





# Profitability of a Liquidator



Just how much  
money can software  
make?



# How much money do these liquidators make?

01



AAVE

02



Collateral  
& Reserves

03



Identified  
Arb Chains

04



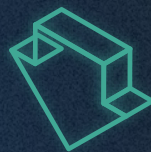
Calculated  
Profit



# Challenges

Along the data journey several minor hurdles were overcome

- An efficient way to get  $10^x$  data for all tokens, and token names and addresses.
- Clustering liquidators transaction patterns.
- Identifying underlying tokens used in a multical transaction.
- Identifying the token profit spread.





# Token Addresses & 10^x



## Etherscan webscraper

2500 tokens scrapped, along with etherscan web addresses, and 'ticker' name.





# Liquidation patterns



## ① Closed Loop Chain

Dex swap, to purchase collateral, then repay dex and keep spread (Flashbot)

## ② Open Loop Chain

Purchase collateral without a multicall dex transaction

## ③ No swap collateral

Some loans were collateralized with the same currency of the loan (similar to a traditional loan)

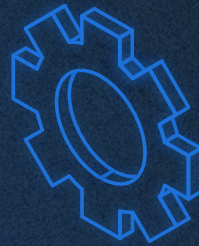
## ④ Open Loop multi dex swap

No return to the original currency used to purchase collateral, and a multi dex train to a new token.



# For Closed Loop Chains

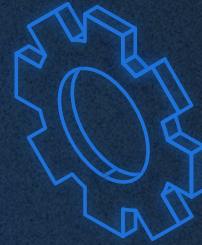
- ❑ All dex trades have a "transfer" log that comes before the swap
- ❑ Within a set of transfers for a transaction many pairs cancel each other out (see link)
- ❑ Keep the unique transfer (usually identified as the start of the trade)
- ❑ Identify the token currency of the unique transfer data





# Calculating Realized Profit

- ❑ Not all flashbots sell ASAP, however we assumed an immediate sale.
- ❑ If there is a currency change (open loop) it was excluded from flashbot calculations

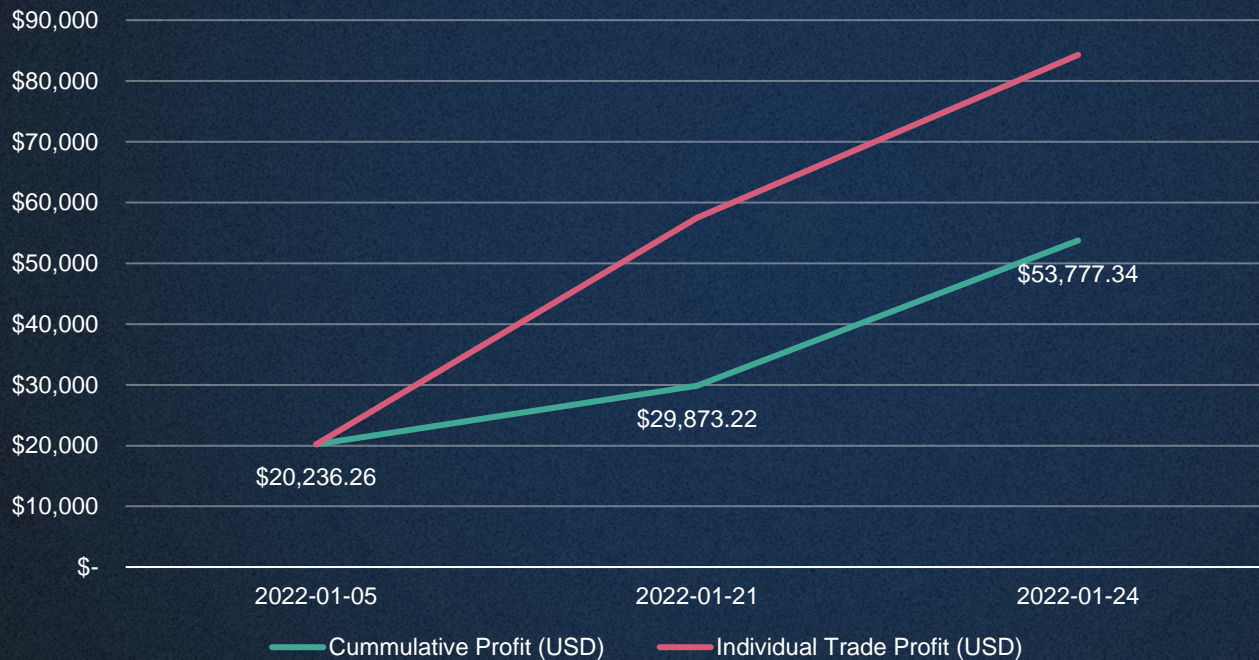




# BTC Flashbot



BTC Flashbot Profit (USD)

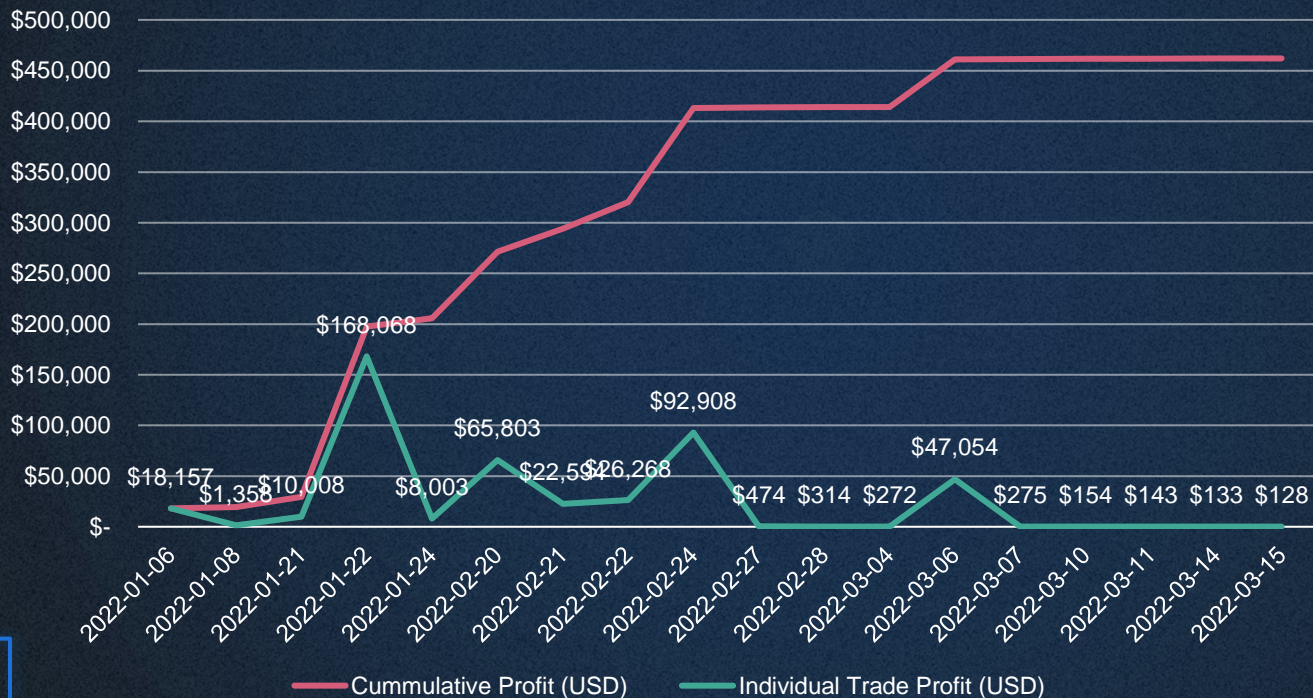


5 Trades  
\$84288.94 USD  
(16.9k avg)



# BTC Flashbot

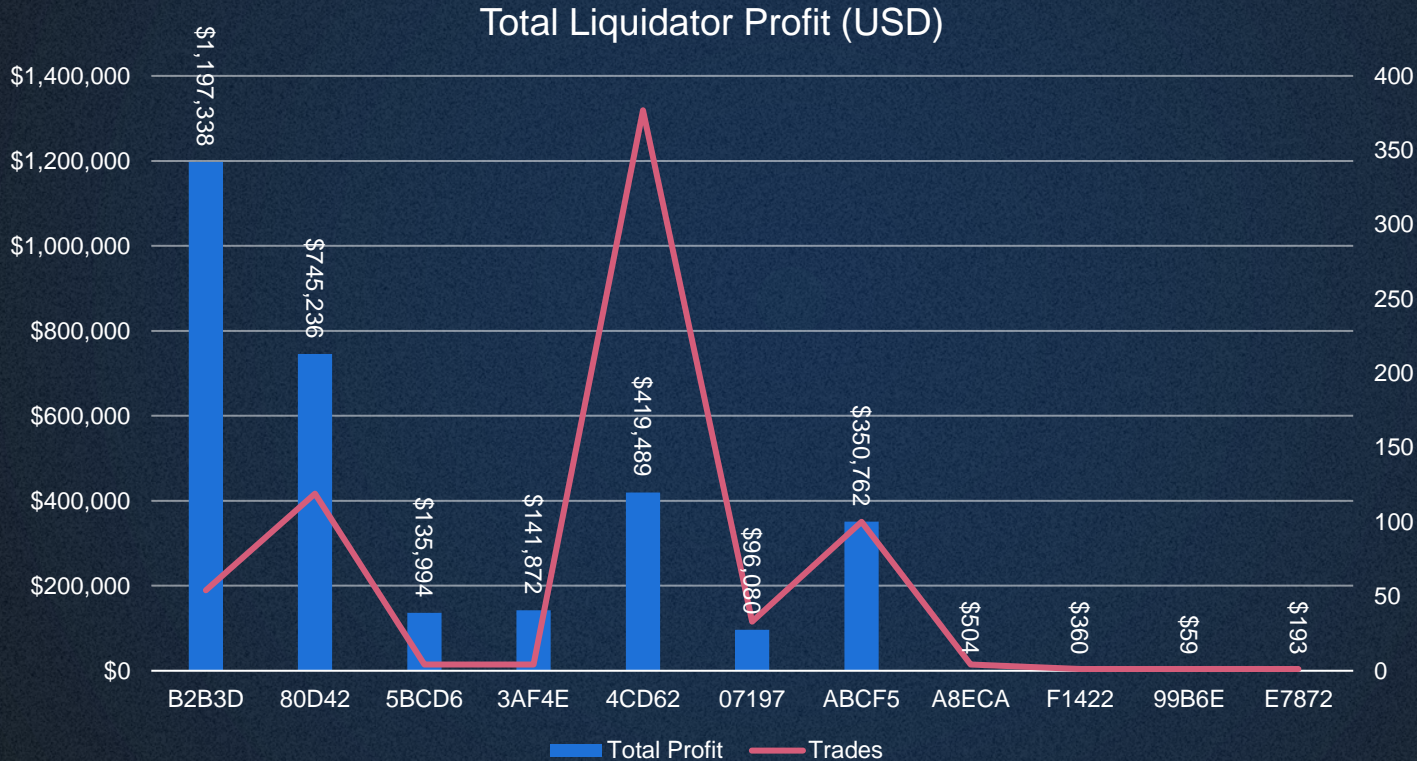
ETH Flashbot Profit (USD)



49 Trades  
\$462114 USD  
(9.4k avg)



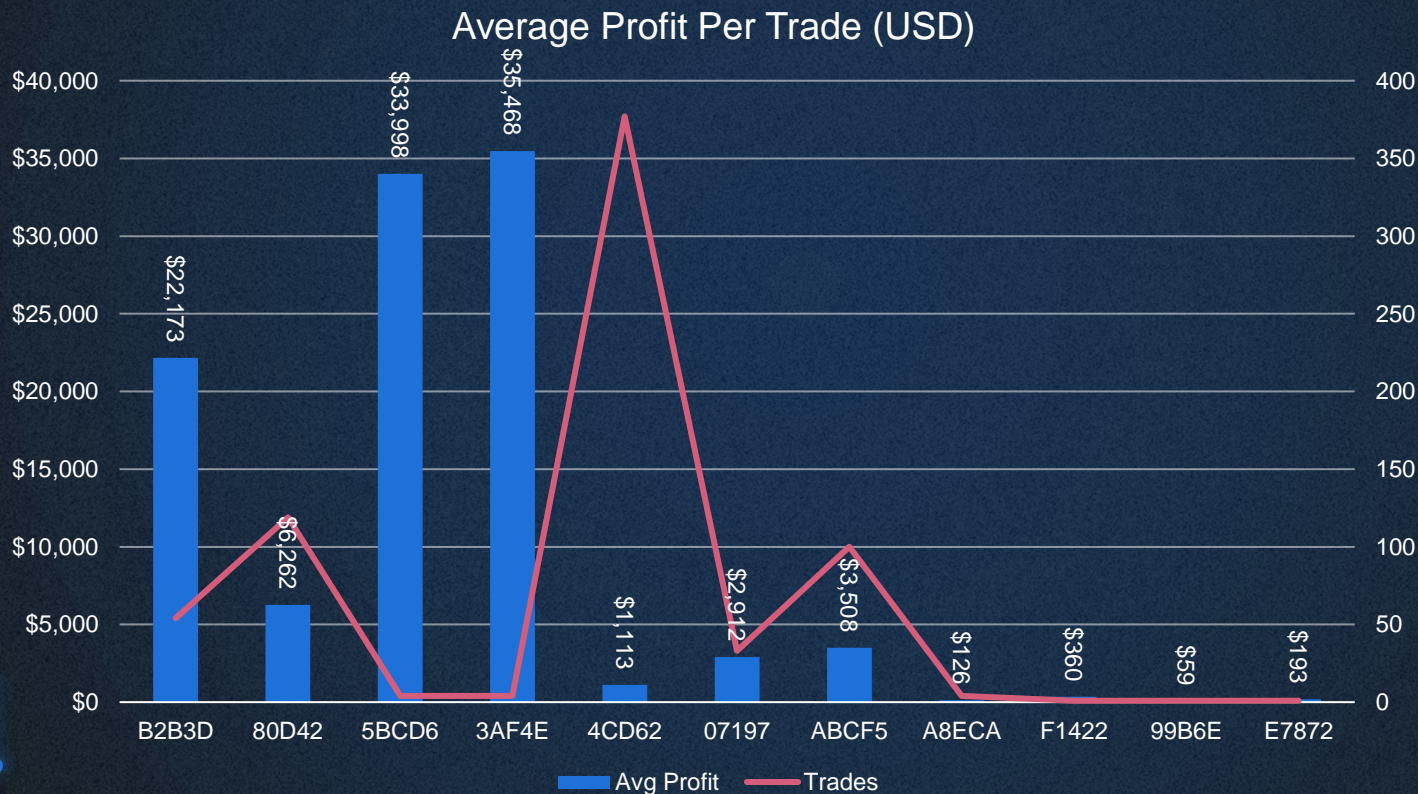
# Trade Profitability as A Liquidator



Over the  
period of  
January 2022,  
to September  
2022



# Average Profitability Per Trade



Over the  
period of  
January 2022,  
to September  
2022



Any  
Questions?

