

**Panda Games:
Corporate Disclosure in the Eclipse of Search**

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**Presented by Bohui Zhang
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Cut off China from the rest of the world



Qianlong emperor
Qing Dynasty (1644–1912)

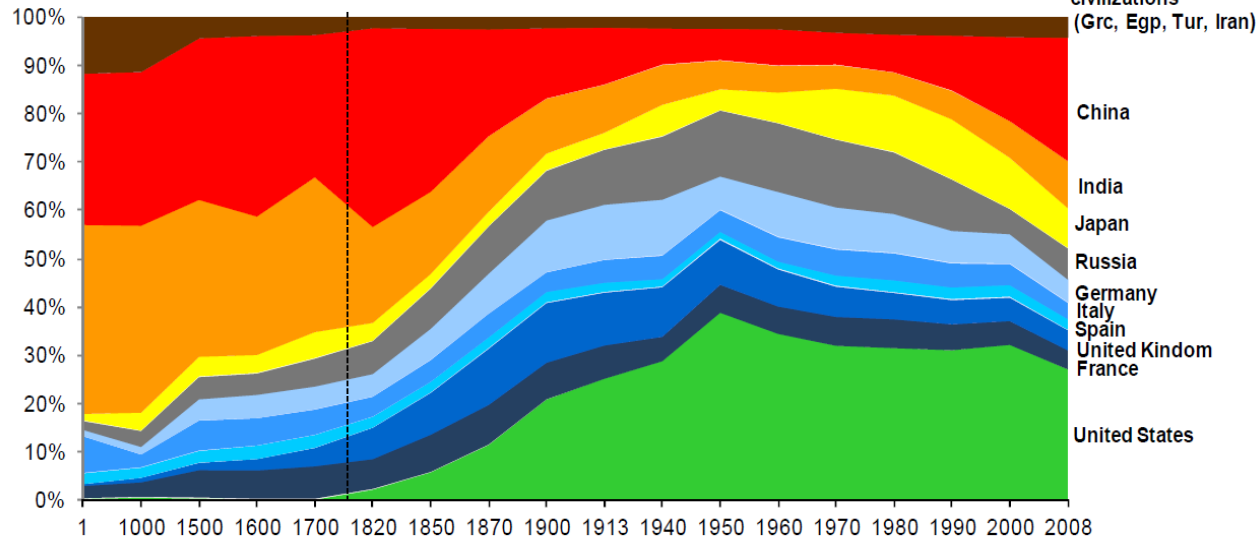
Single commerce port in 1757:
foreigners can only trade in Guangzhou



← Goods

← Information

Economic history of China and other major powers
Share of world GDP

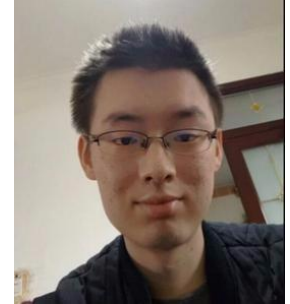


Source: "Statistics on World Population, GDP and Per Capita GDP, 1-2008 AD", Angus Maddison, University of Groningen.

1757

Wei Zexi (魏则西)

A 21-year old Chinese college student from Shaanxi was diagnosed with a rare form of cancer in 2014

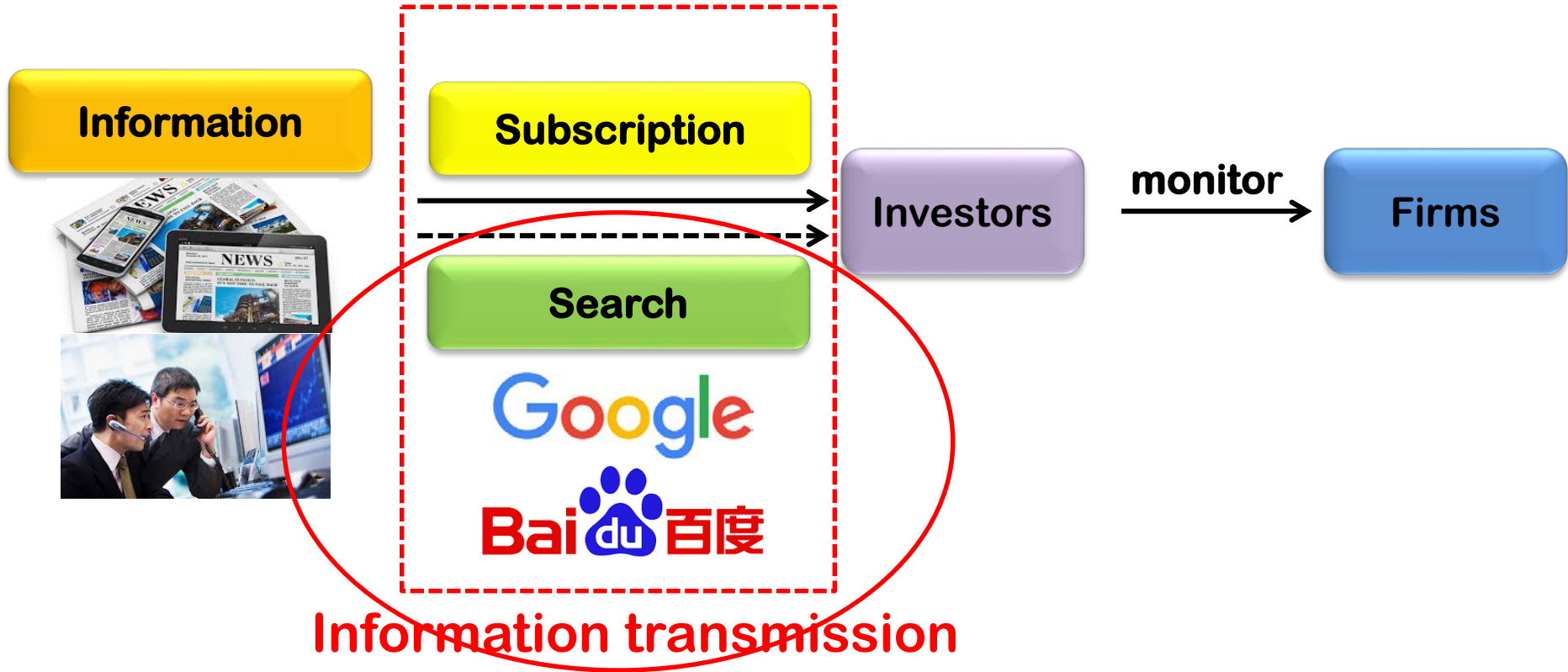


This hospital claimed that they had immunotherapy treatments collaborated with Stanford University



Zexi passed away in 2016 and the government imposed an investigation on Baidu

1. Motivation



Question:

Does the search-based information transmission help investors monitor firms?

2. Design

If investors can not search for information,
how would firms react to it ?
e.g. corporate disclosure?

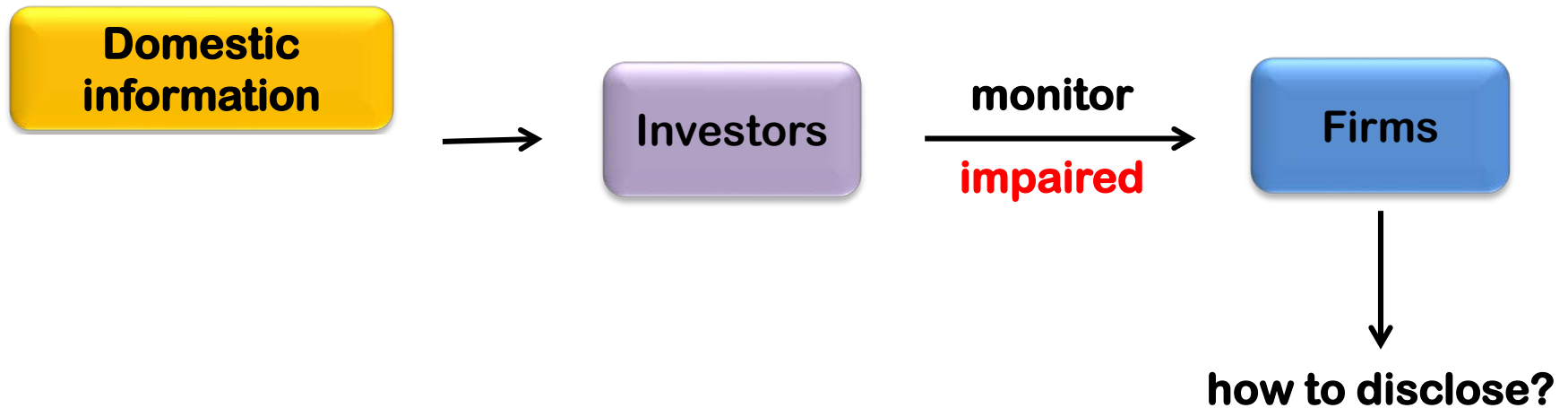
Our experiment:
Google's 2010 exit from Mainland China



3. Hypothesis

Intuition:

Impede domestic investors' search for foreign information



Hypothesis:

After Google's 2010 exit, firms should issue **overoptimistic** press releases involving **foreign** events

4. Preview of our findings

- a. After Google's exit from China,
 - firms' press releases on their foreign events become more **optimistic**
 - firms with existing foreign operations issue more **bullish annual reports** and have **smaller price nonsynchronicity**
- b. The presence of **foreign investors** and **foreign analysts** can mitigate the above effect, while the result is more pronounced for firms with a large fraction of **retail investors**
- c. More frequent and profitable **insider sales** after a press release (annual report)

5.1 Google versus Baidu 百度

Google entered Mainland China in 2006 after agreeing upon abiding by China's censorship rules

- Google.cn
- Competes directly with Baidu.com

Those who need domestic information should go to Baidu, and those who need foreign information should go to Google

Jan.12, 2010



Google announced that it discovered a large-scale cyberattack occurred back in late 2009

March 23, 2010



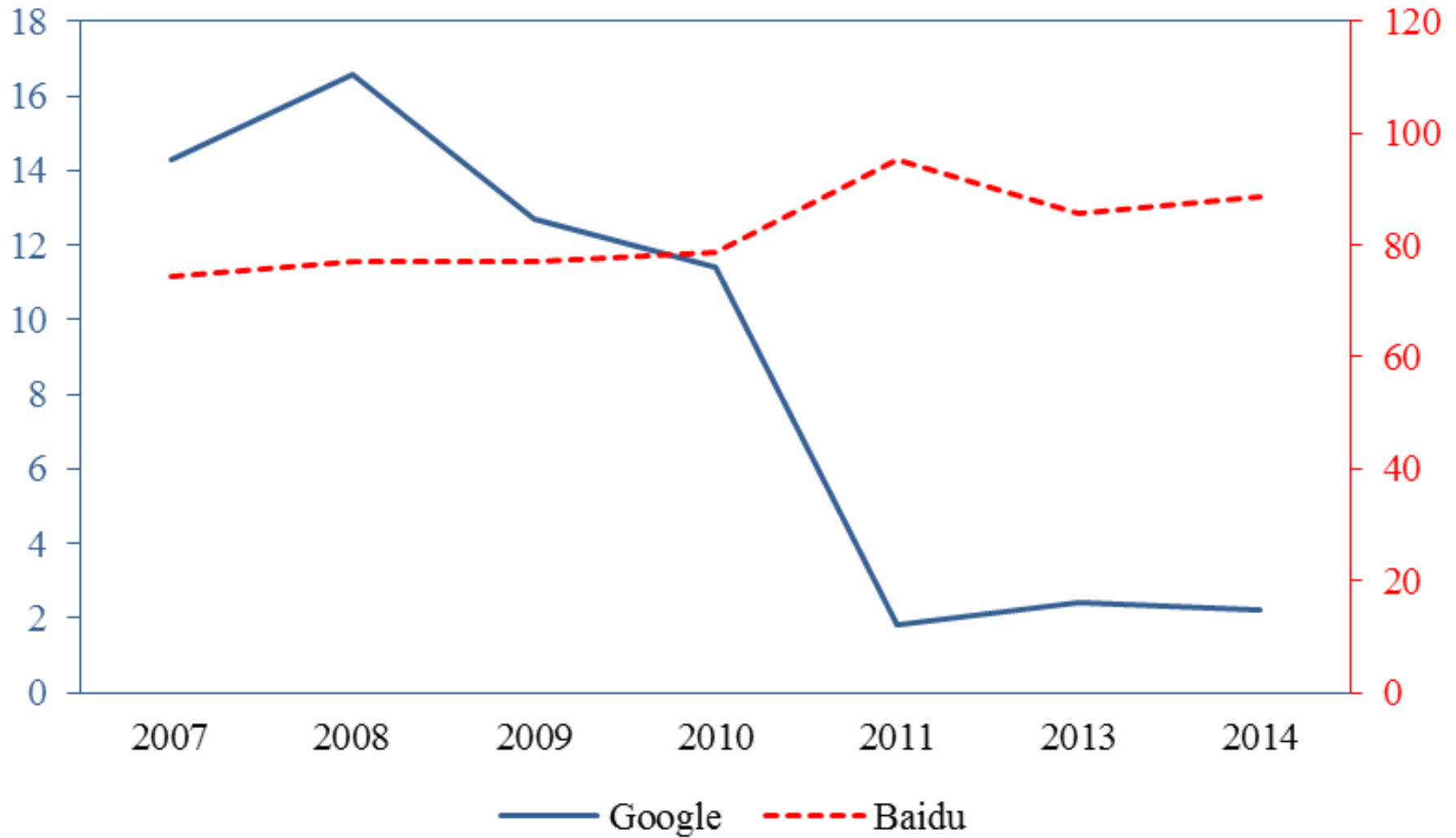
Moved its search engine for Chinese web surfers offshore

March 30, 2010

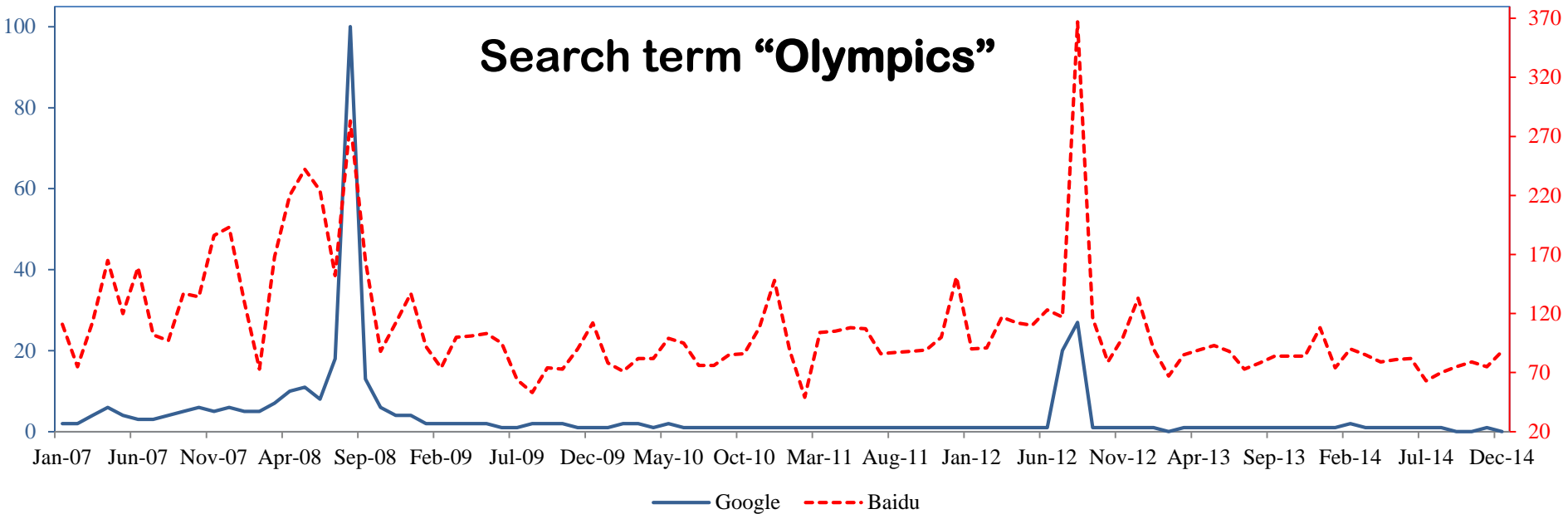
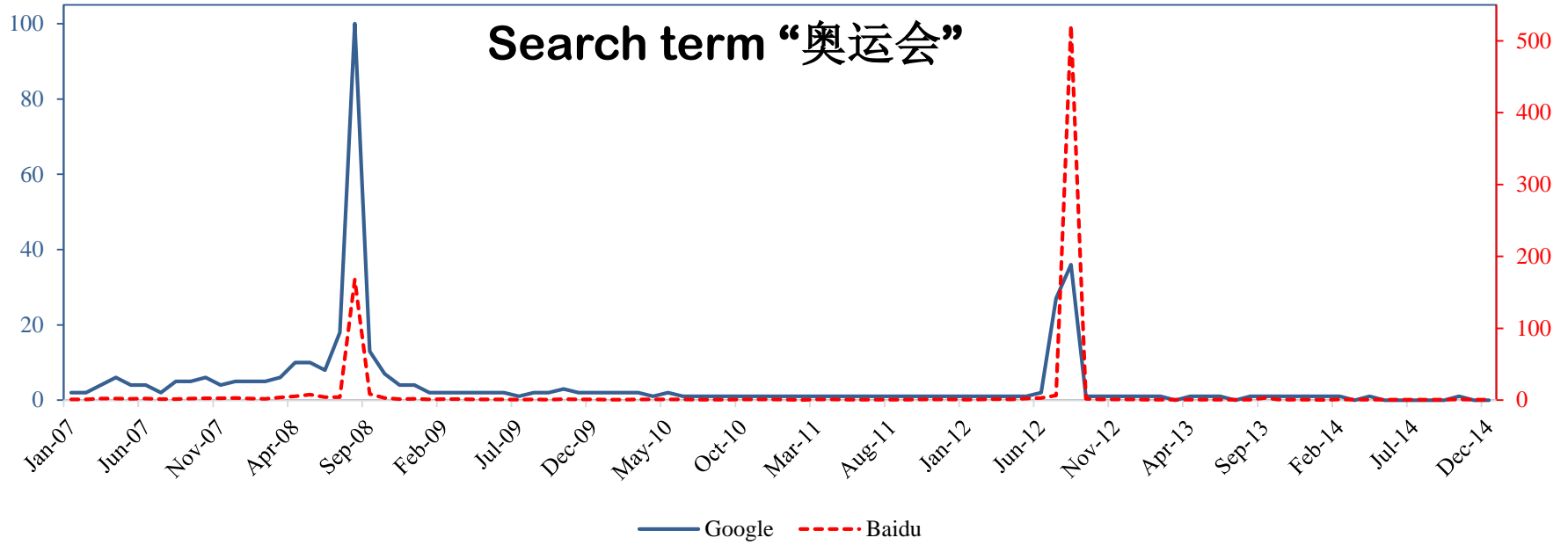


Searching via all Google search sites in all languages was banned in Mainland China

Baidu and Google's Market Share in China



Search volumes of key words in Baidu and Google



Baidu's search quality of foreign information

Type "Massimo Massa" in Google

The screenshot shows a Google search for "Massimo Massa" on the Google Images page. The search bar contains the text "Massimo Massa". Below the search bar, there are navigation tabs for "All", "Images", "News", "Maps", "Videos", and "More". The "Images" tab is selected. The search results display a grid of 14 images. The first row contains five images: a portrait of Massimo Massa, a video frame from a conference, a portrait of Massimo Massa, another portrait of Massimo Massa, and a video frame of Massimo Massa speaking. The second row contains four images: a video frame of Massimo Massa on a news program, a portrait of Massimo Massa, a video frame of Massimo Massa speaking, a portrait of Massimo Massa, a portrait of Massimo Massa, a portrait of Massimo Massa, a portrait of Massimo Massa, and a portrait of Massimo Massa. The images show Massimo Massa in various contexts, including professional settings, conferences, and news programs. The search results also include a "Sign in" button and a "SafeSearch" dropdown menu.

Baidu's search quality of foreign information

Type "Massimo Massa" in Baidu

The screenshot shows a Baidu image search interface. The search bar contains the text "Massimo Massa". Below the search bar, there are navigation tabs for "网页", "新闻", "贴吧", "知道", "音乐", "图片", "视频", "地图", "文库", and "更多". The "图片" tab is selected. Below the navigation tabs, there is a search bar with the text "Massimo Massa" and a "百度一下" button. To the right of the search bar, there are links for "百度首页", "登录", "注册", and "传统翻页版本". Below the search bar, there is a section for "相关搜索" (Related Search) with the following items: "bruno massa", "massimo dobrovic", "massimo dutti常州", "massimo dutti店铺图片", "massimo dutti陈列", "massimo jones", "massimo dutti抹胸裙", "massimo dutti南宁", "massimo dutti模特", and "maggi massimo家具". Below the search results, there is a grid of 12 images showing various fashion advertisements for Massimo Dutti. The images include models in various outfits, including jackets, sweaters, and suits, and some images feature the Massimo Dutti logo and text like "SALES", "VIENNA", and "haiba.cn".

Massimo Massa_百度图片 x

image.baidu.com/search/index?tn=baiduimage&ps=1&ct=201326592&lm=-1&cl=2&nc=1&ie=utf-8&word=Massimo%20Massa

Baidu 图片 Massimo Massa 百度一下 图片筛选

百度首页 登录 注册 传统翻页版本

网页 新闻 贴吧 知道 音乐 图片 视频 地图 文库 更多»

相关搜索: bruno massa massimo dobrovic massimo dutti常州 massimo dutti店铺图片 massimo dutti陈列 massimo jones massimo dutti抹胸裙 massimo dutti南宁 massimo dutti模特 maggi massimo家具

Massimo Dutti SALES

Massimo Dutti

haiba.cn

Massimo Dutti

VIENNA

MANAGERS & FASHION ADVISORS

Massimo Dutti

5.2 Measuring sentiment in corporate disclosure

1) *Tone*

Tone = (# of positive words - # of negative words)/words in a press release and multiplied by 10,000.

2) *Sentiment*

Words are grouped into six sentiment categories

1: 超 (**super**)

2: 极其 (**extreme**)、最(**most**)

3: 很 (**very**)

4: 较 (**more**)

5: 稍 (**-ish**)

6: 欠 (**insufficiently**)

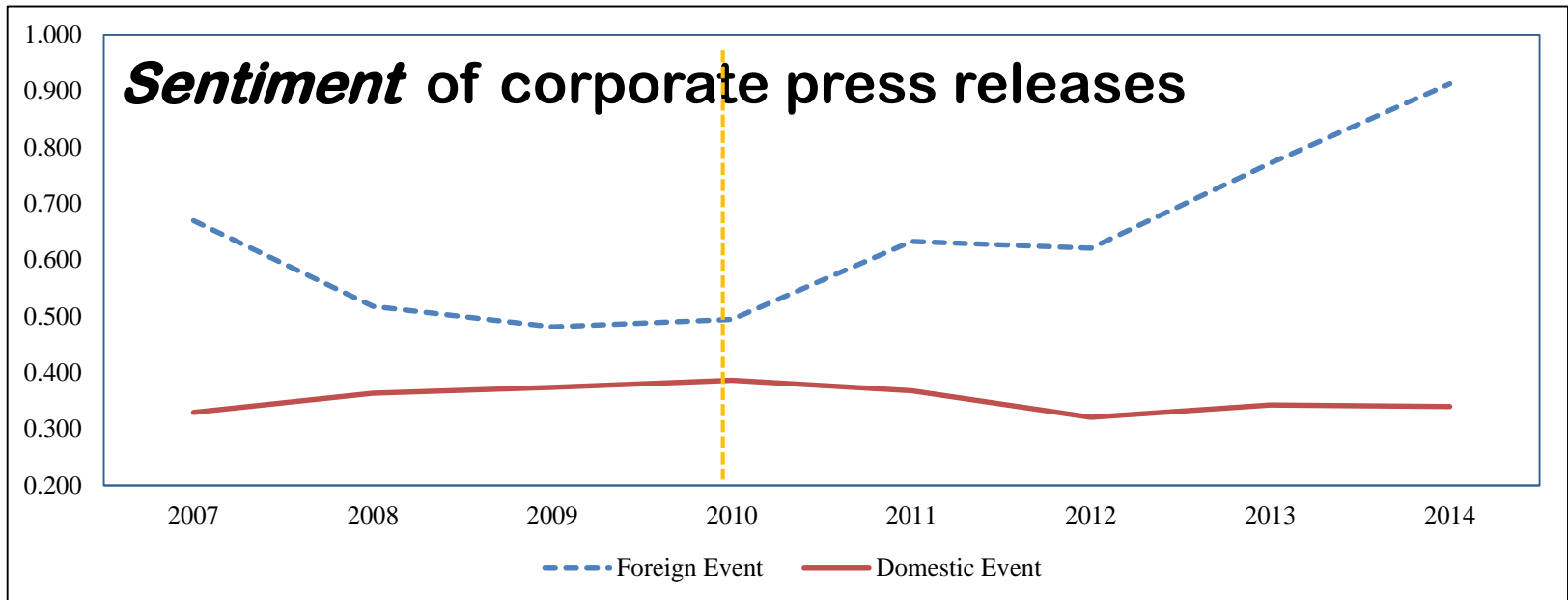
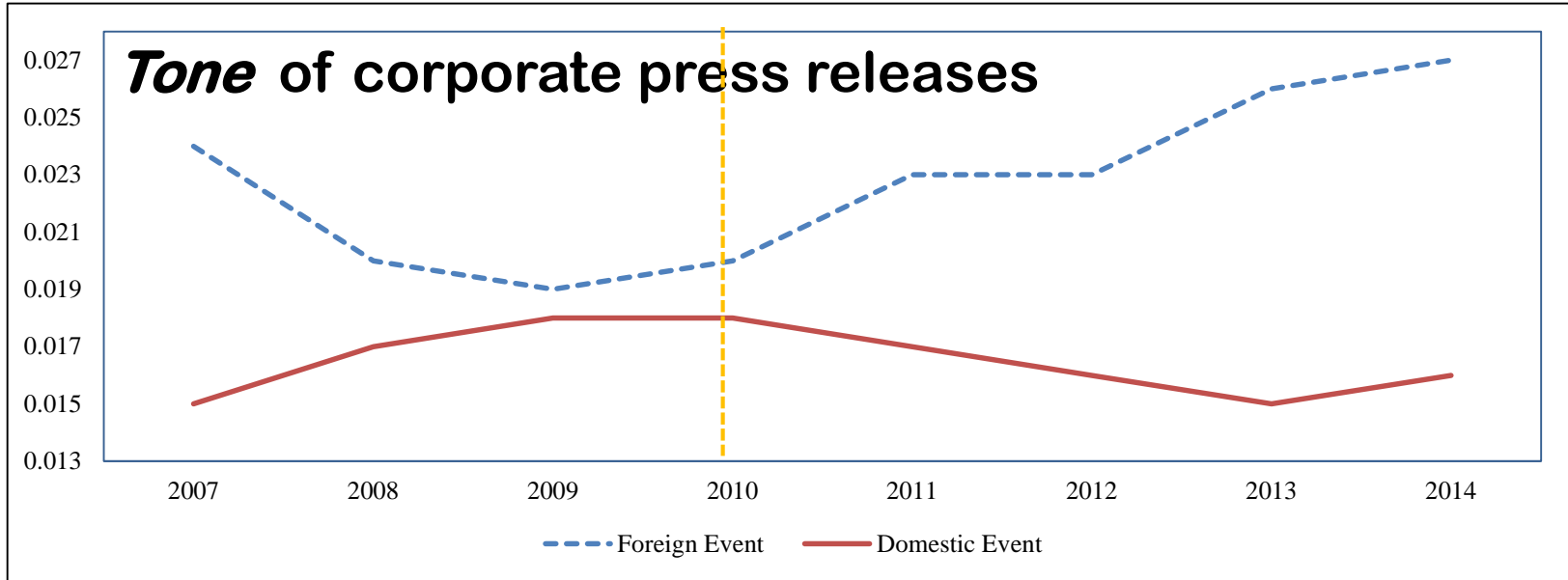
Sentiment = (# of words in **1-4** – # of words in **5-6**)/words

5.3 Sample

- 1) Extract press releases from 2007 to 2014
 - A sample firm with both domestic and foreign press releases around the event
- 2) End up with 11,865 press releases issued by 633 firms
 - 4,334 releases are about foreign events
 - 7,531 are related only to domestic events

Event Type	Foreign Event	Domestic Event	# of obs.
Asset restructuring	417	657	1,074
Major contract	343	464	807
Borrowing	54	109	163
Collateral and guarantees	711	1,240	1,951
Project investment	910	1,646	2,556
Related party transaction	846	1,145	1,991
Fund raising	486	923	1,409
Other financing	567	1,347	1,914
Total	4,334	7,531	11,865

6.1 Univariate analysis



6.2 Multivariate regression

$$Tone_{i,t}(Sentiment_{i,t}) = \beta_0 + \beta_1 Foreign\ Event_{i,t} \times Google\ Exit + \beta_2 Foreign\ Event_{i,t} + \beta_3 Google\ Exit + \beta_4 X_{i,t} + \epsilon_{i,t}$$

Dependent Variable	Tone		Sentiment	
<i>Foreign Event</i> × <i>Google Exit</i>	0.479** (2.11)	0.500** (2.07)	1.985** (2.02)	2.222* (1.93)
<i>Foreign Event</i>	0.274* (1.91)	0.321** (2.16)	1.621*** (4.17)	1.759*** (4.48)
<i>Google Exit</i>	-0.109* (-1.75)	-0.235** (-2.46)	-0.138 (-1.10)	-0.648 (-1.49)
<i>Size</i>		0.094** (2.26)		0.388* (1.78)
<i>Book to Market</i>		-0.048** (-2.14)		-0.046 (-0.41)
<i>Age</i>		-0.231 (-1.05)		0.123 (0.17)
<i>ROA</i>		0.521 (1.28)		1.347 (0.86)
<i>SOE</i>		0.025 (0.29)		-0.708 (-1.05)
<i>Big 4 Auditor</i>		-0.022 (-0.42)		-0.003 (-0.02)
Event Type FE	No	Yes	No	Yes
Year FE	No	Yes	No	Yes
Firm FE	No	Yes	No	Yes
# of obs.	11,865	11,865	11,865	11,865
R ²	0.082	0.312	0.084	0.285

Following Google's exit, the tone of a corporate press release regarding a foreign event is **13.69%** higher than that for a similar domestic event, relative to the sample mean.

6.3 Alternative access to foreign information

- Role of foreign investors

They are not subject to the censorship of foreign information

Dependent Variable	With QFII		Without QFII	
	Tone	Sentiment	Tone	Sentiment
	(1)	(2)	(3)	(4)
<i>Foreign Event</i> × <i>Google Exit</i>	0.188 (0.65)	1.530 (1.07)	0.710*** (2.71)	2.886** (2.08)
Control variables	Yes	Yes	Yes	Yes
# of obs.	1,784	1,784	1,784	1,784
R ²	0.409	0.354	0.450	0.424

- Effect of analysts affiliated with foreign brokers

Foreign brokers have operations outside Mainland China

Dependent Variable	Covered by Analysts from Foreign Brokers		Covered by Analysts from Domestic Brokers	
	Tone	Sentiment	Tone	Sentiment
	(1)	(2)	(3)	(4)
<i>Foreign Event</i> × <i>Google Exit</i>	0.004 (1.00)	0.209 (1.26)	0.008*** (4.36)	0.342* (1.87)
Control variables	Yes	Yes	Yes	Yes
# of obs.	1,635	1,635	1,635	1,635
R ²	0.411	0.377	0.512	0.434

6.3 Alternative access to foreign information

- Role of retail investors

Compared to institutional investors, Google searches are mostly used by individuals

Dependent Variable	Low Retail Ownership		High Retail Ownership	
	Tone	Sentiment	Tone	Sentiment
	(1)	(2)	(3)	(4)
<i>Foreign Event</i> × <i>Google Exit</i>	0.407 (1.34)	1.804 (1.46)	0.614** (2.54)	2.571** (2.09)
Control variables	Yes	Yes	Yes	Yes
# of obs.	5,777	5,777	5,799	5,799
R ²	0.323	0.308	0.358	0.336

6.4 Placebo test

Concern: the above result could be driven by a time trend effect or other economic, financial, and regulatory events

Solution:

- Randomly select 200 days between 2007 and 2014 as the (false) Google's exit date
- Run 200 regressions to test *Foreign Event* × *Google Exit*

	Google's actual exit date	Mean	5%	25%	Median	75%	95%
<i>Tone</i>	0.500 (2.07)	0.069 (0.53)	-0.711 (-3.62)	-0.320 (-1.33)	0.069 (0.32)	0.376 (1.53)	0.742 (4.92)
<i>Sentiment</i>	2.222 (1.93)	1.095 (1.16)	-1.344 (-1.00)	0.071 (0.07)	1.122 (0.93)	1.760 (1.65)	3.308 (3.74)

The timing of Google's exit is consistent with a **causal interpretation**

6.5 Other selection issues

Concern: firms select to engage in profitable opportunities propelled by economic development in foreign countries.

Solution: we control for a country's GDP growth in the year when a foreign event occurs and the year before, as well as their interactions with the exit dummy.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Foreign Event × Google Exit</i>	0.473** (2.02)	0.419* (1.85)	0.568** (2.24)	0.466* (1.82)	0.486*** (3.95)	0.354*** (2.60)
<i>Local GDP Growth</i>	0.455* (1.81)	-0.136 (-0.39)	0.016 (0.06)	-0.952** (-2.43)		
<i>Local GDP Growth (t-1)</i>		1.159** (2.28)		1.675** (2.08)		
<i>Local GDP Growth × Google Exit</i>			0.765** (2.29)	1.329*** (3.58)		
<i>Local GDP Growth (t-1) × Google Exit</i>				-0.790 (-0.70)		
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm x Country FE	No	No	No	No	Yes	No
Year x Country FE	No	No	No	No	No	Yes
# of obs.	11,865	11,865	11,865	11,865	17,280	17,280
R ²	0.312	0.314	0.312	0.314	0.750	0.587

6.6 Annual reports: MD&A

- The timing of annual reports is relatively exogenous and the content is not driven by any particular corporate events.
- Focus on the management's discussion and analysis (MD&A)
- Distinguish between firms that have foreign operations and those that focus their business domestically: *MNC* is equal to one if a firm's foreign sales exceeds 5% of its total sales.

Dependent Variable	<i>Tone</i>	<i>Sentiment</i>	<i>Price Nonsynchronicity</i>
<i>MNC</i> × <i>Google Exit</i>	4.913** (2.51)	0.130* (1.75)	-0.083*** (-4.53)
Control variables	Yes	Yes	Yes
# of obs.	8,567	8,567	8,822
Adjusted R ²	0.626	0.576	0.440

6.6 Who benefit from bullish disclosures?

Our conjecture: managers gain insider trading profits by having overoptimistic disclosures.

Tests: the volume and profit of insider sales

Dependent variable: the fraction of shares sold by insiders during a three-month post-announcement window of a press release

Insider sales increase substantially for foreign events

Dependent variable: the three-month cumulative abnormal return earned by insiders from the above sales

Selling profits increase substantially for foreign events

	Foreign Event	Domestic Event
<i>Tone</i> × <i>Google Exit</i>	0.102*** (6.35)	-0.000 (-0.01)
Control variables	Yes	Yes
# of obs.	4,334	7,531
Adjusted R ²	0.030	0.030

	Foreign Event	Domestic Event
<i>Tone</i> × <i>Google Exit</i>	0.039*** (7.12)	0.015 (0.40)
Control variables	Yes	Yes
# of obs.	735	1,246
Adjusted R ²	0.120	0.080

Conclusion

Question: does the search-based information transmission help investors monitor firms?

Answers:

- Yes
- Firms issue overoptimistic corporate press releases when a channel to search for a certain type of firm-specific information is severed