

The background of the slide is a photograph of the Euronext building's glass facade. The Euronext logo, consisting of a stylized bar chart and the word "EURONEXT", is visible on the building's exterior. A semi-transparent teal banner is overlaid on the middle of the image, containing the title and speaker information.

Periodic Auctions & Primary Markets: Passive Liquidity capture

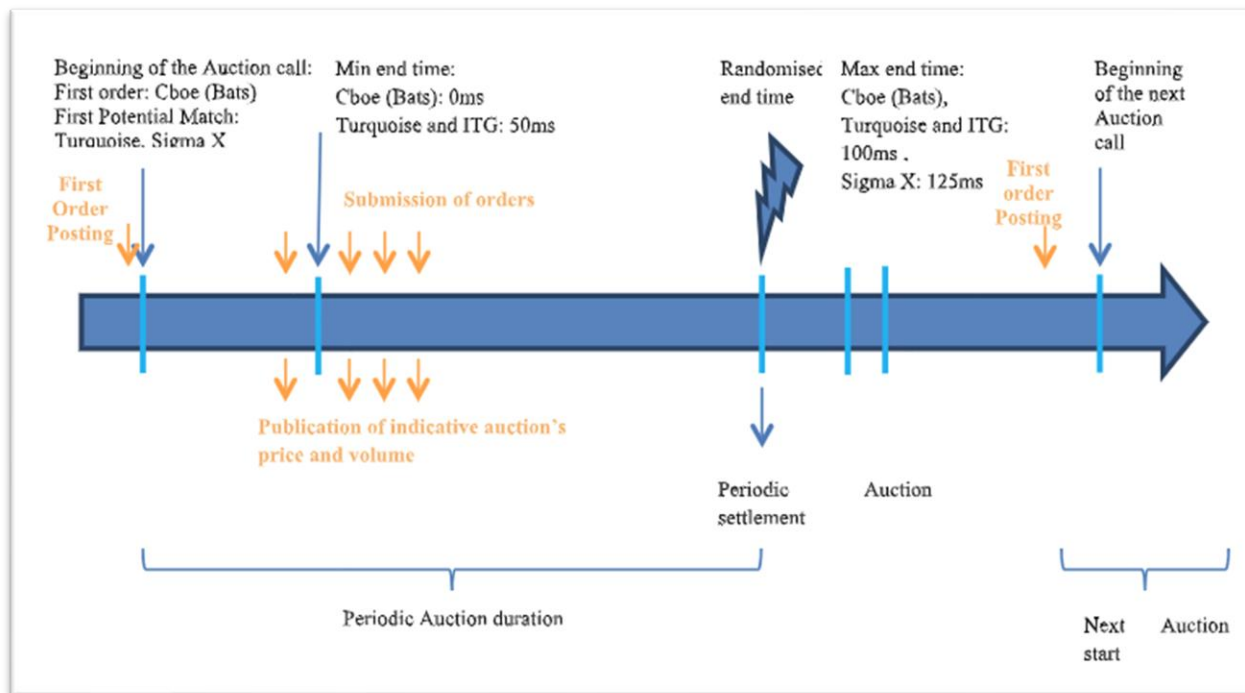
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18 June 2026



Reminder on Periodic Auctions mechanisms

- Mid 2026 Periodic Auctions mostly take place on Cboe Europe (80%), 10% in Aquis and less than 5% in Turquoise and SigmaX.

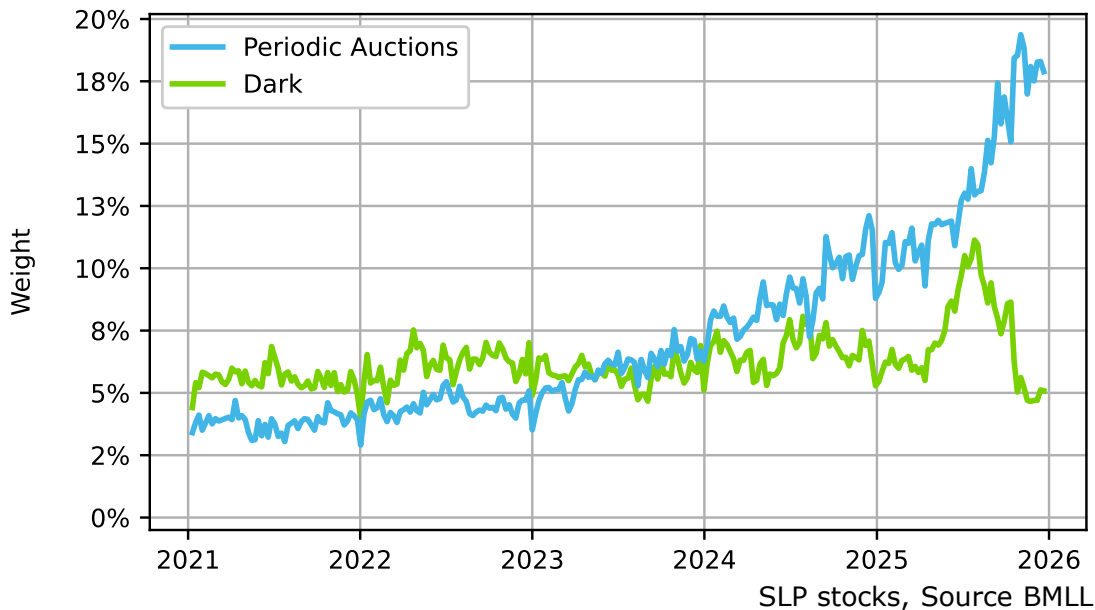




1. Market structure update

The rise of Periodic Auctions market share

- Fuelled by the MiFID II caps on dark trading, the market share of Periodic Auctions has increased by x6 in Europe, jumping from 3% to 18% in less than 5 years.
- Some participants use Periodic Auctions as a Proxy for Dark liquidity, others as Passive liquidity.





2 main questions

1) **Can Periodic Auctions be used as a standalone liquidity pool, regardless of market conditions?**

And more specifically, can passive liquidity sourcing be achieved using Periodic Auctions alone?

2) **Where can passive liquidity be sourced at the best price?**

We'll compare passive trading on Primary Markets versus Periodic Auctions using 5-minute bucket analysis, and examine whether superior Periodic markouts consistently outweigh passive spread capture on the Primary.



2. Quant study on Periodic Auctions



Quant Study part 1: Data and universe

Universe and time period

- We studied 103 stocks from the Euronext Special Liquidity Programme (SLP) in France, the Netherlands and Italy over 2025. In addition to Euronext, Cboe and Turquoise, we considered the Periodic Auctions from Cboe, Turquoise and Aquis. In total we studied 2.7 million 5-minutes buckets and 14 million 1-minute buckets.
- In 2025, Periodic Auction median trade sizes of €8.0k are close to Lit trade sizes (€8.6k), and smaller than Dark trades' (€13.2k).

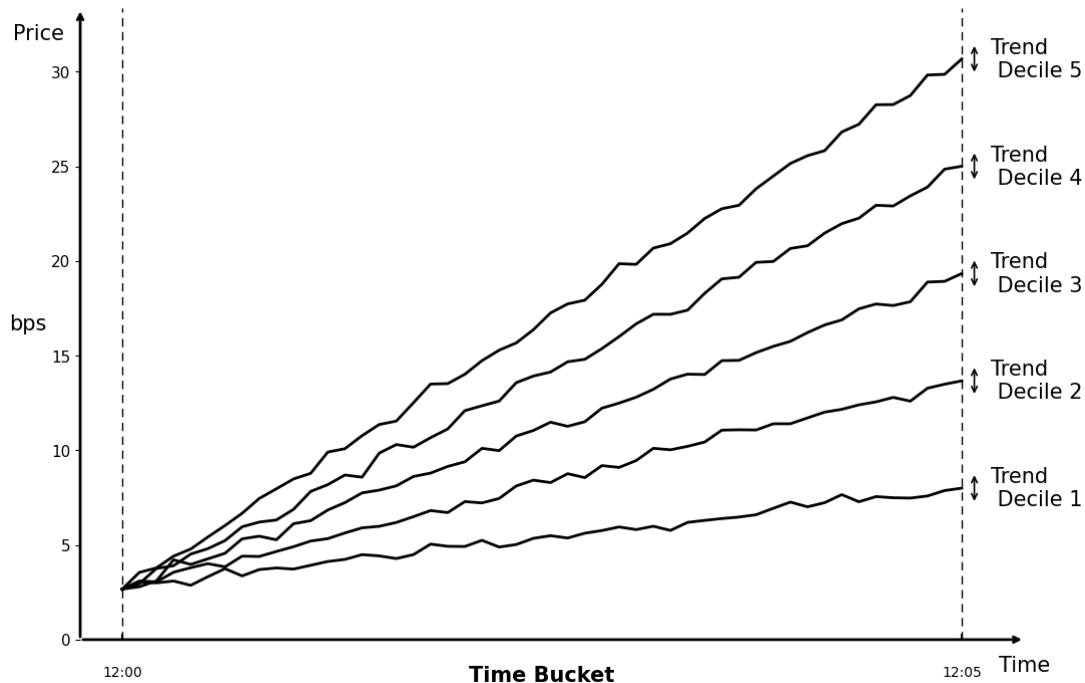
Measure	Mechanism	By stocks					All
		Mean	Std	Q1	Median	Q3	
Daily number of trades	Lit	5,648	4,917	2,557	4,334	6,939	171,259,812
	Periodic Auctions	1,172	727	665	973	1,361	33,184,645
	Dark	425	371	188	341	512	12,762,812
Daily notional (mEUR)	Lit	60.1	67.9	18.4	35.6	79.5	1,817,688
	Periodic Auctions	10.4	9.1	3.9	7.9	14.3	306,671
	Dark	6.8	7.9	1.8	4.7	9.0	226,371
Daily Average trade size (kEUR)	Lit	9.3	3.9	6.7	8.6	11.5	10.6
	Periodic Auctions	8.3	3.6	5.3	8.0	10.7	9.2
	Dark	13.6	5.8	9.5	13.2	17.2	17.7



Quant Study part 2: Periodic Auctions Liquidity and Market Trends

Periodic Liquidity and Market Trends

During trending markets, we study how the Periodic liquidity behaves



When a price trend increases

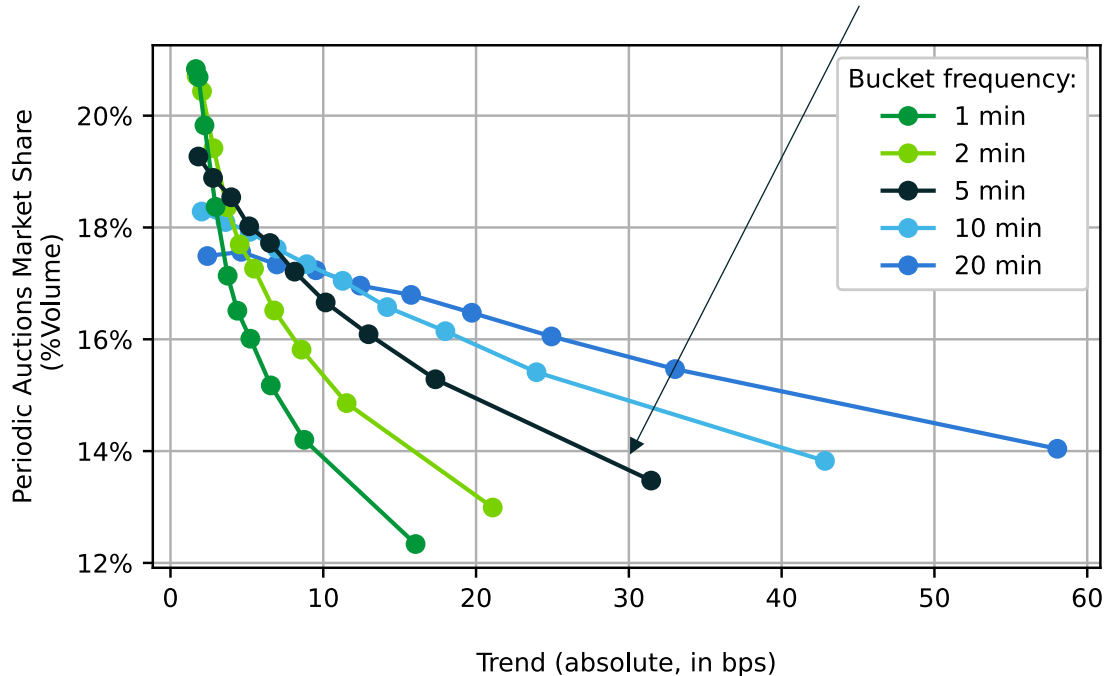


Is Periodic Auction
market share steady?

What about Primary
Market Share?

Periodic Auctions Market Share across trends

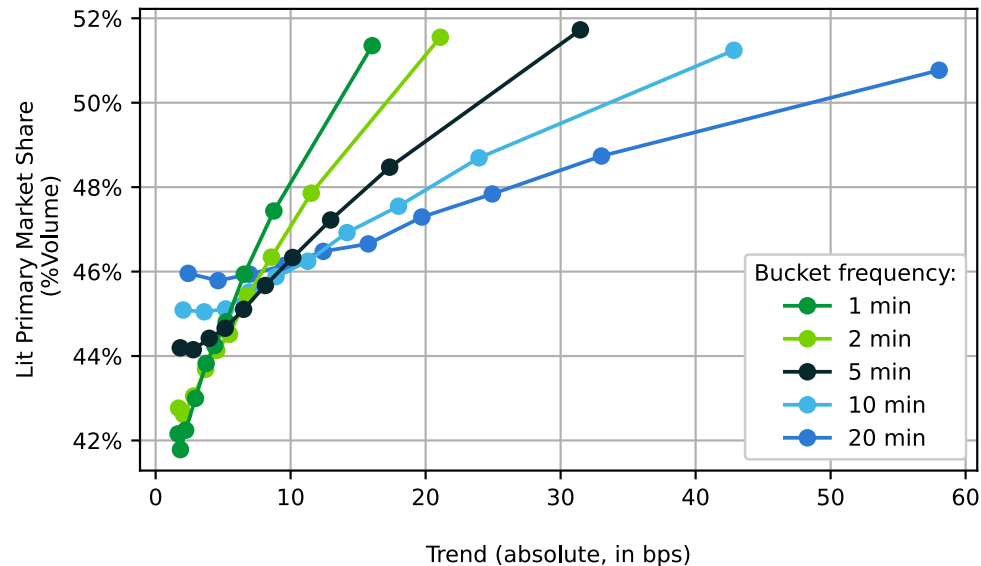
During 1-min price trends, Periodic Auctions market share shrinks by -40% from 21% down to 12.5% (between Q90 to Q10 trend buckets deciles). Similar results are observed on 5-min buckets where Periodic Auction market share drops by **-31%** (19.5% down to 13.7%).



Lit Primary Market Share across trends

In contrast, Primary Market Share increases during price trends:

- +24% in 1-min buckets (42% up to 51.5%), **+18%** on 5-min buckets (44% up to 51.8%).

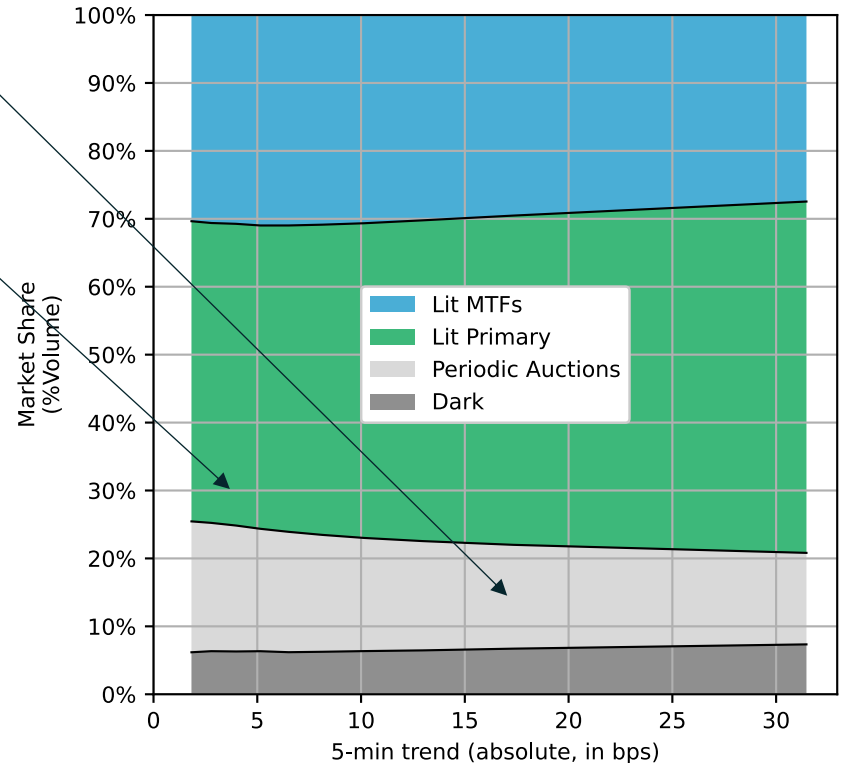


Periodic Liquidity and Market Trends

- Periodic Auction liquidity shrinks during market trends.
- In contrast Primary Market share increases during Price trends.

Relying solely on this liquidity pool cannot provide steady access to market liquidity.

- ➔ Periodic liquidity should be used in conjunction with Primary Markets.
- ➔ Periodic liquidity strongly differs from Dark liquidity.





Quant Study part 3: Where to find liquidity at the best price: Periodics or Primary?



Where to source passive liquidity best?

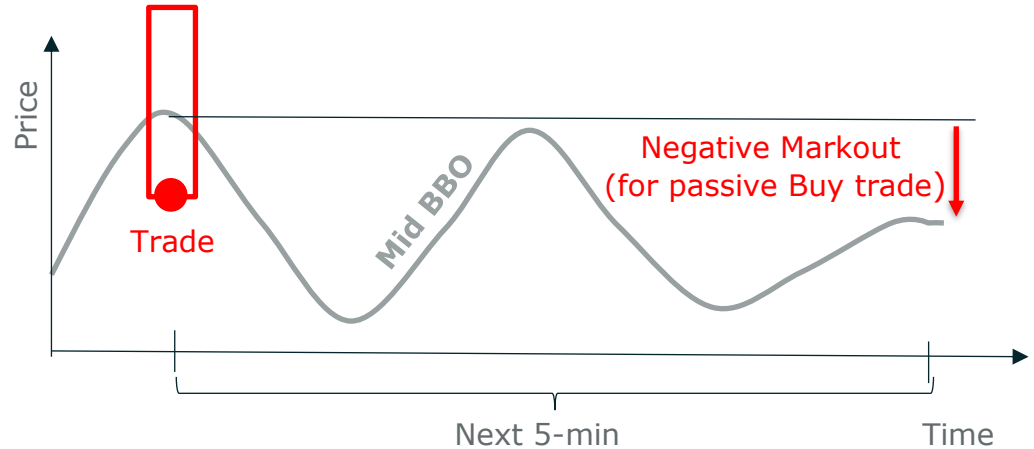
- When trading passively, traders want to **capture the spread**, but at the same time they look for **good Markouts**, so that adverse timing does not offset the benefits of spread capture.
- When traders use Periodics for passive trading, they give up the spread capture. In doing so they expect that the Markout benefit from Periodics will compensate for the lack of spread capture due to Midpoint liquidity trading.

→ **We will check empirically, using 5-min buckets, whether passive trading on Primary improves or worsens Periodic trades on average.**

Markout on passive trades and market timing

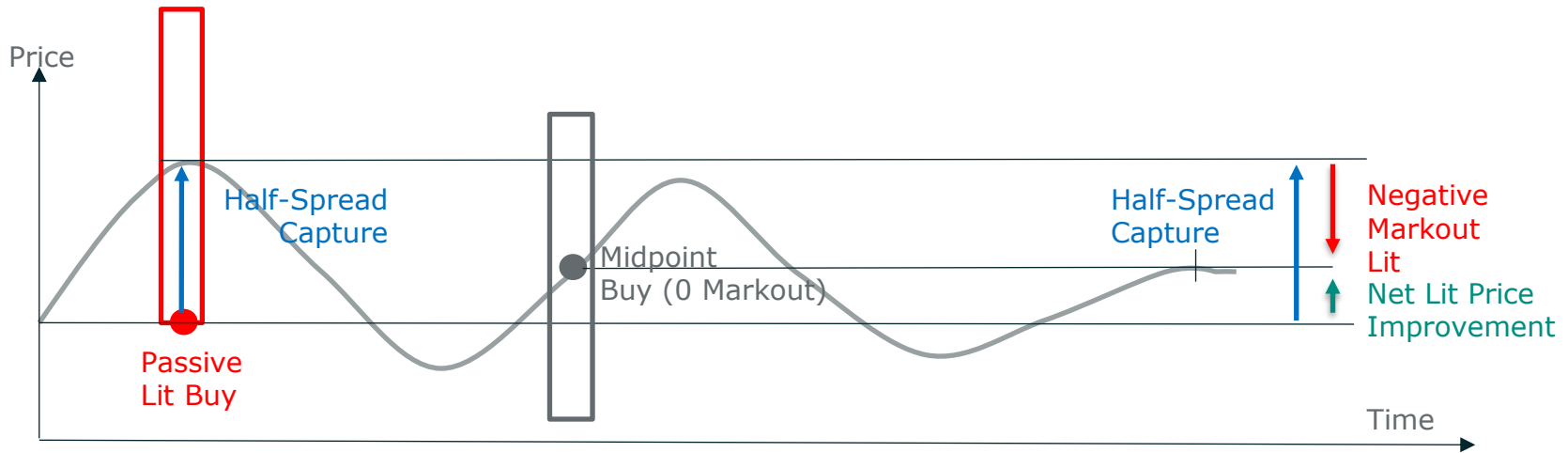
Markout (passive Buy trade) = Mid Price(+5 min after a trade) - Mid Price(at trade)

- Negative Markouts correspond to price drops after passive Buys, which account for an adverse market timing.
- Negative Markouts are often the downside of passive trades that provide spread capture to buyers.



Passive Lit vs Zero-Markout Periodic Midpoint

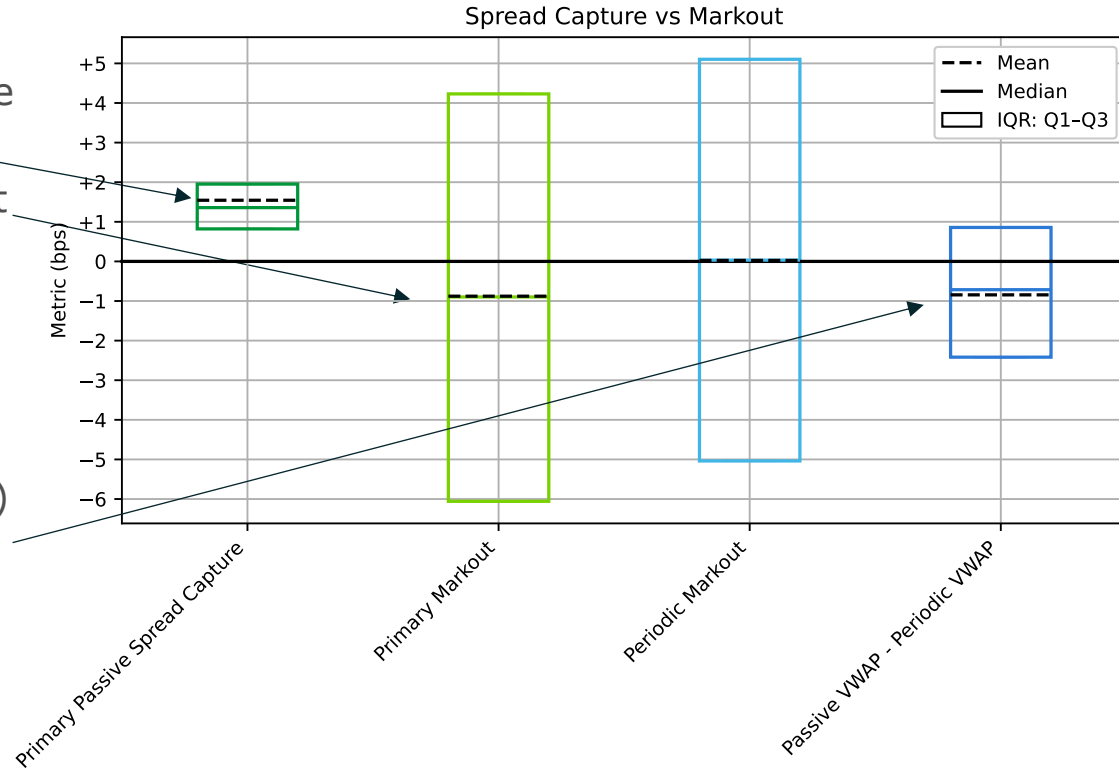
Passive Lit Buys (with negative Markouts) outperform Periodic Midpoint executions (with 0 Markout) when passive Lit spread capture exceeds negative Markouts.



On each 5-min bucket, we first compute Passive Primary Markouts, and EBBO spreads. We also compute the Passive Buy Primary VWAP (Primary trades at Bid), and compare them to Periodic VWAP (Periodic trades).

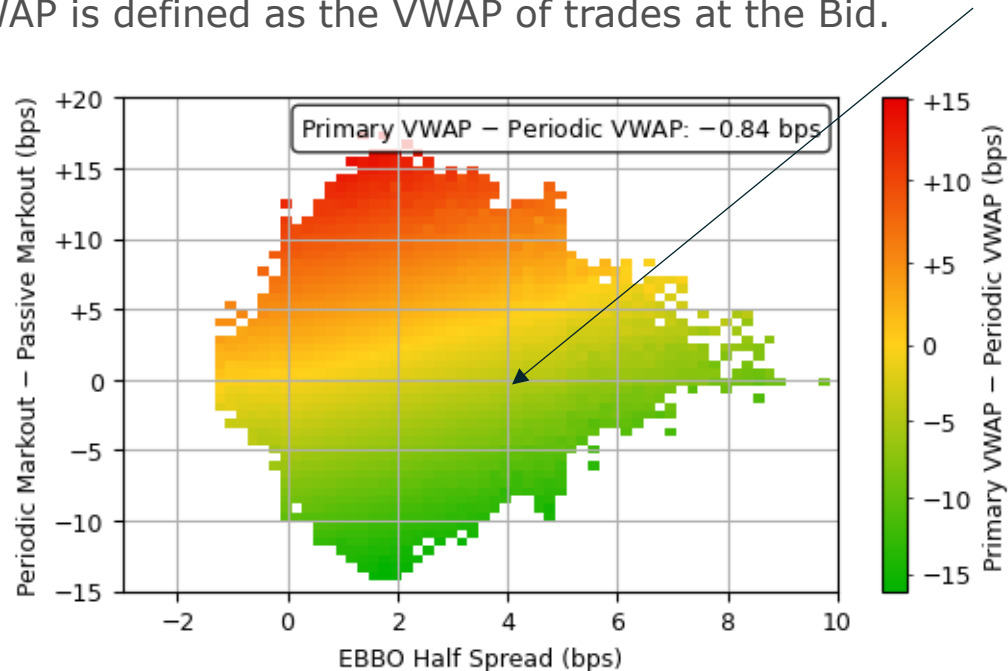
Passive Primary Spread capture vs Markouts

- EBBO Half Spread capture (+1.6bps) exceeds the negative Primary Markout (-0.9bp).
- Consistently we observe empirically that the Passive Buy Primary VWAP is be lower (better) than the Periodic VWAP (-0.84bp).



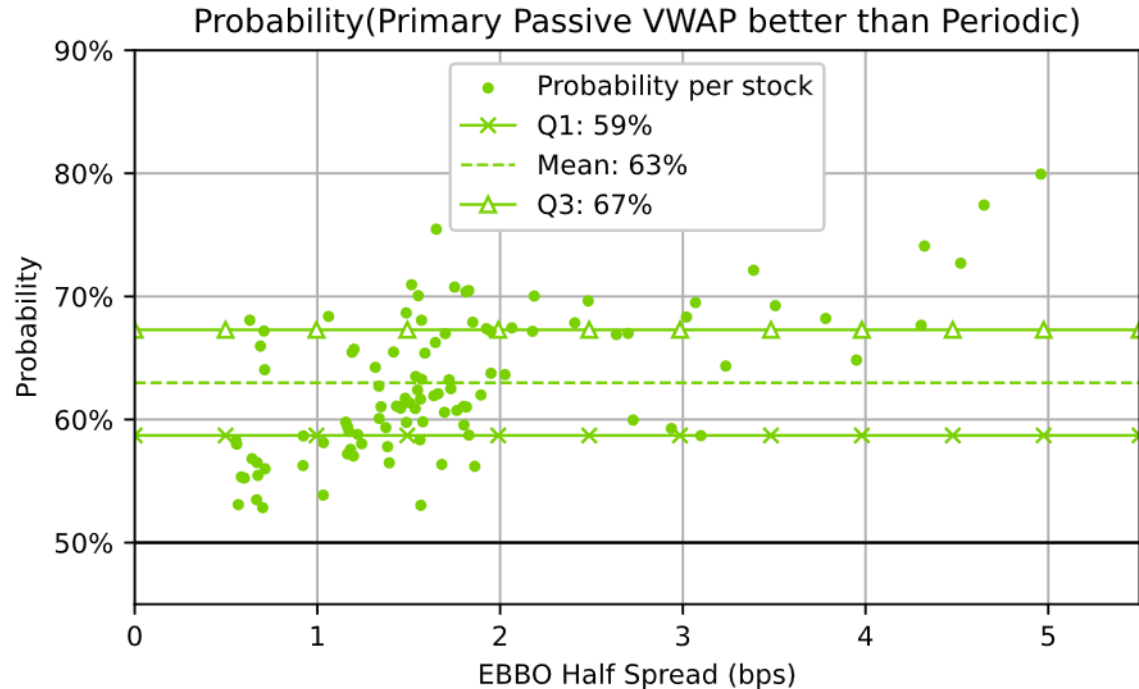
Primary Passive 5min VWAP vs Periodic 5minVWAP

Empirically, over 2025, on our largest stocks, 5-min VWAP over Primary Passive buy trades improve those of Periodic trades by -0.84bp on average (yellow and green areas). Remember, the Primary VWAP is defined as the VWAP of trades at the Bid.



Primary Passive VWAP vs Periodic across Stocks

Across our 103 largest stocks, the probability that Passive Primary trades deliver better prices than Periodic trades amounts to 63%. This probability increases to 75%-80% when half spreads exceed 4bps.





Quant Study part 4: Key takeaways



Key takeaways

Can Periodic Auctions be used as an autonomous liquidity pool, regardless of market conditions? Is this a proxy for Dark trading?

Periodic liquidity differs strongly from Dark liquidity. Periodic Auction liquidity shrinks during market trends (**-31%** relatively). In contrast, Primary Market share increases during price trends (**+18%** relatively). To source passive liquidity, traders should use the Primary Market extensively in combination with Periodic Auctions.

Are the better Periodic Markouts prevalent over passive spread capture while trading passively on Primary Markets?

Empirically, over 2025 on our largest stocks, 5-min VWAP over Primary Passive buy trades improve those of Periodic trades by -0.84bp . Across our 103 largest stocks, there is a 63% probability that Passive Primary trades outperform Periodic trades.



References

Academic papers:

“The benefits of European periodic auctions beyond MiFID dark trading caps”
(Besson, Lasnier, Falck: Journal of investing ; Oct 2019)

“AHEAD: Ad hoc electronic auction design”
(Derchu, Guillot, Rosebaum: Frontiers of Mathematical Finance ; 2024)

Working papers:

Where to best source Passive Liquidity: Periodic Auctions or Lit Markets?
(Besson, Fack, Morin: Euronext working papers; June 2026)



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