



香港中文大學
The Chinese University of Hong Kong



CUHK
BUSINESS SCHOOL

Do Chinese Social Media Delineate the Optimistic Bias of Traditional Media?

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ABFER 2019 Annual Conference

May 29, 2019



“Media” bias in the hotel



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Edition 0085

SHANGRI-LA'S RASA SENTOSA RESORT & SPA THE TABLE TIMES

MONDAY / 27 May 2019 Weather: 100% no snow ☀



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FLAVOURS
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6PM TILL 10PM
SILVER SHELL CAFE

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needles
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6 PM
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Chinese Media Coverage on the Trade War





COOL

May 5, 2019
...the 10% will go up to 25% on Friday.

May 6, 2019
The traditional media all are silent on the event even with the witness of a crash stock and currency market.



Donald J. Trump @realDonaldTrump · 45m

45th President of the United States of America

Washington, DC

Instagram.com/realDonaldTrump

Joined March 2009

3.102 Photos and videos

Tweets 41.6K | **Following** 46 | **Followers** 60M | **Likes** 7 | **Moments** 6

Tweets & replies | **Media**

Donald J. Trump @realDonaldTrump · 45m
...of additional goods sent to us by China remain untaxed, but will be shortly, at a rate of 25%. The Tariffs paid to the USA have had little impact on product cost, mostly borne by China. The Trade Deal with China continues, but too slowly, as they attempt to renegotiate. No!

Donald J. Trump @realDonaldTrump · 45m
For 10 months, China has been paying Tariffs to the USA of 25% on 50 Billion Dollars of High Tech, and 10% on 200 Billion Dollars of other goods. These

中国股汇急挫 官媒全面噤声

特朗普对中美贸易谈判态度突变，令中国的股市和汇市大幅下跌。如果大陆股民不看海外媒体报道，可能不知道大跌原因，因为直至当天下午，中国各路媒体对美方加征关税一事集体失声，连社交媒体亦不容许讨论。

2019-05-06



周一，中国香港及内地的股市大跌。(路透社)

特朗普对中美贸易谈判态度突变，令中国的股市和汇市大幅下跌。如果大陆股民不看海外媒体报道，可能不知道大跌原因，因为直至当天下午，中国各路媒体对美方加征关税一事集体失声，连社交媒体亦不容许讨论。



《习近平关于“三农”工作论述摘编》出版发行

新华社北京5月6日电 中共中央总书记、国家主席、中央军委主席习近平关于“三农”工作论述摘编，近日由中央文献出版社出版发行。这是党的十八大以来，习近平同志在中央政治局常委会上、中央全会上、重要会议和场合，就“三农”工作发表的重要讲话、重要论述、重要指示精神，以及中央政治局常委会、中央政治局、中央书记处，就“三农”工作研究部署、推动落实的重要会议、重要文件、重要批示的汇编。全书共分10个专题，约10万字。

李克强签署国务院令 公布《政府投资条例》

新华社北京5月6日电 国务院总理李克强5月6日签署国务院令，公布《政府投资条例》，自2019年7月1日起施行。

《条例》共5章47条，旨在规范政府投资行为，提高政府投资效益，防范政府投资债务风险，促进经济高质量发展。《条例》明确，政府投资应当遵循科学决策、规范管理、注重绩效、公开透明原则，并以优化产业结构、促进区域协调发展、推进供给侧结构性改革、提高供给质量为导向。

汪洋接见第十一世班禅

新华社北京5月6日电 中共中央政治局常委、全国政协主席汪洋5月6日在北京人民大会堂接见第十一世班禅额尔德尼·确吉杰布。汪洋对班禅大师此次应邀来京表示诚挚欢迎，并祝愿大师身体健康、生活幸福、事业顺利。

班禅大师在讲话中感谢中央政府和全国政协的盛情邀请，表示此次来京是应约履行宗教界人士参政议政、建言献策的职责，将围绕国家重大战略和民生关切，积极建言献策，为促进民族团结、宗教和谐、社会稳定作出积极贡献。

中共中央国务院关于建立健全城乡融合发展体制机制和政策体系的意见

新华社北京4月15日电 中共中央、国务院近日印发《关于建立健全城乡融合发展体制机制和政策体系的意见》。《意见》提出，建立健全城乡融合发展体制机制和政策体系，加快推进农业农村现代化，是实施乡村振兴战略的总抓手，也是推动高质量发展、全面建设社会主义现代化国家的重要基础。

《意见》明确，要健全城乡要素自由流动、平等交换、双向配置体制机制，破除城乡二元结构，增强农村内生发展动力，提高农村资源和要素集聚能力，缩小城乡差距。要健全城乡基础设施互联互通、基本公共服务均等化体制机制，加快推进城乡基础设施一体化建设和基本公共服务均等化，提升农村基础设施和公共服务水平。

习近平《在纪念五四运动100周年大会上的讲话》单行本出版

新华社北京5月6日电 中共中央总书记、国家主席、中央军委主席习近平5月6日在纪念五四运动100周年大会上发表重要讲话，强调青年要坚定理想信念，志存高远，脚踏实地，勇做时代的弄潮儿，在实现中国梦的生动实践中放飞青春梦想，在为人民利益的不懈奋斗中书写人生华章。

全国人大常委会委员长会议组成 人员专题学习习近平外交思想 栗战书主持并讲话

新华社北京5月6日电 十三届全国人大常委会委员长会议5月6日在北京举行，栗战书主持并讲话，专题学习习近平外交思想。栗战书指出，习近平外交思想是新时代中国特色社会主义思想的重要组成部分，是习近平新时代中国特色社会主义思想在外交领域的集中体现，是新时代中国特色大国外交的理论指导和行动指南。

第二届数字中国建设成果展开幕

新华社北京5月6日电 第二届数字中国建设成果展5月6日在福州开幕。本届成果展以“数字中国·智慧生活”为主题，集中展示我国在数字经济、数字社会、数字文化、数字生态等领域取得的最新成果，是展示我国数字建设成就、促进数字经济高质量发展的重要平台。

产业转型 襄州创新发展新引擎

新华社北京5月6日电 襄阳市近日召开全市产业转型升级推进会，强调要以创新驱动引领产业转型升级，加快培育壮大战略性新兴产业，推动传统产业转型升级，构建现代产业体系，增强发展动能，实现高质量发展。

壮图70年 奋斗新时代 新一轮的起点

新华社北京5月6日电 今年是新中国成立70周年，也是全面建成小康社会、实现第一个百年奋斗目标的关键之年。要不忘初心、牢记使命，锐意进取、埋头苦干，为实现中华民族伟大复兴的中国梦不懈奋斗。



一季度经济开局平稳 稳增长中有进

新华社北京5月6日电 国家统计局5月6日公布，一季度我国经济运行开局平稳，稳增长中有进。初步核算，一季度国内生产总值同比增长6.4%，符合预期。其中，第二产业增加值同比增长6.1%，第三产业增加值同比增长6.8%。



May 6, 2019
Baidu Tieba: The BBS is closed according to the law.



中美贸易战

抱歉，根据相关法律法规和政策，本吧暂不开放。



May 6, 2019
Sina Finance: All should avoid topics related to trade war recently.

新浪财经头条号对外服... 钉

新浪财经郑洋洋

@所有人
大家好：近期请各位注意避免中美贸易战等相关话题！

另附：wap测试版发

ns 万伊涵用 请修改群名称

May 6, 2019
A social media platform affiliated with Alibaba: Any topics related to trade war will be definitely deleted.



蚂蚁财富黄龙书院 全员

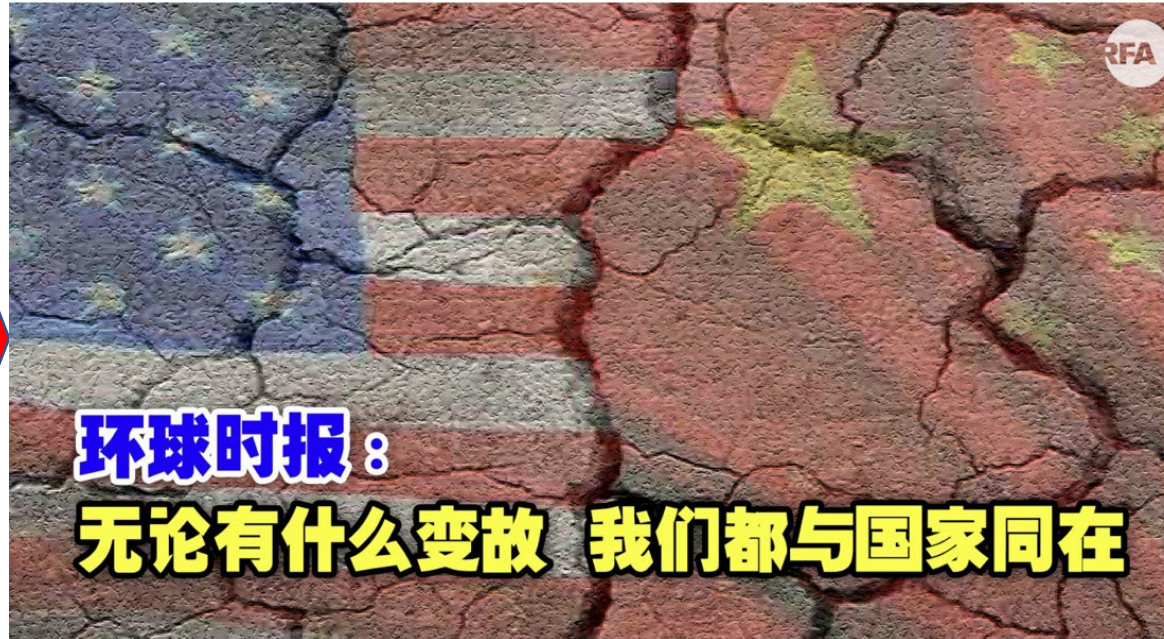
蚂蚁财富黄龙书院

21分钟前

@所有人 关于贸易战的文章，大家不要写了，只要写，无论观点如何，一概删除！



May 7, 2019:
People's Daily and
Global Times cover
the trade war: China
economy is flexible
enough to handle
the trade war.



May 14-22, 2019:
Nine Comments on
China-US relationship

- 《谁在“为赋新词强说愁”——“美国吃亏论”可以休矣》
- 《不要陶醉于自欺欺人的“胜利”——“加征关税有利论”可以休矣》
- 《谁在“出尔”，谁在“反尔”——“中国出尔反尔论”可以休矣》
- 《从来就没有什么救世主——“美国重建中国论”可以休矣》
- 《欲加之罪，何患无罪——“中国强制转让技术论”可以休矣》
- 《香者自香，臭者自臭“中国技术有害论”可以休矣》
- 《捕风捉影者，风必摧之——“中国盗窃知识产权论”可以休矣》
- 《不要逆历史潮流而动——“对华文明冲突论”可以休矣》
- 《轻舟已过万重山——“中国退步论”可以休矣》

Can social media function to deliver the message (May 6, 2019)?



We focus on corporate news.

Media bias of corporate news in autocracies

- There is significant media bias in autocratic regimes (Djankov et al., 2003; Enikolopov et al., 2011; Qin et al., 2018)
- This optimistic bias extends to corporate news as well in state-controlled traditional media (newspapers) in autocracies (Stockmann, 2013; Piotroski et al., 2017)
 - Stronger bias in papers under Party control and for SOEs

Research Question

Do Chinese social media (online stock platforms) delineate the optimistic bias of traditional media?

On the One Hand- Social Media CAN

- Computer-mediated communication widens the scope of communication by increasing access and others (Spears and Lea, 1994).
- The relative anonymity compared to face-to-face communication will lead to a freer and fuller expression of views and make critical feedback more possible.
- Government regards info generated by social media as a source of grass root info (Qin et al., 2017)
- They are more worried about instigation of collective actions, not negative news (King et al., 2013, 2014)



On the Other Hand – Social Media **CAN NOT**

- Computer-mediated communication is also associated with uninhibited behavior and more polarized, risky, and extreme decision compared to face-to-face interaction (Spears and Lea, 1994).
- Social media are “rumor mills” in China and the info they generate is simply noise .
- Social media are subject to central surveillance and censorship.
 - Users refrain from posting critical info on the site, especially in politically sensitive periods during which traditional media are expected to be particularly pressured to bias the reporting.



Question 1: Will social media remain less biased when traditional media are more biased?

- We use the **association** of the tone of traditional media articles and social media posts of the **same firm on the same day** to examine if social media play such a delineating role.
- We posit that for **the same underlying information**, there is **positive association** in the tone of the two types of media.
- However, the **positive association is attenuated** when traditional media's tone is positive than when their tone is neutral or negative.
- We expect traditional media is more likely bias their reporting more positively when their tone is positive than when it is neutral or negative.



Two reasons for the stronger optimistic bias when tone is positive

- Since the tone of the newspaper articles is the sum of the optimistic bias and the tone of the underlying news events, the tone of the articles and the optimistic bias can be mechanically related.
- The sentiment of the underlying events and optimistic bias are likely to be positively associated because the cost to bias the reporting of the events will likely to decrease if the underlying event is positive.



Alternatively, stronger optimistic bias when underlying event is negative

- The benefit of the positive bias can be much greater especially when the tone of the underlying events becomes very negative.
- We do not expect that this benefit effect will outweigh the cost of optimistic bias in our analysis.
 - Traditional media are likely to omit reporting the event than manipulating the tone of the reports.

Testing model

$$(1) \quad \text{Social Media Tone}_{it} = \alpha + \beta_1 \text{Traditional Media Tone}_{it} + \beta_2 \text{Traditional Media Tone}_{it} \times \text{TM Positive}_{it} + \beta_3 \text{TM Positive}_{it} + \beta_4 \text{Size}_{it} + \beta_5 \text{ROA}_{it} + \beta_6 \text{Market to Book}_{it} + \beta_7 \text{Leverage}_{it} + \text{Firm Dummy} + \text{Year Month Dummy} + \varepsilon_{it}$$

- We expect β_1 is expected to be positive and β_2 is expected to be negative.
- TM positive is equal to one when traditional tone is positive, and zero otherwise.



Data

- Traditional media: **3.7m** newspaper articles between 2009 to 2016 by **162** unique newspapers from Wisenews.
- Social media: **38.4m** posts between 2009 to 2016 from a popular online stock platform called Guba by Eastmoney (aka, East Guba).
- We use machine learning to measure the tone of the news articles and posts of the East Guba.
- We limit our sample to firm-days with at least 1 news article and 3 posts for the same firm on the same day.



Measuring Tone of Traditional Media Article

- Importance-weighted tone:
 - Sentences from first and last paragraph x 2
 - First and last sentence from first and last paragraph x 3
 - Other sentences x 1
- Tone of the text body
 - $(\# \text{ of positive sentences} - \# \text{ of negative sentences}) / (\# \text{ of positive sentences} + \# \text{ of negative sentences} + 1)$
- Over-all TM Tone
 - $\text{TM tone} = (\text{tone of text body} * 0.7 + \text{tone of title} * 0.3).$



Measuring Tone of Social Media

- Textual Analysis is similar to Traditional Media
- The tone of social media for a firm-day is defined as the relative weight of the number of positive posts and negative posts = $(\# \text{ of positive posts} - \# \text{ of negative post}) / (\# \text{ of positive posts} + \# \text{ of negative post} + 1)$

Table 1: Sample Selection Process

Panel A		
	Firms	Firm-day
CSMAR-Financial Statement File Merged with Stock Price File <i>Less firm-days with less than 3 posts</i>	3,171 (132)	4,421,222 (136,019)
Social Media with no less than 3 posts/day <i>Less firm-days with no news articles</i>	3,039 -	4,285,203 (3,273,687)
Traditional Media with no less than 1 news/day <i>Less firm-days with missing control variables</i>	3,039 (28)	1,011,516 (40,534)
Final Sample	3,011	970,982

Main result for Question 1: Will social media remain less biased when traditional media are more biased?

Figure 1

Linear Prediction Plot of Association Between the Tone of Social Media and the Tone of Traditional Media

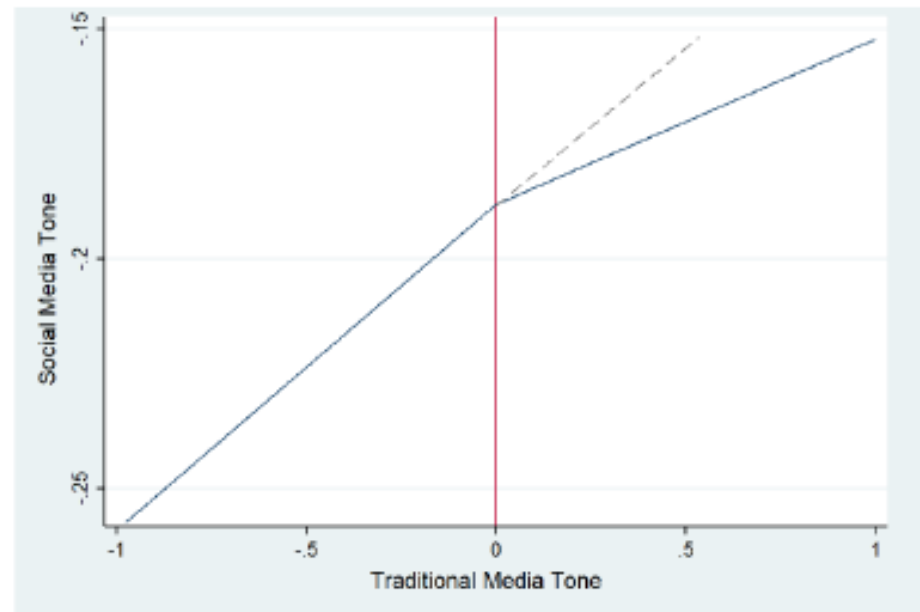


Table 4: Social Media's Correction Effect on Traditional Media Bias

Dependent Variable: Social Media Tone

<i>Independent Variables</i>	1	2	3	4	5
Traditional Media Tone	0.0331*** 51.43	0.0306*** 43.68	0.0711*** 23.62	0.0415*** 16.67	0.0426*** 17.11
Traditional Media Tone x TM_Positive			-0.0676*** -19.99	-0.0224*** -7.84	-0.0235*** -8.23
TM_Positive			0.0145*** 8.32	0.0056*** 3.97	0.0056*** 3.95
Size					-0.0327*** -24.78
ROA					0.0429*** 5.84
Market to Book					-0.0025*** -13.64
Leverage					0.0262*** 12.52
Adj-R2	0.003	0.092	0.005	0.092	0.093
N	970,982	970,982	970,982	970,982	970,982
Firm-Fixed Effect	NO	YES	NO	YES	YES
Year-Month-Fixed Effect	NO	YES	NO	YES	YES

*** P<0.01 ** P<0.05 * P<0.1



Influence of political incentive on role of benchmarking role of social media

Media intervention in 2015

- Crash in stock market in 2015
- On July 23rd, 2015, to stabilize the turbulence in the stock market, the National Bureau of Television, Broadcast, and Newspaper (a bureau under GAPP) issued an authoritative order to all press in China, demanding them to **decrease the coverage of stock market-related news**, and **stop using negative words** such as “tumble” or “crash” in the news.

Figure 4
Screenshots of the Reports on the Media Intervention Order

CHINADAILY 中国日报
.COM.CN

广电总局：少量报道股市 不得使用暴跌崩盘等词

环球时报-环球网 2015-06-26 17:57:00

广电总局要求广播电视台等媒体，要少量报道股市。

广电总局要求广播电视台等媒体，要少量报道股市。（资料图）

环球时报-环球网6月26日报道广电总局要求广播电视台等媒体，要少量报道股市，而在必要的报道中要做到全面平衡、客观理性，不集中唱多，不合力唱空，合理引导市场预期，防止因报道不当引起股市大涨大跌。

此外，广电总局还强调，一律不再组织评论言论、专家访谈、现场连线，不做深度解读，不猜测、评价股市走向，不渲染恐慌、悲情气氛，不使用“暴跌”“暴涨”“崩盘”等煽情用语。

Table 5: Social Media's Correction Effect on Traditional Media Bias: Pre and Post Media Intervention

Dependent Variable: Social Media Tone

<i>Independent Variables</i>	(1)	(2)	Difference
	Pre-Intervention	Post-Intervention	(2)-(1)
Traditional Media Tone	0.0425*** 16.26	0.0360*** 5.99	-0.0065 1.02
Traditional Media Tone x TM_Positive	-0.0209*** -7.00	-0.0352*** -5.15	-0.0143** 3.96
TM_Positive	0.0052*** 3.44	0.0098*** 2.75	
Size	-0.0204*** -16.96	-0.0805*** -14.61	
ROA	0.0096 1.55	0.0404 1.49	
Market to Book	-0.0010*** -6.09	-0.0059*** -14.13	
Leverage	0.0227*** 12.62	0.0516*** 7.99	
Adj-R2	0.084	0.095	
N	802,523	168,459	
Firm-Fixed Effect	YES	YES	
Year-Month-Fixed Effect	YES	YES	

We use Chow Test and report Chi-square Statistics to test the equality of two coefficients across sample.

*** P<0.01 ** P<0.05 * P<0.1



National Congress Meeting of CCP

- Government intensifies its monitoring over media during the congress period
 - Congress Period [-45, 45]
 - Non-congress Period

Congress Meeting vs. non-Congress Meeting Periods

**Table 7: Social Media's Correction Effect on Traditional Media Bias:
National Congress Meeting Period vs Non-National Congress Meeting
Period**

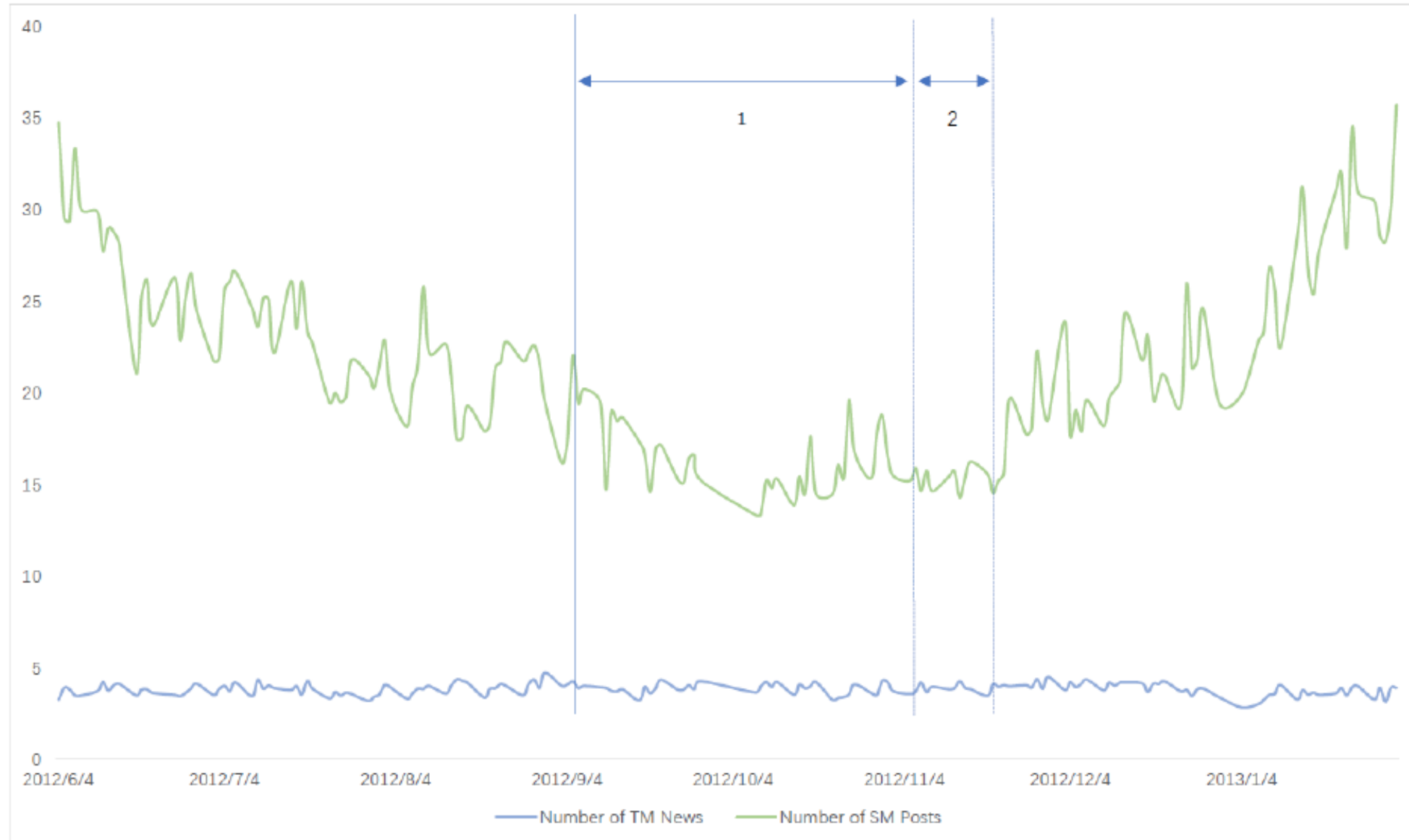
Dependent Variable: Social Media Tone Day 0

<i>Independent Variables</i>	1		2	
	Congress Meeting	Non-Congress Meeting	Congress Meeting	Non-Congress Meeting
Traditional Media Tone	0.0206	0.0431***	0.0206	0.0431***
	1.55	17.02	1.55	17.02
Traditional Media Tone x TM_Positive	0.0094	-0.0248***	0.0094	-0.0248***
TM_Positive	0.62	-8.51	0.62	-8.51
	0.0021	0.0058***	0.0021	0.0058***
	0.29	4.03	0.29	4.03
Size	-0.0436	-0.0331***	-0.0436	-0.0331***
	-1.48	-14.86	-1.48	-14.86
ROA	-0.0252	0.0468***	-0.0252	0.0468***
	-0.01	6.26	-0.01	6.26
Market to Book	-0.0738	-0.0025***	-0.0738	-0.0025***
	-1.11	-13.41	-1.11	-13.41
Leverage	0.3566***	0.0266***	0.3566***	0.0266***
	3.29	12.59	3.29	12.59
Adj-R2	0.196	0.092	0.196	0.092
N	41,110	929,872	41,110	929,872
Firm-Fixed Effect	YES	YES	YES	YES
Year-Month-Fixed Effect	YES	YES	YES	YES

*** P<0.01 ** P<0.05 * P<0.1



Figure 3: The Daily Number of News Articles and Social Media Posted Around 18th CCP National Congress Meeting



1: Preparation Period of the CPC 18th National Congress Meeting.

2: Meeting Period of the CPC 18th National Congress Meeting



Alternative interpretation

- Social media are **noisy** or **reporting on topics different from those of traditional media** when traditional media are more positively biased.
- Do stock return discount the traditional media according to its media bias?

$$(3) \quad CAR_{it} = \alpha + \beta_1 \text{Traditional Media Tone}_{it} + \beta_2 \text{Traditional Media Tone}_{it} \times \\ \text{TM Bias}_{it} + \beta_3 \text{TM Bias}_{it} + \beta_4 \text{Social Media Tone}_{it} + \beta_5 \text{CAR}[-5, -1]_{it} + \\ \gamma' \text{Control Variables}_{it} + \text{Firm Dummy} + \text{Year Month Dummy} + \varepsilon_{it}$$

- β_1 is expected to be positive and β_2 is expected to be negative.
- TM Bias = 1 when (traditional media tone – social media tone) is in the top quintile (most positive), and zero otherwise.
- CAR is from day 1 to day 5, 10 and 20. Day 0 is the day of the info released.



Table 9: The Informativeness of Traditional Media and Social Media in Predicting Abnormal Returns: The Impact of Traditional Media Bias

	1	2	3
	CAR(1,5)	CAR(1,10)	CAR(1,20)
<i>Independent Variables</i>			
Traditional Media Tone	0.0009***	0.0007***	-0.0001
	5.23	2.82	-0.21
Traditional Media Tone x TM Bias	-0.0042***	-0.0047***	-0.0067***
	-5.47	-4.41	-4.43
TM Bias	0.0035***	0.0045***	0.0075***
	5.58	5.14	5.99
Social Media Tone	0.0056***	0.0069***	0.0080***
	21.24	18.47	15.13
Size	-0.0052***	-0.0099***	-0.0189***
	-14.17	-16.05	-19.44
ROA	-0.0026	-0.0042	-0.0124**
	-1.25	-1.21	-2.21
Market to Book	-0.0006***	-0.0011***	-0.0022***
	-10.63	-12.42	-15.11
Leverage	0.0033***	0.0062***	0.0126***
	6.03	6.76	8.46
CAR [-5,-1]	0.0031*	0.0044**	-0.0024***
	1.91	2.13	3.79
Adj- R2	0.0143	0.0223	0.0345
N	970,982	970,982	970,982
Firm Fixed Effect	Yes	Yes	Yes
Year-Month Fixed Effect	Yes	Yes	Yes

*** P<0.01 ** P<0.05 * P<0.1



Additional Test

- SOEs v.s. Non-SOEs
- Official Newspaper v.s. Non-Official Newspaper
- Bias defined by the cutoff at median
- Requiring 5/10 posts on the day
- Requiring 3/5 articles on the day
- Three days surrounding earnings announcement

Conclusion

- The tone of East Guba's posts is less optimistic than that of the newspapers when the latter are more likely to be positively biased.
- The political intervention has increased the newspapers' optimistic bias and the deviation in tone between the newspapers and East Guba.
- The positive stock return response to the tone of the newspapers' articles is significantly attenuated when it deviates positively from that of East Guba.



Thank you!

Table 10: Social Media's Correction Effect on Traditional Media Bias: Party Media and Non-Party Media

Dependent Variable: Social Media Tone Day 0

	1	2	Diff.
<i>Independent Variables</i>	Party Media	Non-Party Media	(2) – (1)
Traditional Media Tone	0.0192**	0.0586***	0.0394***
	2.50	17.70	8.57
Traditional Media Tone x	-0.0145*	-0.0392***	-0.0247
TM_Positive	-1.70	-11.33	0.974
TM_Positive	0.0038	0.0054***	
	0.82	3.19	
Size	-0.0443***	-0.0326***	
	-14.08	-24.65	
ROA	0.0623***	0.0443***	
	3.39	6.03	
Market to Book	-0.0036***	-0.0025***	
	-7.84	-13.55	
Leverage	0.0318***	0.0261***	
	6.49	12.49	
Adj-R2	0.115	0.093	
N	124,616	970,982	
Firm-Fixed Effect	YES	YES	
Year-Month-Fixed Effect	YES	YES	

We use Chow Test and report Chi-square Statistics to test the equality of two coefficients across sample.

*** P<0.01 ** P<0.05 * P<0.1

Table A1: Traditional Media Tone and Traditional Media – Social Media Tone Difference

Traditional Media Tone Decile	Mean of TM Bias (Traditional Media Tone-Social Media Tone)	Standard Deviation	Frequency	
1	-0.3794	0.3760	98,421	▲
2	0.0287	0.3535	97,206	Negative
3	0.2889	0.3410	97,943	Positive
4	0.4654	0.3279	94,736	▼
5	0.6061	0.3314	96,345	
6	0.7229	0.3316	97,796	
7	0.8421	0.3340	97,993	
8	0.9648	0.3337	98,644	
9	1.0683	0.3323	97,264	
10	1.1415	0.3294	94,634	
Total	0.5732	0.5722	970,982	

Table A2: Traditional Media Tone for SOE vs Non-SOE: The Impact of Media Intervention

Dependent Variable: Traditional Media Tone

<i>Independent Variables</i>	Pre-Intervention	Post-Intervention	Full-Sample
SOE	0.0158*** 13.54	0.0009 0.30	0.0137*** 12.66
Size	0.0074*** 19.01	0.0058*** 5.16	0.0073*** 19.71
ROA	0.468*** 23.44	0.439*** 23.23	0.464*** 27.66
Market to Book	-0.0057*** -29.86	-0.0058*** -16.31	-0.0058*** -33.82
Leverage	-0.0161*** -10.91	-0.0213*** -6.01	-0.0173*** -12.75
Adj-R2	0.018	0.014	0.018
N	802,523	168,459	970,982
Year-Month Fixed Effect	YES	YES	YES
Industry Fixed Effect	YES	YES	YES

**Table A3-A: Traditional Media Tone and Social Media Tone
Around Media Intervention in 2015**

Year-Month	Mean Tone of Social Media	Mean Tone of Traditional Media	Difference TM-SM
2015-01	0.4283	-0.2494	0.6777***
2015-02	0.4027	-0.2495	0.6522***
2015-03	0.4552	-0.2141	0.6693***
2015-04	0.4515	-0.2807	0.7323***
2015-05	0.4332	-0.2939	0.7271***
2015-06	0.4221	-0.3325	0.7546***
2015-07	0.4224	-0.3688	0.7912***
2015-08	0.4021	-0.3344	0.7365***
2015-09	0.4062	-0.3245	0.7308***
2015-10	0.4426	-0.2821	0.7247***
2015-11	0.4491	-0.3290	0.7781***
2015-12	0.4653	-0.3053	0.7706***
Total	0.4317	-0.2970	0.7287

Table A3-B: Traditional Media Tone and Social Media Tone by Year

Year	Mean Tone of Social Media	Mean Tone of Traditional Media	Difference TM-SM
2009	0.3503	-0.2081	0.5584***
2010	0.3766	-0.1972	0.5738***
2011	0.3497	-0.2122	0.5618***
2012	0.3460	-0.1534	0.4994***
2013	0.3674	-0.1729	0.5403***
2014	0.4116	-0.1813	0.5928***
2015(Pre-Intervention)	0.4343	-0.2698	0.7041***
2015(Post-Intervention)	0.4282	-0.3256	0.7538***
2016	0.3964	-0.2846	0.6810***
Total	0.3704	-0.2028	0.5732

**Table A3-C: Traditional Media Tone and Social Media Tone
Around 18th CCP National Congress Meeting**

Year-Month	Mean Tone of Social Media	Mean Tone of Traditional Media	Difference TM-SM
2012-07	0.2923	-0.1760	0.4683***
2012-08	0.3018	-0.1638	0.4656***
2012-09	0.3483	-0.1470	0.4952***
2012-10	0.3591	-0.1068	0.4659***
2012-11	0.3893	-0.1331	0.5224***
2012-12	0.4042	-0.1274	0.5316***
2013-01	0.3481	-0.1480	0.4961***
2013-02	0.3071	-0.1384	0.4455***
2013-03	0.3271	-0.1762	0.5033***
Total	0.3419	-0.1463	0.4882

**Table A4: Robustness Check of Social Media's Correction Effect on Traditional Media Bias:
Alternative Measurement of Traditional Media Bias**

Dependent Variable: Social Media Tone

<i>Independent Variables</i>	
Traditional Media Tone	0.0414*** 33.60
Traditional Media Tone x TM Above Median	-0.0463*** -14.34
TM Above Median	0.0254*** 11.12
Size	-0.0326*** -24.72
ROA	0.0426*** 5.82
Market to Book	-0.0025*** -13.64
Leverage	0.0262*** 12.50
Adj-R2	0.093
N	970,982
Firm-Fixed Effect	YES
Year-Month-Fixed Effect	YES

Table 1: Descriptive Statistics

Panel B

	<i>Variable</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>P25</i>	<i>Median</i>	<i>P75</i>
Traditional Media	<i>Number of news</i>	970,982	3.8953	9.2842	1.0000	1.0000	3.0000
	<i>Traditional media tone</i>	970,982	0.3704	0.4947	0.0742	0.4658	0.7958
	<i>Party media tone</i>	124,616	0.5115	0.4998	0.2682	0.7000	0.9182
	<i>Non-party media tone</i>	970,982	0.1602	0.4021	0.0000	0.0000	0.3979
	<i>Traditional media positive</i>	970,982	0.7790	0.4149	1.0000	1.0000	1.0000
Social Media	<i>Social media tone</i>	970,982	-0.2028	0.3145	-0.4118	-0.1778	0.0000
	<i>Number of posts</i>	970,982	39.4893	94.8157	3.0000	16.0000	43.0000
Stock Return	<i>Raw return</i>	970,982	0.0014	0.0339	-0.0157	0.0007	0.0169
	<i>Abnormal return</i>	970,982	0.0012	0.0275	-0.0130	-0.0017	0.0115
	<i>CAR[1,5]</i>	970,982	0.0006	0.0600	-0.0301	-0.0041	0.0253
	<i>CAR[1,10]</i>	970,982	0.0016	0.0821	-0.0416	-0.0054	0.0368
	<i>CAR[1,20]</i>	970,982	0.0036	0.1122	-0.0587	-0.0062	0.0551
Firm Fundamentals	<i>SOE</i>	18,499	0.4278	0.4948	0.0000	0.0000	1.0000
	<i>Size</i>	18,499	21.9302	1.3771	20.9622	21.7418	22.6726
	<i>ROA</i>	18,499	0.0539	0.0809	0.0142	0.0422	0.0834
	<i>Market to Book</i>	18,499	3.8148	3.8706	1.7172	2.7480	4.5508
	<i>Leverage</i>	18,499	0.2125	0.3827	-0.0000	0.0342	0.2606

Table 2: Correlation Table

	1	2	3	4	5	6	7	8	9	10	11
1 <i>number of news</i>											
2 <i>traditional media tone</i>	-0.0184*										
3 <i>party media tone</i>	-0.0048*	0.2826*									
4 <i>non-party media tone</i>	-0.0199*	0.5905*	-0.1036*								
5 <i>traditional media positive</i>	0.0699*	0.8217*	0.2093*	0.4903*							
6 <i>social media tone</i>	-0.0113*	0.0523*	0.0042*	0.0446*	0.0459*						
7 <i>number of posts</i>	0.1523*	-0.0470*	-0.0301*	-0.0155*	-0.0221*	-0.0382*					
8 <i>raw return</i>	-0.0029*	0.0460*	-0.0009	0.0492*	0.0408*	0.2115*	-0.0125*				
9 <i>abnormal return</i>	-0.0028*	0.0524*	-0.0025	0.0582*	0.0474*	0.2183*	-0.0089*	0.8226*			
10 <i>CAR[1,5]</i>	-0.0059*	0.0109*	0.0041*	0.0067*	0.0087*	0.0324*	-0.0439*	0.0593*	0.0639*		
11 <i>CAR[1,10]</i>	-0.0083*	0.0098*	0.0044*	0.0049*	0.0084*	0.0305*	-0.0505*	0.0468*	0.0530*	0.7280*	
12 <i>CAR[1,20]</i>	-0.0109*	0.0079*	0.0051*	0.0043*	0.0052*	0.0274*	-0.0602*	0.0311*	0.0357*	0.5338*	0.7257*

*Indicates correlation coefficient significant at 0.05 level