Social Media and Corruption

Online Appendix

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1. Theoretical Framework

To highlight potential mechanisms through which blog postings might affect stock returns, we propose a simple theoretical model in the spirit of Desai, Dyck, and Zingales (2007). The goal of is not to provide a full-fledged theoretical model, but rather to highlight potential mechanisms of blog posts' impact on the performance of the companies mentioned in a post.

Consider a company with a manager who can divert a fraction of the company's profit. We assume that there is imperfect protection of the minority shareholders' rights and allow for some uncertainty about the manager's propensity to steal. In addition, it is possible to enter into corrupt deals with a government.

Specifically, the market value of the company is $V = (1 - d)(1 - t)$, where d is the manager's level of profit diversion, t is the tax rate, and the expected pre-tax profit without diversion is normalized to 1. The maximand in the manager's problem is

$$V = \lambda(1 - d)(1 - t) + \gamma d - a\delta \frac{d^2}{2},$$

where λ is the manager's share in the company, δ stands for the quality of protection of shareholders' rights, a is the investors' attention to the information about the extent of profit diversion,[1] and γ proxies the (unobserved) propensity of the manager to steal.

Assuming an interior solution for the manager's problem (2), it is straightforward to calculate the optimal level of diversion

$$d^* = \frac{1}{a\delta}\left(\gamma - \lambda(1 - t)\right).$$

A piece of information about corruption in a blog post might mean several things to shareholders. First, new information might change the market's prior about the manager's propensity to steal, γ.

Prior to a blog post, the value of the company is given by

$$V = \left(1 - \frac{E(\gamma) - \lambda(1 - t)}{a\delta}\right)(1 - t),$$

where $E(\gamma)$ is the expected value of the manager's propensity to steal. Post-revelation, the expected value of the company is

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[1] See DellaVigna and Pollet (2009) for a more detailed model focused on investors' inattention.

$$E(V|post) = \left(1 - \frac{E(\gamma|post) - \lambda(1 - t)}{a\delta}\right)(1 - t)$$

where $E(\gamma|post)$ is the expected value of γ conditional on the revealed information.

Using this expression we can formulate our first prediction:

Prediction 1. *If the expected propensity to steal conditional on new information is higher than its unconditional expected value ($E(\gamma|post)$> $E(\gamma)$), the value of the firm, V, goes down following the revelation of information.*

The second channel of influence of the posted information on company value is through a change in the quality of shareholders' rights enforcement. Blog posts can foster enforcement of property rights, e.g., by drawing the attention of regulators or political authorities overseeing the management to problems in the companies. Revealed information can imply that δ, as perceived by managers, goes up, similar to Dyck, Volchkova, and Zingales (2008) arguing that δ goes up after publications in the international financial press. This mechanism suggests that the level of diversion should go down and the value of the company should increase following a release of new information.

Prediction 2. *If protection of minority shareholders strengthens as a result of the blog posts, i.e., δ goes up following a blog post, the value of the firm V increases.*

Next, it could be the case that the money diverted from the companies are used to pay for preferential treatment by government officials such as regulatory protection from competitors or firm-specific tax breaks.[2] As shown by Richter et al. (2009), political connections are associated with smaller effective tax rates even in countries with mature markets and strong political institutions such as the United States. If blog postings about corruption make it more difficult for a company to lobby the government, the result might be an effective increase in t. A corresponding change in the value of the firm is unambiguously negative:

Prediction 3. *If the effective tax rate t for the firm increases, i.e., it becomes more difficult for the firm to cut deals with the government after the information is revealed, the value of the firm V goes down.*

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[2] For example, the natural gas monopolist Gazprom has enjoyed the lowest effective profit tax rates in Russia for years. (See Desai, Dyck, and Zingales, 2007, on preferential tax treatment for Russian state-controlled oil companies.)

Finally, investors' attention can affect corporate accountability in the targeted companies. If the public's attention is drawn to corporate misbehavior, managers could be replaced or punished by political authorities. In our framework, that means that attention variable *a* is an important driver of punishment of the managers, i.e.

Prediction 4. *If public attention to managers' misbehavior increases as a result of a blog post, i.e. the value of parameter a goes up, the value of the firm V should increase.*

Empirically, we look at the impact of blog posts on stock returns. Though we cannot fully disentangle the different information channels and the attention channel, we are able to use additional tests to provide some evidence on their relative relevance.[3]

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[3] An alternative mechanism that we do not discuss is that blog posts could impact higher-order beliefs about different parameters of the model. Our ability to isolate this particular mechanism remain limited: as long as market participants have budget constraints and limited time horizon, a post driving beliefs about a parameter will be observationally equivalent to a post changing higher-order beliefs about this parameter.

2. Additional Background Information.

In this section, we briefly describe Navalny's most famous blog posts and posts that triggered the largest market reaction. In addition, we provide some background data on Alexey Navalny related to the period under study (August 2008 – August 2011).

Important Blog Posts

The three arguably most famous posts that are associated with the Navalny crusade against state-controlled corporations have the same title, which varies only the name of the company in question.

The blog "How the Money Are Stolen in Transneft" (http://navalny.livejournal.com/526563.html), posted at 12:17PM on November 16, 2010 is described in the main body of the paper.

At 12:53PM on December 24, 2008 (http://navalny.livejournal.com/342311.html) Navalny posted a blog "How the Money Are Stolen in Gazprom", which targeted the largest Russian company by market capitalization. The blog post described a specific transfer-pricing scheme, under which Gazprom overpaid almost 100% for gas it was buying from an independent producer. The blog alluded to a criminal case as a source information, and provided some specific details, such as the period of the alleged deals and names of companies involved. However, the blog did not contain any information about the extent of the scheme and the resulting loss for the shareholders.

At 11:00AM on November 30, 2009 (http://navalny.livejournal.com/411199.html) Navalny uploaded a post entitled "How the Money Are Stolen in VTB" that focused on specific contracts concluded by subsidiaries of VTB, one of the two largest banks in Russia. Navalny's documents demonstrated the embezzlement of at least $155 million by the top management of a VTB subsidiary related to the company's purchase of 30 Chinese oil rigs in 2007, and a potential embezzlement of a further $400 million through a web of leasing contracts. The post outlined the Navalny's strategy to pursue a number of legal avenues as a VTB minority shareholder.

For the market reaction, each of the following five blog posts is top 1% in terms of cumulative abnormal returns.

On October 13, 2008, at 5:34PM (http://navalny.livejournal.com/305075.html) Navalny wrote about his participation in a shareholder meeting of Rosneft, the largest Russian oil company, with no new information. In the same post he revealed that the Rosneft management has replied to his letter, sent a month and a half ago, with a request to disclose information about the company's new investment plans. (On June 5, 2008, the shareholder meeting approved a decision that allocated $5 billion of the annual profit to "investment and socio-economic development of Rosneft", while allocation $0.5 billion to dividends.) Navalny informs the readers that his request was denied.

On November 24, 2008, at 1:25PM (http://navalny.livejournal.com/324092.html) Navalny reported that the branch of the Moscow criminal police responsible for economic crimes had shut down the investigation of Transneft charitable spending (reported by Navalny on August 06, 2008). The official letter about the closure of investigation, published by Navalny, reported that the police investigators were unable to interview Transneft top managers or get the necessary information from the state tax authorities. In addition, the post draw attention to a Transneft tax report, published a week yearly, which reported about $10 million in charitable spending in the first two quarters of 2008, and informed readers that his lawsuit against Oleg Vyuigin, a noted liberal reformer and a Transneft independent director, will be have preliminary hearings in court that evening.

Next day, November 25, 2008, at 2:30PM (http://navalny.livejournal.com/325238.html) Navalny reported that at yesterday's court preliminary hearings about his lawsuit against Transneft independent director Oleg Vyuigin, lawyers representing Vyuigin argued that an independent director is not obliged to respond to minority shareholders' requests. (Before filing the lawsuit, Navalny demanded Vyuigin's help in obtaining information about Transneft's charitable contributions.) Navalny added a link to a diploma, recently awarded to Vyugin "for his personal contribution to the transparency of the Russian stock market".

On March 24, 2009, at 4:31PM (http://navalny.livejournal.com/362883.html) Navalny published a letter from German Greif, the Chairman of Sberbank, the

largest bank in Russia, which has the state as the controlling shareholder, denying Navalny's request to confirm the $245-million 10—year credit to the Skolkovo School of Management. The school was launched in 2006 by a group of Russian billionaires and patronized by the then-president Dmitry Medvedev, who has served as the chairman of the SSM advisory board; Navalny's claim was that the credit is inconsistent with any reasonable business plan for the school.

On April 6, 2010, at 2:53PM (http://navalny.livejournal.com/447545.html) Navalny discloses a reply by Transneft president Nikolay Tokarev's to a request by Fedot Tumusov, a member of the State Duma, the lower chamber of the Russian parliament, related to an accident during the construction of the Eastern Siberia–Pacific Ocean (ESPO) oil pipeline. (The law specifies that such requests are required to be answered in 30 days.) The one-page reply, refusing to provide the requested information, spends at least half of the text rambling again "members of parliaments being engaged by those environmental and (sic!) non-profit organizations, foreign- or spy-financed, which are interested in not allowing Russia to be a part of Asian and Far Eastern markets". Without providing any details, Navalny then warns that he will be soon disclosing the documents related to the ESPO construction, a result of 1.5 years of efforts. The story of ESPO-related embezzlement of $4 billion dollars, revealed on a later date, has triggered a top management change in Transneft.

Additional Background Information on Alexey Navalny

(1) Navalny started to focus on identifiable political issues in September 2011 (which is the reason we cut our sample in August 2011). He became known as a politician beyond the close circle of Russia-watchers only after the start of the political protests that were triggered by electoral fraud during the parliamentary elections on December 4, 2011. Navalny was jailed for 10 days after the initial 5,000-strong protest on December 5 (the organizers expect to be at most 500), 2011, and it was his jailing that contributed to a much larger protests on December 10 and December 24, 2011, which were covered in the news all over the world, and made him a national figure.

(2) As of April 2011, only 6% of Russian ever heard about Navalny.[4] Even after the start of the protests in December 2011, Navalny had support of only 1% of Russian population, which was not statistically different from 0 (Levada Center, 2011[5]; VTSIOM 2011[6]). Most other opposition leaders had slightly higher (but still low) electoral ratings. E.g., the same surveys, held in December 2011, suggested the leader of Communists had 11% support, and the leader of a popular nationalistic party, Zhirinovsky, had 9% support. Even several years later, in 2015, 50% of Russian population still never heard of Navalny (Levada Center, 2015).

(3) In the period we focus on, Navalny has not been subject of any political coverage in international media. Before September 2011 (in fact, before December 2011), if his name was mentioned, it was only in connection with his activity as a minority shareholder and never in connection with his political activity. It was on December 21, 2011, following the large protests on December 10, 2011, that BBC has described him as "arguably the only major opposition figure to emerge in Russia in the past five years".

(4) In 2010, Navalny was admitted to The Yale World Fellows Program exactly as "anti-corruption activist and blogger" (see his profile at http://worldfellows.yale.edu/alexey-navalny). This program was not targeting politicians. The other three fellows that were admitted to this program from Russia include one "artist, writer, researcher" (Mari Bastashevski), one "director for corporate affairs" at a private firm (Karina Dashko) and one "editorial page editor" from a business newspaper (Maxim Trudolyubov), none of whom was involved in politics.

[4] http://www.levada.ru/2013/04/04/rossiyane-ob-aleksee-navalnom-i-mihaile-prohorove/

[5] http://www.levada.ru/2011/12/07/vybory-v-gosdumu-chast-3-ob-oppozitsii-i-kritike-vlasti/

[6] http://www.politonline.ru/politika/10111.html

3. Additional Figures.

Figure A1. Timeline for Navalny's Blog Posts.

A. All blog postings.
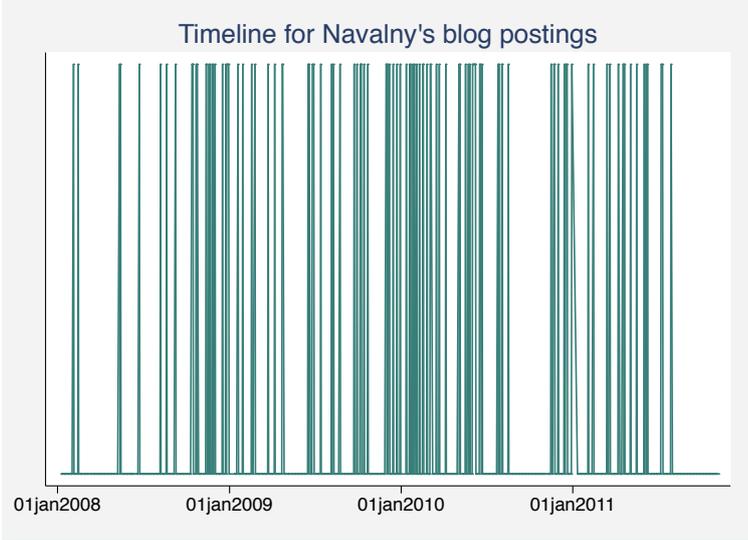
B. Important (with at least five mentions of a company) blog postings.
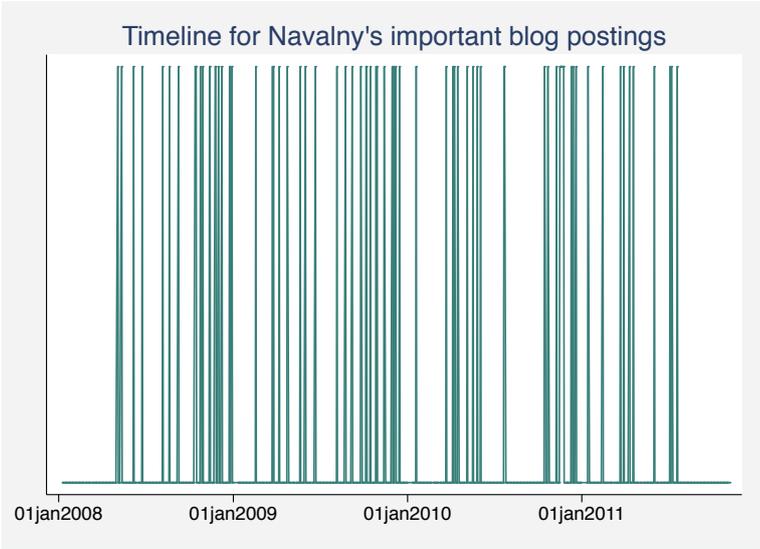
Figure A2. Histograms of frequencies of Navalny's posts

(a) by day of the week
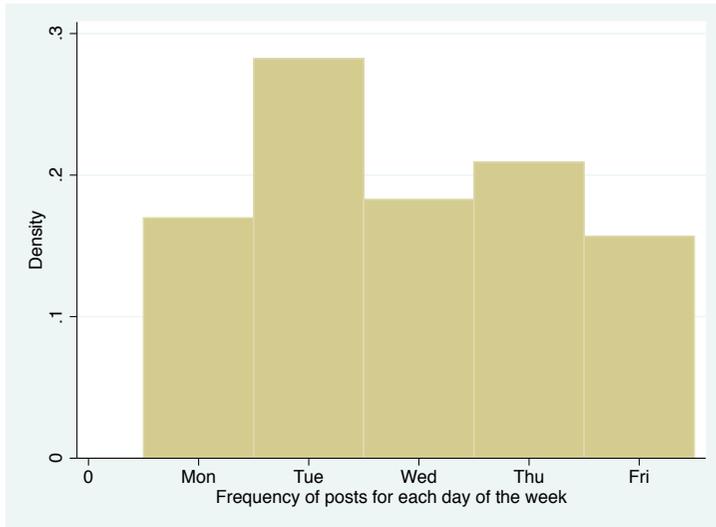
(b) by hour of the day
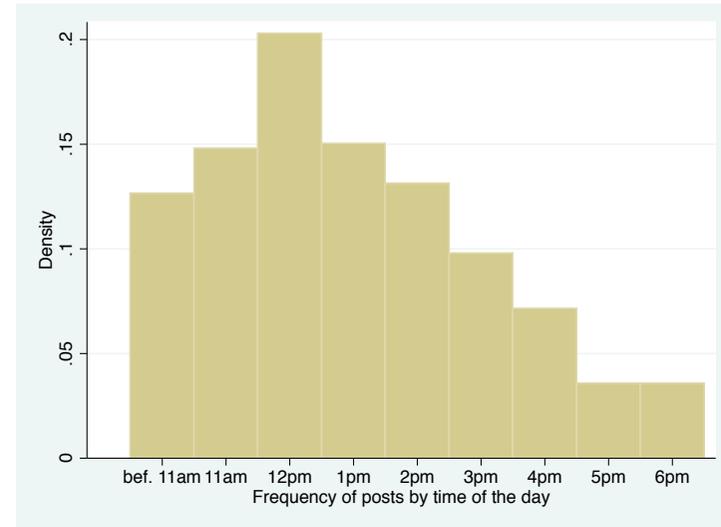
(posts outside trading hours are counted as happening at 10:30am, when stock exchange opens)

Figure A3. Google Trends Search Volume Index for Navalny as a Measure of Navalny's Popularity, Jan 2008 – Sep 2011.
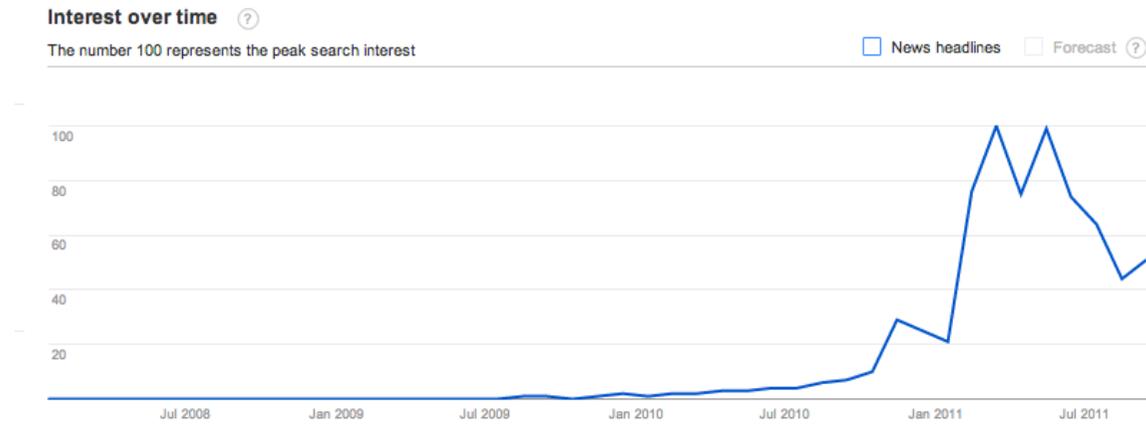
Figure A4. Same-day Reposts of Navalny's Blog Postings in Different Social Media.

A. Reposts in LiveJournal

(median number of reposts: 25 per five-minute interval)
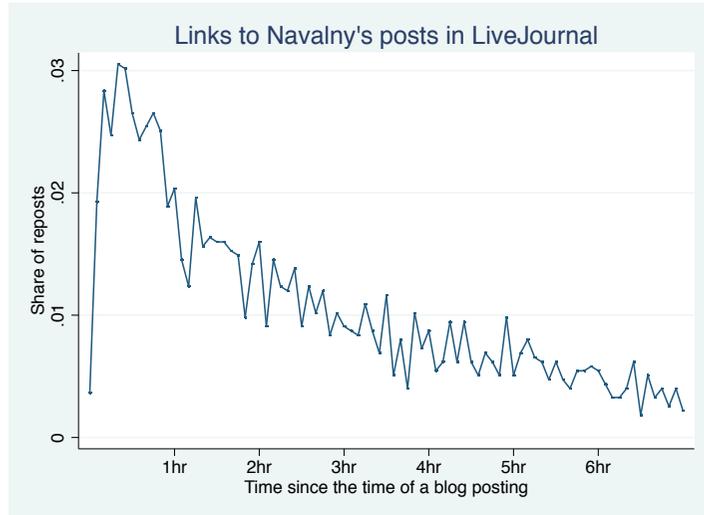
B. Reposts in Twitter.

(median number of reposts: 36 per five-minute interval)
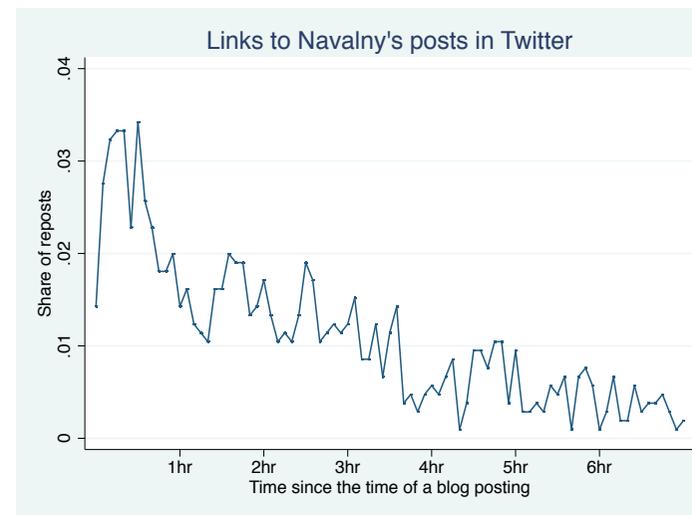
Note: In both cases, ≈50% of reposts happens within first two hours after a blog posting.

4. Additional Tables.

Table A1. Navalny's Blog Postings. Summary Statistics.

Panel A. Postings by company

Transneft	VTB	Gazprom	Rosneft	Sberbank
103	86	83	77	37

Surgutneftegaz	Lukoil	Gazpromneft	Inter RAO UES	RusHydro
10	7	6	3	3

Panel B. Postings by type

Ordinary posts (less than 5 mentions)	Important posts (5+ mentions)	Post about court hearings	Posts about court applications	Posts about shareholder meetings
281	82	17	5	11

Calls for action	Leters from Prosecutor's office
39	32

Table A2. Blog postings and abnormal returns. Including Lags of Abnormal Returns.

Panel A: Intraday evidence. Cumulative abnormal returns (in percentage points) EXCLUDING posts with preceding mentions of the companies

Minutes around blog postings	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.00404	-0.343	-0.445	-0.672	-0.799
	[0.0162]	[0.0773]***	[0.101]***	[0.152]***	[0.287]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.00125	-0.670	-0.928	-1.568	-2.472
	[0.0517]	[0.239]***	[0.383]**	[0.452]***	[0.740]***
Lagged abnormal returns included	Yes	Yes	Yes	Yes	Yes
Observations	629,146	420,346	338,910	267,834	132,717

Panel B: Intraday evidence. Dummies for posts as a function of past posts and past returns; posts with preceding mentions of the companies excluded

Minutes around blog postings	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included, effect of cumulative preceding returns over time period reported	-0.00135	-0.00198	-0.00142	0.00268	-0.0135
	[0.000175]***	[0.0114]	[0.0143]	[0.0196]	[0.0232]
Important (5+) blog postings, fixed effects for company-year and trading day included, effect of cumulative preceding returns over time period reported	-0.000712	-0.0106	-0.0270	-0.0286	-0.0605
	[0.000171]***	[0.00598]*	[0.0162]*	0.0195	0.0798
Lagged abnormal returns included	Yes	Yes	Yes	Yes	Yes
Observations	629,270	420,421	338,961	267,882	132,745

Panel C: Intraday evidence. Cumulative abnormal returns (in percentage points) EXCLUDING posts with preceding mentions of the companies

Minutes around blog postings	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.203	-0.348	-0.432	-0.678	-0.776
	[0.0165]***	[0.0714]***	[0.0947]***	[0.143]***	[0.286]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.200	-0.620	-0.901	-1.603	-2.477
	[0.0519]***	[0.229]***	[0.365]**	[0.441]***	[0.739]***
Observations	629,146	420,346	338,910	267,834	132,717

Notes: Abnormal returns are measured in percentage points. Robust standard errors adjusted for clusters by trading day in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. Cumulative abnormal returns are computed from a standard market model with company-specific betas. Abnormal returns are winsorized at 1st and 99th percentile.

Table A3. Blog postings and abnormal returns. Robustness of Baseline results.

Panel A: Intraday evidence. Cumulative abnormal returns (in p.p.) EXCLUDING posts with preceding mentions of the companies. No winsorizing.

Minutes around blog postings	(-240,0)	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	0.0314	0.0219	0.0121	-0.0575	-0.205	-0.215	-0.381
	[0.136]	[0.0795]	[0.0242]	[0.0573]	[0.0851]**	[0.0982]**	[0.123]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.307	0.115	0.0145	-0.459	-0.822	-0.888	-0.831
	[0.44]	[0.195]	[0.0503]	[0.182]**	[0.297]***	[0.295]***	[0.293]***
Observations	641,684	641,684	641,684	641,684	641,684	641,684	641,684

Panel B: Intraday evidence. Cumulative abnormal returns (in p.p.) EXCLUDING posts with preceding mentions of the companies. Only 2008-2009 included.

Minutes around blog postings	(-240,0)	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.138	-0.135	0.017	-0.109	-0.321	-0.294	-0.481
	[0.207]	[0.108]	[0.0322]	[0.0928]	[0.119]***	[0.136]**	[0.17]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.0396	0.0736	0.00996	-0.527	-0.952	-1.068	-1.058
	[0.457]	[0.235]	[0.0904]	[0.211]**	[0.242]***	[0.262]***	[0.327]***
Observations	338,722	338,722	338,722	338,722	338,722	338,722	338,722

Notes: Abnormal returns are measured in percentage points. Robust standard errors adjusted for clusters by trading day in brackest. * significant at 10%; ** significant at 5%; *** significant at 1%. Cumulative abnormal returns are computed from a standard market model with company-specific betas. Abnormal returns are winsorized at 1st and 99th percentile in panel B.

Table A4. Abnormal Returns and Popularity of Blog Postings. Difference-in-difference Estimation.

	Daily Abnormal Returns					
Panel A: Important Blog Postings	(1)	(2)	(3)	(4)	(5)	(6)
Dummy for Posting x Google SVI for Navalny	0.0199*					
	[0.0112]					
Dummy for Posting x (SVI>10) (after October 2010)		1.0095*				
		[0.5477]				
Dummy for Posting x top 90% reposts in VK			0.9363*			
(Russian Facebook)			[0.5626]			
Dummy for Posting x top 90% reposts in LiveJournal				1.2667		
				[0.7891]		
Dummy for Posting x top 90% reposts in Twitter					1.2441**	
					[0.6242]	
Dummy for Posting x top 90% comments						1.2682**
						[0.5368]
Dummy for Posting	-1.1327***	-1.1677***	-1.0565***	-0.9678***	-1.0839***	-1.1480***
	[0.4298]	[0.4451]	[0.3954]	[0.3528]	[0.3855]	[0.4063]
Controls + Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9.818	9.018	9.018	9.018	9.018	9.018
R-squared	0.0130	0.0130	0.0129	0.0129	0.0130	0.0131
Panel B: All Blog Postings						
Dummy for Posting x Google SVI for Navalny	0.0091					
	[0.0064]					
Dummy for Posting x (SVI>10) (after October 2010)		0.4081				
		[0.3565]				
Dummy for Posting x top 90% reposts in VK			0.2373			
(Russian Facebook)			[0.3825]			
Dummy for Posting x top 90% reposts in LiveJournal				0.3511		
				[0.4943]		
Dummy for Posting x top 90% reposts in Twitter					0.2883	
					[0.3837]	
Dummy for Posting x top 90% comments						0.2970
						[0.3706]
Dummy for Posting	-0.5424**	-0.5272*	-0.4698*	-0.4629*	-0.4748*	-0.4772*
	[0.2746]	[0.2772]	[0.2486]	[0.2363]	[0.2492]	[0.2505]
Controls + Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,818	9,018	9,018	9,018	9,018	9,018
R-squared	0.0125	0.0124	0.0124	0.0124	0.0124	0.0124

Notes: All specifications include company-year and day of the week fixed effects together with controls for mentions in online news, business newspapers, newswires, and other blogs. Robust standard errors adjusted for clusters by trading day in brackets * significant at 10%; ** significant at 5%; *** significant at 1%. Cumulative abnormal returns are computed from a standard market model with company-specific betas. Abnormal returns are winsorized at 1st and 99th percentile. Abnormal returns are measured in percentage points.

Table A5.Navalny's Blog Postings and Popularity of Alternative Posts.

	Dummy for post mentioning a company		Dummy for important (5+) post mentioning a company	
	(1)	(2)	(3)	(4)
Popularity of alternative blog posting	-0.0035		-0.0024	
	(0.0047)		(0.0016)	
Dummy (alternative popular post in the list of top10)		-0.0015		-0.0020
		(0.0110)		(0.0039)
Controls + Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,790	3,790	3,790	3,790
R-squared	0.0136	0.0147	0.0131	0.0136

Notes: All specifications include company-month and day of the week fixed effects together with controls for mentions in online news, business newspapers, newswires, and other blogs. Popularity of alternative blog posting is measured as log(1+number of comments to the most popular alternative posting) during the trading day. An alternative measure of popularity is a dummy for most commented alternative posting belonging to top10 list during the trading da, i.e. it indicates that post with the largest number of comments was in the list of 10 most visited posts during the trading day, in other words it was especially interesting for the audience. Important postings are postings with at least 5 mentions of the company. Robust standard errors adjusted for clusters by company-month in brackets * significant at 10%; ** significant at 5%; *** significant at 1%.

Table A6. Blog Postings And Abnormal Returns. Robustness To Exclusion Of Specific Companies.

Panel A: Intraday evidence. Cumulative abnormal returns (in p.p.) EXCLUDING posts with preceding mentions of the companies. Lukoil excluded from the sample.

Minutes around blog postings	(-240,0)	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.0146	-0.0246	-0.00211	-0.0512	-0.186	-0.223	-0.342
	[0.124]	[0.0712]	[0.0163]	[0.0558]	[0.0732]**	[0.0847]***	[0.0996]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.237	0.00681	0.0144	-0.385	-0.755	-0.821	-0.78
	[0.364]	[0.165]	[0.0503]	[0.155]**	[0.257]***	[0.256]***	[0.250]***
Observations	575,673	575,673	575,673	575,673	575,673	575,673	575,673

Panel B: Intraday evidence. Cumulative abnormal returns (in p.p.) EXCLUDING posts with preceding mentions of the companies. Transneft excluded from the sample.

Minutes around blog postings	(-240,0)	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.0146	-0.0246	-0.00211	-0.0512	-0.186	-0.223	-0.342
	[0.124]	[0.0712]	[0.0163]	[0.0558]	[0.0732]**	[0.0847]***	[0.0996]***
Important (5+) blog postings, fixed effects for company-year and trading day included	0.17	0.22	-0.0426	-0.417	-0.556	-0.681	-0.563
	[0.529]	[0.193]	[0.0602]	[0.166]**	[0.242]**	[0.238]***	[0.259]**
Observations	569,473	569,473	569,473	569,473	569,473	569,473	569,473

Notes: Abnormal returns are measured in percentage points. Robust standard errors adjusted for clusters by trading day in brackest. * significant at 10%; ** significant at 5%; *** significant at 1%. Cumulative abnormal returns are computed from a standard market model with company-specific betas. Abnormal returns are winsorized at 1st and 99th percentile.

Table A7. Blog Postings and Abnormal Returns. Additional Robustness Check.

Panel A: Intraday evidence. Cumulative abnormal returns (in percentage points) EXCLUDING posts with preceding mentions of the companies. Standard errors are clustered by company

Minutes around blog postings	(-240,0)	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.0354	-0.0385	-0.000716	-0.0548	-0.194	-0.233	-0.348
	[0.101]	[0.0412]	[0.0239]	[0.0333]	[0.0549]***	[0.0517]***	[0.0866]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.241	0.00509	0.0144	-0.386	-0.755	-0.820	-0.780
	[0.368]	[0.171]	[0.0490]	[0.118]***	[0.166]***	[0.123]***	[0.190]***
Observations	641,684	641,684	641,684	641,684	641,684	641,684	641,684

Panel B: Intraday evidence. Cumulative abnormal returns (in percentage points) EXCLUDING posts with preceding mentions of the companies during 3 hours

Minutes around blog postings	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.0560	-0.00831	-0.0807	-0.225	-0.256	-0.401
	[0.0745]	[0.0184]	[0.0567]	[0.0818]***	[0.0977]***	[0.110]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.0934	0.0153	-0.467	-0.895	-0.943	-0.905
	[0.182]	[0.0585]	[0.171]***	[0.287]***	[0.280]***	[0.272]***
Observations	599,246	599,246	599,246	599,246	599,246	599,246

Panel C: Intraday evidence. Cumulative abnormal returns (in percentage points) EXCLUDING posts with preceding mentions of the companies during 4 hours

Minutes around blog postings	(-120,0)	(0,5)	(0,120)	(0,180)	(0,240)	(0,360)
All blog postings, fixed effects for company-year and trading day included	-0.0664	-0.0107	-0.0740	-0.229	-0.255	-0.403
	[0.0807]	[0.0201]	[0.0610]	[0.0874]***	[0.104]**	[0.116]***
Important (5+) blog postings, fixed effects for company-year and trading day included	-0.150	6.77e-05	-0.429	-0.858	-0.906	-0.880
	[0.194]	[0.0666]	[0.177]**	[0.298]***	[0.292]***	[0.283]***
Observations	571,007	571,007	571,007	571,007	571,007	571,007

Notes: Abnormal returns are measured in percentage points. Robust standard errors adjusted for clusters by trading day in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. Cumulative abnormal returns are computed from a standard market model with company-specific betas. Abnormal returns are winsorized at 1st and 99th percentile. In panels B and C first column is not shown as there were not enough posts to compute the coefficients estimates with 3 hours or 4 hours restrictions (partly because all companies in Russia are mentionedby financial media once in the beginning of every trading day).

Table A8 presents the results of the analysis of daily returns analogous to the one in subsection 4.2, but using data from U.S. In particular, we explore the effect of blog postings at greewatch.bolspot.com on market returns of companies mentioned in that blog. The results indicate the existence of pre-trends, which suggest, that the blog posts were triggered by negative performance of the companies, rather than the other way around.

Table A8. Blog Posts at GreedWatch and Abnormal returns.

Days around blog postings	(-3,-1)	(-1,-1)	(0,0)	(0,1)	(0,2)	(0,3)	(0,4)
All blog postings, fixed effects for company-year and day of the week included	-0.646	-0.0892	-0.372	-0.466	-0.466	-0.728	-1.046
	[0.377]**	[0.234]	[0.175]**	[0.176]***	[0.218]**	[0.291]**	[0.360]***
Observations	53,388	53,388	53,388	53,388	53,388	53,388	53,388

Notes: Abnormal returns are measured in percentage points. Robust standard errors adjusted for clusters by company-month in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. Cumulative abnormal returns are computed from a standard market model with company-specific betas. Abnormal returns are winsorized at 1st and 99th percentile.