Discussion of:
“Liquidity and the Marginal Value of Information”
by Alex Boulatov and Bart Taub

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The Set Up


**Market:** one risky asset with final value $V \sim F$, where $F$ is common knowledge, $V$ common knowledge only at $t = T$

**Agents:**
1. **Market maker**, observes total demand $dy(t) \rightarrow$ information $\mathcal{F}_M(t)$
2. **Uninformed/liquidity traders** → exogenous demand $\sigma_u dz(t)$
3. **Insider**, knows $V \rightarrow$ endogenous demand $q(t)dt$, information $\mathcal{F}_I(t) = \mathcal{F}_M(t) \lor \sigma \{V\}$

**Utilities:** risk neutral

**Note:** $\mathcal{F}_M(t)$ and $\mathcal{F}_I(t)$ are **discontinuous**

Discussion of Boulatov and Taub (2012)

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Key Findings

1. uniqueness of Markovian (spell it out!) equilibrium
   Note: non Markovian counter examples available

2. the equilibrium trading strategy has martingale property
   Remarks: i) risk neutrality matters \(\rightarrow\) e.g. price mean reversion if MM is risk averse (Danilova and Cetin (2012))
   ii) paper’s heuristic argument (“drift would improve MM estimate of V”) is not the full story
   iii) due to drift-less uninformed demand?

3. neat characterisation of the liquidity/value of information link
   (the shadow value of information is proportional to Kyle’s price impact parameter).

Discussion of Boulatov and Taub (2012)
• a brave paper! ... and (conditional on clean up) an important one for the literature.

But: currently written too loosely e.g.:
  • should spell out assumptions clearly and ex-ante
  • HJB without verification Thm
  • some (fixable) circular argument (e.g. check Karatzas and Shreve (1998) Thm 4.36)
  • some unproven/uncited bits ... but that seem to makes sense nevertheless (e.g. \( y(t) \) is BM in MM’s filtration).
  • perturbation of a continuous processes \((y, q)\) changes all future path (and filtration generated)
  • inappropriate use of Radon-Nikodym theorem (but they don’t really need it)
  • some loose citation

Baseline: a diamond in the rough
Beck (1992) derives an upper bound for your value function
⇒ probably the hardest bit for applying viscosity solution... and
uniqueness comes almost as a freebie.