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: nber of clicks on internet links (**> median nber**, 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 nber of clicks
  - Very popular (more than 37 milliards links created since 2008, 600 millions shortened links each month)

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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 Surprise$_t$ + e$_t$

Surprise = actual release minus thee median forecast of nonfarm payroll figures (standardized)

-> Surprise 2004-2016: 11bps > Surprise 2011-2016: 6bps
(2-year T notes futures)

2/ TenMinuteReturn$_t$ = a + b Surprise$_t$ + Controls + e$_t$

- 2004-2016: control variables are significant
- 2011-2016: control variables are not significant (except SWP), but variables include demand/supply info: **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

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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