Analysis for Descriptive Statistics using calculated Metrics

Stocks vs. ETFs:

- Regarding stocks the Cancel-to-Trade ratio is consistently lower and remains relatively stable over time, rarely exceeding 20 on the mean scale. However ETFs show a significantly higher and more volatile Cancel-to-Trade ratio, with means frequently ranging between 200 and 600. This suggests that ETF orders are cancelled far more often in comparison to executed trades. Which could be due to the market makers' strategies in managing liquidity, or because of the inherent structure and trading strategies involving ETFs.
- The Hidden Rate for stocks shows more fluctuations over time, with values generally ranging between 8% to 15%. This indicates that a notable portion of stock trades involves hidden orders, but this involvement varies. On the other hand the Hidden Rate for ETFs shows slightly higher values, ranging from 10% to 16%, with occasional peaks. Meaning ETFs seem to have a slightly higher reliance on hidden orders. This could reflect different trading strategies or market conditions that favor the use of hidden orders in ETFs.
- The analysis of oddlot volumes reveals a distinct trend where the mean oddlot volume for stocks has been steadily increasing showing increase in trading interest, while the mean for ETFs remains stable. Concurrently, the standard deviation for both stocks and ETFs has been decreasing, indicating reduced variability and more consistent trading patterns over time, with stocks becoming increasingly active and ETFs maintaining steadier volumes.
- In stocks, oddlot trades are more common. This might be indicative of the actions of retail investors or certain stock trading methods, as opposed to ETFs, which usually entail bigger trades from institutions.

Sampling Strategy Considerations:

We can adjust the sample size based on the initial data's distribution meaning either increasing the number of samples or concentrating on the metrics that show the most variation. If certain measures, like Hidden Volume or Cancel-To-Trade, show big changes, we might need a larger sample size to accurately capture these details.