KING'S CAPITAL

Trade Proposal

Vol trade: DAX (German Stock Index)

Hedge: EURO STOXX 600

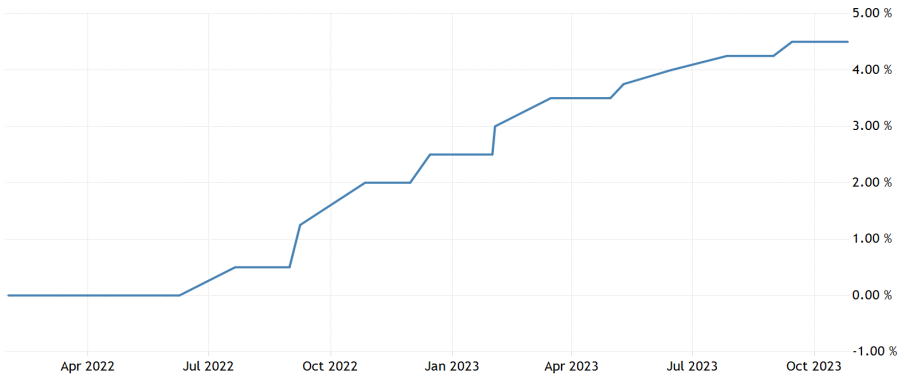
Market Dynamics

Europe in a Global Context

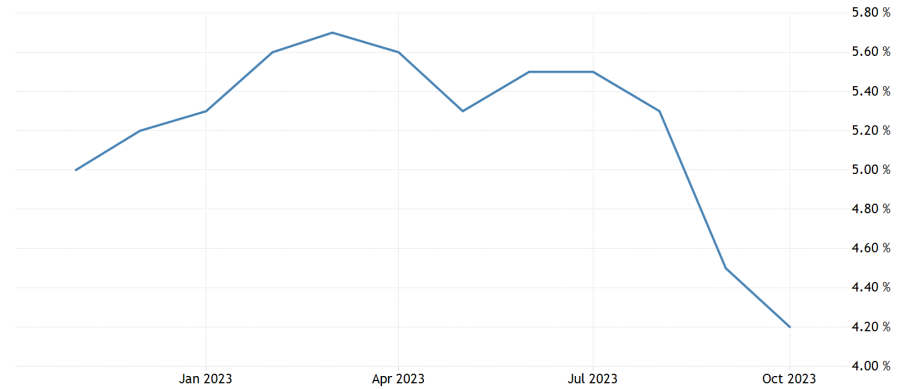
Interest Rates

Central Banks & High Rates

Euro Area Interest Rate

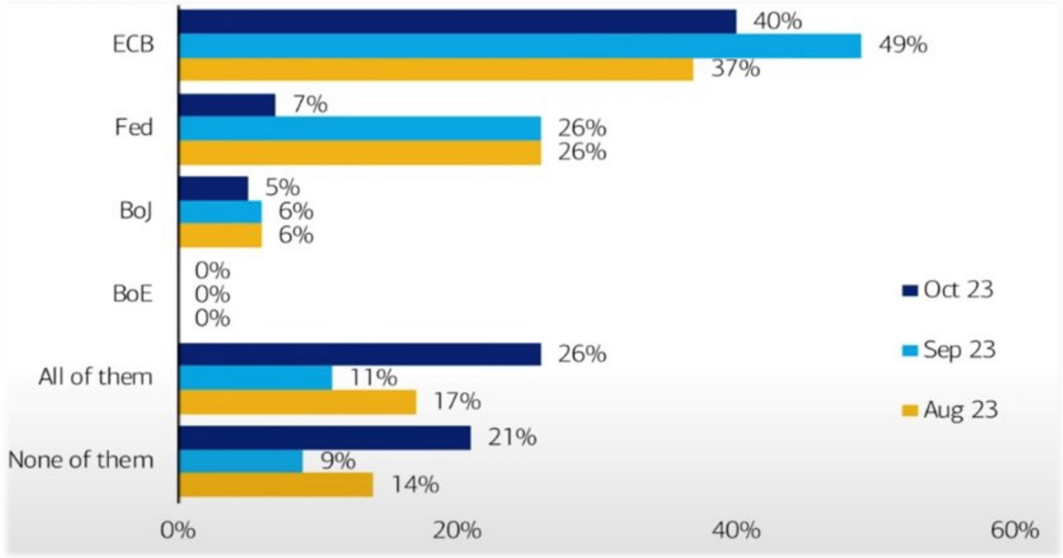


Euro Area Core Inflation Rate



Source: Tradingeconomics.com, ECB, EUROSTAT

Most committed to 2% inflation target survey



Source: BoA Global Research, (FX and Rates Sentiment Survey, I have a dollar 13 October 2023)

Implications for the European markets

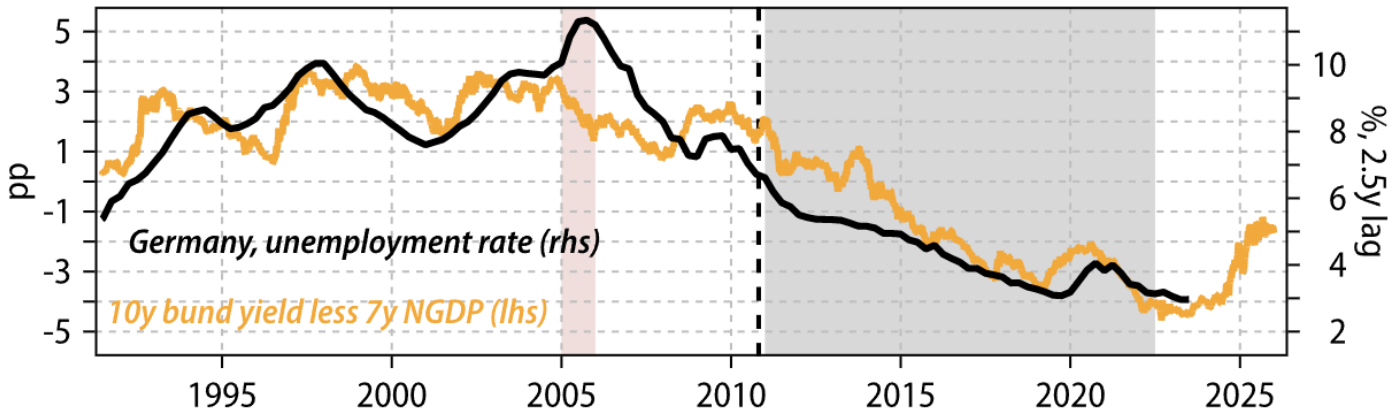
- Increased borrowing costs
- Market volatility (Indices)

German Sentiment

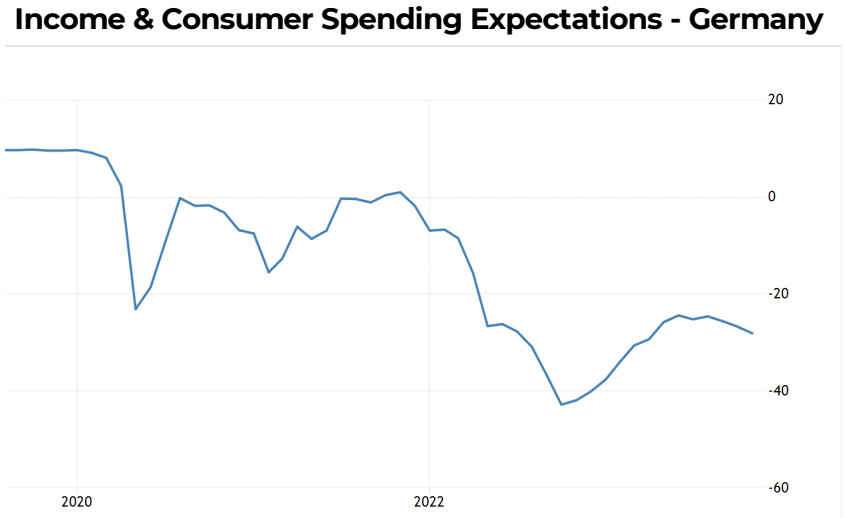
Bond Yields & Economic Sentiment

End of Monetary Easing

- Long-term monetary easing through 2010's led to unnaturally low unemployment
- Rising rates in Germany historically precede rising unemployment
- Recent yields have peaked higher than seen in decades → major unemployment risk



Source: Gavekal Research, Macrobond



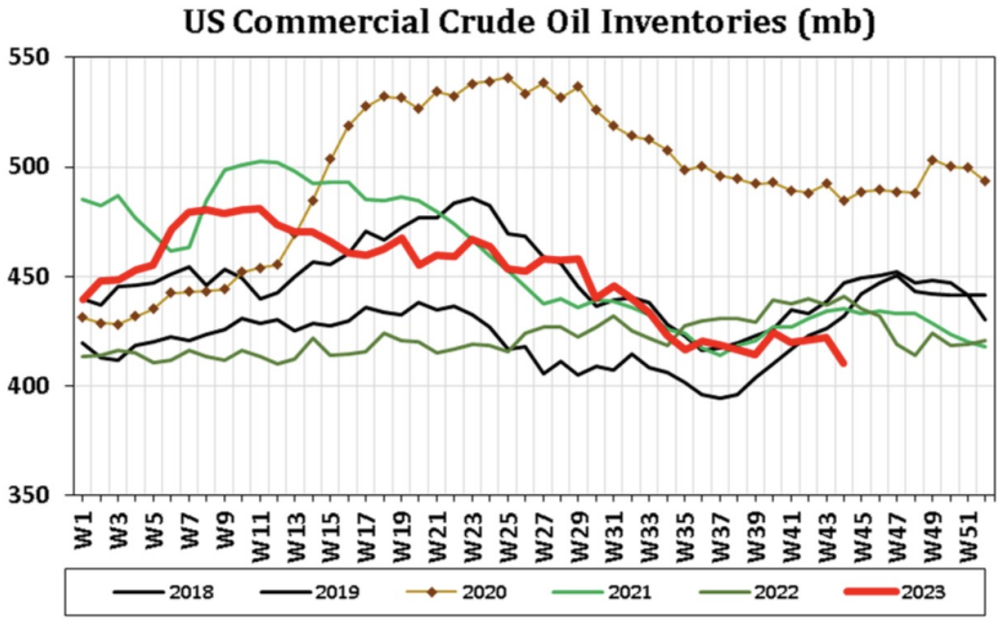
Source: Tradingeconomics.com, GFK Group

EU Energy Security

Peer Comparison

USA (Net Exporter)

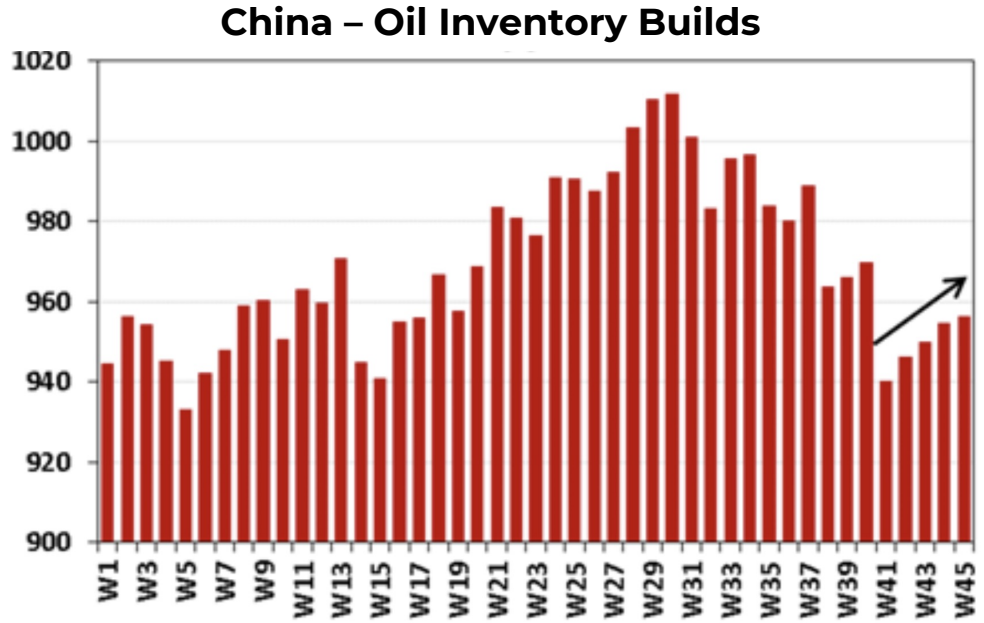
100 days of oil consumption in storage (comm. + refined + SPR)



Source: EIA, 2023, EOA, 2023 & A. Alhaji, 2023

China (Net Importer)

Largest (and rising) public oil/gas storage in world



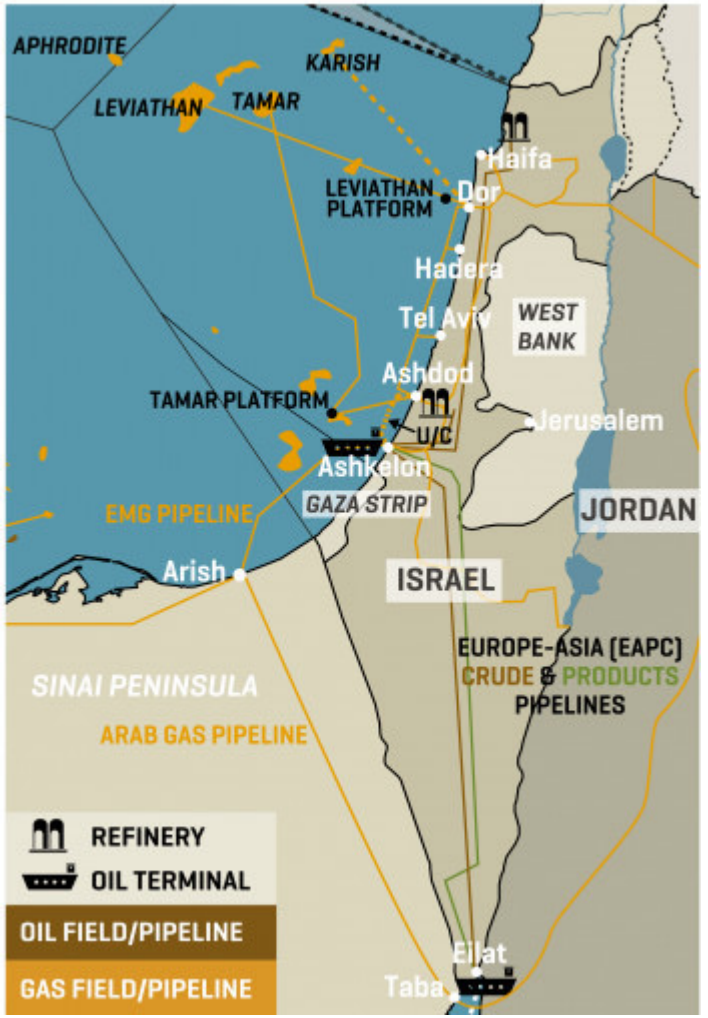
Source: Kpler, 2023, EOA,2023 & A. Alhaji, 2023

EU Energy Security

Short-term risk Catalysts - MENA

- Ongoing Israel-Hamas conflict – potential for prolonged warfare
- Tamar gas field shutdown – Egypt supply compromised (Egypt NX → NI)
- Global O&G trade uncertain and opaque
- As a result: Risks on MENA-dependent EU after EU-Russia trade breakdown

Egypt election date: 10-12 December 23



EU Energy Security

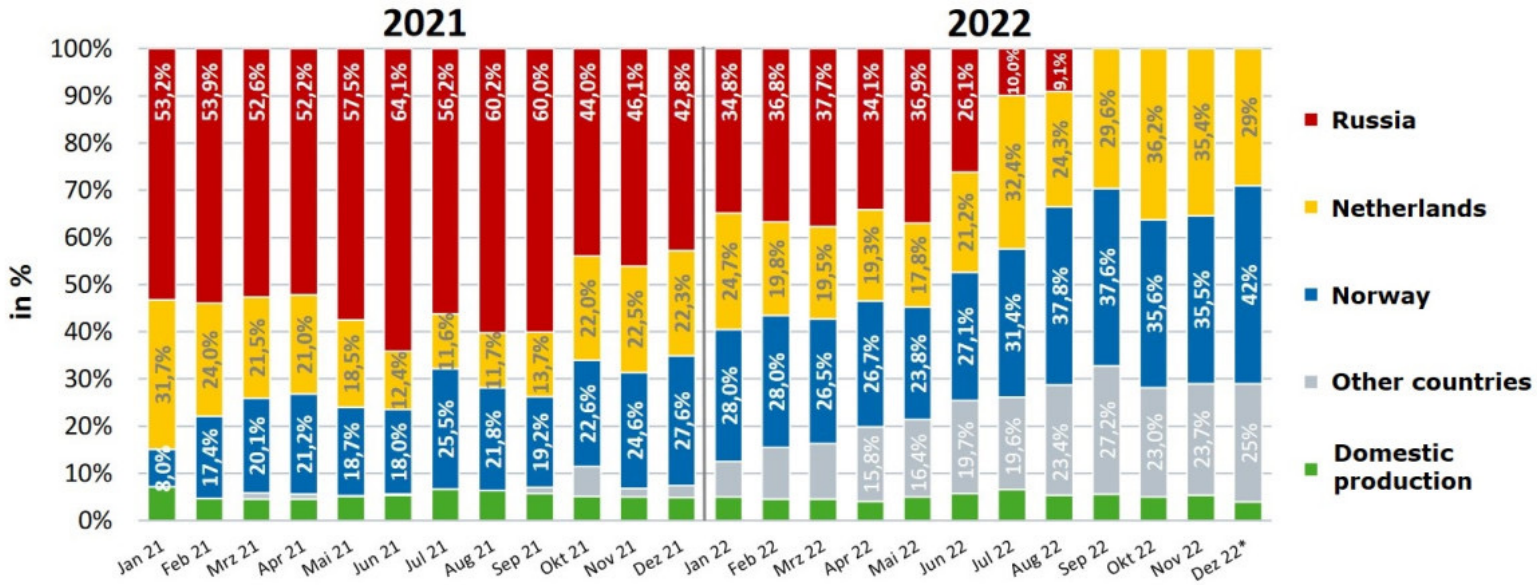
Germany in the Spotlight

Germany

- Imports 97% of crude oil consumption and ~65% of all energy
- Significant Industrial Complex
- Russia lost as a supplier(34% →0% of gas imports)

Increased exposure to potential MENA supply shocks

Import Mix



Source: ENTSOG, FNB, Clean Energy Wire

Index Overview

EURO STOXX - Price

Trend

- Recent upticks provide good entry point for hedges
- Sustained low volatility across European equities has kept put options (portfolio insurance) cheap

Implication: *We plan to hedge against the aforementioned risks 'at the source'*

Source: Interactive Brokers

Volatility Assessment

Index Overview

DAX - Volatility

Trend

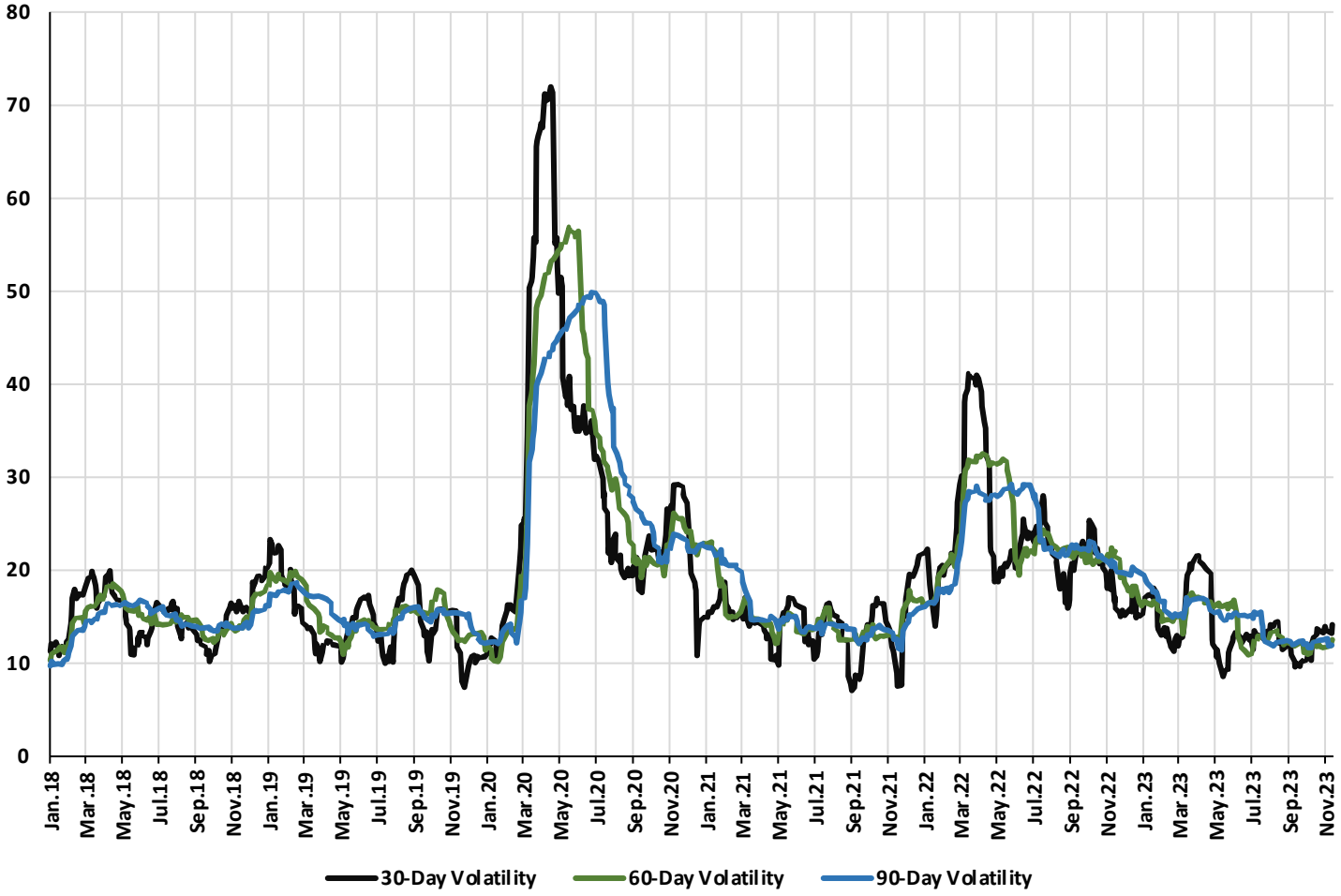
- DAX Volatility has traded downward in a range for over a year
- Resistance at the significant 10% level occurs consistently

Implication: *For a bullish volatility trade, it is difficult to find a better levels*

Source: Bloomberg

Volatility

30, 60, 90-day Historical Volatility

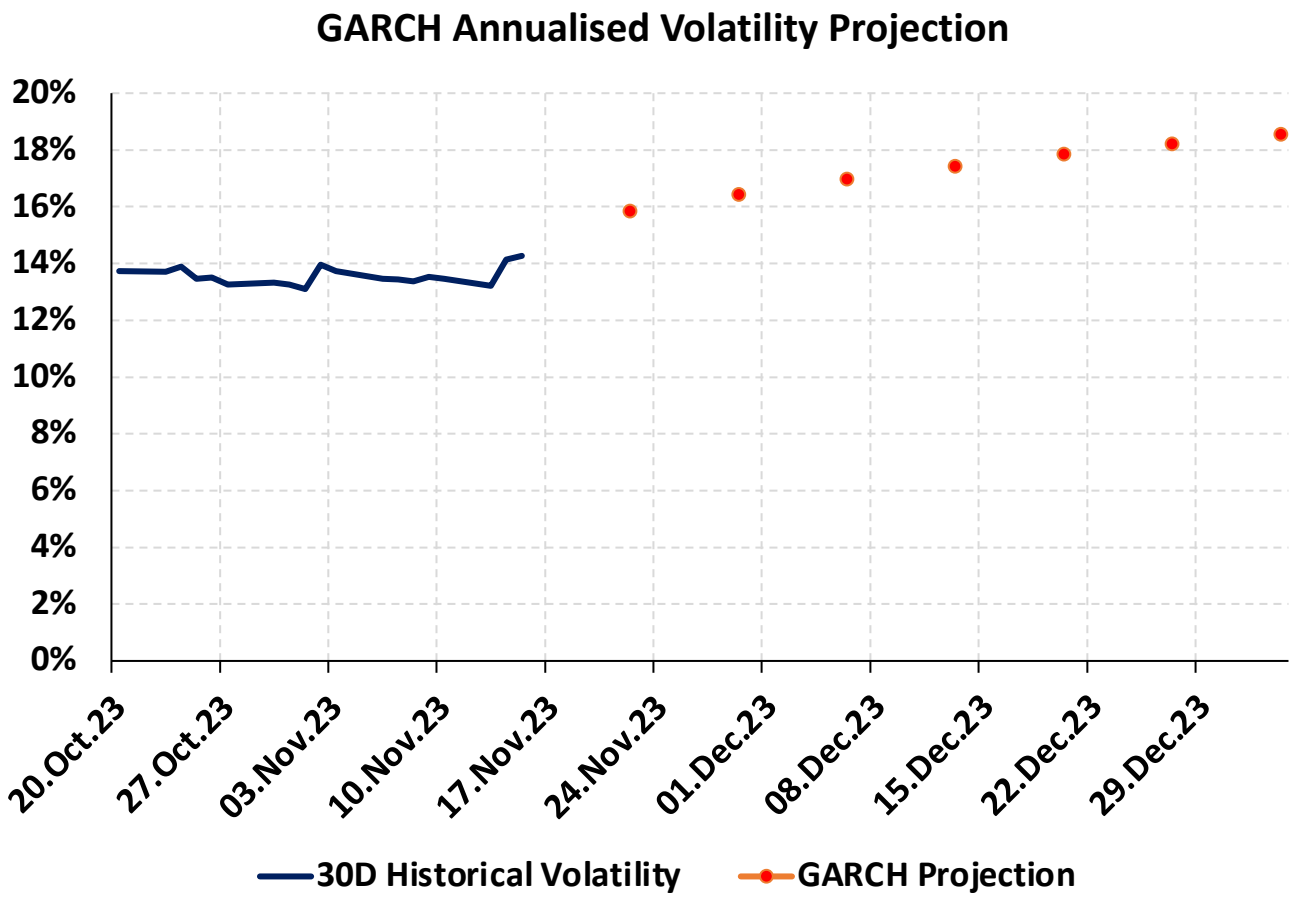


Source: Bloomberg, King's Capital

Volatility Clustering

- Mean-reverting
- Seasonality
- Lagging behaviour, low vol followed by low vol, high vol followed by high vol
- Looking at past major spikes (COVID + Rus-Ukr Invasion), potential for 2-8x upside

Volatility
GARCH Forecast



Model:

$$\sigma_t^2 = \omega + \sum_{i=1}^{q} \alpha_i \epsilon_{t-1}^2 + \sum_{i=1}^{p} \beta_i \sigma_{t-1}^2$$

- Fitted on historical returns data
- Forecasting steady growth in volatility

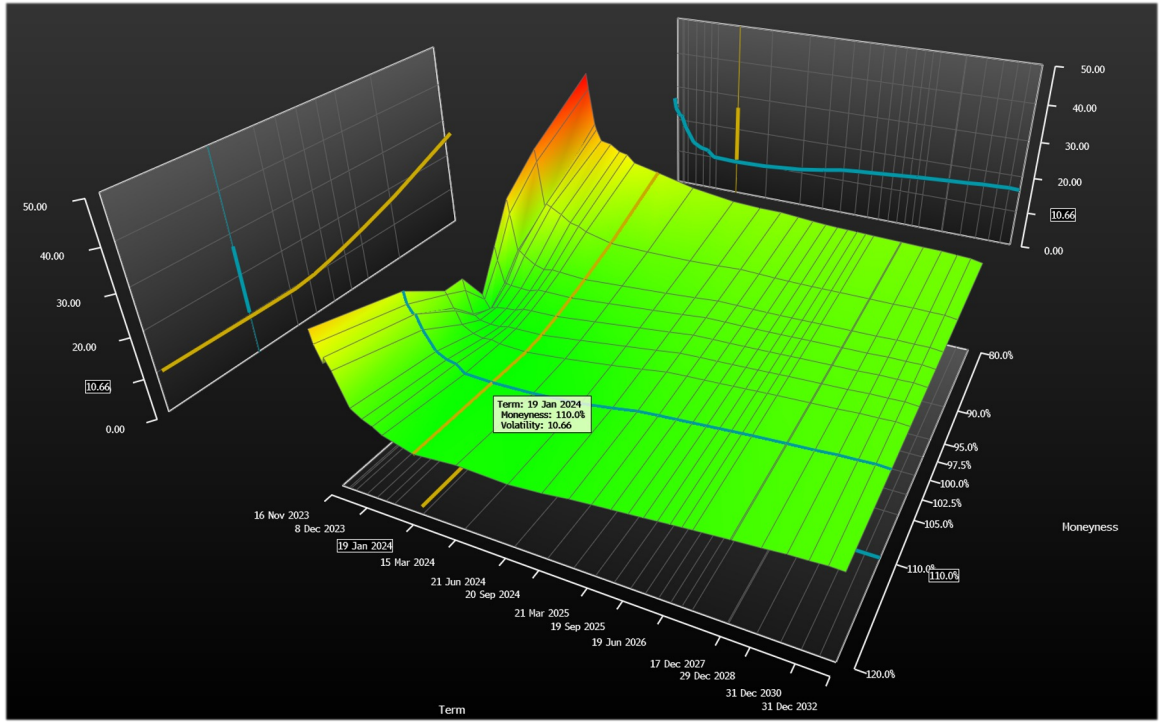
DAX Performance-Index

Volatility Surface

- Represents implied volatility for a range of option strike prices and time to expiration
- Major catalyst will happen in the next couple of months

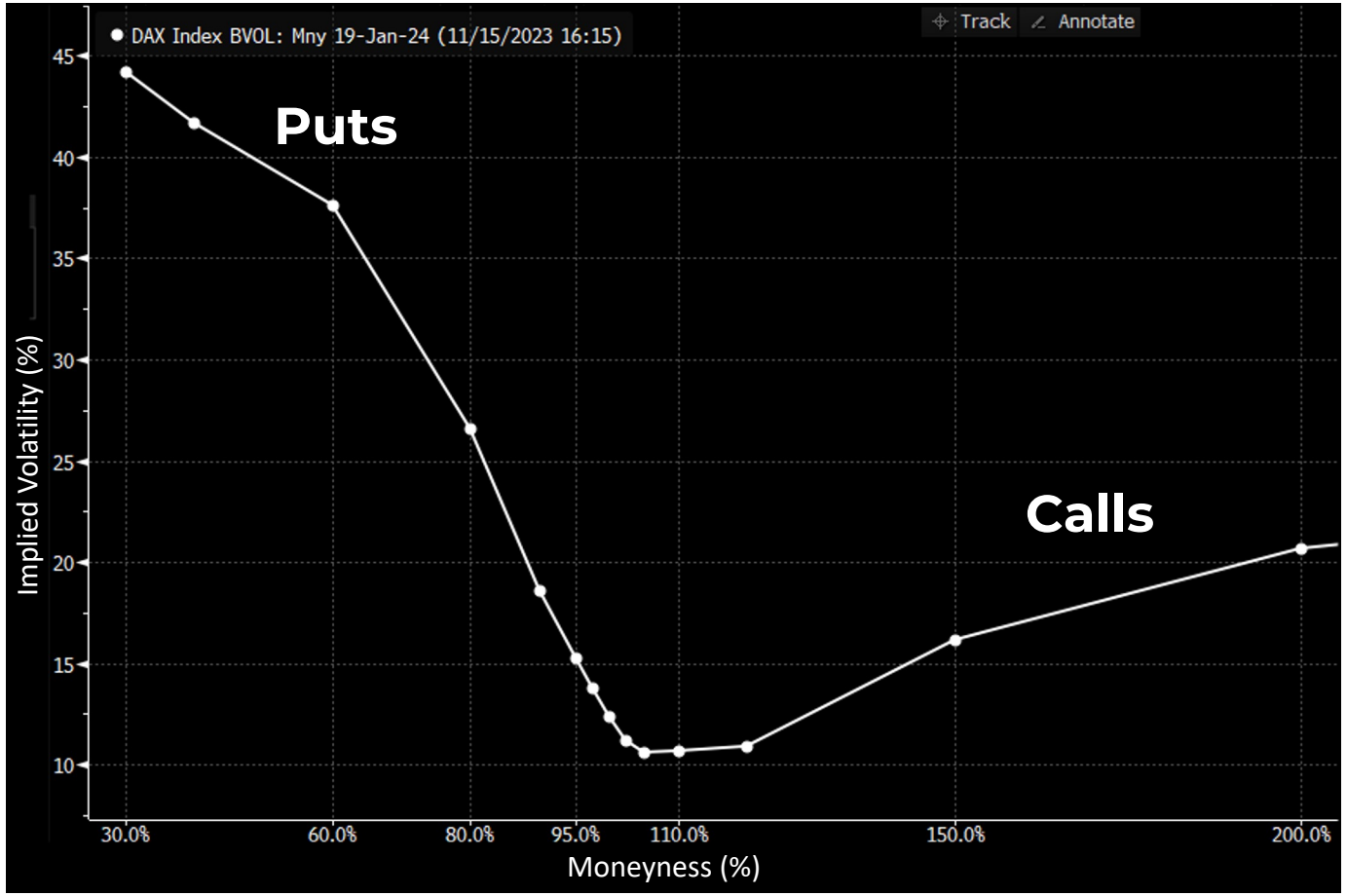
Term: 19 Jan 2024, Moneyness: 110%, Volatility: 10.66%

- Low implied volatility
- Cheap OTM Calls



Source: Bloomberg

Volatility
Put Skew



Source: Bloomberg

Calls vs Puts

- Calls more favourable for delta-hedged volatility trade due to lower implied volatility
- Allows for greater position size with same capital outlay → higher exposure to upwards volatility
- Puts exhibit 'skew' due to their higher usage for hedging purposes – prices are higher

The Heston Model

Proprietary Option Pricing Model

Two stochastic processes

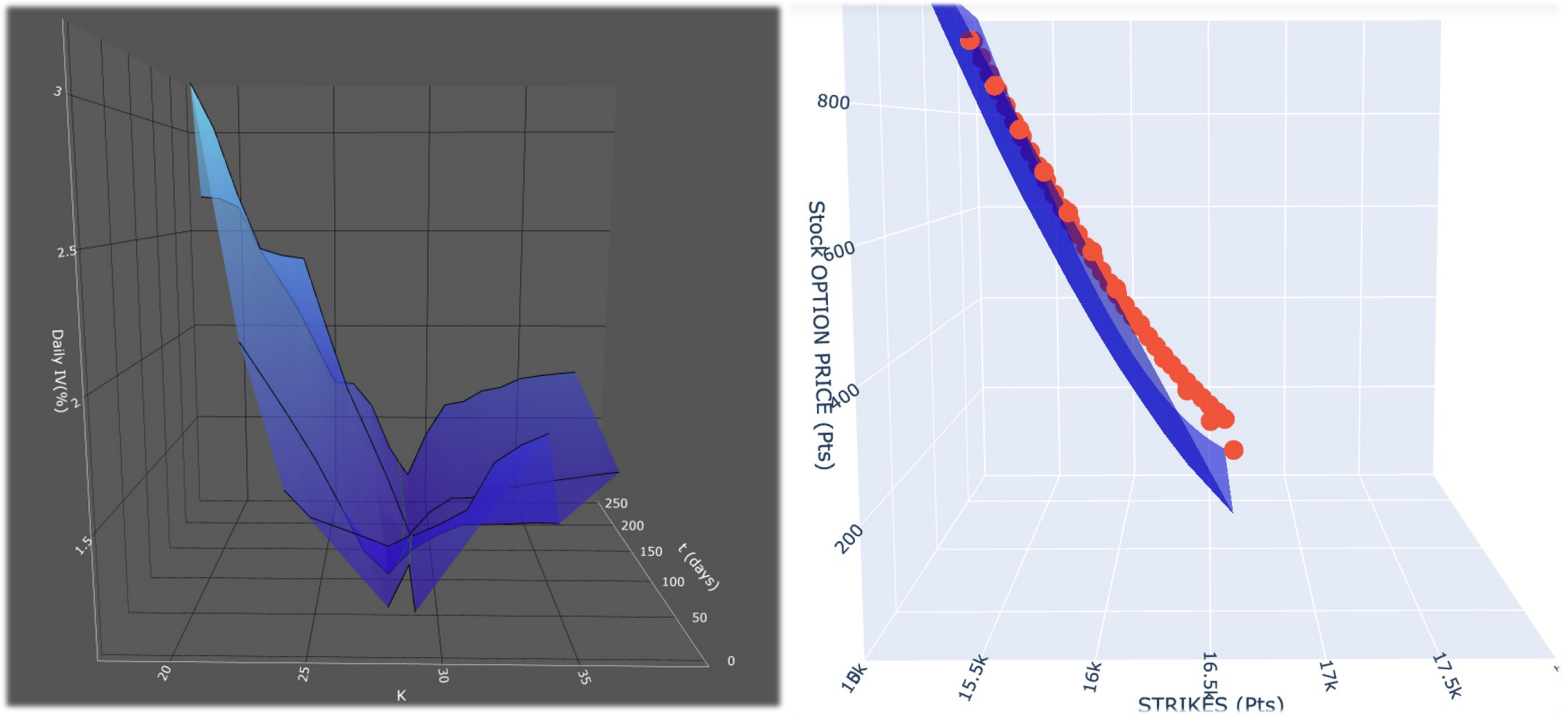
- Asset price
- Volatility

Mean reversion

Correlation between asset returns and volatility

$$dS_t = \mu S_t dt + \sqrt{v_t} S_t dW_{t,s}$$
$$dv_t = \kappa(\theta - v_t)dt + \sigma\sqrt{v_t} dW_{t,v}$$
$$dW_{t,s}\, dW_{t,v} = \rho dt$$

Market Prices (Mesh) vs Calibrated Heston Prices (Markers)



Source: Interactive Brokers, King's Capital

Hedge Position Proposal

Final Assessment
King's Capital View

Through a combined analysis of historical volatility, forecast volatility and macroeconomic risk, we have determined ***two valuable trades for King's Capital***

Long Volatility Trade on DAX

- Long Call @ 110% of the money
- Expiry: 19 Jan 2024
- Delta Hedge (removes exposure to underlying price movements)
- Current IV: 10.66%
- Assessment IV: 25-60%

Downside Protection on EURO STOXX 600

- 22 x Deep OTM Puts @ 400 Strike
- Current asset price: 451
- Premium: 2.6 * 100 * 22 = EUR 5720
- Expiry: 15 Mar 2024