Feedback on Emerging Corporate Policies

Sean Cao [1]   Itay Goldstein [2]   Jie (Jack) He [3]   Yabo Zhao [4]

[1] University of Maryland

[2] University of Pennsylvania

[3] University of Georgia

[4] Chinese University of Hong Kong, Shenzhen

2024 ABFER Singapore

Motivation

- How do firms make decisions about investments in new technologies involving large uncertainties?

  What sources of information do they rely on for such decisions?

- A prominent source of information is financial market:
  Informational feedback from the financial markets can help guide the decision making of corporate managers in the real sector in general investment decisions
  (e.g., Chen, Goldstein, and Jiang, 2007; Luo, 2005; Dessaint et al., 2019; Jayaraman and Wu, 2020)

- We build on the insights from this growing strand of literature and provide new evidence on how firms use market feedback to guide their decisions on investment in prominent emerging technologies.

Motivation

- Specifically, we examine how firms adjust their investments in artificial intelligence (AI) and green (i.e., climate/environment related) technologies in response to the stock market reaction to their announcements of such investment plans.
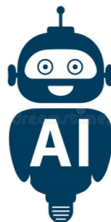
Motivation

- AI and green technologies have been in the frontier of economic development, while investment in these areas are highly uncertain and risky

- Firms need to make such investment decisions without past records to learn from

* Require significant upfront costs yet do not deliver immediate returns

* Even after implementation, market trends, regulatory intervention, and technology development might all evolve in undesirable directions

- It is important to understand how firm managers update their priors, and what role market feedback plays in these investments

MOTIVATION

- Identifying an active learning channel is challenging. Our setting provides some advantage.

- Little is known about **what specific information** managers learn from the market

THIS PAPER

- **Research Questions:**

- What is the role of market feedback in helping managers carry out emerging corporate policies?

- What are some potential nuances in the managerial learning behavior when firms venture into emerging areas?

- **Empirical design**

  - ▷ Compile a comprehensive sample of AI/green-investment related corporate disclosures
  - ▷ Conduct an event-study of market reactions to such disclosures
  - ▷ Analyze firms' AI/green investment adjustments in response to the market feedback
    - * Examine corporate policies in two of the most salient and fast-growing areas: AI and green tech
    - * Comparison of the learning patterns across these investment policies can help draw some differences in what is learnt about the different types of technologies

Data and Sample

Corporate disclosure data:

- Earnings conference call transcripts for US public firms are extracted from Thomson Reuters' StreetEvents
- Material press releases and 8-K filings are collected from SEC's EDGAR database
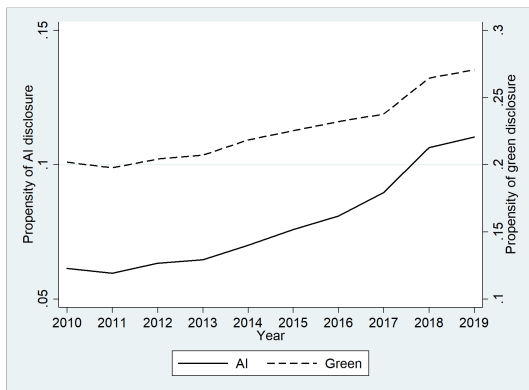
AI/Green investment data:

- AI/green investment measured using AI/green job postings – Burning Glass Technologies (now Lightcast) database

Stock price and financial/accounting data:

- Stock prices from CRSP
- Financial information from CRSP/Compustat Merged Quarterly database

TREND OF AI/GREEN-RELATED DISCLOSURES

- AI/Green-investment-related disclosures:
  The mentioning of AI/Green technology-specific keywords,
  investment-related keywords, and forward-looking keywords in the same
  sentence within a given corporate disclosure AI Example Green Example

- An increasing propensity of both AI and green corporate disclosures

Distribution of AI/Green-related Disclosures

- Firms in service industries tend to make more AI-investment-related disclosures
- Firms in utilities industries are particularly more likely to discuss green investment plans in their disclosures, followed by those in mining, manufacturing, and construction industries
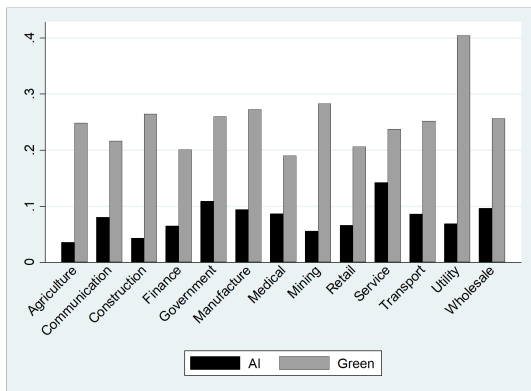
Baseline Analysis

- A sample of 41,263 (81,442) AI (green) investment-related corporate disclosures in 2010-2019 ⬤ Summary Stats

- Baseline regression model:

$$AdjInvestment_{i,d,q} = \alpha + \beta_1 FB_{i,d,q} + \beta_2 \text{Controls}_{i,q-1} + \text{FE} + e_{i,d,q}$$

  ▷ i: firm, d: corporate disclosure, q: year-quarter of disclosure

  ▷ $\Delta AIJobPostings$: the change in firm i's AI job postings from the year before the disclosure d to the year after the disclosure (Babina et al., 2023, 2024)

  ▷ $\Delta GreenJobPostings$: the change in firm i's green job postings from the year prior to the disclosure d to the year after the disclosure (Darendeli, Law, and Shen (2022))

  ▷ FB: the five-day CAR surrounding the disclosure date of firm i's emerging-policy related corporate disclosure d made in quarter q

Baseline Result – AI Investment

	Dependent Variable: ΔAI Job Postings			
	(1)	(2)	(3)	(4)
FB	0.087***	0.067***	0.070***	0.053***
	(4.49)	(4.26)	(4.47)	(3.29)
Controls	No	Yes	Yes	Yes
Firm FE	No	No	No	Yes
Industry $\times$ Year FE	No	No	Yes	Yes
Observations	41,263	40,317	40,291	39,521
R-squared	0.001	0.411	0.444	0.551

- Controls include firm size, ROA, R&D ratio, market-to-book ratio, firm age, cash reserve, earnings surprise, disclosure tone, and ΔTotal Job Postings

- A one std $\uparrow$ in the market reaction to the AI-technology related corporate disclosure is associated with an $\uparrow$ in firm's AI job postings by around 0.8%, which is around 9.2% $\uparrow$ relative to the sample average.

Baseline Result– Green Investment

	Dependent Variable: ΔGreen Job Postings			
	(1)	(2)	(3)	(4)
FB	0.101***	0.058**	0.046**	0.048**
	(3.62)	(2.18)	(2.31)	(2.51)
Controls	No	Yes	Yes	Yes
Firm FE	No	No	No	Yes
Industry × Year FE	No	No	Yes	Yes
Observations	81,442	80,730	80,730	80,596
R-squared	0.000	0.145	0.206	0.290

- A one std ↑ in the market reaction to the green-technology related corporate disclosure is associated with an ↑ in firm's green job postings by around 0.8%, which is around 13.9% ↑ relative to the sample average.

- Baseline results are consistent with an active learning/feedback story.

ALTERNATIVE NON-LEARNING EXPLANATIONS 1

- Alternative non-learning explanations:

  Omitted variables arising from underlying fundamentals

  - ▷ The logic is compelling when considering a positive market response, which is followed by a positive change in emerging investment:

    - * Both firms and market react to the same underlying fundamental in the same direction without one affecting the other

  - ▷ The logic breaks down when it comes to negative market reactions to corporate disclosures:

    - * Disclosures are largely about expanding/launching new activities

    - * Negative market reaction indicates that the market and firm managers *disagree* on the importance/value of expanding emerging technology investments

POSITIVE AND NEGATIVE MARKET REACTIONS

	Panel A: AI investment				Panel B: Green investment		
Dependent Var.	ΔAI Job Postings			Dependent Variable	ΔGreen Job Postings		
Subsample	Positive FB	Negative FB	Full	Subsample	Positive FB	Negative FB	Full
	(1)	(2)	(3)		(1)	(2)	(3)
FB	0.039***	0.078**		FB	-0.034	0.080*	
	(3.06)	(2.48)			(-0.75)	(1.79)	
PosFB			0.021**	PosFB			-0.009
			(2.00)				(-0.24)
NegFB			0.070***	NegFB			0.105***
			(2.93)				(2.90)
F-stat			3.04	F-stat			3.27
P-value			0.081	P-value			0.071
Controls	Yes	Yes	Yes	Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Industry × Year FE	Yes	Yes	Yes
Observations	19,792	18,521	39,521	Observations	40,992	39,206	80,596
R-squared	0.591	0.578	0.551	R-squared	0.334	0.332	0.290

- Half of the disclosures, despite the mentioning of increasing AI/green investments, are followed by negative market reactions
- More prominent results when market reactions are negative

Alternative Non-learning Explanations 2

- Alternative non-learning explanations:

  Omitted variables from other components of the corporate disclosures

  - ▷ Major corporate disclosures typically contain a large amount of information other than that related to emerging technology investment plans, e.g., non-emerging-investment-related components.

  - ▷ Two approaches to mitigate this concern:

  1. Examine stock price reaction within the hour when managers discuss their emerging-technology-related investment plans in conference calls

  2. Analyze "focused" 8-K filings with only one item (that mentions emerging-technology investment plans)

Investment response to emerging-technology-related market feedback − intraday stock price cahnges

Dependent variable:	ΔAI Job Postings	ΔGreen Job Postings
	(1)	(2)
FB_{Hour}	0.260**	0.146*
	(1.99)	(1.70)
$Return_{Pre}$	-0.208	-0.029
	(-0.74)	(-0.12)
$Return_{Post}$	0.107	0.080
	(0.65)	(0.89)
Controls	Yes	Yes
Firm FE	Yes	Yes
Industry × Year FE	Yes	Yes
Observations	4,953	10,738
R-squared	0.660	0.487

- FB_{Hour} is the firm's stock price change in the hour when managers announce their emerging-technology-related investment plans.

SEPARATELY EXAMINE EARNINGS CONFERENCE CALLS AND 8-K FILINGS

	Panel A: AI investment				Panel B: Green investment		
Dependent Variable	ΔAI Job Postings			Dependent Variable	ΔGreen Job Postings		
	Conference Call	8K	Focused 8K		Conference Call	8K	Focused 8K
	(1)	(2)	(3)		(1)	(2)	(3)
FB	0.083***	0.056***	0.067*	FB	0.073**	0.077**	0.114***
	(2.96)	(2.98)	(1.81)		(2.06)	(2.47)	(3.04)
Controls	Yes	Yes	Yes	Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Industry × Year FE	Yes	Yes	Yes
Observations	16,991	28,493	8,682	Observations	49,314	66,334	33,948
R-squared	0.583	0.576	0.677	R-squared	0.314	0.318	0.388

- Focused 8K: a subsample of 8-K filings with only one item (that mentions emerging-technology investment plans)

Heterogeneous Learning

- Market participants' knowledge about emerging technologies

- Technology competition from peer firms

- Market attention to emerging technologies

Outside Market Participants' Knowledge about Emerging Technologies

Panel A: AI investment		Panel B: Green investment	
Dependent Variable	ΔAI Investment	Dependent Variable	ΔGreen Investment
	(1)		(1)
FB $\times$ InstitutionAIExpertise	0.305***	FB $\times$ InstitutionGreenExpertise	0.184**
	(3.22)		(2.03)
FB	-0.024	FB	-0.055
	(-0.90)		(-1.11)
InstitutionAIExpertise	0.010	InstitutionGreenExpertise	-0.035
	(0.38)		(-0.71)
Controls	Yes	Controls	Yes
Firm FE	Yes	Firm FE	Yes
Industry $\times$ Year FE	Yes	Industry $\times$ Year FE	Yes
Observations	39,521	Observations	80,596
R-squared	0.551	R-squared	0.290

- We infer institutional investors' expertise in emerging technologies from their ex-ante portfolio holdings.

- The more knowledgeable the institutional investors are, the more the managers can learn from the market.

Exposure to Technology Competition

| Sample | Dependent Variable: ΔAI Job Postings | | |
	High TPP	Low TPP	Full
	(1)	(2)	(3)
FB	0.079***	-0.002	0.000
	(3.90)	(-0.08)	(0.01)
FB × HighTPP			0.077**
			(2.46)
HighTPP			-0.017
			(-1.49)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Observations	21,994	17,272	39,521
R-squared	0.597	0.582	0.552

- The more technology competition a company faces, the stronger incentive its manager has to learn from the market.

The Paris Agreement

Sample	ΔGreen Job Postings		
	Before (<=Year 2015)	After (>=Year 2016)	Full
	(1)	(2)	(3)
FB	-0.003	0.070***	-0.015
	(-0.07)	(3.26)	(-0.38)
FB × After			0.088**
			(1.97)
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Observations	32,889	47,659	80,596
R-squared	0.360	0.318	0.290

- More learning after the Paris Agreement (Dec. 2015) when the market pays significant attention to green-related issues and corporate green actions.

More Nuances of Learning

■ We provide additional tests to strengthen the inference about what specific information managers learn from the market:

▷ No such feedback effect for **conventional-technology-related** disclosures (e.g., linear regressions, time series analysis, or Monte Carlo simulation methods) convention

▷ No such feedback effect if the disclosures are **not investment-related** (i.e., mention emerging technologies in a general way) non-investment

▷ No such feedback effect if we examine **pre-disclosure** investment adjustments (i.e., pre-event trends) pre-trend

▷ Emerging technology investment adjustments are only related to the market reactions in the narrow announcement window but **not in other narrow windows** immediately before or after the same disclosure event other window

▷ Possible learning from the market reaction to **peer firms'** emerging technology-related disclosures

Investment Response to Peer Market Feedback

	Panel A: AI investment				Panel B: Green investment		
	Dependent Variable: ΔAI Job Postings				Dependent Variable: ΔGreen Job Postings		
	(1)	(2)	(3)		(1)	(2)	(3)
PeerFB	0.002	0.001	0.001	PeerFB	0.008**	0.007**	0.007**
	(1.32)	(0.91)	(1.13)		(2.13)	(1.97)	(2.12)
FocalFB		0.008	0.006	FocalFB		0.020	0.012
		(1.65)	(1.21)			(1.03)	(0.73)
Controls	Yes	Yes	Yes	Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	No	Firm FE	Yes	Yes	No
Industry x Year FE	Yes	Yes	Yes	Industry x Year FE	Yes	Yes	Yes
Pair FE	No	No	Yes	Pair FE	No	No	Yes
Observations	1,226,178	1,226,018	1,225,789	Observations	1,823,274	1,823,104	1,822,906
R-squared	0.457	0.457	0.520	R-squared	0.250	0.250	0.368

- Peer firms only learn from the market feedback on green-related investments but not that on AI-related investments

ADDITIONAL TESTS

- Whether following the wisdom of the crowd from the market improves firms' long-run performance?

  - ▷ Managers' reluctance to follow the market feedback can be either rational (and optimal for firm value) or irrational

  - ▷ If their reluctance is largely rational and thus shareholder-value maximizing, then we should not expect to find any performance difference between feedback-following and non-following

  - ▷ If managers' reluctance is largely irrational due to either lack of skills/knowledge or behavioral biases, then following the feedback ought to be associated with better long-run performance than not following

  - ▷ We compare the long-run performance of following and non-following

- Robustness tests: Alternative measures of green/AI investments

Benefits of Following the Feedback

Dependent Variable	$ROA_{t+1 \to t+3}$			$Return_{t+1 \to t+3}$		
Sample	Full	Neg CAR	Pos CAR	Full	Neg CAR	Pos CAR
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: AI investment						
Follow	0.002*	0.005**	-0.002	-0.007	0.024*	-0.010
	(1.83)	(2.14)	(-0.62)	(-1.35)	(1.86)	(-0.99)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,278	4,382	8,084	13,278	4,382	8,084
R-squared	0.941	0.955	0.948	0.691	0.810	0.662
Panel B: Green investment						
Follow	0.001	0.020***	-0.001	0.052*	0.056**	0.013
	(0.92)	(3.17)	(-0.20)	(1.94)	(2.10)	(0.37)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,456	15,362	6,666	22,456	15,362	6,666
R-squared	0.923	0.935	0.942	0.596	0.648	0.770

Alternative Measures of Emerging-technology Investments

Dependent Variable:	ΔAI Patents			ΔGreen Patents			ΔTotal GHG emission
	1-year	2-year	3-year	1-year	2-year	3-year	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FB	0.050***	0.053**	0.046*	0.007***	0.008**	0.006	-0.596***
	(2.74)	(2.53)	(1.86)	(2.59)	(2.05)	(1.46)	(-2.84)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,187	26,235	18,103	111,102	105,110	92,760	88,089
R-squared	0.629	0.702	0.737	0.393	0.443	0.583	0.601

CONCLUSION

- The role of market feedback in firms' emerging corporate policies.

  Managers adjust their AI/green investments ↑ (↓) in response to a favorable (unfavorable) market reaction to the corresponding corporate disclosures.

- Add to studies on how corporate disclosures facilitate info dissemination
  - ▷ Construct a comprehensive set of AI/green-investment related corporate disclosures
  - ▷ Document the trend and extent of such feedback-seeking by firm managers

- Shed new light on *what type of information* managers learn from the market
  - ▷ First piece of empirical evidence on managerial learning on emerging corporate policies.
  - ▷ We show the learning is context-based. Managers' learning behavior varies not only between emerging- and nonemerging corporate policies, but also within different categories of emerging corporate policies.

- Suggest a market-based solution to mitigate managers' ex-ante concerns and improve ex-post investment efficiency of AI/green investments

Green-investment related disclosures

Duke Energy Corporation, Q4 2016 Earnings Call:

"I want to spend the next few minutes offering insight into our long-term vision for Duke Energy.... Our industry is undergoing transformation, from increasing customer and stakeholder expectations to rapid technology development and new public policy requirements..... We will invest at areas that position us well for this transformation; strengthening and modernizing our energy grid, generating cleaner energy through natural gas and renewables.... We will generate cleaner energy through natural gas and renewables, investing $11 billion as we move to a lower-carbon future. ... Let me spend a few minutes on each investment area.... Our next major investment platform focuses on generating cleaner energy...... In the next 10 years, we will invest $11 billion, increasing new, highly-efficient natural gas generation to 35% of our portfolio, and cleaner renewable energy sources to approximately 10%." Back

Green-investment related disclosures

Alphabet Inc., 2015 Annual Meeting of Stockholders Conference Call:

- Shareholder question/criticize the project:
  "*This proposal asks that management tell Google shareholders if their investments in renewables makes economic sense. Management says its goal is a 100% renewable like electricity, but they don't explain why this is in the best interest of Google's owners, that's us.* We ask management to compare buying power from the local power suppliers with Google's investments in renewable but intermittent sources of electricity. . . . I started my career in energy about 60 years ago, and worked on making it, saving it, moving it and with a few others invented the main method for converting biomass into electricity used in California. . . . Please vote yes on this proposal, so we can find out if Google is spending our dollars wisely."

Green-investment related disclosures

Alphabet Inc., 2015 Annual Meeting of Stockholders Conference Call:

- Shareholder support the project:
  "Good morning. My name is Abigail Shaw from NorthStar Asset Management in Boston. I'd like to take this opportunity to commend Google for its good work on and commitment to renewable energy. The final two shareholder proposals on today's docket seem to disagree but what is quickly becoming a fundamental truth. Action in favor of the environment is good business. . . . Further supporting climate change policy is a smart way to safeguard the company's investments. . . Google clearly understands the importance of committing to cleaner our energy. It is both good for business and good for the future of our world." Back

AI-investment related disclosures

A focused 8-K with only item 8.01 about future AI investment plan

San Francisco, Feb. 10, 2017 – Ford Motor Company (NYSE: F) today announces it is investing $1 billion during the next five years in Argo AI, an artificial intelligence company, to develop a virtual driver system for the automaker's autonomous vehicle coming in 2021 – and for potential license to other companies. Back

AI-investment related disclosures

eBay Inc., Q2 2016 Earnings Call:

Devin N. Wenig - President, Chief Executive Officer & Director: "I think that when I look out to the future, we're also planting seeds, because I think that the impact of AI will be much more significant on commerce eventually. I think that when we see now the way large scale datasets are being used by algorithms through things like GPUs and the cloud, to me AI is going to be the next platform revolution. And just like eBay was early on the Internet, was early on mobile. I want us to be early on AI. . . . When I look out a few years, it's going to be significant for a massive improvement to personalization for consumers and targeting to sellers. So, we're building that capability now, possibly a little bit in advance of when that platform revolution comes." Back

AI-investment related disclosures

Procter & Gamble Company, Q3 2017 Earnings Call:

"We're digitizing our manufacturing operations and automating with robotics using, for example, collaborative robots to automate activities like palletizing, and autonomous vehicles to move materials and pallets within our operations. We see an opportunity for additional $1 billion of savings from transportation, warehousing and other cost of goods sold." Back

SUMMARY STATISTICS Back

Panel A: AI-investment-related corporate disclosures								
Variable	Obs	Mean	Std. Dev.	Min	Q1	Median	Q3	Max
ΔAI Job Postings	41,263	0.088	0.333	-0.794	-0.004	0.000	0.167	1.445
FB	41,263	0.003	0.093	-0.291	-0.040	0.001	0.044	0.317
Firm Size	41,263	5.264	2.153	0.000	3.931	5.409	6.766	9.242
ROA	41,263	0.016	0.055	-0.303	0.007	0.025	0.040	0.161
R&D Ratio	41,263	0.210	0.841	0.000	0.000	0.000	0.109	6.102
Market-to-book ratio	41,263	1.880	1.678	0.211	0.939	1.308	2.212	12.388
Firm Age	41,263	18.654	14.963	0.000	6.250	15.500	26.500	57.500
Cash Reserve	41,263	0.195	0.212	0.000	0.037	0.112	0.281	0.931
Earning Surprise	40,317	-0.004	1.410	-6.375	-0.278	0.000	0.222	7.000
Disclosure Tone	41,263	0.775	0.163	0.502	0.523	0.869	0.889	0.993
ΔTotal Job Postings	41,263	0.245	0.979	-2.303	-0.067	0.000	0.486	4.385

Panel B: Green-investment-related corporate disclosures								
Variable	Obs	Mean	Std. Dev.	Min	Q1	Median	Q3	Max
ΔGreen Job Postings	81,442	0.057	0.420	-1.269	0.000	0.000	0.114	1.702
FB	81,442	0.001	0.078	-0.251	-0.034	0.001	0.039	0.247
Firm Size	81,442	6.340	1.806	0.000	5.343	6.523	7.589	9.242
ROA	81,442	0.023	0.042	-0.303	0.014	0.027	0.040	0.161
R&D Ratio	81,442	0.164	0.792	0.000	0.000	0.000	0.040	6.102
Market-to-book ratio	81,442	1.695	1.545	0.211	0.841	1.167	1.930	12.388
Firm Age	81,442	24.265	16.805	0.000	10.250	20.750	37.500	57.500
Cash Reserve	81,442	0.144	0.183	0.000	0.026	0.073	0.181	0.931
Earning Surprise	80,730	0.011	1.399	-6.850	-0.251	0.000	0.246	6.778
Disclosure Tone	81,442	0.870	0.095	0.523	0.873	0.898	0.912	0.997
ΔTotal Job Postings	81,442	0.242	0.917	-2.048	-0.076	0.000	0.460	4.234

CONVENTIONAL TECHNOLOGY Back

	Dependent Variable: ΔConventional Job Postings			
	(1)	(2)	(3)	(4)
FB	0.015	0.003	0.009	0.008
	(1.19)	(0.23)	(0.77)	(0.61)
Controls	No	Yes	Yes	Yes
Firm FE	No	No	No	Yes
Industry × Year FE	No	Yes	Yes	Yes
Observations	20,193	15,063	15,020	14,339
R-squared	0.000	0.066	0.155	0.275

Dependent Variables	ΔAI Job Postings		ΔGreen Job Postings	
	(1)	(2)	(3)	(4)
NonInvFB	0.028	0.011	0.024	0.010
	(0.91)	(0.65)	(0.52)	(0.25)
Controls	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes
Industry × Year FE	No	Yes	No	Yes
Observations	6,759	5,674	7,032	6,325
R-squared	0.370	0.660	0.119	0.465

PRE-EVENT INVESTMENT TREND

Dependent Variables	Past ΔAI Job Postings		Past ΔGreen Job Postings	
	(1)	(2)	(3)	(4)
FB	0.000	-0.011	-0.042	-0.018
	(0.00)	(-0.67)	(-1.27)	(-0.56)
Controls	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes
Industry $\times$ Year FE	No	Yes	No	Yes
Observations	39,673	38,879	79,128	78,993
R-squared	0.445	0.596	0.207	0.353

Dependent Variables	ΔAI Job Postings		ΔGreen Job Postings	
	(1)	(2)	(3)	(4)
PlaceboFB[-7, -3]	-0.013	-0.020	-0.010	0.005
	(-0.50)	(-0.76)	(-0.19)	(0.13)
Controls	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes
Industry × Year FE	No	Yes	No	Yes
Observations	40,313	39,513	80,728	80,594
R-squared	0.411	0.550	0.145	0.290
PlaceboFB[3, 7]	0.005	-0.014	0.008	-0.017
	(0.20)	(-0.52)	(0.17)	(-0.38)
Controls	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes
Industry × Year FE	No	Yes	No	Yes
Observations	40,313	39,516	80,725	80,591
R-squared	0.411	0.550	0.145	0.290