

# Informed trading in oil-futures market

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# Summary

The paper analyze trading patterns around the weekly release of the U.S. crude oil stock level by the Energy Information Administration (EIA)

- Intraday event-study to analyze the evolution of WTI future prices
- Regression to analyze order imbalance and to relate pre-announcements to trading based on private information

Closely related to Bernile et al. [2016, JFE] on informed trading during news embargoes of the Federal Open Market Committee's (FOMC) scheduled announcements

- 402 announcements, from February 2007 to October 2014
- Define "surprises" as an actual value that is over three standard deviations from the median forecast in the Bloomberg survey
- 43 positive surprises / 47 negative surprises / 312 no surprise

# Return Pattern around announcements

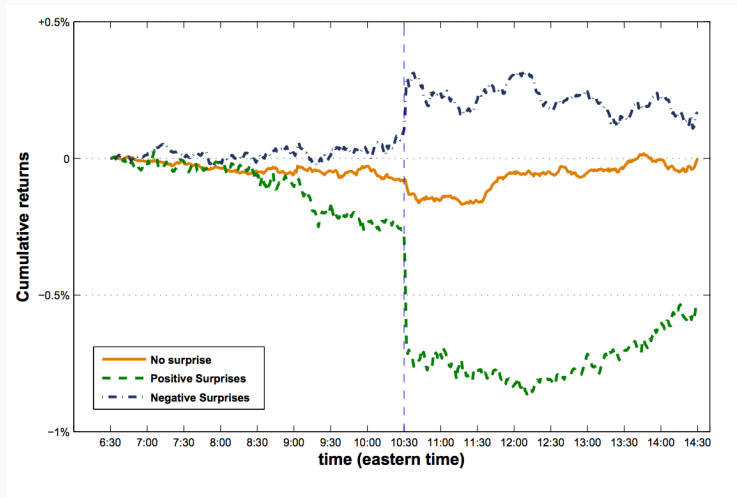


Figure 1: Cumulative returns in announcement dates - WTI oil-futures contract

Is is clear that:

1. "For positive surprises, there is a significant run-up from 8:30"
2. "Prices respond to surprises"
3. "Price over-reacts to surprises"

# Order imbalance and announcements surprises

Classify transactions as buyer or seller-initiated using the tick rule; i.e, a transaction with a price above (below) the previous transaction price is considered as buyer (seller)-initiated

Statistically significant order imbalance on a [-120:-60] minutes preceding "positive surprise" announcements. Concentrated in the hour surrounding the opening of the outcry session.

# Return Pattern around announcements

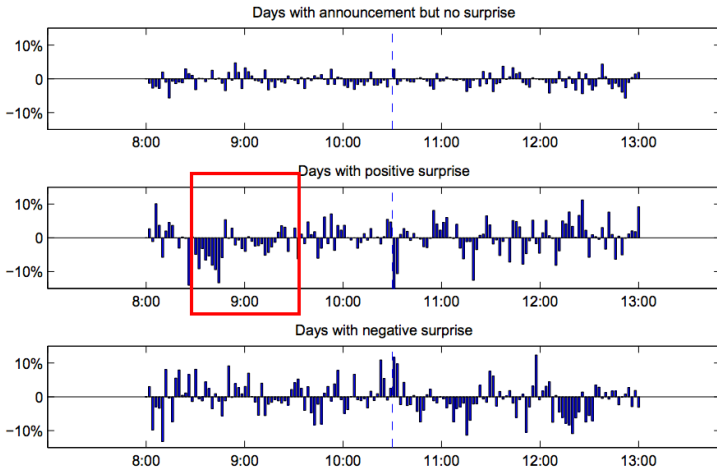


Figure 2: Order imbalances based on number of trades

# Other news announcements

Wednesday March 15 2017	Actual	Previous	Consensus	Forecast	
<b>05:00 AM</b> US IEA Oil Market Report					
07:00 AM  US MBA Mortgage Applications 10/MAR	3.1%	3.3%		1.04%	
07:00 AM  US MBA 30-Year Mortgage Rate 10/MAR	4.46%	4.36%		4.35%	
<b>08:30 AM</b> US Core Inflation Rate MoM FEB	0.2%	0.3%	0.2%		
<b>08:30 AM</b> US Core Inflation Rate YoY FEB	2.2%	2.3%	2.2%	2.3%	
<b>08:30 AM</b> US Inflation Rate YoY FEB	2.7%	2.5%	2.7%	2.5%	
<b>08:30 AM</b> US Inflation Rate MoM FEB	0.1%	0.6%	0.1%	0.2%	
<b>08:30 AM</b> US NY Empire State Manufacturing Index MAR	16.4	18.7	15	15	
<b>08:30 AM</b> US Retail Sales MoM FEB	0.1%	0.6%	0.1%	0.3%	
08:30 AM  US Retail Sales YoY FEB	5.7%	6%		5.5%	
<b>08:30 AM</b> US Retail Sales Ex Autos MoM FEB	0.2%	1.2%	0.2%	0.3%	
10:00 AM  US Business Inventories MoM JAN	0.3%	0.4%	0.3%	0.3%	
10:00 AM  US NAHB Housing Market Index MAR	71	65	65	65	
10:30 AM  US EIA Crude Oil Stocks Change 10/MAR	-0.237M	8.209M	3.713M	1.4M	
10:30 AM  US EIA Gasoline Stocks Change 10/MAR	-3055K	-6555K	-1950K	-2402.3K	
<b>02:00 PM</b> US Fed Interest Rate Decision	1%	0.75%	1%	1%	
<b>02:00 PM</b> US FOMC Economic Projections					
<b>02:30 PM</b> US Fed Press Conference					
04:00 PM  US Overall Net Capital Flows JAN	\$110.4B	-\$65.3B		\$ 31.3B	
04:00 PM  US Foreign Bond Investment JAN	-\$7B	-\$21.9B		-\$29.5B	
04:00 PM  US Net Long-term Tic Flows JAN	\$6.3B	-\$12.9B	\$13.4B	\$ 8B	

Figure 3: News announcements on Wednesday March 15 2017



# Suggestions

- Control for other macro-economic announcements (surprise), mainly those released between 8:30 and 9:30
- Conduct significance tests and provide detailed results for the event-study
- Analyze trading dynamics on non-announcements days
- As already proposed in the conclusion, analyze the impact on other oil-related assets