$GLP Risk/Reward Analysis

Intro

The goal of this writeup is to analyze the GLP token as a potential way to earn stable-ish yield on dollars. As we'll see, GLP is *not* pegged to $1, so there's some price risk and other risks involved. However, there's also some interesting potential advantages involved compared to simply lending out stablecoins for yield.

We want to analyze and quantify GLP's risks in order to see if, and in what fashion, it could be integrated into a "stable yield farming" section of a portfolio. To do this, we'll go over what GLP is, explain why anyone would be interested in holding it, analyze its risk/reward profile, and summarize.

Background

What is GLP? GLP is a token related to GMX, a DeFi derivatives exchange. This means GMX is a place for traders to trade tokens like BTC or ETH with leverage. GMX is currently a top three DeFi derivatives exchange by trading volume, competing mostly with dYdX (the dominant competitor), Perpetual Protocol, and Drift Protocol. We won't get too deep into the $GMX token itself here, as that isn't the focus of this writeup. Instead, we're going to focus on the GLP token. *Note that we're going to focus on GLP on the Arbitrum network (a scaling network for Ethereum), but know that GLP is available on the Avalanche blockchain too*.

GLP

GLP is the token you receive for providing liquidity to the GMX exchange and the traders that use it. Traders obviously need liquidity to make trades and access leverage, so GMX has created an interesting model, utilizing GLP, to attract liquidity.

Basically, GLP is a token that represents all liquidity on GMX. If you provide $1,000 worth of ETH as liquidity for traders, you're going to get about $1,000 worth of GLP in return.

As a representative of *all* liquidity on the platform, GLP is essentially an **index** of different assets, including BTC, ETH, stablecoins, and more. Therefore, it is not a stablecoin itself. Instead, its price is calculated using this formula:

Total value of assets in the index, including profits and losses of open positions, ***divided by*** *GLP supply*

At the time of writing (4/25/22), GLP is priced at $1.04, and it's backed by (roughly) 33% ETH, 11% BTC, 2% LINK, <1% UNI, 38% USDC, 9% DAI, 2% USDT, and 2% FRAX. All said, this means that **over 50% of the index that makes up GLP is stablecoins**. We'll examine the GLP price and its index more in depth later on.

Benefits of GLP

Why would you want to hold GLP? Well, there's a couple main reasons: reduced volatility and rewards. We'll discuss reduced volatility more in depth in the *Risk/Reward Analysis* section later, so for now let's focus on the rewards.

The most common reason (I assume) for holding GLP is the rewards. Holders of GLP earn:

1. Escrowed GMX rewards. These are earned as a token called "esGMX", and they can be converted into GMX tokens by vesting them over the course of a year. If you want to do that so that you can sell or hold the GMX tokens, you have to maintain your GLP balance while the esGMX vests to GMX. It's a bit complex; for more info, read here, but basically just know that these esGMX rewards take a while to unlock and require you to keep holding GLP!
2. **70% of platform fees.** This is the big one, in my opinion. If you're holding GLP on Arbitrum, you're going to get this reward paid in ETH. If you're on Avalanche, it'll be paid in AVAX. Rewards paid out directly in major tokens like ETH and AVAX are somewhat of a rarity to find in major DeFi protocols, so this was the first thing that caught my attention when I started looking into GLP. These rewards do not need to be vested; they're available immediately as you earn them.

Currently, holding GLP on Arbitrum earns you 32.44% APR, including 15.25% paid in ETH and 17.19% paid in esGMX. On the surface, this seems like a great deal. Let's look a bit closer.

Risk/Reward Analysis

Before we look at some stats and try to come to a rough conclusion about if/how GLP fits into a stable yield portfolio, let's check out the main risks that come from holding GLP:

(1) The first (and most important, in my opinion) risk to note is GLP price risk. GLP fluctuates in price and, since September, has ranged from roughly $0.94 to $1.35. A ~43% range in price over that time period is nothing to scoff at, but ETH had a roughly 125% price range over the same time period, so GLP was less volatile. In order to quantify this risk, we need to know what drives its price.

To reiterate, GLP's price is calculated by *Total value of assets in the index, including profits and losses of open positions,* ***divided by*** *GLP supply*. This means a few things. First, **GLP generally moves up and down as the assets in the index backing it move up and down**. Since the index is made up of around 50% volatile tokens (BTC, ETH, LINK, UNI), movements in the price of these tokens can affect the index price, though volatility is dampened given that the other ~50% is made up of stablecoins. There's some other nuances here such as "if traders on the GMX exchange are overall losing a lot of money, the GLP price is pushed up" and "if a lot of traders are leveraged long and BTC and ETH prices go up, GLP will not go up as much because profits need to be used to pay traders."

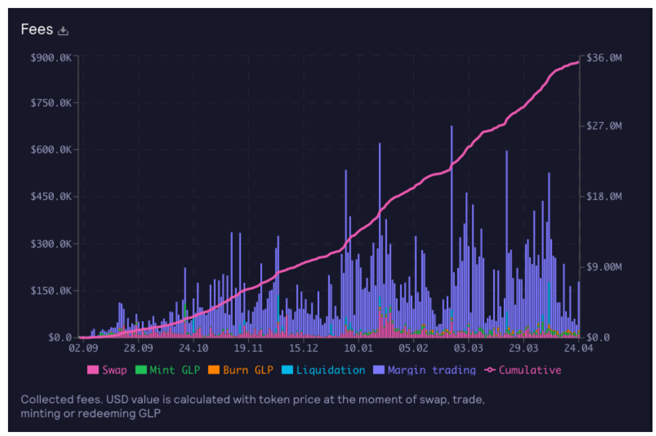
(2) Buy/sell risk. What I mean by this is that the basket of tokens that make up GLP's index have *target weights*. For instance, at the time of writing, ETH makes up 33% of the index, but its target weight is 30%. To incentivize getting ETH back to that target weight, it costs *more* to mint GLP using ETH. You're better off minting GLP with something like USDC, which makes up 38% of the index but has a target weight of 40%. It's cheaper to mint GLP using an asset like USDC that is below its target weight; this encourages getting USDC back up to its target weight.

(3) The "black swan" risks of smart contracts or stablecoins breaking their $1 peg. The stablecoins (USDC, USDT, DAI, FRAX) are among the safest in DeFi, and the smart contracts were audited by ABDK Consulting, a reputable firm who also audited ZkSync, Uniswap, and Rari Capital's contracts. There is also a bug bounty for up to $5 million out. Still, this is a risk.

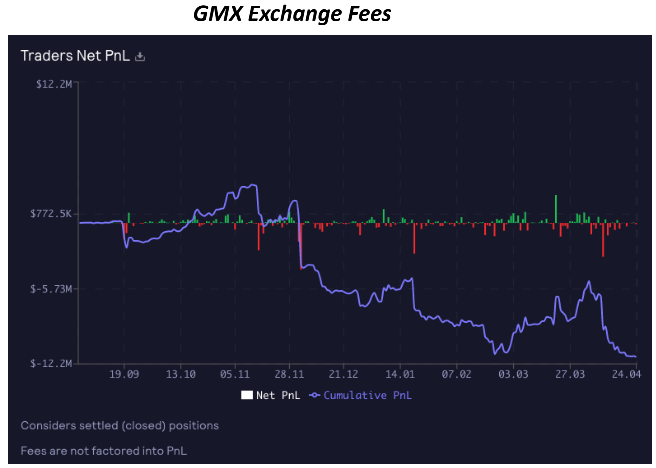
Now that we've gone over the risks, let's get into some data and draw some inferences. Focusing on risk (1), there's two main things to consider in deciding whether GLP fits into a yield-earning portfolio: the GLP price over the next x amount of weeks/month, and the profitability/fee volume of GMX exchange itself.

The main driving factor behind the GLP price in the coming weeks/months will be the price of BTC and ETH since these tokens make up about 44% of the index. Say you see the possibility of more downside to be higher than not, but you also believe that BTC and ETH will not stay below where they are now for *too* long (say, over the next 6-9 months). So, overall, you expect a choppy market. If you're right, any index price driven drawdown on GLP would also not last too long, and you'd be earning yield while the market chops around. This is actually a good thing; a choppy market is where you want to hold something like GLP and earn yield, versus a bull market where you would want to capture as much upside as you can. ***It's up to you to judge where you believe the market is headed while you hold GLP, since the profitability of your GLP position will be influenced by the BTC and ETH prices.***

Let's take a look at some charts now, courtesy of stats.gmx.io. I'll then briefly explain each.



GMX Exchange Fees



GMX Exchange Trader PnL

GLP Price Comparison

The first chart shows GMX fees over time. We want to see this growing, and it generally is. Over the past week or two, it's been a bit more quiet, but generally GMX has seen fees grow via increased margin trading.

The second chart shows trader PnL on GMX. We can see that, when crypto was hitting highs in early November, traders were making money which is bad for the GLP price and GLP holders. Since then, overall trader performance on the exchange has been negative. If you believe we are not going to see a bull market in the coming weeks/months, then this is good for GLP holders as, generally, traders on the platform will lose more money.

Finally, the third (and most important) chart compares the GLP price to other prices such as the index price, the GLP price *with fees*, and the price of simply providing liquidity to BTC or ETH alone. Keep in mind that yield on GLP used to be a bit higher, so this skews things a bit. Still, overall, the key takeaways here are that, as mentioned earlier, GLP generally follows the broader crypto prices due to the makeup of its index. Additionally, yield earned (the blue line does *not* include esGMX yield, only ETH yield) has, in the past, mostly made up for any price decreases in GLP and enhanced any gains in GLP. To outperform dollars, you'll need: (*GLP + rewards realized)* **>** *your GLP entry price*.

Summary

To summarize, the best time to hold GLP is during a choppy BTC and ETH market, where you think that, by the time you want to exit the position, the market will be priced generally around where it was when you entered the position. You'd be able to walk away with your dollar worth intact, plus some yield. All else equal, if you expect the market to drastically increase, you're better off holding BTC or ETH, and if you expect the market to drastically decrease, you're better off holding dollars. That's the simplest way to put it. **Remember, a key difference in farming GLP is that, unlike lending out stablecoins, a rapidly decreasing crypto market will actually hurt your position!**

For me and my risk tolerance, GLP currently fits into a stable yield portfolio, though not as the majority (>50%) of it given the price risk. GLP currently trades at just over $1 which, as seen in the final chart we looked at, is towards the bottom of its range. Now, I do see a higher than normal chance that crypto sees more downside from here, but I expect it to be able to recover by the time I want to exit a GLP position. The goal scenario would be to exit GLP, in the future, at around its current price, taking away the same dollar value plus any gained ETH and esGMX rewards. *As always, the way you view* *this will likely differ based on your own risk tolerance.*

You could also, if you're a bit more of a sophisticated trader, actually *hedge against* downward movements of the GLP index, but this requires more capital (you can't use GLP as collateral anywhere, as far as I'm aware) and exposure to funding rates. Most readers probably don't want to deal with this.

Anyways, I hope this helped you understand the risks and rewards involved with holding GLP! It's obviously more complex than simply lending out stables due to the higher risk to be aware of, but it also has an attractive yield that is paid in an attractive asset (ETH). It's up to you to judge whether the yield is worth the risk.

Sources

https://stats.gmx.io/
https://gmxio.gitbook.io/gmx/glp

Disclaimers

The opinion and commentary herein is provided for general information purposes only and should not be construed as investment, tax or legal advice, and does not constitute an attorney/client relationship. Such information is believed to have been obtained from sources deemed reliable but is not guaranteed. Past performance of any market results including crypto currencies and such related assets is no assurance of future performance. Investing is risky, and you can lose what you put in.