The price of movement of crypto, gas prices and understanding the metrics (Part 1)

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ETH gas prices are reaching ridiculous proportions, in the crypto ecosystem, working with anything less than $5000 of monetary value can eat up your wealth pool very fast. Bots that are given a directive to buy/sell/invest in any given crypto coin token, will have to weigh the probability of profitability, after crunching the numbers and tallying up the odds.

Larger pools of wealth to draw from, of course, offer flexibility of choice and opportunity to seek out new and more profitable coin tokens, lower pools of wealth will likely hold a more conservitive strategy, and trade on less risky options, that do not give as much return on investment, but in most cases still offer a return on investment when compared to just leaving in a bank account, or stuffing into a mattress.

As such it is not enough to just know about your trading options, one has to dig deep into the manucha of the details of how and why gas is spent. Delving into the deeper mechanics of ETH can be intimidating if you are not technically inclined, but I would urge you to take a look, see, and look for resources to help better understand the ecosystem.

Understanding the totality of the crypto ecosystem, including gas and fee costs, is important for several reasons.

- Because you are the custodian of your wealth.
- It is where your money is
- It will help you implement better strategies of trade
- You will be able to competently compare best protocols to trade through.

The Technical Details

The Ethereum Yellowpaper
The official technical specification of the language, identifying which operations are the most gas-consuming.
https://ethereum.github.io/yellowpaper/paper.pdf

The Ethereum Beigepaper
The Yellowpaper, with the technical specifications removed, and expressed in english.
https://github.com/chronaeon/beigepaper/blob/master/beigepaper.pdf

Overview of Gas Costs
https://docs.google.com/spreadsheets/d/1m89CVujrQe5LAFJ8-YAUCcNK950dUzMQPMJBxRtGCqs/edit#gid=0

These resources were extremely important in helping determine the most gas costly operations, and giving us a starting point of where to begin with optimization.

Understanding ETH Gas Optimization

Ethereum block space is a very scarce resource right now. Since liquidity mining and yield farming over the past couple of months have led to a sharp increase in gas fees, that move those trades, with insane averages currently in the 400–600 Gwei range.

The Gas Tokens

It is helpful to think of Gas tokens as tokenized rent for block space. They take advantage of the storage refund mechanism in Ethereum; That is when you mint gas tokens, you are saving data into contract storage, and when you free (spend them), you are burning the tokens and freeing up the storage element previously saved. This in turn gives you a ‘refund’ on the transaction, translating into gas savings.

This can serve as an advantage and be very useful for on chain arbitrage, deploying smart contracts and any sort of batch transaction which otherwise would consume a lot of gas. It is possible for active network participants to mint/buy gas tokens when gas is cheap, and releasing it at high prices in order to smooth out average fee spend over time.

In this way gas tokens can be used as tokenized proxies for fees. Fees up, gas tokens up. Fees down, gas tokens down (generally). The two gas tokens I am aware of that are used by the market currently are GasToken GST2(https://gastoken.io/) and CHI by 1inch. As gas prices have gone up, so have prices of GST2 and CHI:

GasToken GST2
https://www.coingecko.com/en/coins/gastoken

CHI
https://www.coingecko.com/en/coins/chi-gastoken

Deep Understanding of ETH and Gas/Price relations

https://etherscan.io/chart/networkutilization

This has the potential to create a positive feedback loop, which has previously been mentioned on https://gastoken.io/:

“It is possible that widespread use of GasToken will waste substantial block space, driving up gas prices and in-turn driving up GasToken usage, in what has the potential to become a positive-feedback loop.”

https://ethresear.ch/t/use-of-https-gastoken-io-positive-or-negative-for-the-network/2790/6

The end game result

Large purchases of gas tokens in the market would use up further precious block space. As prices of gas token prices go up and deviate away from spot prices or “fair value”, one can mint new tokens to sell into the higher prices, which in turn pushes up block utilization further, driving up gas. As fees continue to increase, demand for gas tokens increase, pushing prices higher, which in turn creates more minting. The minting process consumes more block space…which results in higher gas fees…ad infinitum.

With the current market regime, this is a very real possibility. With CHI tokens (the most liquid gas token), the maximum minting amount is 140 CHI. Large minters would therefore have to continuously mint clips of 140 CHI, which eats up block space and clogs the network further. Secondary market liquidity is thin, with a combined market cap of GST2 and CHI at <$5mm. With DeFi TVL in the billions and the “market caps” of new protocols trading in the hundreds of millions, it is not unimaginable to think we could see a drastic repricing of GST2 / CHI tokens, potentially kick starting this positive feedback loop.

Matic Solutions to the gas problem?
(part 2)

…yield farming / liquidity mining pools start listing gas tokens (or LP shares) as supported assets…