Yang Cao

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EDUCATION

Carroll School of Management, Boston College — Boston, MA
PhD in Accounting — Expected June 2025
Robert H. Smith School of Business, University of Maryland — College Park, MD
MS in Information Systems — December 2018
Zhongnan University of Economics and Law — Wuhan, China
MA in Accounting — June 2016
Jiangxi University of Finance and Economic — Nanchang, China
BS in Accounting — June 2013

RESEARCH INTERESTS

Financial disclosure, information production, Artificial intelligence/Machine learning, ESG

WORKING PAPERS

The Spillover Effect of Waiver Disclosures on Corporate Risk-Taking (Job market paper)

- Presented at: Boston College, 2024 Boston Accounting Student Symposium
- Abstract: I examine the impact of covenant waiver disclosures by peer firms on the risk-taking behaviors of focal firms who share lenders. I posit that waiver disclosures by peer firms diminish the perceived uncertainty and expected costs associated with covenant violations, thereby diminishing the precautionary stance of management and encouraging increased risk-taking. Employing a natural language processing model to identify covenant violations and waiver disclosures in SEC filings, I conduct a determinant analysis which reveals that borrower characteristics (ROA, leverage, and PP&E) and loan features (lender's share) correlate with the likelihood of receiving a waiver, albeit with limited explanatory power overall. By employing a difference-in-difference approach, I find that, following the peer waiver disclosures, focal firms amplify their risk-taking, as indicated by higher volatility of return and cash flow. Examining the underlying mechanisms, focal firms increase risk-taking by increasing leverage and product-development efforts. Overall, these findings illuminate a spillover effect where waiver disclosures by peer firms significantly influence managers' capital structure and investment decisions.

Human Information Production in the Machine Age: Evidence from Automated Information Acquisition in the Asset Management Industry? (with Kai Du, Miao Liu and Shuyang Wang)

Revising for 2nd round review at the Journal of Accounting Research.

- Presented at: Boston Empirical Accounting Conference, the 2nd Annual Labor and Accounting Conference, MIT Asia Conference, AAA Annual Meeting, and Financial Accounting and Reporting Section Midyear Meeting

The Credibility of Non-Disclosure: Evidence from Real-time Market Response to Non-Answers in Conference Calls (with Jared Flake and Miao Liu)

Under review

- Presented at: 2024 FARS Conference, 2024 AAA Annual Meeting

A Rotten Apple Spoils the Barrel? The Spillover Effect of Corporate ESG Misconduct on Family Stock Ownership (with Ki-Soon Choi, Lian Fen Lee, and Alvis Lo)

Under review

Is Information Production for the U.S. Stock Market Becoming More Concentrated? (with Miao Liu and Rachel Xi Zhang)

- Presented at: Boston College, Chicago Booth, Music City Accounting Research Conference, MIT Asia conference, 2023 FARS Conference, and AAA conference.
- Featured in: Institutional Money

Hedging Climate Change Risk: A Real-time Market Response Approach (with Miao Liu and Rachel Xi Zhang)

- 2nd Research Prize Award of IQAM
- Presented at: Boston Empirical Accounting Conference, Bristol Financial Markets Conference, 2024 China International Conference in Finance (CICF), 2024 European Financial Management Association (EFMA) annual conference, Northeastern Finance conference, JAAF Symposium.

Information in Disclosing Emerging Technologies: Evidence from AI Disclosure (with Miao Liu, Jiaping Qiu, and Ran Zhao)

Does More Information Production Lead to Less Post-Earnings-Announcement Drift? (with Miao Liu, Jinzhi Lu, and Haresh Sapra)

- Presented at: Thirteenth Accounting Research Workshop, AES Asia-Pacific Webinar

Question Herding in Earnings Calls (solo-authored)

- Presented at: Boston College

WORK IN PROGRESS

Attention Spike and Mispricing Correction: A Machine Learning Approach (with Hangu Chen, Ed deHaan, and Miao Liu)

- Manuscript writing in progress.

Private Information Production Before Earnings Announcement (with Miao Liu and Jinzhi Lu)

- Modeling and preliminary results; additional analyses in progress

TEACHING EXPERIENCE

ACCT3351 Financial Statement Analysis — Fall 2023, Fall 2022, Fall 2021

- Teaching Assistant to Professor Amy Hutton
- Evaluation: 4.23/5.0

ACCT8824 Financial Statement Analysis — Spring 2024, Spring 2023

- Teaching Assistant to Professor Susan Shu

ACCT1021 Financial Accounting — Spring 2022

- Teaching Assistant to Professor Miao Liu

CONFERENCES & PRESENTATIONS

2024 Boston Accounting Student Symposium (Presenter)	2024
AAA Annual Meeting (Presenter/Moderator/Discussant)	2024
2024 Spark Meeting (Discussant)	2024
Bentley Research Conference	2024
Rutgers Accounting Doctoral Symposium	2024
2023 Boston Accounting Student Symposium (Key organizer)	2023

Music City Accounting Research Conference	2023
MIT Asia Conference	2023
2023 Spark Meeting (Presenter)	2023
2023 Boston Empirical Accounting Conference (Presenter)	2023
2023 FARS	2023
2022 Boston Empirical Accounting Conference	2022
2nd Frontiers of Business Research in China International Symposium (Presenter)	2012
20th Annual Symposium in Finance	2012
6th International Symposium	2011

PROFESSIONAL EXPERIENCE & CERTIFICATIONS

Financial Analyst, SANY Group, China	2019-2020
Consultant, MP Management Consulting, China	2013-2014
Chinese CPA Certification	2017

OTHER

Technical skills: Web scraping, data mining, financial analysis using R, Python, SAS and Stata.

Languages: Mandarin (native), English (fluent)

I have a passion for table tennis and represent Boston College in various tournaments. I serve as the Vice President Education in the Talk of the Town Toastmasters club.

REFERENCES

Amy Hutton	Miao Liu	Alvis Lo
Professor, Boston College	Assistant Professor, Boston College	Associate Professor, Boston College
amy.hutton@bc.edu	miao.liu@bc.edu	alvis.lo@bc.edu

ABSTRACT

Human Information Production in the Machine Age: Evidence from Automated Information Acquisition in the Asset Management Industry?

We examine the impact of automation on the role of humans in the asset management industry's three-stage information processing activities: awareness, acquisition, and integration. Our findings reveal that automating the download of SEC filings allows the human workforce to expand their research across a broader set of firms, thereby enhancing information awareness. Additionally, humans increasingly focus on acquiring soft information from conference calls and context-based data, such as historical filings, indicating improved information acquisition. We also observe that these enhancements in human information awareness and acquisition are effectively integrated into real activities, such as trading and portfolio allocation. Moreover, post-automation, humans shift their information processing efforts towards portfolio firms where they likely hold a comparative advantage over machines, including firms with more intangible assets, firms with multiple industry segments, and firms with which they have established long-term investment relationships. Our results suggest that the unique value of the human workforce is amplified when automation relieves them from repetitive and mechanical tasks.

The Credibility of Non-Disclosure: Evidence from Real-time Market Response to Non-Answers in Conference Calls

Managers sometimes provide non-disclosure to investors despite their best intentions, either due to a lack of information or substantial proprietary costs. However, it is difficult for investors to distinguish these managers from

those hiding negative news. This paper investigates whether managers can establish a transparent disclosure reputation to credibly communicate the absence of information, using non-answers during earnings calls as a setting. By matching granular, time-stamped earnings call conversations with high-frequency trading data, we create a novel dataset that examines immediate real-time market reactions to non-answers given by managers. Additionally, we leverage large language models (LLMs) to build a database of measures that capture strategies that managers can adopt to establish a transparent disclosure reputation. We find that these disclosure strategies bolster managers' credibility when communicating the absence of information. Our study highlights the importance of a transparent disclosure reputation to credibly communicate the absence of information.

A Rotten Apple Spoils the Barrel? The Spillover Effect of Corporate ESG Misconduct on Family Stock Ownership

Corporate ESG misconduct, such as pollution and workplace violations, generates public outcry and raises concerns that corporations profit at the expense of society and the environment. We contend that ESG misconduct hurts families' perception of corporations at large and their willingness to own stocks. We find that families in states with a higher frequency of local ESG misconduct cases are less likely to invest in the stock market. The results are mainly present in subsamples where the misconduct can attract more public criticism (e.g., when the misconduct firms are financially strong) or when the families are prosocial. The local environment (e.g., counter-examples set by local non-misconduct firms with good ESG performance) also influences the effect of ESG misconduct. Our findings highlight that ESG failures by individual firms aggravate families' reluctance to own stocks, suggesting an unexplored spillover effect of negative ESG performance.

Is Information Production for the U.S. Stock Market Becoming More Concentrated?

Over the past two decades, the US stock market has undergone significant changes in its structure, with small firms disappearing and large firms gaining market share. This study investigates whether the dominance of large firms in the market creates positive spillover for or shifts resources away from small firms' information production. Using a shift-share IV approach complemented with a difference-indifferences design, our identification strategy isolates two independent variations in large firms' market share that are plausibly exogenous to small firms' fundamentals. We find that as large firms gain market share, information production resources, including the attention of financial analysts and institutional investors, are shifted away from small firms, even if the size and business fundamentals of small firms remain unchanged. The loss of information production reduces stock price informativeness. The evidence points to an increasing market concentration that not only favors large firms but also leads to a skewed distribution of information production resources, thereby worsening the information environment for small firms.

Hedging Climate Change Risk: A Real-time Market Response Approach

We present a novel methodology for constructing portfolios designed to hedge economic and financial risks arising from climate change. We utilize ChatGPT-4 to pinpoint climate-related discussions during earnings conference calls and connect these time-stamped transcripts with high-frequency stock price data at the conversation level. This approach allows us to assess a company's dynamic exposure to climate change risks by analyzing real-time stock price responses to discussions about climate issues. Our proposed portfolio, constructed by taking long (short) positions in stocks with positive (negative) market responses to climate conversations, appreciates in value during periods with negative aggregate climate news shocks. Compared to portfolios constructed using existing alternative methods, our real-time market response-based portfolios demonstrate superior out-of-sample hedge performance. A key advantage of our approach is its ability to capture time-series and cross-sectional variations in stocks' rapidly-evolving exposures to climate risk, relying on the timing of when climate-related issues become salient topics that warrant conference call discussions and real-time market responses to such conversations. Additionally, we showcase the versatility of our approach in hedging other types of dynamic risks: namely political risk and pandemic risk.

Information in Disclosing Emerging Technologies: Evidence from AI Disclosure

We study the determinants and information content in the voluntary disclosure of artificial intelligence (AI) in corporate annual reports. Using a combination of traditional keyword searching based textual analysis and large language models (LLMs) like ChatGPT, we extract and classify AI-related disclosures into revenue generation and cost reduction activities. We find that AI disclosure for both purposes has grown significantly across all industry sectors since 2010 and is highly related to a firm's real activities in AI, measured by AI-related job postings. However, AI disclosure includes additional information than a firm's current real AI activities in predicting a firm's growth, investment, and operational efficiency. Our results highlight that voluntary AI disclosures not only reflect a firm's present engagement in AI activities but also provide material forward-looking information about the risks and opportunities associated with AI activities, which is useful for external stakeholders to gauge a firm's AI engagement.

Does More Information Production Lead to Less Post-Earnings-Announcement Drift?

Not always. We document an inverse U-shaped relation between post-earnings announcement drift (PEAD) and information environments: Firms with moderate information environments, such as small to medium-sized firms with 2-4 analyst following, have higher PEAD than firms with either richer or poorer information environments. To understand the non-monotonic relation between PEAD and information production, we build a 2-period model and characterize PEAD that closely maps into its empirical counterpart. We show that when investors have limited information processing capacity, PEAD increases with capacity when capacity is low and decreases with capacity when it is high. Our model highlights the distinction and subtle connection between how much and how fast information is incorporated into prices. When investors allocate less attention to earnings news due to binding processing capacity, competing information sources, or low liquidity, stock prices contain less earnings information in equilibrium, but prices converge to equilibrium faster precisely because less information is processed. We formally test our model using two quasi-natural experiments and find evidence consistent with our model predictions: PEAD increases for small firms after adopting EDGAR and decreases for small firms after losing analysts, a result reversed or non-existent for larger firms.

Question Herding in Earnings Calls

This paper investigates whether analysts follow each other by asking similar questions during earnings conference calls (question herding) and how question herding affects firms' information environment. I employ a topic modeling methodology to compare the thematic content of a large sample of analyst questions in earnings calls. The empirical results reveal strong evidence of question herding. The correlation between the fraction of a topic discussed in the first half of the Q&A portion and the fraction in the second half averages 30%. Using an instrumental variables approach that captures the randomness in All-Star analysts' participation, I differentiate between herding that is driven by imitation vs herding driven by common information. Next, I examine the impact of question herding on firms' information environment. Specifically, I find that question herding is associated with greater post-earnings announcement drift. Additionally, I find that question herding is associated with less accurate analysts' forecasts and a smaller price reaction to their recommendation change. Together these findings suggest that earnings conference calls with greater level of question herding produce less information.