# Speed Bumps on the Dark Road
# Leakage, Adverse Selection, Under-filling and Overpaying

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# Outline

- Adverse Selection
- Information Leakage
- Under-filling
- Overpaying
- Managing Complexity

# Preliminaries

- Deep Value
  - Algorithmic Provider
  - Algorithms Trade Material Volumes
  - Extensive Experience with Dark Pools
- Dark pools can be good things, if used well.
- Structure: Problem, Detection, Mitigation, Playing Offense

# Adverse Selection

- Adverse selection is getting fills you don't like
- Trades are zero-sum relative to close, creating winners and losers.  Are you on one side systematically?
- At bulge-bracket or market maker pools, can happen if trading against shorter term proprietary alpha
- Can also get "run over" by a contra trading larger volumes

# Adverse Selection: Detection

- Doing systematically poorly relative to close, or remaining day VWAP
- Watch for getting larger fill rates than the venue average
- Getting run over typically happens at book/fund start up

# Adverse Selection: Mitigation

- If a broker or market maker run pool, ask to not trade against internal flow
- If persistently get fills or IOIs from a single pool, back off
- “Smaller” order flows should be biased towards trading in the open market, keep only larger sizes for the block pools.
- Don’t break large blocks up in dark pools; try and get as much of it done in one go. If you are the largest persistent presence, waiting is riskier.

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# Information Leakage

- Information leakage is when presence is signalled in the market without enough of the order getting done
- Contras trading in small size can sniff out
- If pools or dark aggregators trade against hidden orders in the open market and leak
- IOI linkages: Convert orders from dark to semi-displayed
- Simultaneous open market activity can signal

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# Information Leakage: Mitigation

- Against sniffing: use minQty. Simple yet powerful
- Don't confuse dark pools with undisplayed ECN etc. liquidity: the inside market should float freely
- IOI linkages: go directly to destinations
- Signalling via simultaneous activity: slow down, esp. after block fills

# Information Leakage: Playing Offense

- If a name is rising, and see a block print on the ask, likely to continue; play the trend.
- Block prints trigger participation "catch up"
- If see persistent fills or IOIs from a single pool or broker, play it

# Underfilling

- The general problem of their being no contras at this price is insoluble
- However, underfilling can also happen when have portfolio “balance” constraints; or
- If miss fills going off in various destinations

# Underfilling: Mitigation

- Generally need dark aggregation algorithms to address
- Trading portfolios in dark pools can cause either underfilling or imbalance. Allow imbalances on the illiquid side.
- Missing fills: have tripwire orders, with sizes based on recent fill rates

# Overpaying

- Dark pools are good deals based on market impact saved
- Natural monopoly risk as liquidity begets liquidity
- Open market liquidity, displayed or otherwise, is cheap compared to dark pool pricing and dark aggregation pricing; cheap liquidity can get flipped.
- “Flat” price per share convention, plus extensive linkages between pools behind the curtains.

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# Overpaying:Mitigation

- Natural monopoly risk: encourage independence of manageable number of pools
- Cheap liquidity flipping: minQty, explicit bars
- Aggregation vehicles: ask for pass through pricing

# Managing Complexity

- Use aggregation vehicles or methodologies
  - Assign cost to unfilled shares (e.g. close px)
  - Measure fill slippage and unfill slippage
  - Hold vehicle reponsible or refine methodology for making right tradeoffs

# Discussion

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