Research Proposal

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And

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This research proposal serves to formalize the mutual interest of Newbridge SA and Mukeshwaran Baskaran in establishing a collaborative effort to research and develop analytics which can potentially be used for signal generation and trading.

Research Proposal

Title: Arbitrage Opportunities in Volatile Financial Markets

Background:

The dynamic nature of financial markets, characterised by volatility, provides a unique landscape for continuous evolution. This proposal centers on investigating arbitrage opportunities within volatile markets, emphasising their distinct features and structures. The research aims to contribute to the academic understanding of arbitrage in traditional financial instruments and their derivatives, particularly in volatile conditions.

Research Questions:

1. What arbitrage strategies have proven successful in traditional financial markets and exchanges, particularly during periods of high volatility?
2. How can these strategies be adapted to suit the distinct characteristics of financial assets and their derivative instruments in times of market turbulence?
3. Based on available data and evolving market structures, which specific arbitrage approaches exhibit the most promise for in-depth analysis and potential development of trading algorithms within volatile financial markets?

Methodology:

This research project will adopt a rigorous mixed-methods approach, commencing with a systematic literature review. This review will synthesise existing academic knowledge concerning traditional arbitrage strategies while exploring any indications of their applications in derivative markets, especially during periods of volatility. Promising strategies identified through the literature review will undergo further empirical analysis across various exchanges with available data.

The quantitative analysis will focus on identifying price discrepancies, modelling potential returns, and evaluating the risks associated with real-time execution of selected arbitrage strategies in volatile market conditions. This comprehensive methodology aims to provide a holistic understanding of the feasibility and effectiveness of traditional strategies in the context of financial markets during periods of heightened volatility.

Data Sources:

Newbridge SA, the corporate partner in this research endeavour, will facilitate access to relevant exchange data sources. The provided data will include order books, trades, liquidations, and other market data spanning centralised exchanges & derivative markets. Leveraging this diverse dataset is critical to capturing the nuances of different market structures and ensuring the robustness of the empirical analysis, especially in volatile conditions.

Outcomes & Deliverables:

1. A comprehensive literature review summarising traditional arbitrage strategies and providing insights into their adaptation to financial markets and derivatives, particularly in volatile environments.
2. Empirical analysis quantifying opportunities and risks associated with executing specific arbitrage strategies across various exchange data sources, including derivative instruments, during periods of market volatility.
3. A final report/presentation documenting research findings, presenting results, and offering practical guidance for further model and trading algorithm development to NBR, with a specific focus on navigating volatile financial markets.

Conclusion:

This research proposal outlines the essential components for a rigorous academic study of arbitrage trading within traditional and derivative financial markets, emphasising their behaviour during volatile conditions. By leveraging the industry data access offered through Newbridge SA, this research seeks to generate scholarly insights and provide practical guidance for further technological innovation in quantitative analysis and automated trading systems tailored to the unique landscape of volatile financial markets. The proposed research aims to contribute to the academic understanding of arbitrage in these markets while offering tangible benefits for industry advancements during times of heightened volatility.