Standardizing trade volume reporting for Aave's asset onboarding & risk management processes

This forum post is published by nonstopTheo on behalf ofriskdao.org

TLDR:

Aave's asset onboarding process considers various market-related factors, including trading volume. Trading volumes are notoriously known to be fake. We suggest standardizing a set of acceptable trading venues that should be taken into consideration when reporting the daily volume of an asset.

Risk models account for trading volume to gauge how liquid the token is. This matters for the liquidation process and is also essential for price manipulation attacks, which have happened more often recently.

Trade volumes on Centralized Exchanges (CEXes) are plagued by opaque data, wash trading and fake volumes which limits the data accuracy. CEX data, however, is required even for DeFi applications as most of the trading activity flows through these venues.

There is no generally accepted trading volume definition. The DeFi community has not agreed to a uniform way of measurement. Neither has the Aave community set a defined standard to gauge real exchange trading volume.

Aave's asset onboarding template requires proposals to include

1. Market data (Market Cap, 24h Volume, Volatility, Exchanges, Maturity)

Aave's v.3 asset risk methodology has the following section on market risk assessment

Market risk assessments should use average daily volume representing the availability of the asset to assess liquidity risk: E[volume]

"Volume" however is not defined.

A spot-check of asset onboarding proposals on Aave's forum shows that most listing proposals reference CoinGecko 24hrs volume as the main data point. CoinGecko-data however is not "one size fits all": The website even differentiates between data reliability by assigning trust scores, hence total volume shall not be used.

Why CEX trading volumes matter

Getting reliable data for CEX trading volume is a huge issue. DeFi however needs to rely on CEX trading volume given the relative dominance vs Decentralized Exchange (DEX) volumes. TheBlock estimates that DEX trading volume divided by CEX volume amounts to only 12%, hence representing a tiny fraction.

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Source: TheBlockCrypto

Another data point are trading volumes on Binance, Coinbase and Uniswap over the last 7 days (7d MA). Binance is the clear leader with $12.7bn vs Coinbase ($1.6bn) and Uniswap ($1.1bn) as of 27 Oct, which translates into a CEX dominance of 93%.

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Source: TheBlockCrypto

The Problem with CEX data

Trading volumes are publicly available via exchanges' APIs. However, it is difficult to see behind the data points as only exchange operators see the real trading activity. CEXes want to show the highest liquidity in order to attract traders and are hence incentivized to overstate trading volume. It is an open secret that wash trading is a common practice at some exchanges and thus reported volumes and order book depths do not necessarily correspond to organic activity.

DEX levels are much harder to fake, and also require more investment, as the activity is on-chain and every trade commands a fee. In contrast, CEX matching engines run on private databases. Trading fees can be switched on/off or refunded to market makers.

An indicator for fake volume on CEXes are very large bid-ask spreads. If volume is reported high but small trades can cause +2%/-2% slippage, this is a red flag for fake volume.

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The top 5 CEXes for $ZRX all show >$1m in 24hrs volume but show significant differences in the bid-ask spread // Source: CoinGecko

Another indicator for a red flag can be found by looking at select fiat trading pairs. USD-pairs are by far the largest and most liquid. In case a token has abnormally high volumes in smaller fiat currency pairs, this could be an indicator of fake volumes.

Approaches to quantifying reliable CEX trading volumes

Data providers have taken on the issue of fake volume and came up with various approaches to qualify or adjust trading activity.

Messari Real Volume:

Messari adopts a methodology pioneered by Bitwise in 2019. Basically, they only include a subset of exchanges which they consider have minimal to no wash trading activity. Trading volumes are then weighted by a factor of 0.5 or 1.0 depending on the reliability assessment.

As an example, for a mid-cap token like $ZRX, Messari shows a real 24hrs volume of $3.3m and Coinbase as the top CEX (as of 28 Oct).

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Exchanges that Messari does not consider reliable, are displayed with nil real volume in the table.

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Source:Messari ZRX asset page

This approach works well for large & mid-cap tokens that are traded across various venues. However, small-cap assets are usually listed on only a few CEXes and thus this approach provides no improvement over just taking the reported volume.

DEXes like Uniswap & Sushiswap receive a volume weighting of 1 but are not consistently listed for each token.

As a general observation: The Messari database does not perfectly track all CEX listings for mid & small cap tokens. Spot-

checks for select assets have shown gaps (eg $MAGIC spot market on FTX). Hence, there are occassions when the real volume omits reliable trading data.

Nomics Transparent Volume:

Nomics ranks exchanges and volumes based on "transparent exchanges" which are defined as "…exchanges that provide high granularity (trade-level) data with full history."

The team at Nomics found that intransparent data is oftentimes connected with fake volume.

Transparent volume (24hrs) for $ZRX is shown as $5m. Nomics displays the total reported volume of $21m but discards data sources it finds unreliable. The transparency rating for $ZRX's trading volume is only "D". Only 24% of reported volume is factored into the transparent volume.

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Source: Nomics.com

Nomics lists spot and derivatives trading pairs and combines both in their volume statistics. This is a different approach from many other data sources. Derivatives volumes are easier to manipulate as traders can employ leverage to inflate numbers.

CoinGecko slippage (bid-ask spread):

CoinGecko publishes trading volume and trade size within a 4% bid-ask spread. Specifically, the website displays what trade sizes cause a +2% or -2% slippage. This is a prime indicator for fake volume: Deep exchange volume should not lead to large bid-ask spreads for small trade tickets. CoinGecko derives a traffic light system that provides visual cues on how reliable specific CEX trading pairs are.

Total reported volume (24hrs) amounts to $12.7m but there is no further breakdown of high "trust score" volume. Sorting the table in descending order by 24hrs volume ranks some exchange with medium trust scores among the top results.

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Source:CoinGecko

Conclusion

The above analysis highlights the problem of fake volumes for CEX data which remains crucial for token risk assessments. Trading volume != Trading volume

Data Source

Reported volume

Adjusted volume

CoinGecko

$12.7m

N/A

Messari

$3.4m

$3.3m

Nomics

$21.0m

$5.0m

Aave’s risk methodology does not state a clear approach to trading volume/exchange liquidity. The previously introduced concepts offer improvement in terms of standardized, verifiable methodologies.

Aave’s risk approach should consider the following concepts: Tranche exchange volume into transparent sub-buckets to qualify total vs “reliable” volume. This could be done by taking Nomics data, either in raw format or by adjusting the list of exchanges that Aave’s risk team considers reliable. Derivatives exchange data should be excluded.

In addition, the methodology shall screen for fiat volumes and currency pairs, specifically looking for outliers of non-G7/-KRW FX pairs.

This article aims to raise awareness for the topic of fake volume and how to mitigate it. There is more research required to further refine the methodologies and make it most applicable to Aave’s risk management processes.

We at the RiskDAO.org are starting more in-depth research on the topic, and encourage the Aave community to share any relevant thoughts and ideas in the comment section of this forum post.