

The authors study a very interesting problem related to the framework of linear temporary market impact. In particular, they develop a rather innovative concept related to what can be considered a "good trade execution" within previously cited framework. The proposed approach is worth to be considered also because of the provided construction of explicit dynamic strategies. Such result, indeed, allows to derive strategies able to dynamically adapt themselves w.r.t. the real values of traded assets prices. The advantage results in a better control over potentially chaotic trajectories characterising high volatile assets, as well as possible protection instruments in case of financial scenarios experimenting abrupt variations of associated volatility levels. From the stochastic (SDEs) point of view, the proposed solution turns out to be robust, being not necessary to specify the solutions/paths of the specific SDE model responsible for the (stochastic) dynamic of a specific asset. Such dynamics are considered within the Brownian motion setting, nevertheless it is important to underline that (as outlined in Remark 3.6) the good inventory trajectory is written without assuming a particular SDE dynamics for the price evolution. In particular, the proposed "Closed-form formula for the good trade execution under quadratic inventory cost" allows to treat also the the sum of a possibly discontinuous semimartingale and a fractional Brownian motion.

Accordingly, the authors provided some real-world applications (Sect.3.3) as for the case of " Intraday stock price: Brownian motion", "5Y government bonds: brownian bridge".

It would be interesting to see how the methods (numerically) behaves in presence of Lévy-type dynamics, as to consider phenomena related to crashes and bubbles.

From the pure mathematical point of view, I would like to underline the relevance of Prop.2.3 , related to the reduction to static optimal inventories within SOC-approach to expected trading cost, then answering to an open question [comparison of static and dynamic solutions w.r.t. to the optimal trade execution problem] rather recently proposed by papers of D.Brigo and his co-authors (see [BDG14], [BP18]and [BBDN18]).

Summing up: I think the paper should be accepted in its present form, provided,

for the sake of completeness, the authors include the following references:

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Game options with gradual exercise and cancellation under proportional transaction costs
(2018) Stochastics, 90 (8), pp. 1190-1220.

- * Cordoni F, Di Persio L., A maximum principle for a stochastic control problem with multiple random terminal times,
(2020), Mathematics in Engineering, 557-583.

- * Kentia, K., Kuhn, C.
Nash equilibria for game contingent claims with utility-based hedging
(2018) SIAM Journal on Control and Optimization, 56 (6), pp. 3948-3972.

- * Xu, Z.Q., Zhou, X.Y.
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(2013) Annals of Applied Probability, 23 (1), pp. 251-282.

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On the use of semimartingales and stochastic integrals to model continuous trading
(1986) Journal of Mathematical Economics, 15 (3), pp. 255-266.