Insight in Risks

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How to use historical volatility of aluminium prices to estimate your cashflows

Aluminium as a growth indicator?

Aluminium and copper are good indicators for a general understanding on where to position an economy. The usage of aluminium is split between leading industries such as transport (27 percent), construction (25 percent) and equipment (9 percent).

In 2018 Aluminium prices have been volatile throughout the year on persistent concerns about alumina supply (starting with bauxite).

"The cyber attack that hit Norsk Hydro March'19 affected its entire global organization, having suffered the most significant financial loss," said President and CEO Svein Richard Brandtzæg, adding that the overall financial impact of the cyber attack is estimated at NOK 400-450 million in the first quarter.

"Recent developments in Brazil show that we are progressing towards a resolution of the production embargo on Alunorte, although the timing continues to be uncertain," Brandtzæg says. On April 12, Hydro and Ministerio Publico delivered a joint petition to the federal court in Brazil, asking for the production embargo against Alunorte to be lifted. The petition is currently under evaluation by the court.

Sufficient sources of aluminium keep price tempered

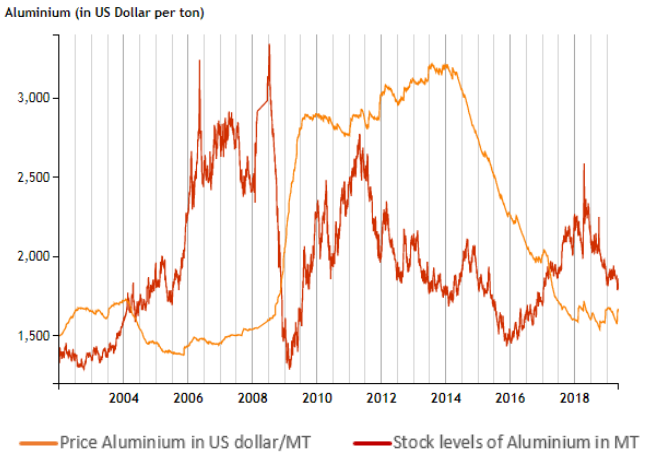


Figure 1 Price and Stock levels of Aluminium, Source Westmetall, website accessed 20 May 2019

Facts about historical price volatility

The current volatility of aluminium prices is with 16% slighly lower compared to the long term average volatility during the last 15 years. The historical range of volatility is roughly between 10% to 35%.

But what else do you need to know about this market? Although volatility is an important starting point for risk management, it is sometimes necessary to go back to the basics and pay attention to the following:

Some interesting facts on Aluminium prices	
Largest price change in 24 hrs	Price Fall 230 $/MT
10% of all price changes	> 45 $/MT
AVG daily price change	> 20 $/MT
Highest price ever traded	> 3,250 $/MT

Note, compared to EURUSD volatility, Aluminium volatility is around three to four times higher. What is the impact of this volatility on your business?

Commodity exposure

Suppose you consume during 2020 an annual volume of 10,000MT aluminium.

Your annual cash flow based upon current market prices (prices taken 20 May 2019) would be around USD 19.1 million.

What is the risk

If you do not hedge this "floating priced" position, your cashflow@risk (=CfaR) from today until the end of 2020 can be presented as the potential cashflow difference between:

- Sourcing volume * (current market prices versus simulated market prices)
- KYOS calculated the current CfaR at USD 7.5 million
- Enough reason to hedge?

KYOS

Figure 2 Distribution of cashflows - Source KYOS

Cashflow-at-Risk

For your cash flow this means that:

- With 95% certainty your cashflow will be lower than USD 26.6 million
- Be aware that this is not the maximum

With this information, you have determined your starting point for the desired hedging strategy. The final choice is yours but with these calculations, combined with your experience you are for sure better prepared to make your hedging decisions!

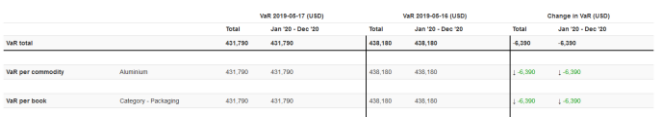
Short term versus Long term

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

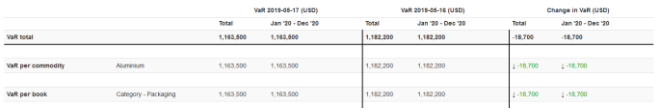
Short term risks can be calculated using stress tests or by using Value@Risk (=VaR) calculations. VaR can be calculated using different modelling techniques and depending on the underlying commodity, clients should apply a different technique.

Value-at-Risk

For a short-term risk calculation (e.g. 1 day) you can use Value-at-Risk. With 95% certainty the potential price change (up/down) will not be bigger than USD 431.790 for this portfolio of 10,000MT aluminium.



A holiday break of 10 days triples that potential price movement above USD 1.16 million.



KYOS adds value

To help you understand these price risks and improve your cash flow prediction, KYOS has developed risk management software to effectively manage your 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