**Literature Review on Alenadre Rock 2009**

Rock (2009) extends the liquidity risk model by Cetin, Jarrow and Protter (2004) in terms of price impacts determined by size of the transaction and the depth of the order book. The author proves sufficient condition for no-arbitrage and provides a new characterization of self-financing trading strategy. The paper establishes the connection between stochastic volatility and illiquidity issue. The author uses variance swap to approximately replicate the contingent claim. Additionally, the liquidity premium of continent claims can be found from the solution of the replication problem without trade impacts of the trade.

**Justifications on Twice Differentiable Demand Curve**

In this paper, we assume the net demand process is twice differentiable. We justify this assumption by practical observations: traders who try to avoid the liquidity cost as much as possible tend to split the large orders into executable pieces. Therefore, discontinuities and non-differentiable points rarely appear on the market when the traders smooth out their orders.