Real-time Price Discovery via Verbal Communication: Method and Application to Fedspeak

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Research Contribution

- The paper is empirical.
- They link high frequency financial data to time-stamped words from videos.
- The authors find positive correlation between asset price changes over two non-overlapping periods (around the FOMC statement, and the FOMC press conference). Intraday momentum.
- They conclude that the results provide evidence that investors fail to fully incorporate information (underreact).

Predictability and rationality

- Under risk neutral investors, discounted prices are martingales.

- However, for risk-adverse investors, predictability need not be a sign of market inefficiency, <u>it might be a compensation of risk-taking</u>.

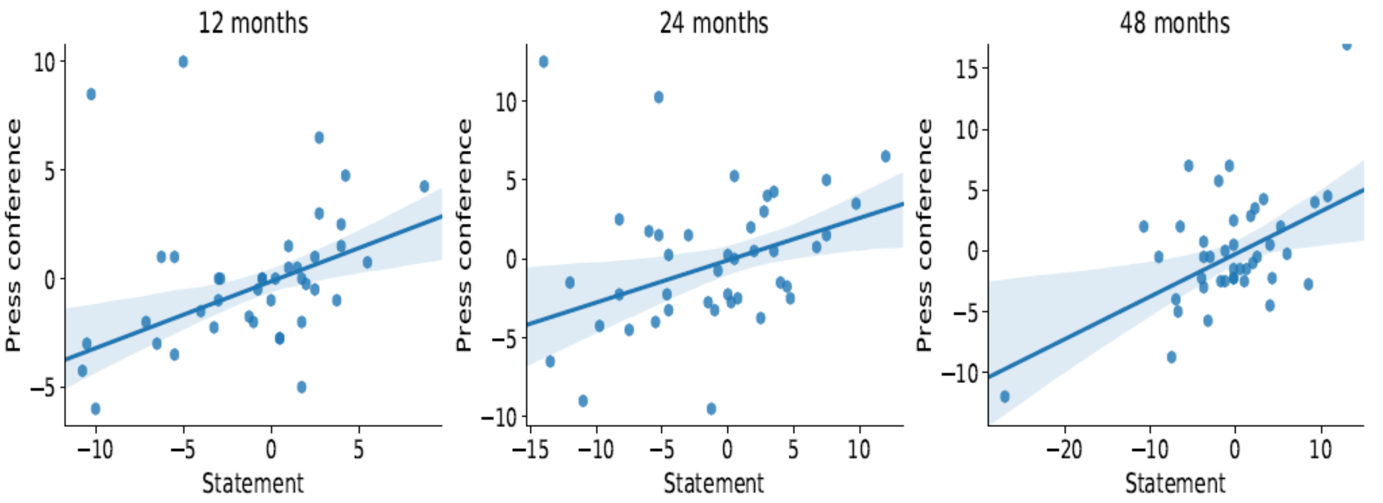
- Under asset pricing theory, price changes are martingales under the risk-neutral measure (not necessarily under the physical measure):
$$E_t[M_{t+h}\Delta P_{t+h}] = 0$$

- Therefore, predictability ΔP_{t+h} depends on
$$cov_t[M_{t+h}, \Delta P_{t+h}]$$

- Predictability on quadratic variation?

- Whether there will be a press-meeting is part of the information set.

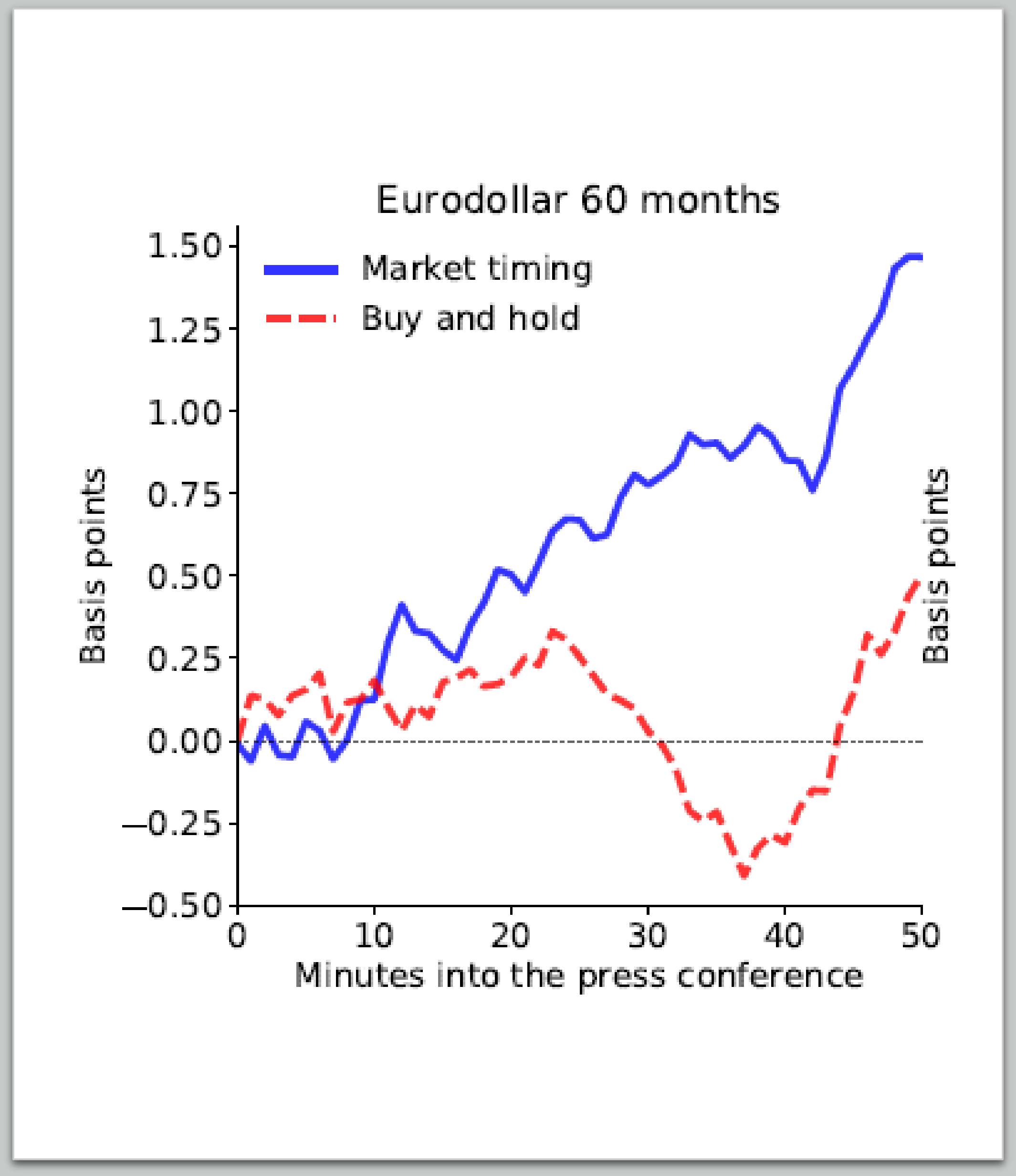
Evidence of Risk-Taking



- There are large deviations from expectations, suggesting non-trivial risks.
- Have you performed small sample testing (i.e. bootstrap distribution)?
- What about the peso problem? Large but unrealized risks -> look at option prices of SPX.
- Obtain *M state prices* from option prices to formally test the hypothesis.
- Have auto-correlations changed over-time?

Alphas

- I would like to see the bootstrapped distribution of alphas:
  - Test the null (alpha == 0).
  - Also, analyze the risk (e.g. max drawdown).



Trading Implementation

- For Eurodollar futures 60-Month, the estimated alpha of the strategy is around 1bp = $25.
- 1 Euro dollar futures contract, notional exposure $1MM.
- You need to consider:
  - Bid-ask spread (0.5 bp).
  - Commissions (0.2bp).
  - Taxes, up to 50% of profits.
  - Market impact.
- In practice, it doesn’t look like a great ex-ante risk-reward trade-off.

Final remarks

- No empirical evidence of outperformance in active funds (alphas are negative net of fees) & good/bad performance is indistinguishable from luck. Fama and French (2010), Wermers (2000), Carhart (1997), Samuelson (1989), Sharpe (1966), Jensen (1968).

- It is very important to talk about the link between risk and expected returns. Let’s be extremely skeptical and include costs, risks, small sample testing.

- Perhaps, the authors want to make the opposite argument: markets are highly efficient even if price changes have predictability …
  - Not “underreaction” during placebo periods.
  - Trading volume increases during press-conference vs. placebo.
  - Risk-taking may justify predictability.