🗺 Overview

This explanation of the mechanism assumes knowledge about implied volatility, the Greeks, and general options terminology. If you need a primer, check out the 'Intro to Options' section of these docs.

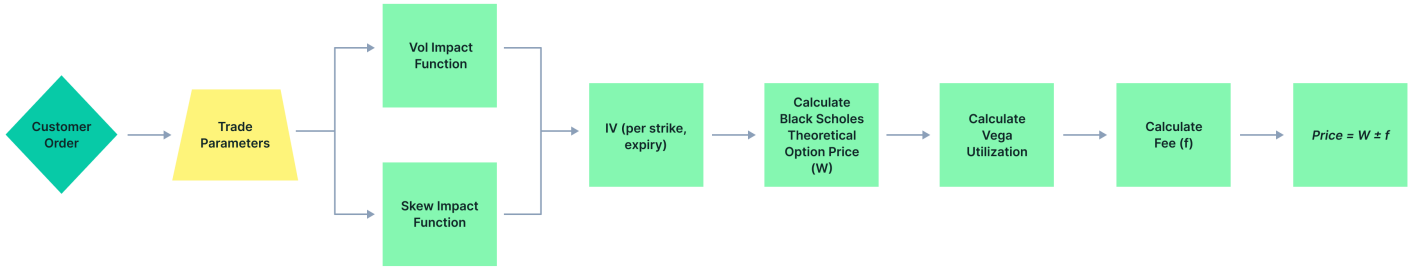
The following sections offer a high level look into the Lyra mechanism. For an in-depth explanation, check out our whitepaper.

When a trader comes in to make a trade with the AMM, the **size of the trade is quantified**. The mechanism then uses the size of the trade to determine the **volatility slippage to charge the trader**. The volatility slippage has two components, **the baseline IV** (per expiry) and the **strike volatility ratio** (per strike/expiry combination). The updated IV / strike volatility values are then used to create the **volatility input into a Black Scholes model**, to get a fair price *W.*

Once *W* has been determined, the AMM then charges a **spread** around *W,* the methodology for which is described here. The goal of the spread is to charge a fee that is higher for trades which add to the AMM's risk, and lower for trades which hedge its exposure.

Lastly, the AMM has an inbuilt method for calculating net delta (described here). External actors can call an incentivized function to trigger the AMM to execute a hedging trade with a spot market that Lyra composes with. This process greatly reduces the risk for LPs. LPs are therefore actively hedging their risk in two key dimensions - delta and vega. This lowers the risk per unit of liquidity provided, leading to deeper liquidity and a more comprehensively priced options surface.

The structure of Lyra's mechanism is outlined in the below flowchart:


Customer Order
Trade Parameters
Vol Impact Function
Skew Impact Function
IV (per strike, expiry)
Calculate Black Scholes Theoretical Option Price (W)
Calculate Vega Utilization
Calculate Fee (f)
Price = W ± f