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Managing Price Risk:

CME Futures & Options

For Palm Oil Market Participants

By Paul Bloemendal

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Hedging Palm Oil with Futures & Options

“Companies that stand the test of time are the ones that remain profitable and return value to shareholders, regardless of the market cycles. Companies that struggle are those that engage in “market timing” and lose focus, in particular when it applies to managing commodity price risk.”¹

Many commodity companies still describe themselves as “traders” while in real terms we are basically all just trying to control our supply chain, our profitability and our existence by managing the various layers of risk efficiently.

Making money on directional trades is hard, as the information disparity between large multinationals and consumers has disappeared. Information is almost free and instantly available to all, causing the already razor thin margins to drop even more from the average 2% of revenue currently.

In early 2020 the commodity market (and mainly the one in Singapore) got shocked by a string of defaults, fraud cases and exits from the industry including some of the major banks. Now the question is what happened, why it happened, what we can do/use to avoid this in the future, and as market participants, what we can do to enhance yield and outperform the market.

This report will focus on the last part, as new tools are coming out to help you manage and control your risk exposure in better and more effective ways.

CME Group is launching the USD Crude Palm Oil 15th Day Bullet Futures and 10th Day Financial Options². They enhance the portfolio of hedging tools available to market participants from the existing paper trades, physical cargoes ex-tank or afloat and the futures on other exchanges. They also complement the existing offering by CME Group that use harder-to-understand average price swaps.

Hopefully, after reading this report, you will see the value of the new contracts and will consider them in your hedging or sourcing program. Personally, I think they are a huge improvement from what we are currently using and thus will make the whole industry more sustainable. Do note that the value of a hedging program should not be measured by its “outperformance” vs market prices as hedge funds tend to do, but by actual results for the company only. Core reasons to implement a hedging program can be to minimize volatility in prices, protect cash flows and to generate savings in your opex and capex.

¹[Four Habits of Successful Price Risk Managers, Cargill, 2020](#)

²[CME Group Palm Oil Product Slate](#)

Hedging Palm Oil with Futures & Options

Who is this report for? And why would we need to hedge if everything is going well?

This educational report reviews current and future options available for all market participants and explains how, when or why to use them. Markets evolve and companies should do the same.

The palm oil market is our focus today, for it has so far been lagging a bit in developing tools for active risk management. Options, available only in the OTC markets, are often expensive and illiquid. CME Group is the only exchange that provides futures to hedge in the global benchmark USD currency. Also, the physical markets do not have clearing or margining system, resulting in full counterparty risk for all parties. As a result, volumes and opportunities have, in my opinion, not been optimized and could benefit from new tools that are being developed by companies like CME group.

There are three client types in the palm oil market, based on the various tools they use for hedging:

1. Refiners / Consumers / Importers who are mainly buying physical cargoes
2. Plantations / Producers / Exporters who are mainly selling physical cargoes
3. Traders / Shippers who can act as both a buyer or seller and are active in the derivatives markets

Why hedging or managing your price risk with financial products?

All the above-mentioned client types will have their own rationale to participate in and use the different options available to them to hedge or trade the various markets. Companies should not be concerned though with the standalone “profitability” of the hedge program; rather they should focus on the value it brings by providing certainty while avoiding exposure to price shocks due to market volatility.

In general, they have the following rationale to execute hedges:

1. **Secure feedstock supply** (procure physical cargoes while staying flexible in pricing)
2. **Protect conversion margins** (maintain profit margins in the face of pricing pressure)
3. **Secure budgets** (achieve a more predictable and profitable future for shareholders)
4. **Stabilize pricing** (mitigate swings in commodity prices by using options)
5. **Defend market share** (prevent lost ground to competition by active risk management)
6. **Eliminate surprises** (avoid being caught off guard by the unknown risk like weather or duties)
7. **Speculative profits** (well managed risk taking to gain risk weighted profits)

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To Hedge or not to hedge, that's the question!

Keeping the previously mentioned rationale in consideration, how do they influence the decisions we make? What will be the added value for me to use another product in the same market?

What to use for our hedges and supply chain management?

Most players in the global palm oil market belong to one of the three types of clients mentioned before: typical producers (in our case plantations or FOB traders), typical consumers (either refineries or CNF/CIF traders), or shippers/trade houses like most MNCs active in all markets.

They all manage their supply chain relatively basically. A combination of paper trades against their physical cargoes, sometimes with futures with low correlation in the wrong currency. Options are available, but only for the large MNCs practically, while financing is done via LCs and invoice credit. While there is nothing wrong with this, as it has worked well for the last 40 years, it is neither sophisticated nor secure.

Trading FOB paper creates direct counterparty risk (bilateral) and has liquidity issues. Trading physical destination markets only creates execution risk and has no real forward market.

Most companies would benefit from a similar way of sourcing your feedstock and managing your risk as we are seeing in the soybean oil and grains markets. With a well-developed, liquid, USD based, easy to access and with cross product margining on credit from banks and brokers, it would convert our flat price risk into the option to run it as basis risk and thus be a lot less risky in terms of counterparty exposure while securing your supply.

Options are like insurances and should be added to any hedging portfolio. Why do you buy travel and health insurance against potential steep costs in unlikely events, but think doing the same for your corporate exposure is just “expensive”? It’s all about value, rather than about price. When volatility (VOL) is high, options can also be sold (even as a consumer) to generate income and as a result, to reduce your average purchase price.

Your goal? Companies with commodity exposure that grow and thrive over time are not the ones that attempt to time the market. They are not guessing on short-term directional moves, but have a disciplined and proactive approach to risk management. They can and do make money in every market environment.³ Bullish, Bearish, Sideways, in the end for a physical player it should not matter that much.

³ [How to build a diversified hedging portfolio, Cargill, 2020](#)

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When to use hedges (advantages of using listed products like futures and options)

- **Budget prices:** If your corporate budget depends on a certain maximum feedstock price, using options or futures to lock in long dated values ensures that you hit your budget without running excessive counterparty or supply chain risks. It provides you with flexibility to enhance or unwind positions.
- **Controlled price risk:** Balancing your positions around your market view (neutral, bearish, bullish) in a liquid, flexible way gives you the opportunity to reduce your market price risk exposure and avoid potential price shocks.
- **Supply chain coverage:** Securing your supply chain (purchasing CNF/CIF cargoes forward) while not increasing your flat price exposure (by selling futures or buying puts). No more suppliers demanding a certain date, you either direct or on the exchange, decide when to price and if agreed you can transfer your position to them against physical ownership.
- **Setting limits** (price/counterparty/product): By trading electronically and automatically you can manage your limits more efficiently. No more breaches of limits--automated execution and reduced counterparty exposure in a clear and transparent way enhance controls for management.
- **Lower counterparty exposure:** By no longer having to trade only with a few parties on the paper and in physical markets, you now can risk manage where you want your exposure to be with the safest counterparty (an exchange with margin calls) and greater liquidity.
- **Flexibility in sourcing:** By changing your hedges to liquid markets, you create the opportunity to gain access to liquidity in highly correlated markets without running into the risk of getting delivered cargoes in places you have no use for it.
- **Smaller volumes per deal:** With futures and options you can trade the volume you need when and where you want, providing you with greater efficiency.
- **Average price hedging:** Buying (or selling) something daily or via options creates a more smoothed out average price. Useful for consumers and plantations to create trust for your shareholders.
- **Basis instead of flat price sourcing:** Securing your supply (or offtake) while not fixing the prices with your counterparties yet gives you the flexibility to hedge where (exchange or destination) and when you want. Giving up futures helps to fix up part cargoes instead of full vessels in one go.

Hedge Considerations	
Refiners / Consumers / Importers	Plantations / Producers / Exporters
Risk: hedge against a rise in prices as natural Short	Risk: hedge against a fall in prices as natural Long
Buy physical paper or forward against refined 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

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What new products is CME Group launching?

Product Name	USD Malaysian Crude Palm Oil Bullet Futures 3 rd Month Reference, Expiry on the 15 th of the month	USD Malaysian Crude Palm Oil Financial Options 3 rd Month Reference, Expiry on the 10 th of the month
Exchange/Division	CME	CME
CME Product Code	CPV	POX
Settlement type	Financially settled	Financially settled
Exercise Style	Not applicable	European
Product/Contract Size	25 metric tons	25 metric tons
Minimum Trade Price Fluctuation (Tick)	US\$ 0.25 per metric ton	US\$0.10 per metric ton
Strike Interval	Not applicable	US\$10 per metric ton
Last Trade Date Rule	<p>15th calendar day of the contract month. If the 15th is not a Bursa Malaysia Derivatives (BMD) business day, then the preceding BMD business day will apply.</p> <p>Should this day not be a CME Exchange business day, trading will then cease on the preceding CME Exchange business day.</p>	<p>10th calendar day of the contract month. If the 10th is not a Bursa Malaysia Derivatives (BMD) business day, then the preceding BMD business day will apply.</p> <p>Should this day not be a CME Exchange business day, trading will then cease on the preceding CME Exchange business day.</p>
Final Settlement Price	<p>The Final Settlement Price is equal to BMD Crude Palm Oil Futures (FCPO) 3rd forward month's settlement price converted to USD using the Kuala Lumpur USD/MYR Reference Rate on the 15th calendar day of the contract month.</p> <p>If such date is not a BMD business day, then the preceding BMD business day will apply</p>	<p>The Final Settlement Price is equal to BMD Crude Palm Oil Futures (FCPO) 3rd forward month's settlement price converted to USD using the Kuala Lumpur USD/MYR Reference Rate on the 10th calendar day of the contract month.</p> <p>If such date is not a BMD business day, then the preceding BMD business day will apply</p>

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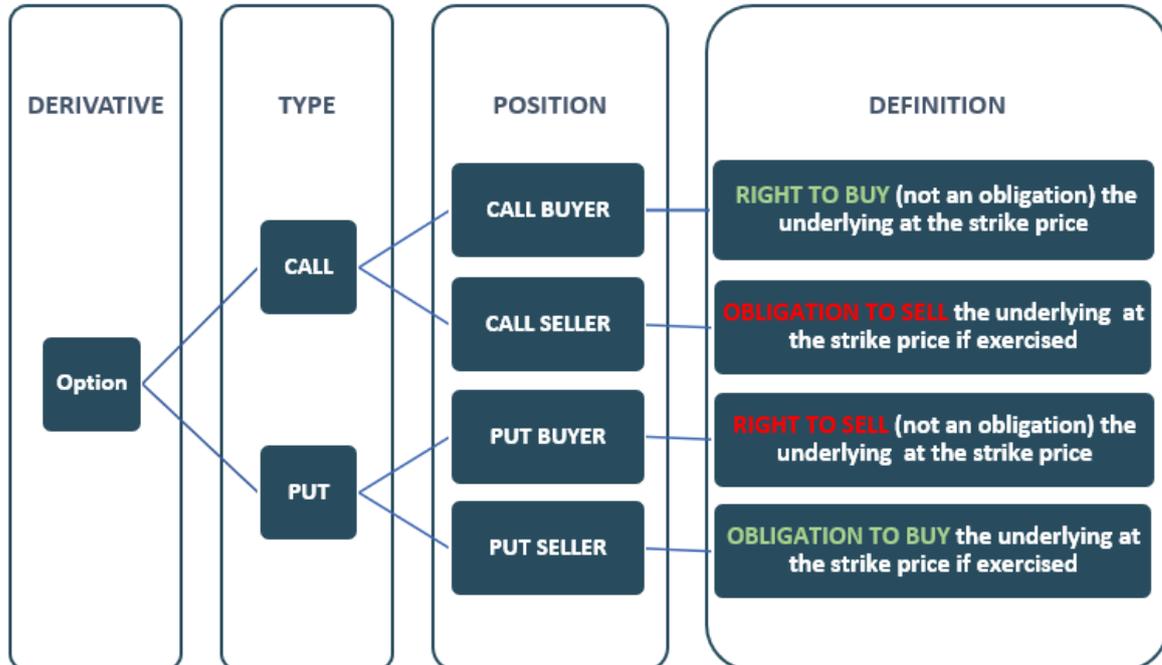
What does this mean, and how does it help me?

➤ **Bullet Futures:**

- With the new USD futures product, you will have a liquid product available in small volumes (starting at 25mt for 1 lot) that can be efficiently used as hedge against both your physical purchases as well as your refined product sales
- No longer do you have to run into counterparty risk (physical trades) or FX exposure as now you will have a simple, liquid, USD based futures contract to help you manage your exposure

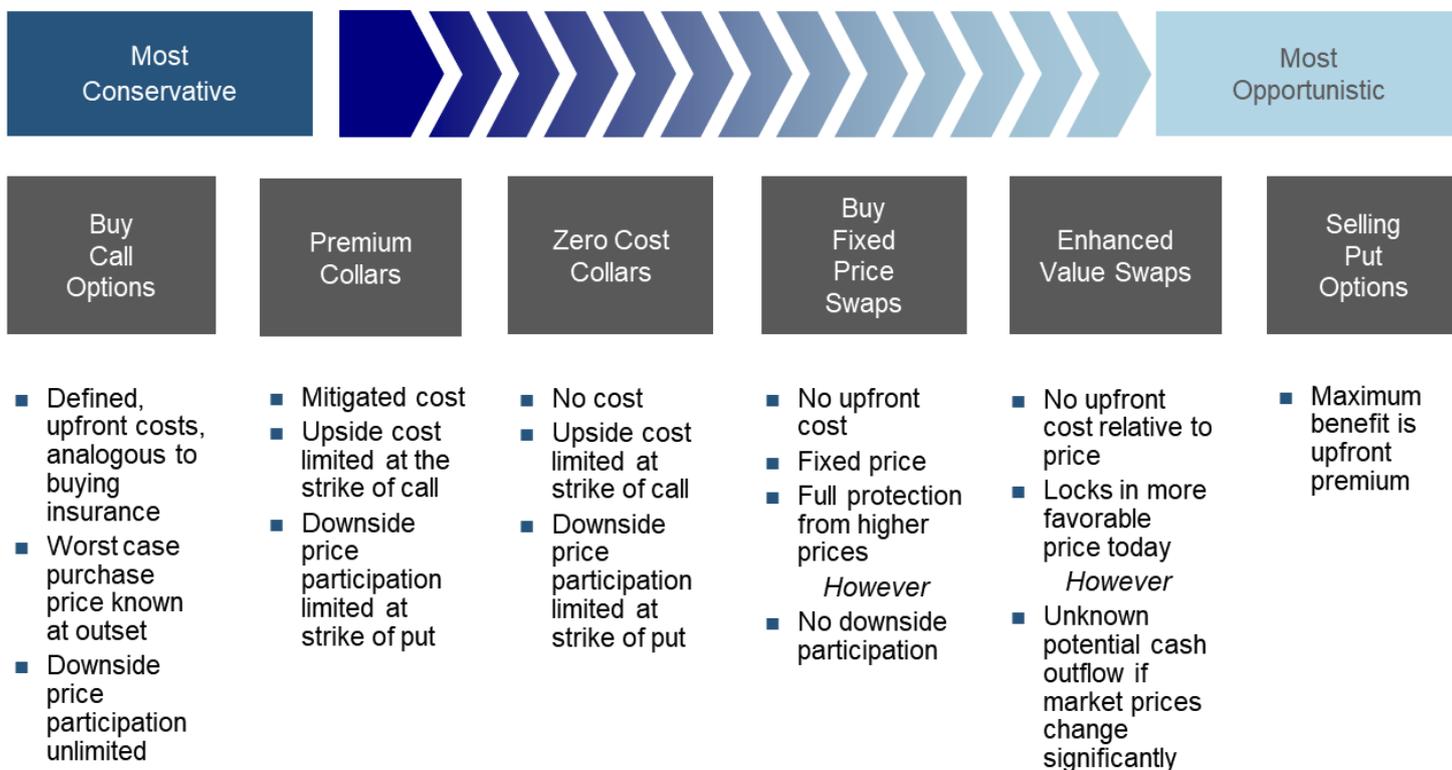
➤ **Bullet Options:**

- Having an option market on an exchange that will likely be successful (as most of the other markets on CME are) makes hedging via structures a lot easier
- There surely will be market makers who trade the optionality in spreads vs other products or outright that don't mind the underlying product
- This will create significantly more liquidity and better price discovery than what is now available via the OTC providers who mainly offer based on SBO volatility + a premium
- Option basics: this table explains the various exposures you get when dealing in options. It is very simplified but yes, that's how easy it is!



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Risk Profile of Hedging Strategies – Consumer Perspective

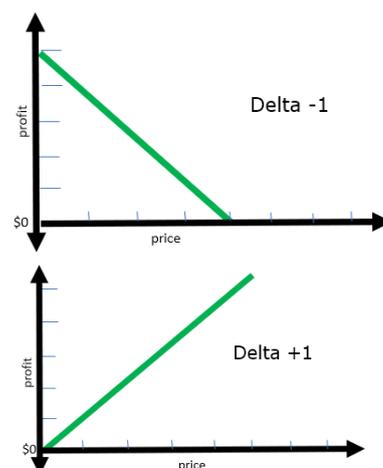


Use cases on Futures & Options for different types of users

In the next part of this report, I will propose a few different structures that can be used for different types of users. First consumers and secondly the producers.

In principle, in the palm oil market there are 2 complimentary but opposite types of risk:

- For a palm oil consumer, the risk is for the market to go up, so they can be seen as a natural short. The goal would be to secure supply chains and protect against price rises. This is described as having a negative delta (sales need to be covered continuously).
- For a palm oil producer, the risk is for the market to go down, so they can be seen as a natural long. The goal would be to secure sales and protect against dropping prices. This is described as having a positive delta (production needs to be sold continuously).
- Traders and shippers are exposed to both types of risks and the goals are combined where they will try to optimize income weighted against the risk that they are taking.

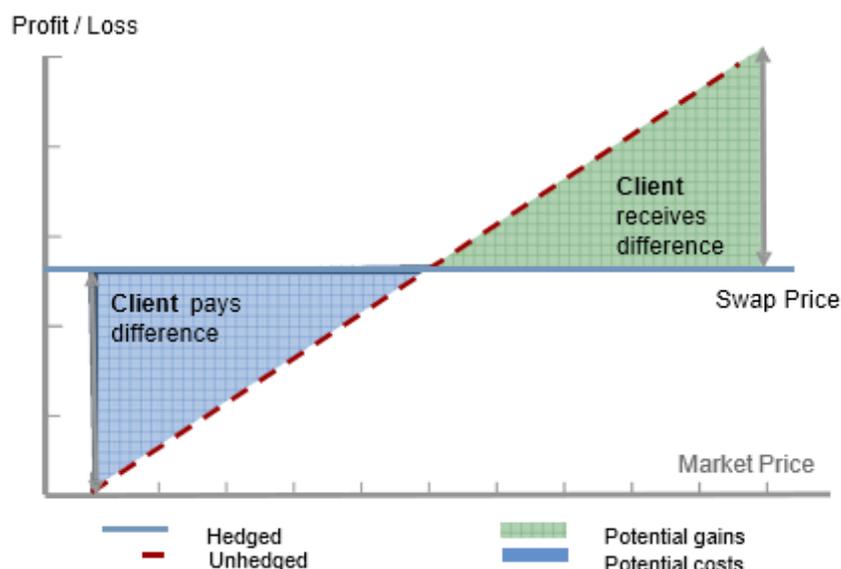


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Ideas for Consumers who could hedge with CME Group's new products:

➤ Consumer Scenario 1: Consumer buys a futures contract.

- The most basic type of futures trading/hedging is mainly to balance your exposure.
 - Most consumers buy their physical cargoes from their suppliers in fixed amounts of 1,500mt or its increments but this is a lot of oil in one go, and often not 100% matching your sales on that day
 - To balance your real exposure, you can use the futures to continuously manage your risk by trading small volumes of 25mt on CME
 - You can also use it to reduce your overall price risk while extending your “pipeline” of physical cargoes. Thus, instead of going flat long to secure supply, you can manage the price risk by buying the physical from your suppliers and hedging the price risk by selling the futures against it. Overtime, as you sell your cargoes from the factory, you buy back the futures position realizing a balanced and stabilized average price.
- **Why?** You lock in a price over a designated time period and are protected for upwards moves. You are not participating in potential downward moves. The difference in your futures exposure is offset against the price changes in your physical sales & purchases.
- **How to use it?**
 - You can buy and sell futures all day depending on your sales (many small amounts) and purchases (a few larger ones) to keep a close to zero position.
- **What are the risks?**
 - You need to pay a margin call for the futures you keep overnight but in terms of counterparty risk are only exposed to CME Group. This is lot safer than running exposure to all players with no margining in the physical markets.
- **What is the payoff?**

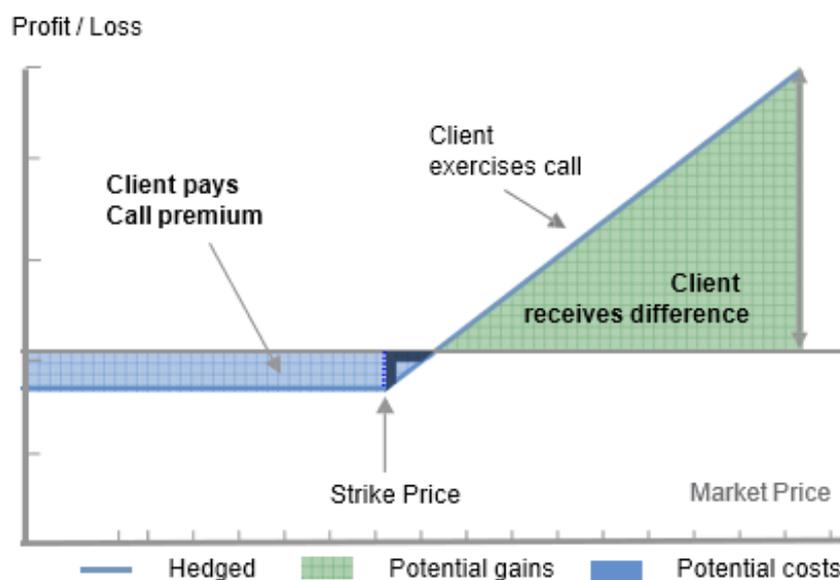


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➤ **Consumer Scenario 2: Consumer Buy ATM or OTM Call / alternatives are to sell OTM Puts.**

All result in a delta positive position (long).

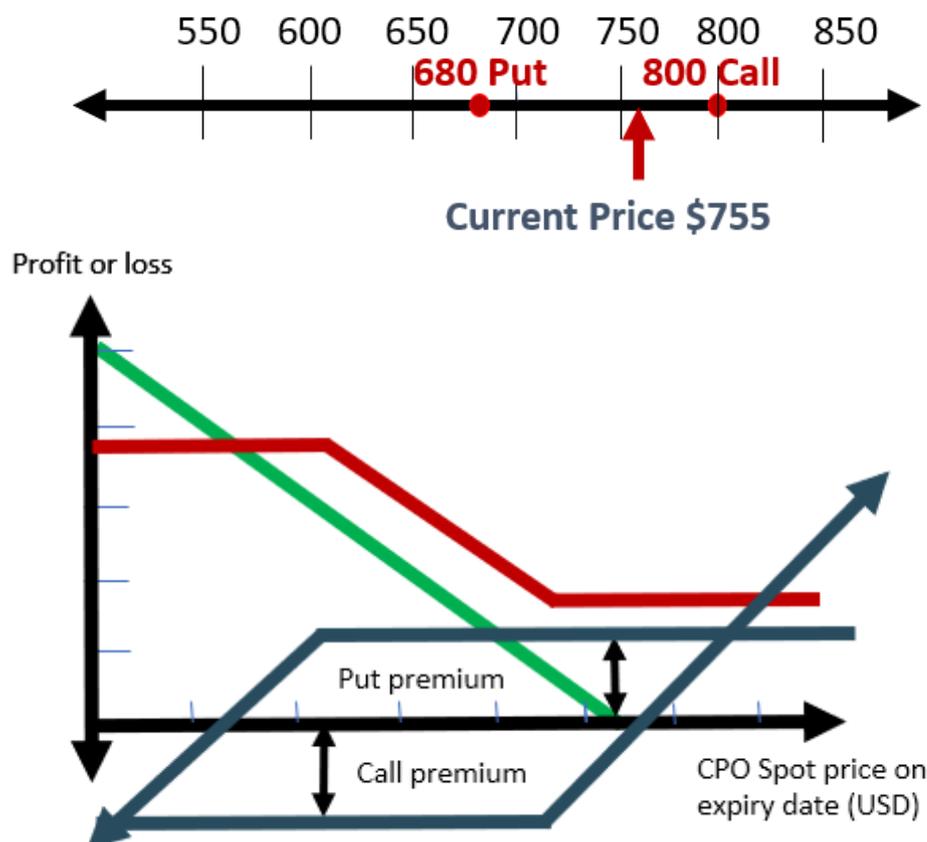
- **Why?** To protect against increasing prices by paying an upfront premium while still participating fully in downwards price movements. Prices are fixed above the call level
- **How to use it?**
 - You either buy a call to protect against price rises and limit your loss to the cost of the option (premium), generating positive delta or
 - You sell OTM puts to collect the premium to reduce your average purchase price in a stable market. If you don't mind owning "more" at lower prices, this is a good solution
- **What are the risks?**
 - Buying the call will cost you the premium as "insurance"
 - Selling the put leaves you at risk when markets drop as you will need to "buy" back the exposure at expiry
- **What is the payoff?** This chart is for a basic "buy a call" scenario. The premium you pay now protects you in case the market moves up (the green triangle) while the blue box is the "risk" you run, as reflected in the price you pay for the insurance. Compared to scenario 1
 - If you were to sell an OTM put, the payoff is different, in the way that you have received the premium upfront while being long, but have the obligation to buy back the futures if the market is below the strike price. This could in theory be down to \$0/mt but as food can't be free, this is not realistic for someone needs to plant and produce it (unlike Crude oil that got to zero in April 2020).



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➤ **Consumer Scenario 3: Consumer Fence** where you simultaneously buy an OTM Call and sell a Put with the same expiry

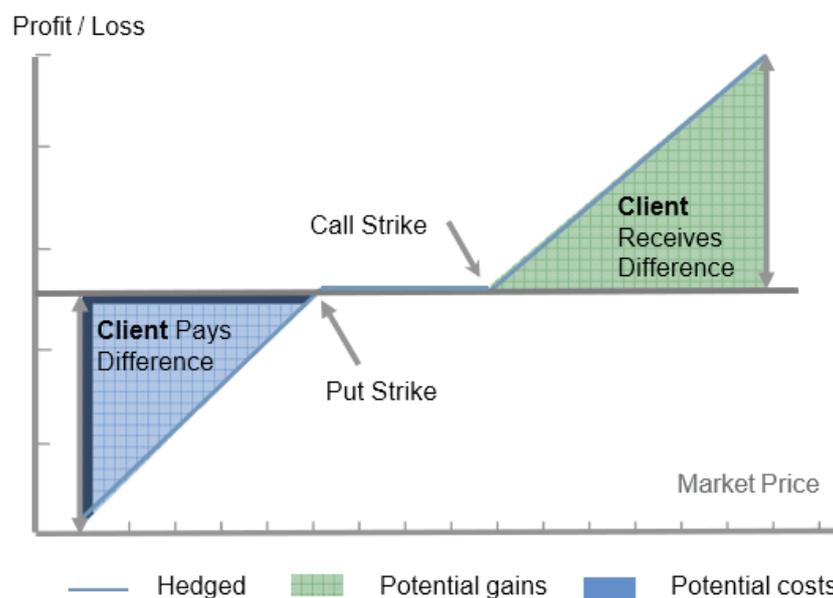
- **Why?** Hedging exposure to the upside while collecting premium by selling the put makes it less capital intensive than buying futures while reducing the price risk for a short physical position
- **How to use it?**
 - You buy an OTM Call (right to buy at a higher price) and sell an OTM Put (obligation to buy at a lower level than today) expiring on the same day
- **What are the risks?**
 - Limited as you are basically buying 2 different long positions against your natural short. One in case the market rises (the call) and one in case the market drops (the short put).
 - The latter of course could become a problem when the put becomes ATM or lower, but at least you are buying cheaper than buying physical or futures at the time of inception. You need to manage these positions more actively.
- **What is the payoff?**



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1. Consumer Scenario 4: Consumer Zero Cost Collar

- **Why?** To protect against price increases in feedstock and input price at zero upfront cost upon inception while retaining some benefits from potential downside participation
- **How to use it?**
 - You buy a call option and finance it by selling a put option at the same time for the same expiry period at zero upfront cost. Both are delta+ (long) structures
 - The settlement price is compared to the strike levels of the put and the call strikes
 - If the settlement price is higher than call strike, you receive the difference between the settlement price and the call strike price
 - If the settlement price is above the put strike but below the call strike price, no payments are made as both options expire out of the money (worthless)
 - If the settlement price is lower than the put strike price, you pay the difference between the put strike and the settlement price at expiry
- **What are the risks?**
 - If the market price falls below the put strike price, you have to pay the difference
- **What is the payoff?**



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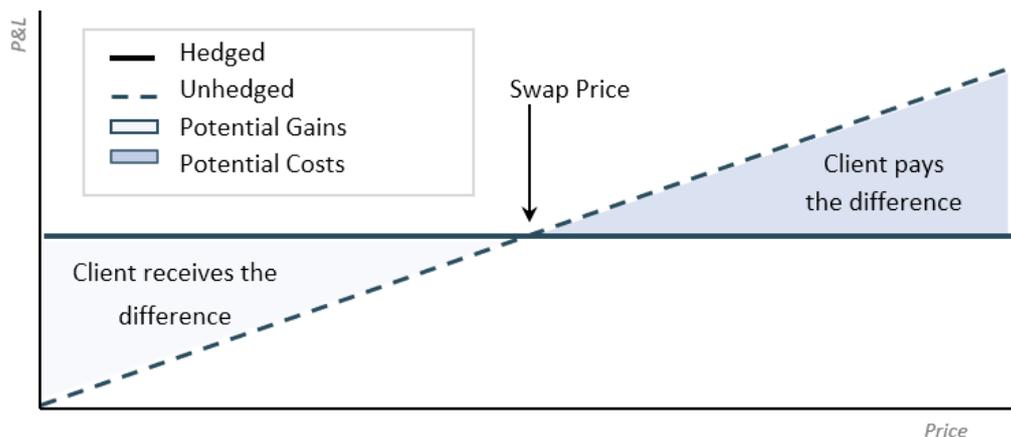
Ideas for Producers who could hedge with CME Group's new products:

Basically, all consumer products can be traded with the opposite exposure as well for producers, but I will explain them concisely for enhanced clarity:

1. Producers selling Futures
2. Producers buying Puts or selling Calls
3. Producers setting up a Fence: buying Puts & selling Calls simultaneously

➤ **Producer Scenario 1: Producer sells a Futures contract**

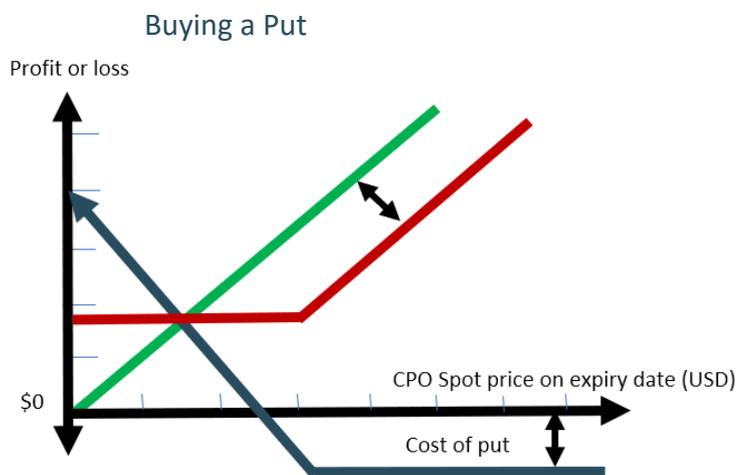
- **Why?** The Producer locks in a commodity price over a time period and is protected from any price decrease below the futures price up to expiry or up to delivery
- **How to use it?**
 - You sell futures against your expected production to realize and fixate the price at time of trading. It can be taken into expiry for financial settlement, or be unwound by buying back the futures at time of physical sales realisation.
- **What are the risks?**
 - If the market price rises above the futures contract, you have to pay the difference between the sales price and the settlement.
- **What is the payoff?**



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➤ Producer Scenario 2: Producer buying Put or selling Call

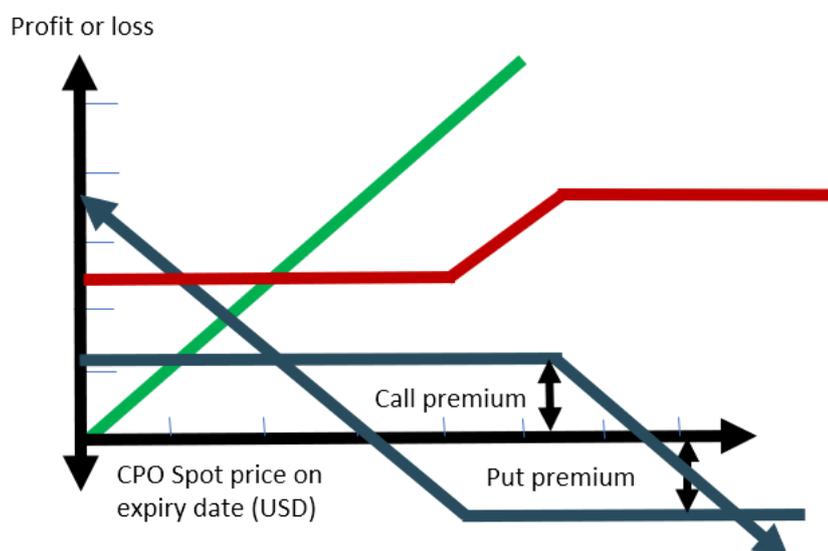
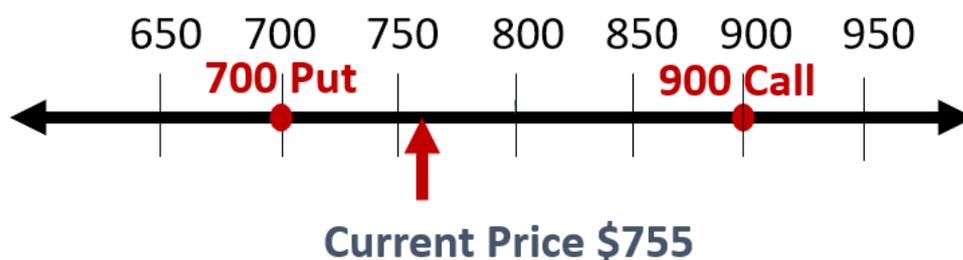
- **Why?** The Producer locks in a commodity prices over a time period
 - Buying a put (delta-) protects against a price decline, limiting loss to the premium
 - Selling a call (delta-) collects a premium upfront, increases sales price in a stable market, but has the potential to unlimited downside if the market shoots up
- **How to use it?**
 - You either buy a put to protect against price reductions and limit your loss to the cost of the option (premium), generating negative delta or
 - You sell OTM calls to collect the premium to increase your average sales price in a stable market. If you don't mind selling "more" at higher prices, this is a good solution. For example, if this takes you over your budgeted prices.
- **What are the risks?**
 - Buying the puts will cost you the premium as "insurance"
 - Selling the calls leaves you at risk when market prices rise, as you will need to "buy" back the exposure at expiry
- **What is the payoff?**



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➤ Producer Scenario 3: Producer Fence, buying Puts & selling Calls simultaneously

- **Why?** The Producer locks in a commodity prices over a time period
 - Buying a put (delta-) protects against a price decline, limiting loss to the premium
 - Selling a call (delta-) collects a premium upfront, increases sales price in a stable market, but has the potential to unlimited downside if the market shoots up
 - Combined they are less capital-intensive vs going short the futures (scenario 1) as they don't have the initial and variation margin
 - It reduces your risk on your production as the combined structure will have delta-effect at inception (short)
- **How to use it?**
 - As a producer, to set up a fence you have to buy a Put and sell a Call with the same tenor and both out of the money at inception against your expected production to realize and stabilize the price at the time of trading. It can be taken into expiry for financial settlement, or be unwound by buying back the options at the time of physical sales realisation.
- **What are the risks?**
 - If the market price rises above the futures contract, you have to pay the difference between the sales price and the settlement.
- **What is the payoff?**



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A few examples

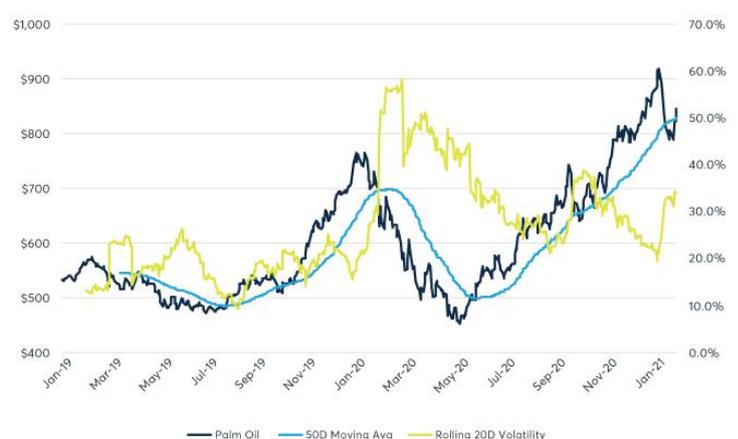
Can you give me an example how I can use the CME futures contracts?

- **Who?** In early September 2020, a refinery in India with a capacity of 10,000 MT / month of CPO is selling 500 MT per day on the spot for delivery in the coming weeks.
 - To secure their supply for this volume, they hedge a few times per week by buying nearby physical shipment CPO taking the intra week price position risk and counterparty exposure for what it is while buying the deeply inverted spot premium @ \$655 / MT.
 - Due to Holi taking place in March 2021, a large supermarket chain has requested to buy an additional 5,000 MT of bottled oil to his clients for end Feb / early March delivery.
 - Instead of buying nearby oil that they don't need and thus would store, now the refiner can buy +200 CME FEB 2021 Bullet Futures that expire on 15-2-2021 at US\$626.50 / MT to hedge his raw material cost and thus lock in the profit margin of these bottled oil sales to his clients.
 - When the delivery period comes closer, the refiner unwinds his CME exposure and converts his position into nearby physical delivery.
- **Result?** Instead of over-paying for nearby spot material, the refinery is able to “buy” the inverse, reduce counterparty exposure, remain flexible in supply chain management and price the supermarket chain with the correct price, securing market share. It also gives them the opportunity to enhance the forward sales book and thus create stability in forward income.

Can you give me an example how I can use the CME option contracts?

- **Who?** An Indonesian plantation which produces 30,000 MT/month of CPO is planning to attend the virtual POC conference in March 2021 and gets nervous about the high prices he has seen since the rally started in May 2020 that came to over \$900 MT.
 - In order to protect the margin on his production against potentially downside expectations in prices while enjoying some more upside, he is considering to hedge with options.
 - He decides to hedge part of his Q3 production (30% or 1200 lots) by buying Puts and selling Calls against it (Producer Scenario 3, Producer Fence in this report) that expire on 10-8-2021.
 - Just before the conference, the CME MAY Futures hits \$905, and CME AUG is around \$830
 - CME AUG Bullet Options⁴: he is able to buy \$30 for the OTM AUG \$800 Puts and against this he has sold some OTM AUG \$850 Calls to finance it @ \$7.50. So, all combined he has paid \$22.50 per lot
- **Result?** By hedging with these options, he has invested 2.5% of notional to get coverage insurance against a potential downward move, while at the same time being able to sell at a higher price if the markets continue to be strong.

USD Malaysian Crude Palm Oil Price (dollars/metric ton)



⁴ Kindly note these are all theoretical prices for the options were not active yet at the time of writing in early April 2021

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About the Author: Paul Bloemendal

Paul is active as Risk Management & Strategic Reframing Specialist under PRETB Pte Ltd with offices in Singapore and the Netherlands.

He brings in extensive experience as commodity trader, having managed agricultural sourcing, shipping and trading desks, mainly with a strong focus on edible oils, since 2004 in companies like Cargill, Noble Group, Citibank & Ruchi Soya.



Since his return to Singapore in 2016, he has been focussing on OTC risk management solutions, working with service providers like Finex Commodities, One North Commodities and Arcadia Agri and now as introducing agent for Marex Solutions and HedgePoint.

He acts frequently as expert witness in arbitration cases for the larger commodity industry.

In partnership with the CME group, he writes a weekly market guidance update and has worked regularly with MPOB under the POTS series and with MPOC for the Pointers series.

Besides the advisory and consultancy work at PRETB Pte Ltd, Paul is an active entrepreneur, investor and mentor to pre-seed start-ups.

His most recent project as founder is Paper Trader, a digital price matching platform to execute physical commodity trades in a secure, compliant and auditable way.



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