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 all departments
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.

This is just a brief overview of what we can offer you. Have a look at our website **www.kyos.com** for more detailed information.

Do not hesitate to contact us for more information, or a short demonstration: **info@kyos.com**

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KYOS Commodity Risk Solutions

Insights in risks
Corn & Soybean meal

July 2022

Learn about the risks of a commodity portfolio with KYOS Insight in Risks. Based on market price volatilities, correlations and Monte Carlo simulations, the report shows the important risk metrics Cashflow-At-Risk and Value-At-Risk. This month corn and soybean meal are in the spotlights. How much is the amount at risk and what could you do to mitigate the risk?

Earlier this year we showed an example of a food producer who needs to buy corn and soybean meal during the budget year 2023. On 4th of March we calculated the costs and risks and on 8th of July we have done the same. Now we are able to compare the costs and risks.

		4 March 2022		8 July 2022	
Commodity	**Amount**	**Average price**	**Total**	**Average price**	**Total**
Corn	14.6 million bushel	597.04 $cnts/bu	USD 87.3 million	587.21 $cnts/bu	USD 85.9 million
Soybean meal	150.000 short tonne	378.23 $/ST	USD 56.7 million	377.15 $/ST	USD 56.6 million
Total			USD 144.0 million		USD 142.5 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 (=1,5 year) 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 202.5 million. This means that the difference between the current costs USD 142.5 million and the worst-case costs is the CfaR of USD 60 million.

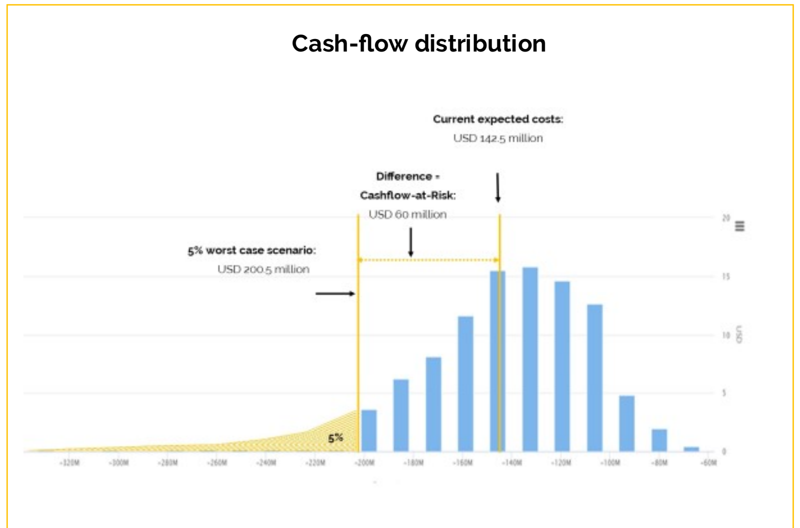
Insights in risks
Corn & Soybean meal

To hedge or not to hedge?

	4 March 2022	8 July 2022
Current value	USD 144.1 million	USD 142.5 million
5% worst case scenario	USD 200.6 million	USD 202.5 million
Cashflow-at-Risk	USD 200.6 – 144.1 = **USD 56.5 million**	USD 202.5 – 142.5 = **USD 60 million**

What will you do? Hedge now, at the price of USD 142.5?

Or leave it open? There is a 5% chance that costs will go up and you have to pay an extra USD 60 million—or more.

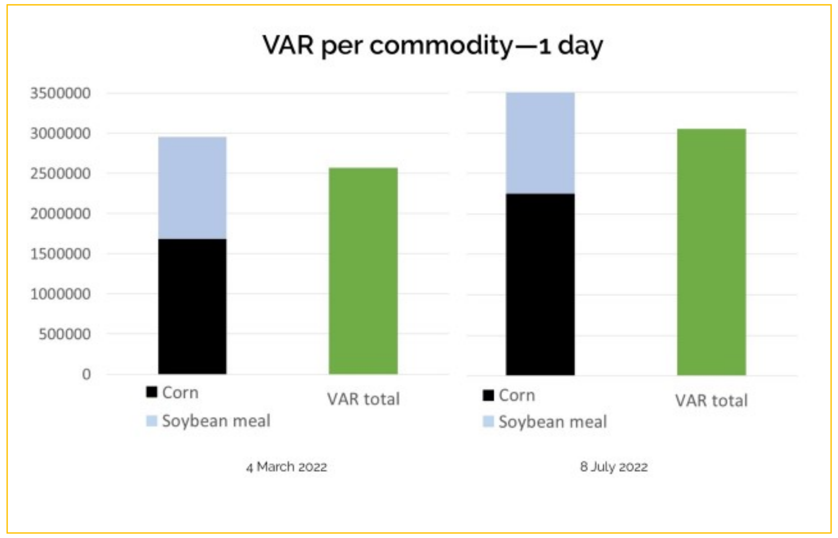


Value-at-Risk

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

The graph shows the Value-at-Risk for a basket of commodities: left for the individual commodities corn and soybean meal, on the right for both together. Do you notice the difference? The combined exposure is lower than the sum of the two because corn and soybean meal 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.



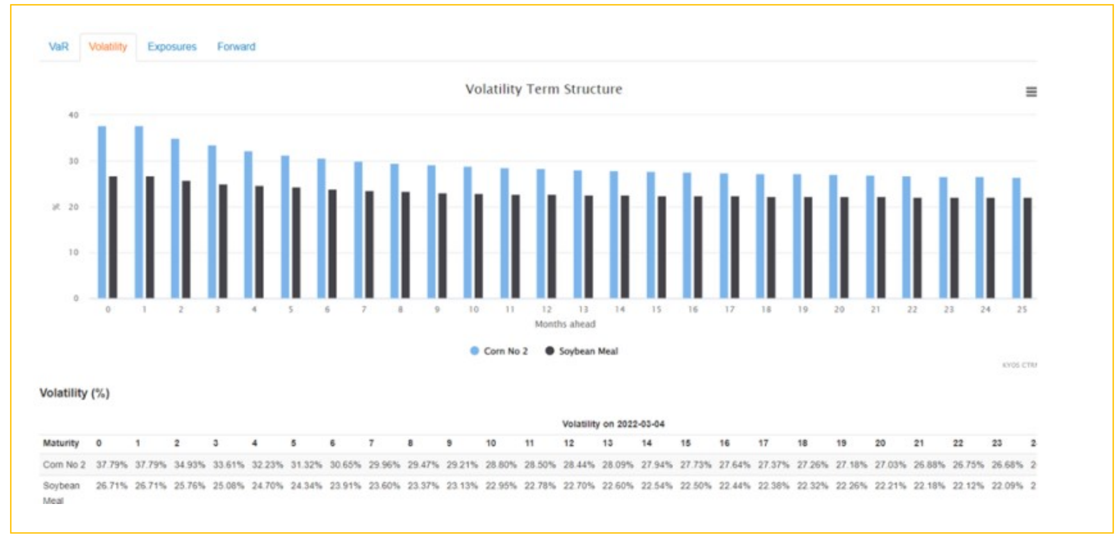
		4 March 2022		8 July 2022	
Value-at Risk	**Commodity exposure**	**VaR per commodity**	**Total VaR**	**VaR per commodity**	**Total VaR**
1 day	Corn: 14.6 million bushel SBM: 150.000 short tonne	USD 1.7 million USD 1.3 million	USD 2.6 million	USD 2.3 million USD 1.4 million	USD 3 million
10 days	Corn: 14.6 million bushel SMB: 150.000 short tonne	USD 4.9 million USD 4.0 million	USD 7.6 million	USD 6.6 million USD 4.2 million	USD 9.1 million

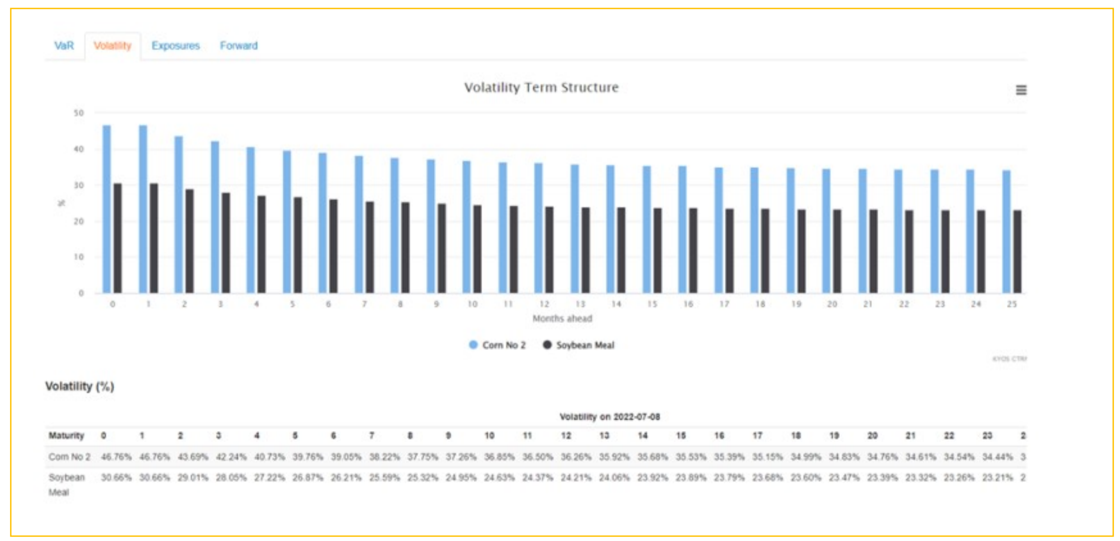
Market Trend

Compared to March, the Cashflow-at-Risk went up from USD 56.5 to USD 60 = USD 3.5 million, an increase of 6.2%. The total Value-at-Risk went up from USD 2.6 to 3 mio = USD 400.000, an increase of 15.4%

The costs to buy the portfolio however remained relatively stable (from USD 144.1 to USD 142.5 million is a decrease of 1.1% only). What is the reason then for the increase in the risk metrics?

This can be found in the increased volatility of the commodity prices. The volatility of corn increase by 8% on average. That of soybean meal with 2%. .





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