The cryptocurrency market counts more than 6000 different cryptocurrencies, traded in 332 spot exchangers and 15 derivative exchangers, following diverse market structure and regulation. Different regulation and trading currency make the existence of such an high number of exchangers   
understandable, and also the vast majority of exchanger is currently not regulated.  
Each exchanger is an individual and isolated marketplace with an unique supply and demand: this opens door to price disparities and inefficient trade executions.

“How Institutional Crypto Traders Can Overcome the Top 3 Barriers to Global Execution”, Amit Khandelwal, 2020 explains why these inefficiencies and arbitrage opportunities are not yet exploited. Several risks and structural impossibilities are involved in hypothetical arbitrage operations, including setting up multiple accounts, that “lead to very high legal expenses from multiple legal agreements, onboardings, and KYC processes”, Cross exchanger transfers, that require hours, and “Several market opportunities can be missed as capital is “on the sidelines” while being transferred or deposited.” and holding reserves on multiple exchangers that increase counterparty risk and capital requirements.

A plausible solution, that is currently implemented for the decentralized exchangers that are not subject to heavy regulation, is an execution platform that provides access to liquidity of different exchangers. This would increase the price efficiency and lower the transaction costs.

(Jeon et Al. 2020) analyzes how the high level of fragmented exchanges affect the Bitcoin market. “Although the market size has steadily grown in the past couple of years, the magnitude of market fragmentation, measured by ExLM[[1]](#footnote-1) of the consolidated order book, has not improved, and may have worsened. A possible reason behind this observation could be the lack of a consolidation tool, such as a smart order router. Although it is possible to use such a router in the Bitcoin market, the results indicate that usage of such a tool seems to be quite limited.”  
A possible explanation of the lack of usage of a smart order router comes from a fast changing and diverse regulation environment. In fact, even if the volume and efficiency of the market increased in the last years, many exchangers increased country restrictions (see Binance and USA) making the usage of such a tool very complex.

Another finding from the study is that “the consolidated order book drops significantly during market downturns”, indicating that market makers are less likely to provide liquidity during downturns, and that the liquidity for individual exchangers increases overtime on average.

Interestingly, the ExLM “is mostly stable throughout the day while it exhibits a sharp decline toward the end of the day, at around 22:00–23:00 UTC” indicating that the market makers adapted quite well to the continued trading hours structure of the cryptocurrency market, providing liquidity almost the whole day.

“Cryptocurrency operators set for consolidation in fragmented Asian market, Binance says”, Georgina Lee, 2020 describes how a stricter regulation would imply a lower degree of fragmentation. The trend is already started, seeing recent merge and acquisition in the Asian exchanger market trying to “swallow up smaller rivals”, but also acquiring data providers and news platforms.

Following the current trend, we will see a less fragmented and more regulated market in the future. However, it will be unlikely to see an exchanger to gain monopoly, mainly due to heterogeneous regulation between different countries.

1. (Gomber et. Al, 2004 (pag 6)) defines the XLM as the cost of a roundtrip trade of size V. […] It uses the information about all the orders in the book […] to calculate the weighted average price at which an order of given size could be executed immediately at time t.   
   Denote these prices by Pb,t(V) and Ps,t(V) where the index (B, S) indicates the type of the transaction (buyer-initiated or seller-initiated) and V denotes the order size.   
   Further, let MQt be the quote midpoint at time t. The execution cost for a buy and a sell order, measured in basis points, are given by (copy formula)

   They are then added up to obtain the XLM measure as the cost of a roundtrip transaction: (copy formula) [↑](#footnote-ref-1)