Activist paper preliminary output

Anya Nakhmurina

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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	24.6%	NA
Excess cash, under-leverage, dividends/repurchases	28	6%	71.4%
Equity issuance, restructure debt, recapitalization	16	3.43%	50%
Operational efficiency	24	5.14%	45.8%
Lack of focus, business restructuring and spinning off	9	1.93%	66.7%
M&A: as target (against the deal/for better terms)	19	4.07%	31.6%
M&A: as acquirer (against the deal/for better terms)	4	0.857%	100%
Pursue growth strategies	8	1.71%	50%
Sell company or main assets to a third party	37	7.92%	56.8%
Take control/buyout company and/or take it private	32	6.85%	40.6%
Rescind takeover defenses	15	3.21%	53.3%
Oust CEO, chairman	11	2.36%	63.6%
Board independence and fair representation	178	38.1%	64.6%
More information disclosure/potential fraud	25	5.35%	12%
Excess executive compensation/pay for performance	25	5.35%	40%
Institute enviromental protection policy	14	3%	0%
Public Short Position/Bear Raid	2	0.428%	0%
Sum of categories not falling into general undervaluation	352	75.4%	57.7%

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	66	18.2%	0%
Equity issuance, restructure debt, recapitalization	23	6.35%	0%
Operational efficiency	36	9.94%	0%
Lack of focus, business restructuring and spinning off	53	14.6%	0%
M&A: as target (against the deal/for better terms)	34	9.39%	0%
M&A: as acquirer (against the deal/for better terms)	13	3.59%	0%
Pursue growth strategies	5	1.38%	0%
Sell company or main assets to a third party	87	24%	0%
Take control/buyout company and/or take it private	11	3.04%	0%
Rescind takeover defenses	23	6.35%	0%
Oust CEO, chairman	35	9.67%	0%
Board independence and fair representation	99	27.3%	0%
More information disclosure/potential fraud	23	6.35%	0%
Excess executive compensation/pay for performance	37	10.2%	0%
Institute enviromental protection policy	3	0.829%	0%
Public Short Position/Bear Raid	0	0%	NaN%
Sum of categories not falling into general undervaluation	362	100%	66.9%

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 avalability 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 avalability comes from SharkWatch database. Campaigns were manually classified.

Exit after	Num. of campaigns	% of Sample	Number of Successes	% of Successes
Demand negotiations	163	45%	108	66.3%
Board representation	38	10.5%	14	36.8%
Proxy fight	161	44.5%	120	74.5%

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* correponds 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.vweghted* 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	p50	median	p75	max	sd
campaign outcome	won_brep_percent	0	0.25	0.49	0.5	0.75	1	0.36
campaign outcome	won_brep_dummy	0	1	0.95	1	1	1	0.22
campaign outcome	success_of_stated_obj	0	0	0.64	1	1	1	0.48
campaign outcome	sales_growth	-0.96	-0.03	0.17	0	0.05	25.38	1.73
campaign outcome	oper_profit_growth	-10.47	-0.04	0.13	0	0.1	11.09	1.71
activists' persuasiveness	log(active.activist.size)	3.23	6.44	7.75	7.73	9.01	13.21	1.81
network variable	investor.number	2	53	63.7	71	85.75	122	27.59
network variable	total.activist.number	1	52	62.69	70	84.75	121	27.59
network variable	log(activist.size.vweighted)	7.39	10.59	10.98	10.81	11.52	16.21	1
network variable	log(activist.size.average)	6.99	10.22	10.42	10.38	10.65	12.91	0.49
network variable	spring measure	0	0	0.02	0	0.01	0.97	0.04
network variable	number of connections	1	1	30	4	15	3369	129.55
control variable	log(size)	3.03	5.75	7.2	7	8.33	13.03	1.95
control variable	age	1	11	22.33	19	30	53	14.03
control variable	leverage	-30.1	0.09	1.25	0.43	1.2	112.41	6.96
control variable	mtb	-113.94	1.15	3.26	1.8	2.9	316.84	19.05
control variable	oper_profit	-1061	11.31	506.97	50.68	182.5	21332	2182.34
control variable	roa	-1938.71	-38.48	53.08	40.07	111.66	4325.62	393.1
control variable	tobins_q	0.17	0.86	1.51	1.19	1.61	19.54	1.8
control variable	asset_turnover	-0.06	0.09	0.2	0.16	0.26	1.2	0.16
control variable	rd_to_assets	0	0	32.57	0	7.91	1444	149.79
control variable	revtq	-1569.77	69.03	2638.19	218.53	954.47	124238	11512.07
control variable	saleq	5.54	65.63	2699.91	196.2	1274.41	35712	7201.09

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.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. *mtb* is the market-to-book ratio of the company. *leverage* is the leverage of the company. *roa* is return on company's assets. *tobins_q* is the company's Tobin's Q. *oper_profit* is an operating profitability of the company. *rd_to_assets* is a share of R&D expenditures to the company's assets. *revtq* is the quartely revenue. *asset_turnover* is the company's asset turnover. *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 won_brep_percent	1																				
2 won_brep_dummy	0.79	1																			
3 success_of_stated_obj	0.26	0.09	1																		
4 sales_growth	0.14	0.02	0.06	1																	
5 oper_profit_growth	-0.16	0.02	-0.05	-0.13	1																
6 log(active.activist.size)	0.22	0.15	0.08	0.06	0.08	1															
7 investor.number	0.21	0.13	0.09	-0.01	-0.08	0.3	1														
8 total.activist.number	0.21	0.13	0.09	-0.01	-0.08	0.3	1	1													
9 log(activist.size.vweighted)	-0.14	0.02	0.13	0.04	-0.03	0.08	0.32	0.32	1												
10 log(activist.size.average)	-0.28	-0.08	0.09	-0.02	0.02	-0.15	-0.23	-0.23	0.61	1											
11 age	0.05	0.03	-0.06	0.09	0.02	0.16	0.07	0.07	0.08	-0.07	1										
12 leverage	-0.09	0.02	-0.04	-0.01	0.01	0.13	-0.02	-0.02	-0.01	-0.04	0.05	1									
13 log(size)	-0.13	0.04	-0.03	-0.02	0.03	0.37	0.12	0.12	0.25	0	0.46	0.06	1								
14 mtb	-0.05	0.02	-0.03	0.01	0	0.11	-0.03	-0.03	0.04	-0.02	0.04	0.96	0.06	1							
15 oper_profit	-0.12	0.03	-0.18	-0.05	-0.02	-0.03	0.06	0.06	0.04	-0.07	0.3	0.01	0.52	0.01	1						
16 roa	-0.03	0.02	0.05	0.04	0.08	0.01	-0.02	-0.02	0	-0.05	0.09	0.02	0.02	0	0	1					
17 tobins_q	0.19	0.07	0.1	0.2	0.03	0.08	-0.02	-0.02	0.11	0.08	-0.08	0.01	-0.03	0.07	0.01	-0.02	1				
18 asset_turnover	0.07	0.02	-0.03	-0.11	-0.01	0.04	-0.03	-0.03	-0.04	-0.03	0.14	-0.02	-0.01	0.02	0.07	0.03	-0.07	1			
19 rd_to_assets	-0.13	-0.09	-0.01	-0.02	-0.02	0.11	0.03	0.03	0.16	0.06	0.08	-0.01	0.29	0	0.12	0.12	-0.01	-0.01	1		
20 revtq	-0.11	0.04	-0.14	-0.03	-0.01	-0.02	0.04	0.04	0	-0.08	0.3	0	0.48	0	0.95	0.03	-0.03	-0.01	0.03	1	
21 saleq	0.1	0.11	0.01	-0.04	-0.03	0.32	0.5	0.5	0.15	-0.19	0.49	0.24	0.62	0.09	0.76	0.11	0.05	0.05	0.09	0.09	1

Preliminary results

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

Table 7: Logit regressions with robust standard errors

	Dependent variable:									
	won_brep_percent					success_of_stated_obj				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
log(total.activist.number)	0.197		0.062			0.202		0.154		
	(0.273)		(0.289)			(0.133)		(0.138)		
log(active.activist.size)		0.191**	0.176		0.170		0.095	0.075		0.075
		(0.097)	(0.118)		(0.117)		(0.068)	(0.071)		(0.071)
log(investor.number)				0.238	0.093				0.212	0.159
				(0.270)	(0.292)				(0.143)	(0.148)
Constant	−0.771	−1.417*	−1.545	−0.935	−1.620	−0.226	−0.164	−0.613	−0.270	−0.642
	(1.083)	(0.751)	(1.004)	(1.079)	(1.029)	(0.533)	(0.527)	(0.657)	(0.575)	(0.683)
Observations	73	73	73	73	73	362	362	362	362	362
Log Likelihood	−50.329	−50.150	−50.120	−50.250	−50.088	−235.782	−235.708	−235.096	−235.833	−235.141
Akaike Inf. Crit.	104.658	104.300	106.241	104.499	106.176	475.564	475.416	476.192	475.665	476.282

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* correponds 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: OLS regressions with robust standard errors.

| | Dependent variable: | | | | | | | | | |
| | won_brep_percent | | | won_brep_dummy | | | success_of_stated_obj | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
total.activist.number	0.002* (0.001)		0.002 (0.002)		0.001 (0.001)	0.002* (0.001)		0.001 (0.001)		0.002 (0.001)
age					0.0002 (0.001)					−0.002 (0.002)
log(size)					−0.001 (0.006)					−0.010 (0.018)
leverage					−0.002 (0.004)					−0.016 (0.023)
mtb					0.001 (0.001)					0.005 (0.007)
log(active.activist.size)		0.047** (0.023)	0.034 (0.028)	0.015** (0.007)	0.014* (0.007)		0.022 (0.015)	0.016 (0.016)	0.016 (0.016)	0.018 (0.020)
investor.number				0.001 (0.001)					0.001 (0.001)	
Constant	0.352*** (0.097)	0.153 (0.177)	0.158 (0.186)	0.790*** (0.063)	0.782*** (0.081)	0.535*** (0.064)	0.470*** (0.121)	0.433*** (0.124)	0.432*** (0.124)	0.514*** (0.155)
Observations	73	73	73	362	298	362	362	362	362	298
R^2	0.044	0.050	0.064	0.030	0.031	0.009	0.007	0.012	0.012	0.026
Adjusted R^2	0.030	0.037	0.037	0.025	0.011	0.006	0.004	0.007	0.007	0.006

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* correponds 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.

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Table 9: OLS regressions with robust standard errors.

	Dependent variable:									
	won_brep_dummy					success_of_stated_obj				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
total.activist.number	0.001 (0.0005)		0.0004 (0.001)		0.001 (0.001)	0.002** (0.001)		0.002* (0.001)		0.002* (0.001)
log(active.activist.size)		0.016*** (0.006)	0.014** (0.006)	0.014** (0.006)	0.011* (0.007)		0.023 (0.015)	0.016 (0.016)	0.016 (0.016)	0.021 (0.020)
investor.number				0.0004 (0.001)					0.002* (0.001)	
exit_s_f	−0.052*** (0.012)	−0.054*** (0.012)	−0.052*** (0.012)	−0.052*** (0.012)	−0.059*** (0.014)	0.042 (0.027)	0.035 (0.026)	0.042 (0.026)	0.042 (0.026)	0.047 (0.031)
age					0.0003 (0.001)					−0.002 (0.002)
log(size)					0.003 (0.006)					−0.013 (0.018)
leverage					−0.002 (0.004)					−0.016 (0.024)
mtb					0.001 (0.001)					0.005 (0.008)
Constant	1.012*** (0.035)	0.933*** (0.043)	0.917*** (0.048)	0.917*** (0.049)	0.910*** (0.067)	0.436*** (0.091)	0.392*** (0.136)	0.331** (0.141)	0.330** (0.141)	0.413** (0.172)
Observations	362	362	362	362	298	362	362	362	362	298
R^2	0.066	0.077	0.080	0.080	0.086	0.015	0.011	0.019	0.019	0.034
Adjusted R^2	0.061	0.072	0.072	0.072	0.064	0.010	0.006	0.010	0.010	0.010

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* correponds 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.

	Dependent variable:									
	won_brep_dummy					success_of_stated_obj				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
log(active.activist.size)		0.016** (0.007)	0.016** (0.007)	0.014** (0.006)	0.015** (0.007)		0.017 (0.016)	0.017 (0.016)	0.016 (0.016)	0.020 (0.019)
investor.number				0.001 (0.001)					0.001 (0.003)	
lag_act_number	0.001* (0.0005)	0.001 (0.0005)	0.001 (0.0005)	−0.0005 (0.001)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)	−0.0001 (0.003)	0.001 (0.001)
age					0.0002 (0.001)					−0.002 (0.002)
log(size)					−0.001 (0.006)					−0.010 (0.018)
leverage					−0.002 (0.004)					−0.017 (0.023)
mtb					0.001 (0.001)					0.005 (0.007)
Constant	0.903*** (0.032)	0.795*** (0.061)	0.795*** (0.061)	0.790*** (0.063)	0.787*** (0.079)	0.556*** (0.058)	0.438*** (0.124)	0.438*** (0.124)	0.431*** (0.124)	0.520*** (0.156)
Observations	362	362	362	362	298	362	362	362	362	298
R^2	0.012	0.028	0.028	0.030	0.028	0.007	0.011	0.011	0.012	0.024
Adjusted R^2	0.009	0.023	0.023	0.022	0.008	0.005	0.006	0.006	0.004	0.004

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* correponds 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: OLS regressions with robust se, operational outcome variables

| | *Dependent variable:* | | | |
| | sales_growth | | oper_profit_growth | |
	(1)	(2)	(3)	(4)
log(active.activist.size)	0.061	0.028	0.118*	0.075
	(0.052)	(0.024)	(0.062)	(0.062)
total.activist.number	−0.002	0.003	−0.009**	−0.009*
	(0.005)	(0.002)	(0.004)	(0.005)
exit_s_f	0.032	−0.047	−0.155	−0.162
	(0.098)	(0.065)	(0.137)	(0.123)
age		−0.003		0.011
		(0.002)		(0.011)
log(size)		−0.014		0.011
		(0.014)		(0.053)
leverage		−0.046		0.006
		(0.040)		(0.026)
mtb		0.016		−0.003
		(0.014)		(0.008)
Constant	−0.277	−0.051	0.087	0.004
	(0.270)	(0.208)	(0.418)	(0.479)
Observations	288	263	235	216
R^2	0.004	0.030	0.028	0.038
Adjusted R^2	−0.006	0.004	0.015	0.006

Notes: OLS regression of the equation $Y = \alpha + \beta x + \gamma N + controls + \epsilon$. *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 *active.activist.size* correponds 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 12: Basic spillover OLS regressions with robust standard errors

						Dependent variable:						
			won_brep_dummy						success_of_stated_obj			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
log(active.activist.size)		0.017*** (0.006)	0.017*** (0.006)		0.018*** (0.006)	0.019*** (0.007)	0.022 (0.015)	0.026* (0.015)	0.031* (0.019)		0.019 (0.015)	0.027 (0.018)
log(activist.size.average)	−0.037* (0.019)	−0.028 (0.018)	−0.030 (0.024)					0.101* (0.057)	0.059 (0.069)			
age			0.0002 (0.001)			0.0003 (0.001)			−0.002 (0.002)			−0.002 (0.002)
log(size)			−0.001 (0.007)			−0.002 (0.007)			−0.012 (0.018)			−0.020 (0.018)
leverage			−0.002 (0.004)			−0.002 (0.004)			−0.016 (0.022)			−0.014 (0.022)
mtb			0.001 (0.001)			0.001 (0.001)			0.005 (0.007)			0.004 (0.007)
log(activist.size.vweighted)				0.005 (0.007)	0.002 (0.007)	0.005 (0.009)				0.063** (0.029)	0.060** (0.029)	0.063* (0.032)
Constant	1.334*** (0.197)	1.108*** (0.183)	1.123*** (0.252)	0.899*** (0.082)	0.790*** (0.099)	0.755*** (0.116)	0.470*** (0.121)	−0.613 (0.619)	−0.086 (0.753)	−0.053 (0.320)	−0.169 (0.318)	−0.081 (0.351)
Observations	362	362	298	362	362	298	362	362	298	362	362	298
R²	0.007	0.026	0.025	0.0005	0.022	0.022	0.007	0.017	0.021	0.017	0.022	0.034
Adjusted R²	0.004	0.021	0.005	−0.002	0.017	0.002	0.004	0.012	0.001	0.014	0.017	0.014

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* correponds 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.

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Table 13: Basic spillower OLS regressions with robust standard errors

| | Dependent variable: | | | | | | | | | | | |
| | won_brep_dummy | | | | | | success_of_stated_obj | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
log(activist.size.average)		−0.029 (0.019)	−0.032 (0.025)					0.083 (0.057)	0.029 (0.066)			
exit_s_f	−0.056*** (0.012)	−0.055*** (0.012)	−0.063*** (0.015)	−0.056*** (0.012)	−0.056*** (0.012)	−0.065*** (0.015)	0.032 (0.026)	0.028 (0.026)	0.030 (0.030)	0.035 (0.026)	0.035 (0.026)	0.036 (0.030)
age			0.0003 (0.001)			0.0004 (0.001)			−0.002 (0.002)			−0.002 (0.002)
log(size)			0.008 (0.007)			0.008 (0.007)			−0.003 (0.017)			−0.013 (0.017)
leverage			−0.002 (0.004)			−0.002 (0.004)			−0.014 (0.022)			−0.013 (0.022)
mtb			0.001 (0.001)			0.001 (0.001)			0.004 (0.007)			0.004 (0.007)
log(activist.size.vweighted)					0.002 (0.007)	0.0004 (0.009)				0.064** (0.029)	0.064** (0.029)	0.065** (0.033)
Constant	1.062*** (0.014)	1.361*** (0.200)	1.346*** (0.251)	1.062*** (0.014)	1.035*** (0.082)	1.005*** (0.097)	0.575*** (0.059)	−0.282 (0.599)	0.339 (0.705)	−0.137 (0.325)	−0.137 (0.325)	−0.016 (0.363)
Observations	362	362	298	362	362	298	362	362	298	362	362	298
R^2	0.059	0.063	0.076	0.059	0.059	0.072	0.004	0.011	0.013	0.022	0.022	0.030
Adjusted R^2	0.056	0.058	0.057	0.056	0.054	0.053	0.001	0.006	−0.007	0.016	0.016	0.010

Notes: OLS regression of the equation $Y = \alpha + \beta x + \gamma \bar{x} + controls + \epsilon$. *success_of_stated_obj* is an indicator of fulfillment of activists' demands. *active.activist.size* correponds to the total assets of an activist group, computed from 13F filings. *won_brep_dummy* is an indicator variable equal to 1 when at least 1 activist nominee was elected to the board. *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.

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Table 14: Basic spillower OLS regressions with robust standard errors

	Dependent variable:					
	won_brep_dummy				success_of_stated_obj	
	(1)	(2)	(3)	(4)	(5)	(6)
log(active.activist.size)	0.018***	0.008	0.002	0.022	0.102***	0.07...
	(0.006)	(0.014)	(0.026)	(0.015)	(0.035)	(0.05
log(act_size_nw_s)		−0.006			0.015	
		(0.155)			(0.288)	
log(act_size_nw_spr)			0.010			0.03...
			(0.029)			(0.05
age		0.002	0.002		−0.002	−0.0...
		(0.002)	(0.002)		(0.005)	(0.00
log(size)		0.016	0.012		−0.043	−0.0...
		(0.016)	(0.017)		(0.041)	(0.04
leverage		0.013	0.011		0.010	0.00...
		(0.013)	(0.015)		(0.041)	(0.04
mtb		0.001	0.001		0.009	0.01...
		(0.003)	(0.003)		(0.009)	(0.01
Constant	0.811***	0.766	0.588**	0.470***	−0.077	−0.00...
	(0.058)	(2.901)	(0.257)	(0.121)	(5.387)	(0.44
Observations	362	76	76	362	76	76
R²	0.022	0.071	0.073	0.007	0.108	0.11...
Adjusted R²	0.020	−0.009	−0.008	0.004	0.031	0.05...

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* correponds to the total assets of an activist group, computed from 13F filings. *activist.size.vweghted* 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.

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Table 15: Basic spillower OLS regressions with robust se, operational outcome variables

	Dependent variable:			
	sales_growth		oper_profit_growth	
	(1)	(2)	(3)	(4)
log(active.activist.size)	0.050*	0.049*	0.076*	0.032
	(0.028)	(0.026)	(0.046)	(0.044)
log(activist.size.vweighted)	0.063	0.020	−0.056	−0.046
	(0.058)	(0.034)	(0.042)	(0.049)
age		−0.002		0.009
		(0.002)		(0.011)
log(size)		−0.019		0.012
		(0.014)		(0.062)
leverage		−0.046		0.008
		(0.042)		(0.028)
mtb		0.016		−0.003
		(0.014)		(0.009)
Constant	−0.904	−0.307	0.148	0.001
	(0.688)	(0.318)	(0.553)	(0.582)
Observations	288	263	235	216
R^2	0.005	0.019	0.008	0.013
Adjusted R^2	−0.002	−0.004	−0.001	−0.016

Notes: OLS regression of the equation $Y = \alpha + \beta x + \gamma \bar{x} + controls + \epsilon$. *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* correponds to the total assets of an activist group, computed from 13F filings. extitactive.activist.size correponds to the total assets of an activist group, computed from 13F filings. *activist.size.vweghted* is the sum of all the company's activists' assets weighted by the share of investments in 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 16: **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 correponds 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. 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. Betweennes 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.) 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_brep_dummy	0.09	1																				
3 total.activist.number	0.09	0.13	1																			
4 activist.size.vweighted	-0.02	0.03	-0.07	1																		
5 activist.size.average	0.04	-0.04	-0.3	0.84	1																	
6 age	-0.06	0.03	0.07	0	-0.06	1																
7 leverage	-0.04	0.02	-0.02	0.03	0.01	0.05	1															
8 size	-0.17	0.04	0.06	0.11	0.01	0.34	0	1														
9 mtb	-0.03	0.02	-0.03	0.03	0.02	0.04	0.96	0.01	1													
10 oper_profit	-0.18	0.03	0.06	0.05	-0.02	0.3	0.01	0.95	0.01	1												
11 act_s_clos	-0.06	0.06	0.21	-0.04	-0.12	-0.05	0.08	-0.03	0.09	0	1											
12 act_s_betw	-0.09	0.04	0.13	-0.02	-0.08	-0.06	0.04	-0.01	0.04	0.01	0.9	1										
13 act_s_bon	0.05	-0.06	-0.23	0.05	0.13	0.08	-0.09	0.04	-0.09	0.01	-0.98	-0.88	1									
14 act_sp_clos	-0.06	0.06	0.21	-0.04	-0.12	-0.05	0.08	-0.03	0.09	0	1	0.9	-0.98	1								
15 act_sp_betw	-0.09	0.04	0.13	-0.02	-0.08	-0.06	0.04	-0.01	0.04	0.01	0.9	1	-0.88	0.9	1							
16 act_sp_bon	0.04	-0.06	-0.24	0.05	0.13	0.06	-0.06	0.03	-0.06	0.01	-0.98	-0.88	0.96	-0.98	-0.88	1						
17 oth_s_clos	0.1	0.06	0.57	-0.09	-0.16	-0.08	-0.05	-0.11	-0.05	-0.12	0.2	0.04	-0.26	0.2	0.04	-0.26	1					
18 oth_s_betw	0.15	0.08	0.67	-0.08	-0.15	-0.03	-0.06	-0.1	-0.06	-0.1	0.14	0.03	-0.21	0.14	0.03	-0.2	0.87	1				
19 oth_s_bon	-0.1	-0.06	-0.56	0.09	0.18	0.1	0.05	0.11	0.06	0.11	-0.17	-0.03	0.26	-0.17	-0.03	0.25	-0.96	-0.88	1			
20 oth_sp_clos	0.1	0.06	0.57	-0.09	-0.16	-0.08	-0.05	-0.11	-0.06	-0.12	0.2	0.04	-0.26	0.2	0.04	-0.2	1	0.87	-0.96	1		
21 oth_sp_betw	0.15	0.08	0.67	-0.08	-0.15	-0.03	-0.06	-0.1	-0.05	-0.1	0.14	0.03	-0.21	0.14	0.03	-0.2	0.87	1	-0.88	0.87	1	
22 oth_sp_bon	-0.11	-0.06	-0.55	0.09	0.18	0.1	0.05	0.1	0.06	0.11	-0.19	-0.03	0.26	-0.19	-0.03	0.26	-0.98	-0.86	0.98	-0.98	-0.86	1

Table 17: OLS regressions with centrality measures, robust se

	Dependent variable:											
	won_brep_dummy						success_of_stated_obj					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
act_s_clos	0.083 (0.055)						−0.515 (0.618)					
act_s_betw		0.075 (0.064)						−0.684* (0.383)				
act_s_bon			−0.085 (0.060)						0.437 (0.601)			
act_sp_clos				0.083 (0.055)						−0.515 (0.618)		
act_sp_betw					0.075 (0.064)						−0.684* (0.383)	
act_sp_bon						−0.076* (0.045)						0.364 (0.425)
total.activist.number	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)	0.002** (0.001)
Constant	0.888*** (0.038)	0.888*** (0.038)	0.973*** (0.075)	0.888*** (0.038)	0.888*** (0.038)	0.962*** (0.063)	0.531*** (0.064)	0.530*** (0.064)	0.095 (0.606)	0.531*** (0.064)	0.530*** (0.064)	0.176 (0.422)
Observations	362	362	362	362	362	362	362	362	362	362	362	362
R^2	0.017	0.017	0.017	0.017	0.017	0.017	0.016	0.020	0.014	0.016	0.020	0.013
Adjusted R^2	0.012	0.011	0.012	0.012	0.011	0.012	0.011	0.014	0.008	0.011	0.014	0.008

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. Betweennes 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 *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. *total.activist.number* is the number of passive activist investors that hold shares of the company. Robust standard errors in parenthesis.

Table 18: OLS regressions with centrality measures, robust se

| | *Dependent variable:* | | | | | | | | | | | |
| | won_brep_dummy | | | | | | success_of_stated_obj | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
act_s_clos	0.124* (0.068)						−0.521 (0.592)					
oth_s_clos	0.120 (0.090)						0.675*** (0.254)					
act_s_betw		0.115 (0.086)						−0.622 (0.379)				
oth_s_betw		0.163** (0.067)						0.658*** (0.203)				
act_s_bon			−0.126* (0.073)						0.463 (0.605)			
oth_s_bon			−0.134 (0.105)						−0.697** (0.277)			
act_sp_clos				0.124* (0.068)						−0.521 (0.592)		
oth_sp_clos				0.120 (0.090)						0.675*** (0.254)		
act_sp_betw					0.115 (0.086)						−0.622 (0.379)	
oth_sp_betw					0.163** (0.067)						0.658*** (0.203)	
act_sp_bon						−0.115** (0.050)						0.400 (0.427)
oth_sp_bon						−0.130 (0.103)						−0.732*** (0.279)
Constant	0.937*** (0.016)	0.933*** (0.016)	1.196*** (0.113)	0.937*** (0.016)	0.933*** (0.016)	1.179*** (0.102)	0.602*** (0.034)	0.584*** (0.034)	0.838 (0.538)	0.602*** (0.034)	0.584*** (0.034)	0.942** (0.400)
Observations	362	362	362	362	362	362	362	362	362	362	362	362
R^2	0.005	0.009	0.006	0.005	0.009	0.006	0.018	0.031	0.015	0.018	0.031	0.016
Adjusted R^2	−0.0001	0.003	0.0004	−0.0001	0.003	0.0002	0.013	0.026	0.010	0.013	0.026	0.011

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. Betweennes 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 *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.