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Paul M. Guest and Marco Nerino

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Paul M. Guest
King's Business School,
King's College London
&
Centre for Business Research,
University of Cambridge
paul.guest@kcl.ac.uk

and

Marco Nerino
King's Business School,
King's College London
&
Centre for Business Research,
University of Cambridge
marco.nerino@kcl.ac.uk

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Abstract

This paper examines empirically the announcement effect of commercial corporate governance ratings on share returns. Rating downgrades by Institutional Shareholder Services (ISS) are associated with negative returns of –1.14% over a 3-day announcement window. The returns are highly correlated with the proprietary analysis of ISS and are decreasing in agency costs, consistent with ratings providing independent information on underlying corporate governance quality. We thus show that the influence and impact of ISS extends beyond proxy recommendations and subsequent voting outcomes. Our findings contrast with the insignificant price impact of Daines, Gow, and Larcker (2010), whose analysis we replicate and successfully reconcile to ours by pooling upgrades and downgrades together.

Keywords: Corporate Governance Ratings; Information Intermediaries; Event Study; Information Content; Institutional Shareholder Services

JEL Codes: G14, G24, G34

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1. Introduction

Over the past 20 years, corporate governance analyst firms ("governance analysts") have emerged as important information intermediaries. These firms provide an array of services including data, analysis, ratings, proxy recommendations, and consulting. Firms such as Institutional Shareholder Services (ISS) arguably wield considerable influence over firm governance choices and investor decisions. Research on governance analysts has predominantly focused on proxy recommendations. Our understanding of the determinants and effects of the other services provided by these firms is limited.

Our objective is to establish whether corporate governance ratings ("governance ratings"), one of the primary services provided by governance analysts, are price-relevant for security markets. Understanding the importance to the market of the information provided by governance analysts is key to understanding how influential they actually are. We examine the announcement effect of rating changes on the stock returns of U.S. firms. Ratings distill a wide range of publicly available governance metrics and discretionary judgement into a singular summary measure of governance quality. There is anecdotal evidence that investors find ratings useful. In 2016 for example, Ides Capital Management pressured Boingo to improve its governance on the basis of the ISS rating: "Our perspective is shaped…by the dismal governance scores that the Company receives from ISS. We believe that the decision by ISS…to assign to Boingo a Governance Quickscore rating of 7…speaks volumes in terms of the Company's "higher risk" corporate governance practices."

Despite such anecdotal evidence (additional examples provided in Appendix Table A1) considerable skepticism has been expressed about the construct validity of the ratings and whether they accurately measure governance quality (e.g., Larcker *et al*., 2007; Rose, 2007; Bhagat and Bolton, 2008; Bhagat *et al*., 2008; Black *et al*., 2014). Some commentators argue that market participants purchase the ratings just to obtain the underlying governance data (e.g., Rose, 2007; Calomiris and Mason, 2010).

Several studies find that rating levels have low power to predict future long run performance (e.g., Bhagat *et al*., 2008; Daines *et al*., 2010 ("DGL")). DGL also conclude that ratings are not useful in predicting accounting restatements or future class action lawsuits. One problem with testing for long run outcomes is the noise caused by their many determinants, which may make it hard to detect a relationship even if it exists. The advantage of event study analysis is that many of these factors are not at play, thus making it the most informative approach to assess the importance of ratings. The only event study to date (DGL) tests for a

linear relation between all rating changes (i.e., upgrades and downgrades) and returns, for four governance analyst firms including ISS, and concludes that rating announcements do not impact stock prices. Thus rating information content may not be important, perhaps because it lags information from other sources.

We revisit this question, focusing our main analysis on 18,911 rating change announcements by ISS, the most influential (and sole surviving governance focused) rating firm in the U.S. over the past 20 years. Whilst our event study approach avoids the noise of long run studies and largely addresses issues of causality, the reliability of our results may be weakened by contaminating events, incorrect counterfactuals, cross-correlation caused by event clustering, and incorrect announcement windows (e.g., de Jong and Naumovska, 2016). We pay careful attention to these issues, removing confounding events, employing different counterfactuals, multiple event windows, and controlling for cross-correlation.

Critically, we also draw a distinction between rating upgrades and downgrades. We are motivated to do so by the presence of asymmetric announcement price effects in the credit rating (e.g., Ederington and Goh, 1998) and analyst forecast revision (e.g., Frankel *et al*., 2006) literatures. In our context, announcement price effects may occur for downgrades but not upgrades for at least three reasons. First, upgrades may impact prices prior to announcement because rumours of upgrades are more likely to be traded on due to potential feedback effects of downgrades (e.g., Edmans *et al*., 2015) and short selling constraints.[1] Second, some institutional investors may sell following downgrades due to investor mandates/self-imposed rules to not hold poorly governed firms, but not buy following upgrades. Third, investors may view upgrades as less credible than downgrades due to conflicts of interest arising from provision of consulting services to rated firms (Rose, 2007; Calomiris and Mason, 2010; Li, 2018).

We find that rating downgrades are associated with large negative stock returns which are increasing in downgrade magnitude. For large downgrades the negative returns are –1.14% over a 3-day announcement window. Upgrades do not result in a significant market reaction. Our key conclusion that ratings contain price-relevant information contrasts with the insignificant price impact documented by DGL. We replicate DGL's analysis, and successfully reconcile their findings to ours by pooling upgrades and downgrades together. However, when we differentiate upgrades from downgrades, we get different results from DGL. It is important to note that in the DGL study and our replication of it, the analysis extends to other governance analysts including Audit Integrity, Governance Metrics International, and The Corporate Library as well as ISS. Thus our replication demonstrates that our relevance and asymmetric effect results are not just specific to ISS, but apply to other governance analysts.

We examine whether the information content reflects the underlying corporate governance quality of the firm, as claimed by ISS. If so, and the market believes that weaker (stronger) governance has a negative (positive) effect on subsequent firm performance, a downgrade (upgrade) should result in lower (higher) firm value. Our *governance quality hypothesis* predicts that downgrade (upgrade) returns are more negative (positive) where potential agency costs are higher, since the cost of weaker governance is higher in such firms. We measure agency costs in line with Jensen (1986): cash flow provides greater scope for wasteful spending through negative NPV projects; growth opportunities (proxied by market-to-book value) reduce such problems since investment generally adds value; leverage constrains management's ability to waste resources. Separately, our *downside risk hypothesis* suggests that stronger governance may decrease the likelihood of very bad outcomes, but not improve the likelihood of very good outcomes.[2] Downgrade (upgrade) returns should thus be more negative (positive) where firms have higher downside risk, which we proxy with higher volatility and leverage (e.g., Hoepner *et al*., 2018).[3, 4] We find lower returns for downgraded firms with higher cash flow, lower growth opportunities, and lower leverage, supportive of the governance quality hypothesis.

To conclude that downgrades are price informative, it is important to understand why upgrades are not. We test three explanations for asymmetric price effects, but none is strongly supported by the data. First, we find no significant pre-announcement abnormal returns for upgrades and thus no evidence that upgrades impact prices prior to announcement. Second, if institutional investors sell following downgrades, such institutional friction could push prices down in the short run and subsequently revert, whilst returns should negatively correlate with institutional investor presence. However, we find no evidence of either. Third, we find no evidence of positive returns to upgrades for smaller firms which are less likely to be ISS consulting clients (Li, 2018), or for The Corporate Library which did not provide consulting services.

We investigate whether the information content of ISS downgrade announcements contains proprietary analysis and thus independent information content. Alternatively, investors may underreact to individual prior changes in governance data, and summary rating changes may merely draw users to look at previously available governance data more closely (see, e.g., Gilbert *et al*. (2012) in the context of summary macroeconomic data). To distinguish between these possibilities, we disentangle governance rating changes from governance changes using the underlying governance inputs that ISS uses for its rating estimation. We show that returns are significantly negative for downgrades with no associated governance changes, and that proprietary information content is an important determinant of negative returns. These findings suggest that downgrades contain independent information content.

We explore, and refute, another explanation for the negative returns related to potential real effects of downgrades. Downgrades may increase the likelihood that ISS will recommend a proxy advisory vote against management, which adversely affect voting outcomes (Iliev and Lowry, 2015; Malenko and Shen, 2016; McCahery *et al*., 2016) and stock prices (Ertimur *et al*., 2013; Hitz and Lehmann, 2018). However, we find that the correlation between downgrades and subsequent proxy recommendations against management is small (as do DGL), and that the negative returns are not driven by downgrades that occur closer to the proxy season. This explanation is also rendered less plausible by our DGL replication which shows negative returns hold for other governance analysts which do not provide proxy advisory services.

Our key finding and conclusion is that a relatively new type of intermediary that conveys summary information on corporate governance is highly relevant for financial markets. Thus at a broad level, we extend understanding of which information intermediaries are price informative (e.g., Healy and Palepu, 2001; Beyer *et al*., 2010). We inform the debate on the value of governance information (e.g., Calluzzo and Dudley, 2019; Iliev *et al*., 2019; Malenko and Malenko, 2019) by demonstrating its high value to market participants. Our finding of a price impact extends the prior evidence on governance ratings which shows that their introduction increases the dissemination of governance information (Lehmann, 2019). Additionally, our key finding supports Bebchuk *et al*.'s (2013) claim that immediate price reactions may explain the disappearing relation between academic summary governance measures and future returns, thus contributing to this literature (e.g., Gompers *et al*., 2003; Bebchuk *et al*., 2009).

Our findings are relevant to the ongoing regulatory debate on proxy advisory firms within Congress (Corporate Governance Reform and Transparency Act of 2017), the SEC (Roundtable on the Proxy Process, 2018), and European Union (EU Shareholder Rights Directive). This debate has focused exclusively on proxy recommendations, which have been shown to determine prices and voting outcomes (e.g., Alexander *et al*., 2010; Ertimur *et al*., 2013; Hitz and Lehmann, 2018). By showing that proxy advisory firms also impact prices via rating announcements, and thus the dissemination of governance information, we demonstrate a greater influence and importance than previously assumed.

2. Data and Methodology

2.1 Governance Ratings

ISS produced three ratings between 2002–2016: Corporate Governance Quotient (CGQ) (2002–2010); Governance Risk Indicator (GRID) (2011–2013); and Quickscore (QS) (2013–2016). Each rating is constructed according to whether certain conditions are met for a set of governance variables which are publicly disclosed by ISS. A score is allocated to each outcome, each variable is weighted, summed, and discretionary adjustments applied. We do not include GRID in our analysis because it has no overall score but instead three sub-category ratings, and announcement effects may be confounded by multiple sub-category effects. CGQ has two relative ratings: CGQ Industry (relative to US firms in same industry) and CGQ Index (relative to firms in same index).[5] QS is measured relative to index firms only. We combine CGQ and QS, employing CGQ Index (rather than CGQ Industry) for comparability with QS.

For the replication, we examine the same ratings, methodology and time period as DGL. Thus we examine CGQ Industry for 2005–2007; Audit Integrity's AGR rating for 2002–2007; Governance Metrics International's GMI rating for 2005–2007; and The Corporate Library's TCL rating for 2003–2006. GMI and TCL are primarily governance ratings whilst AGR includes some governance but mainly accounting measures. Table 1 describes key characteristics of the sample ratings.[6]

Table 1. Corporate governance ratings
This table reports summary information on the commercial governance ratings employed.

Rating firm	Institutional Shareholder Services (ISS)			Audit Integrity	Governance Metrics International	The Corporate Library
Rating	CGQ	GRID	QS	AGR	GMI	TCL
Years in operation	2002–2010	2010–2012	2013–	2002–	2000–2010	2002–2010
"Tick-the-box" approach	Yes	Yes	Yes	Yes	Yes	No
Absolute or relative	Relative	Absolute	Relative	Relative	Relative	Absolute
Overall measure	Yes	No	Yes	Yes	Yes	Yes
Governance sub-categories	Yes	Yes	Yes	Yes	Yes	Yes
Rating scale	0–100	Low-medium-high concern	1–10	0–100	0–10	A–D, F
Minimum change	0.01	1 category	1	1	0.5	1 letter
Strongest governance score	100	Low	1	100	10	A
Reporting frequency	Monthly	Monthly	Monthly	Unsystematic	Quarterly	Unsystematic
Firms covered	Russell 3000 and 2,400 non-Russell 3000 firms	Russell 3000	Russell 3000	Russell 3000 and 6,000 non-Russell 3000 firms	Russell 1000	Russell 3000

2.2 Rating Announcements

The public announcement of ISS ratings occurs on the first trading day of each month via both Bloomberg and Yahoo Finance. The ratings are systematically announced regardless of whether the ratings change or not. The ratings were updated in May, November, and during proxy season until January 2014, after which more frequent monthly updates were introduced. During proxy season, ratings are announced to rated firms and to institutional shareholder clients via the ISS proxy report and recommendation, the date for which is not publicly available. In addition to potential information leakage, the recommendation is a contaminating event generating abnormal returns (Ertimur et al., 2013). We therefore exclude Bloomberg announcements during a firm's proxy season. The announcements for AGR, GMI, and TCL are made on Bloomberg. GMI announcements occur regularly at quarter end, whilst AGR and TCL announcements are irregular. Bloomberg is our source for ratings and announcement dates.

2.3 Sample Selection

We sample all rating announcements for which there is a change between the current and prior rating level. We retain small changes which, although introducing noise, provide a counterfactual for larger changes. To minimize the possibility of returns being contaminated by confounding events (see, e.g., de Jong and Naumovska, 2016) we exclude rating change observations as follows: CGQ Index changes with a simultaneous opposite change in CGQ Industry; corporate announcements (M&A (data from Thomson One); earnings, dividends, analyst recommendations, analyst forecasts, credit rating changes (data from IBES); management and board changes (data from BoardEx)) made 10 days either side of announcement; rating changes preceded in previous 30 trading days by another rating firm's change; less than 70 observations in the estimation period; and stock price less than $1. For the replication, we first report results prior to these exclusions to ensure consistency with DGL. Our replication sample is very similar to that of DGL (Appendix Table A2). It includes three GMI changes of –93, –90.5, and 16, for which the underlying Bloomberg data is incorrect since GMI follows a 1–10 scale. Table 2 reports the number of exclusions.

Table 2. Sample selection

This table reports the sample selection process. *Incorrect changes* are those for which the Bloomberg data is incorrect. *Confounding changes* are those for which CGQ Index is upgraded on the same date that CGQ Industry is downgraded (or vice versa). *Confounding announcements* occur 10 days either side of the announcement date. *Missing returns on CRSP* are changes with less than 70 daily observations in the estimation period for stock returns (days –270 to –21). *Rating changes in prior 30 days* are changes preceded by a rating change by another governance analyst in the prior 30 trading days.

	ISS sample			Replication sample			
	CGQ	QS	All	AGR	CGQ	GMI	TCL
Sample years	2005–2010	2013–2016	2005–2016	2002–2007	2005–2007	2005–2007	2003–2006
# Ratings	126,689	57,378	184,067	65,152	58,689	10,259	6,488
Ratings with prior rating available	122,973	53,807	176,780	61,208	55,369	8,698	4,025
minus Ratings with no change	25,905	40,969	66,874	3,365	7,156	5,708	23
# Rating changes	97,068	12,838	109,906	57,483	48,213	2,990	4,002
minus Incorrect changes	0	0	0	0	0	3	0
minus Confounding changes	27,571	0	27,571	0	10,427	0	0
minus Confounding announcements	38,066	9,157	47,223	21,707	20,072	1,983	2,781
- M&A	3,005	693	3,698	2,154	1,729	188	244
- Earnings	2,978	769	3,747	289	1,737	127	145
- Dividends	5,206	1,591	6,797	2,288	3,113	256	374
- Analyst recommendations	12,940	2,576	15,516	9,719	6,553	724	1,066
- Analyst forecasts	12,710	3,375	16,085	7,060	6,546	651	922
- Credit ratings changes	68	9	77	106	25	13	4
- Management changes	521	68	589	91	51	5	10
- Board changes	638	76	714	0	318	19	16
minus Missing returns on CRSP	3,791	156	3,947	5,198	2,107	26	70
minus Stock price < $1	1,451	23	1,474	573	436	2	4
minus Rating changes in prior 30 days	8,606	350	8,956	10,856	5,525	812	390
minus Rating changes in proxy season	1,393	431	1,824	0	909	0	0
# Rating changes after exclusions	16,190	2,721	18,911	19,509	8,300	166	757
# Unique firms with rating changes	3,698	3,094	4,497	3,782	3,279	1,332	1,495
# Unique firms with rating changes after exclusions	3,091	1,704	3,616	3,204	2,481	154	579

2.4 Event Study Methodology

We estimate the daily cumulative abnormal stock return (CAR) for an event window of 3 [–1, +1] days around the announcement date [0]. We use a market model, using the CRSP value-weighted index, and an estimation period of days –270 to –21. Because our announcements are clustered by date (i.e., monthly for ISS, quarterly for GMI), we address potential bias from cross-sectional correlation. For univariate analysis, we estimate standard errors using the approach of Kolari and Pynnönen (2010) which controls for both event-induced volatility change and cross-sectional correlation, and the nonparametric sign test of Cowan (1992). For regression analysis, we cluster standard errors by event date and firm (Petersen, 2009). Where the number of clusters is insufficient to avoid potential bias (i.e., ≤ 20), we use a wild cluster bootstrap-t procedure (Cameron *et al*., 2008).

2.5 Independent Variables

The *Upgrade* and *Downgrade* variables measure rating change magnitude for changes that improve or deteriorate respectively. They are in absolute terms, comprising positive values only, with larger values indicating larger upgrades and downgrades. To make CGQ rating changes comparable with QS changes (CGQ has a 0–100 range, QS 1–10), we divide CGQ changes by 10. Thus a change of 1 unit can be interpreted as a 10% change. For the replication analysis, the ratings have different ranges with implications for coefficient interpretation. AGR ranges from 0–100, GMI from 1–10, and TCL from 1–5. The variable *Rating change* measures rating change magnitude, including negative values for downgrades and positive values for upgrades.

For our cross-sectional analysis our firm level variables are defined as follows. *Free cash flow* is operating income before depreciation minus interest expenses, income taxes, and capital expenditures, scaled by total assets. *MTB* is market value of assets over total assets. *Leverage* is total liabilities scaled by total assets. *Volatility* is the standard deviation of daily stock returns in the year before rating change. *Size* is market capitalization ($ million) at calendar year-end. Accounting data is from Compustat and share price data from CRSP. *Institutional ownership* is shares held by institutional investors to total shares outstanding, from Thomson Reuters CDA/Spectrum database. When missing, institutional ownership is set equal to zero.

To test the information content of ISS rating changes, we employ the inputs used to construct CGQ and QS, obtained from ISS. The input data is annual for CGQ, daily for QS. To test for independent content, we estimate whether, over the prior 12 months, there is a change in any governance inputs. We examine returns for firms with no change in governance inputs (*No prior change in governance*) vis-à-vis firms that have at least one change (*Prior change in governance*). To measure proprietary information content, we require monthly data and thus use the QS rating. For each month, we assign a value of 1 (0) for each input based on whether it meets (does not meet) the ISS criteria. We exclude inputs that ISS states publicly have a zero weighting. *Public content* is the monthly change in the sum of these values, and captures whether the market reacts belatedly to prior governance changes. *Weighted content* is the fitted value of the regression of monthly rating change on the monthly changes in individual governance inputs, and measures the proprietary weights that ISS attaches to each governance variable. *Discretionary content* is the residual from this regression, and captures any additional discretionary adjustments made by ISS. Summary statistics are shown in Table 3.

Table 3. Summary statistics

This table reports summary statistics for firm-level variables. Panel A reports statistics for the sample of ISS rating changes, Panel B for the replication sample. Both samples are after exclusions in Table 2. The number of observations varies because of data availability. All independent variables (except *Rating change*, *Upgrade*, and *Downgrade* variables) are winsorized at 1% and 99%, and are defined in Section 2. CAR is estimated using the market-model for the window [–1, +1] around rating change announcements.

	Observations	Mean	Std. Dev.	25th percentile	Median	75th percentile
Panel A: ISS sample						
CAR	18,911	0.09	5.86	–2.22	–0.14	1.98
Rating change	18,911	0.04	0.98	–0.12	–0.04	0.02
Upgrade	5,479	0.88	1.17	0.04	0.42	1.00
Downgrade	13,432	0.31	0.63	0.03	0.07	0.21
Public content	1,360	0.47	1.31	0.00	0.00	1.00
Weighted content	1,360	0.46	0.68	0.00	0.15	0.89
Discretionary content	1,360	0.37	0.72	0.00	0.00	0.64
Size (log)	15,412	19.35	1.75	18.07	19.35	20.58
Free cash flow	12,016	–0.03	0.22	–0.04	0.03	0.07
Leverage	15,260	0.19	0.21	0.01	0.13	0.30
MTB	15,521	2.72	6.00	1.16	1.82	3.09
Volatility	18,839	3.15	1.84	1.87	2.71	3.93
Institutional ownership	18,911	34.73	35.22	0.00	25.04	67.01
Panel B: Replication sample						
CAR	28,732	0.23	5.18	–1.75	–0.01	1.89
AGR Rating change	19,509	0.02	11.23	–6.00	1.00	6.00
AGR Upgrade	9,876	8.37	7.23	3.00	6.00	11.00
AGR Downgrade	9,633	8.53	7.58	3.00	6.00	12.00
CGQ Rating change	8,300	–0.08	6.59	–1.30	–0.60	–0.20
CGQ Upgrade	1,361	8.10	11.26	1.20	4.08	9.92
CGQ Downgrade	6,939	1.68	3.37	0.40	0.80	1.60
GMI Rating change	166	0.13	0.66	–0.50	0.50	0.50
GMI Upgrade	96	0.64	0.32	0.50	0.50	0.50
GMI Downgrade	70	0.56	0.22	0.50	0.50	0.50
TCL Rating change	757	–0.18	1.21	–1.00	–1.00	1.00
TCL Upgrade	330	1.12	0.34	1.00	1.00	1.00
TCL Downgrade	427	1.18	0.42	1.00	1.00	1.00

3. Results

3.1 ISS Rating Changes and Announcement Returns

We begin by presenting our event study analysis of ISS upgrades and downgrades. Panel A of Table 4 reports mean and median CAR for the 3-day window surrounding announcements. Upgrades are associated with statistically and economically insignificant returns. In contrast, the returns to downgrades are significantly negative, economically meaningful and more negative for larger downgrades. The mean (median) CAR for rating downgrades of ≥1, >1, and >2 are –0.26%, –0.70%, and –1.14% (–0.26%, –0.45%, and –0.77%), and statistically significant. Including small downgrades of less than one results in insignificant returns, likely due to their lower information content.

Table 4. ISS rating changes and CAR

This table reports CAR for the [–1, +1] window around ISS rating change announcements. CAR is estimated using the market-model. The sample period is 2005–2016 and is after exclusions in Table 2. The t-statistics in Panel A account for event-induced change in volatility and cross-sectional correlation in abnormal returns (Kolari and Pynnönen, 2010). The generalized sign test follows Cowan (1992). Panel B presents results from regressions of CAR on the size of upgrade (*Upgrade*) for the upgrade sample (columns 1–4), and on the size of downgrade (*Downgrade*) for the downgrade sample (columns 5–8). Standard errors in Panel B are clustered by event date and firm. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades				Downgrades			
Panel A: Univariate analysis								
	All	≥1	>1	>2	All	≥1	>1	>2
Mean CAR	0.0109	–0.0219	0.0224	–0.0400	0.1215	–0.2586**	–0.7013***	–1.1405***
t-test	(–0.2128)	(–1.4737)	(–0.6704)	(–0.6703)	(0.1257)	(–2.3129)	(–3.0813)	(–3.0801)
Median CAR	–0.1658	–0.1386	–0.1174	–0.0627	–0.1308	–0.2589**	–0.4498***	–0.7738***
Generalized sign test	(–0.4190)	(–0.3970)	(0.0130)	(0.7530)	(0.0250)	(–2.1160)	(–3.1420)	(–3.7270)
Event dates	68	65	64	59	69	62	59	44
Observations	5,479	2,206	1,325	581	13,432	1,775	737	340
Panel B: Regression analysis								
	All	All	≥1	≥1	All	All	≥1	≥1
DepVar: CAR	0.0012	0.0208	0.0376	0.0356	–0.3659***	–0.4708***	–0.4334***	–0.3778***
	(0.0876)	(0.0845)	(0.0793)	(0.0853)	(0.1193)	(0.1418)	(0.1632)	(0.1242)
Calendar year FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.0000	0.0180	0.0001	0.0455	0.0016	0.0141	0.0086	0.0611
Event dates	68	68	65	65	69	69	62	62
Observations	5,479	5,479	2,206	2,206	13,432	13,432	1,775	1,775

Panel B reports regression analysis of CAR on *Upgrade* and *Downgrade* for the samples of upgrades and downgrades, respectively. We present results both with and without year and industry effects, and for all rating changes as well as those $\geq$1. The coefficient for *Upgrade* is small and insignificant. However, the *Downgrade* coefficient is statistically and economically significant, robust to year and industry effects. For the regression including all downgrades and year and industry effects, the coefficient implies that a one unit downgrade is associated with returns that are –0.47% lower.

The non-linear relationship between returns and rating changes is demonstrated in Figure 1, a non-parametric characterization in the form of a plot using local polynomial smoothing. The negative effect of downgrade size on returns commences at small downgrades, and increases in magnitude for larger downgrades (at around 3). For upgrades, in contrast, there is no relation between upgrade size and returns for upgrades between zero and 4. For very large upgrades, there is a positive relation but it is much weaker than the negative relation for large downgrades.

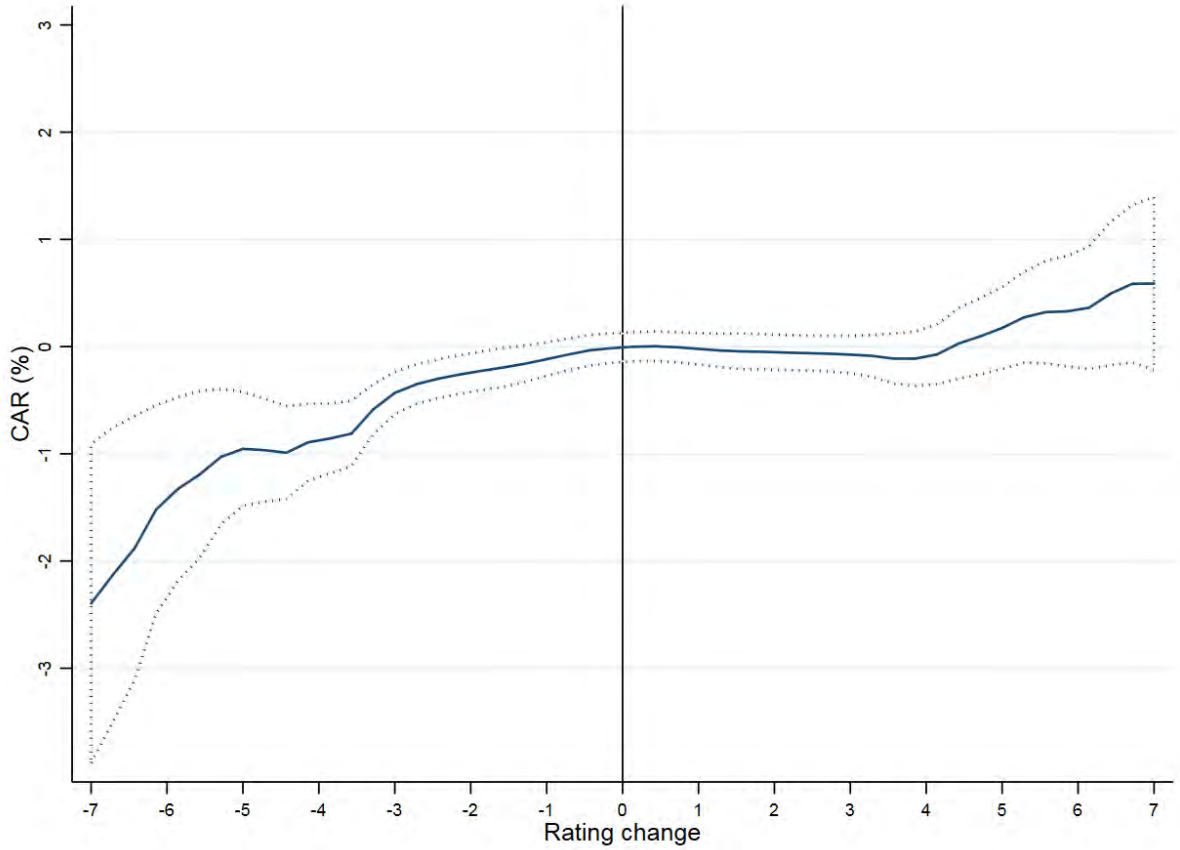

Figure 1. CAR by rating change

This graph shows CAR by size of ISS rating change, estimated using kernel-weighted local polynomial smoothing. The smoother uses the Epanechnikov kernel and the rule-of-thumb bandwidth of Fan and Gijbels (1996). The dashed lines represent 95% confidence intervals. Rating upgrades (downgrades) are winsorized at 7 (–7) due to low observations beyond this size (5 for upgrades; 1 for downgrades). We obtain a similar graph by increasing the bandwidth to 2 rather than winsorizing the data. CAR is estimated using the market-model for the window [–1, +1] around rating change announcements.

This conclusion is not altered by examining a longer window around announcements. Figure 2 exhibits returns over an extended period [–10, +10] for large upgrades and downgrades (i.e., >2 and <2).[7] The CAR for upgrades trends upwards over days –7 to –4, and is an economically meaningful 0.81% over [–10, –3]. However, the return is not statistically significant, does not hold for the median (–0.03%), and reverts by day +10. This pattern suggests the asymmetric announcement effect is not due to positive pre-announcement price effects for upgrades.

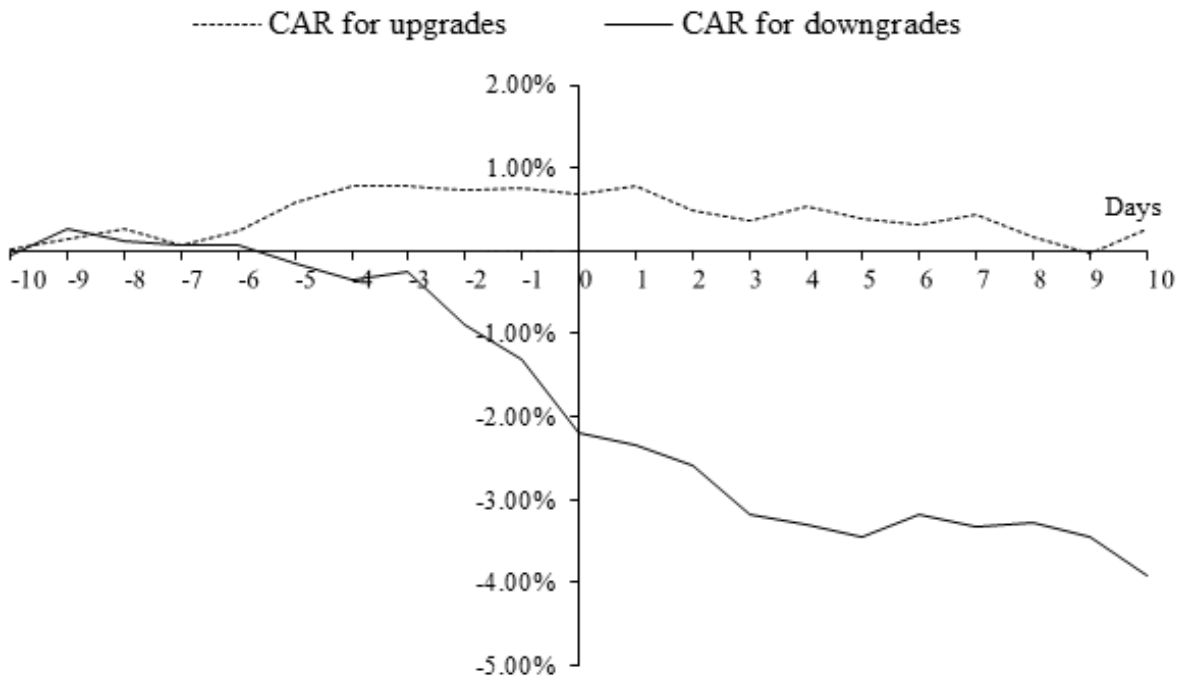

Figure 2. CAR over window [–10, +10]

The graph shows mean market model CAR in the 10 days before and after ISS rating upgrades and downgrades of >2. The sample consists of 581 upgrades and 340 downgrades.

For large downgrades, the CAR turns negative on day –2, possibly indicating information leakage. As noted above, ISS may release the ratings early to rated firms, and thus downgrade information may leak to the market (although we have no anecdotal evidence of this). The CAR of –0.49 from day –4 to day –1 is however statistically insignificant, and much smaller than the CAR of –1.15% on day 0. After the downgrade announcement, the CAR continues to decline. Again however, the CAR of –0.47% (mean and median) from day +3 to +10 is not statistically significant and much smaller than the CAR on day 0, giving us some confidence that the event dates are not mis-measured. One possible explanation is that the market exhibits some behavioral bias that causes an initial under-reaction to downgrades. The post-announcement pattern suggests that the asymmetric price effect is not the result of forced selling by institutional investors resulting in temporary downward price pressure around downgrades with subsequent share price reversal.[8]

3.2 Cross-Sectional Analysis of Announcement Returns

In this section we report regression analysis of announcement returns on firm characteristics. We include a number of independent variables to test the governance quality hypothesis, downside risk hypothesis, and two explanations for the asymmetric price effect (in addition to the pre-announcement patterns just studied). The governance quality hypothesis predicts that downgrade returns are more negative where potential agency costs (in line with Jensen (1986)) are higher and thus for downgrades predicts: a negative coefficient for *Free cash flow* which provides greater scope for wasteful spending; a positive coefficient for *MTB* which proxies for growth opportunities which reduce such problems since investment generally adds value; a positive coefficient for *Leverage* which constrains management's ability to waste resources. For upgrades, the predicted coefficients are reversed. The downside risk hypothesis predicts that weaker (stronger) governance will have a more negative (positive) impact where firm risk is greater (lower). Thus for downgrades (upgrades), it predicts negative (positive) coefficients for *Leverage* and *Volatility*.

To test whether the asymmetric price effect is driven by upgrade returns being muted due to conflict of interest concerns surrounding ISS client firms, we examine the impact of firm size. Larger firms are more likely to be clients and thus this explanation predicts a negative coefficient on *Size* for upgrade returns. Downgrades are more likely than upgrades to be credible, irrespective of whether the downgraded firm is a client or not, and thus this explanation does not predict a comparable size effect for downgrades. To test whether the asymmetric price effect is driven by institutional investors being forced to sell following downgrades we include *Institutional ownership.* This explanation predicts a negative effect of *Institutional ownership* on downgrade returns but no

comparable effect for upgrades since institutional investors would not be forced to buy following upgrades.

The results are reported in Table 5. The estimated coefficient for *Free cash flow* is consistently negative in the downgrade regressions. For downgrades ≥1 the coefficient is statistically and economically significant, an increase of one standard deviation being associated with –0.47% (–2.14*0.22) lower returns. The coefficient for *MTB* is significantly positive for large downgrades, an increase of one standard deviation being associated with –0.16% (0.026*6) lower returns. The coefficient for *Leverage* is positive although not statistically significant. These results are consistent with the market interpreting downgrades as signaling weaker governance which is expected to destroy more value where potential agency costs are higher. Thus our downgrade results are consistent with the governance quality hypothesis. For upgrades (≥1), the coefficient for *Leverage* is negative and statistically significant, whilst the coefficients for *Free cash flow* and *MTB* are the same sign as the downgrade regressions but smaller and statistically insignificant. Overall therefore, upgrades do not create more value when agency costs are higher, inconsistent with the governance quality hypothesis.

The estimated coefficient for *Volatility* is significantly negative in the downgrade (≥1) regressions. Whilst this finding is supportive of the downside risk hypothesis, the positive coefficient for *Leverage* is not. Thus our downgrade results are not supportive of the downside risk hypothesis. The same conclusion holds for upgrades, where we observe a small insignificant coefficient for *Volatility* and a significantly negative coefficient for *Leverage*, rather than the hypothesised positive effect.

Table 5. ISS rating changes, CAR, and firm characteristics

This table reports the regression of CAR for the [–1, +1] window around ISS rating change announcements on proxies for agency cost. CAR is estimated using the market-model. The sample period is 2005–2016. Definition of variables is provided in Section 2. The sample employed is after the exclusions in Table 2. Standard errors are clustered by event date and firm. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades				Downgrades			
	All	All	≥1	≥1	All	All	≥1	≥1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Free cash flow	0.9764	1.2451*	–0.4573	–0.9026	–0.3253	–0.7218	–2.1012*	–2.1374**
	(0.7793)	(0.6588)	(1.2234)	(1.1844)	(0.6927)	(0.5535)	(1.1308)	(0.9668)
MTB	–0.0179	–0.0135	0.0067	0.0156	0.0063	0.0119	0.0274*	0.0259*
	(0.0119)	(0.0112)	(0.0125)	(0.0104)	(0.0111)	(0.0104)	(0.0151)	(0.0154)
Leverage	–0.8036*	–0.5152	–0.8625**	–0.9446**	0.1963	0.3039	0.6233	0.5603
	(0.4258)	(0.5231)	(0.4246)	(0.4717)	(0.3802)	(0.4323)	(0.5333)	(0.5353)
Volatility	0.2286**	0.1156	0.3605	0.0575	–0.0338	–0.1668**	–0.3167*	–0.5487***
	(0.1158)	(0.0780)	(0.2324)	(0.1944)	(0.1252)	(0.0737)	(0.1700)	(0.1080)
Size (log)	0.1089	–0.0382	0.2224	0.1074	–0.0767	–0.1131**	0.1539	–0.0699
	(0.1154)	(0.1024)	(0.1441)	(0.1079)	(0.0866)	(0.0545)	(0.1490)	(0.1369)
Institutional ownership	–0.0009	0.0053	–0.0001	0.0033	0.0003	–0.0016	0.0020	0.0089
	(0.0057)	(0.0046)	(0.0056)	(0.0033)	(0.0031)	(0.0030)	(0.0058)	(0.0061)
Calendar year FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.0063	0.0318	0.0136	0.0762	0.0007	0.0157	0.0247	0.0973
Event dates	68	68	64	64	68	68	56	56
Observations	3,579	3,579	1,497	1,497	8,333	8,333	1,182	1,182

The estimated coefficient on the natural logarithm of *Size* is small and statistically insignificant for the upgrade regressions, and we therefore find no evidence that larger firms experience lower upgrade returns. This goes against the hypothesis that the muted effect of upgrades on returns is due to the market being skeptical about upgrades for consulting clients of ISS, which we proxy by *Size*.

The estimated coefficient for *Institutional ownership* is positive for large downgrades (≥1). The coefficient is statistically insignificant but economically substantial; a one standard deviation increase (35.24%) in ownership is associated with 0.35% (0.01*35.24) higher returns which largely mitigate the negative return. This finding is inconsistent with the hypothesis that the asymmetric price effect is driven by institutional investors being forced to sell following downgrades.[9] The results are instead consistent with large institutional shareholders offsetting weaker governance via monitoring.

3.3 Replication of DGL

We replicate DGL to reconcile their conclusion of an insignificant price impact to our findings. Whereas our analysis thus far has examined the ISS rating only, we now follow DGL and include four different ratings including ISS. Table 6 Panel B shows that regressing returns on rating changes (upgrades and downgrades combined as in DGL) for the replication sample produces very similar results to DGL (reported in Panel A). The eight coefficients are of the same sign, magnitude and significance. The coefficient for the CGQ Industry sample (using size-adjusted returns) is statistically significant but economically small (0.01) implying that a 10 unit (i.e., 10%) downgrade results in –0.10% lower returns, substantially lower than the –0.37% decrease reported in Section 3.1. The coefficients for the GMI rating sample are negative, thus the opposite sign to that expected, whilst other coefficients are insignificant.

Table 6. Replication of DGL

This table replicates the analysis of DGL. We report regressions of CAR for the [–1, +1] window around rating change announcements on *Rating change* which comprises positive values for upgrades and negative values for downgrades. The sample period is 2002–2007. In Panel B (C), the sample is before (after) exclusions in Table 2. Standard errors are clustered by event date. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	AGR	CGQ	GMI	TCL
Panel A: DGL analysis				
DepVar: CAR market-adjusted	0.0036	0.0076	–0.0350**	0.1506
	(0.0029)	(0.0044)	(0.0145)	(0.1319)
DepVar: CAR size-adjusted	0.0028	0.0069**	–0.0270	0.1535
	(0.0027)	(0.0029)	(0.0202)	(0.1146)
Event dates	668	18	8	206
Observations	Not reported	Not reported	Not reported	Not reported
Panel B: Replication				
DepVar: CAR market-adjusted	0.0028	0.0097	–0.0279*	0.1483
	(0.0021)	(0.0074)	(0.0132)	(0.1236)
DepVar: CAR size-adjusted	0.0024	0.0073*	–0.0229	0.1404
	(0.0021)	(0.0041)	(0.0195)	(0.1045)
Event dates	724	19	8	195
Observations	52,927	45,476	2,961	3,927
Panel C: Replication after exclusion				
DepVar: CAR market-adjusted	0.0060**	–0.0008	–0.2478	0.0976
	(0.0028)	(0.0043)	(0.1665)	(0.1437)
DepVar: CAR size-adjusted	0.0053**	–0.0012	–0.2173	0.0782
	(0.0025)	(0.0035)	(0.1972)	(0.1283)
Event dates	401	19	6	195
Observations	19,509	8,300	166	757

Panel C of Table 6 reports replication results after removal of contaminating events. The removal reduces sample sizes considerably, by 80% for CGQ/TCL, and 95% for GMI. The small sample size for GMI mean the test likely has no statistical power (the standard errors increase by an order of magnitude). The coefficients for CGQ Industry and TCL are close to zero and insignificant. However, we now observe a statistically significant linear relationship between CAR and the AGR rating change. Thus, DGL did not find a linear relationship for one rating measure because contaminating effects concurrent with upgrades/downgrades mask this relationship, and excluding the contaminating events is enough to overturn their conclusion for this rating.

In Table 7 we report separate analyses for upgrades and downgrades. We additionally employ the methodology from our main analysis (market- and Fama-French-Cahart four-factor models; standard errors clustered on event date and firm; wild cluster bootstrap-t procedure when the number of event dates is ≤ 20), although our conclusions are not dependent upon this. Panel A reports results prior to removal of contaminating events, although we remove the three incorrect observations for GMI. For upgrades the *Rating change* coefficient is small and insignificant. In contrast, the coefficient for downgrades is significantly negative and of large economic magnitude for CGQ Industry and TCL. The coefficient for CGQ Industry of –0.03 (using market-adjusted returns) implies that a 10 unit (10%) downgrade results in a –0.3% decrease in returns, similar to that reported for CGQ Index in Section 3.1. For TCL, a one unit (20%) downgrade is associated with –0.89% lower returns. The coefficients for GMI downgrades are of the expected negative sign and economically large although not statistically significant.[10]

Table 7. Replication of DGL: upgrades and downgrades

This table replicates the analysis of DGL. We report regressions of CAR for the [–1, +1] window around rating change announcements on *Upgrade* for the upgrade sample, and on *Downgrade* for the downgrade sample. The sample period is 2002–2007. In Panel A (B), the sample is before (after) exclusions in Table 2. Standard errors are clustered by event date and firm, and a wild cluster bootstrap-t procedure is used when the number of clusters is ≤ 20 (Cameron *et al*., 2008). ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades				Downgrades			
	AGR	CGQ	GMI	TCL	AGR	CGQ	GMI	TCL
Panel A: Before exclusion								
DepVar: CAR market-adjusted	0.0009	0.0052	0.1428	–0.1753	–0.0030	–0.0253*	–0.2127	–0.8847**
	(0.0056)	(0.0056)	(0.2570)	(0.3025)	(0.0053)	(0.0153)	(1.0670)	(0.3991)
DepVar: CAR size-adjusted	0.0020	0.0008	0.0700	–0.0257	–0.0020	–0.0150**	–0.1941	–0.8168**
	(0.0043)	(0.0045)	(0.2260)	(0.2606)	(0.0046)	(0.0076)	(1.4990)	(0.3863)
DepVar: CAR market model	0.0016	0.0020	0.0426	–0.1342	–0.0043	–0.0246**	–0.1799	–0.8206**
	(0.0047)	(0.0045)	(0.5470)	(0.2412)	(0.0052)	(0.0121)	(0.9570)	(0.3709)
DepVar: CAR Fama-French-Carhart	0.0050	0.0004	0.0320	–0.0500	–0.0024	–0.0203***	–0.2490	–0.7575**
	(0.0044)	(0.0054)	(0.2520)	(0.1669)	(0.0045)	(0.0074)	(0.8400)	(0.3411)
Event dates	420	19	6	110	417	19	6	174
Observations	26,863	14,874	1,623	1,818	25,829	30,591	1,332	2,109
Panel B: After exclusion								
DepVar: CAR market-adjusted	0.0099*	0.0014	–0.3383	0.1589	–0.0140	–0.0178*	0.9766	–1.0024***
	(0.0055)	(0.0095)	(2.2900)	(0.4365)	(0.0088)	(0.0100)	(1.6380)	(0.2433)
DepVar: CAR size-adjusted	0.0087**	–0.0069	–0.5135	0.2585	–0.0145*	–0.0038	0.9516	–0.9384***
	(0.0043)	(0.0076)	(1.2530)	(0.3681)	(0.0081)	(0.0060)	(1.6080)	(0.2433)
DepVar: CAR market model	0.0111**	–0.0070	–0.4172	0.0744	–0.0153*	–0.0251**	1.0416	–0.8825***
	(0.0049)	(0.0111)	(0.9850)	(0.3980)	(0.0080)	(0.0102)	(1.8900)	(0.2638)
DepVar: CAR Fama-French-Carhart	0.0117**	–0.0084	–0.5645	0.0501	–0.0131*	–0.0200***	0.9608	–0.7358***
	(0.0056)	(0.0113)	(1.6440)	(0.3344)	(0.0077)	(0.0075)	(1.0830)	(0.2465)
Event dates	232	17	5	34	249	19	6	49
Observations	9,876	1,361	96	330	9,633	6,939	70	427

Panel B of Table 7 removes confounding events. The significant negative relation between downgrade size and returns continues to hold for CGQ Industry and TCL. The coefficient for GML downgrades is no longer negative although small sample size makes inference difficult. The coefficients for AGR upgrades and downgrades are statistically and economically significant, consistent with the linear relation documented in Table 6 Panel C.[11]

Summarizing, our findings are reconciled with DGL by pooling upgrades and downgrades together. However, when we differentiate upgrades from downgrades, we get different results from DGL. We demonstrate a significant negative relation between downgrade and CAR for two of four ratings (CGQ Industry and TCL), whilst for a third measure (GMI) the negative relation is economically important. When we additionally remove contaminating events, a significant linear relation is found for AGR. We conclude that rating downgrades, but not upgrades (with the exception of AGR), do have information content. Since negative downgrade effects are not specific to ISS, they are unlikely driven by factors specific to ISS's business model (i.e., proxy recommendations).

3.4 Informational Content of Downgrades

In this Section we investigate whether the information content of ISS downgrade announcements contains proprietary analysis and thus independent information content. Firstly, we report returns for firms with and without prior changes in governance in Table 8. Panel A shows significantly negative returns for both types of firm. For firms with no prior change, the mean (median) CAR for downgrades of ≥1, >1, and >2 are a statistically significant –0.49%, –1.08%, and –1.44% (–0.41%, –0.49%, and –0.50%), respectively. Panel B shows that the *Downgrade* coefficient for these firms is statistically and economically significant, a downgrade of 1 being associated with –0.58% lower returns. These findings suggest that downgrades contain independent price-relevant information.

Table 8. ISS downgrades, CAR, and prior changes in corporate governance

This table reports CAR for the [–1, +1] window around ISS downgrade announcements. CAR is estimated using the market-model. The sample period is 2005–2016. Results are reported according to whether the event firm undergoes a change in corporate governance in the year prior to downgrade announcement. The definition is provided in Section 2. The sample employed is after exclusions described in Table 2. The t-statistics in Panel A account for event-induced changes in volatility and cross-sectional correlation in abnormal returns (Kolari and Pynnönen, 2010). The generalized sign test follows Cowan (1992). Panel B presents results from a regression of CAR on *Downgrade*. Standard errors in Panel B are clustered by event date and firm. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	No prior change in corporate governance				Prior change in corporate governance			
Panel A: Univariate analysis								
Downgrades	All	≥1	>1	>2	All	≥1	>1	>2
Mean CAR	0.1141	–0.4913**	–1.0827***	–1.4402**	0.1269	–0.1582	–0.4553	–0.9038**
t-test	(0.2049)	(–2.4811)	(–3.2438)	(–2.3989)	(0.0407)	(–1.5318)	(–1.6010)	(–2.1654)
Median CAR	–0.1855	–0.4068**	–0.4922***	–0.4950**	–0.0993	–0.1835	–0.4166*	–1.1645***
Generalized sign test	(–0.9160)	(–2.4220)	(–2.7760)	(–2.4730)	(0.8210)	(–0.9410)	(–1.8010)	(–2.7890)
Event dates	66	56	49	36	57	47	44	32
Observations	5,718	535	289	150	7,714	1,240	448	190
Panel B: Regression analysis								
Downgrades	All	All	≥1	≥1	All	All	≥1	≥1
DepVar: CAR	–0.4316***	–0.5766***	–0.4870**	–0.3947*	–0.3199**	–0.4009*	–0.3662	–0.3644**
	(0.1367)	(0.1225)	(0.2202)	(0.2203)	(0.1573)	(0.2081)	(0.2254)	(0.1517)
Calendar year FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.0023	0.0208	0.0165	0.1206	0.0011	0.0159	0.0047	0.0592
Event dates	66	66	56	56	57	57	47	47
Observations	5,718	5,718	535	535	7,714	7,714	1,240	1,240

Table 9 reports the regression of downgrade CAR on: *Public content* which captures whether the market reacts belatedly to prior governance changes; *Weighted content* which measures the proprietary weights that ISS attaches to each governance variable; and *Discretionary content* which captures any additional discretionary adjustments made by ISS. The coefficient for *Public content* is a statistically significant –0.10 (column 2). This suggests downgrades draw users to look more closely at previously available governance information, and thus evidence of investors underreacting to prior governance changes. However, the economic magnitude is small. The coefficient implies that a one standard deviation increase is associated with –0.13% (–0.10*1.31) lower returns. The coefficient for *Weighted content* is statistically insignificant and thus the proprietary weighting element of ISS downgrades does not appear to contain price relevant information. The coefficient for *Discretionary content* is statistically and economically significant. The coefficient of –0.52 (column 2) implies that a one standard deviation increase is associated with –0.37% (–0.52*0.72) lower returns. In sum, the price reaction to downgrades stems from drawing attention to existing public information and proprietary information on discretionary adjustments.

Table 9. ISS downgrades, CAR, and information content

This table reports the regression of CAR for the [–1, +1] window around ISS downgrade announcements on proxies for information content. CAR is estimated using the market-model. The sample period is 2013–2016. *Public content* is the monthly change in the number of governance inputs for which a firm meets the ISS criteria. *Weighted content* is the fitted value of the regression of monthly rating change on the monthly changes in individual governance inputs. *Discretionary content* is the residual from this regression. The sample employed is after exclusions in Table 2. Standard errors are clustered by event date and firm. Industry effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Public content	–0.0550	–0.1023**
	(0.0484)	(0.0465)
Weighted content	0.1623	0.0297
	(0.1949)	(0.2007)
Discretionary content	–0.5077***	–0.5190***
	(0.1422)	(0.1778)
Calendar year FE	No	Yes
Industry FE	No	Yes
R^2	0.0125	0.0694
Event dates	29	29
Observations	1,360	1,360

3.5 Alternative Explanation for the Negative Downgrade Returns

An alternative explanation for the negative CAR is that downgrades incur real costs such as higher likelihood of an ISS proxy recommendation against management. We have partially addressed this by showing that the negative reaction occurs for governance analysts that don't give proxy recommendations. In addition, we report returns for downgrades in the quarter prior to proxy season and the three prior quarters since the previous AGM. There is presumably less time for firms to rectify downgrades occurring closer to the season, and therefore this explanation predicts more negative returns for the quarter prior. The results (Appendix Table A5) show however that returns are broadly comparable for both periods.

Next, we examine the extent to which rating downgrades and subsequent proxy recommendations are correlated. DGL find evidence of a statistically significant but weak economic relation for their earlier time period. Appendix Table A6 (Panel A) reports results from a logit model where the dependent variable (*Proxy recommendation*) equals 1 if ISS recommends in favor of a management proposal, 0 otherwise. A one unit downgrade is associated with a 0.01 decrease in the probability of a favorable recommendation. The marginal effect is statistically significant but of small economic magnitude, given that the sample probability of a favorable recommendation is more than 90%. As an additional test, we employ the proportion of votes voted in favour of management (*Voting outcome*) as the dependent variable. The results (Appendix Table A6 Panel B) are similar to those for proxy recommendations. Rating downgrades thus contain low incremental information about the likelihood of subsequent proxy recommendations and voting outcomes, and these subsequent outcomes appear unable to explain the negative returns to downgrades.

3.6 Robustness Tests

We verify the robustness of our key finding, that ISS downgrades contain price-relevant information, by using alternative methodologies. Appendix Table A7 shows that our main results are robust to controlling for cross-sectional correlation using the crude dependence adjustment method of Brown and Warner (1980), and feasible generalised least squares.

Appendix Table A8 reports downgrade returns during the proxy season. Large downgrades are associated with insignificant positive returns, and larger downgrades are not associated with more negative returns. These insignificant results are consistent with rating announcements during proxy season being announced earlier with the ISS proxy report. Table A9 shows that our main results

for upgrades and downgrades are robust to including announcements made during proxy season.

Appendix Table A10 shows that the results are robust to: other sample selection choices; an event window of five days around announcement [–2, +2]; different counterfactuals (market adjusted, size adjusted, and Fama-French-Carhart model (Fama and French, 1993; Carhart, 1997)); winsorization of CAR; exclusion of the financial crisis (defined as August 2008–March 2009 following Lins *et al*., 2013); firm fixed effects; differentiating CGQ Index from QS; employing CGQ Industry rather than CGQ Index; exclusion of CGQ changes after February 2010 (announcement date of transition to GRID).

Appendix Table A11 (Panel A) shows that downgrades in the ISS GRID rating also contain information content, and thus their exclusion does not alter our conclusions. The governance categories (*compensation*, *board*, *shareholder rights*, and *audit*) follow a 1–3 scale which necessitates a univariate approach due to an insufficient number of two unit downgrades. Compensation downgrades are associated with statistically and economically significant negative returns. Downgrade effects for other categories are mixed. Mean returns are insignificant throughout whilst median returns are of economic and statistical significance for board downgrades. Interpretation of differential impacts by category is complicated by observations containing downgrades in multiple categories. Panels B and C report returns for the sub-categories of CGQ and QS. For CGQ, downgrades in compensation and shareholder rights (not board and audit) are associated with negative returns whilst for QS this holds for all categories.

4. Conclusion

Over the last 20 years, governance analysts have emerged as important information intermediaries in financial markets. Ratings are one of the key services provided and appear to be used by practitioners. However, their validity generates divided opinion and the empirical literature has produced conflicting results. An important and unresolved question is whether ratings provide price relevant information and if so, what the nature of this information is.

We address this question by examining the price effect of rating announcements. We present robust evidence that downgrades by ISS have a large negative impact on stock returns, and thus contain information content. The negative returns are consistent with the market revising downward its expectation of firm performance due to unexpected lower governance quality as conveyed by downgrades. Consistent with this interpretation, returns are decreasing in potential agency costs. We rule out a competing explanation that negative returns are caused by higher expectations of an ISS proxy recommendation against

management, since negative returns hold irrespective of closeness to proxy season and for rating analysts that do not provide proxy advice. The information content is independent and cannot be explained solely by having drawn the market's attention to prior governance changes, since the negative returns hold for firms with no governance change and correlate highly with proprietary information content.

We demonstrate the importance of corporate governance information intermediaries in financial markets. We show that the influence and impact of ISS, the leading intermediary, extends beyond proxy recommendations and subsequent voting outcomes. We contribute to the regulatory debate on proxy advisory firms, in which ratings have received relatively little attention. Our findings suggest that even in the absence of a proxy advisory service, ISS would wield considerable influence and thus the substantive issues at the heart of this debate would remain.

Notes

1 There is anecdotal evidence of ISS rated firms announcing upgrades prior to public announcement. For example, on June 20 2014, Abercrombie and Fitch announced a higher ISS rating, 11 days before the public announcement on Bloomberg. This is consistent with firms releasing good (but not bad) news early (e.g., Hong *et al*., 2000). However, we search on Factiva and find only 8 cases where ISS rated firms announced upgrades prior to public announcement, of which none are in our final dataset.

2 Hoepner *et al*. (2018) show that shareholder engagement on governance (as well as ESG more generally) provides protection against downside risk, whilst Lins *et al*. (2017) find that high CSR firms have higher returns during the financial crisis.

3 The proxies employed (although widely used) are imperfect and could work in the opposite direction to that hypothesized. For example, where growth opportunities are high, the potential value loss from pursuing the quiet life is high, thus agency costs could be greater since a CEO's actions have more effect on firm value.

4 Downside risk effects do not predict the asymmetric upgrade/downgrade effect we observe since upgrades should reduce downside risk and downgrades increase it. In the context of CSR, Krüger (2015) finds significantly negative returns to negative CSR events but no positive returns to positive events. However, this asymmetric effect appears to be driven by positive CSR events being the result of agency costs, which is not the case for corporate governance upgrades.

5 Rating changes may be caused by changes in index rather than focal firms, although such changes are likely to be small given the large indexes.

6 In 2010, Governance Metrics International, Audit Integrity, and The Corporate Library merged to form GMI Ratings. Following the merger, AGR continued in existence whilst GMI and TCL were discontinued and replaced by a new rating, GMI Analyst, which incorporates environmental and social measures and is not available on Bloomberg. GMI Ratings was acquired by MSCI in 2014, and GMI Analyst was subsequently integrated into MSCI's ESG rating measure.

7 We conduct a range of additional robustness tests in section 3.6 below.

8 We also examine downgrade CAR over longer windows of [–1, +20] and [–1, +100]. The mean (median) returns are –2.64% (–1.25%) for [–1, +20] and –8.81% (–5.20%) for [–1, +100]. Thus our conclusion of no reversal holds.

9 We further ascertain this by finding large negative announcement returns where *Institutional ownership* is equal to zero.

10 Appendix Table A3 shows our replication results are similar to DGL when using their other event windows of [–2, +2] and [prior rating, +1]. The latter has a maximum length of 2,100 days and is therefore likely contaminated by confounding events.

11 AGR also classifies firm scores into risk categories: *Very aggressive* (bottom 10%); *Aggressive* (next 25%); *Average* (next 50%); and *Conservative* (top 15%). We examine changes that move across categories, since the market may interpret them as more significant. The results (Appendix Table A4) show that the coefficients for downgrades are significant for two of the four regressions, whilst coefficients for upgrades are insignificant.

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APPENDIX

Table A1. Examples of institutional shareholders using ISS ratings to monitor boards

Letter from Groveland Capital to the board of Biglari Holdings (01/22/2015)	"We believe that good corporate governance practices can drive significant value to all shareholders, as well as accrue to the benefit of management over the long-term. In this regard, we are concerned that board practices of Biglari Holdings Inc. have ranked at the bottom of the possible range of the ISS Governance Quickscore, and that ISS has commented repeatedly on the outsized CEO compensation not being in alignment with company performance. So, we are proposing a corporate governance reform plan to the Board of Directors. Specifically, we believe the Board should implement the following actions as soon as possible."
Letter from Mustang Capital to the shareholders of Furmanite (03/23/2015)	"Over the last few years we have grown increasingly concerned and frustrated by what we believe to be the current Board of Directors' many failures. The Board has not held management accountable for failing to meet earnings and revenue guidance by an alarmingly large margin in each of the last two years. It has failed to reward stockholders for their patience during the multi-year "Orange Way" turnaround. It failed to establish an effective incentive plan. It failed to have a management succession plan in place. And it has failed to improve egregious governance and compensation practices. We believe that these factors have caused Furmanite to persistently underperform its only publicly traded peer, Team, Inc.…In its 2014 report, ISS gave Furmanite a governance Quickscore of 9 overall and 10 in its shareholder rights category, indicating the highest levels of concern and governance risk. We feel ISS's lack of support for the current Board speaks volumes."
Letter from Lone Star Value to the shareholders of Enzo Biochem (12/22/2015)	"We believe change at Enzo is warranted and necessary as a result of:… Poor corporate governance and disregard for shareholder rights:…ISS has given Enzo a corporate governance Quickscore rating of 10, which is the worst possible corporate governance rating that a company can receive by ISS…In LSV's conversations with Enzo's CFO, Barry Weiner, in response to our call for Enzo to hold a shareholder vote to declassify the Board, Mr. Weiner responded that "shareholders don't understand the benefits of a classified board and that shareholders don't have enough information to make a fully informed decision"…Mr. Weiner's comments show a blatant lack of respect for shareholders and a paternalistic attitude. Furthermore, when asked about Enzo's extremely poor ISS score, Mr. Weiner exclaimed it was because "Enzo does not subscribe to or pay for ISS' services"…demonstrating the Company's flippancy toward its shareholder-unfriendly corporate governance policies."
Marathon Partners Calls for Change at OnDeck (Dow Jones Institutional News, 04/13/2017)	"Marathon Partners is also disappointed with OnDeck's corporate governance and executive compensation practices, as exemplified by ISS's Governance Quickscore of 10 - indicating the highest level of concern - at the 2016 Annual Meeting."

Table A2. Replication of DGL: descriptive statistics

This table reports descriptive statistics for the rating changes employed in our replication sample and for the DGL sample.

	Our sample				DGL sample			
	AGR	CGQ	GMI	TCL	AGR	CGQ	GMI	TCL
Mean	–0.13	0.12	0.04	–0.11	–0.13	0.15	0.04	–0.19
Standard deviation	11.22	6.45	2.51	1.19	11.02	7.70	2.43	1.19
10th percentile	–13.00	–3.70	–0.50	–1.00	–13.00	–4.29	–0.50	–1.00
25th percentile	–6.00	–1.20	–0.50	–1.00	–6.00	–1.30	–0.50	–1.00
50th percentile	1.00	–0.40	0.50	–1.00	1.00	–0.40	0.50	–1.00
75th percentile	6.00	0.30	0.50	1.00	6.00	0.42	0.50	1.00
90th percentile	13.00	3.26	1.00	1.00	13.00	4.57	1.00	1.00
Observations	53,608	45,602	2,961	3,927	Not reported	Not reported	Not reported	Not reported

Table A3. Replication of DGL: results for alternative event windows

This table replicates the analysis of DGL. We report regressions of CAR on *Rating change* which comprises positive values for upgrades and negative values for downgrades. We examine two additional windows around the announcement as in DGL: the 5-day window [–2, +2] and the window from the prior rating until the current one [prior rating, +1]. The sample period is 2002–2007. The sample employed is before exclusions in Table 2. Standard errors are clustered by event date. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Our analysis				DGL analysis			
	AGR	CGQ	GMI	TCL	AGR	CGQ	GMI	TCL
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DepVar: CAR market-adjusted [–2, +2]	0.0037	0.0029	–0.0055	0.3064***	0.0048	0.0050	–0.0150	0.3328***
	(0.0028)	(0.0063)	(0.0124)	(0.1146)	(0.0032)	(0.0038)	(0.0114)	(0.1190)
DepVar: CAR size-adjusted [–2, +2]	0.0037	0.0029	0.0077	0.2634***	0.0044	0.0051	0.0003	0.3173***
	(0.0028)	(0.0055)	(0.0205)	(0.0962)	(0.0032)	(0.0042)	(0.0126)	(0.1096)
DepVar: CAR market-adjusted [prior rating, +1]	0.0166	–0.0118	0.0868	–0.1978	0.0287	–0.0182	–0.0910	–0.3846
	(0.0121)	(0.0112)	(0.1315)	(0.4966)	(0.0154)	(0.0108)	(0.1118)	(0.7423)
DepVar: CAR size-adjusted [prior rating, +1]	0.0188	–0.0075	–0.1174	–0.8061	0.0307**	–0.0013	–0.0644	0.1303
	(0.0118)	(0.0355)	(0.1330)	(0.6010)	(0.0144)	(0.0110)	(0.0983)	(0.5173)
Event dates	724	19	8	195	668	18	8	206
Observations	52,927	45,476	2,961	3,927	Not reported	Not reported	Not reported	Not reported

Table A4. Replication of DGL: AGR upgrades and downgrades by risk category

This table reports regressions of CAR for the [–1, +1] window around rating change announcements on *Upgrade* for the upgrade sample and on *Downgrade* for the downgrade sample. The sample of ratings employed is after exclusions in Table 2. We select only AGR changes that cause a change from one AGR risk category to another. The four categories are: *Very Aggressive* (bottom 10%), *Aggressive* (next 25%), *Average* (next 50%) and *Conservative* (top 15%). Standard errors are clustered by event date and firm. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades	Downgrades
	(1)	(2)
DepVar: CAR market-adjusted	0.0241	–0.0179
	(0.0263)	(0.0115)
DepVar: CAR size-adjusted	0.0210	–0.0138
	(0.0238)	(0.0119)
DepVar: CAR market-model	0.0177	–0.0209**
	(0.0247)	(0.0106)
DepVar: CAR Fama-French-Carhart	0.0069	–0.0213*
	(0.0241)	(0.0120)
Event dates	43	45
Observations	584	639

Table A5. ISS downgrades, CAR, and closeness to proxy season

This table reports CAR for the [–1, +1] window around ISS downgrade announcements. CAR is estimated using the market-model for 2005–2016. Results are reported according to whether the downgrade occurs in the quarter prior to proxy season, or prior to this quarter but since the last proxy season. The sample employed is after exclusions described in Table 2. The t-statistics in Panel A account for event-induced changes in volatility and cross-sectional correlation in abnormal returns (Kolari and Pynnönen, 2010). The generalized sign test follows Cowan (1992). Panel B presents results from a regression of CAR on *Downgrade*. Standard errors in Panel B are clustered by event date and firm. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	>1 quarter before the proxy season				≤ 1 quarter before the proxy season			
Panel A: Univariate analysis								
Downgrades	All	≥1	>1	>2	All	≥1	>1	>2
Mean CAR	0.0733	–0.2894**	–0.6697***	–1.1235***	0.2687	–0.1095	–0.9048**	–1.3035**
t-test	(0.0306)	(–2.3635)	(–2.6309)	(–2.6206)	(0.2628)	(–0.8469)	(–2.2635)	(–2.0804)
Median CAR	–0.1234	–0.2418**	–0.4066**	–0.6830***	–0.1591	–0.2760	–0.6270*	–1.0539**
Generalized sign test	(0.3490)	(–1.9890)	(–2.4280)	(–3.1640)	(–0.3510)	(–1.1750)	(–1.8310)	(–2.0000)
Event dates	68	60	57	42	61	39	26	13
Observations	10,122	1,471	638	308	3,310	304	99	32
Panel B: Regression analysis								
Downgrades	All	All	≥1	≥1	All	All	≥1	≥1
DepVar: CAR	–0.3598***	–0.4220***	–0.4392**	–0.3844***	–0.3395	–0.4639*	–0.3800	–0.4217
	(0.1280)	(0.1531)	(0.1777)	(0.1471)	(0.2252)	(0.2748)	(0.2914)	(0.2879)
Calendar year FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.0016	0.0118	0.0088	0.0678	0.0009	0.0539	0.0065	0.2253
Event dates	68	68	60	60	61	61	39	39
Observations	10,122	10,122	1,471	1,471	3,310	3,310	304	304

Table A6. ISS rating changes, proxy recommendations, and voting outcomes

This table analyses the relationship between ISS rating changes and subsequent proxy recommendations and voting outcomes. Panel A reports logit regressions where the dependent variable equals one if ISS recommends in favor of a management proposal. Panel B reports Tobit regressions (with bounds at zero and one) where the dependent variable is the numbers of votes for a management proposal divided by the sum of votes for, against, and abstentions. The independent variable is *Upgrade* for the upgrade sample and *Downgrade* for the downgrade sample. Standard errors are clustered by firm. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades	Downgrades
	(1)	(2)
Panel A: Dependent variable: proxy recommendation in favor of management = 1, 0 otherwise		
Upgrade	0.1737***	
	(0.0389)	
Downgrade		–0.0626**
		(0.0288)
Marginal effect of rating change	0.0126	–0.0065
Observations	36,133	30,235
Panel B: Dependent variable: % of votes for management proposal		
Upgrade	0.0021***	
	(0.0004)	
Downgrade		–0.0035***
		(0.0010)
Observations	35,283	29,605

Table A7. ISS rating changes and CAR: Brown and Warner (1980) standard errors and feasible generalized least squares

This table reports CAR for the [–1, +1] window around ISS rating change announcements. CAR is estimated using the market-model. The sample period is 2005–2016. The sample employed is after exclusions described in Table 2. The t-statistics in Panel A are calculated using the crude dependence adjustment test of Brown and Warner (1980) which estimates the standard deviation of CAR from the time series of average abnormal returns in the estimation period (–270, –21). Panel B presents results from a regression of CAR on *Upgrade* for the upgrade sample, and on *Downgrade* for the downgrade sample. Standard errors in Panel B are estimated using feasible generalised least squares which accounts for contemporaneous cross-correlations. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades				Downgrades			
Panel A: Univariate analysis								
	All	≥1	>1	>2	All	≥1	>1	>2
Mean CAR	0.0109	–0.0219	0.0224	–0.0400	0.1215	–0.2586	–0.7013**	–1.1405**
t-test	(0.1700)	(–0.0430)	(0.1130)	(–0.1490)	(0.7650)	(–1.0420)	(–2.0830)	(–2.1550)
# Event dates	68	65	64	59	69	62	59	44
# Obs.	5,479	2,206	1,325	581	13,432	1,775	737	340
Panel B: Regression analysis								
	All	All	≥1	≥1	All	All	≥1	≥1
DepVar: CAR	0.0012	0.0208	0.0376	0.0356	–0.3659***	–0.4708***	–0.4334***	–0.3778***
	(0.0505)	(0.0550)	(0.0806)	(0.0862)	(0.0651)	(0.0795)	(0.1318)	(0.1455)
Calendar year FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.0000	0.0193	0.0001	0.0455	0.0022	0.0149	0.0073	0.0573
Event dates	68	68	65	65	69	69	62	62
Observations	5,479	5,479	2,206	2,206	13,432	13,432	1,775	1,775

Table A8. ISS downgrades and CAR during proxy season

This table reports CAR for the [–1, +1] window around ISS downgrade announcements made during the proxy season. CAR is estimated using the market-model for 2005–2016. The sample employed is after exclusions (except the proxy season exclusion) described in Table 2. The t-statistics in Panel A account for event-induced changes in volatility and cross-sectional correlation in abnormal returns (Kolari and Pynnönen, 2010). The generalized sign test follows Cowan (1992). Panel B presents results from a regression of CAR on *Downgrade*. Standard errors in Panel B are clustered by event date and firm. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Univariate analysis

	All	≥1	>1	>2
Mean CAR	0.5732	0.1322	0.3605	0.3430
t-test	(1.0157)	(–0.3386)	(0.4184)	(–0.2843)
Median CAR	0.0237*	–0.3127	–0.0871	–0.1872
Generalized sign test	(1.7200)	(–1.0150)	(0.3670)	(0.1230)
Event dates	61	49	42	33
Observations	1,146	392	235	111

Panel B: Regression analysis

	All	All	≥1	≥1
DepVar: CAR	–0.1943	–0.1300	0.1048	–0.0511
	(0.1878)	(0.2314)	(0.3204)	(0.3361)
Calendar year FE	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes
R^2	0.0016	0.0932	0.0008	0.1640
Event dates	61	61	49	49
Observations	1,146	1,146	392	392

Table A9. ISS rating changes and CAR including proxy season observations

This table reports CAR for the [–1, +1] window around ISS rating change announcements. CAR is estimated using the market-model. The sample period is 2005–2016. The sample employed is after exclusions (except the proxy season) described in Table 2. The t-statistics in Panel A account for event-induced changes in volatility and cross-sectional correlation in abnormal returns (Kolari and Pynnönen, 2010). The generalized sign test follows Cowan (1992). Panel B presents results from a regression of CAR on *Upgrade* for the upgrade sample, and on *Downgrade* for the downgrade sample. Standard errors in Panel B are clustered by event date and firm. Industry fixed effects are based on Fama-French 48 industry classification. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades				Downgrades			
Panel A: Univariate analysis								
	All	≥1	>1	>2	All	≥1	>1	>2
Mean CAR	0.0605	0.0576	0.1433	0.1416	0.1570	–0.1879**	–0.4446***	–0.7754***
t-test	(–0.1037)	(–1.0584)	(–0.1351)	(–0.1256)	(0.1980)	(–2.0769)	(–2.7001)	(–3.0138)
Median CAR	–0.1254	–0.1065	–0.0970	–0.0585	–0.1212	–0.2649**	–0.3951**	–0.5588***
Generalized sign test	(0.2320)	(0.0310)	(0.5350)	(0.7560)	(0.5830)	(–2.3470)	(–2.5550)	(–3.1750)
Event dates	68	65	65	61	69	63	61	50
Observations	6,157	2,604	1,622	730	14,578	2,167	972	451
Panel B: Regression analysis								
	All	All	≥1	≥1	All	All	≥1	≥1
DepVar: CAR	0.0263	0.0564	0.0670	0.0431	–0.2867***	–0.3377***	–0.2914*	–0.2768***
	(0.0768)	(0.0420)	(0.0689)	(0.0692)	(0.0965)	(0.1151)	(0.1621)	(0.0971)
Calendar year FE	No	Yes	No	Yes	No	Yes	No	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.0000	0.0112	0.0004	0.0355	0.0011	0.0100	0.0043	0.0234
Event dates	68	68	65	65	69	69	63	63
Observations	6,157	6,157	2,604	2,604	14,578	14,578	2,167	2,167

Table A10. ISS rating changes and CAR: robustness tests

This table reports regressions of CAR for the [–1, +1] window around rating change announcements on *Upgrade* for the upgrade sample and on *Downgrade* for the downgrade sample. CAR is estimated using the market-model. The sample period is 2005–2016. Panels (A)-(I) represent the following robustness tests: (A) exclusion decisions in Table 2; (B) event windows; (C) benchmark models; (D) winsorization of CAR; (E) exclusion of the financial crisis (August 2008–March 2009); (F) inclusion of firm fixed effects; (G) separation of CGQ index and QS; (H) replacement of CGQ Index by CGQ Industry (i.e., results reported for changes in CGQ Industry and QS); (I) exclusion of CGQ Index changes announced after February 2010. Standard errors are clustered by event date and firm. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Upgrades				Downgrades			
	Upgrade coefficient		# Obs.	R^2	Downgrade coefficient		# Obs.	R^2
Panel A: Exclusion								
All rating changes before exclusions	0.0166	(0.0476)	23,465	0.0000	–0.1677**	(0.0669)	54,675	0.0005
All rating changes less M&A	0.0053	(0.0478)	22,322	0.0000	–0.1715**	(0.0676)	52,144	0.0005
All rating changes less earnings	0.0083	(0.0484)	22,548	0.0000	–0.1795***	(0.0686)	51,580	0.0006
All rating changes less dividends	0.0114	(0.0527)	20,628	0.0000	–0.1827**	(0.0735)	49,275	0.0005
All rating changes less analyst recommendations	–0.0117	(0.0506)	17,203	0.0000	–0.1914***	(0.0684)	40,448	0.0006
All rating changes less analyst forecasts	0.0352	(0.0772)	10,935	0.0000	–0.2231***	(0.0794)	27,616	0.0005
All rating changes less changes in credit ratings	0.0164	(0.0482)	23,354	0.0000	–0.1697**	(0.0663)	54,397	0.0005
All rating changes less management changes	0.0172	(0.0465)	22,691	0.0000	–0.1670**	(0.0674)	53,199	0.0005
All rating changes less board changes	0.0219	(0.0479)	22,533	0.0000	–0.1598**	(0.0685)	52,626	0.0005
All rating changes less stock price < $1	0.0252	(0.0446)	22,910	0.0000	–0.1655**	(0.0659)	53,374	0.0006
All rating changes less rating change in prior 30 days	0.0055	(0.0527)	17,829	0.0000	–0.2029***	(0.0767)	38,020	0.0008
All rating changes less proxy seasons	–0.0143	(0.0605)	18,729	0.0000	–0.2152**	(0.0843)	48,724	0.0007
All rating changes after exclusions except M&A	0.0005	(0.0867)	5,624	0.0000	–0.3679***	(0.1199)	13,781	0.0016
All rating changes after exclusions except earnings	0.0008	(0.0878)	5,528	0.0000	–0.3595***	(0.1186)	13,563	0.0015
All rating changes after exclusions except dividends	–0.0230	(0.0836)	5,891	0.0000	–0.3553***	(0.1099)	14,285	0.0015
All rating changes after exclusions except analyst recommendations	–0.0397	(0.0886)	5,831	0.0001	–0.3480***	(0.1129)	14,352	0.0015
All rating changes after exclusions except analyst forecasts	–0.0219	(0.0679)	8,134	0.0000	–0.2993***	(0.1101)	19,364	0.0014
All rating changes after exclusions except changes in credit ratings	–0.0006	(0.0874)	5,486	0.0000	–0.3565***	(0.1182)	13,465	0.0015
All rating changes after exclusions except management changes	0.0109	(0.0894)	5,585	0.0000	–0.3692***	(0.1177)	13,617	0.0016
All rating changes after exclusions except board changes	0.0003	(0.0878)	5,599	0.0000	–0.3699***	(0.1194)	13,720	0.0016
All rating changes after exclusions except stock price < $1	0.0383	(0.1060)	5,802	0.0000	–0.3470***	(0.1178)	14,199	0.0012

All rating changes after exclusions except rating change in prior 30 days	0.0243	(0.0779)	7,459	0.0000	–0.3119***	(0.0998)	20,020	0.0010
All rating changes after exclusions except proxy seasons	0.0263	(0.0768)	6,157	0.0000	–0.2867***	(0.0965)	14,578	0.0011
All rating changes after exclusions	0.0012	(0.0876)	5,479	0.0000	–0.3659***	(0.1193)	13,432	0.0016
Panel B: Event window								
[–2, +2]	0.0134	(0.1140)	5,479	0.0000	–0.5574***	(0.1429)	13,432	0.0023
Panel C: Benchmark models for 3-day CAR								
Market-model	0.0012	(0.0876)	5,479	0.0000	–0.3659***	(0.1193)	13,432	0.0016
Market-adjusted	–0.0070	(0.0796)	5,479	0.0000	–0.3492***	(0.1321)	13,432	0.0014
Size-adjusted	0.0233	(0.0717)	5,479	0.0000	–0.2497**	(0.1100)	13,432	0.0007
Fama-French-Carhart four-factor model	0.0094	(0.0692)	5,479	0.0000	–0.2770**	(0.1103)	13,432	0.0009
Panel D: Winsorization of 3-day CAR								
Market-model	0.0120	(0.0778)	5,479	0.0000	–0.3210***	(0.0923)	13,432	0.0019
Market-adjusted	0.0042	(0.0713)	5,479	0.0000	–0.3141***	(0.1090)	13,432	0.0017
Size-adjusted	0.0507	(0.0633)	5,479	0.0001	–0.2050**	(0.0956)	13,432	0.0008
Fama-French-Carhart four-factor model	0.0261	(0.0641)	5,479	0.0000	–0.2094***	(0.0808)	13,432	0.0011
Panel E: Excluding the financial crisis (August 2008–March 2009)								
All rating changes before exclusions	–0.0153	(0.0379)	21,691	0.0000	–0.1512***	(0.0625)	52,273	0.0005
All rating changes after exclusions	–0.0088	(0.0570)	4,846	0.0000	–0.2952***	(0.1152)	12,851	0.0012
Panel F: Firm fixed effects								
All rating changes before exclusions	0.0558	(0.0350)	23,465	0.0055	–0.0886***	(0.0424)	54,675	0.0040
All rating changes after exclusions	0.0076	(0.0860)	5,479	0.0000	–0.4973***	(0.0792)	13,432	0.0016
Panel G: Results for CGQ Index and QS separately								
CGQ Index changes after exclusions	0.0581	(0.1060)	4,118	0.0001	–0.4576**	(0.1829)	12,072	0.0012
QS changes after exclusions	–0.0403	(0.0746)	1,361	0.0001	–0.4211***	(0.1236)	1,360	0.0098
Panel H: CGQ Industry rather than CGQ Index								
All rating changes before exclusions	–0.0154	(0.0564)	23,465	0.0000	–0.1649***	(0.0772)	54,675	0.0004
All rating changes after exclusions	0.0245	(0.1003)	5,479	0.0000	–0.3496***	(0.1204)	13,432	0.0012
Panel I: Excluding CGQ changes after February 2010								
All rating changes before exclusions	0.0024	(0.0497)	22,511	0.0000	–0.1781***	(0.0673)	52,839	0.0006
All rating changes after exclusions	–0.0157	(0.0893)	5,253	0.0000	–0.4048***	(0.1175)	12,975	0.0019

Table A11. ISS downgrades in governance sub-categories and CAR

This table reports CAR for the [–1, +1] window around ISS announcements of downgrades in the sub-categories of *Compensation*, *Board*, *Shareholder rights*, and *Audit*. Panel A reports results for the GRID rating (2010–2012), which does not report an overall rating but instead these four separate sub-categories. We exclude GRID announcements where there is an upgrade in any of the four sub-categories, and make the same exclusions as in Table 2. Panels B and C report the analogous results for the sub-categories of CGQ and QS respectively. CAR is estimated using the market-model. The t-statistics account for event-induced changes in volatility and cross-sectional correlation in abnormal returns (Kolari and Pynnönen, 2010). The generalized sign test follows Cowan (1992). ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Compensation	Board	Shareholder rights	Audit
	(1)	(2)	(3)	(4)
Panel A: GRID				
Mean CAR	–0.8487***	–0.0891	–0.1352	–0.1706
t-test	(–3.5695)	(–1.0502)	(–0.9229)	(–0.3348)
Median CAR	–0.6110***	–0.7139***	–0.5195	–0.7762
Generalized sign test	(–3.8420)	(–2.6590)	(–1.2800)	(–1.1540)
Event dates	187	95	76	60
Observations	619	252	239	111
Panel B: CGQ				
Mean CAR	–0.9686**	–0.2686	–0.8283*	0.2529
t-test	(–1.9762)	(–0.7373)	(–1.8130)	(0.1636)
Median CAR	–0.6967**	–0.1915	–0.6058	–0.3089
Generalized sign test	(–2.4330)	(–0.1540)	(–0.8980)	(–0.0650)
Event dates	21	22	23	19
Observations	221	213	232	151
Panel C: QS				
Mean CAR	–0.3328***	–0.3157*	–0.7285*	–0.4442
t-test	(–2.5965)	(–1.8328)	(–1.9207)	(–1.5705)
Median CAR	–0.3565*	–0.2704	–0.3885*	–0.2182
Generalized sign test	(–1.8350)	(–1.3930)	(–1.9000)	(–0.4560)
Event dates	29	28	26	23
Observations	613	429	159	185