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Social Media and Corporate Misconduct

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Does Social Media Reduce Corporate Misconduct?

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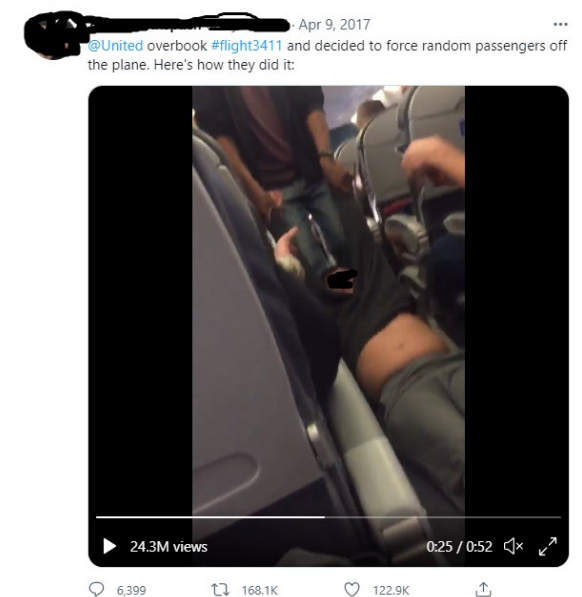
Research Question

Is social media an effective monitor of firms' corporate misconduct?

- Why is it important to study this question?
 - Corporate misconduct is a big problem.
 - Increasing importance of social media in society, while decrease in traditional media.
 - No systematic evidence on social media as a monitor of firms.

An Example: United Airlines forcibly removed passenger

- Social media users filmed the incident and posted videos on Twitter.
- Incident became #1 trending topic attracting more than 100 mm views.
- Stock price dropped by \$250 mm.
- CEO apologized.
- Department of Transportation started an investigation related to aviation safety violations.
- Coverage of incident by traditional media.



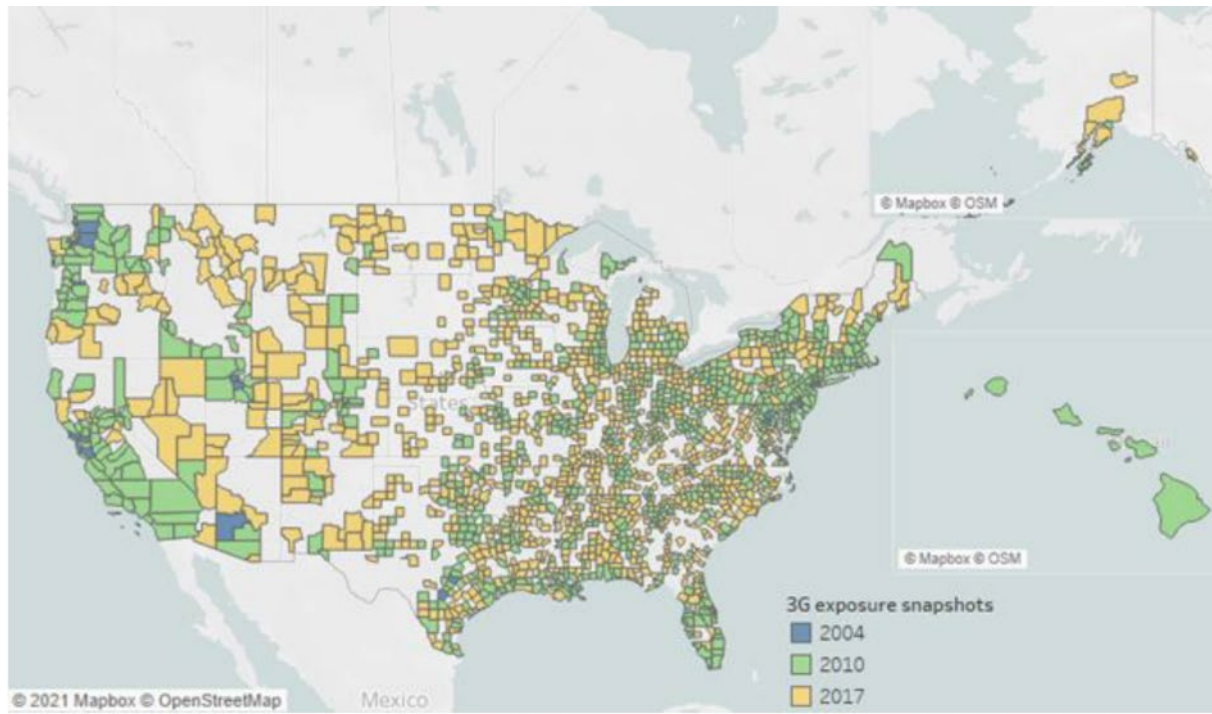
Social Media and Firm Behavior

- Social media could be an effective monitor of firms
 - Create reputational costs through dissemination.
 - Facilitate information access for other monitors (e.g., traditional media; regulators).
 - Help firms detect misconduct through social media posts.
- Social media could be an ineffective monitor of firms
 - Social media content might often be wrong (“fake news”).
 - Social media content is not substantial enough or short-lived.
 - Firms might not change underlying misconduct, but respond with less costly strategies (e.g., public apology).

➤ Ultimately, it's an empirical question.

Empirical Challenges – Social Media

- Two approaches:
 1. Use 3G introduction at zip code level as a shock to strength of monitoring by social media (Guriev et al. 2021); digital maps of 3G network coverage from Collins Bartholomews' Mobile Coverage Explorer



2. Use Twitter data at zip code level to more directly capture social media activity

Empirical Challenges – Corporate Misconduct

- Data on misconduct (covered on social media) typically not available
- Corporate violations – Violation Tracker:
 - Wide range of violations - 40+ regulatory agencies
 - Sample includes 11,508 violations perpetrated by 10,590 unique facilities of 1,360 Compustat firms (including 80% of Fortune 500 firms) with \$8.5 billion in penalties.
 - Average firm has 1 violation / year (penalties \$715,888)
 - Average facility 0.17 violations / year (penalties \$133,656)
 - Workplace safety represents 66% of violations, only 4% of penalties
 - False Claims Act, environmental, and securities violations are the largest categories in % of penalties.

Type of Violations

Offense Type	Number of Violations	% of Total	Penalties (\$m)	% of Total
Workplace safety or health violation	7,608	66.1%	336.0	3.9%
Environmental violation	1,009	8.8%	2,280.0	26.8%
Railroad safety violation	839	7.3%	8.2	0.1%
Wage and hour violation	639	5.6%	189.0	2.2%
Labor relations violation	504	4.4%	159.0	1.9%
Aviation safety violation	273	2.4%	17.7	0.2%
Motor vehicle safety violation	143	1.2%	3.2	0.0%
Employment discrimination	74	0.6%	338.0	4.0%
Family and Medical Leave Act violation	44	0.4%	0.6	0.0%
Securities violation	37	0.3%	1,478.5	17.4%
False Claims Act violation	32	0.3%	2,610.0	30.7%
Other	306	2.7%	1,091.7	12.8%
Total	11,508	100%	8,511.9	100%

Research Design for 3G Access Tests

- Dependent variables: dollar penalties, number of violations
- Pre vs. post periods of 3 years
- Treated facility vs. non-treated facilities (which can be of the same firm located in the same county)

Facility	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Facility of Walmart located in zip code 19030, Bucks County, Pennsylvania	0	0	0	1	1	1					
Facility of Walmart located in zip code 18951, Bucks County, Pennsylvania			0	0	0	1	1	1			
Facility of Walmart located in zip code 30512, Union County, Georgia						0	0	0	1	1	1

3G Access and Facility-Level Misconduct

Dependent Variable		Penalties			Number Violations		
Variables	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
3G	-	-0.1291*** (0.0477)	-0.1298*** (0.0476)	-0.1298*** (0.0476)	-0.0176*** (0.0056)	-0.0177*** (0.0056)	-0.0178*** (0.0056)
Employees_Facility			0.0766*** (0.0125)	0.0768*** (0.0125)		0.0072*** (0.0015)	0.0073*** (0.0015)
Sales_Facility			-0.0035 (0.0103)	-0.0035 (0.0103)		-0.0002 (0.0011)	-0.0002 (0.0011)
Size			-0.0031 (0.0163)	-0.0030 (0.0163)		0.0024 (0.0015)	0.0024 (0.0015)
Leverage			0.0468 (0.1025)	0.0473 (0.1026)		0.0056 (0.0100)	0.0056 (0.0100)
ROA			0.2150 (0.2254)	0.2052 (0.2250)		0.0269 (0.0222)	0.0240 (0.0220)
Labor_Force				-0.3614 (0.4235)			-0.0932** (0.0470)
Unemployment_Rate				-0.0283 (0.0262)			-0.0084*** (0.0031)
Facility FE		Yes	Yes	Yes	Yes	Yes	Yes
Year FE x State FE		Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square		0.101	0.101	0.101	0.266	0.266	0.266
Observations		63,687	63,687	63,687	63,687	63,687	63,687

- 3G introduction results in a ~13% decrease in penalties and ~2% decrease in the number of violations.

3G Access and Twitter Activity

Dependent Variable	Number_Tweets	
Variables	(1)	(2)
3G	0.1882*** (0.0548)	0.1890*** (0.0550)
Controls	No	Yes
Zip Code FE	Yes	Yes
Year FE	Yes	Yes
Adj. R-square	0.926	0.926
Observations	4,526	4,526

- 3G access is associated with a larger number of Tweets.

Twitter Activity and Facility-Level Misconduct

Dependent Variable		Penalties	Number Violations
Variables	Pred.	(1)	(2)
High Twitter Activity	–	–0.2005* (0.1062)	–0.0183* (0.0102)
Controls		Yes	Yes
Facility FE		Yes	Yes
Year FE x State FE		Yes	Yes
Adj. R-square		0.093	0.342
Observations		13,142	13,142

- Higher Twitter activity is associated with less misconduct.

Additional Results

1. Effect of 3G on misconduct is concentrated in facilities of firms with many Twitter followers.
2. Effect of 3G on misconduct is concentrated in non-financial violations.
3. Alternative explanation: 3G increases local IT investments → no evidence.
4. Results are robust to research-design choices:
 - 10-year treatment window or all years treatment window
 - Alternative fixed effects (e.g., county-year FE)
 - Alternative samples + clustering

Conclusions

- Systematic evidence on social media as a monitor of firm behavior.
- This is important for 2 reasons:
 - Prior research in capital markets primarily examines social media's *informational* role.
 - Prior research in economics primarily examines social media's *political monitoring* role.
- Study improves understanding of the consequences of social media on firm behavior by highlighting a positive effect of social media.

Thank you!