Discussion of "The Information Content of Option Demand" by Kerstin Kehrle and Tatjana-Xenia Puhan

Discussed versions: Finrisk Working Paper 745, March 2012
and private version, June 1, 2012

Peter H. Gruber*

*University of Lugano, Switzerland

9^{th} Finrisk Research Day, Gerzensee, June 11, 2011

The paper

Information flow between option and stock markets

- Informed agents use options to trade on private information
  Informed agents do not have to trade
- Open interest predicts stock movements

In a nutshell

- Options are assets in zero net supply
- Insiders have specific $\mathbb{Q}$ measure and buy out-of-the money (OTM) options for optimal leverage and "risk"/return tradeoff
- Risk-neutral market makers provide these options

$\Rightarrow$ presence of informed traders detected in open interest imbalances

Contribution:

- New measure: option marked sidedness (OMS)
- Large US data set ($N = 4157$)

Tools, results, praise

Option Market Sidedness (*OMS*)

$$OMS_t^C = \frac{\frac{1}{\tau}\sum_{z=Z_{t-\tau}}^{Z_t}\left(\Delta OI^C_{z,OTM} - \overline{\Delta OI}^C_{\tau,OTM}\right)\left(\Delta OI^P_{z,ITM} - \overline{\Delta OI}^P_{\tau,ITM}\right)}{\sqrt{\sigma^2_{OI^C_{\tau,OTM}}}\sqrt{\sigma^2_{OI^P_{\tau,ITM}}}}.$$

- $-1 \leq OMS \leq 1$; typical values (quartiles): $0.12 \sim 0.79$

  Only increases in open interest relevant?

Results

- Excess returns of up to 0.2% daily for strong *OMS* signal
- Larger effect if (i) firms is small and (ii) stock more volatile
- Informed trading (small *OMS*) increases spread of OTM options and (possibly) PCP violations

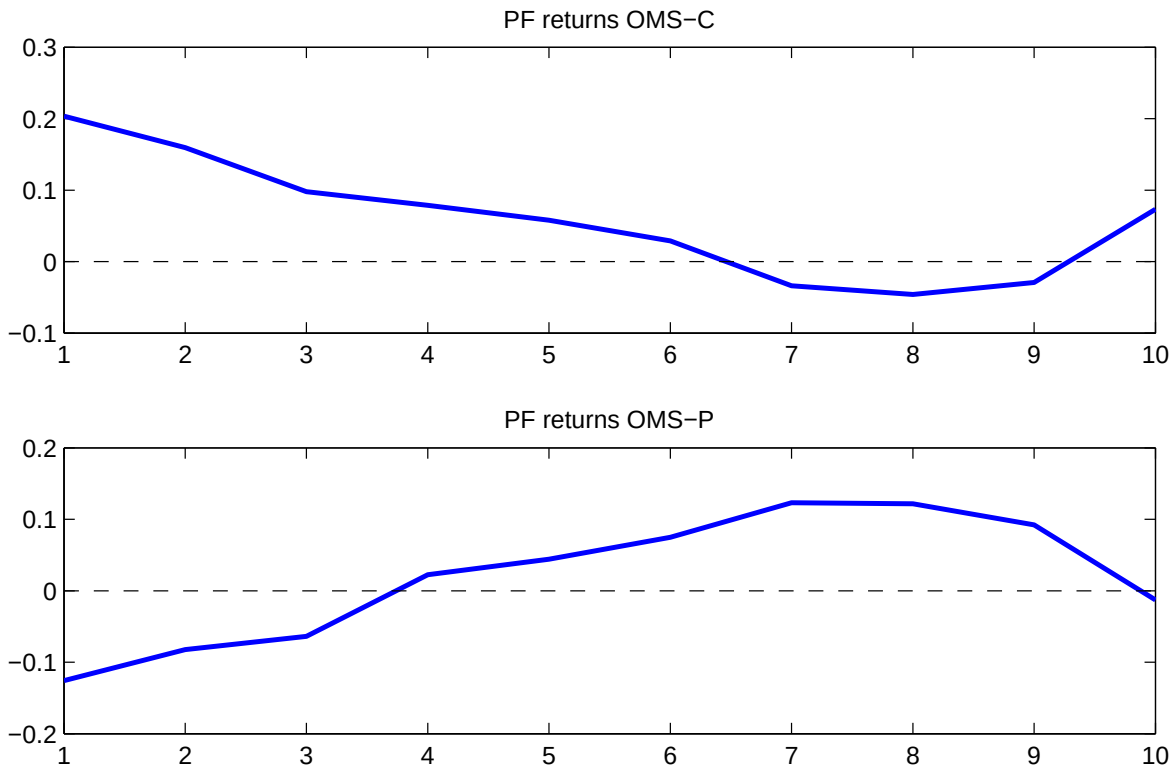
Praise

- Well written and very clear exposition
- Convincing results

Comments I

Trade on a signal

- Trade if signal is strong (low *OMS*), do nothing if signal is weak



0.2% daily excess return = 65% annual return

Comments II

Statistics of *OMS*

- How often does an *OMS* signal occur?
- Include some plot/statistics of the time-series properties?
- Distribution over stocks?

Panel A: Single Sorted Portfolio Returns in Percent										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Low				OMS^{C}_{t-1}					High
mean return	0.2034	0.1595	0.0977	0.0786	0.0579	0.029	-0.0338	-0.046	-0.0292	0.0731
N_{PF}	34722	46398	73500	119622	475600	764753	679025	812852	926336	1013504
	Low				OMS^{P}_{t-1}					High
mean return	-0.1257	-0.0822	-0.0638	0.0224	0.0441	0.0747	0.1231	0.1216	0.0923	-0.013
N_{PF}	33309	43050	69471	112235	472177	737474	683548	848467	1029269	1303315

Comments IIa

Reporting of excess portfolio returns

- How often can we trade, how diversified are these portfolios?
- Cumulative returns of the *OMS* trading strategy?
- Risk measures: Sharpe ratio, higher moments
- Additional risk factors: event risk, differences in beliefs, liquidity, availability of leverage
  This is a HF strategy

Test of non-event

- *OMS* large $\rightarrow$ no insider trading $\rightarrow$ no significant excess return

The drivers of this effect

- Which options (especially: which maturities) drive the *OMS*-signal?
- Calendar effects?

Comments III

Assumption: excess OTM demand caused by insiders

- Counter-example: replicate a single-name variance swap, different weights for OTM puts and OTM calls ($1/K^2$)
- Disentangle skewness risk from informed trading?

Assumption: insider trades on events

- Blurred line between public and private information
- Realized events (earnings surprises, corporate actions, merger activities, product announcements)?
- Higher moments of returns predicted even better (large jumps after announcements)?
- Anticipation: more insiders $\rightarrow$ better signal $\rightarrow$ smaller excess return
  Does not seem to be the case.

Comments IV

Predicting volatility

- If we can predict "events", we can also predict (realized) volatility

$\rightarrow$ variance risk premium

Small items

- Microeconomic model adds little insight; I do not see a direct link.
- Alternatively: cast in terms of order book model (how deep are the insiders' pockets)?
- Add min/max to summary statistics.
- Usage of some symbols (τ)
- End-of day bid/ask spread is not reliable.
- More sophisticated identification of OTM options

Conclusion

- Impressive results, need additional risk measures and time series statistics