“A huge amount of time and effort is devoted by public companies to managing the divide between public and private potentially market-moving information. I can envision a future in which we abandon concepts like 10-Qs and 8-Ks in favor of a continuous stream of relevant performance data.”

- Tom Glocer, former CEO of Reuters Group PLC
Information in Financial Markets

How much impact does presentation of information have?

1. To what extent does the market react differently to identical content positioned more / less prominently?
2. Compare the effect of positioning against the effect of importance.
Information in Financial Markets

- How much impact does presentation of information have?
  1. To what extent does the market react differently to identical content positioned more / less prominently?
  2. Compare the effect of positioning against the effect of importance

- This paper: exploit a natural experiment in news positioning on the Bloomberg terminal
  - Most important news always prominently positioned
  - Middling importance: depends on space availability
Preview of Findings

1. Positioning has a large effect
   ▶ First 10 min: 280% larger trading volume, 180% larger price change
   ▶ 21% more drift from first five minutes to next five minutes
Preview of Findings

1. Positioning has a large effect
   - First 10 min: 280% larger trading volume, 180% larger price change
   - 21% more drift from first five minutes to next five minutes

2. Consistent with gradual information diffusion models
   - News articles stay prominently positioned for up to a couple hours, sometimes minutes
   - Prominent position → price drift for up to 45 minutes, partial reversal over 1-2 hours
1. Positioning has a large effect
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2. Consistent with gradual information diffusion models
   - News articles stay prominently positioned for up to a couple hours, sometimes minutes
   - Prominent position → price drift for up to 45 minutes, partial reversal over 1-2 hours

3. Diff in position has a larger effect than diff in news importance
Overview

1. Data: natural experiment in news positioning

2. Comparison of articles in absence of diff position
   - Textual analysis using topic modeling
   - Survey of active finance professionals

3. Conceptual framework

4. Causal analysis: effect of news position

5. Effect of positioning vs. effect of importance
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Data

Positioning Process

Journalist writes

News article

Journalist labels importance
Data

Positioning Process

Journalist writes

News article

Journalist labels importance

Editor decides on final importance
Data

Positioning Process

Journalist writes

News article

Journalist labels importance

Editor decides on final importance

Primary important

Secondary important

All other news articles
Data

Positioning Process

Journalist writes

News article

Journalist labels importance

Editor decides on final importance

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Secondary important

All other news articles

FRONT PAGE NEWS

FRONT PAGE NEWS

NON FRONT PAGE NEWS

∃ currently space on front page?

Yes

No
Data
Positioning Process

Journalist writes

News article

Journalist labels importance

Editor decides on final importance

Primary important

Secondary important

All other news articles

FRONT PAGE NEWS

NON FRONT PAGE NEWS
Data

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FRONT PAGE NEWS

NON FRONT PAGE NEWS
Data

Positioning Process

Journalist writes

News article

Journalist labels importance

Editor decides on final importance

Primary important

Secondary important

All other news articles

∃ currently space on front page?

Yes

FRONT PAGE NEWS

No

NON FRONT PAGE NEWS
Data

- **News positioning & importance:** manually collected articles
  - March 22, 2014 - August 31, 2015
  - News during 8AM-5PM EST, tagged with U.S. securities
  - 2,046 primary important article-tickers
  - 6,626 secondary important article-tickers, 994 on front page

- **Market data:** QuantQuote
  - Includes quotes from NYSE and NASDAQ
  - Cleaned, preprocessed, second-level prices and trades
  - Merged: 1,156 PI, 735 front page SI, 3,819 non-front page SI

- **Additional data sources**
  - Large corpus of financial news from Reuters for textual analysis
  - Survey of active financial professionals
Data

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Data

News Positioning & Importance

Daily Numbers of "Primary Important" and "Secondary Important" Stories

Number of "Primary Important" Stories

Number of "Secondary Important" Stories

Anastassia Fedyk (Harvard)
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Comparison of Articles

Textual Analysis

- **Goal:** verify that there are no systematic differences in textual content of front page and non-front page news
  - What about primary important vs. secondary important news?
Comparison of Articles
Textual Analysis

- **Goal:** verify that there are no systematic differences in textual content of front page and non-front page news
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- **Approach:** model and compare topics discussed in the different categories of news
Comparison of Articles

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Comparison of Articles

Textual Analysis

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- **Method:** Latent Dirichlet Allocation
  - Learn topics generally discussed in financial news from large (1.8M articles) corpus from Reuters (TRC2)
Comparison of Articles

Textual Analysis

Goal: verify that there are no systematic differences in textual content of front page and non-front page news
  ▶ What about primary important vs. secondary important news?

Approach: model and compare topics discussed in the different categories of news

Method: Latent Dirichlet Allocation
  1. Learn topics generally discussed in financial news from large (1.8M articles) corpus from Reuters (TRC2)
  2. Use trained model to compare distributions of topics in front page secondary important, non-front page secondary important, and primary important news
Comparison of Articles

Identified Topics

- **Technology**: data, technology, companies, security, information, ...
Comparison of Articles

Identified Topics

- **Technology**: data, technology, companies, security, information, ...
- **Earnings & Performance**: percent, year, sales, quarter, million, ...
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- **Mergers & Acquisitions**: deal, offer, price, people, bid, ...
Comparison of Articles

Topic Distributions

Distributions of Topics in Different Categories of News

- Technology
- Earnings
- Financials
- Automobile
- Air Transport
- Litigation
- Management
- Healthcare
- Operations
- Strategy
- M&A
- Advertising
- Regulations
- Retail
- Employees

Topic Incidence

Primary Important
Front Page SI
Non-Front Page SI
## Comparison of Articles

### Topic Distributions

- Pairwise $\chi^2$-square tests of independence

### Panel 1: Front Page SI versus Non-Front Page SI

<table>
<thead>
<tr>
<th># Topics in Model</th>
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<tbody>
<tr>
<td>10</td>
<td>0.8670</td>
</tr>
<tr>
<td>15</td>
<td>0.8776</td>
</tr>
<tr>
<td>20</td>
<td>0.8731</td>
</tr>
<tr>
<td>25</td>
<td>0.7801</td>
</tr>
</tbody>
</table>

### Panel 2: PI versus Front Page SI

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<tbody>
<tr>
<td>10</td>
<td>0.1236</td>
</tr>
<tr>
<td>15</td>
<td>0.0836†</td>
</tr>
<tr>
<td>20</td>
<td>0.0526†</td>
</tr>
<tr>
<td>25</td>
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  1. Front page secondary important vs. non-front page SI
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- **Participants:** 150 professionals, 26 MBA students
  - **Decision makers:** managing directors, principals, partners, chairmen
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Survey of Active Finance Professionals

- **Banks & Broker Dealers:** Goldman Sachs, Morgan Stanley, JP Morgan, Bank of America, HSBC, BNP Paribas, UBS, ...
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- **Investment Banks:** Barclays Capital, Lazard

- **MBA students:** HBS, Wharton, Columbia, Chicago, Georgetown, UVA
Comparison of Articles
Survey of Active Finance Professionals

Which Financial News Headline Is More Important?

(Question 4) For the news headlines below, please select the radio button next to the headline that you think had larger market impact and is more deserving of prominence.

- ALLSTATE THIRD-QUARTER PROFIT MORE THAN DOUBLES ON PREMIUM GAINS
- EINHORN SAYS BULLISH ON TECHNOLOGY, SEEKS TO CLARIFY BUBBLE CALL
Comparison of Articles
Survey of Active Finance Professionals

Individual-Level Response Proportions

- Blue bars: Choice: Front Page SI over non-Front Page SI
- Gray bars: Choice: PI over Front Page SI

Share of Respondents vs. % Times Chose First Type of Article (Front Page over not; PI over SI)
Comparison of Articles
Survey of Active Finance Professionals

<table>
<thead>
<tr>
<th>PI versus Front Page SI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respondent Type</strong></td>
</tr>
<tr>
<td>Finance Professionals</td>
</tr>
<tr>
<td>MBA Students</td>
</tr>
<tr>
<td>All Respondents</td>
</tr>
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Survey of Active Finance Professionals

### PI versus Front Page SI

<table>
<thead>
<tr>
<th>Respondent Type</th>
<th>Choosing PI</th>
<th>SE</th>
<th># Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance Professionals</td>
<td>61.16%**</td>
<td>(2.13%)</td>
<td>150</td>
</tr>
<tr>
<td>MBA Students</td>
<td>57.54%*</td>
<td>(3.55%)</td>
<td>26</td>
</tr>
<tr>
<td>All Respondents</td>
<td>60.58%**</td>
<td>(1.87%)</td>
<td>176</td>
</tr>
</tbody>
</table>

### Front Page SI versus Non-Front Page SI

<table>
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<th>Respondent Type</th>
<th>Choosing Front Page</th>
<th>SE</th>
<th># Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance Professionals</td>
<td>48.24%</td>
<td>(1.21%)</td>
<td>150</td>
</tr>
<tr>
<td>MBA Students</td>
<td>45.05%†</td>
<td>(2.65%)</td>
<td>26</td>
</tr>
<tr>
<td>All Respondents</td>
<td>47.78%*</td>
<td>(1.11%)</td>
<td>176</td>
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Conceptual Framework

Period 0

Form priors
True prior distribution: \( R \sim N(\mu, \sigma^2) \)

Period T

Payoff \( R \) realized

Investors consume wealth

Period 1

News arrives

Signal \( N = R + \epsilon \), \( \epsilon \sim N(0, \sigma^2) \)

Period 2

Some investors observe \( N \) and update beliefs

Period 3

Non-front page news:
Share \( \gamma \) observe \( N \)
Share \( \xi \) observe \( N \)

Front page news:
Share \( \gamma \) observe \( N \)
Share \( \gamma \) observe \( N \)
Share \( \xi \) observe \( N \)
Conceptual Framework

Period 0

Form priors

True prior distribution:
\[ R \sim \mathcal{N}(\mu, \sigma_R^2) \]

Period T

Payoff \( R \) realized

Investors consume wealth
## Conceptual Framework

**Period 0**
- **Form priors**
  - True prior distribution: \( R \sim \mathcal{N}(R, \sigma_R^2) \)

**Period 1**
- **News arrives**
  - Signal: \( N = R + \epsilon \)
  - \( \epsilon \sim \mathcal{N}(\mu, \sigma_\epsilon^2) \)

**Period \( T \)**
- **Payoff** \( R \) realized
  - Investors consume wealth

---

**Data**

**Conceptual Framework**
**Conceptual Framework**

- **Period 0**: Form priors
  - True prior distribution: \( R \sim \mathcal{N}(R, \sigma_R^2) \)

- **Period 1**: News arrives
  - Signal: \( N = R + \epsilon \)
  - \( \epsilon \sim \mathcal{N}(\mu, \sigma_\epsilon^2) \)

- **Period 2**: Some investors observe \( N \) and update beliefs

- **Period 3**

- **Period \( T \)**: Payoff \( R \) realized
  - Investors consume wealth

Some investors observe \( N \) and update beliefs.
**Conceptual Framework**

<table>
<thead>
<tr>
<th>Period 0</th>
<th>Period 1</th>
<th>Period 2</th>
<th>Period 3</th>
<th>Period T</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form priors</strong></td>
<td><strong>News arrives</strong></td>
<td><strong>Payoff realized</strong></td>
<td><strong>Investors consume wealth</strong></td>
<td></td>
</tr>
<tr>
<td>True prior distribution: $R \sim N(\mu_R, \sigma_R^2)$</td>
<td>Signal $N = R + \epsilon$, $\epsilon \sim N(\mu, \sigma^2_{\epsilon})$</td>
<td></td>
<td></td>
<td></td>
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**Some investors observe $N$ and update beliefs**

- Share $\gamma$ observe $N$
- Share $\xi$ observe $N$
- Share $\xi$ observe $N$
### Conceptual Framework

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**Some investors observe** $N$ **and update beliefs**

**Non-front page news:**
- Share $\gamma$ observe $N$
- Share $\xi$ observe $N$
- Share $\xi$ observe $N$

**Front page news:**
- Share $\gamma$ observe $N$
- Share $\gamma$ observe $N$
- Share $\xi$ observe $N$
Conceptual Framework

Predictions

1. Higher immediate trading volume and absolute price change after front page news.
3. Less longer-term drift after front page news.
Overview

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Illustrative Results

Trading Volumes

Anastassia Fedyk (Harvard)
Illustrative Results
Absolute Price Change

Cumulative Absolute Price Change

- Non Front Page News
- Front Page News
- Pre-News Baseline (FP)
- Pre-News Baseline (NFP)
Empirical Results

Immediate Trading Volume

- Compare total trading volumes within 5 min, 10 min, 1 hour after front page and non-front page news

<table>
<thead>
<tr>
<th></th>
<th>Front Page SI News</th>
<th>Non-Front Page SI News</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 5 min</td>
<td>0.10%</td>
<td>0.02%</td>
<td>0.07%**</td>
</tr>
<tr>
<td>Standard Error</td>
<td>(0.00012)</td>
<td>(0.00001)</td>
<td>(0.00013)</td>
</tr>
<tr>
<td># Observations</td>
<td>678</td>
<td>3,476</td>
<td>–</td>
</tr>
<tr>
<td>First 10 min</td>
<td>0.19%</td>
<td>0.05%</td>
<td>0.14%**</td>
</tr>
<tr>
<td>Standard Error</td>
<td>(0.00030)</td>
<td>(0.00002)</td>
<td>(0.00031)</td>
</tr>
<tr>
<td># Observations</td>
<td>689</td>
<td>3,547</td>
<td>–</td>
</tr>
<tr>
<td>First 1 hour</td>
<td>0.58%</td>
<td>0.26%</td>
<td>0.32%**</td>
</tr>
<tr>
<td>Standard Error</td>
<td>(0.00143)</td>
<td>(0.00012)</td>
<td>(0.00143)</td>
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<tr>
<td># Observations</td>
<td>721</td>
<td>3,726</td>
<td>–</td>
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Anastassia Fedyk (Harvard)
Front Page News
May 26, 2017
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<td>0.32%** (0.00143)</td>
</tr>
<tr>
<td># Observations</td>
<td>721</td>
<td>3,726</td>
<td></td>
</tr>
<tr>
<td>Standard Error</td>
<td>(0.00143)</td>
<td>(0.00012)</td>
<td></td>
</tr>
</tbody>
</table>
Empirical Results

Immediate Absolute Price Change

- Compare absolute price changes within 5 min, 10 min, 1 hour after front page and non-front page news
Empirical Results
Immediate Absolute Price Change

- Compare absolute price changes within 5 min, 10 min, 1 hour after front page and non-front page news

<table>
<thead>
<tr>
<th></th>
<th>Front Page SI News</th>
<th>Non-Front Page SI News</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First 5 min</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.42% (0.00041)</td>
<td>0.16% (0.00006)</td>
<td>0.26%** (0.00042)</td>
</tr>
<tr>
<td># Observations</td>
<td>678</td>
<td>3,476</td>
<td>–</td>
</tr>
<tr>
<td><strong>First 10 min</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.60% (0.00065)</td>
<td>0.21% (0.00006)</td>
<td>0.39%** (0.00066)</td>
</tr>
<tr>
<td># Observations</td>
<td>689</td>
<td>3,547</td>
<td>–</td>
</tr>
<tr>
<td><strong>First 1 hour</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Error</td>
<td>0.98% (0.00145)</td>
<td>0.51% (0.00027)</td>
<td>0.47%** (0.00147)</td>
</tr>
<tr>
<td># Observations</td>
<td>721</td>
<td>3,726</td>
<td>–</td>
</tr>
</tbody>
</table>
Empirical Results

Short-Term Price Drift

To compare drift after front page and non-front page articles:

\[ Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s \]

\[ + \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s + \gamma X_{i,t} + \epsilon_{s,i,t} \]

- \( FP_s \) = indicator equal to 1 if article \( s \) is on the front page
- Coefficient of interest: \( \beta_3 \)
Empirical Results

Short-Term Price Drift

To compare drift after front page and non-front page articles:

\[ Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s \]
\[ + \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s + \gamma X_{i,t} + \epsilon_{s,i,t} \]

- \( FP_s \) = indicator equal to 1 if article \( s \) is on the front page
- Coefficient of interest: \( \beta_3 \)
- Immediate window: \( t_1 \in \{5 \text{ min}, 10 \text{ min} \} \)
- Delayed window: \( t_2 \in \{10 \text{ min}, 15 \text{ min}, 30 \text{ min}, 45 \text{ min} \} \)
Empirical Results

Short-Term Price Drift

- To compare drift after front page and non-front page articles:

\[
Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s + \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s + \gamma X_{i,t} + \epsilon_{s,i,t}
\]

- \( FP_s \) = indicator equal to 1 if article \( s \) is on the front page
- **Coefficient of interest**: \( \beta_3 \)
- Immediate window: \( t_1 \in \{5 \text{ min}, 10 \text{ min}\} \)
- Delayed window: \( t_2 \in \{10 \text{ min}, 15 \text{ min}, 30 \text{ min}, 45 \text{ min}\} \)

**Controls:**

1. None
2. Month and hour fixed effects
3. Month & hour FE, industry FE, log market cap
### Empirical Results

#### Short-Term Price Drift

<table>
<thead>
<tr>
<th></th>
<th>$t_1 = 5\text{ min}, t_2 = 10\text{ min}$</th>
<th>$t_1 = 5\text{ min}, t_2 = 15\text{ min}$</th>
<th>$t_1 = 10\text{ min}, t_2 = 30\text{ min}$</th>
<th>$t_1 = 10\text{ min}, t_2 = 45\text{ min}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>0.307**</td>
<td>0.306**</td>
<td>0.316**</td>
<td>0.259**</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td>(0.035)</td>
<td>(0.035)</td>
<td>(0.034)</td>
</tr>
<tr>
<td># Obs: FP SI, Non-FP SI:</td>
<td>689</td>
<td>689</td>
<td>688</td>
<td>699</td>
</tr>
<tr>
<td></td>
<td>3,547</td>
<td>3,547</td>
<td>3,546</td>
<td>3,577</td>
</tr>
<tr>
<td></td>
<td>0.220**</td>
<td>0.219**</td>
<td>0.228**</td>
<td>0.347**</td>
</tr>
<tr>
<td></td>
<td>(0.039)</td>
<td>(0.040)</td>
<td>(0.040)</td>
<td>(0.053)</td>
</tr>
<tr>
<td># Obs: FP SI, Non-FP SI:</td>
<td>710</td>
<td>710</td>
<td>710</td>
<td>718</td>
</tr>
<tr>
<td></td>
<td>3,653</td>
<td>3,653</td>
<td>3,651</td>
<td>3,691</td>
</tr>
</tbody>
</table>
Empirical Results

Longer-Term Price Drift

To compare drift after front page and non-front page articles:

\[
Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s \\
+ \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s \gamma X_{i,t} + \epsilon_{s,i,t}
\]

- \( FP_s \) = indicator equal to 1 if article \( s \) is on the front page
- Coefficient of interest: \( \beta_3 \)
Empirical Results

Longer-Term Price Drift

- To compare drift after front page and non-front page articles:

\[
Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s \\
+ \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s \gamma X_{i,t} + \epsilon_{s,i,t}
\]

- \(FP_s\) = indicator equal to 1 if article \(s\) is on the front page
- **Coefficient of interest:** \(\beta_3\)
- Immediate window: \(t_1 \in \{30 \text{ min}, 45 \text{ min}\}\)
- Delayed window: \(t_2 \in \{90 \text{ min}, 120 \text{ min}\}\)
Empirical Results

To compare drift after front page and non-front page articles:

\[ Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s \]

\[ + \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s \gamma X_{i,t} + \epsilon_{s,i,t} \]

- \( FP_s \) = indicator equal to 1 if article \( s \) is on the front page
- **Coefficient of interest:** \( \beta_3 \)
- Immediate window: \( t_1 \in \{30 \text{ min}, 45 \text{ min}\} \)
- Delayed window: \( t_2 \in \{90 \text{ min}, 120 \text{ min}\} \)

**Controls:**

1. None
2. Month and hour fixed effects
3. Month & hour FE, industry FE, log market cap
## Empirical Results
### Longer-Term Price Drift

| & $t_1 = 30 \text{ min}, t_2 = 90 \text{ min}$ & & $t_1 = 45 \text{ min}, t_2 = 90 \text{ min}$ & |
|---|---|---|---|
| (1) | (2) | (3) | (1) | (2) | (3) |
| -0.143** | -0.142** | -0.145** | -0.215** | -0.215** | -0.214** |
| (0.038) | (0.038) | (0.038) | (0.022) | (0.023) | (0.023) |
| # Obs: FP SI, Non-FP SI: | & | & | & | & |
| 725 & 725 & 724 & 725 & 725 & 724 |

| & $t_1 = 30 \text{ min}, t_2 = 120 \text{ min}$ & & $t_1 = 30 \text{ min}, t_2 = 120 \text{ min}$ & |
|---|---|---|---|
| (1) | (2) | (3) | (1) | (2) | (3) |
| -0.178** | -0.179** | -0.181** | -0.286** | -0.303** | -0.286** |
| (0.039) | (0.039) | (0.040) | (0.022) | (0.022) | (0.022) |
| # Obs: FP SI, Non-FP SI: | & | & | & | & |
| 726 & 726 & 725 & 726 & 726 & 725 |
| 3,754 & 3,754 & 3,752 & 3,754 & 3,754 & 3,752 |
Empirical Results

Permanent Market Impact

- **Question**: does the differential market induced by news positioning reaction correct completely?
Empirical Results

Permanent Market Impact

- **Question**: does the differential market induced by news positioning reaction correct completely?

- **Approach**: look at trading volumes, price changes days later
  - Timing: \( d \in \{1, \ldots, 5\} \) days after news
  - Trading volume: over 10-min period \( d \) days after news
  - Absolute price changes: from publication to exactly \( d \) days after
## Empirical Results

### Permanent Market Impact

<table>
<thead>
<tr>
<th>Number of Days after News</th>
<th>Difference in:</th>
<th>Trading Volume</th>
<th>Absolute Price Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$d = 1$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Error</td>
<td>$(0.00001)$</td>
<td>$(0.0014)$</td>
</tr>
<tr>
<td></td>
<td># Obs (FP; NFP)</td>
<td>$668; 3,442$</td>
<td>$668; 3,442$</td>
</tr>
<tr>
<td></td>
<td>$0.02%^{**}$</td>
<td>$0.53%^{**}$</td>
<td></td>
</tr>
<tr>
<td>$d = 2$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Error</td>
<td>$(0.00002)$</td>
<td>$(0.0019)$</td>
</tr>
<tr>
<td></td>
<td># Obs (FP; NFP)</td>
<td>$638; 3,401$</td>
<td>$638; 3,401$</td>
</tr>
<tr>
<td></td>
<td>$0.03%^{†}$</td>
<td>$0.48%^{*}$</td>
<td></td>
</tr>
<tr>
<td>$d = 3$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Error</td>
<td>$(0.00002)$</td>
<td>$(0.0022)$</td>
</tr>
<tr>
<td></td>
<td># Obs (FP; NFP)</td>
<td>$618; 3,325$</td>
<td>$618; 3,325$</td>
</tr>
<tr>
<td></td>
<td>$0.02%$</td>
<td>$0.48%^{*}$</td>
<td></td>
</tr>
<tr>
<td>$d = 4$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Error</td>
<td>$(0.00002)$</td>
<td>$(0.0021)$</td>
</tr>
<tr>
<td></td>
<td># Obs (FP; NFP)</td>
<td>$639; 3,312$</td>
<td>$639; 3,312$</td>
</tr>
<tr>
<td></td>
<td>$0.01%$</td>
<td>$0.36%^{†}$</td>
<td></td>
</tr>
<tr>
<td>$d = 5$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard Error</td>
<td>$(0.00002)$</td>
<td>$(0.0019)$</td>
</tr>
<tr>
<td></td>
<td># Obs (FP; NFP)</td>
<td>$646; 3,304$</td>
<td>$646; 3,304$</td>
</tr>
<tr>
<td></td>
<td>$-0.01%$</td>
<td>$0.32%^{†}$</td>
<td></td>
</tr>
</tbody>
</table>
Overview

1. Data: natural experiment in news positioning
   - Comparison of articles in absence of diff position
   - Illustrative results

2. Conceptual framework

3. Causal analysis: effect of news position

4. Effect of positioning vs. effect of importance
Goal: compare the effect of news positioning against the effect of news importance
Goal: compare the effect of news positioning against the effect of news importance

Estimating effect of importance: news of different importance in same position

1. Primary important news (always front page)
2. Front page secondary important news
News Position vs. News Importance

Trading Volumes

- Differences in trading volume following primary important vs. front page secondary important news

<table>
<thead>
<tr>
<th>Time</th>
<th>PI News</th>
<th>SI News</th>
<th>Difference</th>
<th>Standard Error</th>
<th># Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 5 min</td>
<td>0.10%</td>
<td>0.18%</td>
<td>0.09%</td>
<td>(0.0002)</td>
<td>678</td>
</tr>
<tr>
<td>First 10 min</td>
<td>0.19%</td>
<td>0.30%</td>
<td>0.10%</td>
<td>(0.0002)</td>
<td>689</td>
</tr>
<tr>
<td>First 60 min</td>
<td>0.79%</td>
<td>1.02%</td>
<td>0.18%</td>
<td>(0.0008)</td>
<td>721</td>
</tr>
</tbody>
</table>
Differences in trading volume following primary important vs. front page secondary important news

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Front Page SI News</th>
<th>PI News</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 5 min</td>
<td>0.10% (0.0002)</td>
<td>0.18% (0.0005)</td>
<td>0.09% (0.0005)</td>
</tr>
<tr>
<td># Observations</td>
<td>678</td>
<td>1,034</td>
<td>–</td>
</tr>
<tr>
<td>First 10 min</td>
<td>0.19% (0.0002)</td>
<td>0.30% (0.0004)</td>
<td>0.10%† (0.0005)</td>
</tr>
<tr>
<td># Observations</td>
<td>689</td>
<td>1,061</td>
<td>–</td>
</tr>
<tr>
<td>First 60 min</td>
<td>0.79% (0.0008)</td>
<td>1.02% (0.0010)</td>
<td>0.18% (0.0013)</td>
</tr>
<tr>
<td># Observations</td>
<td>721</td>
<td>1,138</td>
<td>–</td>
</tr>
</tbody>
</table>
**News Position vs. News Importance**

**Absolute Price Changes**

- Differences in immediate absolute price changes following primary important vs. front page secondary important news
**News Position vs. News Importance**

Absolute Price Changes

- Differences in immediate absolute price changes following primary important vs. front page secondary important news

<table>
<thead>
<tr>
<th></th>
<th>Front Page SI News</th>
<th>PI News</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First 5 min</strong></td>
<td>0.45% (0.0004)</td>
<td>0.80% (0.0005)</td>
<td>0.35%** (0.0005)</td>
</tr>
<tr>
<td># Observations</td>
<td>678</td>
<td>1,034</td>
<td>–</td>
</tr>
<tr>
<td><strong>First 10 min</strong></td>
<td>0.60% (0.0007)</td>
<td>0.97% (0.0006)</td>
<td>0.41%** (0.0009)</td>
</tr>
<tr>
<td># Observations</td>
<td>689</td>
<td>1,061</td>
<td>–</td>
</tr>
<tr>
<td><strong>First 60 min</strong></td>
<td>1.08% (0.0009)</td>
<td>1.39% (0.0007)</td>
<td>0.42%** (0.0012)</td>
</tr>
<tr>
<td># Observations</td>
<td>721</td>
<td>1,138</td>
<td>–</td>
</tr>
</tbody>
</table>
News Position vs. News Importance

Short-Term Price Drift

- For primary importance indicator $Pl_s$, estimate:

$$Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s$$

$$+ \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s \gamma X_{i,t} + \epsilon_{s,i,t}$$

- **Time windows**: $(t_1, t_2) \in \{(5 \text{ min}, 10 \text{ min}), (5 \text{ min}, 15 \text{ min})\}$

- **Controls**: (1) none; (2) month & hour FE; (3) month, hour, ind FE, log size
News Position vs. News Importance

Short-Term Price Drift

- For primary importance indicator $PI_s$, estimate:

$$ Ret_{s,i,[t+t_1,t+t_2]} = \alpha + \beta_1 Ret_{s,i,[t,t+t_1]} + \beta_2 FP_s + \beta_3 Ret_{s,i,[t,t+t_1]} \times FP_s \gamma X_{i,t} + \epsilon_{s,i,t} $$

- Time windows: $(t_1, t_2) \in \{(5 \text{ min}, 10 \text{ min}), (5 \text{ min}, 15 \text{ min})\}$
- Controls: (1) none; (2) month & hour FE; (3) month, hour, ind FE, log size

<table>
<thead>
<tr>
<th></th>
<th>$t_1 = 5 \text{ min}, t_2 = 10 \text{ min}$</th>
<th>$t_1 = 5 \text{ min}, t_2 = 15 \text{ min}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>$\beta_1$</td>
<td>-0.016</td>
<td>-0.020</td>
</tr>
<tr>
<td>$\beta_2$</td>
<td>(0.043)</td>
<td>(0.044)</td>
</tr>
<tr>
<td># Obs: PI, FP SI:</td>
<td>1,061</td>
<td>1,061</td>
</tr>
<tr>
<td></td>
<td>689</td>
<td>689</td>
</tr>
</tbody>
</table>
Conclusion

- **Pinned to top of Bloomberg screen**: substantial but relatively short-term market impact
Conclusion

- Pinned to top of Bloomberg screen: substantial but relatively short-term market impact

- Absent prominent positioning, the articles are indistinguishable by:
  1. Target audience of finance professionals
  2. Algorithmic analysis
Conclusion

- Pinned to top of Bloomberg screen: substantial but relatively short-term market impact

- Absent prominent positioning, the articles are indistinguishable by:
  1. Target audience of finance professionals
  2. Algorithmic analysis

- News positioning has a **stronger** effect than news importance
Conclusion

- **Pinned to top of Bloomberg screen:** substantial but relatively short-term market impact

- Absent prominent positioning, the articles are indistinguishable by:
  1. Target audience of finance professionals
  2. Algorithmic analysis

- **News positioning** has a *stronger* effect than *news importance*

- Making information public is not enough, how it is presented matters