

News Selection and Asset Pricing Implications

Charles Martineau

University of Toronto

Jordi Mondria

University of Toronto

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- **objective:** study the role of editorial decisions in financial markets
 - public information normally taken as given
- **what we do:** theoretical framework of editorial decisions and analyze asset pricing implications
- **main takeaway:** editorial decisions about one firm will have implications about *non-reported* firms

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What's News

Biden Hits Road as Negotiations Drag On in Washington
 Biden's road trip is seen as a sign that the president is trying to show Americans that he is still in control of the White House.

Facebook Hearing Fuels Call For Reins On Tech
 Facebook's annual shareholder meeting is expected to draw attention to the company's handling of user data and its relationship with the federal government.

Banks Challenge Apple Pay Over Fees for Transactions
 A group of banks has filed a lawsuit against Apple, claiming that the company's payment system unfairly favors its own services.

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What's News

Fire Destroys Heart of California Town as Residents Flee
 A massive wildfire has destroyed the historic downtown area of a California town, forcing residents to evacuate.

Spending Program Widens Deficit, CBO Says
 The Congressional Budget Office has released a report that says the current spending program will significantly increase the federal deficit.

Apple Plans iPhone Software To Report Child-Abuse Images
 Apple is planning to introduce a new feature in its iPhone software that will automatically report any child-abuse images to law enforcement.

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What's News

Biden Defends Exit as Taliban Cheer Pullout
 President Biden has defended his decision to withdraw U.S. troops from Afghanistan, as Taliban fighters celebrate the news.

Withdrawal Shuffles Global Power Order
 The U.S. withdrawal from Afghanistan is expected to have significant implications for the global balance of power.

Pain From Hurricane Provides In Louisiana
 The aftermath of a hurricane in Louisiana is causing significant pain and hardship for the local population.

Canadian National Death Blow In Kansas City Southern Bid
 A Canadian company's bid for the Kansas City Southern railway has been rejected, marking a significant setback for the company.

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What's News

Individual Investors Rout Hedge Funds
 A report shows that individual investors have significantly outperformed hedge funds in recent months.

GameStop Shows Epitome of Bubble
 The stock price of GameStop has reached a historic high, illustrating the concept of a market bubble.

Apple Profit Hits Record as Sales Pass \$100 Billion
 Apple has reported a record profit for the third quarter, with total sales exceeding \$100 billion.

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What's News

CDC Changes Guidelines on Indoor Masks
 The Centers for Disease Control and Prevention has updated its guidelines regarding the use of masks in indoor settings.

Apple Posts Highest Spring Profit Ever
 Apple has reported its highest profit in the spring season, driven by strong sales of its products.

Stars' Exits Reveal Strains Of the Pandemic Olympics
 The departures of several athletes from the Tokyo Olympics have highlighted the challenges of the pandemic games.

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WSJ

Delta Variant Throttles Job Growth
 The spread of the Delta variant of COVID-19 is slowing down job growth in the U.S. economy.

Apple Posts Highest Spring Profit Ever
 Apple has reported its highest profit in the spring season, with sales exceeding \$100 billion.

A Daring Escape Plan
 A group of individuals has executed a daring escape plan from a high-security facility.

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What's News

Syrian Regime Shells Rebel-held Province, Killing at Least 13



FDA Broadens Use of Covid-19 Boosters

PayPal Pursues Pinterest Deal, Opening Way Into Shopping

THE WALL STREET JOURNAL. FRIDAY, SEPTEMBER 11, 2020. WALL STREET JOURNAL. \$4.00

What's News

New Lebanon Leader Named, but Anger Lingers Over Blast



Stocks Log Five Straight Months Of Gains

Zoom Boosts Outlook as Sales Surge in Shift to Remote Work

THE WALL STREET JOURNAL. FRIDAY, SEPTEMBER 11, 2020. WALL STREET JOURNAL. \$4.00

What's News

Minneapolis Reopens Area Around Memorial to George Floyd



Universal Music Nears Record SPAC

AMC Stock Pares Recent Gain After Chain Warns Investors

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What's News

Banning TikTok's Mother Hate It, Says Musk at Trial



TikTok's Owner Delayed IPO After Warning

Broadcom in Talks to Acquire Software Firm SAS Institute

Cuba Moves Against Protesters

Higher Coffee Prices Brewing

Governments Pile Up Debt, Testing New Limits

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WSJ THE WALL STREET JOURNAL WEEKEND

Yankees Stadium Fights a New League Covid-19 Strife



Hiring Resumed At Tepid Pace in January

Stocks Rise to End Best Week For S&P 500 Since November

Robinhood's Reckoning: Facing Life After GameStop

Tiffany's Outlook Returns to Office

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What's News

Kansas City Chiefs Win Their First Super Bowl in 50 Years



Trump, Democrats Clash as Trial End Looms

Virus Closes China to the World And Strains Global Economy

New WeWork CEO To Face Challenges

Democrats Make Their Final Push in Iowa

- ① Man-bites-dog signals: reports about firm with the highest uncertainty
- ② Editorial choice state-dependent: story affects reported and unreported firms
- ③ asymmetric response of asset prices to positive and negative news
- ④ public information does not necessarily crowd out private information

Public information crowding out?

Reconcile the apparent disconnect between literatures

- ① info acquisition: public signal decreases incentives to acquire info
- ② attention allocation: more info acquisition when firms on media

Our framework: public information leads to more info acquisition

- large literature: implications of firm news to returns and volatility
- **common view**: low media coverage leads to more uncertainty
- **our paper**: depends on expected media coverage
 - for high priority firm, lower than expected coverage leads to **less** uncertainty
 - for low priority firm, lower than expected coverage leads to **more** uncertainty

- **Theoretical framework:** Admati & Pleiderer (1986, 1987)
- **Theory of media:** Nimark (2014), Nimark & Pitschner (2019)
- **Impact of media in financial markets:** Fang & Peress (2009), Goldman, Martel & Schneemeier (2020)

Conceptual Framework

- Three dates, $t = 0, 1, 2$
- $N+1$ assets are traded:
 - a riskless asset has a constant value of 1 and in unlimited supply
 - N independent risky assets (N large number)
- Two types of agents:
 - continuum of investors of measure one: trade assets
 - one media outlet: publishes news story about one firm

Conceptual Framework: risky assets

Each risky asset $n \in N$

- traded at date $t = 1$ for price p_n with noisy supply $\tilde{z}_n \sim N(0, \tau_z^{-1})$
- pays an uncertain cash flow $\tilde{v}_n = \bar{\delta} + \tilde{\rho}_n \tilde{\delta}_n$ at date $t = 2$

Cash flows \tilde{v}_n have three components:

- constant benchmark cash flow $\bar{\delta}$
- firm-specific risk regime $\tilde{\rho}_n$: $\begin{cases} \rho_{h,n} & \text{with probability } \pi_n \\ \rho_{l,n} & \text{with probability } 1 - \pi_n \end{cases}$
- firm-specific risk factor $\tilde{\delta}_n \sim N(0, \tau_\delta^{-1})$
- all random variables are independent

Conceptual Framework: media outlet

Media outlet publishes a story about one of the firms $n^* \in N$ at $t = 0$:

- 1 reveals $\tilde{\rho}_{n^*}$ (e.g, free info from the headline of the front-page)
- 2 provides a public signal $\tilde{y}_{n^*} = \tilde{\delta}_{n^*} + \eta_{n^*}$, where $\eta_{n^*} \sim N(0, \tau_\eta^{-1})$ (e.g, pay-to-read news article)

As in Admati & Plesiderer (1986, 1987), monopolistic media profits:

- value of signal \tilde{y}_{n^*} is the certainty equivalent of the information
- assumption ensures that all investors pay for the public signal

Conceptual Framework: investors

- Each investor i has mean-variance preferences:

$$EU_i = E_0 \left[E_1[\tilde{W}_i | I_i] - \frac{\gamma}{2} V_1[\tilde{W}_i | I_i] \right],$$

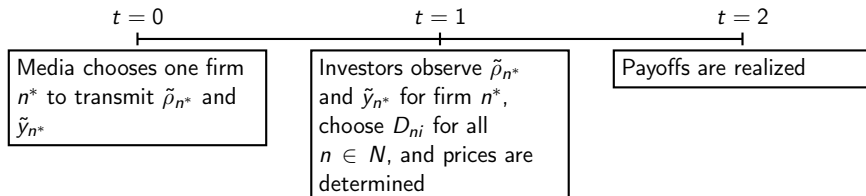
where \tilde{W}_i final wealth, W_{0i} initial endowment, $\gamma > 0$ risk aversion

- Budget constraint:

$$\tilde{W}_i = W_{0i} - \phi(\tilde{y}_{n^*}) + \sum_{n=1}^N D_{ni}(\tilde{v}_n - p_n),$$

where D_{ni} asset holdings, $\phi(\tilde{y}_{n^*})$ monetary value of \tilde{y}_{n^*}

Conceptual Framework: timeline



Investor's Problem

Mean-variance + independent assets \Rightarrow each asset studied independently

Three information scenarios:

- 1 investor has no information about $\tilde{\rho}_n$ and $\tilde{\delta}_n$
- 2 investor knows the realization of $\tilde{\rho}_n$, but no information about $\tilde{\delta}_n$
- 3 investor knows the realization of $\tilde{\rho}_n$ and public signal \tilde{y}_n

Media outlet chooses a news story about one firm to maximize their profits

- ① media outlet observes the realization of $\tilde{\rho}_n$ for all $n \in N$
- ② calculates profits for each firm n if a signal were to be published
 - Admati & Plesiderer (1986, 1987): monopolistic media profits
 - value of a private signal \tilde{y}_n is the certainty equivalent of the information
- ③ chooses to publish a story about only one firm $n^* \in N$

Media Problem: Result 1

- Media profits for all firms only differ by the realization of $\tilde{\rho}_n$
- **Result 1:** $Profit_n(\tilde{\rho}_n)$ is increasing in $\tilde{\rho}_n$
- Implication: publish story about firm with highest realization of $\tilde{\rho}_n$
- How to optimize? rank all firms by $\rho_{h,n}$
- set firm $n = 1$ as the firm with the highest $\rho_{h,n}$
- set $n = N$ as the firm with the lowest $\rho_{h,n}$.

Asset Pricing Implications

When media publishes a story about a firm n^* and $\tilde{\rho}_{n^*} = \rho_{h,n^*}$, then

- 1 Firm n^* is in a high volatility risk-regime ρ_{h,n^*} and asset prices with a signal y_{n^*} and $\tilde{\rho}_{n^*} = \rho_{h,n^*}$
- 2 Any firm n such that $n < n^*$ is in a low volatility risk-regime $\rho_{l,n}$ and asset prices with no public signal and $\tilde{\rho}_n = \rho_{l,n}$
- 3 Any firm n such that $n > n^*$ is in an unknown risk-regime and asset prices with no public signal and unknown $\tilde{\rho}_n$

Corollary: A firm n' with the exact same realizations of cash flows may have different asset prices depending on the story reported in the news

Asymmetric Response of Asset Prices

Stronger price reaction to negative news:

- 1) Publication implies high risk regime and a price decrease
- 2.a) Negative news generate even stronger negative price reaction
- 2.b) Positive news generate a positive price reaction that counteracts the initial decrease

Main implication: editorial decisions about one firm will have implications about *non-reported* firms

- publication ranking in the model is only based on the risk regime
- model is a simplification of how editorial decisions are taken in reality
- there are many more drivers of news coverage, i.e., size of the firm
- we can rank firms by publication priority through an empirical analysis

Empirical analysis:

- 1 study the determinants of new coverage to determine the expected news coverage of a firm
- 2 analyze the asset pricing implications of receiving more or less than the expected news coverage

Model implications:

- Firms with high expected news coverage: lower than expected news \Rightarrow low risk regime
- Firms with low expected news coverage: lower than expected news \Rightarrow unknown risk regime

Empirical Results

- editorial articles from the Wall Street Journal, Dow Jones and Market Watch through Ravenpack
- US-traded stocks from CRSP: returns, trade volume, price volatility, turnover...
- sample period is from Jan 2000 to Dec 2021
- sum the number of articles per month for each firm

Empirical Results: main drivers to news coverage

Table: Firm Characteristics and News

	(1)	(2)	(3)	(4)	(5)
Ln MCAP	0.174*** (0.003)	0.147*** (0.003)	0.147*** (0.003)	0.156*** (0.003)	0.158*** (0.004)
$\mathbb{1}_{EA}$	0.227*** (0.011)	0.226*** (0.011)	0.216*** (0.011)	0.208*** (0.011)	0.209*** (0.011)
Analyst		0.094*** (0.004)	0.070*** (0.004)	0.067*** (0.004)	0.070*** (0.004)
Turnover			0.090*** (0.003)	0.072*** (0.003)	0.069*** (0.003)
IO			-0.006* (0.004)	0.001 (0.004)	-0.008** (0.004)
Ret				-0.005* (0.002)	-0.004 (0.003)
IVOL				0.052*** (0.003)	0.047*** (0.003)
Age				0.002*** (0.000)	0.002*** (0.000)
R ²	0.195	0.203	0.213	0.215	0.214
N	1,023,890	1,023,890	1,023,890	1,018,168	1,018,168
Industry F.E.	N	N	N	N	Y
Year-Quarter F.E.	Y	Y	Y	Y	Y

Empirical Results

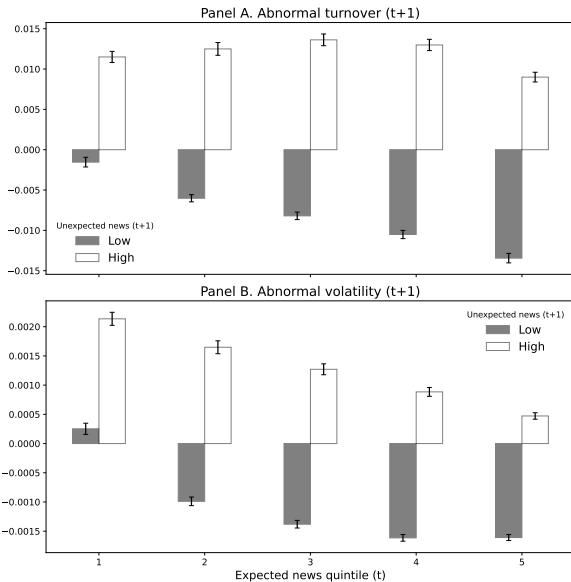


Table: Asymmetric Response to Positive and Negative News

	(1)	(2)	(3)	(4)	(5)
Sent	0.065*** (0.003)	0.048*** (0.005)	0.049*** (0.005)	0.043*** (0.005)	0.043*** (0.005)
$\mathbb{1}_{\text{Sent}^-}$		0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.002 (0.001)
$\text{Sent} \times \mathbb{1}_{\text{Sent}^-}$		0.038*** (0.008)	0.035*** (0.008)	-0.005 (0.009)	-0.003 (0.009)
$\text{Sent} \times \mathbb{1}_{\text{Sent}^-} \times \mathbb{1}_{\text{High news}}$				0.042*** (0.011)	0.037*** (0.011)
$\mathbb{1}_{\text{Sent}^-} \times \mathbb{1}_{\text{High news}}$				-0.001 (0.002)	-0.001 (0.002)
$\text{Sent} \times \mathbb{1}_{\text{High news}}$				0.015** (0.008)	0.017** (0.007)
$\mathbb{1}_{\text{High news}}$				0.013*** (0.002)	0.012*** (0.001)
Ret^M	1.156*** (0.029)	1.155*** (0.029)	1.129*** (0.026)	1.156*** (0.029)	1.130*** (0.027)
R ²	0.11	0.11	0.12	0.11	0.12
N	457,892	457,892	446,231	457,892	446,231
Controls	N	N	Y	N	Y

Main takeaways:

- ① editorial decisions about one firm will have implications about *non-reported* firms
- ② failing to capture the information implications of editorial decisions may lead the econometrician to estimate a misspecified asset pricing model
- ③ news stories do not crowd out private information