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Comment of  
“Time series and cross-section  
properties of equity market  
liquidity”  
by Jeffrey Russell

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# Definition of (il)liquidity

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## Types of Liquidity:

- Market liquidity (assets)
- Funding liquidity (investors)

## Components of market liquidity:

### Characteristics

- Tightness
- Depth
- Resiliency

### Measure

- Bid-ask spread (BAS)
- Turnover/Nb of trades
- Price impact of trades



# Definition of (il)liquidity

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## **Components of Bid-ask spread:**

- Cost of holding inventory
- Cost of processing orders
- Cost of trading with more informed investors

The paper proposes proxies for these different costs.



# Liquidity as a Risk Factor

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Pástor-Stambaugh (2003); Acharya-Pedersen (2005)

- Based on sensitivity of return to the \$-volume ( $\gamma_{it}$ )
- Liquidity factor is the innovation in the aggregate liquidity ( $\gamma_t = \sum_i \gamma_{it}$ )
- Market liquidity is an important factor for stock returns

Amihud (2014)

- Factor-mimicking ptf: IML ptf based on ILLIQ
- IML beta is positive and significantly priced.



# Commonality in Liquidity

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## Hasbrouck and Seppi (2001)

- Commonality in order flow explains commonality in return.

## Korajczyk and Sadka (2008)

- Commonality in a risk measure across firms
- Commonality across risk measures.

# This Paper: A model for Liquidity

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Objective: What are the sources of commonality in liquidity across stocks?

Illiquidity (BAS) is expected to decrease as:

- **Inventory cost increases**
  - Volatility ↗
  - Frequency of trades ↘
  
- **Adverse selection cost increases**
  - Number of analysts ↘
  - Prob. informed trading ↗
  - Frequency of trades ↗

# Liquidity Decomposition

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BAS is driven by  $L_{i,t} = \alpha_i + \lambda' R_{i,t} + \varepsilon_{i,t}$

Individual drivers are  $R_{i,t} = B_i R_t + \eta_{i,t}$

so that 
$$L_{i,t} = \underbrace{\lambda_i' R_t}_{\text{systematic component}} + \underbrace{\alpha_i + \lambda' \eta_{i,t} + \varepsilon_{i,t}}_{\text{idiosyncratic component}}$$

with  $\lambda_i' = \lambda' B$



# Empirical Results

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(1) PCA on BAS → 2 to 5 factors (50%, 8%, ...)

(2) Individual illiquidity increases as

- VIX ↗ (inventory cost)
- Number of trades ↗ (adverse selection cost)
- TED spread ↗ (funding cost)
- Number of quotes ↘ (liquidity provision, funding cost)

(3) Impulse response analysis

- VAR on 4 factors then IRF for BAS
- Main contributors: VIX and Number of trades





# Remarks

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(1) VIX is a risk-neutral measure of volatility

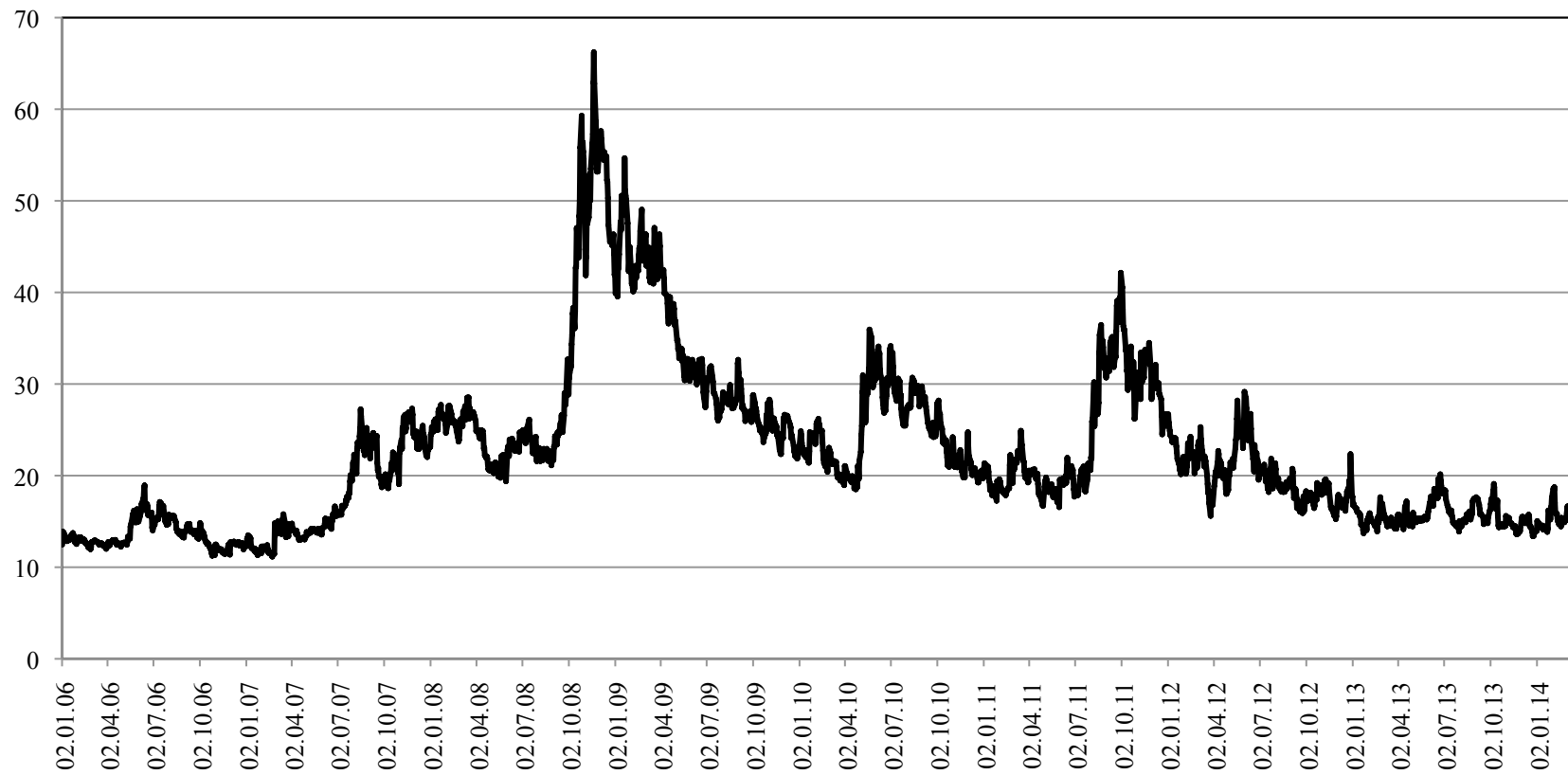
- ➔ What about realized volatility?
- ➔ How does it affect the analysis?

(2) VIX and/or TED spread look like non-stationary

- ➔ What about non-stationarity?
- ➔ Do we have trends (cointegration?) in liquidity?

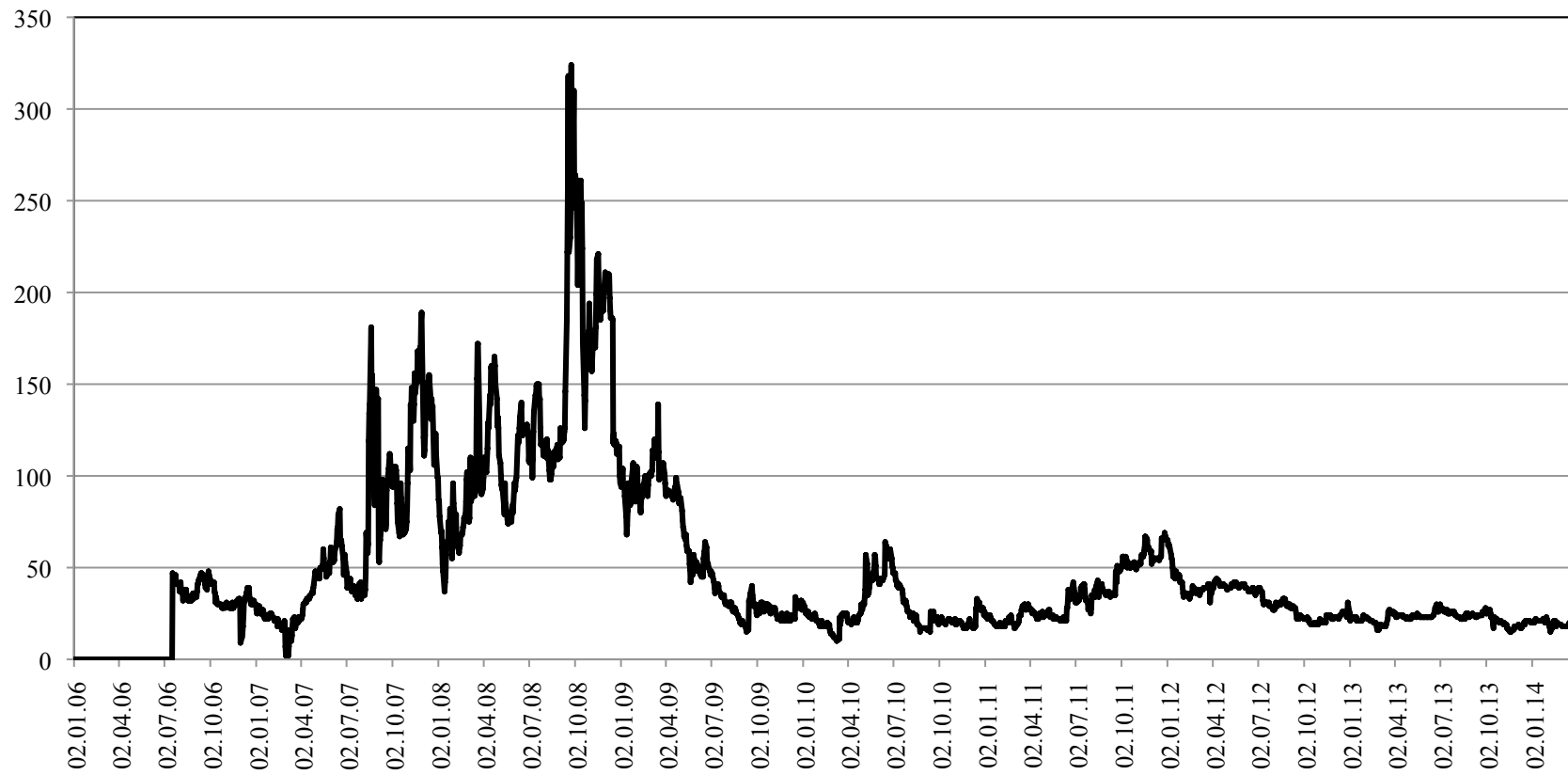
# Remarks

VIX



# Remarks

**TED spread**





# Remarks

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(3) There are some causal links between factors:

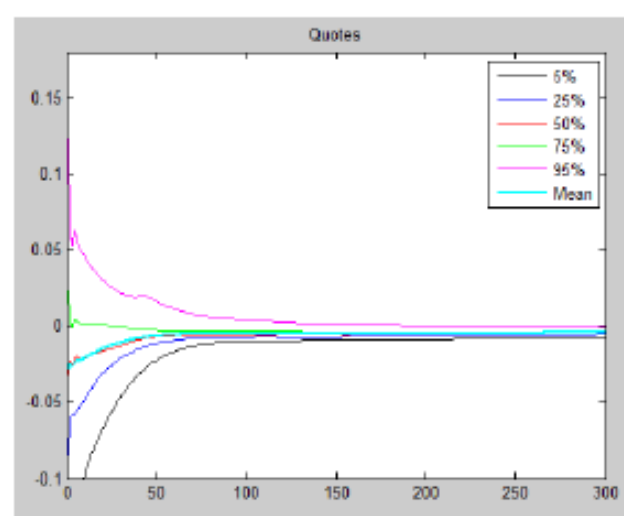
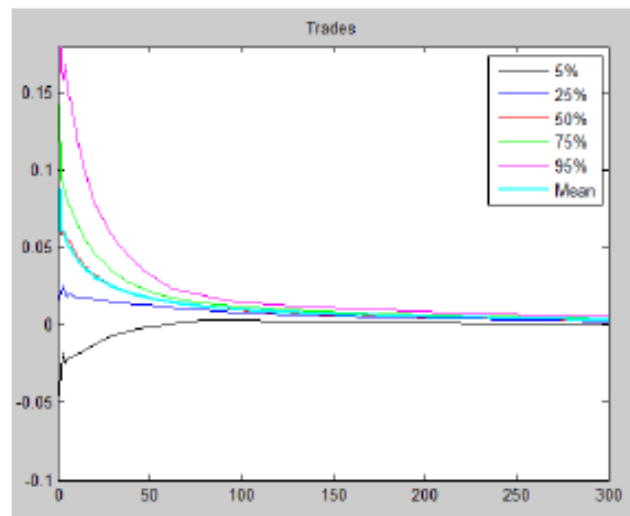
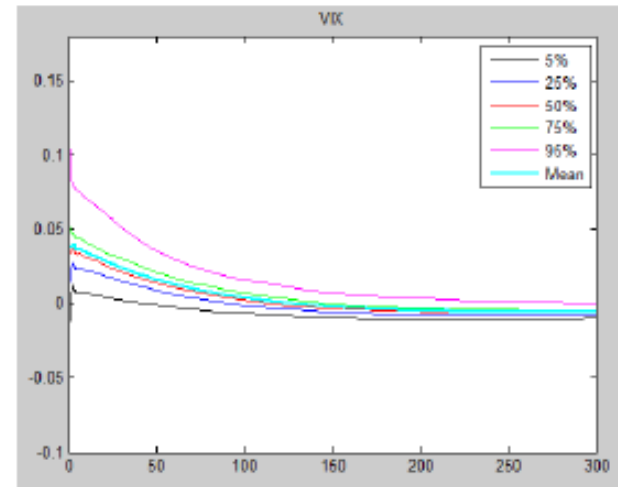
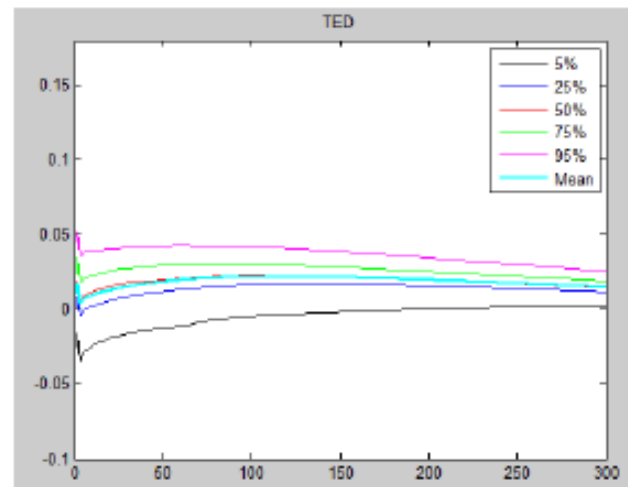
TED → VIX → Quotes/Trades

What about timing in causal links?

→ TED / VIX: long-run causality (macro variables)

→ Quotes/Trades: short-run causality (aggr. of micro var.)

# Remarks





**Thank you for your attention**

