Time Is All You Need

Optimizing Dutch Auctions on Arbitrum

Alan Wu
Protocol Engineer
Uniswap Labs

Brad Bachu
Research Scientist
Uniswap Labs

Swapping On-Chain

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It’s not always good to directly swap on AMMS

- Liquidity fragmentation
- Maximal Extractable Value (MEV)

Intents Increase Accessible Liquidity

If a Swapper has an intent to swap ETH to USDC…

They don’t care where the USDC comes from!

Swappers Only Want 2 Things...

1. Good Pricing
2. Fast Execution

Current Ways to Get Good Pricing & Fast Execution

- Complex
- Hard to maintain fairness
- Difficult to analyze and evaluate

Dutch Auctions

Dutch Auctions

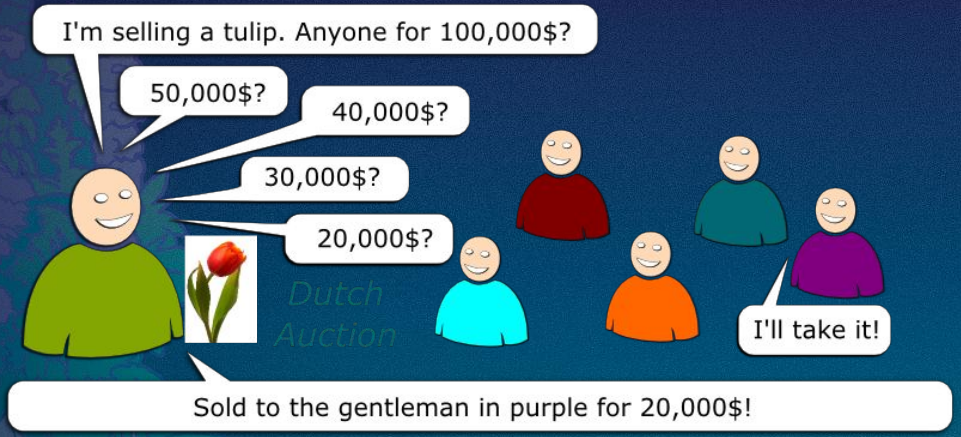
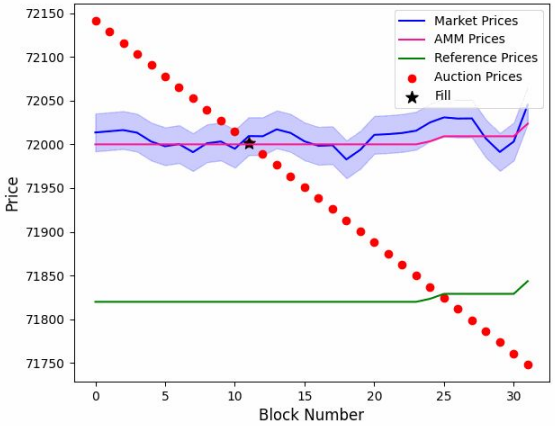


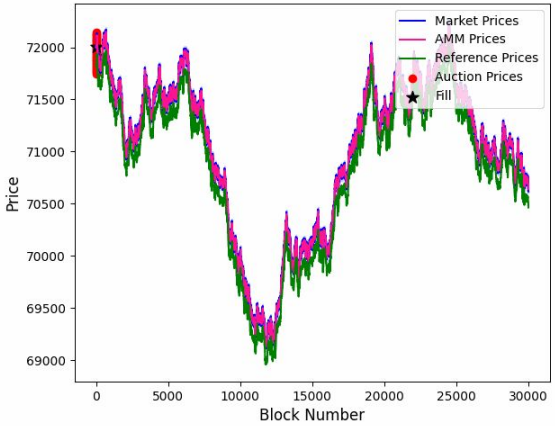
Image Source: https://mylinsfashion.wordpress.com/2017/03/02/strategies-for-web-auctions-virtual-communities-and-web-portals/

- Starting price too high?
  - Takes too long
- Starting price too low?
  - You get a bad price

So...
How do we set this auction?

Time Is All You Need


Market Prices
AMM Prices
Reference Prices
Auction Prices
Fill
Price
Block Number


Market Prices
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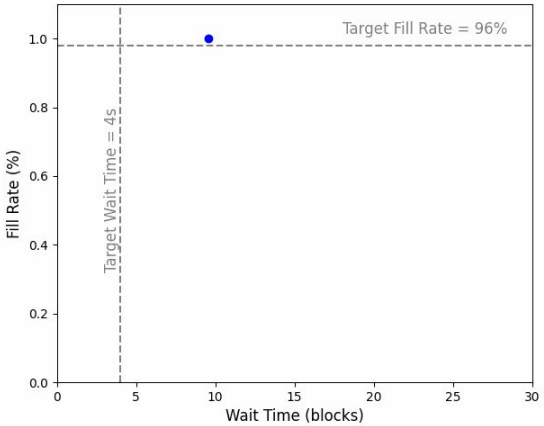
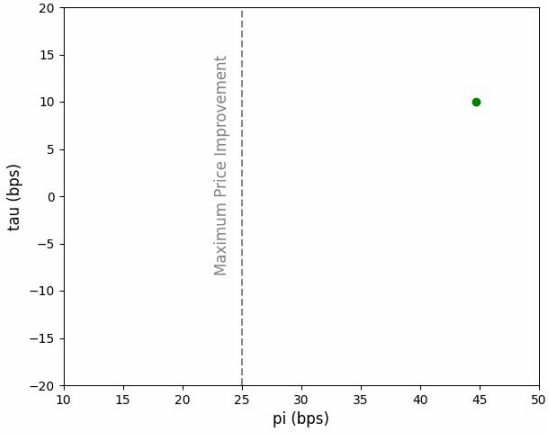
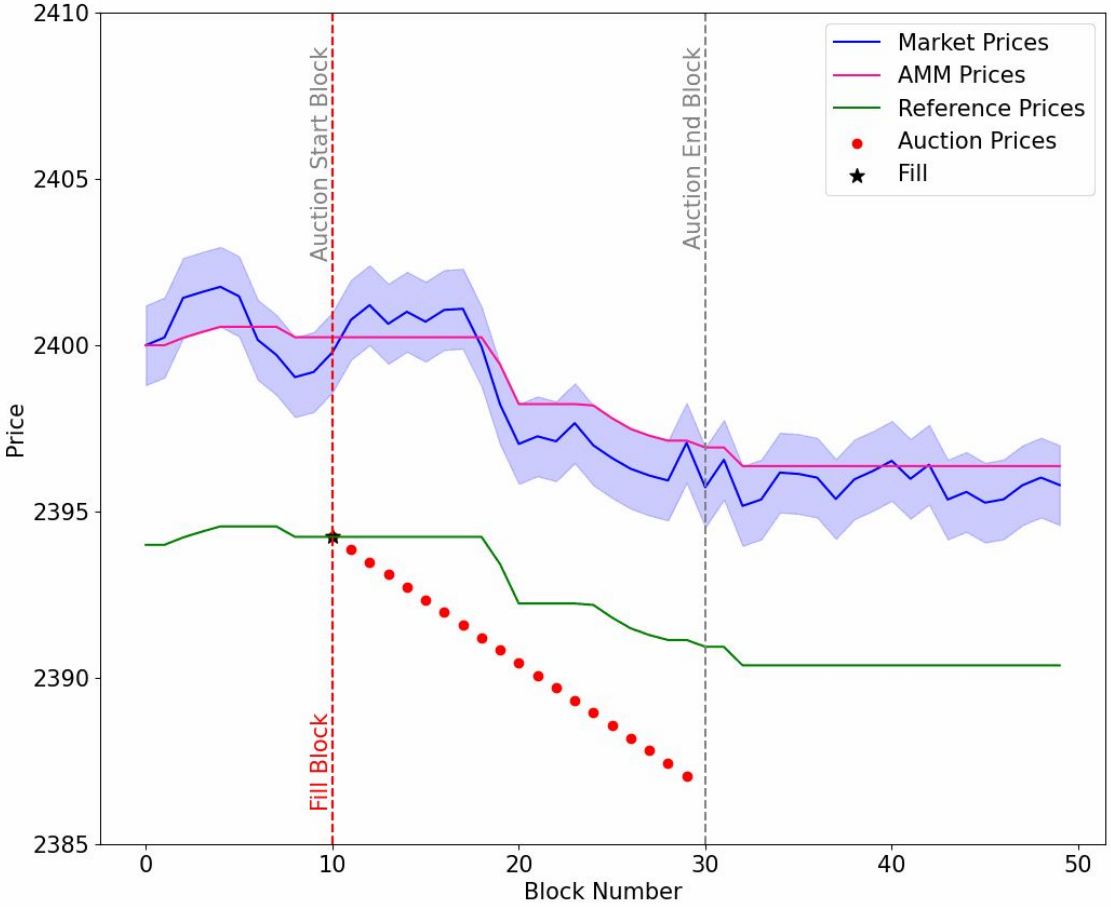

Target Fill Rate = 96%
Target Wait Time = 4s
Fill Rate (%)
Wait Time (blocks)


Maximum Price Improvement
tau (bps)
pi (bps)


Market Prices
AMM Prices
Reference Prices
Auction Prices
Fill
Auction Start Block
Auction End Block
Fill Block
Price
Block Number
2410
2405
2400
2395
2390
2385
0
10
20
30
40
50

	CEX Prices	RFQ	Wait Time
Fairness	YES	NO	YES
Works with every token	NO	YES	YES
Easy to evaluate	NO	NO	YES

This is just the beginning

Thank you!

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