



# The Chaos Caused by Putin's War

Presentation by Dr James Fry to Bursa Malaysia POC March 2023

# Outline



- It is almost impossible to know where to begin in view of the way Mr Putin's unprovoked invasion has affected every aspect of the world vegetable oils market.
- I start by reviewing its impact on sun oil exports from Ukraine, the largest exporter.
- I then turn to the way in which the war lifted farm input prices, such as fertilisers.
- This affects farmers' plantings, favouring nitrogen-fixing soybeans in particular.
- Globally the greatest damage occurred in petroleum product and natural gas markets.
- We learnt about petroleum refinery "cracks", such as the diesel spread over crude oil.
- The link of biofuels with diesel makes diesel the floor to the vegetable oils price band.
- Indonesia's Domestic Market Obligation to cap cooking oil prices had its own impact.
- Indonesian biodiesel exports responded to the DMO's success in capping CPO prices.
- Despite Indonesia's larger output, Malaysian stocks set the CPO premium over gasoil.
- Using gasoil futures and our Malaysian stock forecasts, we project EU CPO prices.
- We then factor in freight rates and Malaysian export taxes to forecast BMD futures.

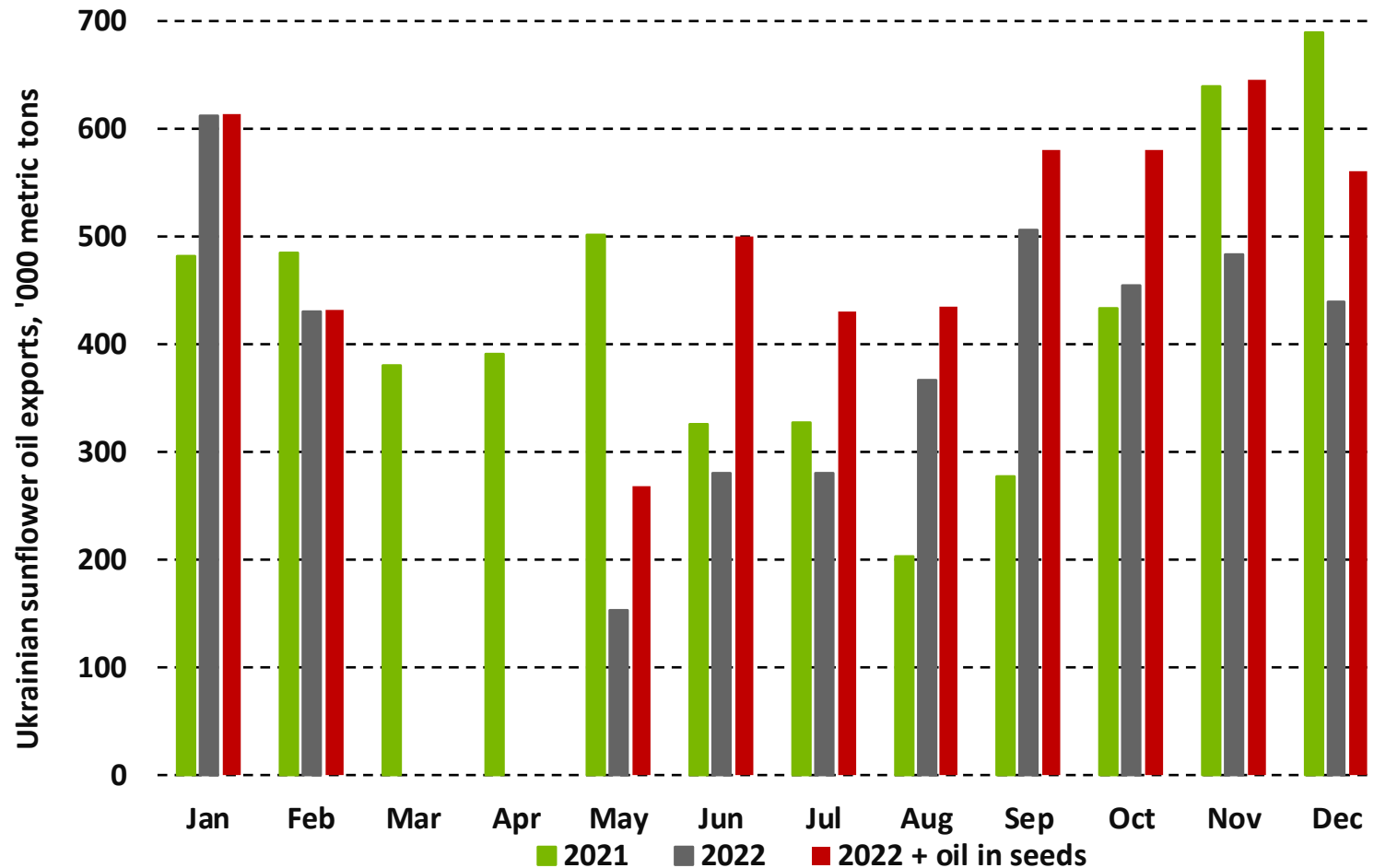
**Enjoy the action-packed, bumpy ride through the chaos caused by Mr Putin!**



# 1. Sun oil: Putin's disruption to Ukraine's exports has faded

Russia's war forced Ukraine to export much more oil in seeds to be crushed abroad (mainly in the EU) than was the case before the invasion. The accumulation of stocks that were waiting to be crushed meant that once new routes could be developed, Ukrainian direct and indirect (in seeds) exports of sunflower oil recovered after June.

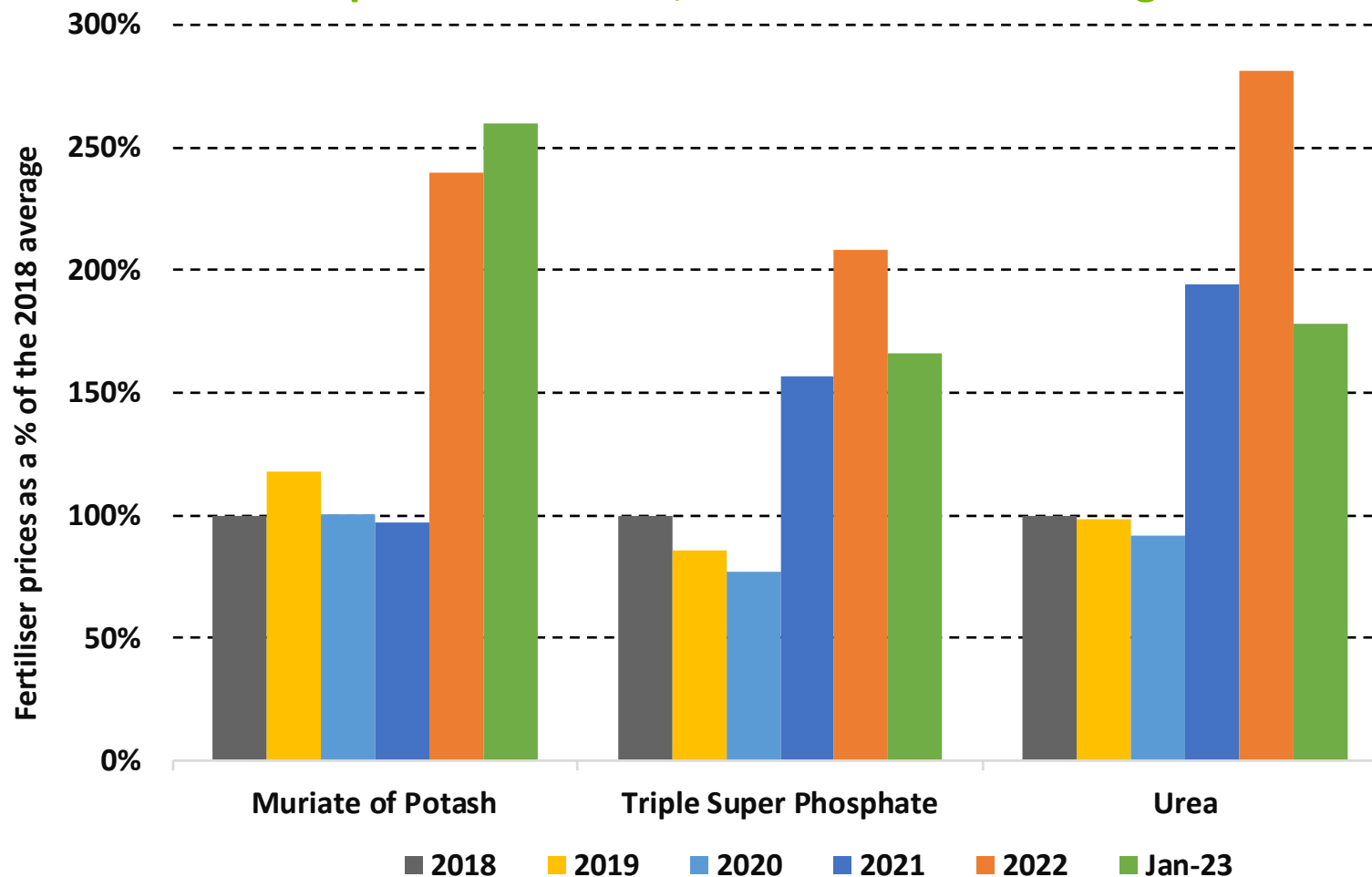
## Ukraine's monthly exports of sunflower oil as oil and oil in seed



## 2. Input prices: Putin's actions drove up fertiliser prices

Annual fertiliser export prices soared as a result of Putin's invasion. All three major types of fertiliser saw 2022 prices rise to over double their 2018 levels. In January this year, urea and phosphate prices fell back but those of potash, a major cost for oil palm plantations, were actually higher in January than their average level in 2022.

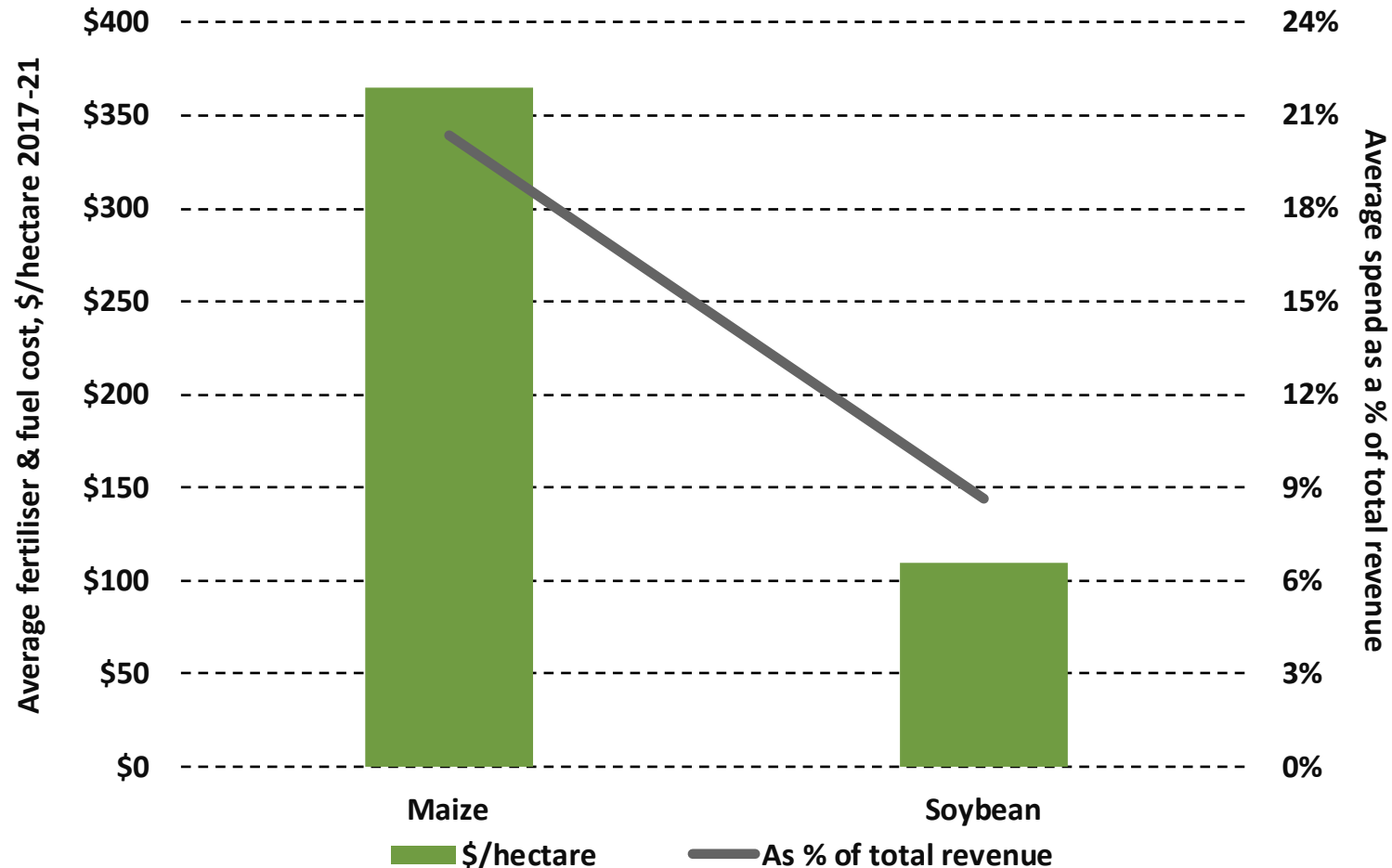
### World fertiliser prices as indices, where the 2018 average = 100%



## 2. Fertiliser price rises affect the choice of crop, e.g., in U.S.

U.S. maize requires over three times as much spending on fuel & fertilisers/hectare as soybeans. Higher yields of maize give it larger revenues/hectare, but even so maize fuel/fertiliser costs as a % of revenues are over twice as high as those for soybeans (which is nitrogen-fixing, too). This will favour soybeans in planting decisions.

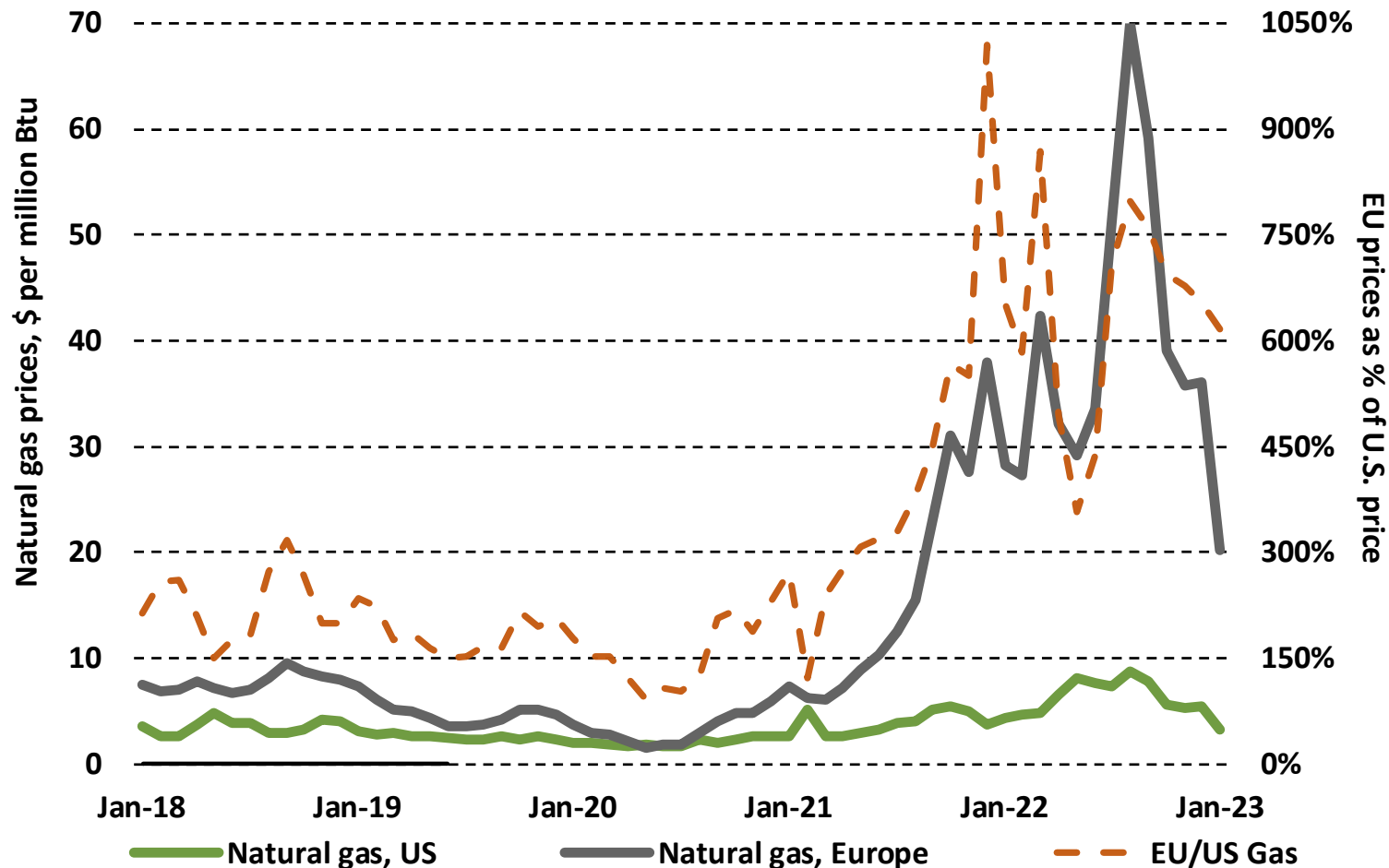
### U.S. spending on fertiliser & fuel/hectare and as % of revenues for soy and maize



### 3. EU natural gas prices went through the roof

The EU relied heavily on Russian natural gas supplies. They were cut drastically when a sudden “mysterious” set of holes appeared in the main underwater pipeline to Germany. EU gas prices touched records while U.S. prices rose only slowly. EU demand was cut in response but U.S. LNG exports rose impressively, pulling prices closer.

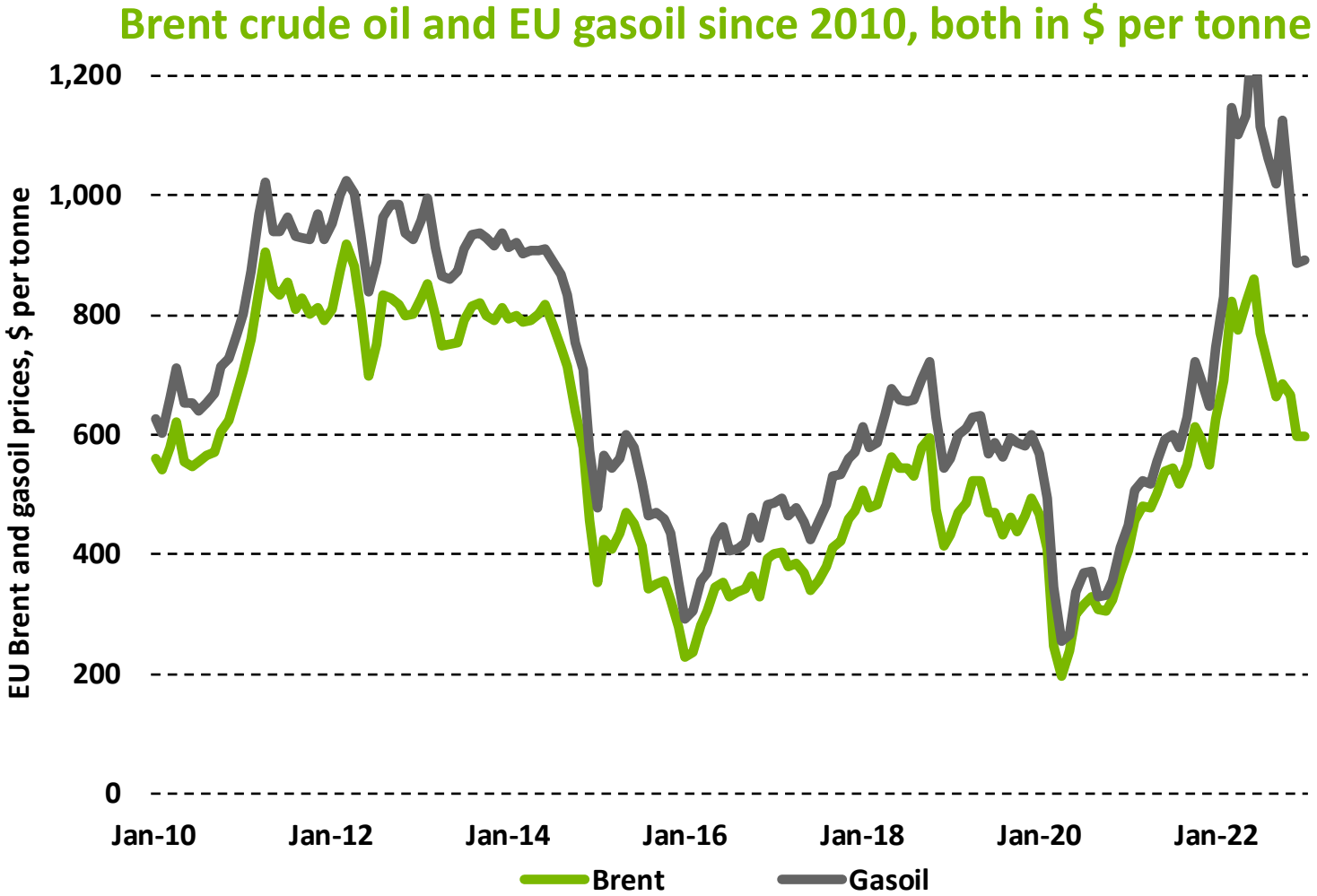
EU and U.S. natural gas prices, \$ per million Btu



# 4. Putin created chaos in petroleum product markets



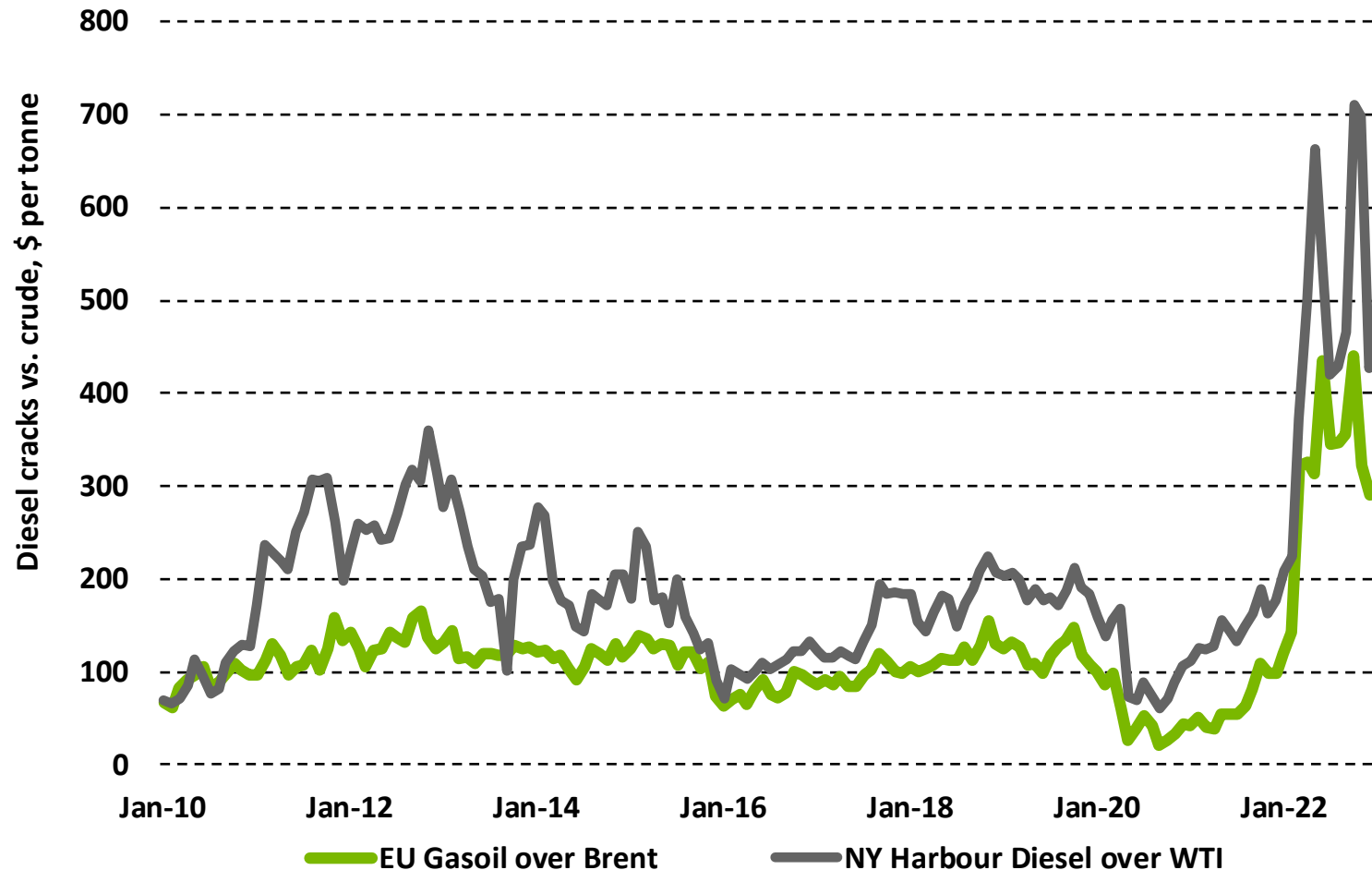
Putin's main lasting impact on the petroleum market proved not to be in the crude petroleum market, where prices fell back after the initial shock, but in the gasoil (i.e., diesel fuel) market. Gasoil prices reached all-time peaks shortly after the invasion and, though they have since dropped back, they are still historically very high.



## 4. Disruption was most marked in petroleum refinery “cracks”

Petroleum refineries' margins over crude oil are “cracks”. Russia is a major exporter of refinery products, such as gasoil. In both the EU and U.S., the cracks for gasoil soared after Putin invaded Ukraine. The average EU crack of roughly \$100 per tonne from 2010 to 2021 leapt to a peak of \$440 in 2022 and was still over \$300 in January.

### EU and U.S. local diesel cracks over crude oil since 2010, in \$ per tonne

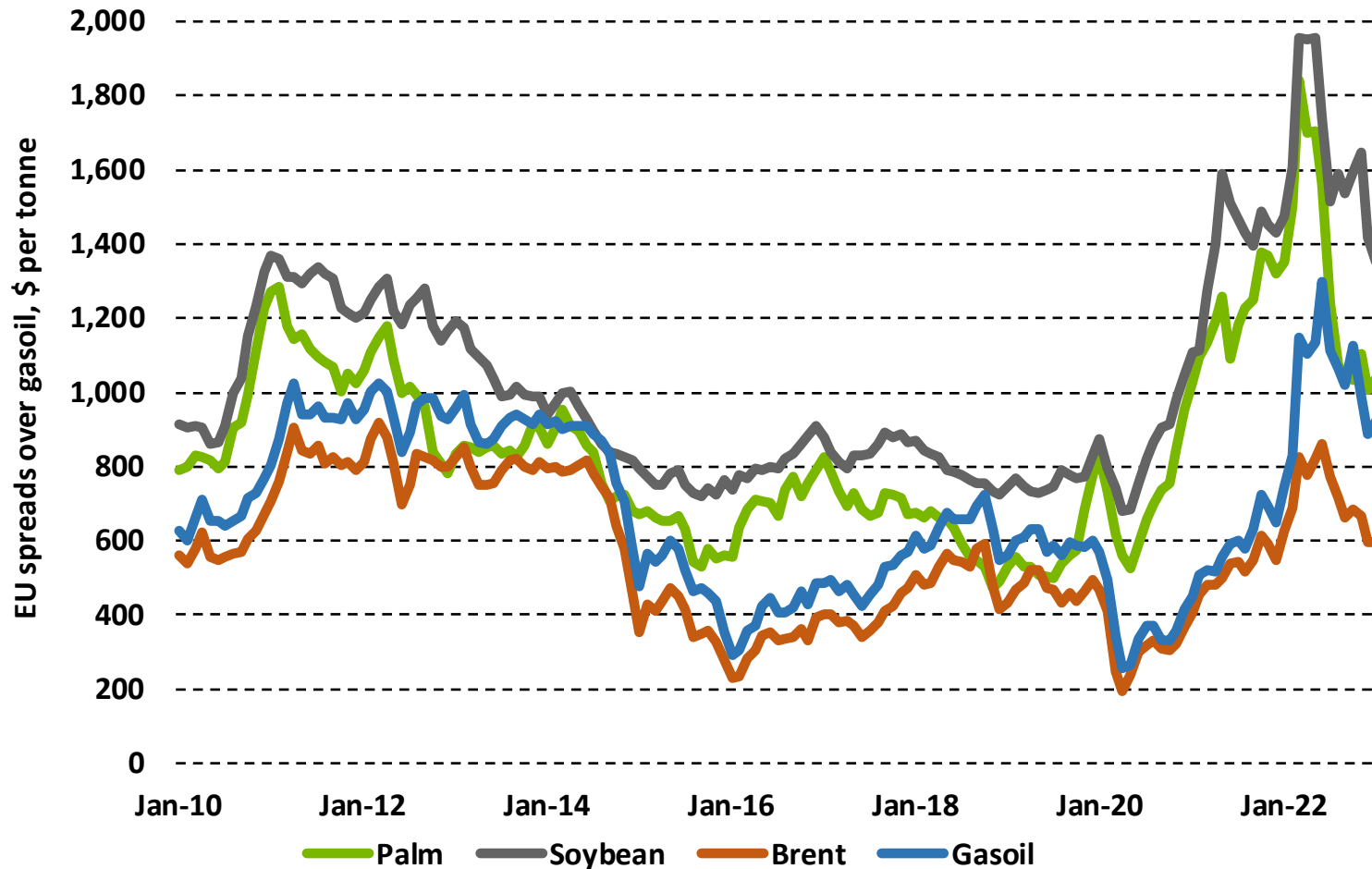




# 5. Gasoil prices now act as the vegetable oils price band floor

Until the war, Brent set the floor to the price band. The average gasoil crack was \$100 and because it cost around \$100 to turn CPO into PME (Indonesia sets a processing margin of \$85), when CPO and Brent prices were close, gasoil and PME costs were also close. Today's high gasoil cracks have made gasoil the floor to the oils price band.

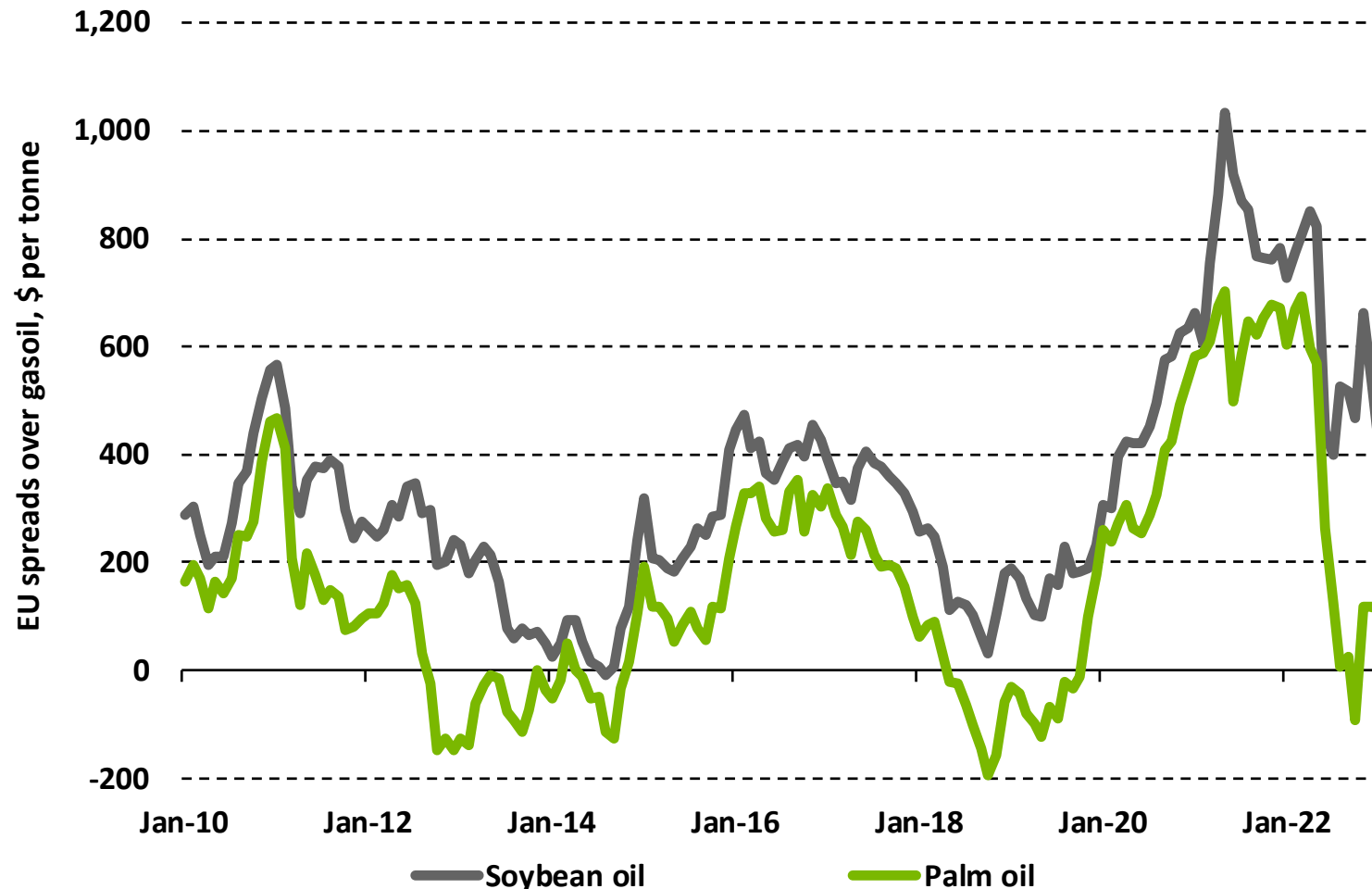
## EU prices of palm oil, soybean oil, Brent crude and gasoil, all in \$ per tonne



## 5. EU CPO rarely goes more than \$100 below gasoil prices

There is logic in this price floor. If CPO goes as much as, say, \$200 below gasoil, it could be processed into PME with cash costs of \$100 or so and then PME could be supplied at \$100 below gasoil, making it a competitive fuel. The logic is more compelling in S.E. Asia because local CPO prices are below those in the EU, as we shall see now.

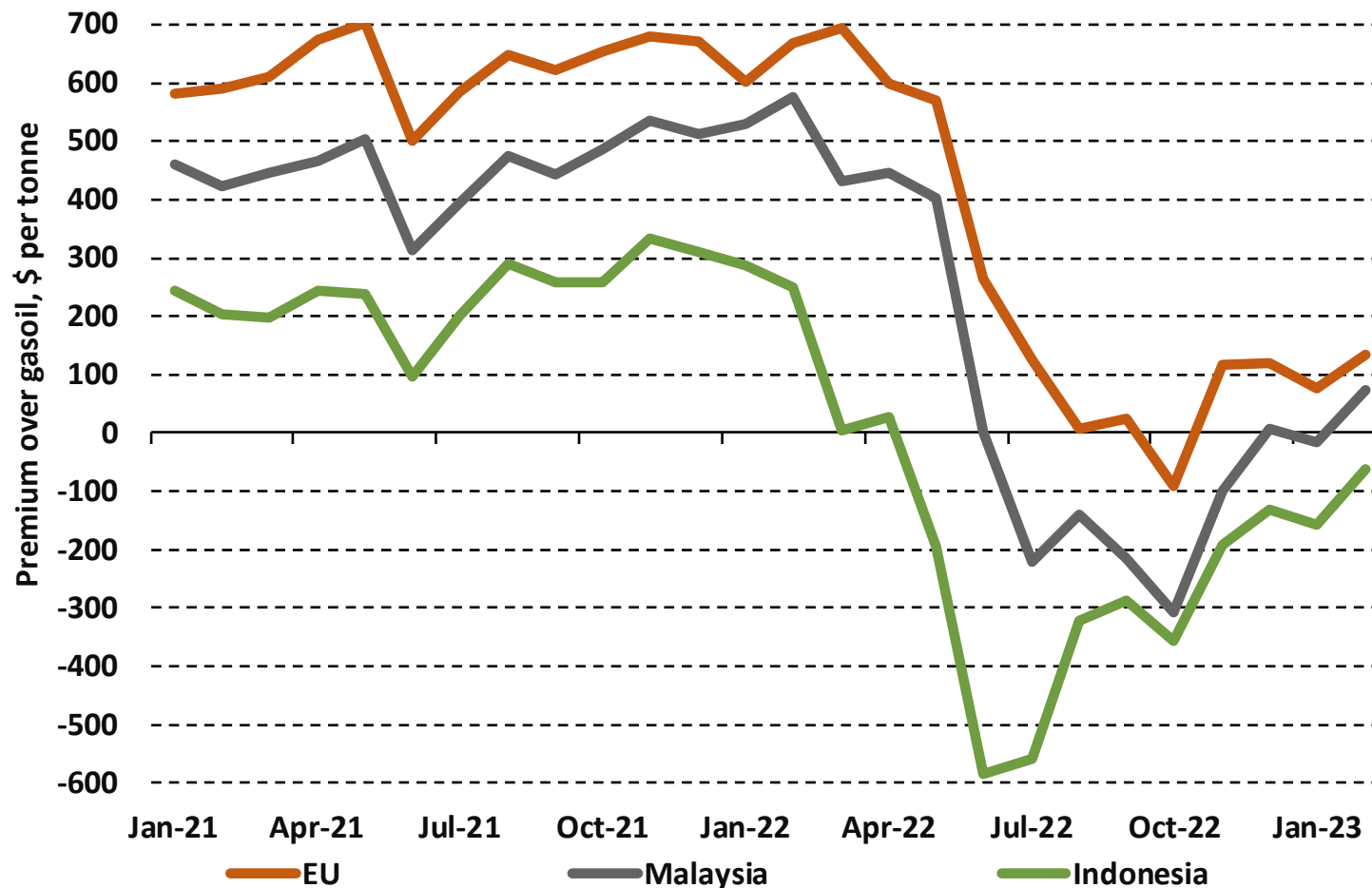
### Rotterdam premia for CPO and soybean oil over gasoil since 2010, in \$ per tonne



## 6. Export duties made S.E. Asian CPO a cheap fuel feedstock

Indonesia's Domestic Market Obligation with export controls and high export taxes and levies pulled Indonesian local CPO prices far below EU gasoil values in mid-2022. In Malaysia, too, export taxes pulled its CPO price below that of gasoil. This encouraged the use of palm biodiesel as a cheap distillate fuel in Indonesia and for export.

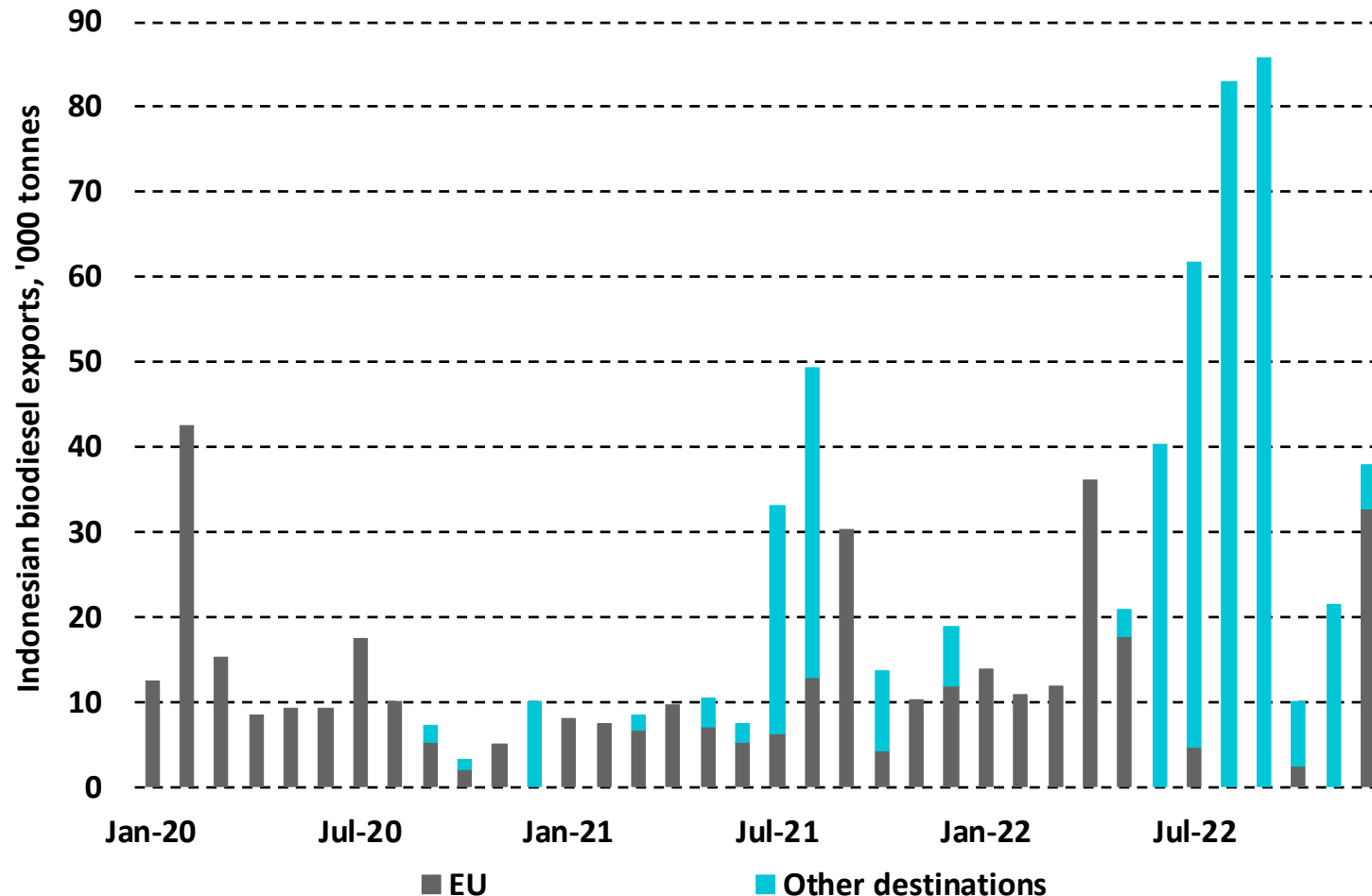
### The premia and discounts of local CPO over EU gasoil prices, \$ per tonne



## 6. Indonesian biodiesel exports reacted to these incentives

Indonesia has depended heavily on EU markets for its biodiesel export in recent years. In 2022, when Indonesian palm oil became a competitive source of distillate fuel, its exports of biodiesel to China in particular rose to close to 100,000 tonnes for two months. As the price advantage subsided, these price-sensitive exports did the same.

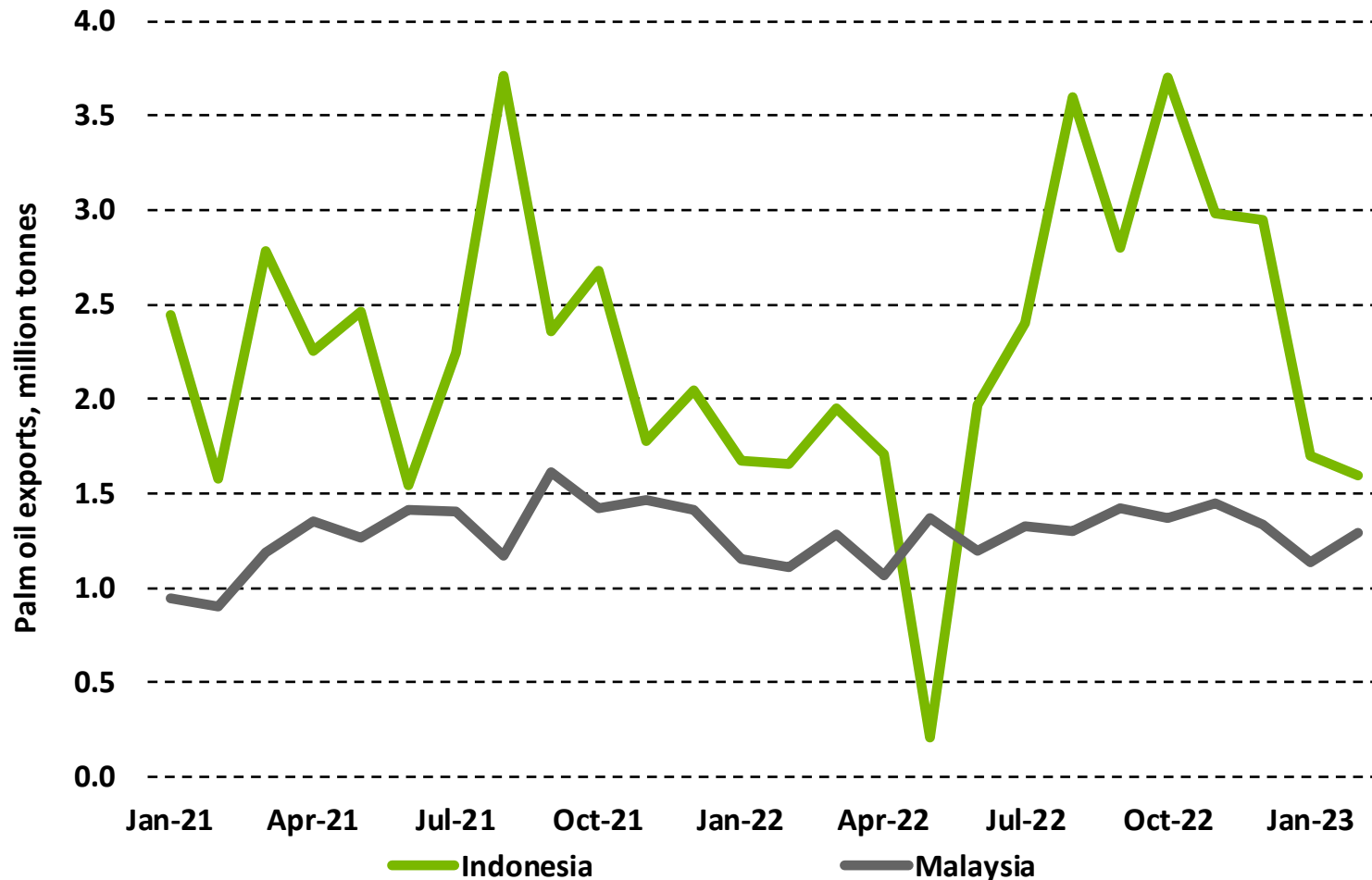
### Indonesian exports of biodiesel to the EU and other destinations (mainly China)



# 7. Indonesian palm oil exports almost ceased in May

The biggest shock from Indonesia's DMO came in May. Exports were their lowest for many years. The build-up in stocks put massive pressure on local prices, which we saw averaged near \$600 per tonne (\$80/bbl.) below EU gasoil in both June and July and exports of palm oil and PME rose to absorb stocks trapped inside the country.

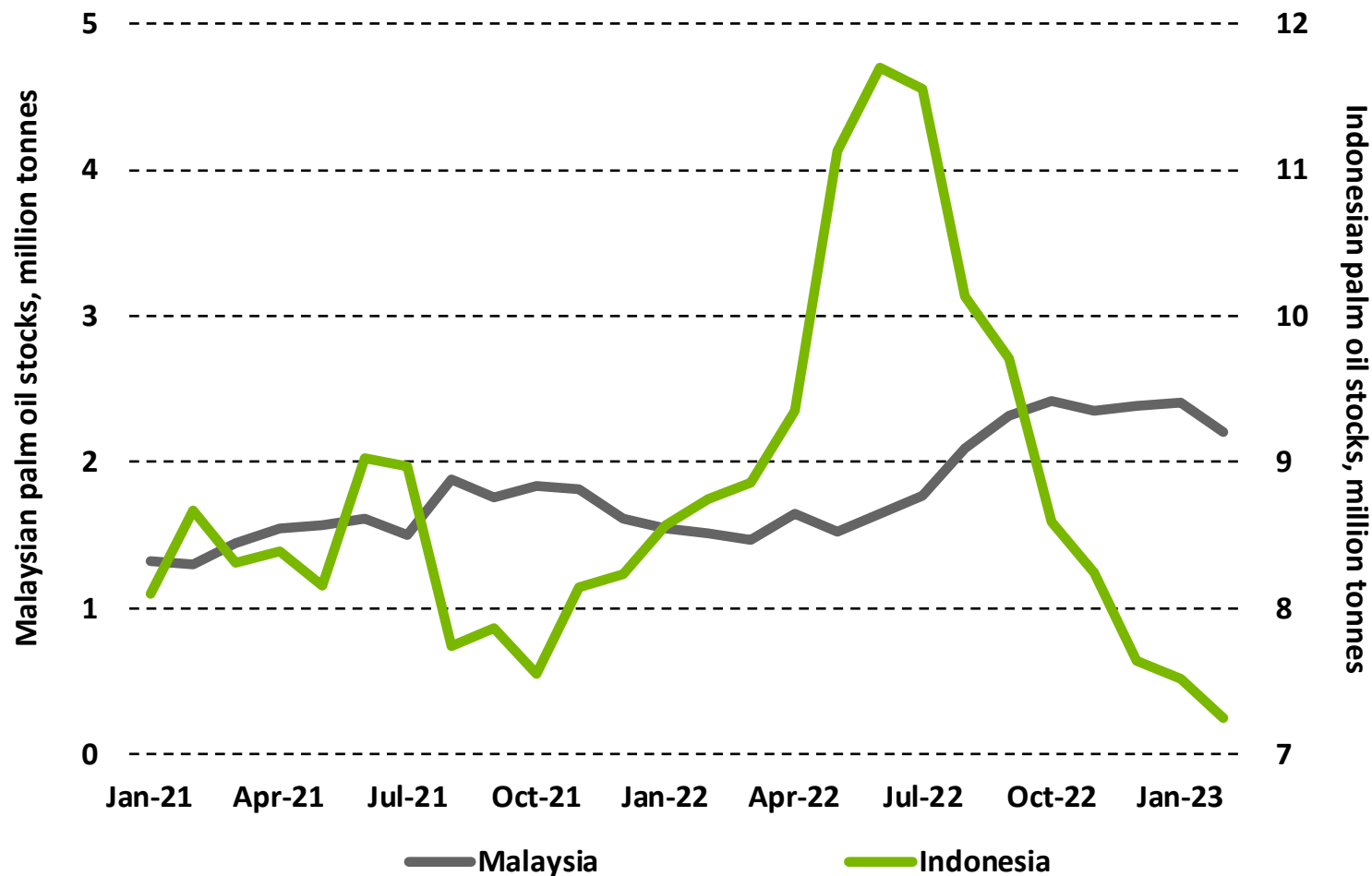
## Total Indonesian and Malaysian monthly exports of palm oil, both crude and refined



# 7. Indonesian and Malaysian palm oil stocks

The large rise and fall in Indonesian stocks are plotted here. Malaysian stocks moved more gently. (Note that the axes for both countries have intervals of 1 million tonnes, with Indonesia's scale beginning at 7 million tonnes.)  
*No-one knows the true level of Indonesian stocks but the movements from month to month should be accurate.*

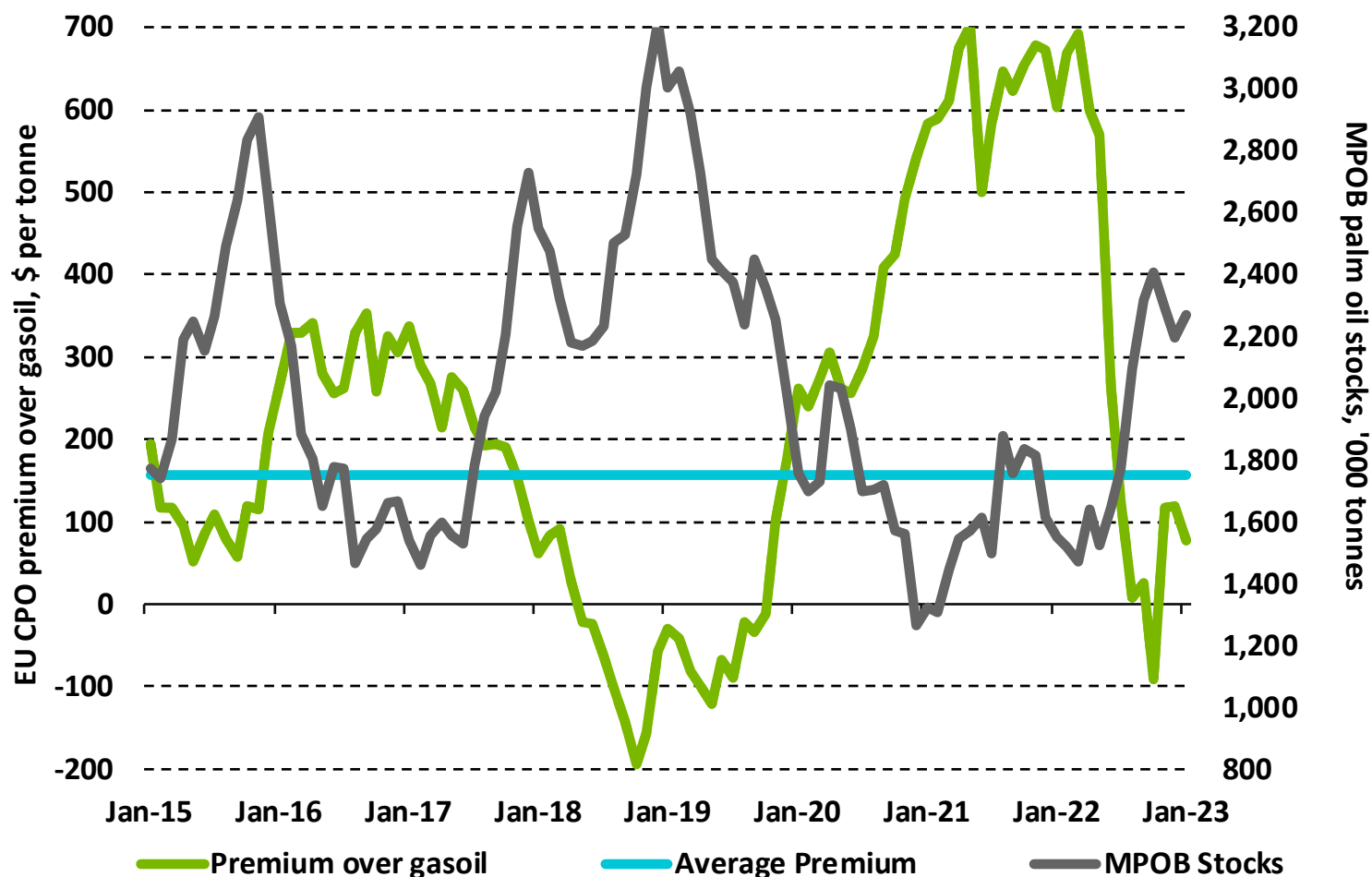
## Indonesian and Malaysian palm oil stocks (note the different ranges in the Y axes)



# 8. Monthly MPOB stocks set the EU CPO premium over gasoil

It might be expected that stocks in Indonesia, which are larger than those in Malaysia, would determine the world CPO-gasoil premium (the POGO). However the relationship between the POGO and the MPOB's Malaysian stocks is very much better. Rising MPOB stocks push down CPO-gasoil spreads; falling stocks increase them.

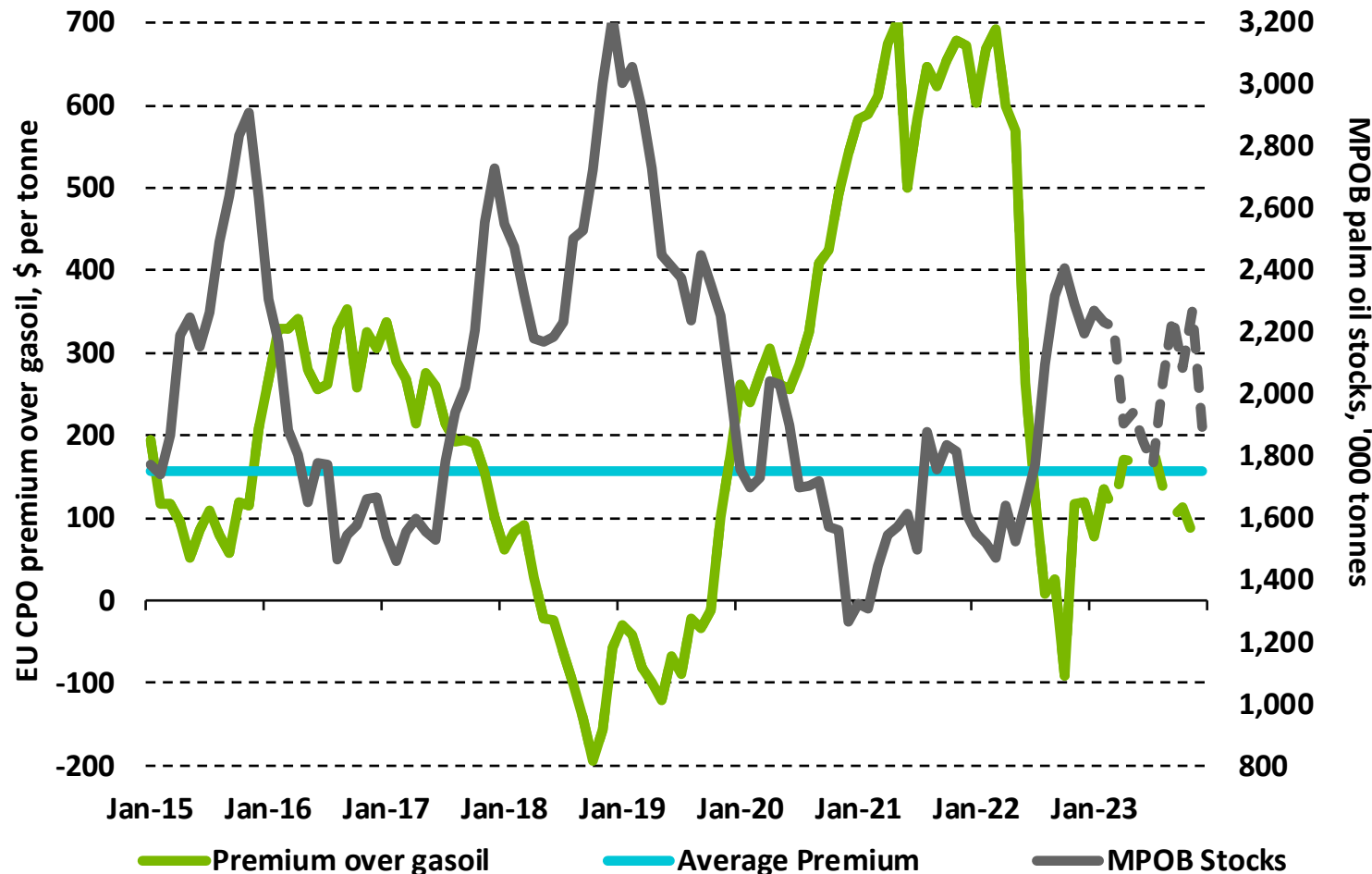
## The inverse relationship between MPOB stocks and the EU CPO premium over gasoil



# 9. Now we can start to generate CPO price forecasts

The inverse relationship between Malaysian monthly stocks and the EU CPO-gasoil spread lets us work from our projections of Malaysian stocks to forecasts of the POGO. Stocks will fall at first in part as Indonesia's DMO leaves Malaysia to fill the gap left by reduced Indonesian exports. This will lift the POGO. This reverses later in 2023.

## These forecasts build upon the links between MPOB stocks and EU CPO-gasoil spreads

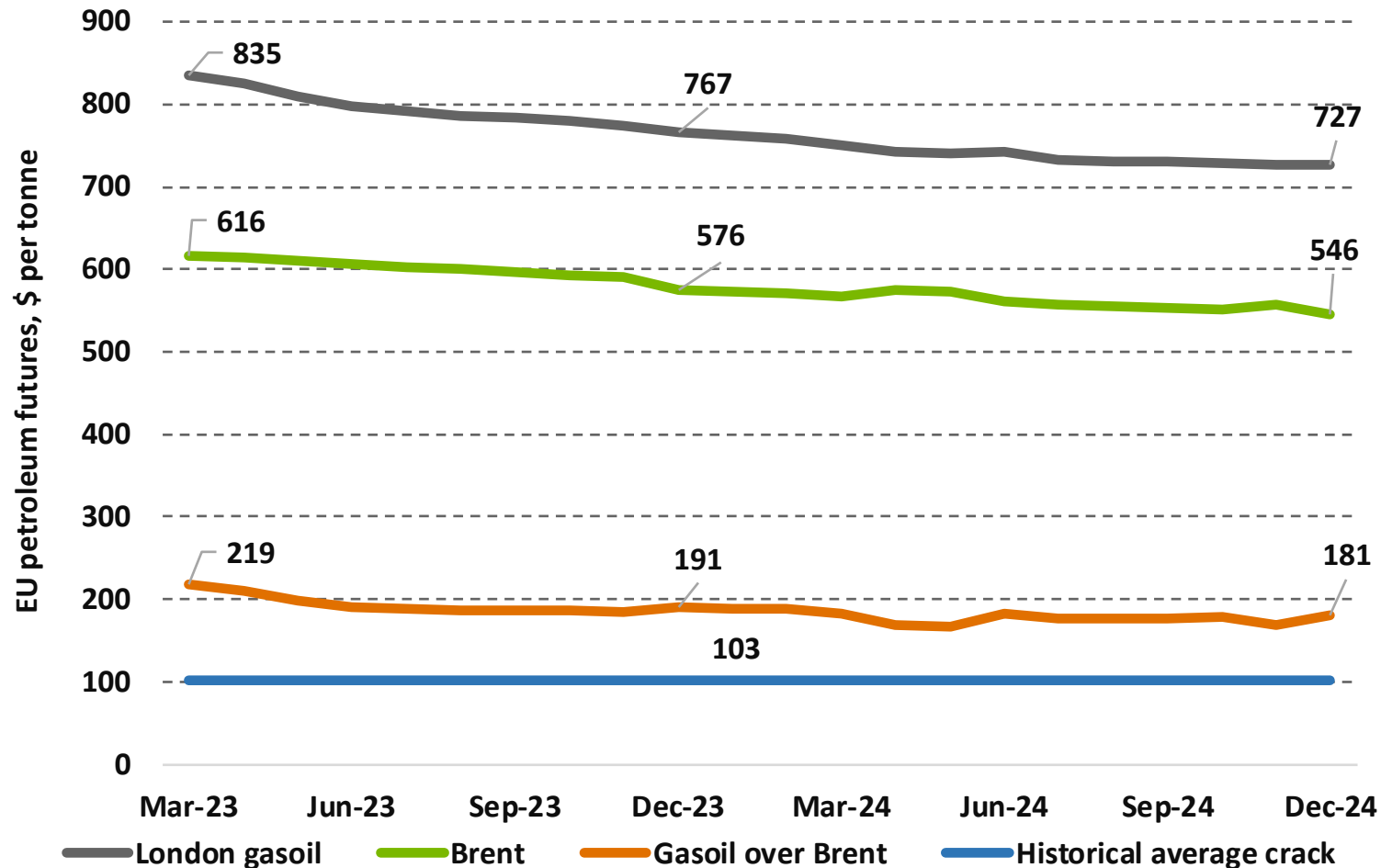




# 9. What do futures markets imply about gasoil cracks?

According to today's futures markets, Putin's war will leave diesel cracks above their long run average until 2025, but the crack will fall gently. The main implication of this diagram for CPO prices is that gasoil, which is now the floor to the price band, will fall nearly \$70/tonne by December. This is a fall of RM305/tonne at RM4.50/\$.

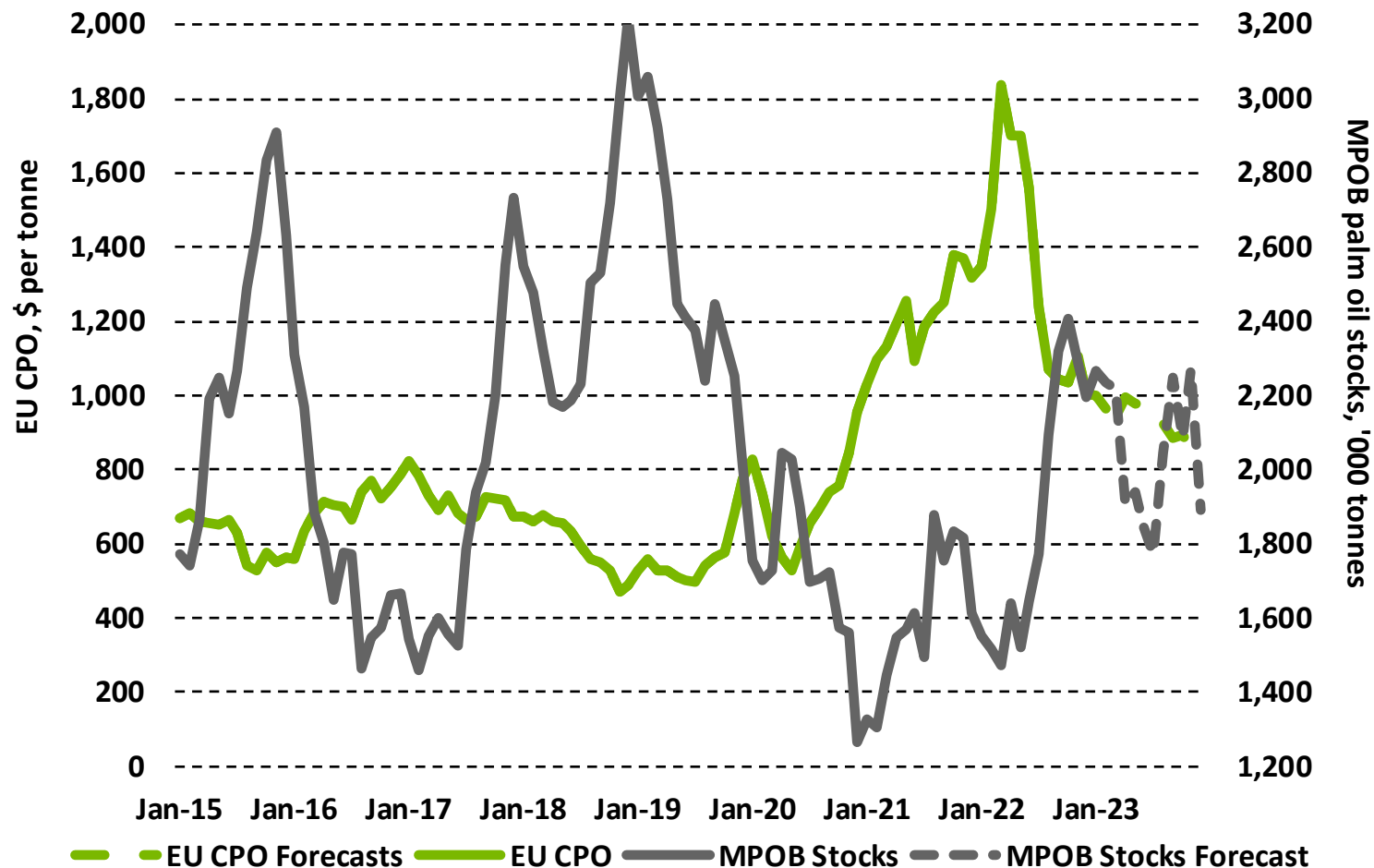
**Gasoil falls \$68 by December; Brent falls only \$40. This cuts the crack from \$219 to \$191.**



# 9. Using gasoil and POGO forecasts to derive EU CPO prices

The two preceding slides gives us the information that we need in order to prepare EU CPO price forecasts to the end of this year. The steady decline in gasoil prices, implied by the futures, tends to dominate these projections. Between March and December, gasoil falls by \$70, taking EU CPO down by \$100. Its 2023 annual average is \$940.

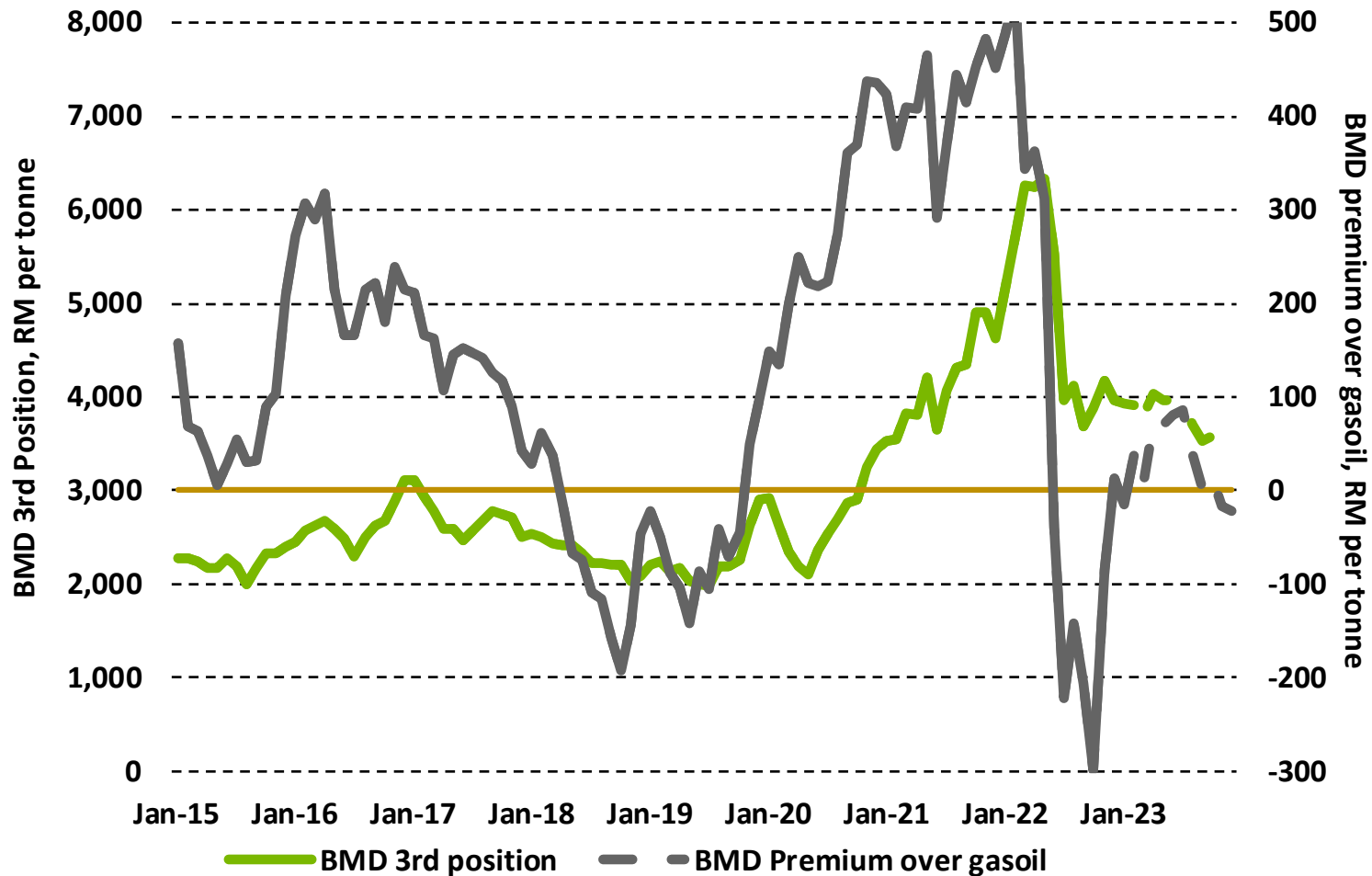
## Malaysian stock and EU CPO forecasts, applying POGO and gasoil projections



# 10. Translating forecasts into BMD 3<sup>rd</sup> position futures values

From the Rotterdam CPO projections, we have generated forecasts of BMD futures, applying an exchange rate of RM 4.50/\$ and allowing for freight to Europe and Malaysian CPO export taxes. BMD will be at a premium over gasoil for 8 months but is at a discount by year-end, when it stands at RM3,350. Its 2023 average is RM3,760.

## BMD 3<sup>rd</sup> position CPO forecasts and their premia over EU gasoil, RM per tonne



# Conclusions

Mr Putin's unprovoked invasion has affected every aspect of the vegetable oils market. It hit supply directly by removing Ukrainian sunflower oil from the export market. It hit supply indirectly by forcing up farm input prices, notably of fertilisers and fuel. It changed planting decisions by altering the relative profitability of alternative crops. It transformed fossil fuel prices by cutting Russian petroleum and gas sales to Europe. Via the diesel link with biofuels, this affected the floor to the vegetable oils price band. In palm, soaring prices led Indonesia to introduce its Domestic Market Obligation and the associated export controls caused Indonesian palm oil stocks to scale new peaks. Low local CPO prices boosted Indonesian biodiesel exports and reduced its stocks. Malaysian stocks, partly because of their transparency and prompt publication, continue to play the key role in setting the CPO premium over gasoil (the POGO). Rising stocks reduce the POGO; declining stocks increase it. The futures markets indicate gently falling crude and slightly faster falls in gasoil prices. Combining gasoil futures and Malaysian stock forecasts EU CPO will be \$850 by December. BMD 3<sup>rd</sup> position CPO futures will be RM 3,350 by year-end, pulled down by gasoil. Annual averages for 2023 are \$940 per tonne for Rotterdam CPO and RM 3,760 for BMD. These are not bad historically, but are well down from \$1,350 and RM 4,920 in 2022.