

Competition for order flow: Dark versus Lit?



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What is causing the growth in dark pools? New research from the Capital Markets Cooperative Research Centre (CMCRC), forthcoming in the *Journal of Financial Economics*, has found that SEC trading rules may be providing dark venues a regulatory advantage over traditional stock exchanges by allowing some traders to circumvent time priority, leading to the rapid growth of dark trading in U.S. equity markets.

In the U.S.'s highly fragmented markets, approximately a dozen exchanges (e.g., NYSE, NASDAQ, AMEX, and BATS) compete with more than two score of dark pools (e.g. Credit Suisse's Crossfinder and Goldman Sachs' Sigma X) for trades in the same security. Dark pool's market share has grown rapidly in recent years both in the U.S. (from around 7% in 2008 to over 14% in 2013) and in many other countries. Dark pools operate much like traditional exchanges with the additional feature of pre-trade opacity. One concern is that dark pools may have achieved this rapid growth in part through more favourable regulatory treatment. In the U.S., exchanges are prohibited from accepting or displaying orders at price increments of less than one penny if the price of the security is \$1.00 or more. Except in limited cases, exchanges are not able to trade in sub-penny increments. What can dark pools do?

In worldwide equity markets, a transaction takes place when buy orders match sell orders at the best price. Often, there will be more than one order placed at this price, so exchanges prioritise orders that arrive first. When quotes on the exchanges are constrained because there is only a one penny difference between the price at which traders are willing to buy and the price at which they are willing to sell, additional trading interest is reflected in a build-up of depth, or trading queues, in the exchange's order book. The authors find that traders can queue jump existing displayed limit orders by trading in a dark venue. As more traders send their orders to dark venues, the probability of subsequent order execution there rises, leading to growth in dark trading.

The study uses a discontinuity at the \$1.00 price level to isolate the effects of the minimum pricing increment on intermarket competition. Rule 612 prohibits displaying, ranking, or accepting orders priced at more than two decimal places for stocks priced at or above \$1.00 by broker-dealers and exchanges. When stock prices fall below \$1.00, the required minimum pricing increment for exchange trades decreases from a penny, or \$0.01, to \$0.0001. Thus, there are strong incentives for traders to migrate their order flow to dark venues to benefit from queue jumping when the stock is trading just above a dollar, which is immediately lost when the stock price falls below a dollar. The authors compare trading in stocks that fluctuate in price around a dollar and find a sharp rise in dark venue market share when the stock price rises just above a dollar.

One implication is that price discovery is taking place in dark pools when bid-ask spreads on 'lit' exchanges are regulated by tick-size constraints. Over time, the ability to queue jump on some dark venues can discourage traders

The *Capital Markets Cooperative Research Centre* is a world-leading research organisation that provides thought leadership and break-through technology solutions for capital and insurance markets (www.cmcrc.com).

from providing liquidity to traditional lit order books, resulting in wider spreads and less depth.

The findings of this study lend support to the introduction of a 'trade-at' rule currently being studied by the SEC, which requires dark orders to be routed to lit exchanges unless dark pools can provide meaningful price improvement.