

# Activist paper preliminary output

*Anya Nakhmurina*

*03 November, 2016*

## The purpose of this document

The research question of this paper is to learn whether there are any network effects among the ‘active’ and ‘passive’ activist investors over the span of the activists’ campaign. This document contains a summary of my progress with this project. Research approach section is basically copied from my original proposal to remind the reader about my research approach.

Table 1: **Summary of events by hedge fund stated goals - the whole 2015.** The sample consists of 467 activist campaigns in 2015, of which 352 contain demands.

Activist’ Objective	Num. of events	% of Sample	% of Success
General undervaluation/maximize shareholder value	115	13.1%	NA
Excess cash, under-leverage, dividends/repurchases	94	10.7%	64.9%
Equity issuance, restructure debt, recapitalization	32	3.64%	56.2%
Operational efficiency	61	6.94%	50.8%
Lack of focus, business restructuring and spinning off	84	9.56%	73.8%
M&A: as target (against the deal/for better terms)	64	7.28%	32.8%
M&A: as acquirer (against the deal/for better terms)	17	1.93%	82.4%
Pursue growth strategies	8	0.91%	50%
Sell company or main assets to a third party	135	15.4%	48.1%
Take control/buyout company and/or take it private	46	5.23%	41.3%
Rescind takeover defenses	43	4.89%	46.5%
Oust CEO, chairman	65	7.39%	53.8%
Board independence and fair representation	286	32.5%	69.6%
More information disclosure/potential fraud	56	6.37%	17.9%
Excess executive compensation/pay for performance	57	6.48%	50.9%
Institute enviromental protection policy	21	2.39%	0%
Public Short Position/Bear Raid	2	0.228%	NA
Sum of categories not falling into general undervaluation	764	86.9%	60.9%

Table 2: **Summary of events by hedge fund stated goals - the merged subsample of 2015.** The sample consists of 104 activist campaigns in 2015, of which 104 contain demands. The campaigns that fall into general undervaluation category are not considered here.

Activist' Objective	Num. of events	% of Sample	% of Success
General undervaluation/maximize shareholder value	0	0%	NA
Excess cash, under-leverage, dividends/repurchases	73	15.4%	68.5%
Equity issuance, restructure debt, recapitalization	41	8.67%	82.9%
Operational efficiency	47	9.94%	46.8%
Lack of focus, business restructuring and spinning off	69	14.6%	71%
M&A: as target (against the deal/for better terms)	46	9.73%	32.6%
M&A: as acquirer (against the deal/for better terms)	15	3.17%	80%
Pursue growth strategies	6	1.27%	33.3%
Sell company or main assets to a third party	103	21.8%	52.4%
Take control/buyout company and/or take it private	12	2.54%	33.3%
Rescind takeover defenses	29	6.13%	48.3%
Oust CEO, chairman	50	10.6%	60%
Board independence and fair representation	135	28.5%	71.9%
More information disclosure/potential fraud	36	7.61%	22.2%
Excess executive compensation/pay for performance	44	9.3%	50%
Institute enviromental protection policy	5	1.06%	0%
Public Short Position/Bear Raid	2	0.228%	NA
Sum of categories not falling into general undervaluation	473	100%	66.8%

Table 3: **Sussess rate by stage - the whole 2015.** This table provides the breakdown of stages at which the campaign is terminated. The table is based on the sample of all campaigns that took place in 2015. The data on campaign availability comes from SharkWatch database. Campaigns were manually classified.

Exit after	Num. of campaigns	% of Sample	Number of Successes	% of Successes
Demand negotiations	336	29.7%	214	63.7%
Board representation	433	38.3%	228	52.7%
Proxy fight	362	32%	247	68.2%

Table 4: **Sussess rate by stage - the merged subsample.** This table provides the breakdown of stages at which the campaign is terminated. The table is based on the observations that are left after the campaigns data is merged with 13F data. The data on campaign availability comes from SharkWatch database. Campaigns were manually classified.

Exit after	Num. of campaigns	% of Sample	Number of Successes	% of Successes
Demand negotiations	187	39.5%	124	66.3%
Board representation	55	11.6%	23	41.8%
Proxy fight	231	48.8%	169	73.2%



**Table 5: Descriptive statistics.** This table provides summary statistics on the variables used in preliminary analysis. The variables are grouped by type. *won\_brep\_percent* is the percentage of board seats won out of the number of activists’ nominees. *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists’ demands. *sales\_growth* is the growth of sales over the span of the campaign. *oper\_profit\_growth* is an operational profitability growth over the span of the campaign. Operational profitability is defined as in Ball et. al (2016). *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *investor.number* is a total number of institutional investors that hold shares of a company. *total.activist.number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *activist.size.vweighted* is the sum of all the company’s activists’ assets weighted by the share of investments in the company. *activist.size.average* is an average of total assets of company’s activists. *spring measure* corresponds to the edges of Spring Network, which is described above. *number of connections* corresponds to Number of Connections Network, where the weight of the edge is number of connections between two activists. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. *mtb* is the market-to-book ratio of the company. *oper\_profit* is an operating profitability of the company. *roa* is return on company’s assets. *tobins\_q* is the company’s Tobin’s Q. *asset\_turnover* is the company’s asset turnover. *rd\_to\_assets* is a share of R&D expenditures to the company’s assets. *revtq* is the quarterly revenue, and *saleq* are the company’s sales.

Variable type	Variable	min	p25	mean	median	p75	max	sd
campaign outcome	checked_board_seats_won	0	0	1.51	1	2	7	1.46
campaign outcome	won_board_ind	0	0	0.71	1	1	1	0.46
campaign outcome	success_of_stated_obj	0	0	0.64	1	1	1	0.48
campaign outcome	sales_growth	-0.96	-0.02	0.4	0	0.03	25.38	3
campaign outcome	oper_profit_growth	-10.47	-0.02	0.1	0	0.07	11.09	1.51
activists’ persuasive-ness	log(active.activist.size)	3.23	7.36	9.64	9.07	11.58	17.54	3.18
network variable	investor.number	2	54	63.75	72	85	123	27.64
network variable	total.activist.number	1	53	62.69	71	83	122	27.62
network variable	log(activist.size.vweighted)	9.79	10.69	12.66	10.98	12.57	23.11	3.1
network variable	log(activist.size.average)	9.38	10.23	12.1	10.37	11.17	19.81	3.18
network variable	log(inv_size_nw_s)	12	15.12	17.94	16.17	20.48	28.35	3.92
network variable	log(inv_size_nw_spr)	3.52	6.99	9.73	8.45	12.18	19.8	3.87
network variable	log(act_size_nw_s)	-Inf	15.11	-Inf	16.16	19.73	28.29	NaN
network variable	log(act_size_nw_spr)	-Inf	6.86	-Inf	8.3	11.74	19.76	NaN
network variable	log(act_s_clos)	-4.46	-1.11	-0.36	0.44	0.78	2.41	1.54
network variable	log(oth_s_clos)	-3.66	-1.36	-0.81	-0.66	-0.01	2.45	1.12
network variable	log(act_s_betw)	-2.46	-0.17	0.52	0.68	0.89	2.45	0.89
network variable	log(oth_s_betw)	-5.84	-1.07	-0.7	-0.45	0.15	2.21	1.45
network variable	spring fund	0	0	0.02	0	0.01	0.97	0.04
network variable	# of connections fund	1	1	30.61	4	15	3369	129.49
network variable	spring top20	0	0	0.02	0	0.01	0.97	0.04
network variable	# of connections top20	1	1	30.61	4	15	3369	129.49
control variable	log(size)	3.03	5.81	7.45	7.24	8.74	13.03	2.09
control variable	age	1	11	23.45	19	32.5	53	15.1
control variable	leverage	-30.1	0.1	1.17	0.43	1.19	112.41	6.16
control variable	mtb	-113.94	1.21	2.98	1.69	2.69	316.84	16.74
control variable	oper_profit	-1061	10.65	720.09	58.57	262.71	21332	2595.16
control variable	roa	-1938.71	-40.96	53.59	41.28	122.54	4325.62	351.92
control variable	tobins_q	0.17	0.86	1.45	1.19	1.59	19.54	1.64
control variable	asset_turnover	-0.06	0.08	0.19	0.16	0.25	1.2	0.16
control variable	rd_to_assets	0	0	36.63	0	4.92	1444	171.03
control variable	revtq	-1569.77	78.19	4160.4	294.94	1247.88	124238	14395.7
control variable	age_activist	-4	5	15.8	12	20.5	102	18.43

**Table 6: Correlation table.** *won\_brep\_percent* is the percentage of board seats won out of the number of activists' nominees. *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *sales\_growth* is the growth of sales over the span of the campaign. *oper\_profit\_growth* is an operational profitability growth over the span of the campaign. Operational profitability is defined as in Ball et. al (2016). *active\_activist\_size* corresponds to the total assets of an activist group, computed from 13F filings. *investor\_number* is a total number of institutional investors that hold shares of a company. *total\_activist\_number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *activist\_size\_weighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist\_size\_average* is an average of total assets of company's activists. *spring\_measure* corresponds to the edges of Spring Network, which is described above. *number\_of\_connections* corresponds to Number of Connections Network, where the weight of the edge is number of connections between two activists. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. *mtb* is the market-to-book ratio of the company. *oper\_profit* is an operating profitability of the company. *roa* is return on company's assets. *tobins\_q* is the company's Tobin's Q. *asset\_turnover* is the company's asset turnover. *rd\_to\_assets* is a share of R&D expenditures to the company's assets. *revtq* is the quarterly revenue, and *saleq* are the company's sales

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1 checked_board_seats_won	1																				
2 won_board_ind	0.67	1																			
3 success_of_stated_obj	0.23	0.22	1																		
4 sales_growth	-0.05	-0.18	0.09	1																	
5 oper_profit_growth	0.06	0.06	-0.03	-0.11	1																
6 log(active_activist_size)	-0.16	-0.23	0.06	0.18	0.07	1															
7 investor_number	0.25	0.3	0.01	-0.1	-0.08	-0.64	1														
8 total_activist_number	0.25	0.3	0.01	-0.1	-0.08	-0.64	1	1													
9 log(active_activist_size)	-0.3	-0.32	0.06	0.17	0.02	0.79	-0.73	-0.73	1												
10 log(active_activist_size.vweighted)	-0.28	-0.31	0.03	0.14	0.03	0.8	-0.83	-0.83	0.97	1											
11 age	-0.21	-0.22	-0.04	0.19	0.01	0.27	0	-0.01	0.19	0.15	1										
12 leverage	-0.03	0.1	-0.03	-0.01	0.01	0.06	-0.02	-0.02	0.01	0	0.03	1									
13 log(size)	-0.01	0.01	-0.03	-0.05	0.03	0.26	0.11	0.11	0.11	0.03	0.53	0.04	1								
14 mtb	0.08	0.14	-0.02	0.02	0	0.06	-0.03	-0.03	0.01	0.01	0.03	0.96	0.04	1							
15 oper_profit	-0.2	-0.3	-0.2	-0.06	-0.01	-0.02	0.04	0.04	0.03	0.01	0.37	0	0.56	0.01	1						
16 roa	-0.09	-0.06	0.04	0.08	0.08	0.06	-0.05	-0.05	0.06	0.05	0.12	0.02	0.04	0	0.01	1					
17 tobins_q	0.38	0.15	0.11	0.25	0.02	0	-0.03	-0.02	0.01	-0.01	-0.08	0.01	-0.05	0.08	0.01	-0.02	1				
18 asset_turnover	0.08	0.08	-0.03	-0.15	-0.02	-0.02	0	0	-0.05	-0.04	0.11	-0.03	-0.03	0.03	0.11	0	-0.06	1			
19 rd_to_assets	0.05	0.08	0	-0.03	-0.01	0.08	0.03	0.03	0.1	0.05	0.11	-0.02	0.26	0	0.1	-0.05	-0.03	-0.03	1		
20 revtq	-0.22	-0.28	-0.14	-0.04	-0.01	0	0.01	0.01	0.03	0.01	0.38	-0.01	0.55	0	0.95	0.02	-0.01	0.18	0.02	1	
21 saleq	-0.26	-0.32	0.16	-0.1	-0.04	0.36	0.38	0.38	0.19	-0.21	0.56	0.15	0.68	-0.02	0.72	0.17	0.05	0.02	0.03	0.03	1

## Preliminary results

This section contains the tables with output of some preliminary OLS regressions.

Table 7: Logit regressions with robust standard errors

	<i>Dependent variable:</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
total.activist.number	0.0230 t = 4.5905***		0.0228 t = 3.0553***		0.0223 t = 4.3045***	0.0222 t = 2.7529***		
investor.number		0.0230 t = 4.5998***		0.0229 t = 3.0698***			0.0223 t = 4.3133***	0.0225 t = 2.8563***
log(active.activist.size)			-0.0022 t = -0.0324	-0.0015 t = -0.0230		-0.0274 t = -0.2421		0.0018 t = 0.0265
exit_s_board:log(active.activist.size)						0.5953 t = 2.3908**		
exit_s_proxy:log(active.activist.size)						0.0077 t = 0.0718		
exit_s_board					-0.7900 t = -1.0736	-7.0757 t = -2.5816***	-0.7892 t = -1.0720	-0.7907 t = -1.0596
exit_s_proxy					-0.8574 t = -2.3275**	-0.9357 t = -0.8020	-0.8571 t = -2.3268**	-0.8573 t = -2.3140**
Constant	-0.3854 t = -1.3094	-0.4121 t = -1.3785	-0.3531 t = -0.3421	-0.3892 t = -0.3748	0.3155 t = 0.7310	0.6038 t = 0.4099	0.2893 t = 0.6649	0.2625 t = 0.2420
Observations	268	268	268	268	268	268	268	268

*Notes:* Logistic regression of the equation  $Y = a + bx + gN + controls + e$ . *won\_brep\_dumny* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *investor.number* is a total number of institutional investors that hold shares of a company. *total.activist.number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. Robust standard errors in parenthesis.

Table 8: Logit regressions with robust standard errors

	<i>Dependent variable:</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
total.activist.number	0.0008 t = 0.2422		0.0065 t = 1.3544		0.0019 t = 0.5063	0.0111 t = 2.0858**		
investor.number		0.0007 t = 0.2179		0.0063 t = 1.3183			0.0018 t = 0.4827	0.0107 t = 2.0661**
log(active.activist.size)			0.0768 t = 1.8360*	0.0758 t = 1.8137*		0.1232 t = 1.8932*		0.1232 t = 2.8348***
exit_s_board					-0.9033 t = -2.8225***	-0.9397 t = -0.7608	-0.9039 t = -2.8248***	-1.1922 t = -3.4016***
exit_s_proxy					0.2914 t = 1.3406	0.1528 t = 0.2249	0.2904 t = 1.3359	0.2451 t = 1.1230
log(active.activist.size):exit_s_board						-0.0218 t = -0.1946		
log(active.activist.size):exit_s_proxy						0.0100 t = 0.1401		
Constant	0.5445 t = 2.3157**	0.5488 t = 2.3001**	-0.5445 t = -0.8403	-0.5308 t = -0.8141	0.4545 t = 1.5034	-1.2472 t = -1.5240	0.4586 t = 1.5000	-1.2295 t = -1.7642*
Observations	473	473	473	473	473	473	473	473

*Notes:* Logistic regression of the equation  $Y = a + bx + gN + controls + e$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active\_activist\_size* corresponds to the total assets of an activist group, computed from 13F filings. *investor.number* is a total number of institutional investors that hold shares of a company. *total\_activist.number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. Robust standard errors in parenthesis.



Table 9: OLS regressions with robust standard errors.

	<i>Dependent variable:</i>						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
total.activist.number	0.0048 t = 4.8361***			won_board_ind			
investor.number		0.0048 t = 4.8472***	0.0045 t = 4.4831***	0.0045 t = 4.4940***	0.0044 t = 3.0656***	0.0044 t = 3.0828***	0.0039 t = 2.2383**
exit_s_board			-0.1215 t = -0.8864	-0.1213 t = -0.8849	-0.1201 t = -0.8594	-0.1200 t = -0.8590	-0.1312 t = -0.9300
exit_s_proxy			-0.1390 t = -2.4958**	-0.1389 t = -2.4953**	-0.1389 t = -2.4751**	-0.1388 t = -2.4747**	-0.1512 t = -2.2009**
age							-0.0044 t = -1.8120*
log(size)							0.0190 t = 1.0680
leverage							-0.0088 t = -0.3423
mtb							0.0108 t = 0.8602
log(active.activist.size)					-0.0015 t = -0.1161	-0.0014 t = -0.1068	0.0028 t = 0.1612
Constant	0.4279 t = 6.2667***	0.4223 t = 6.0997***	0.5443 t = 6.5027***	0.5389 t = 6.3704***	0.5662 t = 2.8283***	0.5591 t = 2.7775***	0.5170 t = 2.2800**
Observations	268	268	268	268	268	268	217
R <sup>2</sup>	0.0922	0.0927	0.1099	0.1103	0.1100	0.1104	0.1241
Adjusted R <sup>2</sup>	0.0888	0.0893	0.0998	0.1002	0.0964	0.0968	0.0904

*Notes:* OLS regression of the equation  $Y = a + bx + gN + controls + e$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *investor.number* is a total number of institutional investors that hold shares of a company. *total.activist.number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.

Table 10: OLS regressions with robust standard errors.

	<i>Dependent variable:</i>						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
total.activist.number	0.0002 t = 0.2417		0.0004 t = 0.5044	success_of_stated_obj	0.0023 t = 2.1712**		0.0030 t = 2.4200**
investor.number		0.0002 t = 0.2174		0.0004 t = 0.4809		0.0023 t = 2.1309**	
exit_s_board			-0.2213 t = -2.8791***	-0.2214 t = -2.8814***	-0.2791 t = -3.5214***	-0.2789 t = -3.5186***	-0.2164 t = -2.3017**
exit_s_proxy			0.0641 t = 1.3403	0.0639 t = 1.3355	0.0530 t = 1.1192	0.0527 t = 1.1125	0.0463 t = 0.8436
log(active.activist.size)					0.0268 t = 2.9816***	0.0265 t = 2.9534***	0.0297 t = 2.6401***
age							-0.0034 t = -1.7418*
log(size)							-0.0009 t = -0.0615
leverage							-0.0095 t = -0.4851
mtb							0.0030 t = 0.4643
Constant	0.6329 t = 11.6530***	0.6339 t = 11.5104***	0.6134 t = 9.0115***	0.6143 t = 8.9311***	0.2462 t = 1.6715*	0.2488 t = 1.6774*	0.2496 t = 1.4487
Observations	473	473	473	473	473	473	384
R <sup>2</sup>	0.0001	0.0001	0.0334	0.0334	0.0508	0.0505	0.0446
Adjusted R <sup>2</sup>	-0.0020	-0.0020	0.0273	0.0272	0.0427	0.0424	0.0242

*Notes:* OLS regression of the equation  $Y = a + bx + gN + controls + e$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *investor.number* is a total number of institutional investors that hold shares of a company. *total.activist.number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.

Table 11: Basic spillover OLS regressions with robust standard errors

	Dependent variable:							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(activist.size.average)	-0.0413 t = -4.7527***		-0.0393 t = -4.4908***		-0.0544 t = -3.2057***		-0.0429 t = -1.8923*	
log(activist.size.vweighted)		-0.0454 t = -4.9499***		-0.0434 t = -4.7176***		-0.0625 t = -3.4847***		-0.0428 t = -2.0937**
exit_s_board			-0.1384 t = -1.0012	-0.1428 t = -1.0331			-0.1621 t = -1.1206	-0.1677 t = -1.1428
exit_s_proxy			-0.1444 t = -2.5999***	-0.1442 t = -2.5948***			-0.1606 t = -2.3673**	-0.1687 t = -2.4769**
log(active.activist.size)					0.0157 t = 0.8866	0.0196 t = 1.1349	0.0147 t = 0.5808	0.0103 t = 0.4825
age							-0.0037 t = -1.5929	-0.0035 t = -1.4953
log(size)							0.0154 t = 0.7911	0.0231 t = 1.3066
leverage							-0.0105 t = -0.3920	-0.0119 t = -0.4502
mtb							0.0116 t = 0.8520	0.0122 t = 0.8529
Constant	1.2216 t = 11.5228***	1.2952 t = 11.0656***	1.3020 t = 12.2224***	1.3750 t = 11.7015***	1.2310 t = 11.5392***	1.3247 t = 10.9029***	1.1902 t = 6.2621***	1.1955 t = 6.4713***
Observations	268	268	268	268	268	268	217	217
R <sup>2</sup>	0.0938	0.1024	0.1132	0.1218	0.0976	0.1086	0.1233	0.1251
Adjusted R <sup>2</sup>	0.0904	0.0990	0.1031	0.1118	0.0908	0.1018	0.0895	0.0914

Notes: OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + controls + \epsilon$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *activist.size.vweighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist.size.average* is an average of total assets of company's activists. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.

Table 12: Basic spillover OLS regressions with robust standard errors

	<i>Dependent variable:</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(activist.size.average)	0.0044 t = 0.6399		0.0044 t = 0.6345		-0.0084 t = -0.6549		-0.0219 t = -1.4444	
log(activist.size.vweighted)		0.0097 t = 1.3549		0.0106 t = 1.5350		0.0060 t = 0.4627		-0.0043 t = -0.2940
exit_s_board			-0.2289 t = -2.9816***	-0.2377 t = -3.0960***				
exit_s_proxy			0.0542 t = 1.1412	0.0482 t = 1.0179				
log(active.activist.size)				0.0160 t = 1.2715		0.0046 t = 0.3799	0.0264 t = 1.6733*	0.0106 t = 0.7239
age							-0.0029 t = -1.4010	-0.0029 t = -1.4038
log(size)							-0.0040 t = -0.2687	0.0015 t = 0.1031
leverage							-0.0092 t = -0.4544	-0.0091 t = -0.4647
mtb							0.0022 t = 0.3278	0.0023 t = 0.3539
Constant	0.5911 t = 6.7940***	0.5218 t = 5.5496***	0.5914 t = 6.8500***	0.5143 t = 5.6938***	0.5922 t = 6.8267***	0.5247 t = 5.5158***	0.7483 t = 5.5186***	0.6470 t = 4.6672***
Observations	473	473	473	473	473	473	384	384
R <sup>2</sup>	0.0009	0.0039	0.0337	0.0375	0.0048	0.0043	0.0163	0.0095
Adjusted R <sup>2</sup>	-0.0013	0.0018	0.0276	0.0313	0.0006	0.0001	0.0006	-0.0063

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + controls + \epsilon$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *activist.size.vweighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist.size.average* is an average of total assets of company's activists. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.

Table 13: Basic spillover OLS regressions with robust standard errors

	<i>Dependent variable:</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\log(\text{inv\_size\_nw\_s})$	-0.0284 t = -3.7596***		-0.0272 t = -3.5281***		-0.0376 t = -4.5498***		-0.0299 t = -3.2410***	
$\log(\text{inv\_size\_nw\_spr})$		-0.0242 t = -3.0837***		-0.0225 t = -2.8310***		-0.0349 t = -3.7695***		-0.0228 t = -2.3539**
$\text{exit\_s\_board}$			-0.0584 t = -0.3967	-0.0815 t = -0.5618			-0.1513 t = -0.9972	-0.1672 t = -1.0865
$\text{exit\_s\_proxy}$			-0.1536 t = -2.7456***	-0.1554 t = -2.7245***			-0.1698 t = -2.4775**	-0.1785 t = -2.5886***
$\text{act\_size\_nw\_s}$					0.0000 t = 3.3463***		0.0000 t = 2.6935***	0.0000 t = 2.2470**
$\text{act\_size\_nw\_spr}$						0.0000 t = 3.0970***		
$\text{age}$							-0.0041 t = -1.7506*	-0.0040 t = -1.6740*
$\log(\text{size})$							0.0294 t = 1.8173*	0.0344 t = 2.0847**
$\text{leverage}$							-0.0211 t = -0.8173	-0.0250 t = -0.9725
$\text{mtb}$							0.0139 t = 1.1178	0.0144 t = 1.1501
Constant	1.2208 t = 9.0142***	0.9464 t = 11.7621***	1.3066 t = 9.8394***	1.0394 t = 13.3676***	1.3689 t = 9.3410***	1.0300 t = 11.3377***	1.2387 t = 6.7862***	0.8961 t = 6.8466***
Observations	268	268	268	268	268	268	217	217
R <sup>2</sup>	0.0631	0.0452	0.0855	0.0675	0.0867	0.0664	0.1223	0.0982
Adjusted R <sup>2</sup>	0.0596	0.0416	0.0751	0.0569	0.0798	0.0594	0.0886	0.0635

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + \text{controls} + \epsilon$ .  $\text{won\_brep\_dummy}$  is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board.  $\text{success\_of\_stated\_obj}$  is an indicator of fulfillment of activists' demands.  $\text{active.activist.size}$  corresponds to the total assets of an activist group, computed from 13F filings.  $\text{activist.size.vweighted}$  is the sum of all the company's activists' assets weighted by the share of investments in the company.  $\text{activist.size.average}$  is an average of total assets of company's activists. Activist investor is defined as any investor that appeared in SharkWatch database at least once.  $\text{size}$  is the market value of the company.  $\text{age}$  is the age of the company.  $\text{leverage}$  is the leverage of the company. Robust standard errors in parenthesis.

Table 14: Basic spillover OLS regressions with robust standard errors

Dependent variable: success_of_stated_obj								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(inv_size_nw_s)	-0.0018 t = -0.3251		0.0034 t = 0.5825		-0.0056 t = -0.9021		-0.0066 t = -0.9044	
log(inv_size_nw_spr)		0.0036 t = 0.6459		0.0093 t = 1.6520*		-0.0008 t = -0.1224		0.0018 t = 0.2448
exit_s_board			-0.2383 t = -2.9724***	-0.2621 t = -3.2979***			-0.2314 t = -2.2243**	-0.2591 t = -2.5432**
exit_s_proxy			0.0545 t = 1.1506	0.0464 t = 0.9784			0.0444 t = 0.8027	0.0345 t = 0.6278
act_size_nw_s					0.0000 t = 3.1888***		0.0000 t = 4.6912***	0.0000 t = 3.6999***
act_size_nw_spr						0.0000 t = 2.7642***		
age							-0.0029 t = -1.4785	-0.0030 t = -1.5250
log(size)							0.0108 t = 0.7674	0.0099 t = 0.6947
leverage							-0.0109 t = -0.5612	-0.0110 t = -0.5805
mtb							0.0038 t = 0.5955	0.0038 t = 0.6030
Constant	0.6776 t = 6.5832***	0.6099 t = 10.3669***	0.5850 t = 5.6468***	0.5621 t = 9.3726***	0.7392 t = 6.6186***	0.6449 t = 10.1292***	0.7334 t = 4.9146***	0.6154 t = 5.9187***
Observations	473	473	473	473	473	473	384	384
R <sup>2</sup>	0.0002	0.0008	0.0336	0.0379	0.0046	0.0053	0.0385	0.0364
Adjusted R <sup>2</sup>	-0.0019	-0.0013	0.0274	0.0318	0.0004	0.0011	0.0180	0.0158

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + \text{controls} + \epsilon$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active\_activist\_size* corresponds to the total assets of an activist group, computed from 13F filings. *activist\_size\_weighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist\_size\_average* is an average of total assets of company's activists. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.

Table 15: Basic spillover OLS regressions with robust standard errors

Dependent variable:								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
scale(top20_size_nw_s)	0.0243 t = 0.3284		0.0318 t = 0.3680		0.1623 t = 3.1001***		0.0373 t = 0.5050	
scale(top20_size_nw_spr)		0.0681 t = 1.8056*		0.0733 t = 1.4256		0.2243 t = 3.1026***		0.2535 t = 2.0793**
exit_s_board			-0.1595 t = -1.0950	-0.1770 t = -1.2638			-0.1779 t = -1.1860	-0.1593 t = -1.0677
exit_s_proxy			-0.1778 t = -3.1051***	-0.1766 t = -3.0862***			-0.1880 t = -2.7061***	-0.1790 t = -2.5830***
log(active.activist.size)					-0.0365 t = -3.6995***	-0.0412 t = -4.0962***		
act_size_nw_s								-0.0000 t = -1.4091
age							-0.0042 t = -1.7263*	-0.0043 t = -1.7875*
log(size)							0.0233 t = 1.4338	0.0185 t = 1.1105
leverage							-0.0284 t = -1.0879	-0.0191 t = -0.7435
mtb							0.0145 t = 1.4346	0.0117 t = 1.2179
Constant	0.7075 t = 24.4886***	0.7126 t = 25.8708***	0.8371 t = 17.8994***	0.8424 t = 18.4274***	1.0804 t = 10.6249***	1.1367 t = 10.6417***	0.7827 t = 6.1329***	0.8558 t = 6.1739***
Observations	268	268	268	268	268	268	217	217
R <sup>2</sup>	0.0003	0.0031	0.0297	0.0326	0.0625	0.0787	0.0684	0.0754
Adjusted R <sup>2</sup>	-0.0035	-0.0006	0.0187	0.0216	0.0554	0.0717	0.0371	0.0399

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + \text{controls} + \epsilon$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *activist.size.vweighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist.size.average* is an average of total assets of company's activists. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.

Table 16: Basic spillover OLS regressions with robust standard errors

	<i>Dependent variable:</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				success_of_stated_obj				
scale(top20_size_nw_s)	0.0266 t = 2.8524***		0.0521 t = 5.1919***		0.0183 t = 1.5858		0.0588 t = 4.3481***	
scale(top20_size_nw_spr)		-0.0166 t = -0.6504		0.0184 t = 0.5952		-0.0317 t = -1.2824		0.0079 t = 0.2278
exit_s_board			-0.2707 t = -3.4604***	-0.2467 t = -2.9871***			-0.2533 t = -2.5506**	-0.1965 t = -1.9035*
exit_s_proxy			0.0552 t = 1.1868	0.0588 t = 1.2662			0.0363 t = 0.6687	0.0368 t = 0.6765
log(active.activist.size)					0.0071 t = 0.9791	0.0129 t = 1.7805*		
age							-0.0030 t = -1.5253	-0.0027 t = -1.3829
log(size)							0.0105 t = 0.7494	0.0103 t = 0.7241
leverage							-0.0110 t = -0.5788	-0.0087 t = -0.4557
mtb							0.0038 t = 0.6031	0.0028 t = 0.4463
Constant	0.6448 t = 29.2763***	0.6448 t = 29.1825***	0.6494 t = 18.4053***	0.6448 t = 18.1133***	0.5761 t = 7.7891***	0.5206 t = 7.0303***	0.6370 t = 6.6827***	0.6258 t = 6.3839***
Observations	473	473	473	473	473	473	384	384
R <sup>2</sup>	0.0031	0.0012	0.0438	0.0341	0.0050	0.0075	0.0364	0.0252
Adjusted R <sup>2</sup>	0.0010	-0.0009	0.0377	0.0280	0.0008	0.0033	0.0185	0.0070

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + \text{controls} + \epsilon$ . *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* corresponds to the total assets of an activist group, computed from 13F filings. *activist.size.vweighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist.size.average* is an average of total assets of company's activists. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. Robust standard errors in parenthesis.



**Table 17: Correlation table.** *won\_brep\_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *success\_of\_stated\_obj* is an indicator of fulfillment of activists' demands. *active\_activist\_size* corresponds to the total assets of an activist group, computed from 13F filings. *investor\_number* is a total number of institutional investors that hold shares of a company. *total\_activist\_number* is the number of passive activist investors that hold shares of the company. Activist investor is defined as any investor that appeared in SharkWatch database at least once. *activist\_size\_weighted* is the sum of all the company's activists' assets weighted by the share of investments in the company. *activist\_size\_average* is an average of total assets of company's activists. *size* is the market value of the company. *age* is the age of the company. *leverage* is the leverage of the company. *mtb* is the market-to-book ratio of the company. *oper\_profit* is an operating profitability of the company. All the other variables are centrality measures of activist network. Centrality captures the importance of the node position in a network. Three centrality measures are used. Closeness centrality shows how close each node to any other node. Betweenness centrality captures how well situated a node is in terms of the paths that it lies on. Degree centrality, is defined as the number of links incident to a node. Bonacich centrality is a degree centrality adjusted for the centrality of the neighbours in a network. The centrality measures were computed for both Simple and Spring networks. (By construction, centrality measures for Simple network are identical to the centrality measures of Number of Connections network.) I aggregated the centrality measures for each campaign. That is, *act\_simple\_closeness* is a sum of closeness centralities of every active activist participating in a campaign, and *oth\_simple\_closeness* is a sum of closeness centralities of every passive activist that invested in the company but does not participate in a campaign.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 success_of_stated_obj	1																					
2 won_board_ind	0.22	1																				
3 total_activist_number	0.01	0.3	1																			
4 activist_size_weighted	-0.05	-0.01	-0.1	1																		
5 activist_size_average	0	-0.14	-0.59	0.76	1																	
6 age	-0.04	-0.22	-0.01	0.01	0.02	1																
7 leverage	-0.03	0.1	-0.02	0.03	0.03	0.03	1															
8 size	-0.16	-0.14	0.05	0.12	0.04	0.38	-0.01	1														
9 mtb	-0.02	0.14	-0.03	0.03	0.03	0.03	0.96	0.01	1													
10 oper_profit	-0.2	-0.3	0.04	0.07	0.02	0.37	0	0.95	0.01	1												
11 act_s_clos	-0.13	-0.02	0.25	-0.05	-0.17	-0.03	0.06	-0.04	0.06	-0.01	1											
12 act_s_betw	-0.19	-0.08	0.18	-0.03	-0.1	-0.01	0.02	-0.03	0.02	0	0.92	1										
13 act_s_bon	0.15	0.03	-0.29	0.06	0.18	0.02	-0.09	0.06	-0.09	0.02	-0.95	1										
14 act_sp_clos	-0.13	-0.02	0.25	-0.05	-0.17	-0.03	0.06	-0.04	0.06	-0.01	1	0.92	1									
15 act_sp_betw	-0.19	-0.08	0.18	-0.03	-0.1	-0.01	0.02	-0.03	0.02	0	0.92	1	-0.91	0.92	1							
16 act_sp_bon	0.13	0	-0.27	0.06	0.18	0.03	-0.04	0.05	-0.04	0.01	-0.98	-0.89	0.93	-0.98	-0.89	1						
17 oth_s_clos	0.1	0.22	0.56	-0.11	-0.35	-0.14	-0.04	-0.12	-0.05	-0.13	0.14	-0.01	-0.18	0.14	-0.01	-0.18	1					
18 oth_s_betw	0.12	0.26	0.66	-0.1	-0.33	-0.09	-0.05	-0.12	-0.05	-0.12	0.09	-0.01	-0.17	0.09	-0.01	-0.14	0.87	1				
19 oth_s_bon	-0.08	-0.23	-0.59	0.11	0.36	0.13	0.04	0.12	0.04	0.13	-0.1	0.02	0.18	-0.1	0.02	0.17	-0.94	-0.91	1			
20 oth_sp_clos	0.1	0.22	0.56	-0.11	-0.35	-0.14	-0.04	-0.12	-0.05	-0.13	0.14	-0.01	-0.18	0.14	-0.01	-0.18	1	0.87	1			
21 oth_sp_betw	0.12	0.26	0.66	-0.1	-0.33	-0.09	-0.05	-0.12	-0.05	-0.12	0.09	-0.01	-0.17	0.09	-0.01	-0.14	0.87	1	-0.91	0.87	1	
22 oth_sp_bon	-0.09	-0.24	-0.55	0.11	0.35	0.16	0.05	0.11	0.05	0.13	-0.11	0.03	0.17	-0.11	0.03	0.18	-0.96	-0.87	-0.96	-0.87	-0.87	1

Table 18: OLS regressions with centrality measures, robust se

	Dependent variable:									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
act_s_clos	-0.0441 t = -0.9512									
act_s_betw		-0.0870 t = -2.1943**					-0.0687 t = -1.6692*			
act_s_bon			0.0644 t = 1.9154*					-0.0937 t = -3.1799***	0.0827 t = 2.3811**	
act_sp_clos				-0.0441 t = -0.9512						-0.0687 t = -1.6692*
act_sp_betw					-0.0870 t = -2.1943**					
act_sp_bon						0.0405 t = 0.8194				
total.activist.number	0.0051 t = 5.0169***	0.0050 t = 5.1129***	0.0053 t = 5.1728***	0.0051 t = 5.0169***	0.0050 t = 5.1129***	0.0051 t = 4.9492***	0.0008 t = 0.9822	0.0008 t = 1.0294	0.0011 t = 1.2705	0.0008 t = 0.9822
Constant	0.4057 t = 5.6861***	0.4006 t = 5.7776***	0.3894 t = 5.4530***	0.4057 t = 5.6861***	0.4006 t = 5.7776***	0.4057 t = 5.5969***	0.5939 t = 10.2769***	0.5941 t = 10.8187***	0.5784 t = 9.9971***	0.5939 t = 10.2769***
Observations	268	268	268	268	268	268	473	473	473	473
R <sup>2</sup>	0.1000	0.1070	0.1064	0.1000	0.1070	0.0982	0.0194	0.0371	0.0274	0.0194
Adjusted R <sup>2</sup>	0.0932	0.1003	0.0997	0.0932	0.1003	0.0914	0.0152	0.0330	0.0233	0.0152

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma N + controls + \epsilon$ . The regressions are run using the centrality measures to proxy for persuasiveness of an activist. Centrality is a characteristic of a node that captures the importance of the node position in a network. I use three centrality measures for this analysis. Closeness centrality shows how close each node to any other node. Betweenness centrality captures how well situated a node is in terms of the paths that it lies on. Degree centrality, is defined a the number of links incident to a node. Bonacich centrality is a degree centrality adjusted for the centrality of the neighbours in a network. The centrality measures were computed for both Simple and Spring networks. (By construction, centrality measures for Simple network are identical to the centrality measures of Number of Connections network.) After that I aggregated the centrality measures for each campaign. That is, *act\_simple\_closeness* is a sum of closeness centralities of every active activist participating in a campaign, and *act\_simple\_closeness* is a sum of closeness centralities of every passive activist that invested in the company but does not participate in a campaign. *total.activist.number* is the number of passive activist investors that hold shares of the company. Robust standard errors in parenthesis.

Table 19: OLS regressions with centrality measures, robust se

Dependent variable:									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	success_of_stated_obj (9) (10)
act_s_clos	-0.0383 t = -1.2689						-0.0710 t = -3.2357***		
oth_s_clos	0.1403 t = 3.8590***						0.0581 t = 2.6450***		
act_s_betw		-0.0632 t = -1.5115						-0.0890 t = -4.1310***	
oth_s_betw		0.1491 t = 4.4891***						0.0564 t = 2.6184***	
act_s_bon			0.0559 t = 1.7305*					0.0842 t = 3.8134***	
oth_s_bon			-0.1604 t = -4.1989***					-0.0539 t = -2.4439**	
act_sp_clos				-0.0383 t = -1.2689					-0.0710 t = -3.2357***
oth_sp_clos				0.1403 t = 3.8590***					0.0581 t = 2.6450***
act_sp_betw					-0.0632 t = -1.5115				
oth_sp_betw					0.1491 t = 4.4891***				
act_sp_bon						0.0339 t = 1.0826			
oth_sp_bon						-0.1622 t = -4.2566***			
Constant	0.7143 t = 26.0022***	0.7117 t = 25.7895***	0.7176 t = 26.0455***	0.7143 t = 26.0022***	0.7117 t = 25.7895***	0.7174 t = 26.1782***	0.6448 t = 29.6860***	0.6448 t = 29.9517***	0.6448 t = 29.7550***
Observations	268	268	268	268	268	268	473	473	473
R <sup>2</sup>	0.0535	0.0761	0.0633	0.0535	0.0761	0.0640	0.0318	0.0489	0.0362
Adjusted R <sup>2</sup>	0.0463	0.0691	0.0562	0.0463	0.0691	0.0569	0.0276	0.0448	0.0321

*Notes:* OLS regression of the equation  $Y = \alpha + \beta x + \gamma \bar{x} + controls + \epsilon$ . The regressions are run using the centrality measures to proxy for persuasiveness of an activist. Centrality is a characteristic of a node that captures the importance of the node position in a network. I use three centrality measures for this analysis. Closeness centrality shows how close each node to any other node. Betweenness centrality captures how well situated a node is in terms of the paths that it lies on. Degree centrality, is defined as the number of links incident to a node. Bonacich centrality is a degree centrality adjusted for the centrality of the neighbours in a network. The centrality measures were computed for both Simple and Spring networks. (By construction, centrality measures for Simple network are identical to the centrality measures of Number of Connections network.) After that I aggregated the centrality measures for each campaign. That is, *act\_simple\_closeness* is a sum of closeness centralities of every active activist participating in a campaign, and *oth\_simple\_closeness* is a sum of closeness centralities of every passive activist that invested in the company but does not participate in a campaign. Robust standard errors in parenthesis.