Demand for Information, Macroeconomic Uncertainty, and the Response of U.S. Treasury Securities to News

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Demand for information

- *Nonfarm payroll announcements:*
  - "US Economy adds the Most jobs in 3 months »
  - "US Economy adds 164K jobs in April »
  - "US Economy adds less jobs than expected»…

- If surprises occur -> Price response of US Treasury yields?

- Great uncertainty -> RATIONAL models of demand for information (G&S 80)

- Main findings: Demand for information on macro news = proxy for high macro uncertainty

- Discussion:
  - Measure
  - Empirical tests
  - Investor’s sentiment?
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Investor’s demand for information

- Measure: number of clicks on internet links (>median number, i.e. abnormally high) provided by Bitly.com (SURLs) over the 2H preceding announcement.
  - No data issues (>median): multi clicks from the same IP, clicks from platforms…
  - No causality and attribution issues (short delay, i.e. 2 hours)

- 66 announcements over 2011-2016

- Advantages of Bitly SURLs:
  - Highly used by info providers (Bloomberg, Wall Street journal)
  - Highly used for micro-blogs (Twitter messages < 140 signs,…)
  - Give access to statistics to the number of clicks
  - Very popular (more than 37 milliards links created since 2008, 600 millions shortened links each month)
Investor’s demand for information

- Alternatives measures:
  - **Information demand:**
    - Google trends data -> retail investors (Da, Engelberg and Gao, 2011)
      Correlation of 0.64 to 0.38 (nonfarm payroll announcements weeks only)
    - News reading by institutional investors (Ben-Rephael, Da and Isrealsen, 2017)
  - **Information supply:**
    - Ravenpack’s story dataset
      Correlation of 0.67 to 0.13 (nonfarm payroll announcements weeks only)
- Nber of clicks on Bitly SURL is DISTINCT from these two

- Questions:
  - How the distribution of clicks over 6h25-8h25 looks like? [probably not uniform]
  - Nber of clicks: intentional (what about algorithms, robots?) cf Table 3: 11% of IPs have an unknow origin
  - What kind of investors does the paper adress?, i.e. who demands for information?
    - 73% of SURL on nonfarm payroll announcements come from Bloomberg (prior the release, 67% after the release)
    - 50% of SURL are accessed through Twitter, 41% directly (prior the release, 45% and 41% after the release)
  - Investor’s sentiment?
Empirical analysis

1/ TenMinuteReturn_{t} = a + b \text{ Surprise}_t + \epsilon_t

\text{Surprise} = \text{actual release minus the median forecast of nonfarm payroll figures (standardized)}

-> \text{Surprise 2004-2016: 11bps} > \text{Surprise 2011-2016: 6bps}

(2-year T notes futures)

2/ TenMinuteReturn_{t} = a + b \text{ Surprise}_t + \text{Controls} + \epsilon_t

- 2004-2016: control variables are significant
- 2011-2016: control variables are not significant (except SWP), but variables include demand/supply info: \text{High Bitly Count is significant}

- -> Unsignificance due to low variables dispersion over the short period
- -> But also, lower rates and low volatility of rates period, mixed evidence on macroeconomic uncertainty:
  - Market-based uncertainty: 60.85 (16.70) < 85.67 (30.53) [lower in short period]
  - News-based uncertainty: 168.31 (74.58) > 139.73 (71.02) [higher in short period]

- -> you should report demand/supply (except Bitly data which are not available) in the long period sample in order to compare your results.
- -> Table 11 is more convincing: Demand for information (nber of clicks t/average nber over 40 days) is driven by market-based uncertainty
Investor’s sentiment?

- **Investor sentiment**: « a belief about future cash-flows and investment risks that is not justified by the facts at hand » (Baker and Wurgler 2006).
- Sentiment investors use more their system 1 brains (fast and automatic) and partially base their decisions on « first impressions » (Kahneman, 2011, Barberis, Mukherjee and Wang, AFA 2014).
- -> Investor’s sentiment => noise trading / by individual investors (mostly)

- -> Nonfarm payroll clicks = Media-based investor’s sentiment measure (Tetlock, 2007; Antweiler and Franck, 2004; Da et al, 2011)
- The paper tests Barberis, Schleifer, Vishny (1998) view -> sentiment lead to over/under reactions to news [1 Figure plus 2 Tables]

- **OTHER (more direct) WAYS:**
  - -> Correlation with market-based or survey-based measures

  “To help differentiate the behavioral and Rational explanations, we have conducted a battery of empirical tests. We find no evidence that our results are driven by lagged macroeconomic variables, macroeconomic news announcement effects associated with the non-farm payroll unemployment report, or FOMC (Federal Open Market Committee) meetings.” (Sun et al., 2016, JBF).

  - -> Proxy for rational information rather than investor’s sentiment