

# KYOS Commodity Risk

## Insight in risks: Wheat & Sugar

No 3 – April 2022



# Your commodity exposure



Suppose you are a food producer and need to buy in 2023 an annual volume of the following products, valued per 6<sup>th</sup> of April 2022:

Commodity	Volume	Average price per UoM	Current costs (6 <sup>th</sup> April)
Sugar #11	66,138,600 Lbs	18.69 \$ cents/Lbs	USD 12.3 million
Wheat	5,000,000 Bushel	953.95 \$ cents/bushel	USD 47.7 million
Total			USD 60.0 million

What are the risks you are facing? At KYOS we offer several analytical modules in our platform to help you simulating the future.

- **Stress tests:** effective financial results after a change in market prices, volatilities and/or positions?
- **Options and accumulators:** what are the values of your derivatives, using Monte Carlo simulations?
- **Value-at-Risk:** what is a '95% worst-case' impact on your MtM in one single day?
- **Cashflow-at-Risk / Profit-at-Risk:** what is a '95% worst-case' scenario of your cash-flows over a longer period?

# Cashflow-at-Risk

The Cashflow-at-Risk is calculated as a '95% worst-case' scenario of your cash-flows over a longer period.

If you do not hedge this "floating priced" position, your Cashflow-at-Risk (=CfaR) from today until 31 December 2023 can be presented as the potential cashflow difference between:

Sourcing volume \* (current market prices versus simulated market prices)

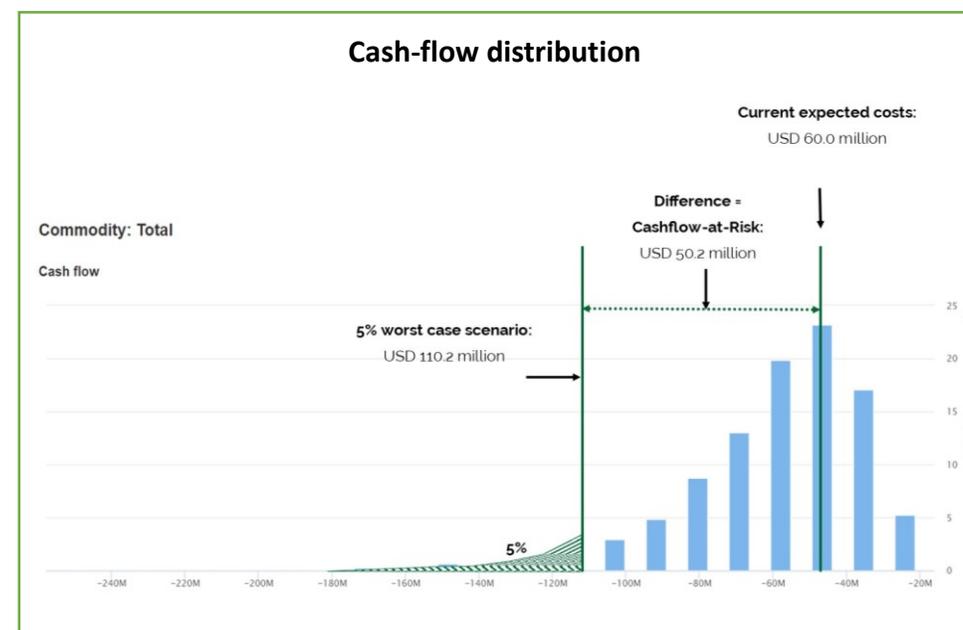
We estimate with 95% confidence that the total costs to source these two commodities will not be more than USD 110.2 million. This means that the difference between the current expected costs and the worst-case costs is your CfaR of USD 50.2 million.

## To hedge or not to hedge?

Current value	USD 60.0 million
5% worst case scenario	USD 110.2 million
Cashflow-at-Risk	USD 110.2 – 60.0 = <b>USD 50.2 million</b>

What will you do? Hedge now, at current prices, with costs of USD 60 million?

Or leave it open? Accepting the 5% chance that prices go up further and pay an additional USD 50.2 million.



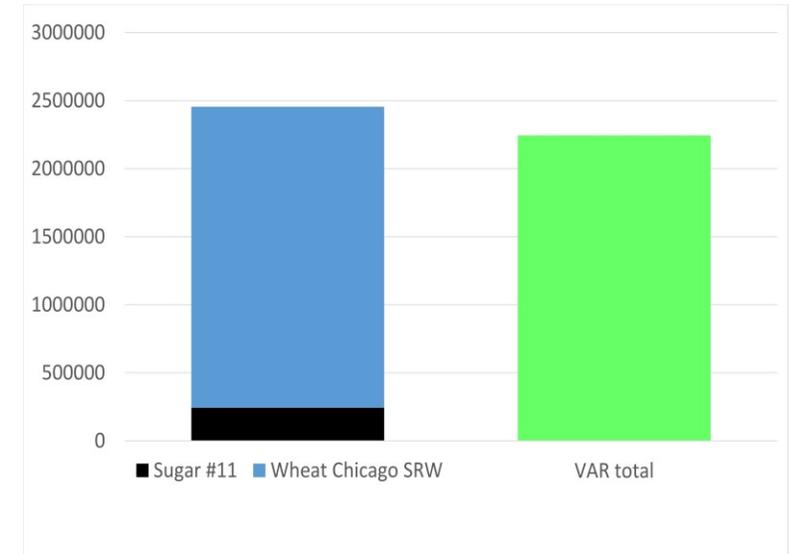
# Value-at-Risk

The Value-at-Risk shows the '95% worst-case' impact on your cashflow and/or MtM due to potential price changes in the short-term.

The graph shows the Value-at-Risk for a basket of commodities: left for the individual commodities sugar and wheat, on the right for both together. Do you notice the difference? The combined exposure is lower than the sum of the two because sugar and wheat prices are not strongly correlated.

See in the table the Value-at-Risk calculations for 1 day. We also show how quickly the value could go up (or down) for 10 days (holiday scenario). Beware that this is not the maximum. The actual cost increase may be higher with 5% probability.

**VaR per commodity**



Value-at Risk	Commodity exposure	VaR per commodity	Total VaR
1 day	66,138,600 Lbs Sugar #11 5,000,000 Bushel Wheat Chicago	USD 246,020 USD 2,205,000	USD 2.24 million
10 days	66,138,600 Lbs Sugar #11 5,000,000 Bushel Wheat Chicago	USD 737,470 USD 6,286,000	USD 6.58 million

# Advantages KYOS Portfolio and Risk Management System



## **Short term versus Long term**

KYOS software is used globally by procurement teams to calculate short- and long-term risks.

Short term risks can be calculated using stress tests or by using Value@Risk (=VaR) calculations. VaR can be calculated using different modelling techniques and depending on the underlying commodity, clients should apply a different technique.

## **Accumulators - embedded options**

Many clients in the food & beverage industry use accumulators to manage the price risk. KYOS has developed software to verify price valuations. It enables our clients to have an independent calculation of

the value as well as the MtM. It also enables clients to play with the strikes to find their optimum.

## **KYOS adds value**

To help you understand price risks and improve your company's cash flow prediction, KYOS has developed risk management software to effectively manage any commodity portfolio. This software is tailor-made to reflect your specific requirements. The KYOS commodity portfolio & risk management system captures years of industrial experience in managing budgets, commodity contracts, physical and/or financial hedging, market price analysis including sophisticated cash flow forecasting.

## **For whom**

Are you still using different spreadsheets to calculate your numbers? Whether you are in Procurement, Sales, Finance or Treasury – every department needs good, dependable figures. We at KYOS are confident a good cash flow forecast will make your life easier.

Please do not hesitate to contact us so we can discuss how we can help you save time – and probably money too.

Interested to learn more?  
Contact us at [info@kyos.com](mailto:info@kyos.com)

Our knowledge center is a great resource for the latest news, where we publish interesting articles and reports.

Do not hesitate to contact us for more information, or ask for a short demonstration: [info@kyos.com](mailto:info@kyos.com)



**Head office and European markets:**

Nieuwe Gracht 49  
2011 ND Haarlem  
The Netherlands  
E-mail: [info@kyos.com](mailto:info@kyos.com)  
Tel: +31 (0)23 551 02 21  
[www.kyos.com](http://www.kyos.com)

**Americas:**

HedgeStar  
6400 Flying Cloud Drive #212,  
Minneapolis MN 55344  
USA  
E-mail: [info@hedgestar.com](mailto:info@hedgestar.com)  
Tel: +1 866 200 9012  
[www.hedgestar.com](http://www.hedgestar.com)

**Japanese market:**

Toranomon Rapo-to bldg. UCF7F  
Toranomon 1-16-6, Minato-ku,  
Tokyo, 105-0001  
Japan  
E-mail: [info@kyos.jp](mailto:info@kyos.jp)  
Tel: +81(0)3 6869 6646  
[www.kyos.jp](http://www.kyos.jp)