High Frequency Trading in the US Treasury Market
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Summary of the Paper

- Overall question: How does HFT contribute to market quality in the US treasury market around macroeconomic news announcements?

1. **Activity**:
   - HFT activity increases around macroeconomic announcements.
2. **Liquidity & Volatility:**
   - HFT increases return volatility
   - HFT leads to higher spreads
   - HFT improves overall depth
3. **Price Discovery:**
   - Manual trades and orders are more informative than HF trades and orders

- Overall assessment:
  - Very interesting paper! Contribution to HFT literature
  - Well-written, short and concise

General comments

- Focus paper on one aspect of market quality

- Institutional details of US treasury markets
  - Include description of US treasury markets (centralized LOB, trading hours, market volume, fragmentation, etc.)
  - Who are the manual and HF traders? (Long-term traders, prop traders, large HFT firms)

1. Results on Liquidity/Volatility

- Testing on Market Quality (Liquidity, Volatility):

$$MQ_{i+1}=\alpha+\phi_0 HFO_i+\gamma_0 HFT_i+\phi_1 NHFO_i+\gamma_1 NHFT_i+\beta MQ_i+\varepsilon_i$$

  - Look at Trades and Orders separately
  - Relative HFT variables instead of absolute HFT /NHFT variables
  - α: Time and Firm Fixed effects?
  - Similar to Boehmer, Fong, Wu (WP, 2012): Control variables, i.e. turnover, 1/price, …
- Inherent assumption:
  - Abnormal HF activity unrelated to abnormal liquidity
  - Abnormal HF activity unrelated to abnormal volatility
- Literature on liquidity/volatility effects:
  - Hendershott and Riordan (JFQA, 2011): „AT more actively monitor market liquidity than human traders. AT consume liquidity when it is cheap […], and supply liquidity when it is expensive."
  - Foucault, Hombert and Rosu (2012): "An increase in price volatility causes both an increase in flow trading activity, and a reduction in liquidity."
- Might need additional explanation, an instrumental variable (HFT in other securities, residual HFT), or testing (Granger-causality test)

2. Results on Informativeness (1/2)

- Result:
  - HFO are less informative than manual orders
  - HFT more informative than NHFT for 2yr bonds
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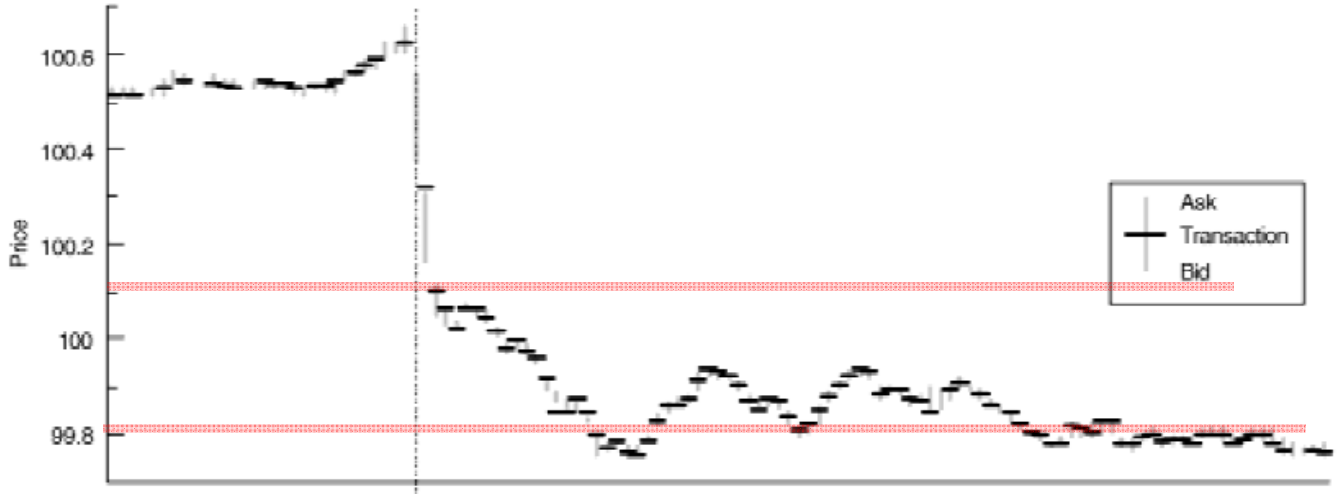
     correlation

	Pre-announcement Period					
	2-year		5-year		10-year	
	(1)	(2)	(1)	(2)	(1)	(2)
Intercept	0.6878***	0.6871***	0.7721***	0.7635***	0.6442***	0.6462***
ORDER*	0.0017		0.0001		-0.0003	
TRADE*	-0.0415		0.0610**		0.0826***	
NHF^{ORDER*}		-0.0004		-0.0066***		-0.0037**
NHF^{TRADE*}		0.1013**		0.0780*		0.1331***
HF^{ORDER*}		0.0074*		0.0121***		0.0056**
HF^{TRADE*}		-0.2661***		0.0594		0.024
VLTY*	-0.2532**	-0.2519**	-0.2270***	-0.2219***	-0.0617*	-0.0543
$DPTH^{BST*}$	-0.0677***	-0.0696***	-0.1355*	-0.1358*	0.0043	0.0029

Fleming and Remolona (JF, 1999): Price Formation and Liquidity in the U.S. Treasury Market: The Response to Public Information



- Fleming and Remolona (JF, 1999): We uncover a […] two-stage adjustment to public information.
- A brief first stage […] Prices adjust sharply to a just-released announcement […]
- In a second stage, the initial sharp price change is followed by a surge in trading volume. […] reflects a disagreement among investors about what the new information means for prices.

2. Results on Informativeness (2/2)

- Further robustness checks:
  - Brogaard, Hendershott, and Riordan (WP, 2012):

$$Ret_{i,t+2,t+10} = \alpha + \beta HFT_{i,t-1,t+1} + \varepsilon_{i,t}$$

    with macro announcement at t=0

- Alternative measures of informativeness:
  - VAR model based on Hasbrouck (JF, 1991) and Chaboud et al. (WP, 2009)
  - Tookes (JF, 2008): Additional influence on returns after information events

Minor comments

- HFT Identification & sample properties
  - Check for amount of HF Volume according to Kite (2010): “50 percent of daily volume on the firm's EBS Prime platform, and 35 percent of volume in overall FX trading”
  - Check correlation with other HFT proxies: number of messages, message to trade ratio
  - HFT/HFO descriptives rather in % (relative to total trading / order volume)
- Updates on literature references
  - Missing reference for Jiang et al. (2012) in reference list
  - Brogaard, Hendershott and Riordan (2012)
  - „Algorithmic Trading and the Market for Liquidity“ by Hendershott and Riordan (JFQA, forthcoming) instead of „Algorithmic Trading and Information“ by Hendershott and Riordan (2010)