This post proposes a self-contained futarchy mechanism for bonding curve tokens.

Problem

Decentralized exchanges are likely the best price-finding solution for futarchy markets but, until they've achieved sufficient usability and liquidity, futarchies must be self contained providing their own price-finding mechanism. The current best know solution is to use an LMSR automated market maker but this presents a significant challenge. Each LMSR market must be funded up front in order to provide liquidity to market participants. This places a significant burden on the party that needs to provide the funding.

Bonding Curve Futarchy

A bonding curve token has a built in price-finding mechanism as well as a reserve pool of funds. This can be used to create a relatively simple and self-contained futarchy mechanism. The mechanism works like this:

1. Start with a bonding curve token ABC

where its bonding curve uses ETH

as the reserve token.

1. A decision to accept a new proposal is started with a YES

or NO

outcome.

1. Two tokenized events are started allowing the conversion of ABC

into the outcome tokens YES-ABC

and NO-ABC

and ETH

into YES-ETH

and NO-ETH

. If the decision is YES

, YES-ABC

tokens can be exchanged for ABC

tokens and YES-ETH

can be exchanged for ETH

. Likewise, if the decision is NO

, NO-ABC

tokens can be exchanged for ABC

tokens and NO-ETH

can be exchanged for ETH

.

1. The main bonding curve is halted and two new bonding curves are created that mint YES-ABC

and NO-ABC

in exchange for their respective reserve tokens YES-ETH

and NO-ETH

.

1. The main bonding curve's reserve (ETH

) is split into YES-ETH

and NO-ETH

and is used as the reserve for the YES-ABC

and NO-ABC

bonding curves respectively.

1. Participants trade on the YES-ABC

and NO-ABC

curves predicting the value of ABC

if the proposal is accepted on not accepted.

1. The decision is resolved using a normal futarchy decision function such as highest price over the last 24 hours.
2. The winning bonding curve's reserve pool is converted back into ETH

through the tokenized event and is used as the reserve for the main ABC

bonding curve once again. The winning outcome tokens can be exchanged for ABC

and the main ABC

bonding curve can resume trading as normal.

[

1412×733 71.9 KB

](https://ethresear.ch/uploads/default/original/2X/4/4236db5226633dcc00bb4924f55db33488707488.png)

Drawbacks

1. It doesn't work for normal tokens that don't have a bonding curve.
2. Allowing the main bonding curve to function during a decision is an unsolved problem and may not be possible.
3. Bonding curves (as well as LMSR markets) are susceptible to front running.
4. New decisions may create a race to be the first to buy into the new bonding curve.