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Whale Watching: Activities of Professional Investors on Ethereum DeFi Protocols

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Research and Insights



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1. Executive Summary

- High yields draw more whales to DeFi. The number of addresses that hold more than 10,000 ETH increased by 11% since the beginning of 2021, while the number of addresses that hold more than 1,000 ETH declined.
- WETH (50% of inflows¹ in Aug 2021) and USDC (27% of inflows in Aug 2021) are the most popular assets in Uniswap V3.
 - Most of the inflows (46%) in Uniswap was contributed by investors with \$100K-\$1M daily transaction volume.
 - Investors with over \$1 million daily transaction volume were very active in July and accounted for more than 60% of total inflow activities.
- Although SushiSwap (51% of average inflows) had more exposure than Uniswap (48% of average inflows) on WETH, SushiSwap had more diversified crypto assets than Uniswap².
 - Around one third (31%) of inflows on SushiSwap came from investors who transacted under \$100K volume, higher than Uniswap's 16%.
- For Yearn Finance, the most commonly used token among investors is DAI, with over 40% of token inflows using DAI on average.
- Aave and Compound gained traction from professional investors (which we define as \$1M or above daily transaction volume).
 - WETH and USDC were the main tokens in Aave.
 - USDC and DAI were more popular in Compound.
- TokenSets' DeFi Pulse Index token marked \$200 million worth of market value. TokenSets, one DeFi asset management platform, maintains a token that tracks the performance of DeFi tokens across the market, marking its market value the largest among 14 featured token sets that TokenSets provides.

¹ Inflow in this report means that the token (in USD value) is directly transferred to the liquidity pools of each protocol.

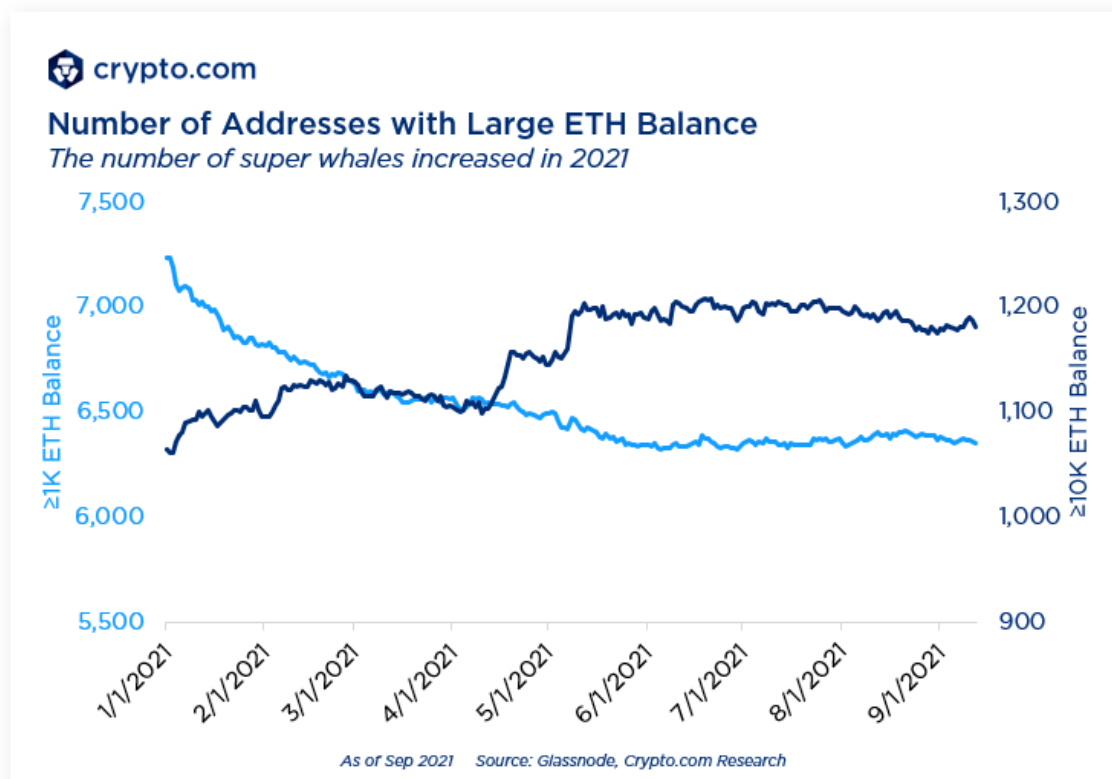
² On SushiSwap, WETH, USDC, USDT, DAI, WBTC, SUSHI, LINK, and YFI accounted for more than 3% of the average inflow. On Uniswap, WETH, USDC, USDT, WBTC accounted for more than 3% of the average inflow.

2. Introduction

2.1 Overview

High yields draw more whales to DeFi. While centralised exchanges provide comprehensive functions, they are constrained by system maintenance and even compliance issues. DeFi simplifies these procedures by offering ways to generate passive yields through smart contracts without interference of centralised entities.

Data suggest that the number of addresses with over 10,000 Ether increased 11% since the beginning of 2021, even though the number of addresses with over 1,000 Ether declined. The growth of those super addresses with huge balances result from the participation of institutional investors.



Knowing that the crypto market gained more traction from institutions, their activities or transaction patterns to seek higher returns invokes our interest. Hence, we would like to investigate the transactions from professional investors and their preferred crypto assets in different DeFi platforms.

2.2 Methodology

In this report, we use on-chain data from [Google BigQuery](#) to explore behaviours of professional investors (whales) in DeFi. In terms of the features of DeFi platforms, we visualise investors' activities in the categories of DEX, lending/borrowing protocols, yield aggregators, and asset management protocols.

Investors' transactions are divided into different tiers in terms of USD values of their transactions: \$10,000-\$100,000, \$100,000-\$1 million, and over \$1 million. The transactions of each cohort in those protocols are unveiled for the study period from January to August 2021.

Additionally, in this report, we define "professional investors" as those individuals or organisations that have traded more than US\$10,000 in a single transaction according to a [Chainalysis report](#).

Period	Cohort (transaction volume in USD)	Definition (in Pseudo SQL)
01/01/2021 - 31/08/2021	\$10,000 – \$99,999.99	SELECT date, token_symbol, sum(tx_volume) WHERE to_address = liquidity_pool_address in each protocol and tx_volume in ranges FROM token_transfer GROUP BY date, token_symbol
	\$100,000 – \$999,999.99	
	≥ \$1,000,000	

3. Results

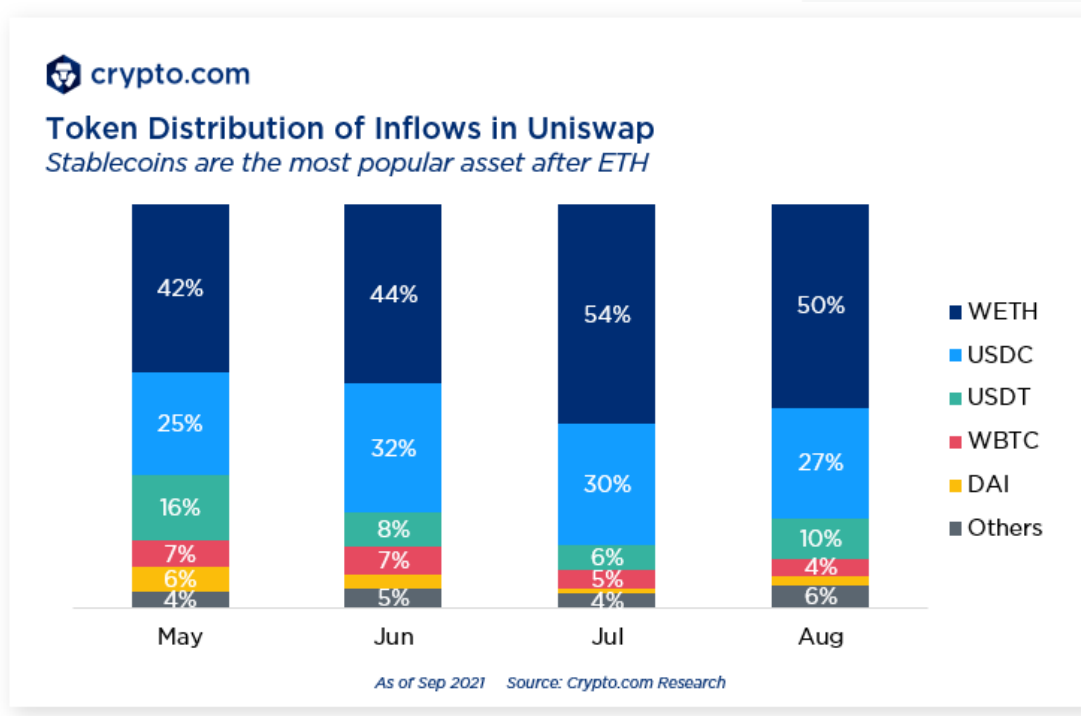
3.1 DEX

In this category, we present data for two of the most popular token swappers: Uniswap and SushiSwap.

Uniswap V3

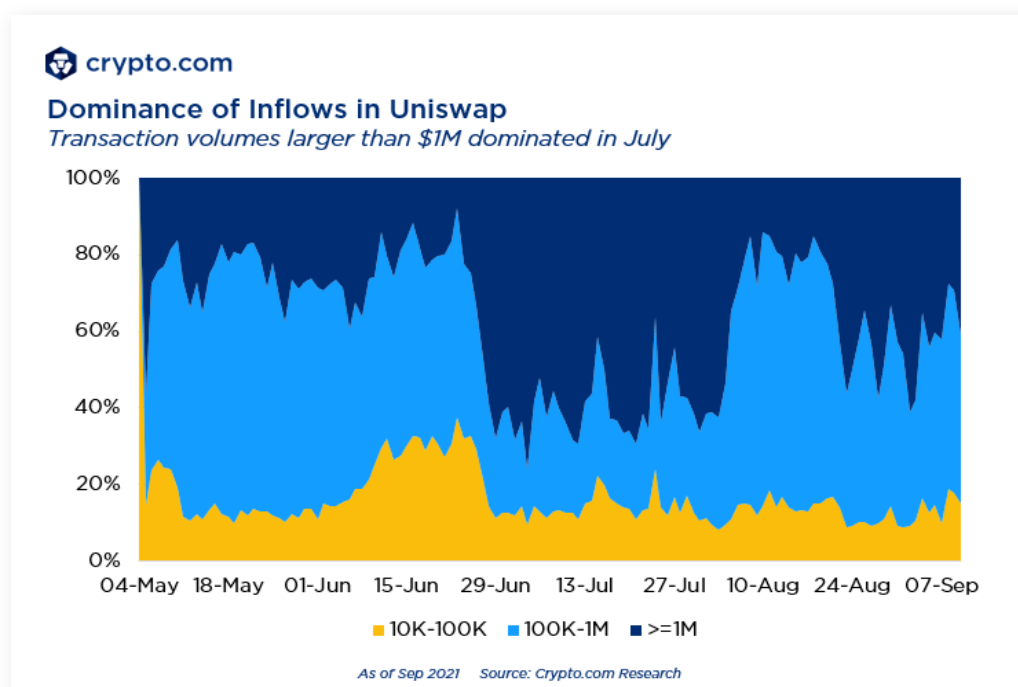
WETH (50% of inflows³ in Aug 2021) and USDC (27% of inflows in Aug 2021) are the most popular assets in Uniswap V3. Uniswap was first launched on Ethereum in November 2018, which created liquidity pools and allowed anyone to exchange ERC20 tokens based on the AMM model without an order book. It gained the spotlight during the DeFi mania in August 2020. It became [the first DeFi protocol to hit \\$2 billion](#) in total value locked. In May 2021, Uniswap V3 was launched and proposed ways to increase fund efficiency and lower slippage.

As shown below, Uniswap V3 gained popularity from professional traders as ETH increased since its launch. Besides, traditional stablecoins like USDC and USDT are the second-largest asset category.



³ Inflows in this report refers to a token (in USD values) being directly transferred to the liquidity pools for each protocol.

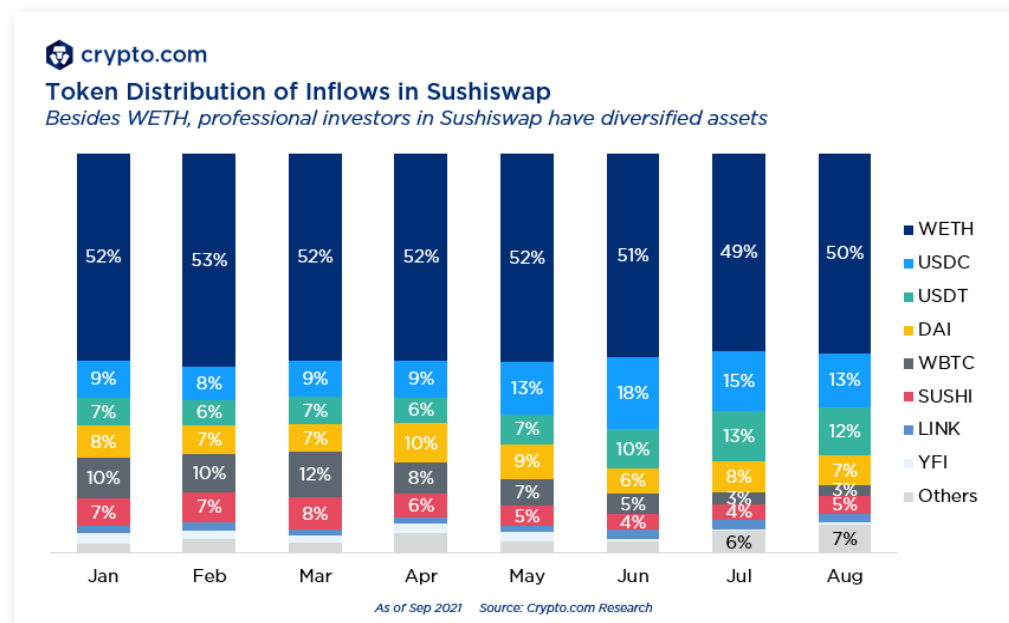
The most common tier for the transaction is 100k-1M in Uniswap V3. However, dealings with over \$1 million volume dominated in July. Besides the uptrends of ETH in July, this matches reports that high-net-worth ETH accounts accumulated ETH, and ETH flowed from centralised exchanges to smart contracts, according to [Sentiment](#) and [Glassnode](#).



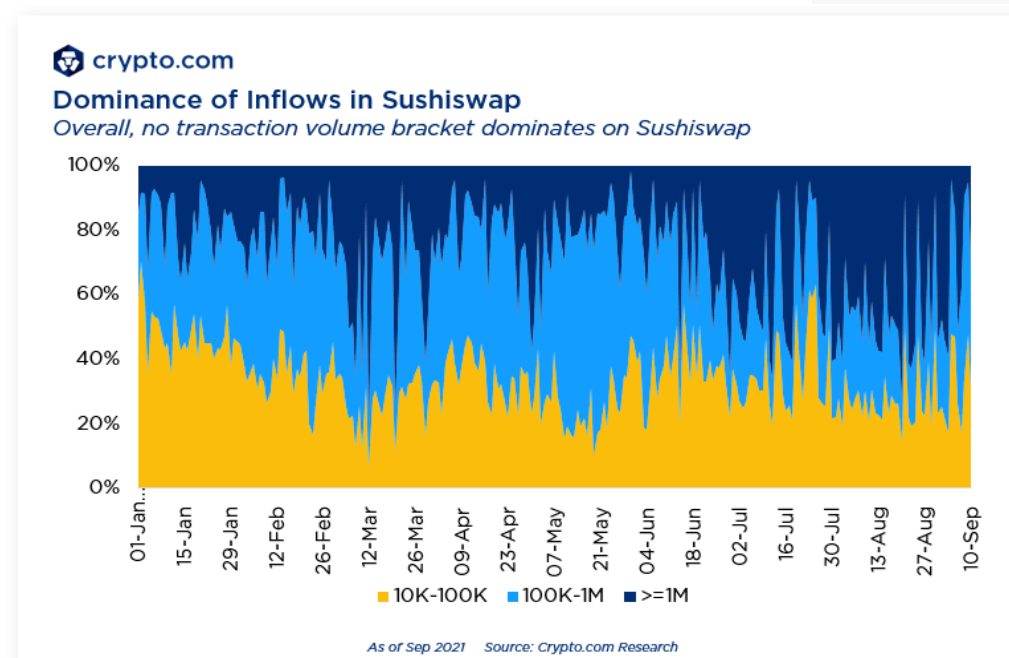
SushiSwap

Although SushiSwap (51% of average inflows) had more exposure than Uniswap (48% of average inflows) on WETH, SushiSwap had more diversified crypto assets than Uniswap. On SushiSwap, WETH, USDC, USDT, DAI, WBTC, SUSHI, LINK, and YFI accounted for more than 3% of the average inflow. On Uniswap, WETH, USDC, USDT, WBTC accounted for more than 3% of the average inflow. Established in late 2020 as a fork of Uniswap, SushiSwap introduced a governance token, SUSHI, to provide additional rewards to liquidity providers (LP) in addition to trading fees. The extra token rewards led to a massive exodus of LPs from Uniswap to SushiSwap, to the tune of about [1 billion dollars](#) of value in 48 hours.

Like Uniswap, more than half of the overall trading inflows were relevant to ETH, and the ETH proportion in the pools was very steady, maintaining a level of around 50%. Additionally, the portfolio of professional investors was more diversified than Uniswap. DAI displayed a significant investment ratio in stablecoins. Its governance token, SUSHI, also gained popularity among investors.



Unlike Uniswap, generally, there was no dominating tier in SushiSwap, and around one third (31%) of inflows volume in SushiSwap came from investors who transacted with volumes lower than \$100K volume on average. This rate is the second-highest among other platforms after TokenSets, suggesting that SushiSwap was popular in the community. We also noticed that the cohort with over \$1 million transaction volume dominated the protocol's transaction activities in late July and August. This phenomenon may have contributed to the rejuvenation of the crypto market from late July.



3.2 Lending/Borrowing

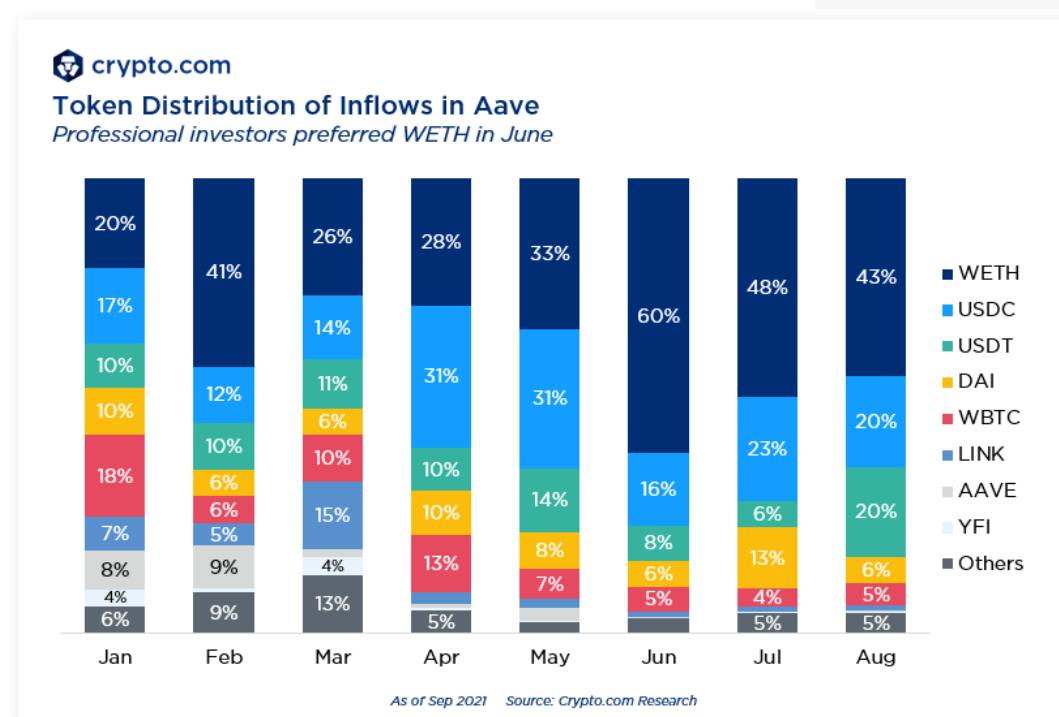
There are protocols that mainly provide functions that allow users to lend/borrow crypto and gain/pay interest correspondingly to mimic the traditional money market. Here, we primarily discuss Aave and Compound.

Aave and Compound gained traction from professional investors (which we define as \$1M or above daily transaction volume).

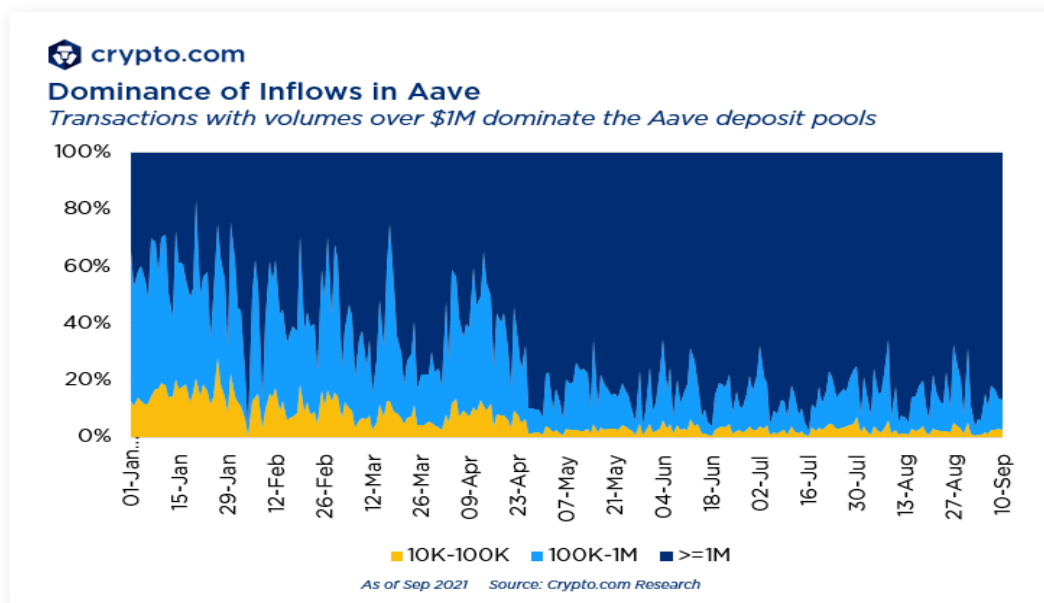
Aave V2

WETH and USDC were the main tokens in Aave. Aave was launched at the beginning of 2020. It has experienced significant growth in total deposits and daily deposits since the summer of 2020. Overall, Aave has [totalled over \\$45 billion in deposits, with 2021 seeing the protocol average of \\$231 million in deposits per day](#).

The values of inflows for tokens in Aave is shown below. Although ETH was the main asset traded on the platform, its inflow ratio fluctuated heavily, ranging from 20% (in January) to 60% (in June). A possible reason is that Aave may have introduced the liquidity mining program to incentivise lending and borrowing in April 2021. After that, ETH inflows increased significantly from 28% in April to 60% in June.



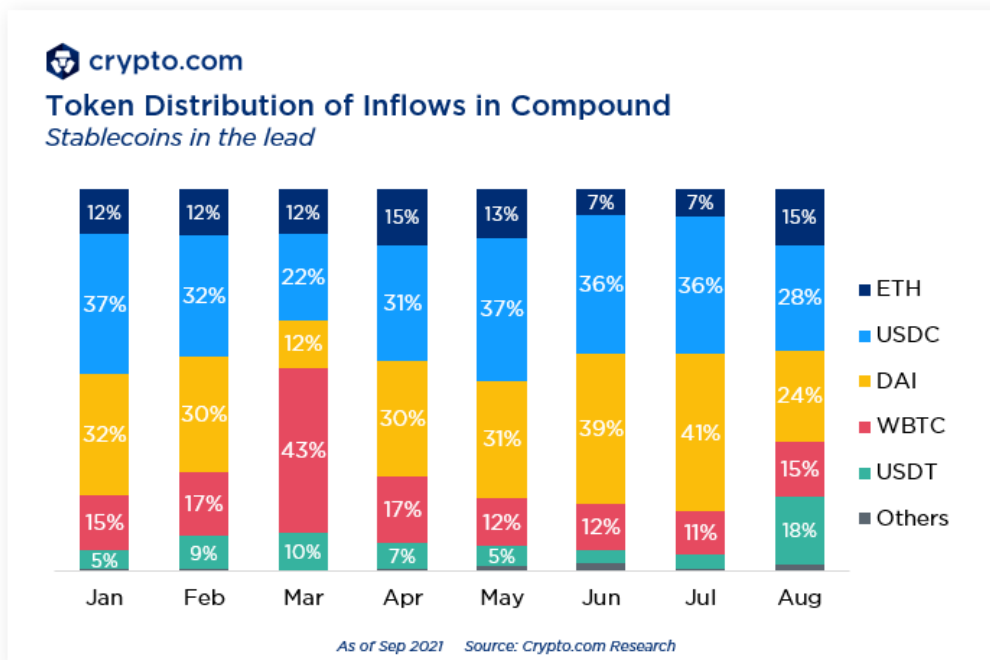
The cohort with over \$1 million transaction volume accounted for the majority of trades, suggesting that Aave gained traction from professional investors with a considerable amount of funds.



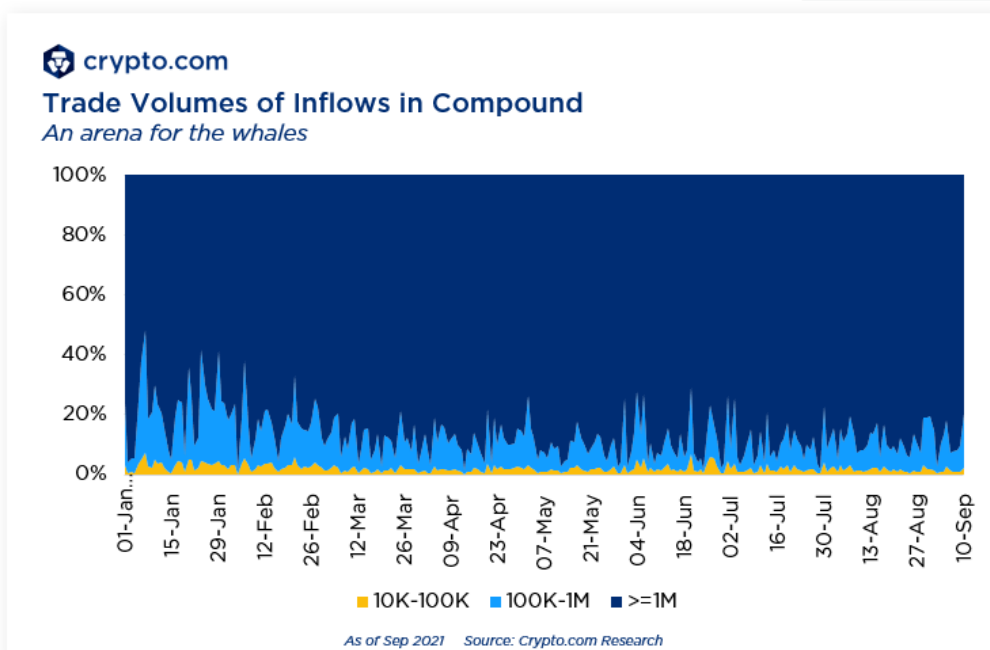
Compound

USDC and DAI were more popular in Compound. Compound provides similar functionalities to Aave, where participants can lend their crypto assets out to earn interests. As an algorithmic money market protocol, Compound can automatically match borrowers and lenders and adjust interest rates dynamically based on supply and demand.

Unlike Aave, Compound's assets concentrated on stablecoins, while USDT was less popular than USDC and DAI. Meanwhile, WBTC was even more popular than ETH on the platform. Notably in March, the inflows of WBTC accounted for 43% of total inflows, which coincided with the general market uptrend in BTC during this period.



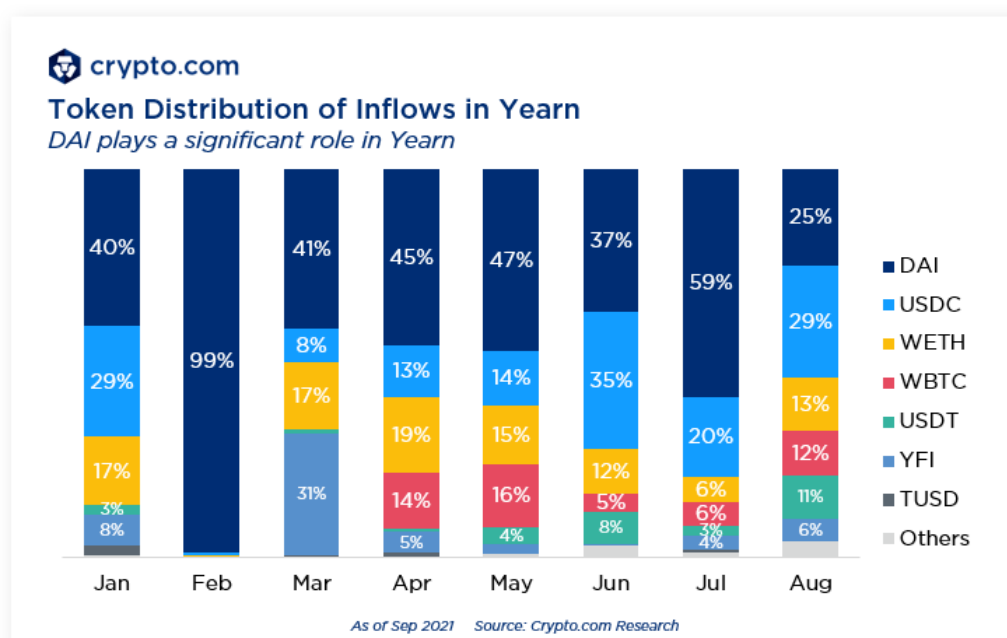
Institutional investors mainly dominated Compound's transactions similar to Aave. From January to August 2021, it demonstrated that professional investors with over \$1 million prevail over other tiers. According to the [governance composition of Compound](#), most of the funds came from institutional investors like a16z, Polychain, Bain Capital, Gauntlet, and Paradigm.



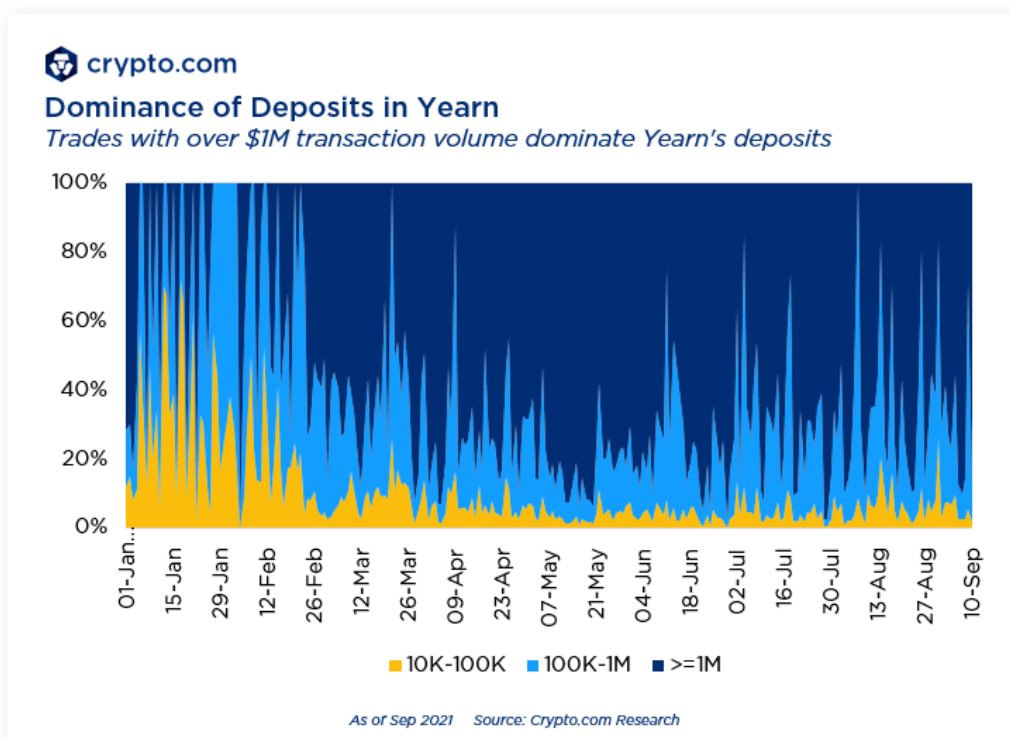
3.3 Yield Aggregators

For Yearn Finance, the most commonly used token among investors is DAI, as over 40% of token inflows used DAI on average. [Yearn.Finance](#) is a popular yield generator on Ethereum that [had \\$650 million](#) poured into it in less than one month after its launch (the [V1](#) version). Its [yVaults](#) enables investors to deposit crypto and seek out optimised available yields through underlying strategies. Additionally, its Earn function routes funds to lending and borrowing protocols like Aave, dYdX, and Compound to earn passive income through providing liquidity.

The chart below shows that a considerable amount of DAI was injected in February when it suffered an exploit from flash loans. [‘In a nutshell, someone deposited a bunch to Curve 3pool to manipulate the DAI price given by the pool.’](#) explained Curve CEO Michael Egorov.



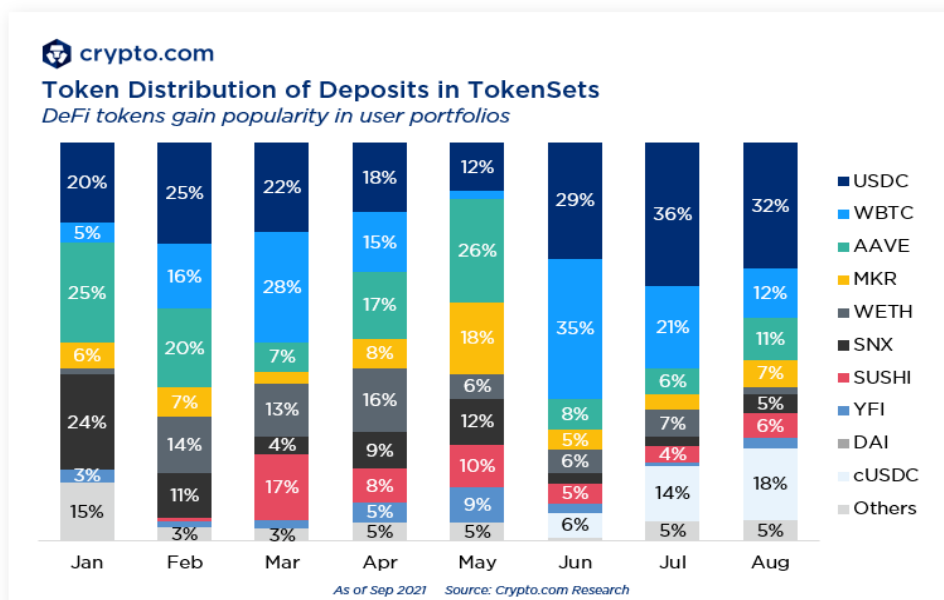
For the figure of inflow transactions below we can see that transactions with over \$1 million volume dominated inflows, while the \$100K-\$1M cohort was more volatile than other groups.



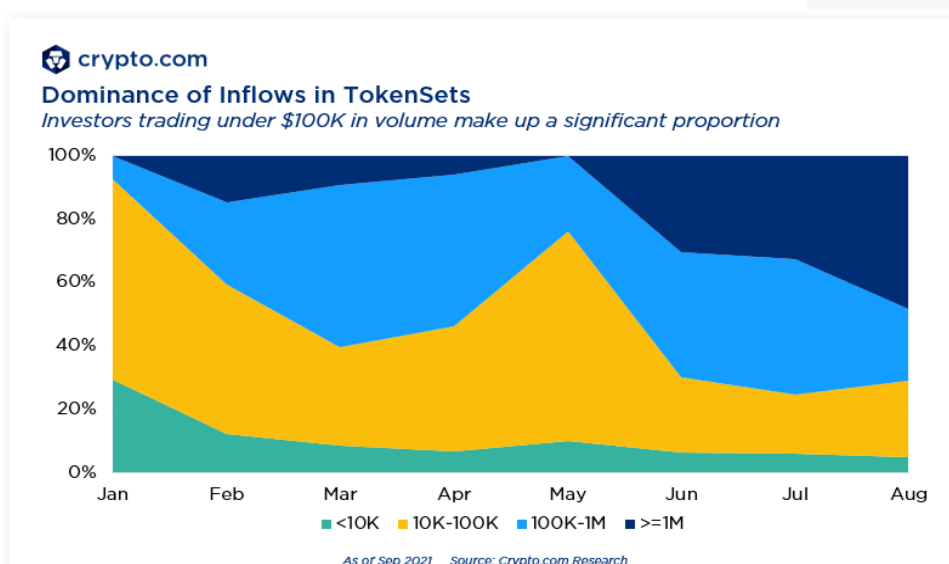
3.4 Asset Management

TokenSets' [DeFi Pulse Index](#) token marked \$200 million worth of market value. TokenSets is the popular crypto asset management protocol providing portfolio management functions. The underlying strategy is called a 'set', which is a basket of cryptocurrencies. Set tokens are ERC20 tokens, and each set token is a representation of a crypto portfolio. All functions embedded in set tokens like creation, issuance, redemption, and rebalancing are supported by the Set Protocol. The DeFi Pulse Index that tracks the performance of a basket of DeFi tokens is the most popular set with over [\\$197 million market cap](#) at the time of writing.

DeFi tokens gained popularity in TokenSets shown in the token distribution below also suggests that the DeFi Pulse Index was the most successful product in the protocol. Meanwhile, it had the lowest exposure (8%) in WETH.



Surprisingly, the group with less than \$10,000 transaction volume accounted for a notable percentage (around 11%) of trades, compared to miniscule rates in other protocols. This outstanding percentage also helped TokenSets become the only platform where nearly half of the inflow volume came from the cohort with under \$100K transaction volume. The ratio was the highest in this report. Besides, in January and May, the groups (<10K and 10K-100K) accounted for over three-quarters of the total inflows. The peaks are in tandem with the skyrocketed volatility in the above periods based on our [market index](#). This also indicates that the community prefers to reduce risk by performing asset allocation.



4. Limitations

Although this study gives new insights into a large part of the activities of institutional investors, we cannot give a fully comprehensive picture of their transaction patterns, limited by the following factors:

- All numbers are derived by counting the first interaction of corresponding smart contracts. Routing and intermediate transactions were excluded.
- Limited by time and availability of data, we only selected a few representative protocols on Ethereum for this study.
- With the fast development in blockchain, new solutions like new layer 1 blockchains and layer 2 boosted the DeFi by lowering the obstacles. Again, due to the constraints of data availability, we currently could not include these.

5. Conclusion

One solid pattern has emerged from this data analysis: all protocols' transactions are dominated by professional investors that transacted at least \$10K in volume. The small transactions for general users were tiny or insignificant, although they accounted for the largest user base. The imbalance between user bases and transactions (reflecting the distribution of profits and interests) also illustrates similarity to traditional financial markets. With rewards including providing liquidity and platforms' governance tokens, platforms may skew users with significant funds and manipulate the rules in their favour—casting doubt on the decentralisation of DeFi.

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