

Abstract: Currently, over 90% of Ethereum blocks are built using MEV-Boost, an auction that allows validators to sell their block-building power to builders who compete in an open English auction in each slot. Shortly after the merge, when MEV-Boost was in its infancy, most block builders were neutral, meaning they did not trade themselves but rather aggregated transactions from other traders. Over time, integrated builders, operated by trading firms, began to overtake many of the neutral builders. Outside of the integrated builder teams, little is known about which advantages integration confers beyond latency and how latency advantages distort on-chain trading.

This paper explores these poorly understood advantages. We make two contributions. First, we point out that integrated builders are able to bid truthfully in their own bundle merge and then decide how much profit to take later in the final stages of the PBS auction when more information is available, making the auction for them look closer to a second-price auction while independent searchers are stuck in a first-price auction. Second, we find that latency disadvantages convey a winner's curse on slow bidders when underlying values depend on a stochastic price process that change as bids are submitted.

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Structural Advantages for Integrated Builders in MEV-Boost

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