The Impact of Subjective School Ratings on Principal Compensation and Turnover* Online Appendix

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Tables

Table A1: Comparison of Selected Ofsted Inspections and All Inspections between 2006 and 2008.

	(1)	(2)	(3)
VARIABLES	In sample	In sample	In sample
Female	0.013	0.013	0.010
	(0.018)	(0.018)	(0.018)
Log Salary	-0.045	-0.033	-0.021
	(0.063)	(0.065)	(0.072)
Tenure principal	0.030***	0.030***	0.030***
	(0.002)	(0.002)	(0.002)
Grade Ofsted	-0.038***	-0.037***	-0.041***
	(0.013)	(0.014)	(0.014)
Past Grade Ofsted	-0.136***	-0.136***	-0.131***
	(0.011)	(0.011)	(0.011)
(log) N. Pupils	0.114***	0.111***	0.099***
	(0.030)	(0.030)	(0.034)
% Students 5+ A*-C GCSE	-0.077	-0.074	-0.133
	(0.077)	(0.078)	(0.084)
% No Pass GCSE	-1.585***	-1.620***	-1.386***
	(0.457)	(0.460)	(0.508)
% Free School Meal eligible	-0.179**	-0.177**	-0.324***
	(0.086)	(0.086)	(0.124)
% Special Education Need	0.006	0.006	0.002
	(0.007)	(0.007)	(0.008)
Observations	2,524	2,524	2,524
R-squared	0.241	0.241	0.294
Mean	.657	.657	.657
Year FE	NO	YES	YES
LA FE	NO	NO	YES

Note: Table compares the sample of selected school inspections with respect to the universe of inspections taking place between 2006 and 2008. The dependent variable is a dummy equal to one if the inspection is included in the sample. The equation is estimated via OLS and it is a linear probability model. The equation includes principal characteristics (dummy for female, log of salary, and tenure as principal), inspection data (grade of the current inspection and past grade), and school characteristics (log of number of students, share of students achieving 5 or more A*-C in the GCSE, share of students with no pass in the GCSE, share of students who are eligible for free school meals and share of students with special education needs). Robust standard errors reported in parenthesis. Level of Significance: *** 0.01, ** 0.05, * 0.1.

Table A2: Baseline and Changes in Ofsted Grades Between 2006 and 2008: Overall Rating and Subscores

	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Previous Grade (Overall)				Previous Grade (Leadership)			
Starting grade Change Ofsted Rating	Fail (1)	Requires Improvement (2)	Good (3)	Outstanding (4)	Fail (1)	Requires Improvement (2)	Good (3)	Outstanding (4)
-3				12				10
-2			57	60			12	124
-1		59	331	214		9	205	257
0		228	406	133		107	273	141
1		145	53		3	102	53	
2		13			7	6		
3					1			
	Previous Grade (Pupil Achievement)				Previous Grade (Teaching)			
-3				1				1
-2			43	23			31	25
-1		46	274	100		15	353	126
0	3	191	369	63	1	140	463	36
1	5	121	57		2	84	32	
2	2	11				1		
3	1							

Note: Table reports the number of schools by change in Ofsted rating and starting rating for inspections between 2006 and 2008. The table is based only on inspections included in the final sample. The top left panel report the tabulation for the overall Ofsted rating while the other three report the same tabulation for subscores. More specifically the top right panel reports the tabulation for the leadership subscore while the bottom left panel reports the tabulation for the pupil achievement and the bottom right panel reports the tabulation for the teaching subcore. Only inspections included in the main estimation sample are considered (see Section **??** for details).

Table A3: Tabulation of Distance in Years Between Inspections

Distance	# Schools 2006	Share 2006	# Schools 2007	Share 2007	# Schools 2008	Share 2008
1	9	0.01	65	0.07	21	0.03
2	47	0.05	31	0.03	54	0.08
3	11	0.01	40	0.04	209	0.29
4	28	0.03	281	0.30	315	0.44
5	340	0.38	311	0.33	63	0.09
6	415	0.46	160	0.17	22	0.03
7	6	0.01	24	0.03	6	0.01
8	0	0	5	0.01	3	0
9	3	0	3	0	16	0.02
10	8	0.01	17	0.02	2	0
11	27	0.03	7	0.01	2	0
12	3	0	1	0	0	0
14	0	0	0	0	1	0

Note: Table reports the number of years elapsed since the last inspection for inspection taking place between 2006 and 2008. The tabulation is based on all inspections which took place between 2006 and 2008.

Table A4: Observable Characteristics and Probability of Inspection.

VARIABLES	(1) Inspection	(2) Inspection	(3) Inspection	(4) Inspection	(5) Inspection
Distance past Insp: 2 years	0.027***	0.040***	0.052***	0.053***	0.053***
	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)
Distance past Insp: 3 years	0.146***	0.175***	0.200***	0.200***	0.202***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Distance past Insp: 4 years	0.399***	0.419***	0.444***	0.445***	0.449***
	(0.014)	(0.014)	(0.013)	(0.013)	(0.013)
Distance past Insp: 5 years	0.614***	0.627***	0.682***	0.683***	0.682***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Distance past Insp: 6 years	0.812***	0.818***	0.889***	0.890***	0.888***
	(0.015)	(0.015)	(0.017)	(0.016)	(0.017)
Distance past Insp: 7 years or more	0.421***	0.423***	0.462***	0.464***	0.442***
	(0.026)	(0.026)	(0.026)	(0.027)	(0.028)
Past Ofsted: Good		-0.113***	-0.106***	-0.105***	-0.107***
		(0.008)	(0.008)	(0.008)	(0.009)
Past Ofsted: Outstanding		-0.215***	-0.200***	-0.198***	-0.201***
		(0.010)	(0.010)	(0.010)	(0.013)
Year 2007			0.104***	0.104***	0.102***
			(0.009)	(0.009)	(0.009)
Year 2008			0.159***	0.159***	0.151***
			(0.009)	(0.009)	(0.010)
Female				-0.001	0.003
				(0.008)	(0.008)
Age				-0.001	-0.001
				(0.001)	(0.001)
New Head				0.006	0.007
				(0.009)	(0.009)
Share of Free School Meal eligible					-0.001***
					(0.000)
Share no passes (GCSE)					-0.001
					(0.003)
Share 5+ A*-C (GCSE)					0.000
					(0.000)
log N. Pupils					0.002
					(0.011)
Change (2 years) Share of Free School Meal eligible					0.001
					(0.001)
Change (2 years) Share no passes (GCSE)					-0.000
					(0.002)
Change (2 years) Share 5+ A*-C (GCSE)					0.001***
					(0.000)
Change (2 years) log N. Pupils					-0.104*
					(0.056)
Observations	8,919	8,919	8,919	8,912	8,736
R-squared	0.367	0.398	0.418	0.418	0.420

Note: The Table relates observable characteristics to the probability of inspections for inspections taking place between 2006 and 2008. The sample includes all inspection taking place between 2006 and 2008. The dependent variable is a dummy equal to one if the school is inspected in year t. Linear probability model results. The dependent variable is a dummy equal to one if the the school is subject to an inspection in the year. The model includes dummies for the distance from the last Ofsted inspection, past inspection grade, year dummies, characteristics of the principal (gender, age and if the school changed head in the year or in the previous year), and school characteristics (share of students with no passes in the GCSE exams, share of students with share of 5+ A*-C grade in the GCSE exams, log of the the number of students, and share of students eligible to free school meals). Robust standard errors reported in parenthesis. Level of Significance: *** 0.01, ** 0.05, * 0.1.

Table A5: Summary Statistics and Difference in Characteristics Across Grade Changes.

Variable	(1) Baseline (No change)	(2) Worsening	(3) T-Stat Difference (2)-(1)	(4) Improvement	(5) T-Stat Difference (4)-(1)
			Schools		
N. pupils	1048.348	1078.495	1.753	991.646	-2.130
Pupil Teacher Ratio	17.152	16.635	-1.440	16.974	-.404
Share Free School Meal	.001	.001	.662	.002	2.467
Share No Pass	.017	.023	5.118	.014	-1.202
Share 5+ A*-C GCSE	.615	.558	-6.631	.626	.861
Share Entry	.172	.179	1.258	.182	1.376
Total Teachers	64.585	66.419	1.519	60.217	-2.460
Total Managers	5.098	5.142	.347	5.227	.624
Female	41.816	43.092	1.536	39.318	-2.138
			Principals		
Salary Head	72589.726	71496.921	-1.804	73572.320	.966
Female Haed	.344	.314	-1.231	.326	-.493
Age Head	51.953	51.576	-1.449	51.411	-1.296
Tenure Head	6.393	5.682	-3.351	6.024	-1.205
N. Schools	768	733		211	
			Senior Leaders		
Salary	48631.824	48120.441	-3.421	48783.863	.634
Female	.437	.425	-.978	.435	-.150
Age	47.772	48.125	1.889	46.825	-3.187
Part time	.009	.012	.592	.009	-.134
Tenure	4.506	4.422	-1.060	4.170	-2.900
N. Managers	3294	3204		916	
			Teachers		
Salary	33819.203	33803.714	-.337	34021.082	2.733
Female	.597	.603	1.646	.606	1.396
Age	43.051	43.076	.307	42.884	-1.335
Part time	.142	.141	-.338	.127	-3.780
Tenure	7.080	7.184	3.118	6.907	-3.355
N. Teachers	34390	33579		8429	

Note: Table reports summary statistics in the year before the inspection for schools and school personnel experiencing an inspection between 2006 and 2008. The sample includes only schools and school personnel in the main estimation sample (see Section **??** for details). Bottom line of each panelreports the number of units by category of grade change. Column (1) reports the average for schools experiencing no change in their Ofsted grade, Column (2) reports the average for schools experiencing a worsening in Ofsted rating, and Column (4) reports the average for schools experiencing an improvement in their Ofsted inspection rating. Column (3) displays the t- statistic for the difference between Column (2) and Column (1), while Column (5) displays the t-statistic for the difference between Column (5) and Column (1). T-statistics based on robust standard errors.

Table A6: Specification Checks for the Impact of a Ofsted Grade Change on Principals' Salaries: Age Polynomial and Local Authority

VARIABLES	(1) Log Salary	(2) Log Salary	(3) Log Salary	(4) Log Salary
Worsening X Post	-0.027***	-0.027***	-0.027***	-0.023**
	(0.007)	(0.007)	(0.007)	(0.010)
Improvement X Post	0.012	0.012	0.012	0.008
	(0.016)	(0.016)	(0.016)	(0.015)
Observations	11,137	11,137	11,137	10,583
Age Polynomial	2	3	4	YES
IndividualXCohort FE	YES	YES	YES	YES
Year Fe	YES	YES	YES	YES
Cohort FE	YES	YES	YES	YES
Tenure FE	YES	YES	YES	YES
CohortXYear FE	YES	YES	YES	YES
TenureXCohort FE	YES	YES	YES	YES
TenureXYear FE	YES	YES	YES	YES
TenureXCohortXYear FE	YES	YES	YES	YES
LaXCohortXYear FE	NO	NO	NO	YES

Note: Table reports estimates of the effect of a change in Ofsted grade for principals based on Equation **??**. The dependent variable is the log of the salary of the principal. The equation is estimated via OLS. Worsening is a dummy taking value one if the school experiences a downgrade while Improvement is a dummy taking value one if the school experiences an upgrade. Age polynomial is a third order polynomial is age. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. Panel covers years ranging from three years before to three years after the inspection. Standard errors are clustered at the school at the time of inspection level. Level of Significance: *** 0.01, ** 0.05, * 0.1.

Table A7: Effect of Unexpected Grade Change on Principals' Salaries

VARIABLES	(1) Log Salary	(2) Log Salary	(3) Log Salary	(4) Log Salary	(5) Annual Salary rate
Worsening X Post	-0.028***	-0.025***	-0.025***	-0.024***	-2,429.683***
	(0.009)	(0.008)	(0.008)	(0.008)	(517.633)
Improvement X Post	0.013	0.007	0.007	0.013	1,474.093**
	(0.011)	(0.010)	(0.010)	(0.011)	(666.576)
Post	0.165***	0.006	0.006		
	(0.005)	(0.007)	(0.007)		
Worsening	0.004				
	(0.009)				
Improvement	0.008				
	(0.010)				
Observations	11,137	11,137	11,137	11,137	11,137
Baseline					72389.372
Age Polynomial	YES	YES	YES	YES	YES
IndividualXCohort FE	NO	YES	YES	YES	YES
Year Fe	NO	YES	YES	YES	YES
Cohort FE	NO	YES	YES	YES	YES
Tenure FE	NO	NO	YES	YES	YES
CohortXYear FE	NO	NO	NO	YES	YES
TenureXCohort FE	NO	NO	NO	YES	YES
TenureXYear FE	NO	NO	NO	YES	YES
TenureXCohortXYear FE	NO	NO	NO	YES	YES

Note: Table reports estimates of the effect of an unexpected change in Ofsted grade for principals based on Equation **??**. The expected Ofsted rating is estimated using an ordered probit which consider both past principal and school characteristic and the predicted grade is the one with the highest predicted probability. The dependent variable is the log of the salary of the principal in Columns from (1) to (4) and salary in level in Column (5). The equation is estimated via OLS. Worsening is a dummy taking value one if the school experiences a downgrade (if the school gets a grade lower than what could be predicted from the past characteristics) while Improvement is a dummy taking value one if the school experiences an upgrade (if the school gets a grade higher than what what could be predicted from the past characteristics). Age polynomial is a third order polynomial is age. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. Panel covers years ranging from three years before to three years after the inspection. Standard errors are clustered at the school at the time of inspection level. Level of Significance: *** 0.01, ** 0.05, * 0.1.

Table A8: Characteristics of New Principal by Grade Change

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		New Principals							Difference in School Characteristics		
Grade Change	Share Change	Different School	Woman	Age	Experience	Principal	Manager	Teacher	% 5+ A*-C GCSE	% No Pass	(log) N. Students
Worsening	0.371	0.500	0.382	48.055	24.287	0.313	0.636	0.048	0.016	0.000	-0.006
No Change	0.310	0.536	0.366	48.239	24.218	0.314	0.623	0.054	-0.007	0.000	0.022
Improvement	0.308	0.477	0.323	47.969	23.800	0.292	0.662	0.046	0.002	0.002	0.006

Note: The Table reports the characteristics of the first new principal for schools subject to inspection between 2006 and 2008 which are included in the main estimation sample (see Section **??** for details). The characteristics refer to the first new principal present in the school after the inspection within three years since the inspection. Column (1) reports the share of schools changing the principal within 3 years since the inspection by grade change. Columns (2) to (8) report the characteristics of the principal: whether the new principal comes from a different school or not (Column 2); the gender (Column 3); Age (Column 4); the number of years elapsed since the principal entered the schools sector (Column 5); and whether the new principal was already a principal before (Column 6), was a school manager such as deputy principal (Column 7) or a teacher (Column 8). Columns from (9) to (11) refer only to new principals coming from a different school and compare the characteristics of the old school of the principal, and the characteristics of the inspected school in the year before the new principal moves to the school which was subject to the inspection. The difference is computed as the characteristic of the old school minus the ones for the new school (the one which was subject to the inspection). Column (9) considers the share of students attaining 5 or more A*-C in the GCSE exams, Column (10) considers the share of students attaining no passes in the GCSE exams, and Column (11) the size of the school in the terms of the log of the number of students.

Table A9: Comparison of Inspection Cohorts

Variable	Cohort		
	2006	2007	2008
Salary	69.159	72.522	75.325
Female	0.334	0.298	0.368
Age	51.580	51.977	51.583
Tenure (Principal)	5.998	6.263	5.825
% No Pass	0.020	0.021	0.016
N. Pupils	1076.944	1041.376	1041.378
% Students 5+ A*-C GCSE	59.535	58.234	60.278
% Free School Meal	12.306	14.307	13.548
(%) Improvement Ofsted	0.110	0.122	0.143
(%) Worsening Ofsted	0.442	0.431	0.406
Number of Inspections	626	618	468

Note: The table compares characteristics of schools and principals who were subject to an Ofsted inspection in the three academic year considered in the paper (2006, 2007 and 2008; we define a year of inspection as cohort of inspections). Characteristics are measured in the year before the inspection. The first four rows report the characteristics of the principal (salary, gender, age, Tenure) while the following four report the characteristics of the schools (Number of students, share of students with no pass at the GCSE, share of students with 5 or more A*-C in the GCSE and share of students eligible to free school meal). The last two rows report the she share of upgrade and downgrade for schools inspected in that cohort. The table only includes schools and headteachers in the main estimation sample (see Section **??** for details).

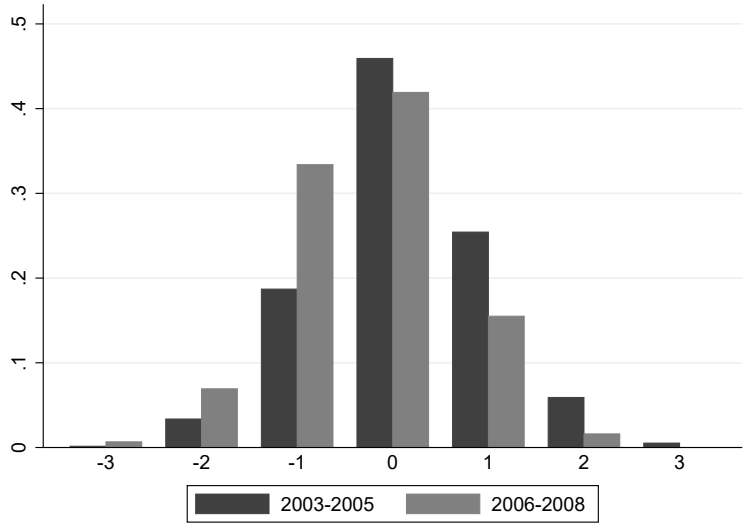
Table A10: Effect of Leadership Grade Change on Principals' Careers: School Characteristics and Competition

	(1) Baseline	(2) School Char	(3) # Schools <p25	(4) # Schools >p25	(5) # Schools bet <p25	(6) # Schools bet >p25	(7) # Schools bet pc <p25	(8) # Schools bet pc >p25	(9) % Downgrade <p25	(10) % Downgrade >p25
Panel (a): (log) Salary										
Leadership - worse X post	-0.014	-0.008	-0.001	-0.017	-0.021	-0.007	0.015	-0.011	0.003	-0.018
	(0.009)	(0.008)	(0.015)	(0.011)	(0.018)	(0.010)	(0.021)	(0.010)	(0.013)	(0.012)
Leadership - improv x post	0.010	0.008	0.020	0.008	0.026	-0.000	0.056*	-0.023	0.020	0.003
	(0.017)	(0.017)	(0.020)	(0.022)	(0.031)	(0.018)	(0.030)	(0.021)	(0.031)	(0.019)
Observations	8,517	8,310	2,124	6,388	2,139	6,366	2,225	6,280	2,460	6,035
Age Polynomial	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
IndividualXCohort FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
TenureXCohortXYear FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
P-value Worsening				.395		.502		.242		.244
P-value Improvement				.691		.455		.025		.632
Panel (b): Exit										
Leadership - worse X post	0.077***		0.063*	0.086***	0.032	0.083***	0.031	0.078***	0.115***	0.063***
	(0.017)		(0.035)	(0.020)	(0.035)	(0.020)	(0.038)	(0.020)	(0.039)	(0.021)
Leadership - improv x post	-0.001		0.044	-0.017	-0.038	0.023	-0.033	0.007	0.016	-0.025
	(0.024)		(0.048)	(0.028)	(0.040)	(0.029)	(0.040)	(0.030)	(0.036)	(0.034)
Observations	9,170		2,275	6,895	2,275	6,888	2,366	6,797	2,625	6,524
Age Polynomial	YES		YES	YES	YES	YES	YES	YES	YES	YES
IndividualXCohort FE	YES		YES	YES	YES	YES	YES	YES	YES	YES
TenureXCohortXYear FE	YES		YES	YES	YES	YES	YES	YES	YES	YES
P-value Worsening				.559		.198		.264		.229
P-value Improvement				.259		.207		.413		.393

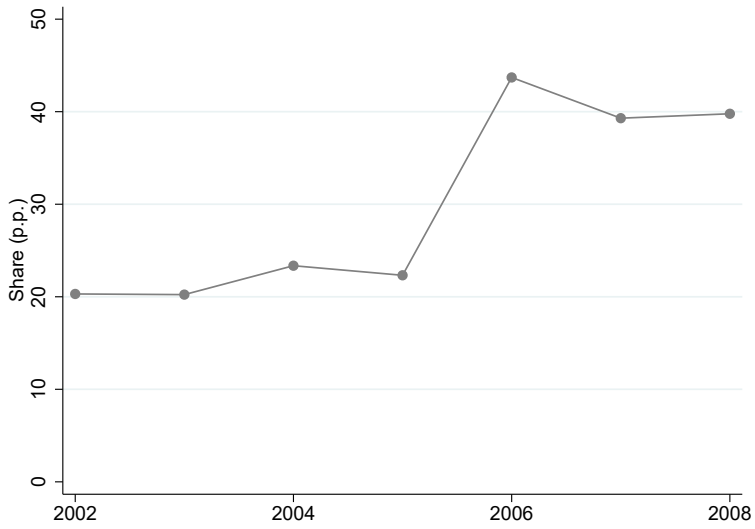
Note: Table reports estimates of the effect of a change in Leadership Ofsted grade for principals based on Equation **??**. The equation is estimated via OLS. Panel (a) reports the impact of a change in Leadership Ofsted rating on log salary of the principal while Panel (b) reports the impact of change in leadership rating on the probability of exiting the English public school sector (exit) in a linear probability model. Note that for Panel (b) it is not possible to estimate Column (2) since characteristics of schools are missing when the principal exits the school sector and the results are then missing for this specification. In addition, note that the number of observations is lower with respect to the main sample since 401 schools do not have a prior leadership rating at the time of their inspection in the period between 2006 and 2008 and it is not possible to compute a change. Worsening is a dummy taking value one if the school experiences a downgrade while Improvement is a dummy taking value one if the school experiences an upgrade. Age polynomial is a third order polynomial is age. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. Panel covers years ranging from three years before to three years after the inspection. Column (1) reports the baseline estimates for the sake of comparison. Column (2) includes controls for time-varying characteristics of the schools such as (log) number of students, share of students on free school meals, share of students with special education needs, share of students achieving no passes, and share of students with 5 or more A* to C grades in GCSE exams; Columns (3) and (4) report the impact of an improvement or worsening in terms of Ofsted rating when the number of schools in the same local authority is lower (3) or higher (4) than the first quartile of the distribution of the number of schools by local authority; Columns (5) and (6) report the impact of an improvement or worsening in terms of Ofsted rating when the number of better schools (equal or better Ofsted leadership rating) in the same local authority is lower (5) or higher (6) than the first quartile of the corresponding distribution (i.e. distribution of the number of schools with the same or better rating within the same local authority); Columns (7) and (8) report the impact of an improvement or worsening in terms of Ofsted rating when the number of better schools (equal or better Ofsted leadership rating) per capita in the same local authority is lower (7) or higher (8) than the first quartile of the corresponding distribution; Columns (9) and (10) report the impact of an improvement or worsening in terms of Ofsted rating when the share of inspected schools experiencing a leadership downgrade in the same local authority is lower (9) or higher (10) than the first quartile of the corresponding distribution. Bottom lines of each panel report p-value for a test equality of the coefficient between pairs of column for each measure of local competition separately for the impact of Ofsted rating improvement and worsening (e.g. p-values of Column 4 report the statistical significance of the difference in the impact of worsening - first p-value - and improvement - second p-value - in Ofsted rating between Column 3 and Column 4). Per capita computations use population by local authority in 2006. Standard errors are clustered at the school at the time of inspection level. Level of Significance: *** 0.01, ** 0.05, * 0.1.

Figures

Figure A1: Inspection Rating Over Time.



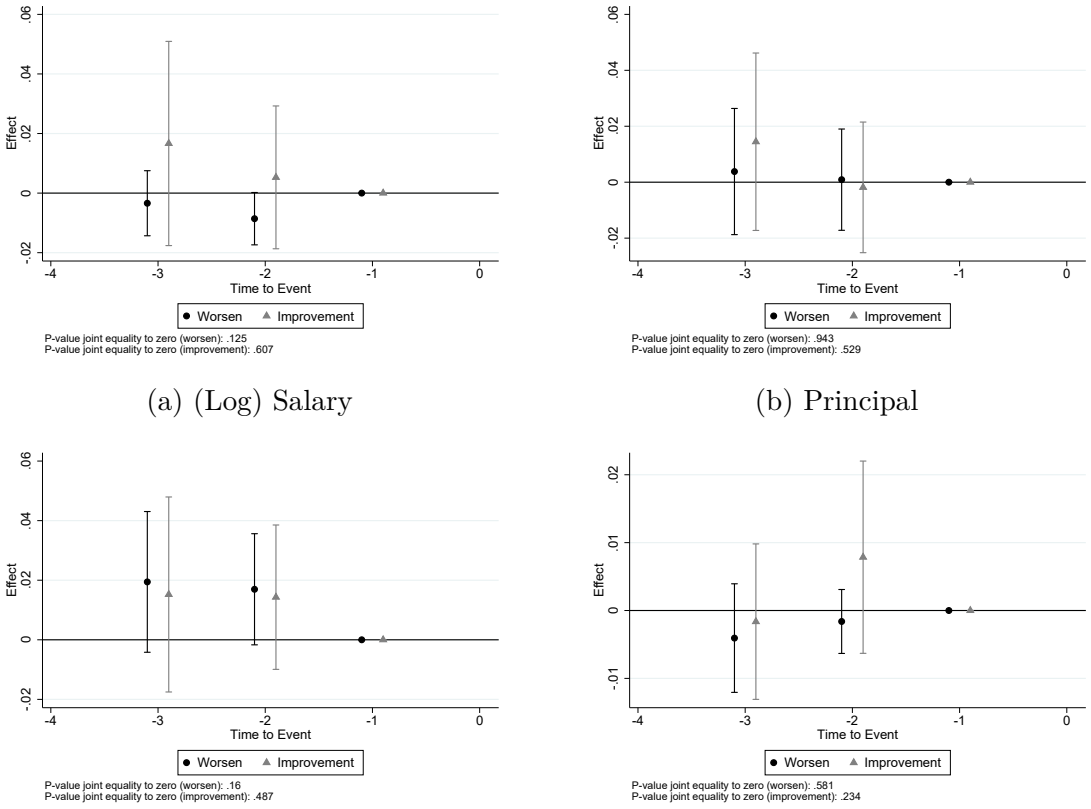
(a) Rating Change: Inspections in 2003-2005 vs Inspections in 2006-2008



(b) Share of Schools Experiencing Downgrade by Year

Note: Panel (a) reports inspection rating change for school which received and inspection in the period 2003-2005 and in the period 2006-2008. Panel (b) reports the share of schools which experienced a decline in their inspection rating by year of inspection. The first figure is based on the full set of complete inspections for the years between 2003 and 2008 (3,892 inspections) while the second is based on the full set of inspections between 2002 and 2008 (4,286).

Figure A2: Differences in Trends in Principals' Career Outcomes Before Grade Change



(a) (Log) Salary

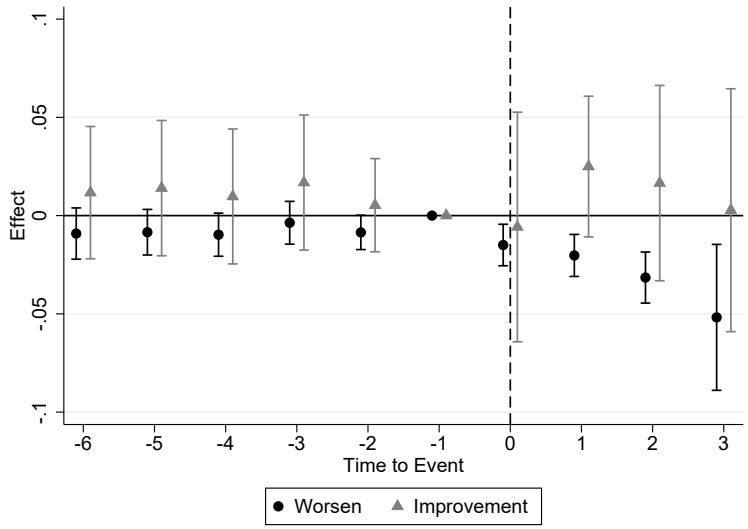
(b) Principal

(c) Leave School

(d) Exit

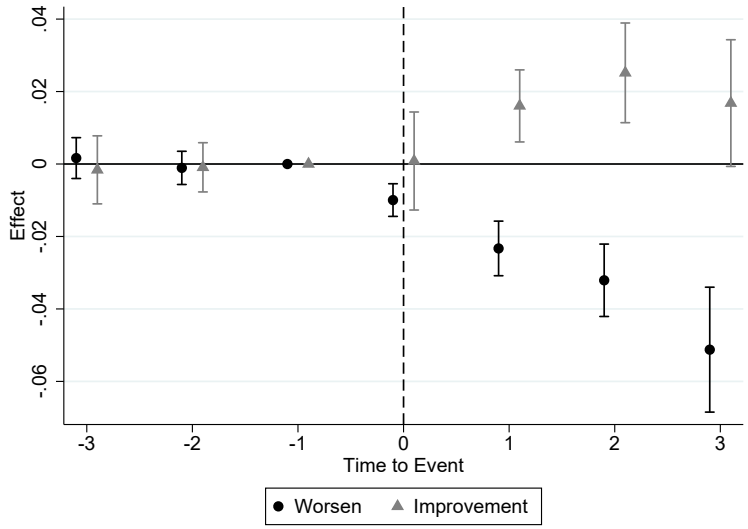
Notes: Figure reports the effect of change in Ofsted grade on career outcomes based on Equation **??** as well as 95% confidence intervals. The sample is restricted to the period before the inspection. The number of observations is 5,116 for panel (a) and 5,133 for panel (b), panel (c) and panel (d). Regression estimated via OLS and all regressions are linear probability models. Panel (a) reports the effect on the principal's (log salary), Panel (b) reports the effect on the probability of being a principal (dummy equal to one if the individual is a principal), Panel (c) reports the effect on the probability of leaving the school (dummy equal to one if the individual is no longer in the school in which the person was at the time of the inspection), Panel (d) reports the effects on the probability of exiting the school sector (dummy equal to one if the individual is no longer observed as active in the school sector). Regressions include a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level. At the bottom of each graph, we report the p-value for the null hypothesis that all coefficients are jointly equal to zero for worsening and imporvement separately.

Figure A3: Effect of Change in Ofsted Grade on Principals' (log) Salaries: Longer Pre-trends



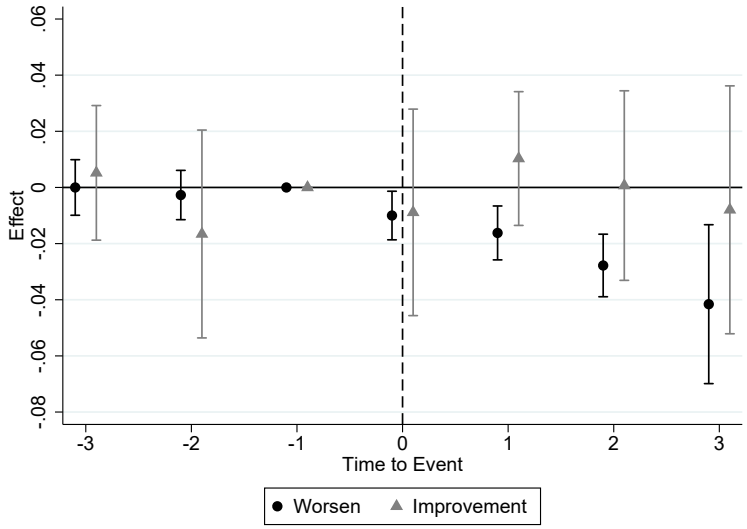
Notes: Figure reports the effect of Change in Ofsted grade on log salaries based on Equation **??** as well as 95% confidence intervals. The equation is estimated via OLS. The pre period is extended to 5 years before the inspection and the number of observations is 16,126. The impact is estimated for a decline in Ofsted rating (circles) and an improvement (triangles). Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

Figure A4: Effect of Change in Ofsted Grade on Principals' (log) Salaries: All Inspection (1998-2008)



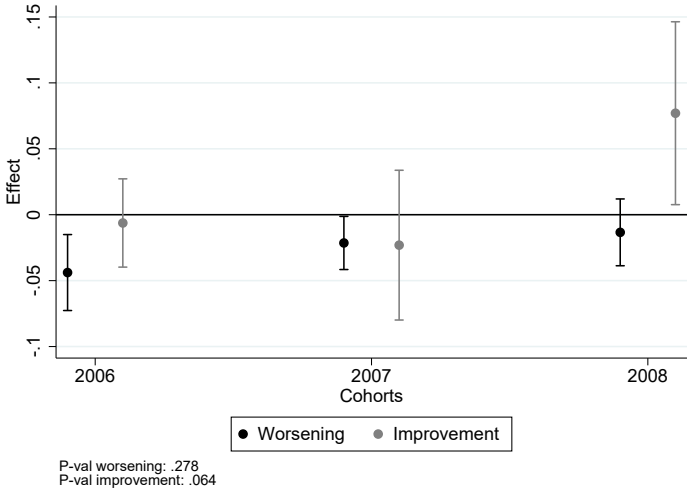
Notes: Figure reports the effect of Change in Ofsted grade on log salaries based on Equation **??** as well as 95% confidence intervals. The equation is estimated via OLS. The sample includes all inspections taking place between 1998 and 2008 with no restriction and the number of observations is 34,666. The impact is estimated for a decline in Ofsted rating (circles) and an improvement (triangles). Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

Figure A5: Effect of Change in Ofsted Grade on Principals' (log) Salaries: Extended set of Inspections (2006-2008)

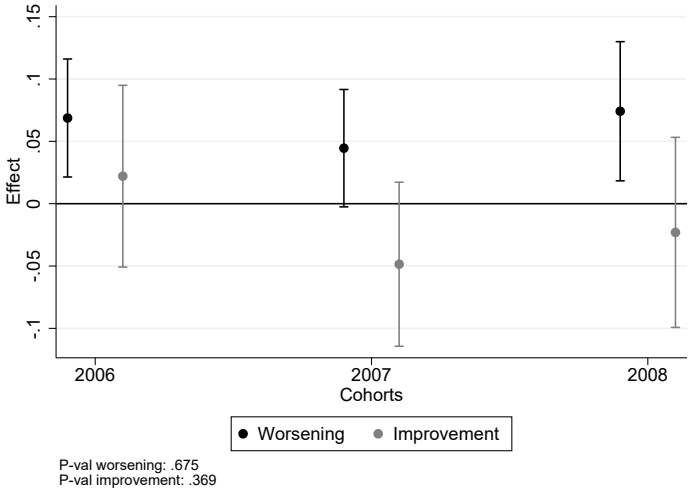


Notes: Figure reports the effect of Change in Ofsted grade on log salaries based on Equation **??** as well as 95% confidence intervals. The equation is estimated via OLS. The sample includes all inspections taking place between 2006 and 2008 and excludes only inspection for which the school did not have a full panel (from 3 years before to 3 years after). The number of observations is 14,835. The impact is estimated for a decline in Ofsted rating (circles) and an improvement (triangles). Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

Figure A6: Effect of Change in Ofsted Grade on Principals' Career by Year of Inspection



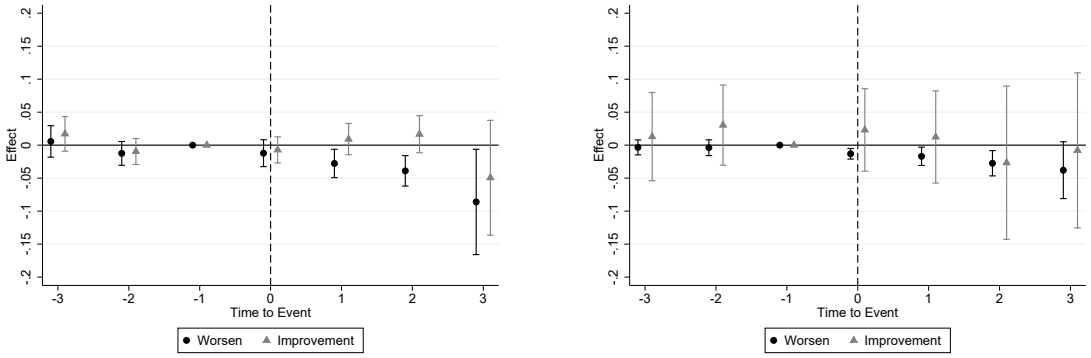
(a) (log Salary)



(b) Exit

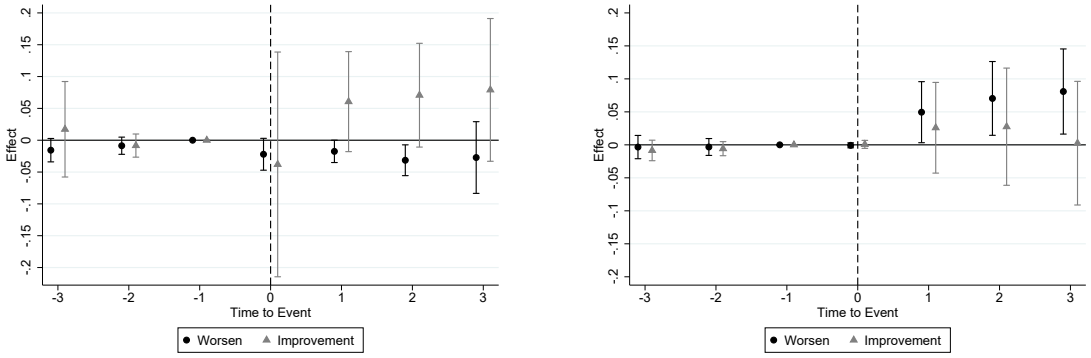
Notes: Figure reports the effect of Change in Ofsted grade on for principals' salary (Panel a) and probability of exit from the school sector (Panel b) based on Equation **??** by year of inspection, between 2006 and 2008. The number of observations per cohort for log salary (exit) as dependent variable is: 2006, 4,077 (4,382);2007, 4003 (4,319);2008, 3,057 (3,276). The figure reports the average impact for the periods after the inspection (control group is school experiencing no change in Ofsted rating). The equation is estimated via OLS. The data cover the period from three years before to three years after the inspection. The impact is estimated for a decline in Ofsted rating (black dots) and an improvement (gray dots). Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. Standard errors are clustered at the school at the time of inspection level. P-value for the equality of the coefficients reported at the bottom of the figure.

Figure A7: Impact of Ofsted Rating Change on log Salary and Exit by Cohort



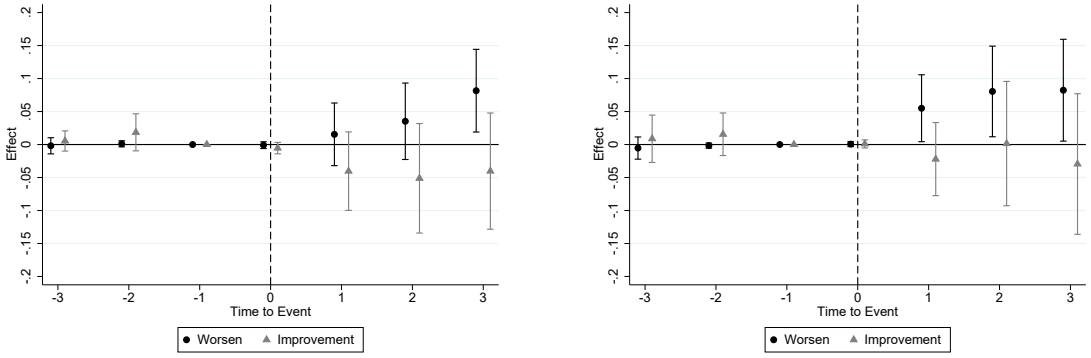
(a) (log) salary - 2006

(b) (log) salary - 2007



(c) (log) salary - 2008

(d) Exit - 2006

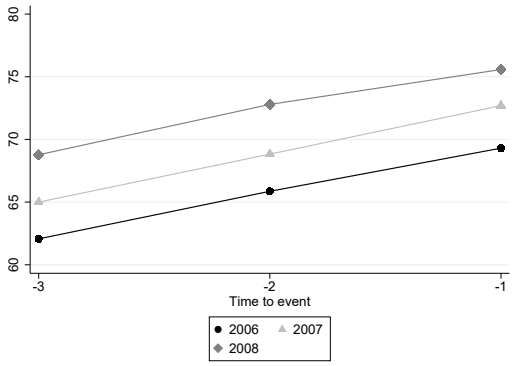


(e) Exit - 2007

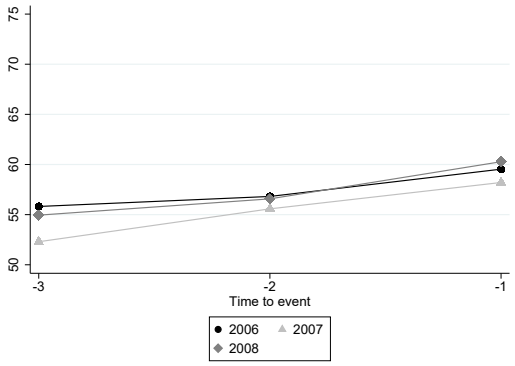
(f) Exit - 2008

Notes: Figure reports the effect of Change in Ofsted grade on log salaries and exit probability (dummy equal to one if the principal is no longer in the school sector) based on Equation **??** as well as 95% confidence intervals by cohort of inspection. The equation is estimated via OLS. The estimates are based on the main sample split by cohort and the number of observations for each graph is: panel a, 4,077; panel b, 4,003; panel c, 3,057; panel d, 4,382; panel e, 4,319; panel f, 3,276. The impact is estimated for a decline in Ofsted rating (circles) and an improvement (triangles). Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

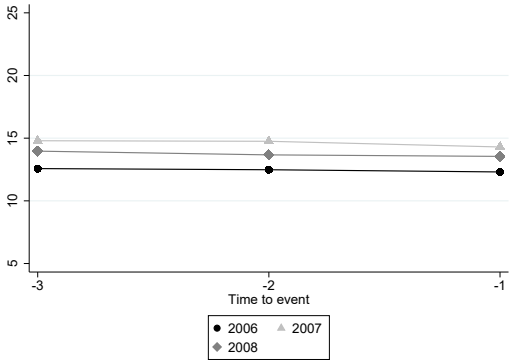
Figure A8: Pattern of Performance of Students (5+ A*-C GCSE) and Share of Free School Meal students in the Three Years Prior to the Inspection by Cohort



(a) Salary



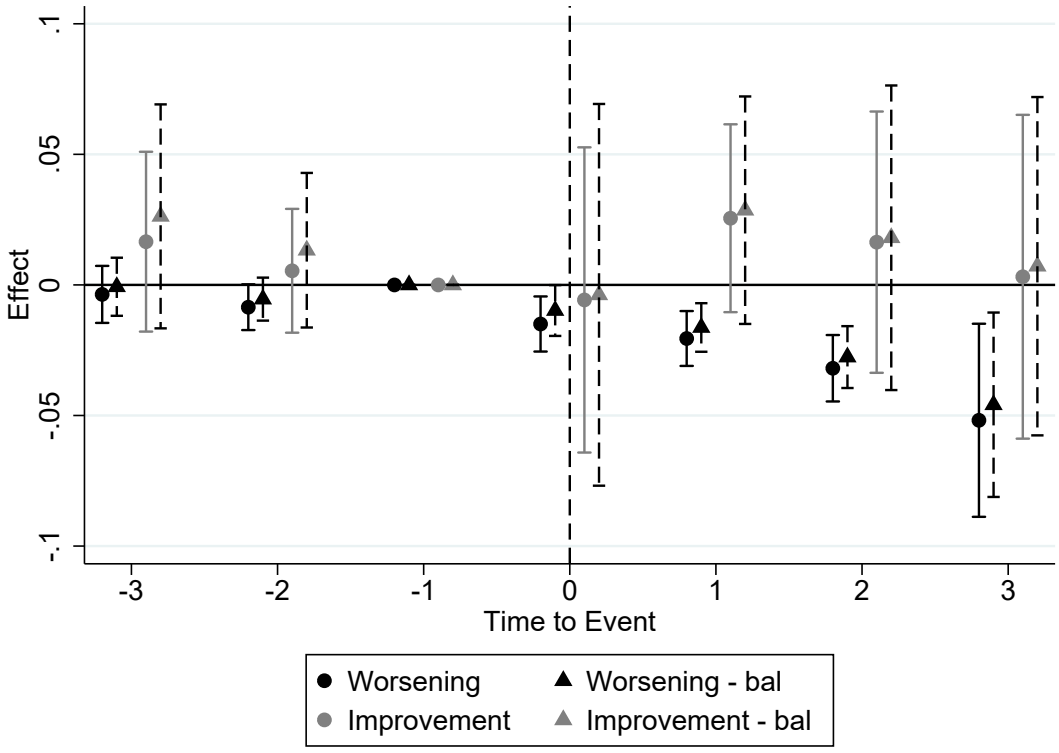
(b) 5+ A*-C GCSE



(c) Free School Meal

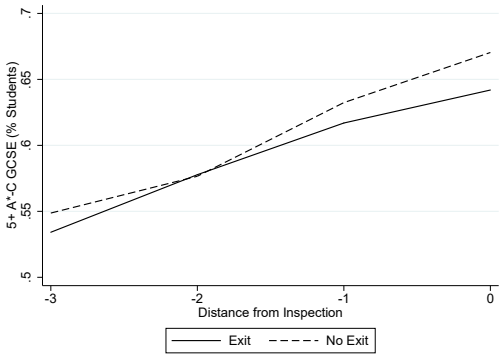
Notes: The figure describes the pattern of principals' salary (panel a), student performance (share of students achieving 5 or more A*-C in the GCSE exam; panel b) and student composition (students eligible for Free School meals, panel c) in the years leading to the inspection by outcome of the inspection and year in which the inspection takes place. The pattern for these three variables is reported for schools that were inspected in the same year: dots are used for schools inspected in 2006; triangles are used for schools inspected in 2007; diamond are used for schools inspected in 2008. The figure only uses schools in the main estimation sample (see Section **??** for details). The number of observations is: 5,136 for panel (a); 5,053 for panel (b) and 5,136 for panel (c).

Figure A9: Effect of Change in Ofsted Grade on Principals' (Log) Salary for the Main Panel and Balanced Panel

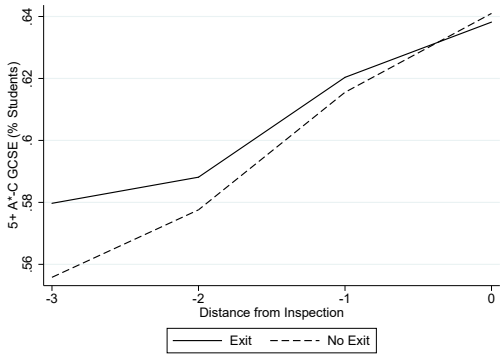


Notes: Figure reports the effect of Change in Ofsted grade on log salaries based on Equation **??** as well as 95% confidence intervals. The equation is estimated via OLS. The impact is estimated for a decline in Ofsted rating (circles) and an improvement (triangles). The balanced sample includes only principals for whom there are no missing salaries over the seven years of the panel. The estimates for the balanced sample are reported with dashed lines and triangles. The number of observations is 11,137 for the main sample and 8,960 for the balanced sample. Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

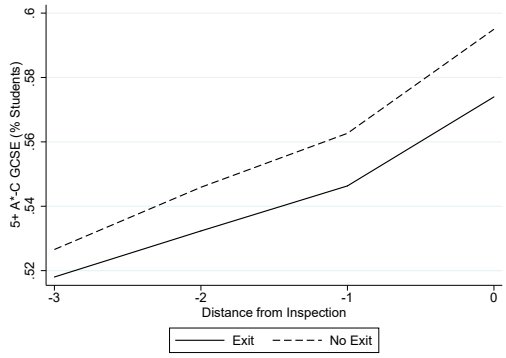
Figure A10: School Performance for School Experiencing and not Experiencing the Exit of the principal by Ofsted Grade



(a) Improvement



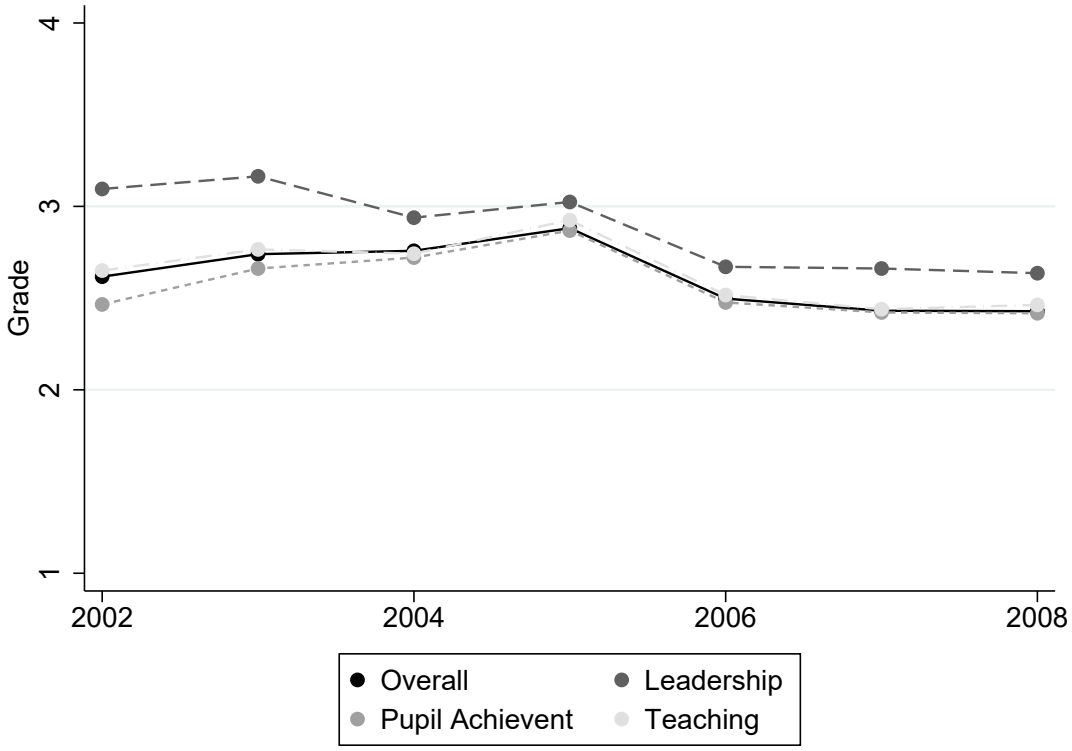
(b) No Change



(c) Worsening

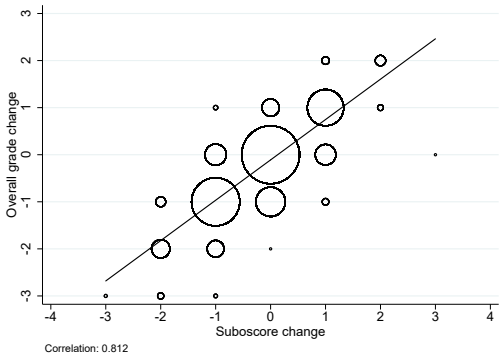
Notes: Figure reports the performance of students (share of students achieving 5 or more A*-C in the GCSE exam) in the years before the Ofsted inspection by change in Ofsted rating and depending on whether the principal will leave the school (solid line) or will remain in the same school (dashed line) in the years after the inspection. Panel (a) reports the performance of students for schools experiencing an upgrade; Panel (b) reports the performance of students for schools experiencing no change in the rating; Panel (c) reports the performance of students for schools experiencing a downgrade. The figure only uses schools in the main estimation sample (see Section **??** for details). The number of observations is: panel a, 1,331; panel b, 5,292; panel c, 5,081.

Figure A11: Dynamic of Inspection Grade Score: Overall and Subscores.

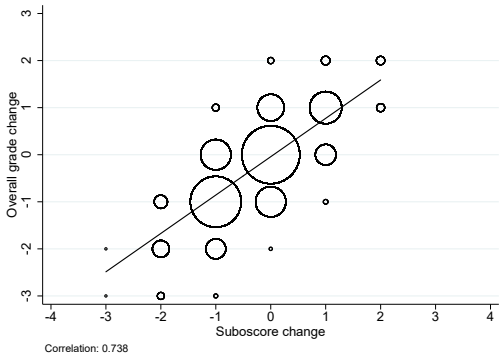


Notes: The figure plots the average of overall Ofsted inspection rating (black dots) as well as the average of Ofsted rating for subscores (leadership in dark gray; pupil achievement in gray; teaching in light gray) of the rating by year of inspection. The figure is based on the full set of complete inspections for the years between 2002 and 2008. The number of observations is 4,424 for general rating and leadership, 4,423 for teaching, and 4,422 for pupil achievement.

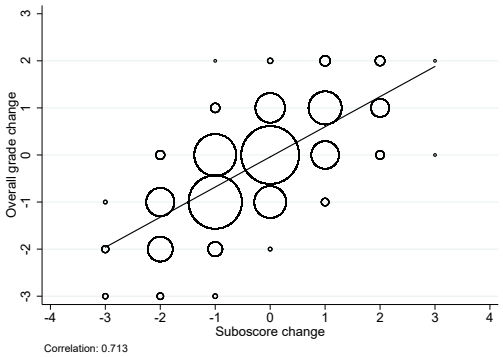
Figure A12: Correlation of changes of Ofsted Subscore and Overall Ofsted Rating



(a) Pupil Achievement Subscore and Overall Rating



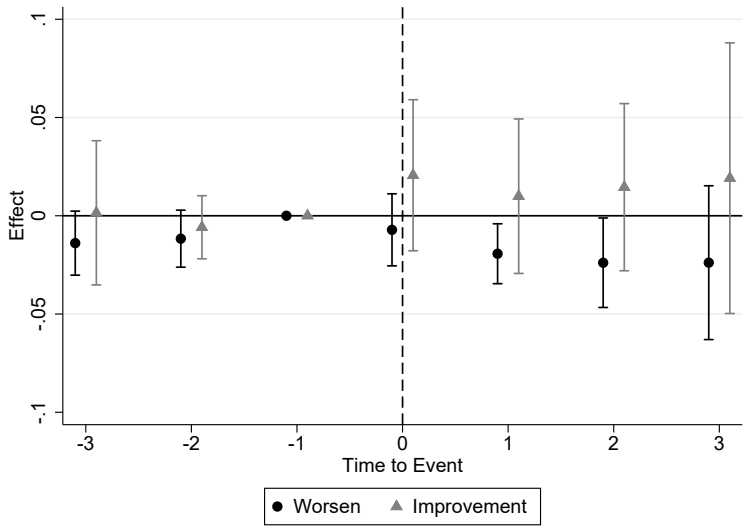
(b) Teaching Subscore and Overall Rating



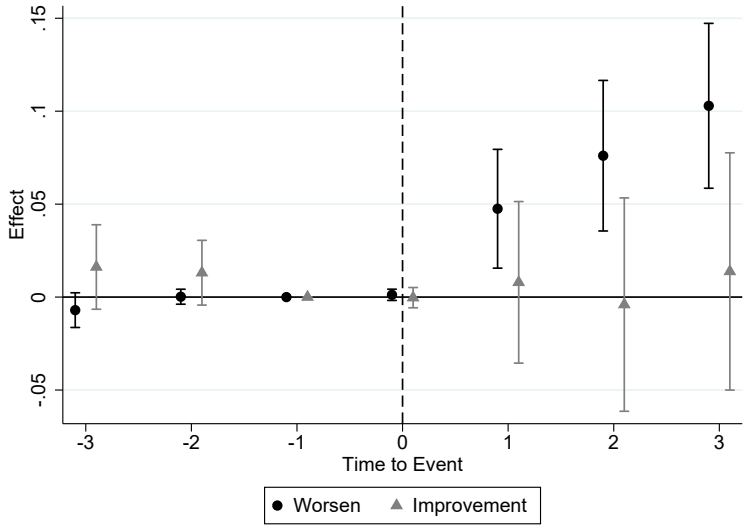
(c) Leadership Subscore and Overall Rating

Notes: The figure reports the correlation between the change in overall Osfted rating and the change in the subscores. Panel (a) reports the correlation between change in the overall rating (y-axis) and the change in pupil achievement subscore (x-axis); Panel (b) reports the correlation between change in the overall rating (y-axis) and the change in teaching subscore (x-axis); Panel (c) reports the correlation between change in the overall rating (y-axis) and the change in leadership subscore (x-axis). The size of the bubbles in the scatter plot is proportional to the number of observation in the same bin defined by the change in the subscore and the change in the overall rating. A linear fit is reported for each panel and the value of the correlation is reported at the bottom of each panel. The figure is based on the full set of complete inspections for the years between 2006 and 2008 for which the subgrades are available. The number of observations is 2,605.

Figure A13: Effect of Change in Leadership Inspection Grade on Principals' Salary and Exit Probability



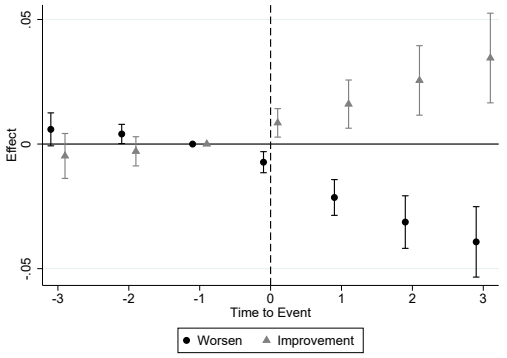
(a) (log) Salary



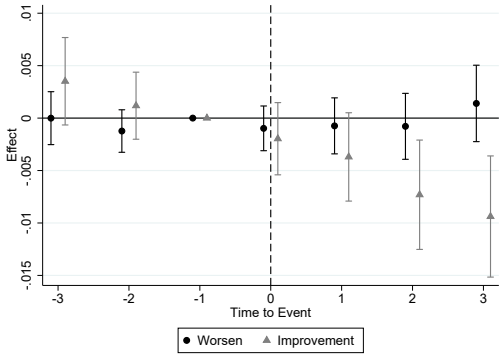
(b) Exit

Notes: Figure reports the effect of a change in Ofsted Leadership subscore grade on principals' (log) salary (panel a) and exit probability (panel b; the latter is estimated with a linear probability model with a dummy equal to one if the principal is no longer reported employed in the school sector) on based on Equation **??** as well as 95% confidence intervals. The equation is estimated via OLS. The number of observations is 8,517 for panel (a) and 9,170 for panel (b). The impact is estimated for a decline in Ofsted rating (circles) and an improvement (triangles). Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

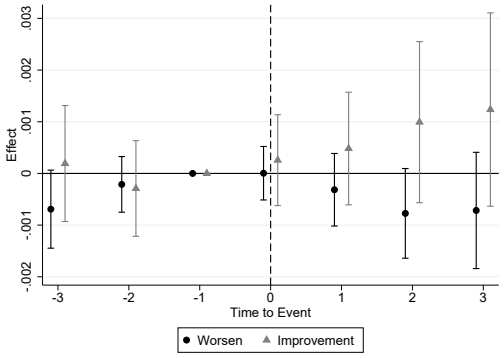
Figure A14: Effect of Change in Ofsted Grade on School Outcomes



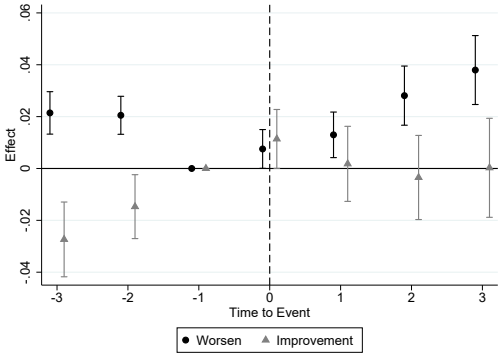
(a) (Log) Students



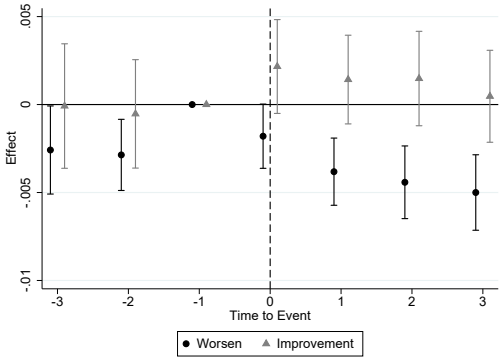
(b) % Free School Meal



(c) % SEN students



(d) % Students with 5+ A*-C in GCSE



(e) % No passes (GCSE)

Notes: Figure reports the effect of change in Ofsted grade on school level outcomes outcomes based on Equation **??** (at school level) as well as 95% confidence intervals. Panel (a) reports the effect of a grade change on the number of pupils; Panel (b) reports the effect on the share of students eligible to free school meals; Panel (c) reports the effect on the share of students achieving 5 or more A*-C in the GCSE exams (this is considered a measure of high performance of students in the final secondary school exam, the GCSE; Panel (d) reports the effect on the share of students achieving no passes in the GCSE exams; and Panel (e), finally, reports the effect on share of students classified with special education needs (SEN) with statement. The number of observations is: panel (a), 11,973; panel (b), 11,982; panel (c), 11,982; panel (d), 11,793; panel (e), 11,793. The baseline period is the year before the inspection $\tau = -1$. Regression includes fixed effects at the school and cohort-year level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. The estimation sample includes 1,712 schools. Standard errors are clustered at the school level.

A Theoretical Framework: A Simple Bayesian Updating Model

In this section we adopt a Bayesian learning model in order to better understand how the market might respond to disclosure of school quality ratings. We make the assumption that the rating provides a noisy signal of the quality or productivity of the school principal. The true quality of the principal, η, is not known, but it is drawn from a normal distribution with a known mean, $\bar{\eta}$, and variance, σ_η^2 :

$$\eta \sim N(\bar{\eta}, \sigma_\eta^2)$$

The precision of the prior is given by $h_p = \frac{1}{\sigma_\eta^2}$. Inspection ratings, $\tilde{\eta}$ provide a noisy signal of true quality:

$$\tilde{\eta} = \eta + \varepsilon$$

where ε is drawn from a normal distribution with known variance:

$$\varepsilon \sim N(0, \sigma_\varepsilon^2)$$

The precision of the signal is defined as $h_s = \frac{1}{\sigma_\varepsilon^2}$. Given this setup, it can be shown (see, for example, **schervish2012probability**) that the posterior is given by:

$$E(\eta|\tilde{\eta}) = \frac{h_p\bar{\eta} + h_s\tilde{\eta}}{h_p + h_s}$$

This can be restated as follows:

$$E(\eta|\tilde{\eta}) = \gamma\bar{\eta} + (1-\gamma)\tilde{\eta}$$

where $\gamma = \frac{\sigma_\varepsilon^2}{\sigma_\varepsilon^2+\sigma_\eta^2}$ and $1-\gamma = \frac{\sigma_\eta^2}{\sigma_\varepsilon^2+\sigma_\eta^2}$.

This simple framework helps shed light on why the market might respond to signals of school quality provided by external evaluators. To the extent that the school's own governing board (responsible for pay setting for the principal, within given limits – see details of the institutional setting below) is already aware of the principal's true quality, η, arguably there is little news in the rating (signal, $\tilde{\eta}$). This would imply that salaries would not change as a consequence of the

new rating. If, instead, the inspection delivers new information, the governing board may change the salaries. The response to the inspection rating ($\tilde{\eta}$) will also depend on the precision with which the market was already aware of the quality of the principal, as well as the precision of the inspectors' findings. It should be noted that the governing board can make decisions along two margins: salaries and retention. The model can be easily extended to retention decisions: the governing board may decide to change only the salary of the principal if the signal is not clear or if the change in perceived quality is sufficiently small. In contrast, the principal may be laid off when the perceived quality goes below a certain threshold, which, for example, equates the new productivity and the expected productivity of getting a new principal.

B Impact Conditional on Prior Rating

We further explore the heterogeneous impact of declines and improvements in inspection ratings by conditioning on the prior grade. If, for example, stigma and "Fail" ratings are most salient to school governing boards and the market, then marginal changes from, say, a "Good" rating to either and "Outstanding" (representing a one unit improvement) or "Satisfactory" (representing a one unit decline) may not lead to economically or statistically significant impact. We now test such hypotheses. Practically, we select all schools starting with a certain grade and then compare the careers of principals in schools experiencing a grade decline with those in schools experiencing no change in their grade. We report results for "Fail" and "Not Fail" grades in Figures B1 (for salaries) and B2 (for Exit) in the Appendix. We report related results for grade improvements in Figure B3.

We start by looking at salaries in Figure B1. For schools experiencing declines in rating without reaching the "Fail" grade, Panels (a) and (b) demonstrate that principals in charge of schools previously rated "Outstanding" or "Good" suffer wage losses up to two and three years after the inspection. Note that we exclude the baseline grade 2, "Satisfactory", since a grade decline here would lead automatically to a "Fail". It is the case, however, that a "Fail" rating leads to a much larger impact for principals at schools previously rated "Good" or "Satisfactory" (Panels d and e). The impact for schools rated "Outstanding" on the other hand is quite noisy (Panel c). It should be noted that these results are conditioned on the principal remaining in the state school sector.

Next, in Figure B2 we consider exits from the school sector. Two notable findings emerge from this set of results. First, There are large and statistically significant effects for principal exits from rating declines even when these do not lead to a "Fail" rating, both for the schools previously rated "Outstanding" as well as ones rated "Good" (Panels a and b). The impact for both these types of schools when they fall into the "Fail" category are even more dramatic (Panels c and d). The second notable feature is the relatively modest impact for schools rated "Fail" which were previously rated "Satisfactory". This latter result suggests that the school board or the market are less sensitive to schools falling into the "Fail" category when these schools are already in the lower part of the quality distribution.

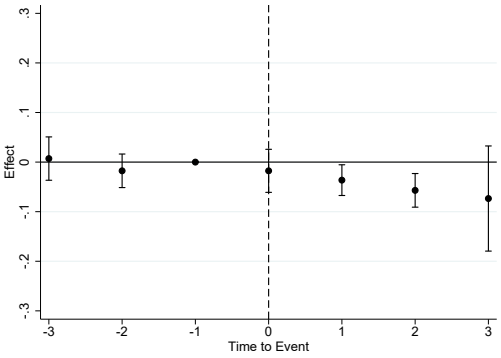
Finally, we report results for an improvement in the Ofsted rating in Figure B3. The impact of inspection rating improvements on salaries is statistically insignificant (Panels a and b). Rating improvements appear to lead to a decline in the probability of exiting from the school sector, however these effects are imprecisely estimated and the impact is significantly different from zero at 5% after three years only for schools starting from a "Satisfactory" grade. For shorter time horizons after the inspections, the effects are smaller and never statistically different from zero at 5%.

We report a summary of the results, by looking at the average change in salary and exit probability over the three years following the Ofsted inspection in Table B1 in the Appendix. The table shows clearly the negligible impact of Ofsted

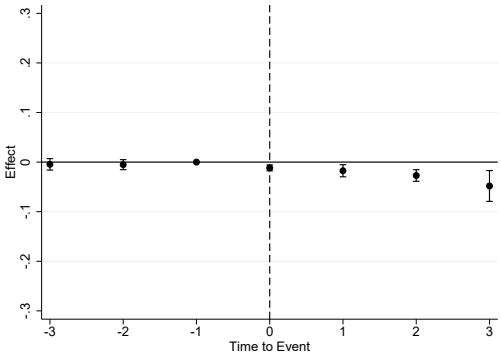
rating improvements, whereas large negative effects appear for rating declines. Ofsted rating changes leading to exit have particularly negative consequences, with a higher probability of 30 percentage points of exiting, on average, for schools starting from an "Outsanding" grade (4) and a 20 percentage point increase for schools starting from a "Good" score

Figure B1: Effect of a Decline in Ofsted Grade on Principals' (log) Salary - by Initial Inspection Rating

Panel A: Decline - No Fail

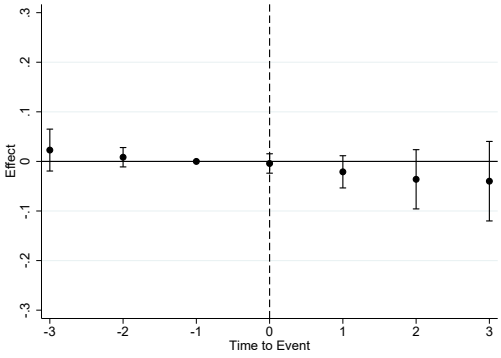


(a) Grade: "Outstanding"

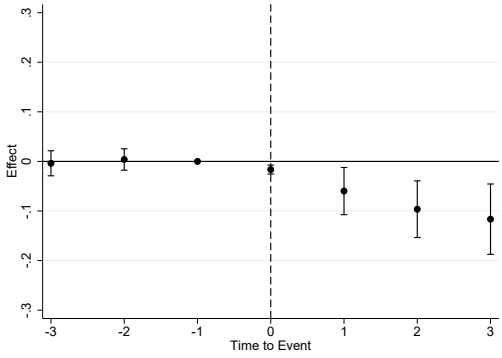


(b) Grade: "Good"

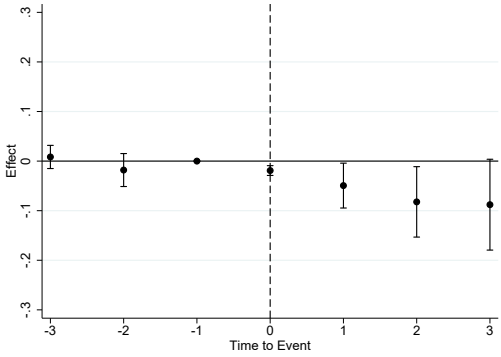
Panel B: Decline - Fail



(c) Grade: "Outstanding"



(d) Grade: "Good"

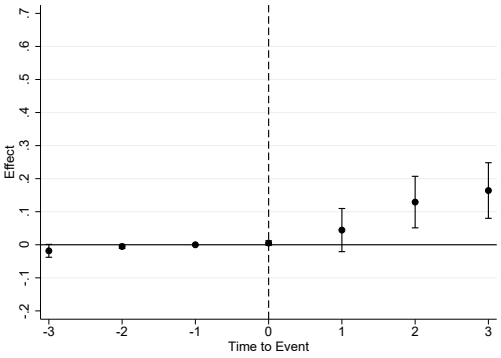


(e) Grade: "Satisfactory"

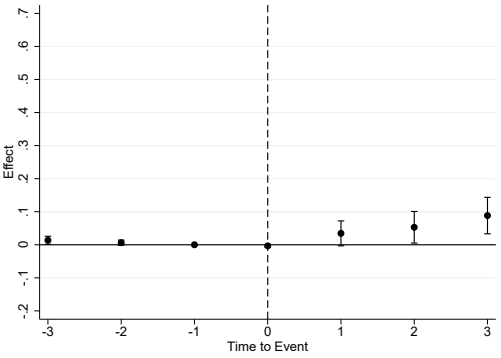
Notes: Figure reports the effect of a change in Ofsted overall grade on principals' (log) salary based on Equation **??** as well as 95% confidence intervals. Panel A reports the effect of a decline which does not lead to a "Fail" grade (subpanel a reports the impact of a decline if the school starts from a "Outstanding" grade and subpanel b reports the impact if the school starts from a "Good" grade), while Panel B reports the impact if the grade deterioration leads to a "Fail" for the school (subpanel c reports the impact of a decline if the school starts from a "Outstanding" grade, subpanel d reports the impact if the school starts from a "Good" grade, and subpanel e reports the impact if the school starts from a "Satisfactory" grade). Panel A does not consider the "Satisfactory" starting grade, since a decline in grade would necessarily lead to a "Fail". The equation is estimated via OLS. The number of observations is: panel (a), 2,655; panel (b), 4,828; panel (c), 871; panel (d), 3,026; panel (e), 1,803. Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

Figure B2: Effect of a Decline in Ofsted Grade on Principals' Exit Probability - by Starting Grade

Panel A: Decline - No Fail

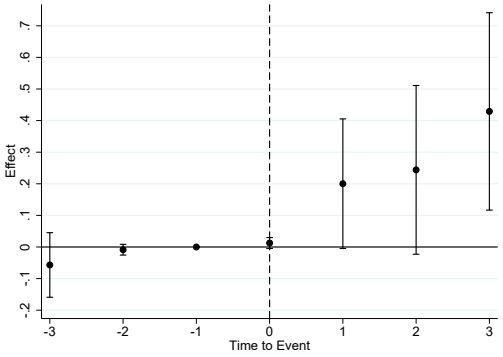


(a) Grade: "Outstanding"

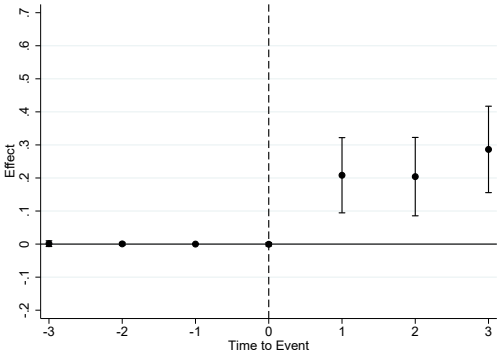


(b) Grade: "Good"

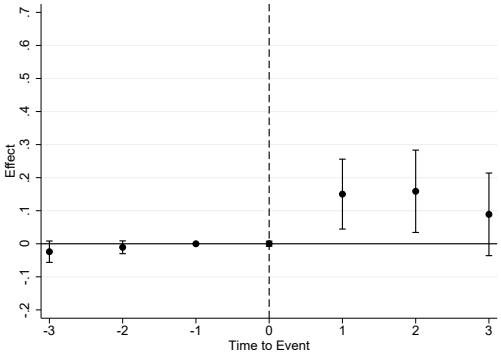
Panel B: Decline - Fail



(c) Grade: "Outstanding"



(d) Grade: "Good"

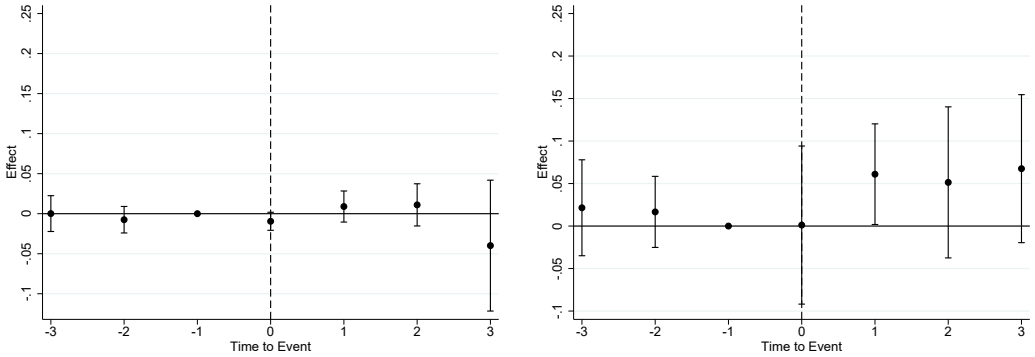


(e) Grade: "Satisfactory"

Notes: Figure reports the effect of a change in Ofsted overall grade on principals' exit probability based on Equation **??** as well as 95% confidence intervals. Panel A reports the effect of a decline which does not lead to a "Fail" grade (subpanel a reports the impact of a decline if the school starts from a "Outstanding" grade and subpanel b reports the impact if the school starts from a "Good" grade), while Panel B reports the impact if the grade deterioration leads to a "Fail" for the school (subpanel c reports the impact of a decline if the school starts from a "Outstanding" grade, subpanel d reports the impact if the school starts from a "Good" grade, and subpanel e reports the impact if the school starts from a "Satisfactory" grade). Panel A does not consider the "Satisfactory" starting grade, since a decline in grade would necessarily lead to a "Fail". The equation is estimated via OLS. The number of observations is: panel (a), 2,842; panel (b), 5,159; panel (c), 945; panel (d), 3,241; panel (e), 1,995. the regression is a linear probability model with dependent variable a dummy equal to one if the principal is not reported active in the school sector. Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

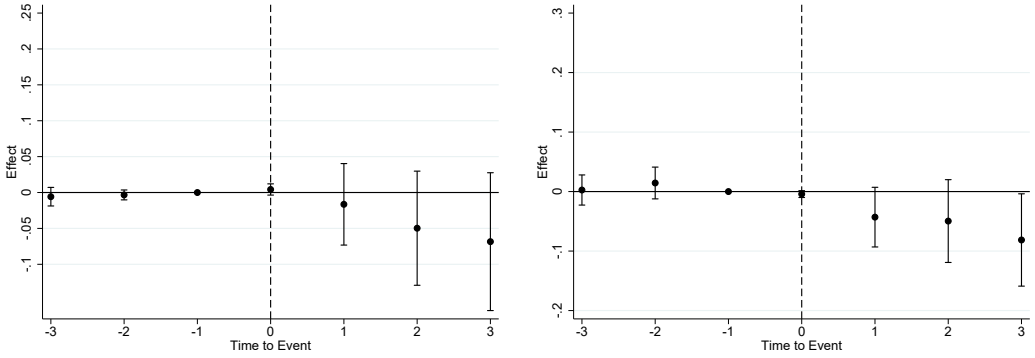
Figure B3: Effect of a Rating Improvement on Principals' Salary and Exit Probability - by Ofsted Starting Grade

Panel A: (log) Salary



(a) Grade: "Good" (b) Grade: "Satisfactory"

Panel B: Exit Probability



(c) Grade: "Good" (d) Grade: "Satisfactory"

Notes: Figure reports the effect of a change in Ofsted overall grade on principals' (log) salary (Panel A) and exit probability (Panel B) based on Equation **??** as well as 95% confidence intervals. Subpanel (a) and subpanel (c) report the impact of an improvement if the school starts from a "Good" grade while subpanel (b) and subpanel (d) report the impact if the school starts from a "Satisfactory" grade. The figure does not report schools starting from a "Fail" rating since they are excluded form the main sample since they are subject to additional government interventions. The equation is estimated via OLS. The number of observations is: panel (a), 2,490; panel (b), 3,039; panel (c), 2,688; panel (d), 3,213. Regression includes a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level.

Table B1: Effect of Grade Change on Principals' Salaries and Exit by Starting Grade and Size of Change

Starting Grade	(1) Change:+2	(2) Change:+1	(3) Change:-1	(4) Change:-2	(5) Change:-3
			Panel (a): (log) Salary		
2	-.023	.056	-.064		
	[-.159]	[2.545]	[-2.158]		
3		-.001	-.024	-.084	
		[-.059]	[-3.379]	[-3.306]	
4			-.042	-.054	-.037
			[-1.951]	[-2.488]	[-1.461]
			Panel (b): Exit		
2	-.096	-.059	.141		
	[-.989]	[-2.013]	[2.947]		
3		-.044	.054	.233	
		[-1.304]	[2.655]	[4.42]	
4			.111	.119	.302
			[3.217]	[2.572]	[2.845]

Note: Table reports estimates of the effect of a change in Ofsted grade for principals based on Equation **??** for each starting grade and transition across grades. The table reports the average impact of the specific rating transition with respect to school not changing rating and starting from the same rating over the three years in the post-inspection period. The dependent variable is the log of the salary of the principal in Panel (a) and a dummy equal to one if the principal is no longer observed in the public sector in Panel (b). The equation is estimated via OLS. Regressions include a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. Standard errors are clustered at the school at the time of inspection level. T-statistics are reported in square brackets.

C Senior Leaders and Teachers

School inspections do not only have an impact on principals, but may also affect other school employees' pay and career progression. We extend the analysis to also examine the impact on senior leaders (deputy and assistant principals) and teachers. We expect school inspection ratings to have larger consequences for more senior leaders. We now test this hypothesis.[1] As before, we focus on the following outcomes: salary, turnover, and school exit. As in the case of principals, impact is highly asymmetric and in the discussion below we mainly focus on declines in ratings. We also add potential career progression measures such as: the probability of becoming a principal or a senior leader. Results are reported in Table C1 and are in line with our expectations: both senior leaders and teachers are affected by the change in inspection ratings, with the former experiencing the largest impact.

We also assess dynamics in some greater detail. We start by looking at senior leaders in Figure C1. As the figure shows, they experience lower salaries by up to 1% three years after inspection in response to a decline in the rating, as shown in Panel (a). In this case, a small difference in trends in log salary appears, especially in period $\tau = -3$. However, years closer to the inspection ($\tau = 0, -2$), which matter most, do not show any suspicious pattern, with a very flat difference in wages. In order to study promotions, we classify teachers based on our broad categories in each year of our time span and assess whether inspection grade changes have an impact on the probability of teachers climbing the job ladder. We focus on senior leaders (deputy or assistant principal) becoming a principal, in Panel (b). Note that for senior leaders, becoming a principal is a promotion. Our findings show that a decline in the rating decreases the chances of senior leaders becoming principals. The effect is up to 2 percentage points. As these transitions are relatively rare - for senior leaders only 6.8% of them become principals, on average, within three years of the inspection, relative to senior leaders in schools experiencing no change in rating - the effect of a decline in the rating represents about 30% decrease in the probability of becoming a principal. Overall, experiencing a decline in an Ofsted rating is harmful for the career of both principals, who are less likely to keep their position, and senior leaders, who are also less likely to be promoted.

Next, we assess the impact of these school rating changes on turnover. To do so, we check two dimensions of mobility; first, whether the individual remains in the same school in which she was at the time of the inspection (Panel c); and second, if they remain in the state-run school sector or not (Panel d). As can be seen, for senior leaders the consequence of exiting are quite dramatic: they have a 3 percentage point higher probability of leaving their school when the rating decreases and a 2 percentage point higher probability of exiting the school sector and retiring.

Finally, we explore the impact on teachers in Figure C2. There is no evidence of any statistically significant impact on salaries (Panel a). There is some limited evidence

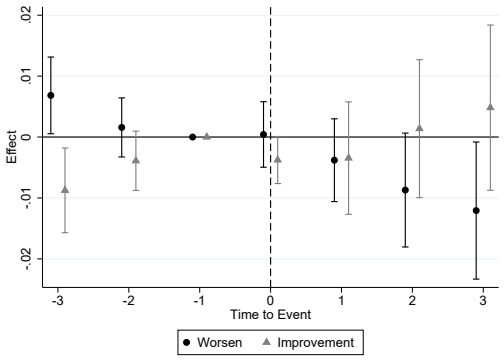
[1] In Table A8 we also report descriptive statistics for new principals at inspected schools. This shows that, inter alia, following inspections, a substantial fraction of new principals emerge from the ranks of managers.

of impact on career progression, but the most dramatic effects are on turnover. By the third year after the inspection teachers are about 2 and 3 percentage points more likely to leave the current school in response to an increase or decrease in the rating, respectively (Panel d). This suggests that both negative and positive inspection outcomes impact teacher turnover. This result also flows for the exit margin (Panel e), with impact of between 1 and 1.5 percentage points for the two treatments. These results suggest that even in the case where schools experience positive inspections, teacher exits rise modestly, perhaps as a consequence of an interaction between the experience of the inspection itself and changes which may follow a positive inspection (such as increased student enrollment). Overall, the impact for teachers of the rating treatment is relatively modest. This suggests that while senior leaders face dramatic consequences for changes in their schools' Ofsted ratings, implications for teachers are much more limited.[2] Arguably teachers have fewer margins to adjust and hence have more limited ability to affect school quality, relative to school principals. Furthermore, the pay structure for teachers is likely more rigid and they are less likely to be affected by pay for performance-style incentive schemes.

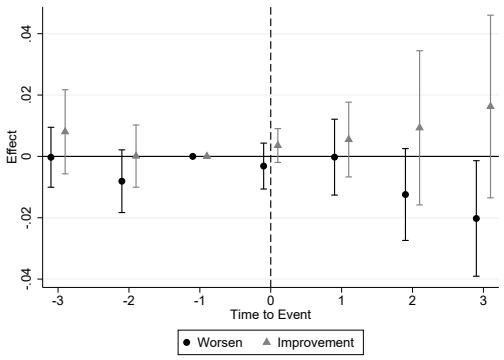
Overall, our results show that Ofsted ratings have an important impact on the careers of top level managers. The market for senior managers reacts strongly to external assessments, perhaps because they carry the greatest responsibility for the inspection outcome, while substantially smaller effects are observed for lower level managers and teachers.

[2]Throughout this analysis, the parallel trend assumption is supported by trend in years prior to the inspection in most of the cases, with only few exceptions. Panel (a) of Figure C1, that is the impact of a Ofsted rating change on salaries for senior leaders, in particular, shows some deviation from the parallel trend three years prior to the inspection. To assess to what extent the analysis is affected by this deviation we also present results for both senior leaders and teachers after excluding the 2007 cohort, which appears to be the most problematic in Figure C3 and Figure C4 in the Appendix. Both Figures, reassuringly, provide very similar results.

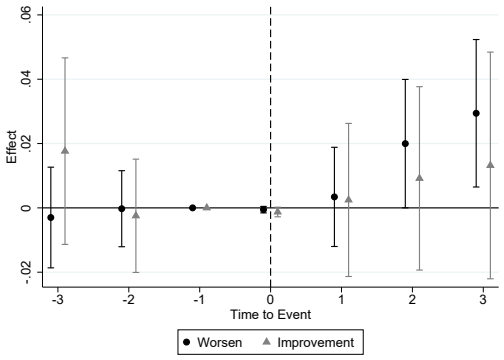
Figure C1: Effect of Change in Ofsted Grade on Senior Leaders' Salary and Career



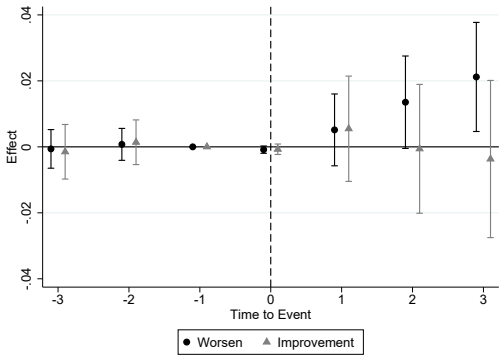
(a) (Log) Salary



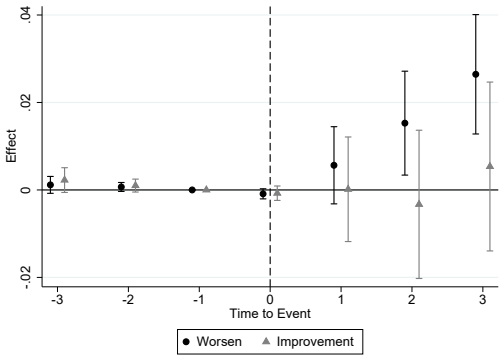
(b) Principal



(c) Leave School



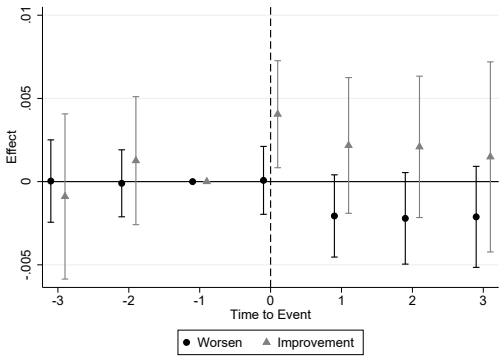
(d) Exit



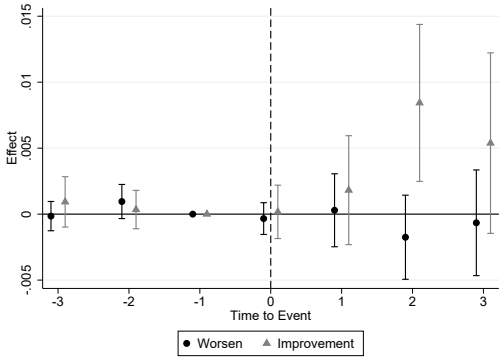
(e) Pension

Notes: Figure reports the effect of a change in Ofsted overall grade on senior leaders' (log) salary and career outcomes on based on Equation **??** as well as 95% confidence intervals. Regression estimated via OLS and all regressions - but the regression for salary - are linear probability models. Panel (a) reports the effect of changes in Ofsted rating on (log) salary (49,556 observations); panel (b) reports the effect on the probability of being a principal (dummy equal to one if the individual is a principal; 51,898 observations); Panel (c) reports the effect on the probability of leaving the school (dummy equal to one if the individual is no longer in the school in which the person was at the time of the inspection; 51,898 observations); Panel (d) reports the effects on the probability of exiting the school sector (dummy equal to one if the individual is no longer observed as active in the school sector; 51,898 observations); and Panel (e) reports the effect on the probability of retirement (dummy equal to one if the individual is reported as retired; 51,898 observations). Regressions include a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. The estimation sample includes 7,406 senior leaders. Standard errors are clustered at the school at the time of inspection level.

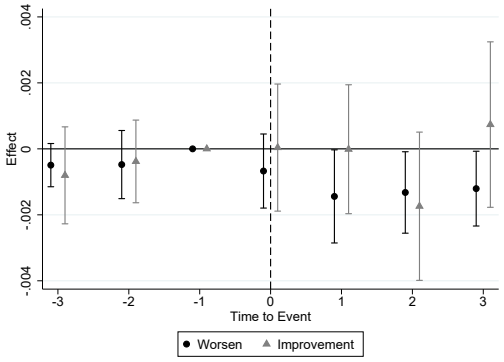
Figure C2: Effect of Change in Ofsted Grade on Teachers' Salary and Career



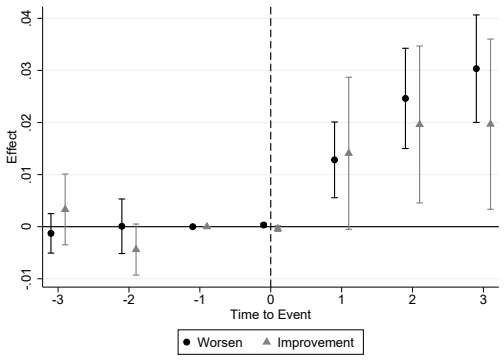
(a) (Log) Salary



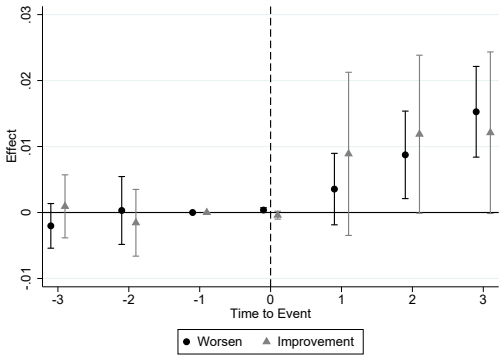
(b) Senior Leader



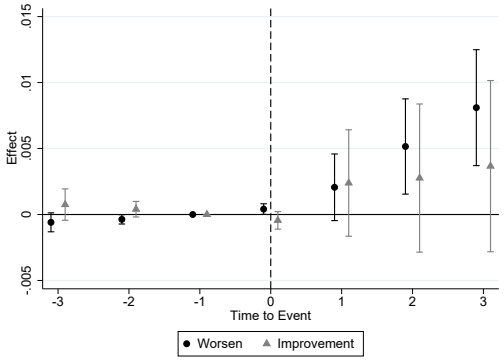
(c) Principal



(d) Leave School



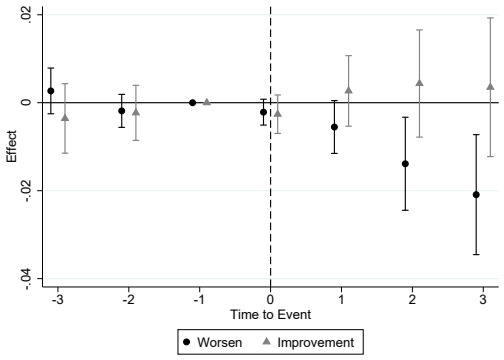
(e) Exit



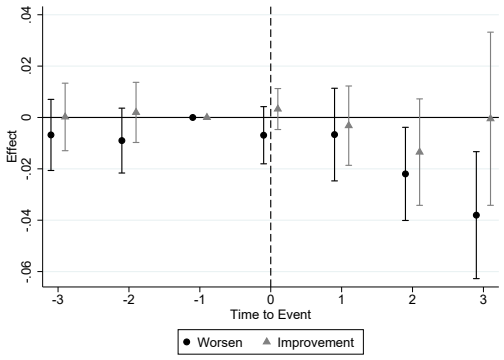
(f) Pension

Notes: Figure reports the effect of a change in Ofsted overall grade on teachers' (log) salary and career outcomes on based on Equation **??** as well as 95% confidence intervals. Regression estimated via OLS and all regressions - but the regression for salary - are linear probability models. Panel (a) reports the effect of changes in Ofsted rating on (log) salary (503,652 observations); panel (b) reports the effect on the probability of being a senior leader (dummy equal to one if the individual is a senior leader; 534,786 observations); panel (c) reports the effect on the probability of being a principal (dummy equal to one if the individual is a principal; 534,786 observations); Panel (d) reports the effect on the probability of leaving the school (dummy equal to one if the individual is no longer in the school in which the person was at the time of the inspection; 534,786 observations); Panel (e) reports the effects on the probability of exiting the school sector (dummy equal to one if the individual is no longer observed as active in the school sector; 534,786 observations); and Panel (f) reports the effect on the probability of retirement (dummy equal to one if the individual is reported as retired; 534,786 observations). Regressions include a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. The estimation sample includes 76,283 teachers. Standard errors are clustered at the school at the time of inspection level.

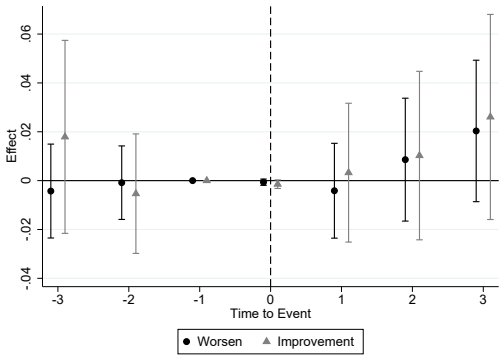
Figure C3: Effect of Change in Ofsted Grade on Senior Leaders' Salary and Career - Excluding the 2007 Cohort



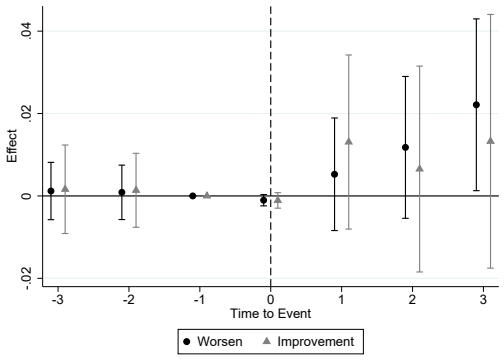
(a) (Log) Salary



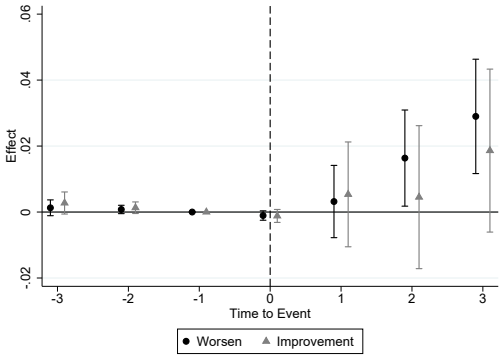
(b) Principal



(c) Leave School



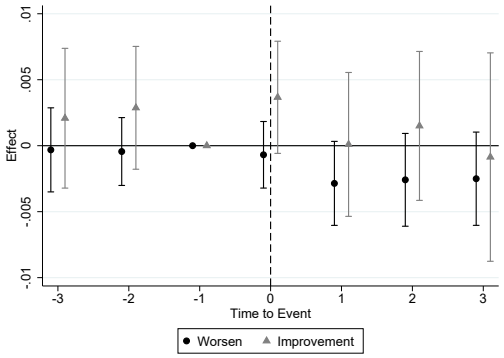
(d) Exit



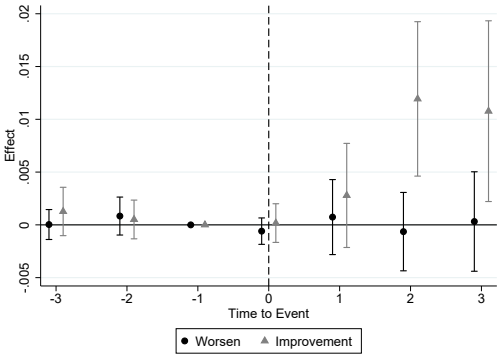
(e) Pension

Notes: Figure reports the effect of a change in Ofsted overall grade on senior leaders' (log) salary and career outcomes on based on Equation **??** as well as 95% confidence intervals. Regression estimated via OLS and all regressions - but the regression for salary - are linear probability models. Panel (a) reports the effect of changes in Ofsted rating on (log) salary (31,785 observations); panel (b) reports the effect on the probability of being a principal (dummy equal to one if the individual is a principal; 33,313 observations); Panel (c) reports the effect on the probability of leaving the school (dummy equal to one if the individual is no longer in the school in which the person was at the time of the inspection; 33,313 observations); Panel (d) reports the effects on the probability of exiting the school sector (dummy equal to one if the individual is no longer observed as active in the school sector; 33,313 observations); and Panel (e) reports the effect on the probability of retirement (dummy equal to one if the individual is reported as retired; 33,313 observations). Regressions include a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. The sample excludes senior leaders who were in schools inspected in 2007. The estimation sample includes 4,751 senior leaders. Standard errors are clustered at the school at the time of inspection level.

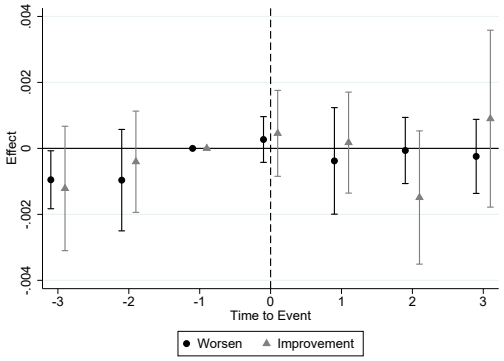
Figure C4: Effect of Change in Ofsted Grade on Teachers' Salary and Career - Excluding the 2007 Cohort



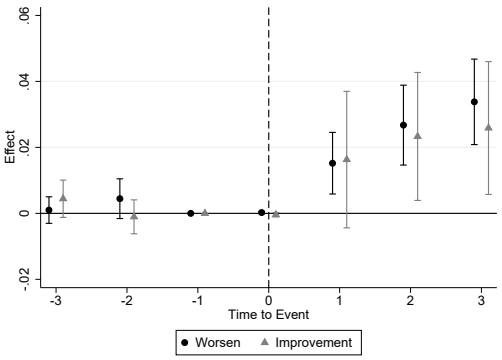
(a) (Log) Salary



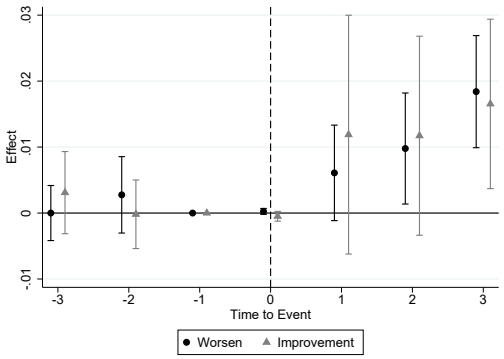
(b) Senior Leader



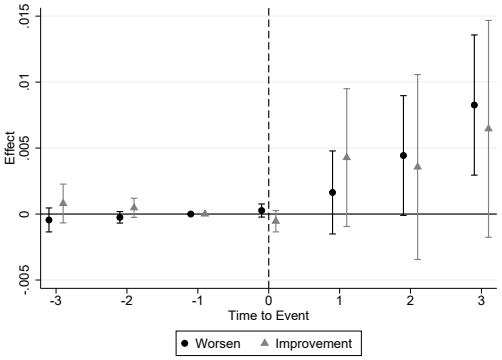
(c) Principal



(d) Leave School



(e) Exit



(f) Pension

Notes: Figure reports the effect of a change in Ofsted overall grade on teachers' (log) salary and career outcomes on based on Equation **??** as well as 95% confidence intervals. Regression estimated via OLS and all regressions - but the regression for salary - are linear probability models. Panel (a) reports the effect of changes in Ofsted rating on (log) salary (326,700 observations); panel (b) reports the effect on the probability of being a senior leader (dummy equal to one if the individual is a senior leader; 347,067 observations); panel (c) reports the effect on the probability of being a principal (dummy equal to one if the individual is a principal; 347,067 observations); Panel (d) reports the effect on the probability of leaving the school (dummy equal to one if the individual is no longer in the school in which the person was at the time of the inspection; 347,067 observations); Panel (e) reports the effects on the probability of exiting the school sector (dummy equal to one if the individual is no longer observed as active in the school sector; 347,067 observations); and Panel (f) reports the effect on the probability of retirement (dummy equal to one if the individual is reported as retired; 347,067 observations). Regressions include a third order age polynomial and fixed effects at individual-cohort level and at the year-cohort-tenure level. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. The baseline period is the year before the inspection $\tau = -1$. The sample excludes teachers who were in schools inspected in 2007. The estimation sample includes 49,468 teachers. Standard errors are clustered at the school at the time of inspection level.

Table C1: Effect of Grade Change on Senior Leaders and Teachers' Salaries

Variables	(1) Log Salary	(2) Salary	(3) Manager	(4) Principal	(5) Leave School	(6) Exit
			Panel (a): Senior Leaders			
Worsening X Post	-0.010***	-573.307***	-0.013	-0.008	0.019**	0.013**
	(0.003)	(165.329)	(0.010)	(0.006)	(0.009)	(0.006)
Improvement X Post	0.005	434.971	-0.010	0.007	0.005	0.001
	(0.005)	(269.224)	(0.014)	(0.010)	(0.013)	(0.009)
Observations	49,556	49,556	51,898	51,898	51,898	51,898
R-squared	0.790	0.809	0.594	0.314	0.460	0.435
Baseline		55710.111	.805	.051	.181	.095
			Panel (b): Teachers			
Worsening X Post	-0.002*	-114.251**	-0.001	-0.001**	0.023***	0.010***
	(0.001)	(45.489)	(0.001)	(0.000)	(0.004)	(0.003)
Improvement X Post	0.001	98.061	0.005*	-0.000	0.018***	0.011**
	(0.002)	(72.893)	(0.002)	(0.001)	(0.007)	(0.005)
Baseline		38597.065	.027	.003	.221	.12
Observations	503,652	503,658	534,786	534,786	534,786	534,786
Age Polynomial	YES	YES	YES	YES	YES	YES
Individual FE	YES	YES	YES	YES	YES	YES
Tenure x Cohort x Year FE	YES	YES	YES	YES	YES	YES

Note: Table reports estimates of the effect of a change in Ofsted grade for senior leaders (panel a) and teachers (panel b) based on Equation **??**. The dependent variable is the log of the salary of the principal in Column (1), salary in level in Column (2), a dummy equal to one if the individual is a senior leader (deputy or assistant principal) in Column (3), a dummy equal to one if the individual is a principal in Column (4), a dummy equal to one if the individual is no longer in the school in which she was at the time of the inspection (5), a dummy equal to one if the individual is no longer active in the school sector (6). The equation is estimated via OLS. Worsening is a dummy taking value one if the school experiences a downgrade while Improvement is a dummy taking value one if the school experiences an upgrade. Age polynomial is a third order polynomial is age. Cohort dummies identify in which of the three years (2006, 2007 and 2008) the school was inspected to compare it with schools inspected in the same academic year. Tenure is the tenure of the principal as an head in the school and it is computed in the year before the inspection. Panel covers years ranging from three years before to three years after the inspection. Standard errors are clustered at the school at the time of inspection level. Level of Significance: *** 0.01, ** 0.05, * 0.1.