap @ 16.84%, and with IVOL +22.4%?
- What to do with illiquid markets?
- How to trade in this scenario if there is no two-sided market?
- How do OTC providers make their money?
- What's the future of OCPO?
- Can I trade BlockTrades on options with BMD?
- How to calculate my risk?
- What can we do, most sophisticated?
- How can I embed the FX risk?
- What arbitrage opportunities are there (+OCPO @ 16.8% / -CME SBO @ 26.9% ?!)

Example Strategies - Options OCPO

Consumer based on June futures at the close 23-1-2026



MAREX

Consumer 3-way
Low Call Level <X< High Call Level: buy Notional @ LCL = 4000
X > HCL, receive [HCL – LCL] * Notional
X< Put Level, buy Notional at Put

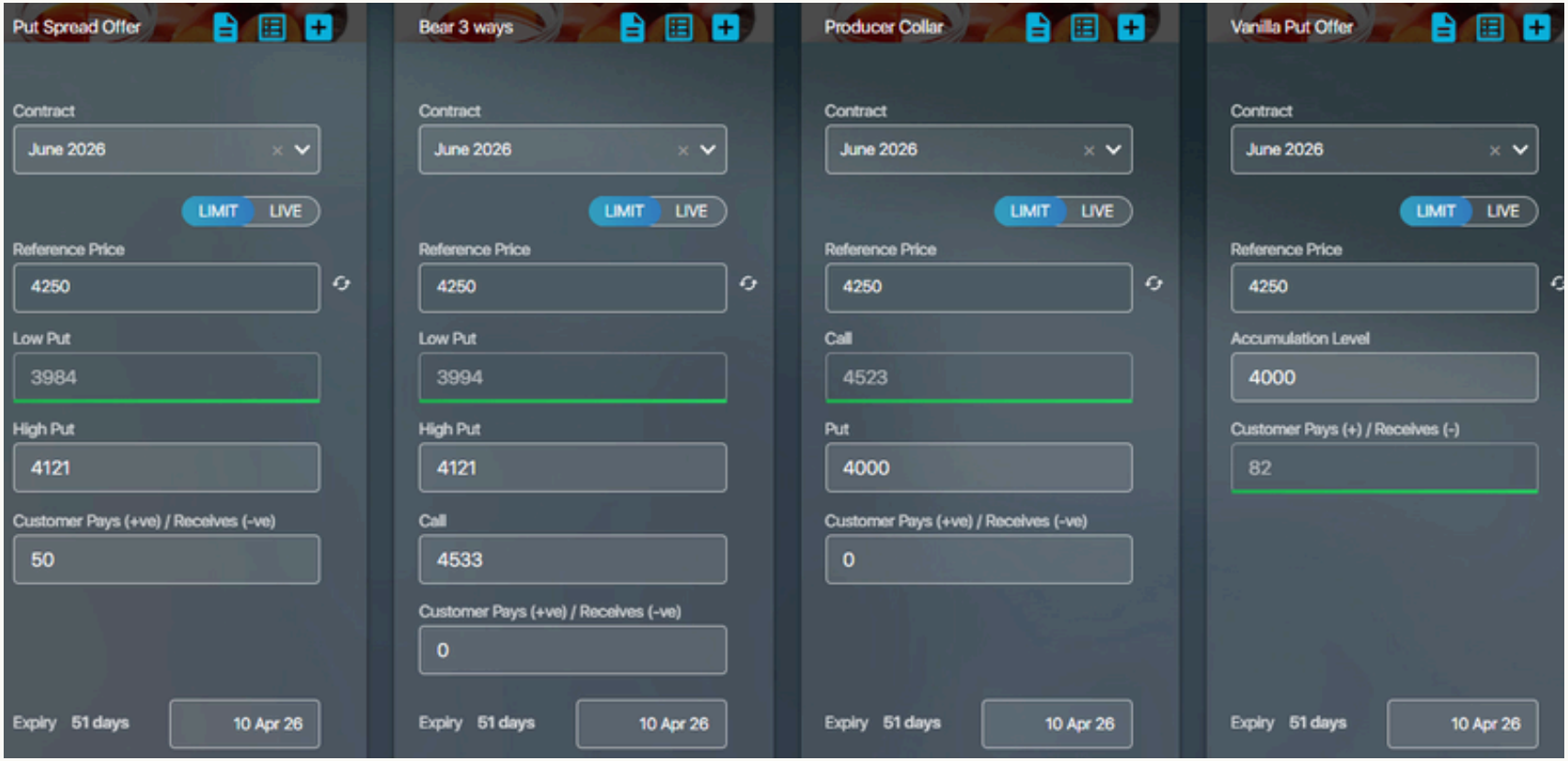
Consumer Collar
X >Call Level, buy Notional at Call Level = 4484
X < Put Level, buy Notional at Put Level = 3584

Vanilla Call Offer
- Above the Call Strike, buy the Notional Quantity at the Call Strike 4568

Example Strategies - Options OCPO

Producer based on June futures at the close 23-1-2026

MAREX



Put Spread Offer
LPL<X<HPL: sell Notional at the High Put Level = 4121
X<LPL, receive [High Put Level – Low Put Level] * Notional Quantity

Bear 3-way
LPL <X< HPL:
sell Notional @ HPL = 4121
X < LPL, receive [HPL – LPL] * Notional in cash
X> Call Level, Sell Notional at Call level = 4533

Producer Collar
X < Put Level, Sell Notional at Put Level = 4000
X > Call Level, Sell Notional at Call Level = 4523

Vanilla Put Offer
X < the Put Strike, sell the Notional Quantity at the Sell Strike = 4000

Practical Option Examples

All based on the expiry and settlement of
Wednesday 31 December and KOJ6 futures

Options –Pricing: Example

Greeks are not static

- Options lose time value every day, as Greeks change with time, underlying price, and implied volatility. Even when price and volatility don't move, the sensitivities are fluctuating
- Options do not operate independently, but move and adjust dynamically with changes in market conditions.
- Some other Greeks, which aren't discussed as often, are Lambda, Epsilon, Vomma, Vera, Speed, Zomma, Color, Ultima
- When trading options, you should consider risk-neutral probabilities as pricing is never perfect, and never risk-free, thus trading options gives opportunities

The risk-neutral probability is the chance of future outcomes adjusted for risk

- There are two main assumptions behind this concept:
  - The current value equals its expected payoff discounted at the risk-free rate
  - There are no arbitrage opportunities in the market
- Option pricing uses this theoretical value to measure the probability of buying and selling assets as if there is a single probability for everything in the market
- However, we neither assume that all investors in the market are risk-neutral nor that the fact that risky assets will always earn the risk-free rate of return.

Options –Pricing: Illustrative Example

Let's look at an OCPO example with the following parameters:

- BMD FCPO Futures
- Futures ref. price = 3,980
- 4000 Call price = 12
- Delta = 0.40
- Gamma = 0.50
- Theta = 0.20
- Vega = 0.10
- Volatility = 15%

If the market goes to 4,000 (up 20 points) in 2 weeks and volatility drops to 14% (down one point), what is the resulting premium of the option?

- Delta: The option's premium from delta alone would be: 0.40 x 20 = 8 points
- Gamma: To calculate the delta effect due to gamma, we multiply the gamma of 0.50 times the 20-point move, giving us 10 additional delta: 0.50 x 20 = 10 points
  - This changes the options delta from 40 to 50
  - Roughly, with the initial delta at 0.40, we would expect 8 points of change across the 20-point move, but due to the Gamma the new delta of 0.50 would generate a premium change of 10
  - Across the 20-point move, the delta changed from 40 to 50, therefore we take the average, 45 as we expect it to have moved during the period
  - Average delta over the 2 weeks = 45, price change is 20, price change = 45% * 20 = 9 MYR
  - This will contribute 9 points to the option's new premium (but this is not all!)

Options –Pricing: Illustrative Example

Let's look at an OCPO example with the following parameters:

- BMD FCPO Futures
- Futures ref. price = 3,980
- 4000 Call price = 12
- Delta = 0.40
- Gamma = 0.50
- Theta = 0.20
- Vega = 0.10
- Volatility = 15%

If the market goes to 4,000 (up 20 points) in 2 weeks and volatility drops to 14% (down one point), what is the resulting premium of the option?

- Delta + Gamma contribute 9 points to the option's new premium
- Theta, time decay, multiply the theta value of 0.20 times 14 days: 0.20 x 14 = -2.8
- Vega effect, multiply vega by the change in volatility: Vega of -1 x 0.10 = -0.1
- Rho effect, no change in interest rates has been discussed: 0
- Now we can add those values to get our new option price on t+14:
- New option premium = Old option premium + Δ delta + Δ theta + Δ Vega =
- Very indicative as value = 12 + 9 + (-2.8) +(-0.1) = 18.10
- The value of the same call option after 2 weeks = 18 MYR

Live examples 31-12-2025 @ KOJ26

Time GMT +8, 18:00 (close) Ref MYR 4056 KOJ 2026

OCPO

TERMS OCPO:

- Options on MYR-denominated CPO Futures
- Calls: C OCPO // Puts: P OCPO
- European-style exercise options
- Expiry 10th day 2 months before the spot month of the underlying FCPO Contract or, if the 10th day is a non-Business Day, on the last Business Day preceding the 10th day
- The 1st OCPO Contract will be trading the 3rd month FCPO Contract

DATA 31-12-2025:

- FCPOc4 settlement at the close: KOJ26 4056 MYR
- FCPOc4 at the close: 16,86%
- T to expiry: 41 days
- Rho assumed: 2.75% = Malaysian OPR by Bank Negara Malaysia

Live examples 31-12-2025 @ KOJ26

Time GMT +8, 6 pm (close) Ref MYR 4056 KOJ @ 16.84% VOL

Directional Trades

1. **Futures (swaps)**
MYR 4056, IV 16.86, Δ1
G 0.0, V0.0, T0.0

2. **Buying a C+4,500 @ 1**
MYR 3.5, IV 23.52, Δ0.039
G0.001, V1.157 T -0.249

3. **Buying a P+4,250 @ 202**
MYR 210, IV 16.75, Δ-0.772
G 0.001, V4.109, T -0.592

4. **Put Spread +3750/-4250**
MYR 203, IV 16.4, Δ-0.84
G0.002, V5.93, T-0.996

Physical Cargo Hedge Trades

5. **Producer Fence**
+3750P / -4250C @ 23 MYR
Δ-0.298, G0.001, V-2.272, T-0.557

6. **Producer Collar**
-3750P / +4250C @ 23MYR
Δ0.158, G0.001, V2.272, T-0.557

7. **Three Ways**
+3750P / -4000P / +4250C
-24 MYR, IV 22.50, Δ0.21
G0.001, V0.801, T -0.963

8. **Ratio Three Ways**
+3500P / -3750P / +4250C
23 MYR, IV 22.50, Δ0.154
G0.001, V2.416, T-0.585

Volatility Trades

9. **Straddle 4050 KOJ6**
MYR182, IV 16.84, Δ0.04 G
0.0035, V1.079, T -2.217

10. **Strangle**
+3750P /+4250C
MYR36, IV 16.67, Δ0.158
G0.002, V5.938, T-1.265

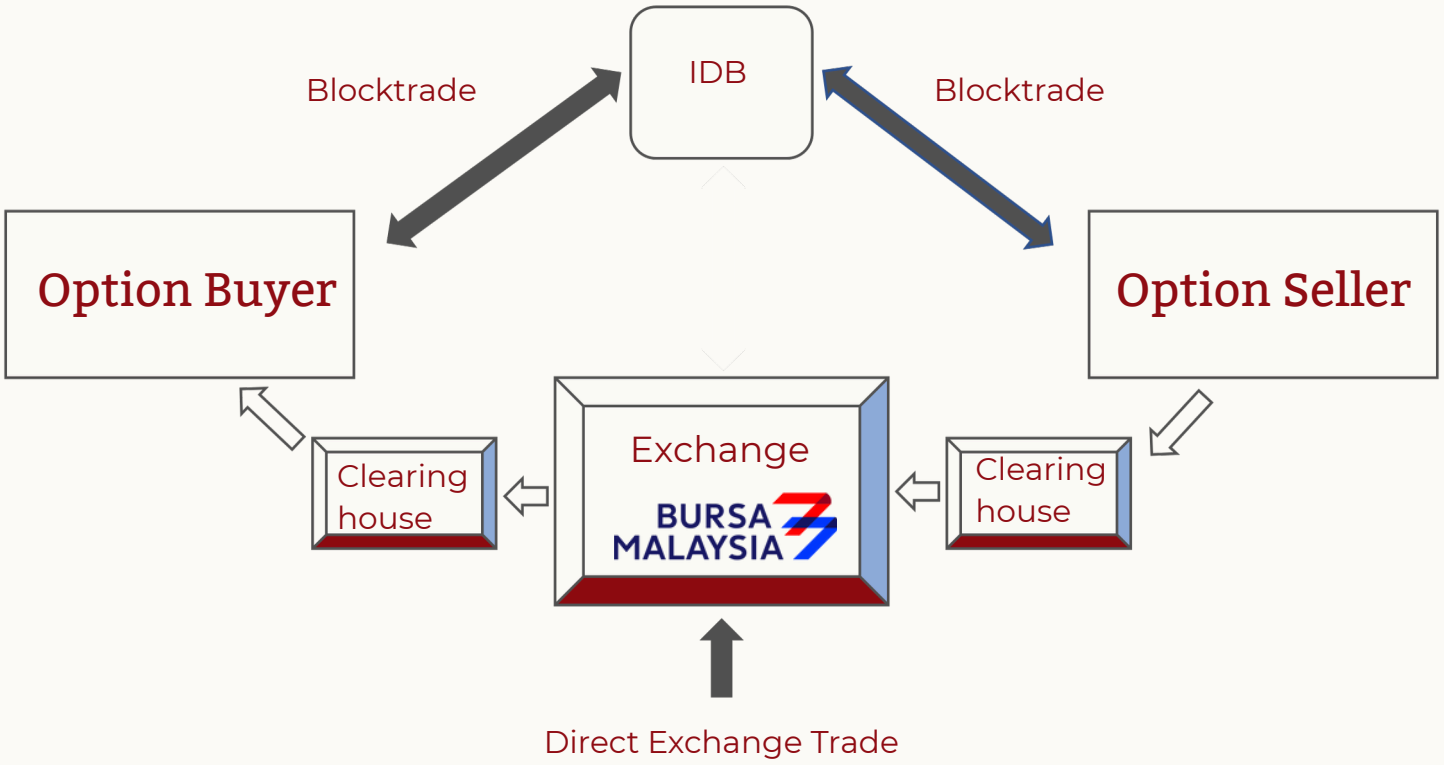
Now what?
next steps for you

Conclusions on OCPO -

Options for Edible Oil players

- All options strategies presented are just examples of possible ideas
- Preferences are to limit cashout, ask advice on what/why to buy
- Brokers can add value by commenting not just on today's prices, but more on expected Implied Volatility (IV) ranges and price moves
- Managing risk with options is easy IF you know what you are doing.
- Brokers can add value by managing a portfolio on behalf of clients and charging for it
- Ideally, don't try to calculate values in Excel; use QuickStrike (CME) or other platforms for it, provided by your option broker (e.g., Marex Agile)
- Longer dated options often only trade OTC with the bigger producers, so getting close to them adds value to your company's base
- The overall goal is to reduce your exposure to price risk, not per se as a revenue source. You don't earn on hedging; you limit risk.
- Short-term seasonal risks are fantastic reasons to trade options (Christmas rally, POC rally, Monsoon Madness, all USDA/MPOB reports)

Executing Options on Bursa Malaysia



- Anonymous transactions
- No counterparty, but Bursa Malaysia Exchange Risk exposure only
- Can be created and advised by e.g. Marex, Ginga or SCB
- Easy to create, execute, and manage
- Validation, valuation via in online portfolios
- Or trade direct with your Bursa Malaysia account via brokers like RHB

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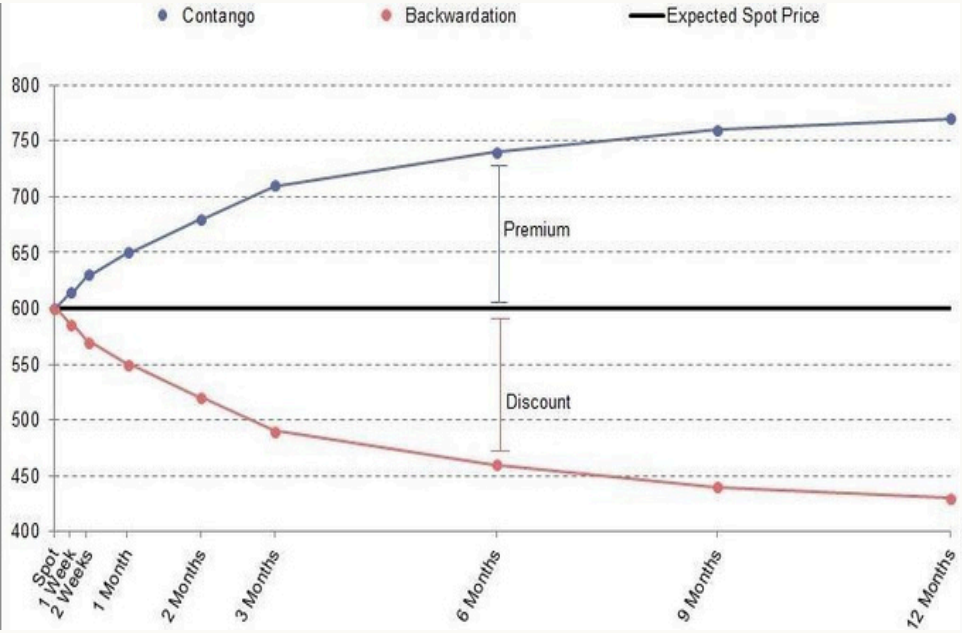
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Options on Bursa Malaysia (OCPO)
Appendices

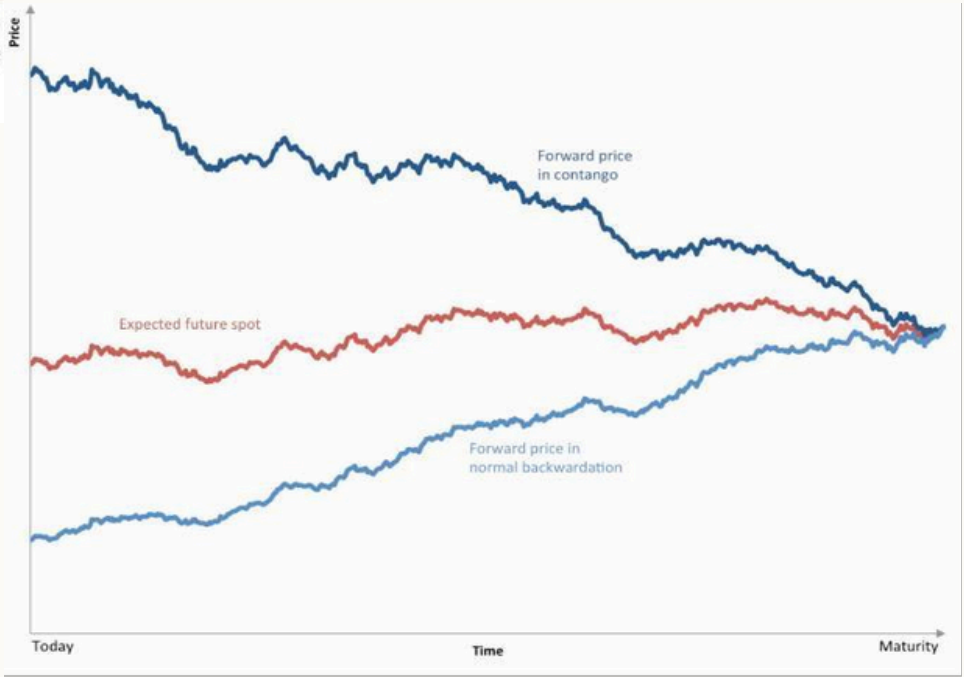
FCPO and OCPO
market structure explained

FCPO -Market Structure



Contango = Carry &
Backwardation = Inverse
Both are terms used to define the structure of the forward curve

Over time, as nearby futures become the spot contracts, the futures price and spot physical prices converge to cash values, so delivery can be made or taken against the exchange.



OCPO additional Greeks:
Gamma and Rho

Options –Pricing: Gamma = delta moves

Gamma represents the sensitivity of Delta to the underlying price. That is, it measures the rate of change between price moves compared to the original Delta.

- Example, you are long one call option on OCPOK6
  - The call option has a Delta of 0.50 and a gamma of 0.10
  - Therefore, if OCPO C K6 increases or decreases by 10 MYR, the call option's Delta would increase or decrease by 5, and its Gamma by 1.

You can think of gamma as the delta of the delta to show how much you need to hedge

- The best way to interpret Gamma is how much to adjust Delta hedge when the underlying prices change
  - If you are long Gamma, you are always gaining on a price move of the underlying
  - Hedging and re-hedging a long option position will result in a profit
  - When long Gamma, place hedge orders whenever the market is likely to move over big figures, key data releases (MPOB, USDA), and relevant macroeconomic events.

Gamma rent indicates the quantity of the earnings from gamma for one MYR invested in options for one day.

- A high gamma rent implies that the premium receiver does not receive sufficient earnings for the costs of the time decay = cheap option. A low gamma rent reflects the fact that the option trader is getting more for less (more gamma and less theta) = expensive option
- It is a risk measure for options, which is computed by relating an option's Theta to its Gamma: Gamma rent = time decay/gamma

Options –Pricing: Rho = interest rate

what if I do nothing?

Rho represents the rate of change between an option's value (price) and a change in the achievable risk-free interest rates in the market

- Rho measures sensitivity to the risk-free interest rates (usually government bonds) to compare an option to the “what if I do nothing” return
- Example, assume a call option has a Rho of 0.05 and a price of 125 MYR
- If interest rates rise by 1%, the value of the call option would increase to 130 MYR, all else being equal (the put option price would drop to 120 MYR)
- Changing interest rates affects the value of shorter-term options less
- Trading longer-term options (such as some of the palm producers look for, at high prices), Rho can have a much more significant effect due to greater “cost of carry” compared to the interest rate risk-free investments

Additional Option Strategies (OCPO)

Directional trades: Put Spreads

Objective

- To hedge at lower costs and still retain some benefit from higher prices

Description

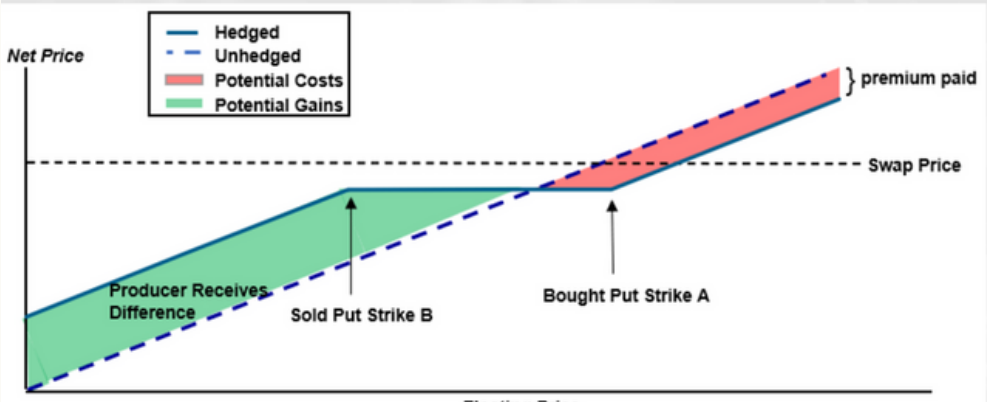
- A Producer buys an ATM or ITM put option (A) and partially finances it by selling an OTM put option (B) with a lower strike price for the same time period at lower upfront cost, thus creating a put spread. Also called a Bear Put Spread
- At the option expiry, the settlement price compares to the strike levels of the puts
  - If the settle < B, the Producer receives the difference between the put strikes
  - If the settle B<X<A, Producer receives the difference between A and B
  - If the settle > B, Producer pays the difference between settle and A

Advantages

- Lower upfront cost method of hedging against downward price moves while maintaining some upside participation

Disadvantages

- If the market price falls below the lower put strike, the Producer buys at the lower put strike B



Put Spreads are best in generally bearish markets for producers. Of course they can also be structured for calls in the case of consumers.

Selling the cheaper put with strike B helps to offset the cost of the put you buy with strike A. That ultimately limits your risk, but also reduces your upside.

Physical hedges: Fences

Objective

- To hedge against exposure to the downside (producer) / upside (consumer)

Description

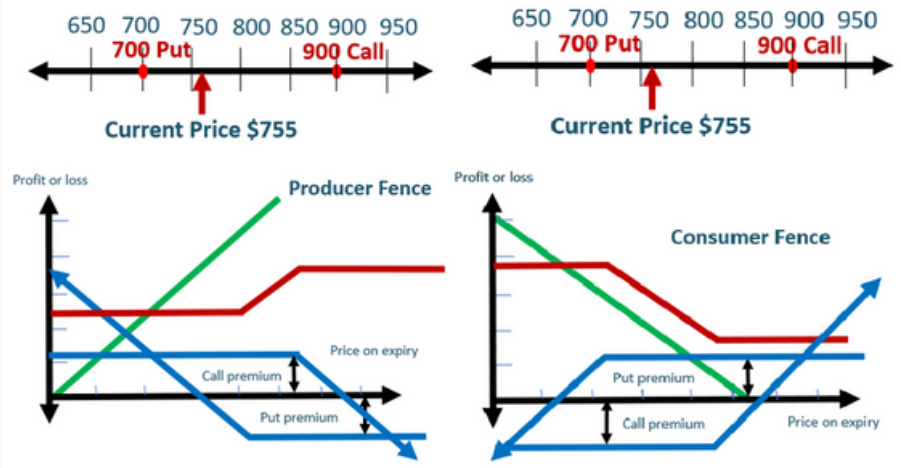
- A Producer buys an OTM Put, and at the same time sells a OTM Call
- A Consumer buys an OTM Call, and at the same time sells an OTM Put
- At expiry, the settlement price compares to the strike levels of the options

Advantages

- Lower upfront cost by selling part of the options, less capital-intensive than futures
- Can be used to reduce the price risk of physical positions

Disadvantages

- Relatively complex way to hedge your physical long/short as less liquid than futures



Physical Cargo Hedges: Three ways

Objective

- To hedge at zero cost and still retain some benefit from higher prices (producer)

Description

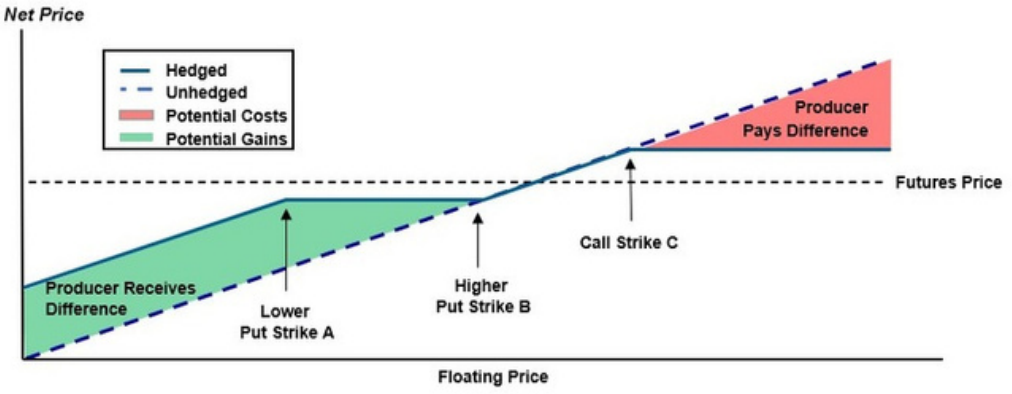
- The Producer buys an ATM Put (or nearly at-the-money) and sells an OTM Put to create a put spread and combines this with selling an OTM call to finance the put spread.
- The total premium paid is zero for this combined structure
- Result: the Producer is protected by the value difference between the put strikes A & B at levels below A, but participates in upside price moves to the call strike level C

Advantages

- Producer participates in upside price moves up to the call strike C
- If the market falls between put strikes, the Producer is selling at the higher put strike B

Disadvantages

- The Producer sells at the call strike C on price moves above the call strike C (=cap)
- If the market falls below the lower put strike A, the Producer is selling at the settlement price plus the difference between the two put strikes A & B



A Three-Way allows a Producer to participate in higher levels than a traditional zero-premium collar would allow.

However, the Producer is only partially hedged for levels below the lower put strike.

Physical Cargo Hedges: Ratio Three ways

Objective

- To hedge at zero cost and still retain some benefit from higher prices (producer)

Description

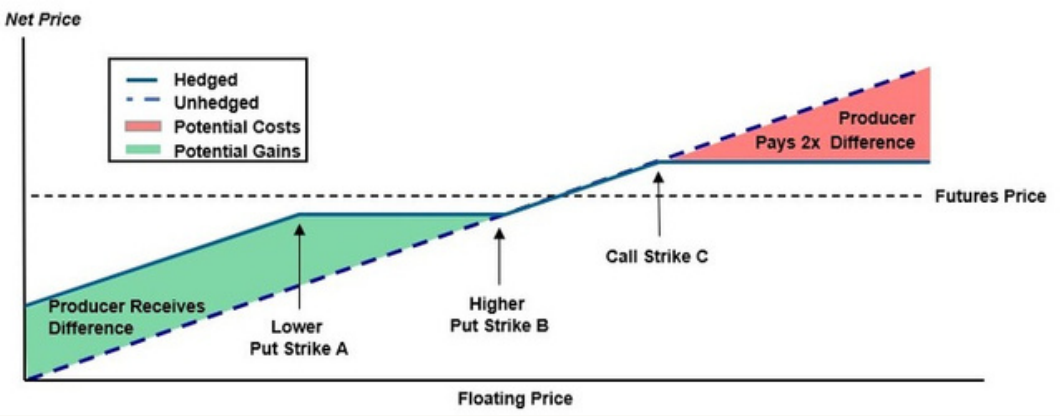
- The Producer buys an ATM Put (or nearly at-the-money) and sells an OTM Put to create a put spread and combines this with selling 2X an OTM call to finance the put spread.
- The total premium paid is zero for this combined structure
- Result: the Producer is protected by the value difference between the put strikes A & B at levels below A, but participates in upside price moves to the call strike level C

Advantages

- Producer participates in upside price moves up to the call strike C
- If the market falls between put strikes, the Producer is selling at the higher put strike B

Disadvantages

- The Producer sells x2 the volume at level C when the price moves above the call strike C
- If the market falls below the lower put strike A, the Producer is selling at settle plus the difference between the two put strikes A & B



A Ratio 3-Way allows a Producer to participate in higher levels than a traditional zero-premium collar would allow.

However, the Producer is only partially hedged for levels below the lower put strike.

OCPO option pricing theory

Options –Pricing: valuations

The Black-Scholes Option Pricing Formula = most used

call option: $c(S,X,r,T,\sigma) := S \cdot N(d_1(S,X,r,T,\sigma)) - X \cdot e^{-r \cdot T} \cdot N(d_2(S,X,r,T,\sigma))$

put option: $p(S,X,r,T,\sigma) := X \cdot e^{-r \cdot T} \cdot N(-d_2(S,X,r,T,\sigma)) - S \cdot N(-d_1(S,X,r,T,\sigma))$

where

$$d_1(S,X,r,T,\sigma) = \frac{\ln\left(\frac{S}{X}\right) + \left(r + \frac{\sigma^2}{2}\right) \cdot T}{\sigma \cdot \sqrt{T}}$$

$$d_2(S,X,r,T,\sigma) = \left(d_1(S,X,r,T,\sigma) - \sigma \cdot \sqrt{T}\right)$$

$N(x) =$ cumulative normal distribution

$$C = SN(d_1) - N(d_2)Ke^{-rt}$$

C = Call premium
S = Current stock price
t = Time until option exercise
K = Option striking price
r = Risk-free interest rate
N = Cumulative standard normal distribution
e = Exponential term

s = St. Deviation
ln = Natural Log

$$d_1 = \frac{\ln\left(S/K\right) + \left(r + s^2/2\right)t}{s \cdot \sqrt{t}}$$

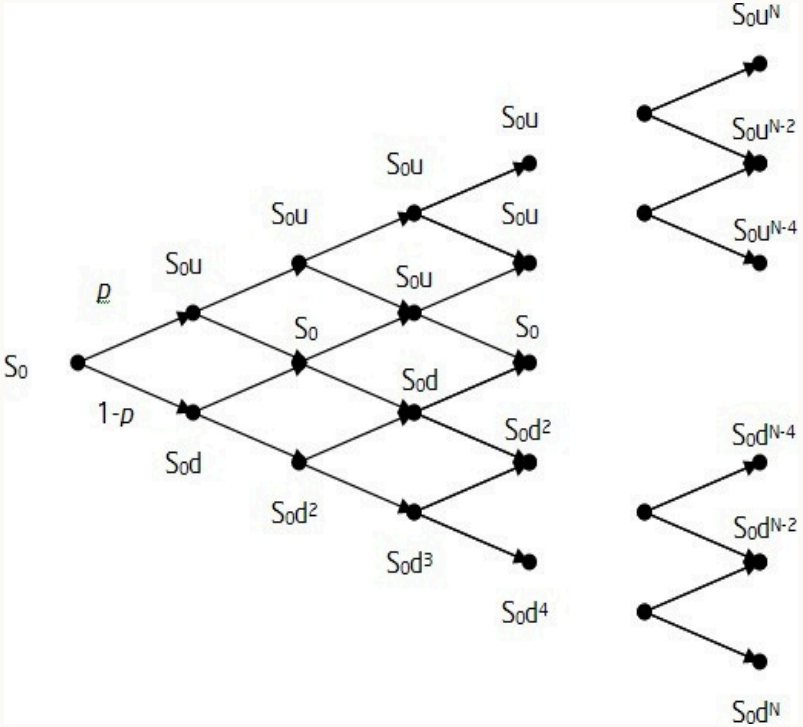
$$d_2 = d_1 - s \cdot \sqrt{t}$$

S = Underlying price
X = Strike price of the option
r = Risk-free interest rate
T = Time to expiration in years
σ= Implied volatility
N(x) = The cumulative normal distribution function

- The Black-Scholes-Merton (BSM) model is a model of price variation over time that can be used to determine the price of an option.
- The model assumes the price follows a geometric Brownian motion with constant drift and volatility, and assumes the underlying prices follow a log normal distribution because asset prices cannot be negative (they are bounded by zero).
- Often, asset prices have significant right skewness and some degree of kurtosis (fat tails). This means high-risk downward moves often happen more often in the market than a normal distribution predicts.

Options –Pricing: valuations

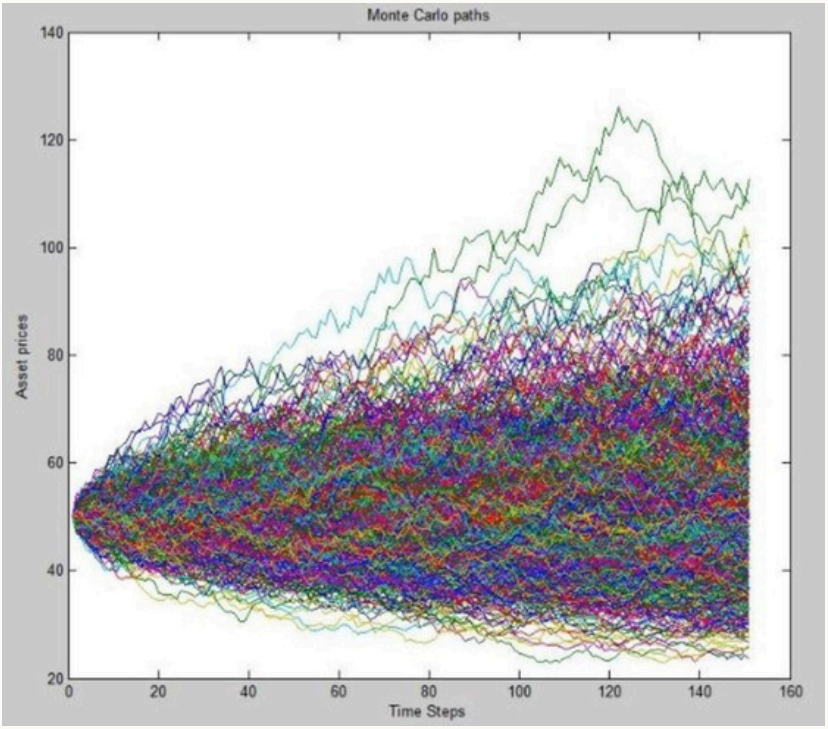
The Binomial Option Pricing Formula = alternative



- The binomial option pricing model is an options valuation method developed in 1979. The binomial option pricing model uses an iterative procedure, allowing for the specification of nodes, or points in time, during the time span between the valuation date and the option's expiration date.
- With binomial option price models, the assumptions are that there are two possible outcomes, hence the binomial part of the model. With a pricing model, the two outcomes are a move up, or a move down.
- The major advantage of a binomial option pricing model is that it’s mathematically simple. Yet these models can become complex in a multi-period model.

Options –Pricing: valuations

The Monte Carlo Option Pricing Formula = digital alternative



- Monte Carlo simulation is used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. It is a technique used to understand the impact of risk and uncertainty in prediction and forecasting models
- It is a multiple probability simulation and involves the creation of a computer-based model into which the variabilities and interrelationships between random variables are entered
- A spread of results is obtained when the model is run many times –100s or 1000s.
- The method is very useful when the number of random variables is too high making the analysis using ordinary methods very complex

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- Finalist: Technology Innovation of the Year 2024, Commodity Trading Awards by Commodities People
- Finalist: Most Promising Innovation 2023, Techblazer Awards
- Finalist: Technology Innovation Award 2023, Global Trade Review (GTR) and GTR Ventures

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