Ricochet Exchange: Scaling and Simplifying Dollar-Cost Averaging with Superfluid

Michael Ghen
and
Joel Jesudason

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Abstract

Ricochet Exchange allows users to trade ERC20 tokens using streaming, continuous payments. Any existing ERC20 tokens can be wrapped as Superfluid Super Tokens to become streamable on the Ricochet Exchange. Ricochet eliminates the need for all the streamers to make continuous swaps (e.g. USDC to ETH). Ricochet triggers distributions periodically (e.g. every 5 minutes) to swap the streamed funds to another token (e.g. ETH) on Sushiswap. Superfluid's Instant Distribution Agreement is used to avoid creating one transaction per streamer, instead Ricochet creates one transaction to distribution to all streamers. Ricochet Exchange reduces the number of transactions exponentially using this novel exchange technique.
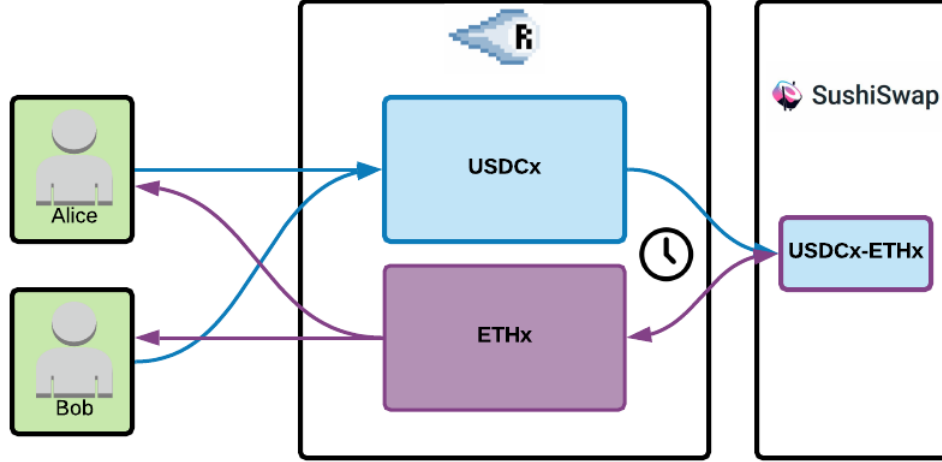
Figure 1: Alice and Bob open a stream in units of USDC/month. Ricochet's keeper triggers a public distribute() method and pays both Alice and Bob with one transaction

1 Ricochet Exchange

Ricochet Exchange is a stream exchange that supports setting a rate to swap tokens. The rates are specified in units per month, 1000 USDC/month for example. Streamers interested in dollar-cost averaging can use Ricochet Exchange to do a continuous swap a certain amount at the market price. Figure 1 shows how this process works and what the flow of tokens looks like for streamers.

Ricochet Exchange is able to achieve frequent swaps and distributions for its streamers using Superfluid's Instant Distribution Agreement[1] and ERC777[2]. Figure 2 shows the reduction in the number of transactions required to support savers doing dollar-cost averaging over time.

Ricochet Exchange is available on the Polygon network and uses SushiSwap[3] to swap tokens. The exchange rate for the swap is retrieved using the Tellor Oracle[4]. Ricochet's public distribution method is called every five minutes using Apache Airflow[5].

Table 1: Ricochet requires each user to open a stream (one transaction) then all streamers are distributed their funds using one transaction, the impact is shown here numerically and in Figure 2 visually

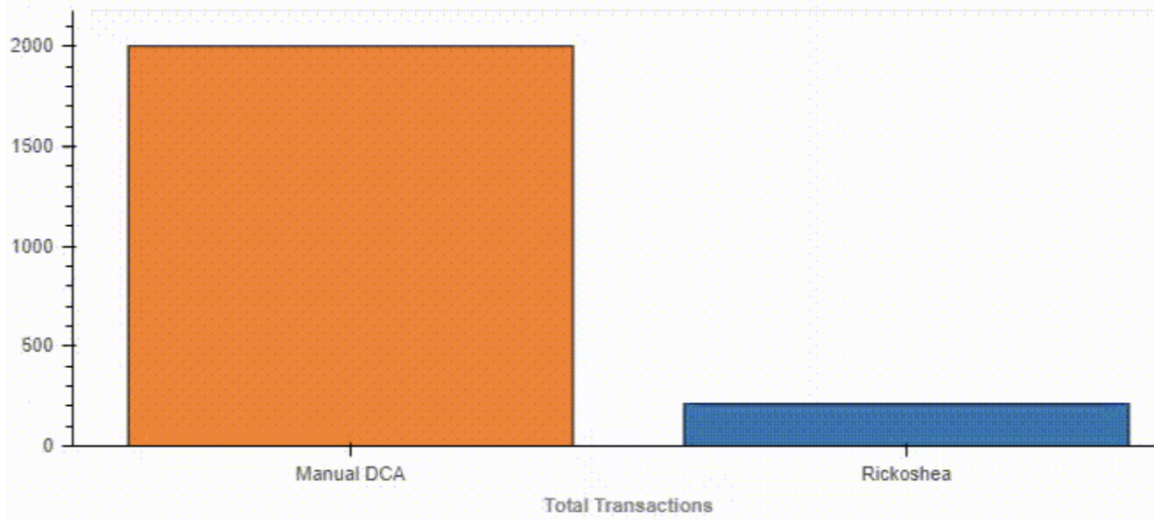| Method	Num. Savers	DCA Frequency	DCA Duration (days)	Transaction Count
Traditional	10	Daily	200	2000
Ricochet	10	Daily	200	210

Figure 2: Alice and Bob open a stream in units of USDC/month. Ricochet's keeper triggers a public distribute() method and pays **both** Alice and Bob with one transaction

References

[1] Superfluid. Instant Distribution Agreements, https://docs.superfluid.finance/superfluid/protocol-tutorials/perform-an-instant-distribution, accessed 2021-07-10

[2] Jacques Dafflon, Jordi Baylina, Thomas Shababi. EIP-777: ERC777 Token Standard, https://eips.ethereum.org/EIPS/eip-777, accessed 2021-07-10

[3] SushiSwap, https://sushi.co/, accessed 2021-07-10

[4] Tellor, https://tellor.io, accessed 2021-07-10

[5] Apache Airflow, https://airflow.apache.org, accessed 2021-07-10