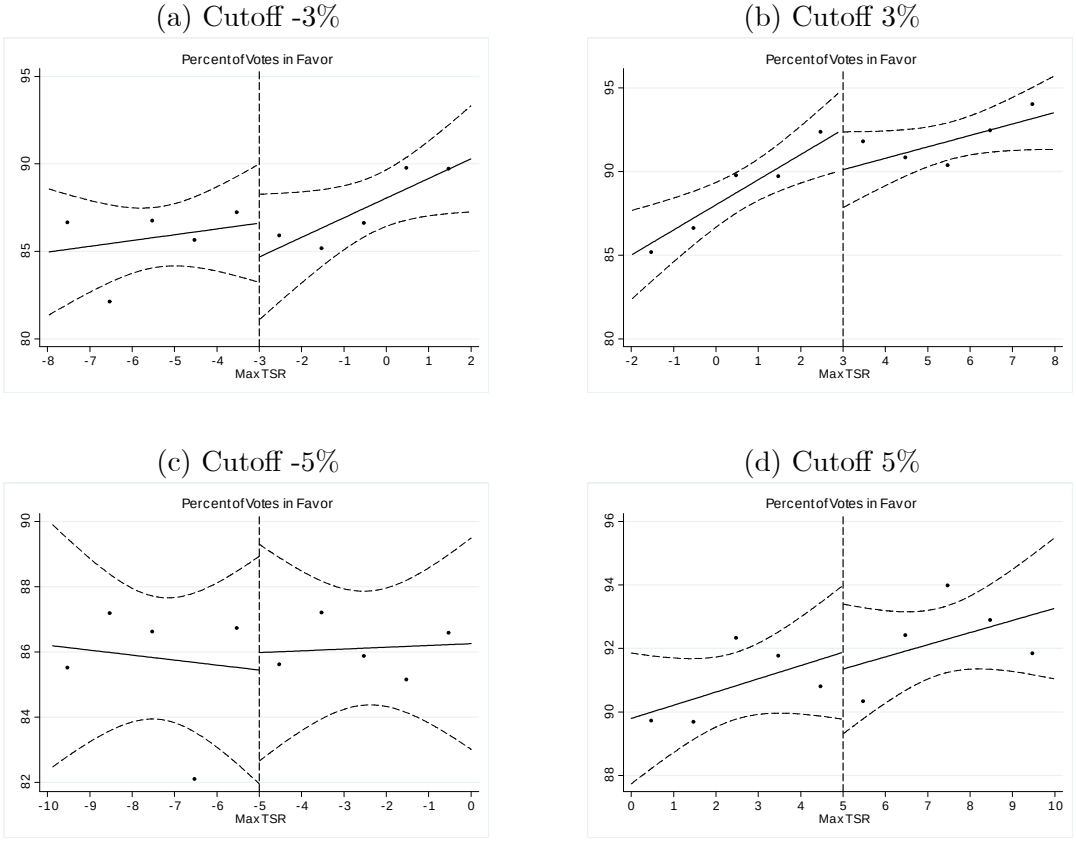
Online Appendix

Section A presents additional empirical analysis. Section B describes the details of the ISS cutoff rule (in Section B.1) and the regulatory debate about proxy advisors (in Section B.2). Section C outlines the cross-validation procedure that is used to find the optimal bandwidth.

A. Additional tests

Figure A.1: Placebo tests using alternative cutoffs



The figure shows that voting support on the sample of say-on-pay proposals in 2010-2011 exhibits no discontinuity around placebo cutoffs $MaxTSR = c$ for $c \in \{-3\%, 3\%, -5\%, 5\%\}$. For each c, the x-axis presents the forcing variable $MaxTSR$, measured in percentage points, in a 5% bandwidth centered around the cutoff $MaxTSR = c$. The y-axis corresponds to *Votes*, the percentage of votes in favor of the say-on-pay proposal, measured in percentage points. Each dot represents the average percentage of votes in favor of the say-on-pay proposal in bins of 1%. The solid and dashed lines represent, respectively, the fitted values and 95% confidence intervals of the regression of *Votes* on $BelowCutoff_c$, $MaxTSR$, and $BelowCutoff_c \cdot MaxTSR$, estimated on $c-5\% < MaxTSR < c+5\%$, where $BelowCutoff_c$ is the indicator variable that equals one if $MaxTSR < c$ and zero otherwise. These subsamples include 364, 453, 327, and 458 observations for $c = -3\%$, 3%, -5%, and 5%, respectively.

Table A.1: Distribution of additional firm characteristics around the cutoff

	RD coeff. on	-5%<MaxTSR<0		0<MaxTSR<5%		Diff. in means
	BelowCutoff	Mean	# Obs	Mean	# Obs	p-val
Percentile of CEO Total Compensation in the overall sample	0.02 (4.97)	59.54	173	55.89	230	0.18
CEO Total Actual Compensation	0.23 (1.30)	5.18	173	5.16	230	0.97
Proportion of stocks grants	0.03 (0.04)	0.27	173	0.28	230	0.56
Proportion of option grants	0.03 (0.03)	0.15	173	0.14	230	0.43
Institutional Ownership HHI	0.01 (0.01)	0.07	171	0.06	226	0.13

The table complements Table 6 and shows that the distribution of firm characteristics is smooth around the cutoff. For each firm characteristic in the first column, column "RD coeff. on BelowCutoff" presents the results of a local linear regression of this characteristic on *BelowCutoff*, $MaxTSR$, *BelowCutoff*$\cdot MaxTSR$, and year and industry fixed effects using a 5% bandwidth around the cutoff. The estimated coefficients on *BelowCutoff* are reported in the first row, and standard errors are reported in parentheses. Subsequent columns present the means of each firm characteristic in two narrow intervals around the cutoff: $-5\% < MaxTSR < 0$ and $0 < MaxTSR < 5\%$, as well as the corresponding number of observations in these intervals. The last column presents the p-values for the difference in means test. CEO Total Actual Compensation is the GMI Ratings variable CEOTotActComp, defined as the sum of Total Annual Compensation (base salary + annual bonus + other annual compensation) + Value Realized On Vesting + Option Value Realized + Pension/NonQualified Deferred Compensation Earnings + Pension Pay Last Year. Institutional Ownership HHI is the institutional ownership Herfindahl-Hirschman index, defined as the sum of squared share ownership over all institutional investors.

Table A.2: First-stage regression for the 2012 say-on-pay sample

	(1)	(2)	(3)	(4)	(5)
	NegRec	NegRec	NegRec	NegRec	NegRec
BelowCutoff	0.044	0.046	0.070	0.111	0.083
	(0.072)	(0.072)	(0.078)	(0.080)	(0.079)
MaxTSR	-0.002	-0.010	-0.004	0.003	-0.009
	(0.014)	(0.019)	(0.021)	(0.021)	(0.020)
BelowCutoff·MaxTSR		0.016	0.017	0.011	0.021
		(0.027)	(0.029)	(0.029)	(0.029)
CEO Total Compensation				0.021***	0.032***
				(0.005)	(0.008)
Growth in CEO Total Compensation				0.001	0.000
				(0.000)	(0.000)
Proportion of Stock-Based Compensation				-0.046	-0.072
				(0.104)	(0.104)
Institutional Ownership				-0.022	-0.034
				(0.119)	(0.118)
Insider Ownership				0.051	-0.124
				(0.291)	(0.290)
Log(Market Value of Equity)					-0.046*
					(0.025)
ROA					-0.236
					(0.339)
M/B					0.011
					(0.033)
Year FE	No	No	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Observations	289	289	289	274	272
R^2	0.007	0.008	0.007	0.093	0.115

The table presents the first-stage regression for the sample of say-on-pay proposals in 2012, estimated on a 5% bandwidth around the cutoff. The outcome variable is *NegRec*, which equals one if ISS gives a negative recommendation, and zero otherwise. The main variable of interest is *BelowCutoff*, which equals one if the firm is below the ISS cutoff, and zero otherwise. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table A.3: First-stage regression for the 2010-2011 sample of director elections

	(1)	(2)	(3)	(4)	(5)
	NegRec	NegRec	NegRec	NegRec	NegRec
BelowCutoff	0.101	0.096	0.080	0.062	0.059
	(0.062)	(0.062)	(0.065)	(0.066)	(0.066)
MaxTSR	0.014	0.030**	0.029*	0.030**	0.029*
	(0.011)	(0.014)	(0.015)	(0.015)	(0.015)
BelowCutoff·MaxTSR		-0.033	-0.035	-0.036	-0.033
		(0.021)	(0.022)	(0.022)	(0.022)
CEO Total Compensation				0.002	-0.002
				(0.004)	(0.006)
Growth in CEO Total Compensation				-0.000	-0.000
				(0.000)	(0.000)
Proportion of Stock-Based Compensation				-0.006	-0.031
				(0.089)	(0.091)
Institutional Ownership				-0.164*	-0.154
				(0.093)	(0.094)
Insider Ownership				0.358***	0.374***
				(0.113)	(0.115)
Log(Market Value of Equity)					0.020
					(0.019)
ROA					-0.248
					(0.160)
M/B					-0.008
					(0.023)
Year FE	No	No	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Observations	470	470	470	448	447
R^2	0.006	0.011	0.010	0.060	0.067

The table presents the first-stage regression for the sample of director elections. To match our main sample, we restrict attention to 2010 and 2011 and to those firms in each year that had a say-on-pay proposal in that year, and aggregate the observations by firm-year-recommendation. All specifications are estimated on a 5% bandwidth around the cutoff. The outcome variable is *NegRec*, which equals one if ISS gives a negative recommendation, and zero otherwise. The main variable of interest is *BelowCutoff*, which equals one if the firm is below the ISS cutoff, and zero otherwise. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table A.4: First-stage regression for the compensation committee elections

	(1)	(2)	(3)	(4)	(5)
	NegRec	NegRec	NegRec	NegRec	NegRec
BelowCutoff	-0.029	-0.029	-0.009	-0.005	-0.003
	(0.053)	(0.053)	(0.057)	(0.056)	(0.056)
MaxTSR	-0.002	-0.003	0.004	0.004	0.005
	(0.009)	(0.013)	(0.014)	(0.014)	(0.014)
BelowCutoff·MaxTSR		0.002	-0.009	-0.003	-0.004
		(0.018)	(0.019)	(0.020)	(0.020)
CEO Total Compensation				0.002	-0.001
				(0.003)	(0.005)
Growth in CEO Total Compensation				0.000	0.000
				(0.000)	(0.000)
Proportion of Stock-Based Compensation				-0.037	-0.045
				(0.083)	(0.085)
Institutional Ownership				-0.002	0.011
				(0.109)	(0.111)
Insider Ownership				-0.008	0.008
				(0.137)	(0.141)
Log(Market Value of Equity)					0.013
					(0.020)
ROA					0.108
					(0.396)
M/B					-0.015
					(0.028)
Year FE	No	No	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Observations	263	263	263	257	257
R^2	0.002	0.002	0.007	0.009	0.012

The table presents the first-stage regression for the elections of compensation committee members. To match our main sample, we restrict attention to 2010 and 2011 and to those firms in each year that had a say-on-pay proposal in that year, and aggregate the observations by firm-year-recommendation. All specifications are estimated on a 5% bandwidth around the cutoff. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table A.5: First-stage regression for the sample of director elections in 2012

	(1)	(2)	(3)	(4)	(5)
	NegRec	NegRec	NegRec	NegRec	NegRec
BelowCutoff	-0.041	-0.039	-0.024	-0.009	-0.007
	(0.063)	(0.063)	(0.067)	(0.072)	(0.074)
MaxTSR	-0.017	-0.026	-0.017	-0.016	-0.015
	(0.012)	(0.017)	(0.018)	(0.019)	(0.019)
BelowCutoff·MaxTSR		0.018	0.007	0.017	0.017
		(0.024)	(0.025)	(0.026)	(0.027)
CEO Total Compensation				0.001	0.001
				(0.004)	(0.007)
Growth in CEO Total Compensation				0.000	0.000
				(0.000)	(0.000)
Proportion of Stock-Based Compensation				-0.033	-0.024
				(0.092)	(0.096)
Institutional Ownership				-0.117	-0.126
				(0.113)	(0.116)
Insider Ownership				0.590***	0.585***
				(0.218)	(0.225)
Log(Market Value of Equity)					0.001
					(0.022)
ROA					0.017
					(0.322)
M/B					-0.012
					(0.031)
Year FE	No	No	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Observations	332	332	332	312	310
R^2	0.008	0.010	0.007	0.051	0.051

The table presents the first-stage regression for the sample of director elections in 2012. To match our main sample, we aggregate the observations by firm-year-recommendation. All specifications are estimated on a 5% bandwidth around the cutoff. The outcome variable is *NegRec*, which equals one if ISS gives a negative recommendation, and zero otherwise. The main variable of interest is *BelowCutoff*, which equals one if the firm is below the ISS cutoff, and zero otherwise. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table A.6: External validity

Panel A: OLS estimates of the ISS effect across subsamples

	(-5%,5%)	(-10%,10%)	(-20%,20%)	Whole sample	MaxTSR<0	MaxTSR>0
	Votes	Votes	Votes	Votes	Votes	Votes
NegRec	-25.38***	-24.77***	-24.83***	-24.34***	-22.98***	-23.98***
	(1.15)	(0.88)	(0.73)	(0.57)	(0.97)	(0.82)
Observations	403	785	1244	2020	611	1409
R^2	0.547	0.504	0.484	0.477	0.478	0.376

Panel B: Variation in the effect of ISS depending on M/B and size

	M/B		Market Capitalization	
	Low	High	Low	High
BelowCutoff	0.214***	0.145**	0.166**	0.167**
(First Stage)	(0.068)	(0.066)	(0.074)	(0.062)
NegRec	-24.639***	-29.238**	-26.043**	-33.123***
(Second Stage)	(7.617)	(11.548)	(10.648)	(8.978)
MaxTSR controls	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	388	389	366	381

Panel C: Distribution of say-on-pay votes and ISS recommendations in 2012

2011						2012							
Distribution of voting outcomes						Distribution of voting outcomes						p-value	p-value
Mean	25th	50th	75th	SD	Obs	Mean	25th	50th	75th	SD	Obs	(diff. in means)	(diff. in medians)
90.13	86.97	94.88	97.75	11.73	2020	89.29	87.22	95.09	97.44	13.74	1541	0.06	0.29

Prob. of a negative recommendation	Obs	Prob. of a negative recommendation	Obs	p-value (test for diff.)
0.13	2020	0.14	1541	0.26

Panel D: OLS estimates of the ISS effect in 2012

	(1) Votes	(2) Votes	(3) Votes
NegRec	-26.430***	-25.124***	-24.573***
	(1.705)	(1.800)	(1.804)
MaxTSR controls	Yes	Yes	Yes
CEO compensation controls	No	Yes	Yes
Ownership controls	No	Yes	Yes
Other firm characteristics	No	No	Yes
Industry FE	Yes	Yes	Yes
R^2	0.483	0.520	0.551
Observations	289	274	272

The table examines the generalizability of the estimates to other firms in the sample and to subsequent years. Panel A presents the OLS estimates of the ISS effect across various subsamples: the 5%, 10%, and 20% bandwidths, the whole sample, and the subsamples to the left and to the right of the cutoff. Panel B shows how the effect of ISS varies with the firm's market-to-book ratio and size. We first restrict the sample to observations within a 10% bandwidth and calculate the median value of M/B (market capitalization) in the resulting sample. Next, we divide this sample into two subsamples, based on whether the firm's M/B (market capitalization) falls below or above the median, and repeat the 2SLS procedure on each of the two subsamples. Panel C shows that the distribution of shareholder votes and the probability of a negative ISS recommendation on say-on-pay proposals are similar between 2011 and 2012. Panel D presents the OLS estimates of the ISS effect in 2012 estimated on a 5% bandwidth. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table A.7: Price reaction to the vote

Panel A

	Market-adjusted CAR						Four-factor model CAR					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	(-1,+1)	(-1,+1)	(-1,+1)	(-3,+3)	(-3,+3)	(-3,+3)	(-1,+1)	(-1,+1)	(-1,+1)	(-3,+3)	(-3,+3)	(-3,+3)
BelowCutoff	0.15	1.30	1.16	1.50	4.33	4.21	-0.27	1.74	1.70	1.10	3.49	3.43
	(0.68)	(2.57)	(2.60)	(1.04)	(3.95)	(3.92)	(0.70)	(2.66)	(2.69)	(1.06)	(4.04)	(4.00)
MaxTSR	0.07	0.05	0.07	0.10	0.08	0.16	-0.07	-0.08	-0.06	-0.03	-0.04	0.04
	(0.16)	(0.16)	(0.16)	(0.24)	(0.24)	(0.24)	(0.16)	(0.16)	(0.17)	(0.25)	(0.25)	(0.25)
MaxTSR·BelowCutoff	-0.08	-0.07	-0.07	0.13	0.15	0.09	0.02	0.03	0.02	0.24	0.26	0.20
	(0.23)	(0.23)	(0.24)	(0.36)	(0.36)	(0.36)	(0.24)	(0.24)	(0.24)	(0.36)	(0.37)	(0.36)
Votes		0.02	0.02		0.03	0.02		0.02	0.01		0.03	0.02
		(0.02)	(0.02)		(0.03)	(0.03)		(0.02)	(0.02)		(0.03)	(0.03)
Votes·BelowCutoff		-0.01	-0.01		-0.03	-0.03		-0.02	-0.02		-0.03	-0.02
		(0.03)	(0.03)		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
Compensation controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Observations	402	402	398	402	402	398	402	402	398	402	402	398
R-squared	0.009	0.013	0.020	0.010	0.013	0.020	0.002	0.004	0.007	0.005	0.007	0.009
Year FE	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B

	Market-adjusted CAR						Four-factor model CAR					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	(-1,+1)	(-1,+1)	(-1,+1)	(-3,+3)	(-3,+3)	(-3,+3)	(-1,+1)	(-1,+1)	(-1,+1)	(-3,+3)	(-3,+3)	(-3,+3)
BelowCutoff	0.09	0.73	0.40	1.46	3.91	3.60	-0.37	1.19	0.96	1.05	3.01	2.79
	(0.68)	(2.57)	(2.59)	(1.05)	(3.97)	(3.94)	(0.70)	(2.66)	(2.69)	(1.07)	(4.06)	(4.03)
MaxTSR	0.07	0.06	0.09	0.10	0.09	0.18	-0.06	-0.07	-0.05	-0.02	-0.04	0.05
	(0.16)	(0.16)	(0.16)	(0.24)	(0.24)	(0.24)	(0.16)	(0.16)	(0.16)	(0.25)	(0.25)	(0.25)
MaxTSR·BelowCutoff	-0.09	-0.06	-0.08	0.13	0.15	0.08	0.01	0.03	0.01	0.24	0.26	0.19
	(0.23)	(0.23)	(0.23)	(0.36)	(0.36)	(0.35)	(0.24)	(0.24)	(0.24)	(0.36)	(0.37)	(0.36)
NegRec	0.46	1.73**	1.92**	0.31	1.30	1.54	0.73	1.68**	1.86**	0.35	1.47	1.63
	(0.50)	(0.72)	(0.75)	(0.77)	(1.11)	(1.14)	(0.52)	(0.75)	(0.78)	(0.79)	(1.14)	(1.16)
Votes		0.06**	0.05**		0.06	0.05		0.05*	0.05*		0.06	0.05
		(0.03)	(0.03)		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
Votes·BelowCutoff		-0.01	-0.00		-0.03	-0.02		-0.02	-0.01		-0.02	-0.02
		(0.03)	(0.03)		(0.04)	(0.04)		(0.03)	(0.03)		(0.04)	(0.04)
Compensation controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Observations	402	402	398	402	402	398	402	402	398	402	402	398
R-squared	0.011	0.028	0.038	0.011	0.016	0.025	0.008	0.018	0.022	0.006	0.012	0.014
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table studies the stock price reaction to the voting outcome for firms around the cutoff. The outcome variable is the cumulative abnormal return (CAR) calculated over the one-day (-1,+1) or three-day (-3,+3) window around the shareholder meeting date. Models 1-6 in both panels present market-adjusted returns, and models 7-12 present CARs based on the four-factor model, using the three Fama-French and momentum factors. In models 3, 6, 9, 12, we control for the characteristics of the compensation package being voted on: CEO Total Compensation, Growth in CEO Total Compensation, and Proportion of Stock-Based Compensation. Panel A (B) presents regressions not controlling (controlling) for the ISS recommendation. All specifications are estimated on a 5% bandwidth around the cutoff. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table A.8: Executive compensation after the vote

Panel A

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CEOTotComp$_{t+1}$			Stock-Based$_{t+1}$			CEOTotComp$_{t+2}$			Stock-Based$_{t+2}$		
BelowCutoff	-0.24	1.37	-1.48	0.02	-0.04	-0.08	-0.55	-0.13	-1.65	0.04	-0.16	-0.18
	(1.09)	(4.12)	(2.00)	(0.04)	(0.16)	(0.14)	(1.27)	(4.82)	(2.73)	(0.05)	(0.17)	(0.16)
MaxTSR	-0.33	-0.30	0.04	0.00	0.00	-0.00	-0.45	-0.39	-0.04	0.01	0.01	0.01
	(0.25)	(0.25)	(0.12)	(0.01)	(0.01)	(0.01)	(0.30)	(0.30)	(0.17)	(0.01)	(0.01)	(0.01)
MaxTSR·BelowCutoff	0.27	0.22	-0.19	0.01	0.01	0.01	0.37	0.29	-0.12	0.01	0.01	0.00
	(0.37)	(0.37)	(0.18)	(0.01)	(0.01)	(0.01)	(0.44)	(0.44)	(0.25)	(0.02)	(0.02)	(0.01)
Votes		-0.06*	0.00		-0.00	0.00		-0.08**	-0.01		-0.00	-0.00
		(0.03)	(0.02)		(0.00)	(0.00)		(0.04)	(0.02)		(0.00)	(0.00)
Votes·BelowCutoff		-0.02	0.02		0.00	0.00		-0.01	0.01		0.00	0.00
		(0.05)	(0.02)		(0.00)	(0.00)		(0.05)	(0.03)		(0.00)	(0.00)
Compensation controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Observations	382	382	378	382	382	378	348	348	344	347	347	343
R-squared	0.02	0.04	0.78	0.01	0.02	0.31	0.03	0.06	0.70	0.02	0.02	0.22
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	CEOTotComp$_{t+1}$			Stock-Based$_{t+1}$			CEOTotComp$_{t+2}$			Stock-Based$_{t+2}$		
BelowCutoff	-0.34	2.42	-1.48	0.03	0.00	-0.06	-0.66	0.91	-1.66	0.04	-0.14	-0.18
	(1.10)	(4.12)	(2.02)	(0.04)	(0.16)	(0.14)	(1.28)	(4.81)	(2.76)	(0.05)	(0.18)	(0.16)
MaxTSR	-0.32	-0.32	0.04	0.00	0.00	-0.00	-0.43	-0.41	-0.04	0.01	0.01	0.01
	(0.25)	(0.25)	(0.12)	(0.01)	(0.01)	(0.01)	(0.30)	(0.29)	(0.17)	(0.01)	(0.01)	(0.01)
MaxTSR·BelowCutoff	0.26	0.22	-0.19	0.01	0.01	0.01	0.36	0.24	-0.12	0.01	0.01	0.00
	(0.37)	(0.37)	(0.18)	(0.01)	(0.01)	(0.01)	(0.44)	(0.44)	(0.25)	(0.02)	(0.02)	(0.01)
NegRec	0.65	-2.73**	-0.01	-0.05*	-0.10**	-0.05	0.86	-3.25**	0.05	-0.01	-0.05	0.00
	(0.80)	(1.17)	(0.59)	(0.03)	(0.05)	(0.04)	(0.94)	(1.41)	(0.83)	(0.03)	(0.05)	(0.05)
Votes		-0.11***	0.00		-0.00	-0.00		-0.15***	-0.01		-0.00	-0.00
		(0.04)	(0.02)		(0.00)	(0.00)		(0.05)	(0.03)		(0.00)	(0.00)
Votes·BelowCutoff		-0.03	0.02		0.00	0.00		-0.02	0.02		0.00	0.00
		(0.05)	(0.02)		(0.00)	(0.00)		(0.05)	(0.03)		(0.00)	(0.00)
Compensation controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Observations	382	382	378	382	382	378	348	348	344	347	347	343
R-squared	0.02	0.06	0.78	0.02	0.03	0.31	0.03	0.07	0.70	0.02	0.03	0.22
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table studies the characteristics of the subsequent years' compensation packages for firms around the cutoff. The outcome variable is CEO Total Compensation one year after the vote in models 1-3, Proportion of Stock-Based Compensation one year after the vote in models 4-6, CEO Total Compensation two years after the vote in models 7-9, and Proportion of Stock-Based Compensation two years after the vote in models 10-12. In models 3, 6, 9, 12, we control for the characteristics of the current compensation package being voted on: CEO Total Compensation, Growth in CEO Total Compensation, and Proportion of Stock-Based Compensation. Panel A (B) presents regressions not controlling (controlling) for the ISS recommendation. All specifications are estimated on a 5% bandwidth around the cutoff. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

A.1 Analysis of positive ISS recommendations

In this section, we describe another test we perform to examine the informational role of ISS recommendations. This analysis leads to similar conclusions as the comparison between OLS and RD estimates in Section 5.1.

Specifically, consider two firms with a positive ISS recommendation and suppose that firm A is just below the cutoff and firm B is just above the cutoff. The ISS rule implies that the positive recommendation for firm A is based on an in-depth review, but the positive recommendation for firm B is not (or less likely to be) and is given just because firm B's TSR was above its industry median. Suppose that two assumptions hold: (1) the in-depth review by ISS is effective at screening companies based on the quality of their compensation packages, and (2) many shareholders do their own independent research and get valuable information. Under these two assumptions, we would expect to see greater say-on-pay voting support for firm A than for firm B. Indeed, the first assumption implies that firm A's compensation package must be better than firm B's compensation package (both received a positive recommendation, but only firm A went through ISS's in-depth review), and the second assumption implies that shareholders doing their own research identify these differences between the two compensation packages and hence are more likely to vote favorably in firm A.

We therefore focus on the subsample of observations with a positive ISS recommendation and estimate the regression

$$Votes = \beta_0 + \beta_1 BelowCutoff + \beta_2 MaxTSR + \beta_3 BelowCutoff \cdot MaxTSR + \beta X + \varepsilon$$

on a 5% bandwidth around the cutoff. The table below presents the results, with specifications 1-5 corresponding to those in Tables 2 and 3. In all specifications, the coefficient on *BelowCutoff* is insignificant and has the opposite (negative) sign from the positive sign predicted by the two assumptions above. The point estimate of β_1 is about -2 percentage points with a standard error of 1.4. For comparison, the standard deviation of *Votes* in the subsample of firms with a positive ISS recommendation is 7.0 percentage points (and is 6.6 percentage points in the 5% bandwidth within this subsample). Thus, the coefficient on *BelowCutoff* is statistically and economically insignificant.

The insignificant difference in voting support around the cutoff implies that one of the two assumptions above does not hold: either the ISS in-depth review does not screen companies very effectively, or most shareholders do not perform careful independent research (and hence cannot distinguish between better and worse compensation packages that both get a positive ISS recommendation). Of course, it could also be that given the small sample size, the test does not have enough power to identify the predicted effect.

To summarize, both the OLS-RD comparison in Section 5.1 and the analysis of positive ISS recommendations in this section suggest that either few shareholders do independent research or that ISS recommendations are relatively uninformative.

Table A.9: Voting outcomes for firms with a positive ISS recommendation

	(1)	(2)	(3)	(4)	(5)
	Votes	Votes	Votes	Votes	Votes
BelowCutoff	-2.201	-2.167	-2.301	-1.756	-1.605
	(1.386)	(1.415)	(1.450)	(1.431)	(1.396)
MaxTSR	-0.166	-0.189	-0.219	-0.228	-0.124
	(0.238)	(0.305)	(0.309)	(0.304)	(0.298)
BelowCutoff·MaxTSR		0.060	0.128	0.342	0.174
		(0.490)	(0.504)	(0.494)	(0.486)
CEO Total Compensation				-0.230***	-0.584***
				(0.082)	(0.124)
Growth in CEO Total Compensation				-0.792	-0.498
				(0.567)	(0.568)
Proportion of Stock-Based Compensation				0.586	0.230
				(1.951)	(1.972)
Institutional Ownership				-1.925	-2.418
				(2.027)	(1.981)
Insider Ownership				7.976***	9.179***
				(2.916)	(2.853)
Log(Market Value of Equity)					1.428***
					(0.425)
ROA					7.896**
					(3.348)
M/B					0.072
					(0.499)
Year FE	No	No	Yes	Yes	Yes
Industry FE	No	No	Yes	Yes	Yes
Observations	338	338	338	329	328
R^2	0.012	0.012	0.015	0.101	0.159

The table shows that voting outcomes for say-on-pay proposals with a positive ISS recommendation are not significantly different between firms just below and just above the cutoff. We first restrict the sample to observations with a positive ISS recommendation and then estimate all specifications on a 5% bandwidth around the cutoff. The outcome variable is *Votes*, the percentage of votes in favor of a say-on-pay proposal, measured in percentage points. The main variable of interest is *BelowCutoff*, which is an indicator variable that equals one if the firm is below the ISS cutoff, and zero otherwise. The coefficient on *BelowCutoff* can be interpreted as the difference between voting support for firms just below the cutoff and firms just above the cutoff, conditional on a positive ISS recommendation. Standard errors are reported in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

B. Institutional background

B.1 ISS cutoff rule

ISS voting guidelines specify that in 2010-2011, when giving recommendations on say-on-pay proposals, ISS used to first screen companies based on their TSRs and then focused its efforts on "underperforming" firms. Specifically, ISS identified a company as "underperforming" if both its one- and three-year TSRs were below the respective median TSRs of other firms in the company's four-digit GICS group. ISS only includes Russell 3000 firms in its definition of the company's four-digit GICS group. See, for example, the "2011 U.S. Proxy Voting Guidelines Summary" white paper and the "Financial Highlights Data Overview," which says "The GICS Sector TSR displayed for US companies is the median TSR for companies in the same 4-digit GICS group and Russell 3000 index membership — i.e., for a company included in the Russell 3000 index, sector peers will be drawn only from the Russell 3000 index."

The TSRs used to calculate industry medians are computed on the last day of the calendar quarter closest to the company's fiscal-year-end. For example, if a firm's fiscal-year-end is March 31, TSRs for firms in the same industry group are calculated on March 31. See, for example, the guidelines on the ISS website, which say: "ISS downloads TSR performance data at the end of March, June, September, and December for each of the four-digit industry GICS groups to determine the median applicable for Russell 3000 companies. Given that executive compensation is reported on a fiscal year basis, and that fiscal year ends vary by company, the applicable list will depend on the closest TSR performance download where a company's fiscal year falls." This methodology was also confirmed in authors' communication with ISS representatives.

ISS guidelines do not specify whether a given firm's TSR, which is compared to the industry median cutoff, is downloaded on the firm's fiscal-year-end date or, similarly to the corresponding industry median, at the end of the calendar quarter closest to its fiscal-year-end. For example, ISS uses TSRs downloaded on the firm's fiscal-year-end date for some of its other recommendations, such as evaluating pay-for-performance alignment (see, e.g., "Evaluating Pay for Performance Alignment"). The two approaches are exactly the same for firms whose fiscal-year-end falls on the end of the calendar quarter. Because such firms constitute 90% of the sample and because we want to follow ISS guidelines as close as possible, we restrict our sample to these 90% of firms.

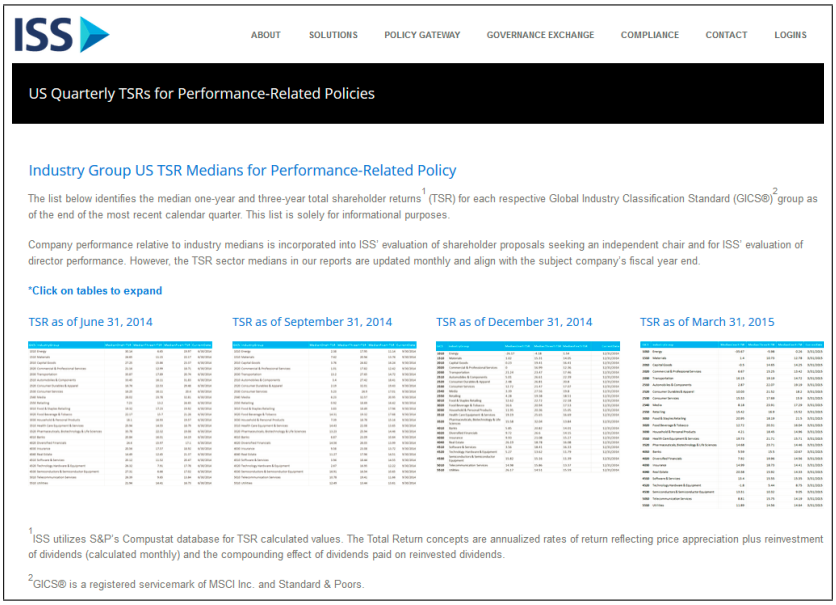
Besides manually calculating the median industry TSRs, we obtain the list of median TSRs from the ISS website. For example, Figure B.1 below presents screenshots of the webpage with median TSRs for each four-digit GICS industry group, downloaded at the end of the four calendar quarters between summer 2014 and spring 2015 (ISS still provides these cutoffs on its website because it still uses them for some issues in its voting guidelines.) We have downloaded similar tables for most periods in our sample.

After identifying the "underperforming" companies using these cutoffs, ISS conducted an in-depth qualitative review of their compensation practices before giving a say-on-pay recommendation. This review focused on factors such as the year-over-year change in the CEO's total pay, the 5-year trend in CEO pay versus company TSR, and the strength of performance-based pay elements. For details, see "Evaluating Pay for Performance Alignment ISS' Quantitative and Qualitative Approach," Feb 17, 2012. See also page 38 of the "2011 U.S. Proxy Voting Guidelines Summary" and pages 37-38 of the "2010 SRI U.S. Proxy Voting Guidelines" for descriptions of the same rule.

The cutoff rule does not imply that ISS always gives a positive recommendation to a firm above the cutoff. This can be seen in Figure 1a of the paper: some firms above the cutoff also receive negative recommendations. There are two main explanations. First, in addition to the above methodology, ISS checks for three key "problematic pay practices" that, according to its guidelines, can lead to a negative recommendation on a stand-alone basis: "single-trigger" or "modified single-trigger" provisions in severance contracts, "tax gross-ups," and repricing of stock options without shareholder approval (see, e.g., the ISS "2011 U.S. Proxy Voting Guidelines Summary" and Pearl Meyer & Partners "Client Alert: ISS Issues Policy Updates and FAQs for 2011 Proxy Season"). This policy is consistent with our findings: to understand the ISS methodology better, we examined the corresponding (2010 or 2011) proxy statements of the 78 firms that received a negative ISS recommendation despite being above the cutoff and found that more than 90% of these firms had at least one of these three problematic pay practices. Another reason why negative recommendations are given above the cutoff $MaxTSR = 0$ is that ISS could be paying more attention to firms that were below their industry medians on only one of the dimensions, either one-year TSR or three-year TSR, even though the guidelines suggest that only firms with both TSRs below their respective cutoffs are considered "underperforming."

The above rule was followed by ISS in 2010 and 2011. In 2012, ISS significantly changed its say-on-pay guidelines and, among other things, stopped using its 2010-2011 cutoff methodology. For example, after discussing the cutoff rule used in 2010-2011, the ISS 2012 white paper "Evaluating Pay for Performance Alignment" notes: "This year, ... ISS decided to refine our approach to pay-for-performance evaluations and develop a more sophisticated methodology to drive the quantitative component of the analysis." The 2012 methodology is also aimed to screen firms before conducting an in-depth qualitative review, but the new screening rule does not allow us to perform the RD analysis for two reasons. First, the comparison group now consists of 14-24 firms separately chosen by ISS for each company, which are not known to us. Second, the new screening is based on several characteristics of the compensation package (CEO's pay rank within a peer group, the multiple of the CEO's pay relative to the peer group, and the five-year trend in CEO pay), which are easily manipulable by companies.

Figure B.1: ISS cutoffs from the ISS website



GICS	IndustryGroup	MedianOneYrTSR	MedianThreeYrTSR	MedianFiveYrTSR	CurrentDate
1010	Energy	-35.67	-5.98	0.26	3/31/2015
1510	Materials	1.4	10.73	12.78	3/31/2015
2010	Capital Goods	-0.5	14.65	14.25	3/31/2015
2020	Commercial & Professional Services	6.67	15.25	13.42	3/31/2015
2030	Transportation	16.15	19.19	14.72	3/31/2015
2510	Automobiles & Components	2.87	22.07	19.19	3/31/2015
2520	Consumer Durables & Apparel	10.03	21.52	18.2	3/31/2015
2530	Consumer Services	15.33	17.69	15.9	3/31/2015
2540	Media	8.18	23.91	17.29	3/31/2015
2550	Retailing	15.42	16.9	15.52	3/31/2015
3010	Food & Staples Retailing	20.95	18.19	21.5	3/31/2015
3020	Food Beverage & Tobacco	12.72	20.31	16.04	3/31/2015
3030	Household & Personal Products	4.21	18.45	14.96	3/31/2015
3510	Health Care Equipment & Services	19.73	21.71	15.71	3/31/2015
3520	Pharmaceuticals, Biotechnology & Life Sciences	14.68	23.71	14.46	3/31/2015
4010	Banks	5.59	15.5	10.67	3/31/2015
4020	Diversified Financials	7.92	19.96	14.56	3/31/2015
4030	Insurance	14.99	18.73	14.41	3/31/2015
4040	Real Estate	20.38	15.92	14.33	3/31/2015
4510	Software & Services	13.4	15.55	15.35	3/31/2015
4520	Technology Hardware & Equipment	-1.8	5.44	8.75	3/31/2015
4530	Semiconductors & Semiconductor Equipment	13.31	10.32	9.05	3/31/2015
5010	Telecommunication Services	8.81	15.75	14.19	3/31/2015
5510	Utilities	11.89	14.56	14.64	3/31/2015

The first figure presents a screenshot from the ISS website: http://www.issgovernance.com/policy-gateway/industry-group-us-tsr-medians-performance-related-policy. It contains the list of ISS cutoffs, i.e., one- and three-year median TSRs for each four-digit GICS group, downloaded at the end of the four calendar quarters between summer 2014 and spring 2015. The second figure presents an expanded view of the last table in the first figure, with the TSRs downloaded on March 31, 2015.

B.2 Debate about proxy advisors

In this section, we describe the current regulatory debate about proxy advisory firms. In recent years, multiple commentators have raised concerns that while proxy advisors have a significant influence on voting outcomes, they often apply a one-size-fits-all approach to corporate governance matters, without taking into account the specifics of the company. Other critics point out the lack of transparency and inaccuracies in proxy advisors' methodologies, as well as potential conflicts of interest due to consulting services they provide to corporations. See, for example, Gallagher (2014) and the SEC Concept Release on the U.S. Proxy System. According to PwC's 2014 Annual Corporate Directors Survey, more than 80% of directors believe that proxy advisory firms use a one-size-fits-all approach to governance and that their policies do not align with company needs or investors' best interests.

These concerns have prompted the SEC to take several actions. In July 2010, the SEC sought public comment on the role of proxy advisory firms, potential conflicts of interest that may exist in this industry, and the transparency and accuracy of their recommendations. On December 5, 2013, the SEC held a roundtable on proxy advisory services, whose participants included representatives of large institutional investors, major law firms, proxy advisors, and academics. Finally, on June 30, 2014, the SEC released Staff Legal Bulletin No. 20 (SLB 20). The bulletin provided guidance and clarification on the duties of proxy advisors and on investment advisers' responsibilities in using proxy advisory services. Among other things, it increased pressure on proxy advisory firms to disclose potential conflicts of interest to the recipients of their proxy voting recommendations.

Nevertheless, many market participants believe that the current steps, including SLB 20, are insufficient to alleviate concerns about the proxy advisory industry. For example, even the SEC commissioner Daniel Gallagher writes: "While these reforms are much-needed, I am concerned that the guidance does not go far enough. SLB 20 provides some incremental duties and suggests ways that individual entities could structure their advisory relationship so as to reduce reliance on proxy advisory firms, but it has become clear to me that, over the past decade, the investment adviser industry has become far too entrenched in its reliance on these firms, and there is therefore a risk that the firms will not take full advantage of the new guidance to reduce that reliance" (Gallagher, 2014).

A number of proposals have been put forward to regulate the proxy advisory industry further. These proposals seek strict regulatory oversight of proxy advisors' voting guidelines and recommendations. They include requiring proxy advisors to file their recommendations with the SEC, maintain public records of their recommendations, and disclose the data and arguments they use when formulating those recommendations. See, for example, the October 20, 2010 Shareholder Communications Coalition Letter to the SEC.

However, there is significant disagreement among market participants about whether further regulation of proxy advisory firms would be beneficial. Many observers believe that the influence of

proxy advisors is significantly overstated. For example, BlackRock's comment to the SEC states: "We believe that the influence of proxy advisory firms in general, and ISS in particular, have been overstated" (www.sec.gov/comments/s7-14-10/s71410-254.pdf). Both ISS and Glass Lewis also claim that their influence is overstated and the correlations observed between their recommendations and voting outcomes are not evidence of causality. See ISS (2012) and Glass Lewis's response to the European Securities and Markets Authority on June 25, 2012, which states: "The extent to which advisors influence voting outcomes is overstated... A correlation between PA recommendations and vote outcomes is proof of coincidence, not causality."

Market participants who think that the influence of proxy advisors is overstated, believe that stringent regulation may do more harm than good. Specifically, industry observers are concerned that regulatory costs would be eventually transferred from proxy advisors onto their clients, which may be prohibitively costly for small institutional investors. In addition, regulation could give proxy advisors a "seal of approval" from the government, thus giving them "undue credibility." Finally, stringent regulation would be especially costly for smaller proxy advisors and new competitors, which could harm competition and strengthen ISS's position as a market leader: ISS controls 61% of the market, the second largest proxy advisor, Glass Lewis, controls 36%, and other proxy advisors have a much smaller market share. See, e.g., Edelman (2013) and the Center on Executive Compensation report "A Call for Change in the Proxy Advisory Industry Status Quo."

Thus, understanding the exact influence of proxy advisory firms is important to understand whether consideration of further regulation is warranted.

C. Cross-validation procedure

To find the optimal bandwidth, we perform the following cross-validation procedure, as outlined in Imbens and Lemieux (2008).

1. First, we discard 50% of observations from the left tale on the left side of the cutoff and 50% of observations from the right tale on the right side of the cutoff.

2. Then, for a given bandwidth h, we take the following steps.

   (a) For each observation i to the right of the cutoff ($MaxTSR_i > 0$), we estimate a linear regression at $MaxTSR_i$, using observations within bandwidth h to the right of $MaxTSR_i$. In particular, let $\left(\hat{\alpha}_R\left(MaxTSR_i\right), \hat{\beta}_R\left(MaxTSR_i\right)\right)$ solve

$$\min_{\alpha,\beta}\left\{\sum_{j:MaxTSR_i<MaxTSR_j<MaxTSR_i+h}\left(NegRec_j-\alpha-\beta\left(MaxTSR_j-MaxTSR_i\right)\right)^2\right\}.$$

(b) Similarly, for each observation i to the left of the cutoff ($MaxTSR_i < 0$), we estimate a linear regression at $MaxTSR_i$, using observations within bandwidth h to the left of $MaxTSR_i$. In particular, let $(\hat{\alpha}_L(MaxTSR_i), \hat{\beta}_L(MaxTSR_i))$ solve

$$\min_{\alpha,\beta} \left\{ \sum_{j:MaxTSR_i - h < MaxTSR_j < MaxTSR_i} (NegRec_j - \alpha - \beta(MaxTSR_j - MaxTSR_i))^2 \right\}.$$

(c) We then calculate the fitted value $\hat{\alpha}(MaxTSR_i)$ as $\hat{\alpha}_R(MaxTSR_i)$ for observations to the right of the cutoff (i.e., those with $MaxTSR_i > 0$), and as $\hat{\alpha}_L(MaxTSR_i)$ for observations to the left of the cutoff (i.e., those with $MaxTSR_i < 0$).

(d) For each observation i, we calculate the deviation of the fitted value $\hat{\alpha}(MaxTSR_i)$ from the actual value $NegRec_i$, and calculate the sum of squared deviations across all observations:

$$CV_{NegRec}(h) \equiv \frac{1}{N} \sum_{i=1}^{N} (NegRec_i - \hat{\alpha}(MaxTSR_i))^2.$$

3. The optimal bandwidth for the first-stage regression is then calculated as

$$h_1^{opt} = \arg\min_h CV_{NegRec}(h).$$

4. We repeat steps 2-3 above, but for the outcome variable *Votes*. In particular, we replace $NegRec$ by *Votes* in all equations of step 2 and find the corresponding optimal bandwidth as $h_2^{opt} = \arg\min_h CV_{Votes}(h)$.

5. The optimal bandwidth, which should be used in the estimation of both the first and the second stage, is then given by $h^{opt} = \min(h_1^{opt}, h_2^{opt})$.

References

[1] Edelman, Sagiv, 2013, Proxy advisory firms: a guide for regulatory reform, Emory Law Journal 62, 1369-1409.

[2] Gallagher, Daniel M., 2014, Outsized power & influence: The role of proxy advisers, Critical Legal Issues Working Paper Series.

[3] Imbens, Guido W., and Thomas Lemieux, 2008, Regression discontinuity designs: A guide to practice, Journal of Econometrics 142, 615-635.

[4] Institutional Shareholder Services (ISS), ISS Responses to ESMA Discussion Paper "An Overview of the Proxy Advisory Industry. Considerations on Possible Policy Options," Jun 21, 2012.