Man vs. Machine: Liquidity Provision and Market Fragility

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Question

• Do Algorithmic Traders (AT) withdraw (or reduce their participation and liquidity provision) in turbulent periods?

• Obvious Regulatory and Academic Implications
Findings

• AT significantly reduce their participation and liquidity provision under extreme conditions
• Reinforce regulatory concerns about AT
• Well executed study
• Univariate analysis
• Difference-in-Difference
• Multivariate Analysis
• Logit Modeling of AT
Concerns and Suggestions

• Is it withdrawal or simply lower participation under higher volume? They may have different implications.

• I would like to see trading volume numbers in addition to Participation and Liquidity Provision in Tables 3 and 4 (Univariate Results)
Sample of Extreme Conditions
(Table 3)

• High Volatility (201 observations)
• High Spreads (141 observations)
• High Order Imbalance (10 observations)
• Any of the three conditions (347 observations)
• Three extreme conditions appear to be primarily mutually exclusive (201+141+10 = 352)
Turbulent/Stress Conditions

- High Volatility with no order imbalance and normal spreads could imply larger information driven price changes with no information asymmetry. Is that necessarily a turbulent or stressful condition.
Suggestions

• Sub-divide high volatility observations into return terciles and report returns and trading volume in addition to participation and liquidity provision. Differences across the terciles may provide additional insights.
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Conclusion

• Congratulations on a well-thought and well-executed study
• Best wishes for its publication