**WEB APPENDIX**

**“CAN ADVERTISING INVESTMENTS COUNTER THE NEGATIVE IMPACT OF SHAREHOLDER COMPLAINTS ON FIRM VALUE?”**

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# WEB APPENDIX A: Shareholder Complaint Submission PROCESS

Shareholder complaints are submitted under Security and Exchange Commission’s (SEC) regulation 14a-8, which permits every shareholder owning more than $2,000 in market value or 1% of the firm’s outstanding total amount of shares for at least one year to file a complaint (Gillan and Starks 2007). The costs for filing and disseminating the complaint are borne by the firm. The complaint itself includes a 500-word statement of the shareholder’s issue of concern. Once a complaint is submitted, there are three possible outcomes: (i) the complaint is omitted by the firm, (ii) the complaint is withdrawn by the shareholder, or (iii) the complaint is put up for vote at the firm’s annual general meeting (AGM).

If the filed complaint is not in line with SEC regulations, the firm can petition the SEC to omit it from the voting process. For instance, complaints relating to an issue raised exactly the same way in another complaint, or complaints relating to ordinary business operations fall under this exemption. If there are no legal reasons for the firm to exclude a complaint from the voting agenda, and the management feels its own interest or reputation is adversely affected, it can invite the complaining shareholder for private negotiations. Usually shareholders withdraw their initial complaints if they have successfully engaged in private negotiations with the firm’s management (Chidambaran and Woidtke 1999). This does not necessarily imply that the management promises to resolve the issue to the shareholder’s satisfaction, but at least signals credible progress towards reaching a compromise. Finally, the complaint may be put up for vote at the AGM. The complaint is then put into the proxy statement and distributed among the shareholders prior to the AGM, at the earliest 50 calendar days before the AGM. At the AGM, shareholders are asked to vote on the issue. Under U.S. legislation, voting results of shareholder complaints are nonbinding and only of precatory character. Given most of the issues that shareholders complain about remain unchanged, many studies conclude that complaints are “disruptive, opportunistic, misguided, and at best […] ineffective” (Becht et al. 2010, p. 3094). See Table A1 for examples of submitted shareholder complaints in our sample.

Table A1: Examples of Shareholder Complaints

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Company** | **Content of the complaint** | **Submitting shareholder** |
| 2005 | Delta Airlines | Complaint about discrimination of minority employees | Pension fund |
| 2005 | Dow Chemical | Complaint about missing reporting on gene-engineered plants | Church fund |
| 2006 | Chevron Corporation | Complaint about disclosing too little information on environmental liabilities | SRI fund |
| 2009 | Dentsply International | Complaint about potential toxicity of product formulation | Mutual fund |
| 2011 | Jack in the Box | Complaint about animal slaughter methods | Special interest group |
| 2011 | Oracle | Complaint about stock retention/holding period | Individual shareholder |
| 2015 | Microsoft | Complaint about executive compensation | Mutual fund |

# WEB APPENDIX B: Qualitative interviews

We conducted a qualitative study among managers of publicly-listed firms to explore their perceptions of shareholder complaints and the extent to which they consider advertising investments a viable response. Following extant work (e.g., Xiong and Bharadwaj 2011), the goal of this study was to obtain first-hand insights from domain experts in order to supplement established theory in the course of our hypothesis development. With key concepts and potential relationships based on the literature, we relied on a series of semi-structured interviews with open-ended, non-leading questions (Ayres 2012) that allowed managers to elaborate as they saw fit. This enabled us to capture their perspectives as accurately as possible, unconfined to a fixed range of response options (as compared to structured interviews). With permission, we created an audio recording of each interview which we transcribed subsequently. In this way, we could keep the conversations naturally flowing during the interviews as well as ensure to accurately capture and quote participants’ responses.

We recruited managers through the alumni networks of the Executive MBA programs of the authors’ universities. As eligibility criteria, we required participants to be sufficiently senior and have either decision power or influence over a possible advertising investment response. We also worked to ensure sufficient variation in participants’ tenure duration and industry backgrounds. The final sample consisted of eight international executives (either CFO, Chief Financial Controller, VP of Public Relations, or Head of Investor Relations) from eight publicly-listed firms. Each manager had between ten and twenty-five years of working experience at a publicly-listed firm, and had been in his or her current role between one and five years. The industries in which these managers operated included financial services, dairy and foods, automatization and industrial components, engineering, and telecommunications. We recruited and interviewed managers sequentially, such that we stopped recruiting once theoretical saturation occurred and no new information was revealed in the interviews. Notably, our sample size of eight executives from eight firms is well in line with extant studies (e.g., Kähr et al. 2016; Xiong and Bharadwaj 2011) and consistent with Guest, Bunce, and Johnson’s (2006) observation that key themes are often already evident within six interviews. Each interview, conducted either in person or by phone, lasted between thirty and sixty minutes. While the insights we report from these interviews are specific quotes, they reflect general insights expressed by multiple managers.

Two main insights emerged from this exploratory study. First, managers are reluctant to readily implement changes suggested in shareholder complaints, but rather view complaints within the broader context of their firm’s strategy. Indeed, a CFO stated that “when investors challenge the strategic direction of the business, we tend and just try to reiterate and justify our strategy, rather than directly addressing any proposed changes.” A potential reason came from another CFO who remarked that “shareholders follow your firm from a distance and are not involved in the daily development of your strategy and the considerations involved.” Moreover, according to a Head of Investor Relations, in response to shareholder complaints, his firm tends to “double-down on the strategy, reiterating why they think it is a good strategy, focusing on that justification process.” Altogether, the tenor of our interviews corroborates extant findings that managers are typically hesitant to implement changes requested in shareholder complaints (Gillan and Starks 2007).

The second key learning from this study was that, as an alternative to implementing suggested changes in response to shareholder complaints, managers instead seek to engage in a dialogue and display transparency towards the investor community and resort to marketing tools to establish confidence in the firm’s existing strategy and reputation. In particular, one Head of Investor Relations declared that “we would consider advertising [to buffer the negative influence created by shareholder complaints], depending on the specific circumstances and significance of the shareholder complaint.” Similarly, a CFO noted that “advertising could address concerns by some people who think we are not a good company by letting them and the broader market know we are a good company.” In Table B1, we report exemplary views of managers regarding changes in advertising investments as a viable response to shareholder complaints. In sum, the qualitative interviews of this study provided us with an important form of “triangulation” to help develop our hypotheses based on joint insights from extant theory and managerial practice (Morgan, Anderson, and Mittal 2005).

**Table B1: Exemplary Views of Managers Regarding Advertising as a Response to Shareholder Complaints**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **In favor of decreasing advertising investments** | **In favor of no change in advertising investments** | **In favor of increasing advertising investments** |
| **Manager has experienced shareholder complaints before** | -none- | “[Rather] double-downing on the strategy, try to reiterate why we think it is a good strategy and that justification process.”  —Chief Financial Controller, foods industry | “I absolutely think increasing advertising spending and therefore increasing firm value is a worthwhile option.”  —CFO and Head of Investor Relations, financial services industry  “It makes sense; anything that impacts the wider community and really exposure to the wider community is advertising.”  —Chief Financial Controller, foods industry  “Advertising could address concerns by some people who think we are not a good company by letting them and the broader market know we are a good company.”  —Chief Financial Controller, foods industry  “If activist shareholder uses wrong arguments or proposes things that are damaging to the firm, for example selling your crown jewels, or that undermine your long-term strategy, it is legitimate to use advertising.”  —CFO, engineering industry |
| **Manager has not experienced shareholder complaints before** | -none- | “Advertising may or may not be the right instrument to deal with a specific issues (…) [Rather:] Active communication of own strategy and how that would create more value than activist proposals.”  —CFO, foods industry  “Conceptually difficult/potentially ineffective. (…) Plus, I believe a serious complaint requires a factual response and more than a few punchlines.”  —Head of Investor Relations, financial services industry | “We would of course consider advertising [to buffer the negative influence created by shareholder proposals], depending on the specific circumstances and significance of the shareholder proposal.”  —Head of Investor Relations, telecommunications industry  “Putting more money into the advertising and getting a more positive publicity about your company becomes a really strong way to get them kind of off that piece [the original issue raised in the complaint].”  —VP of Public Relations, financial services industry |

# WEB APPENDIX C: industry descriptive STATISTICS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **SIC2 industry** | **Number of firms** | **Number of shareholder complaints** |  | **SIC2 industry** | **Number of firms** | **Number of shareholder complaints** |
| 13 | 8 | 102 |  | 37 | 31 | 200 |
| 14 | 3 | 10 |  | 38 | 80 | 58 |
| 15 | 3 | 0 |  | 39 | 24 | 99 |
| 16 | 3 | 2 |  | 47 | 2 | 4 |
| 20 | 41 | 327 |  | 48 | 22 | 368 |
| 21 | 5 | 147 |  | 50 | 4 | 10 |
| 22 | 2 | 0 |  | 51 | 5 | 23 |
| 23 | 4 | 3 |  | 58 | 2 | 83 |
| 24 | 6 | 5 |  | 59 | 4 | 31 |
| 25 | 4 | 4 |  | 60 | 2 | 1 |
| 26 | 14 | 100 |  | 61 | 5 | 175 |
| 27 | 3 | 27 |  | 62 | 12 | 12 |
| 28 | 110 | 868 |  | 65 | 4 | 2 |
| 30 | 11 | 43 |  | 67 | 10 | 4 |
| 31 | 6 | 5 |  | 73 | 95 | 462 |
| 32 | 3 | 10 |  | 78 | 4 | 22 |
| 33 | 6 | 2 |  | 79 | 2 | 1 |
| 34 | 22 | 23 |  | 87 | 2 | 3 |
| 35 | 120 | 341 |  | 99 | 12 | 3 |
| 36 | 135 | 316 |  |  |  |  |

# WEB APPENDIX D: Robustness Checks and ALTERNATIVE MODELING CHOICES

**D1. System of Equations Modeling**

While not part of our conceptual framework, we add Equation D1 below to our system of equations to account for a possible feedback loop in that advertising investments could increase the number of future shareholder complaints the firm receives. For instance, the increased visibility associated with advertising investments could make the firm a more prominent target for future complaints. Likewise, shareholders may be encouraged to spend more time analyzing the firm and thereby become aware of unsatisfying strategies, leading to an increase in future shareholder complaints.

(D1) SHCi,t = β0 + β1UADVi,t-1 + Ki,t + 1tYRt + αi + i,

Following Bauer, Moers, and Viehs (2015), the vector of control variables Ki,t includes firm size (total assets, retrieved from Compustat) and firm performance variables (market-to-book ratio, dividend yield, profitability, all retrieved from Compustat), a firm governance variable (G-index score, retrieved from Andrew Metrick’s website), and an industry control (industry concentration, as measured by the Herfindahl-Hirschman Index (HHI) and retrieved from Compustat). We do not find that advertising investments influence future shareholder complaints (β = -.001, n.s). Next, we estimate this model simultaneously with Equations 2 and 3. We lose more than two thirds of the total observations in this estimation but replicate that shareholder complaints drive advertising investments. Results for the salience moderators and the effectiveness of an advertising investment response point into the same direction as reported in Tables 2 and 3 but are statistically weaker. We also account for the reverse causality concern between shareholder complaints and advertising investments using the residual approach that Roberts and Dowling (2002) recommend. We estimate Equation D1 and use the estimated residuals as our measure of shareholder complaints in estimating Equations 2 and 3. Again, using only a third of the observations, we replicate results for the advertising investment response but results for the salience moderators and effectiveness of an advertising investment response are statistically weaker than reported in Tables 2 and 3.

**D2. Advertising Investment Robustness Checks**

*Accounting for industry effects in estimating unexpected advertising investments.* Following Kurt and Hulland (2013), we calculate unexpected advertising investments as deviations from industry forecasts using a cross-sectional model. To do so, we first estimate Equation D2 for each year and every two-digit SIC industry that comprises at least ten firms:

(D2) ADVi,t = β0 + β1(1/TAi,t-1) + β2(SALEi,t-1/TAi,t-1) + εi,t,

where ADV is unscaled advertising investments, TA is firm assets, and SALE is firm sales for firm i in year t. Using the estimated beta coefficients from each industry-year group (, , ) we fit expected firm advertising investment levels as follows:

(D3) = + (1/TAi,t-1) + (SALEi,t-1/TAi,t-1).

Unexpected advertising investment levels, UADVi,t, are then calculated as the difference between actual and expected advertising investments. We find results pointing into the same direction but showing up partly less statistically significant than the results in our main analyses.

*Using Compustat advertising investments in estimating unexpected advertising investments.* For reasons of comparability to previous literature, we use Compustat’s advertising data instead of Kantar Media’s advertising data to calculate unexpected advertising investments. 74% of firms in Compustat and 62% of firms in our sample do not disclose their advertising investments and are hence not covered by Compustat, reducing our sample size substantially. We replicate partial results of our main analyses (see Table D3) but fail to detect the effectiveness of an advertising investment response in protecting firm value (see Table D4). We obtain marginally significant results for the advertising investment effectiveness if we set missing advertising expenses to 0 (Kashmiri and Mahajan 2017).

*Using an advertising stock measure in estimating unexpected advertising investments.* Given advertising investment effects might carry over to subsequent periods, we employ a measure of advertising stock, which is the cumulative value of a firm’s advertising in a given period that will decay over time. Following Dinner, van Heerde, and Neslin (2014), we model advertising stock as ADV\_Si,t = λADV\_Si,t-1 + (1-λ)ADVi,t, where ADVi,t is the natural logarithm of advertising of firm i in year t. To estimate the decay parameter λ, we use a bivariate grid search maximizing model fit, where λ varies in increments of .05. The estimated carry-over parameter of .67 compares well to other advertising investment research (e.g., Dinner et al. 2014). Replacing the unexpected advertising investment variable in Equations 2 and 3 with the advertising stock variable replicates our findings.

**D3. Shareholder Complaints Robustness Checks**

*Shareholder complaints sample construction.* Since many firms receive zero or very few shareholder complaints, we re-estimate Equation 2 including only firms that experience at least one shareholder complaint during the sample period. We confirm the findings in Table 2. We further re-estimate the model and include only those shareholder complaints that were eventually voted on (i.e., excluding omitted and withdrawn complaints). Results are reported in Tables D5 and D6.

*Shareholder complaints modeling.* As a further robustness test, we replace the level of shareholder complaints with a dummy variable that indicates whether or not a firm received any shareholder complaints in the previous period and confirm our results in Table 2, although the coefficient estimate of complaint nonfinancial type is marginally insignificant. We also test for curvilinear effects by adding this variable to Equation 2 and find the coefficient of the quadratic term of shareholder complaints to be negative, suggesting that the rate of increase in advertising investments becomes smaller with more shareholder complaints.

*Unexpected shareholder complaints.* We control for whether an advertising investment response is dependent on whether shareholder complaints were expected or not. First, we estimate Equation 2 using the unexpected number of shareholder complaints as a measure of shareholder complaints. We estimate a simple autoregressive fixed-effects panel model of yearly shareholder complaints (Bendig et al. 2018), and use the derived residuals as our measure of unexpected shareholder complaints. Results are marginally weaker for the moderators, but point into the same direction as reported in Table 2. Second, we include a dummy variable that indicates whether any of the complaints feature topics that had been submitted as complaints in previous periods. We assume that shareholder complaints are considered as more unexpected if the topics have not been complained about before. Estimating our models including this additional control does not alter our results, and we find the control variable to be insignificant.

*Number of shareholder complaints in the industry.* We also test whether the number of shareholder complaints submitted in a firm’s two-digit SIC industry confounds our results and include an additional variable measured as the log-transformed number of industry shareholder complaints. We find this variable to be insignificant in estimating Equation 2.

**D4. Unit of analysis**

We replicate our findings at even stronger statistical significance levels when we move to a quarterly level of analysis. Given the challenge of aligning annual shareholder complaint data with quarterly advertising investments and firm value data, we nevertheless focus on annual data in our main analyses.

**Table D1: Advertising Investment Response (Share of Voice)**

|  |  |
| --- | --- |
|  | **Advertising investments** |
|  | **(*UADV\_*)** |
|  |  |
| Shareholder complaints (*SHC*) | .0102\*\*\* |
|  | (.002) |
| Shareholder complaints (*SHC*) \* Institutional submitter (*INST*) | .0405\*\*\* |
|  | (.009) |
| Shareholder complaints (*SHC*) \* Nonfinancial type (*NONFIN*) | .0179\*\*\* |
|  | (.004) |
| Shareholder complaints (*SHC*) \* Topic media attention (*MEDIA*) | .0256\*\*\* |
|  | (.030) |
| Shareholder complaint institutional submitter (*INST*) | -.0306\*\*\* |
|  | (.007) |
| Shareholder complaint nonfinancial type (*NONFIN*) | -.0159\*\*\* |
|  | (.004) |
| Shareholder complaint topic media attention (*MEDIA*) | .0110\*\*\* |
|  | (.010) |
| Shareholder complaints excluded | -.0029\* |
|  | (.002) |
| Shareholder complaint voting support | -.0029\*\* |
|  | (.002) |
| Firm size | .0000\* |
|  | (.000) |
| Cash flows | .0010 |
|  | (.002) |
| Stock returns | -.0072 |
|  | (.007) |
| Sales growth | .0003 |
|  | (.005) |
| Financial leverage | .0000 |
|  | (.000) |
| Constant | .1222\*\*\* |
|  | (.020) |
|  |  |
| Observations | 4,428 |
| Adjusted R-squared | .060 |
| Model F-statistic | 8.42\*\*\* (26) |

*Notes*: UADV\_ measured as share of voice. Standard errors in parentheses. Predictors calculated at period t-1. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

**Table D2: Effectiveness of an Advertising Investment Response (Share of Voice)**

|  |  |
| --- | --- |
|  | **Tobin’s q** |
|  | **(*TQ*)** |
|  |  |
| Shareholder complaints (*SHC*) | -.0571\*\* |
|  | (.024) |
| Shareholder complaints (*SHC*) \* Advertising investments | .1038\* |
| (*UADV\_*) | (.060) |
| Advertising investments (*UADV\_*) | -7.4525 |
|  | (5.740) |
| Shareholder complaint institutional submitter (*INST*) | -.0035 |
|  | (.030) |
| Shareholder complaint nonfinancial type (*NONFIN*) | -.0056 |
|  | (.022) |
| Shareholder complaint topic media attention (*MEDIA*) | -.4999 |
|  | (.368) |
| Shareholder complaints excluded | .0377\* |
|  | (.021) |
| Shareholder complaint voting support | -.0003 |
|  | (.017) |
| Firm size | -.0605\*\* |
|  | (.029) |
| Profitability | .0502\*\*\* |
|  | (.009) |
| Sales growth | .0816\*\*\* |
|  | (.031) |
| Market share | .1088 |
|  | (.095) |
| Financial leverage | -.0001 |
|  | (.000) |
| Constant | -.0858 |
|  | (.671) |
|  |  |
| Observations | 4,372 |
| Adjusted R-squared | .214 |
| Model F-statistic | 28.36\*\*\* (22) |

*Notes*: UADV\_ measured as share of voice. Standard errors in parentheses. Shareholder complaints calculated at period t-1. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

**Table D3: Advertising Investment Response (Compustat Advertising)**

|  |  |  |
| --- | --- | --- |
|  | **(1)**  **Advertising investments** | **(2)**  **Advertising investments** |
|  | **(*UADV\_*)** | **(*UADV\_*)** |
|  |  |  |
| Shareholder complaints (*SHC*) | .4969\*\*\* | -.3934 |
|  | (.098) | (.531) |
| Shareholder complaints (*SHC*) \* Institutional |  | -.0826 |
| submitter (*INST*) |  | (.058) |
| Shareholder complaints (*SHC*) \* |  | .0855 |
| Nonfinancial type (*NONFIN*) |  | (.076) |
| Shareholder complaints (*SHC*) \* Topic media |  | -.1719\* |
| attention (*MEDIA*) |  | (.095) |
| Shareholder complaint institutional submitter |  | .0847\* |
| (*INST*) |  | (.045) |
| Shareholder complaint nonfinancial type |  | -.0955 |
| (*NONFIN*) |  | (.062) |
| Shareholder complaint topic media attention |  | .1228\*\*\* |
| (*MEDIA*) |  | (.038) |
| Shareholder complaints excluded | .2780\*\* | .2179 |
|  | (.139) | (.198) |
| Shareholder complaint voting support | -.0700 | -.1009 |
|  | (.106) | (.312) |
| Firm size | .0000\*\*\* | .0000 |
|  | (.000) | (.000) |
| Cash flows | .1961\*\*\* | .1954\*\* |
|  | (.031) | (.095) |
| Stock returns | .1026 | .0974\*\* |
|  | (.063) | (.047) |
| Sales growth | .0742 | .0779\*\* |
|  | (.050) | (.032) |
| Financial leverage | -.0009\*\* | -.0009 |
|  | (.000) | (.001) |
| Constant | 2.9820\*\*\* | 3.3722\*\*\* |
|  | (.123) | (.374) |
|  |  |  |
| Observations | 2,954 | 2,954 |
| Adjusted R-squared | .09 | .09 |
| Model F-statistic | 15.24(21)\*\*\* | 3.09(26)\*\*\* |

*Notes*: UADV\_ based on Compustat advertising. Standard errors in parentheses. Predictors calculated at

period t-1. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

**Table D4: Effectiveness of an Advertising Investment Response (Compustat Advertising)**

|  |  |
| --- | --- |
|  | **Tobin’s q** |
|  | **(*TQ*)** |
|  |  |
| Shareholder complaints (*SHC*) | -.1618\*\* |
|  | (.073) |
| Advertising investments (*UADV\_*) | -.0053\*\*\* |
|  | (.002) |
| Shareholder complaints (*SHC*) \* Advertising investments | .0006 |
| (*UADV\_*) | (.001) |
| Shareholder complaint institutional submitter (*INST*) | -.0895 |
|  | (.133) |
| Shareholder complaint nonfinancial type (*NONFIN*) | .0384 |
|  | (.095) |
| Shareholder complaint topic media attention (*MEDIA*) | -.0011 |
|  | (.001) |
| Shareholder complaints excluded | .0275 |
|  | (.085) |
| Shareholder complaint voting support | -.0464 |
|  | (.061) |
| Firm size | -.4415\*\*\* |
|  | (.049) |
| Profitability | .1198\*\*\* |
|  | (.022) |
| Sales growth | .3495\*\*\* |
|  | (.051) |
| Market share | .6811\*\* |
|  | (.273) |
| Financial leverage | .0001 |
|  | (.001) |
| Constant | 1.7575\*\*\* |
|  | (.138) |
|  |  |
| Observations | 2,954 |
| Adjusted R-squared | .123 |
| Model F-statistic | 22.84\*\*\* (22) |

*Notes*: UADV\_ based on Compustat advertising. Standard errors in parentheses. Shareholder

complaints calculated at period t-1. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

**Table D5: Advertising Investment Response (WITHOUT EXCLUDED Complaints)**

|  |  |
| --- | --- |
|  | **Advertising investments** |
|  | **(*UADV*)** |
|  |  |
| Shareholder complaints (*SHC\_*) | .0858\*\*\* |
|  | (.028) |
| Shareholder complaints (*SHC\_*) \* Institutional | .0022 |
| investor (*INST*) | (.003) |
| Shareholder complaints (*SHC\_*) \* Nonfinancial type | .0042 |
| (*NONFIN*) | (.003) |
| Shareholder complaints (*SHC\_*) \* Topic media | -.0002 |
| attention (*MEDIA\_*) | (.005) |
| Shareholder complaint institutional sponsor (*INST\_*) | -.0006 |
|  | (.001) |
| Shareholder complaint nonfinancial type (*NONFIN\_*) | -.0018 |
|  | (.002) |
| Shareholder complaints topic media attention (*MEDIA\_*) | -.0367\*\*\* |
|  | (.003) |
| Shareholder complaints excluded | -.0423\*\*\* |
|  | (.015) |
| Shareholder complaint voting support† | .0063 |
|  | (.013) |
| Firm size | .0000\*\* |
|  | (.000) |
| Cash flows | .0012 |
|  | (.001) |
| Profitability | .0012 |
|  | (.021) |
| Stock returns | -.0079 |
|  | (.007) |
| Sales growth | .0008 |
|  | (.005) |
| Financial leverage | -.0000 |
|  | (.000) |
| Constant | -.2551\*\*\* |
|  | (.019) |
|  |  |
| Observations | 4,428 |
| Adjusted R-squared | .158 |
| Model F-statistic | 27.08\*\*\* (26) |

*Notes*: SHC\_, INST\_, NONFIN\_, and MEDIA\_ based on shareholder complaints discussed at the AGM only. Coefficients scaled by 10-1 to improve readability. Standard errors in parentheses. Predictors calculated at period

t-1. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

**Table D6: Effectiveness of an Advertising Investment Response (WITHOUT EXCLUDED Complaints)**

|  |  |
| --- | --- |
|  | **Tobin’s q** |
|  | **(*TQ*)** |
|  |  |
| Shareholder complaints (*SHC\_)* | -.2427\*\*\* |
|  | (.070) |
| Advertising investments (*UADV*) | .0459\*\*\* |
|  | (.013) |
| Shareholder complaints (*SHC\_*) \* Advertising investments | .0032\* |
| (*UADV*) | (.002) |
| Shareholder complaint institutional submitter (*INST\_)* | .0802 |
|  | (.126) |
| Shareholder complaint nonfinancial type (*NONFIN\_)* | -.0172 |
|  | (.088) |
| Shareholder complaint topic media attention (*MEDIA\_)* | .0755\*\*\* |
|  | (.021) |
| Shareholder complaints excluded | .0119 |
|  | (.081) |
| Shareholder complaint voting support | -.0598 |
|  | (.062) |
| Firm size | -.4352\*\*\* |
|  | (.043) |
| Profitability | .1117\*\*\* |
|  | (.021) |
| Sales growth | .2693\*\*\* |
|  | (.045) |
| Market share | .5697\*\* |
|  | (.253) |
| Financial leverage | -.0002 |
|  | (.001) |
| Constant | 6.3128\*\*\* |
|  | (1.242) |
|  |  |
| Observations | 4,428 |
| Adjusted R-squared | .124 |
| Model F-statistic | 25.58\*\*\* (22) |

*Notes*: SHC\_, INST\_, NONFIN\_, and MEDIA\_ based on shareholder complaints discussed at the AGM

only, calculated at period t-1. Standard errors in parentheses. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

# WEB APPENDIX E: Categorizing Shareholder ComplaintS

**E1. Operationalizing Shareholder Complaint Institutional Submitter**

We operationalize *shareholder complaint institutional submitter* as the firm-year percentage of shareholder complaints submitted by institutional investors (i.e., public pension funds, mutual funds, endowments, and foundations).

*Example*: In 2015, Aetna Inc. received three shareholder complaints. One was submitted by a public pension fund, generating a shareholder complaint institutional submitter percentage value of .33 for this firm-year observation.

**E2. Operationalizing Shareholder Complaint Topic Media Attention**

*Shareholder complaint topic media attention* is the yearly media coverage (i.e., articles count) about the topic addressed in a given complaint as captured on LexisNexis (see Liu and Shankar 2015). We use the following procedure to arrive at our measure. First, we pull RiskMetrics’ summary description of each complaint’s topic. These descriptions are between three and nine words long (91% of the summaries have fewer than six words). We remove all filler words to identify the index terms used to describe the topic of the complaint and search LexisNexis for all newspaper articles that mention the respective index term by year, excluding duplications in the same newspaper outlet. If the number of hits exceeds LexisNexis’ hit count restriction, we repeat the analysis on a monthly level and sum up the monthly counts for the given year. We count the number of articles that LexisNexis ranks with a relevancy score of 60% or more. To control for scale effects, we normalize topic media coverage in a given year by the topic’s total media coverage over the sample period. In years in which the firm receives multiple shareholder complaints, we take the arithmetic mean across the topic media attention scores to arrive at our firm-year shareholder complaint media attention measure.

*Example*: Shareholder complaint description of “Reduce the firm’s executive compensation schemes,” is cleaned to reveal the index term of “executive compensation.” This term has 2,219 newspaper hits on LexisNexis for the year 2016, and 31,240 newspaper hits over the observation period, ending up with a topic media attention score of .07 for 2016. Xerox received one complaint, related to executive compensation, in 2016, producing a value of shareholder complaint topic media attention of .07 for this firm-year observation.

**E3. Operationalizing Shareholder Complaint Type**

***E.3.1. Procedure for operationalizing shareholder complaint nonfinancial type***

To operationalize *shareholder complaint nonfinancial type*, we employ the following procedure. RiskMetrics classifies each complaint as relating to either financial (i.e., financial/corporate governance) or nonfinancial (i.e, social responsibility) concerns. For our measure of nonfinancial concerns, we use the complaints classified as social responsibility concerns. To verify that all corporate social responsibility concerns indeed relate to nonfinancial concerns, we pull the complaint summary descriptions from RiskMetrics and review each complaint. Two independent coders confirmed that all of the complaints (i.e., κ = 1.00) unambiguously relate to nonfinancial concerns. We then create a variable indicating the firm-year percentage of complaints that were defined as relating to nonfinancial concerns.

*Example*: Shareholder complaint description of “Report on fulfilling equal employment opportunities standards” was rated as a nonfinancial concern by both coders. Shareholder complaint description of “Redeem poison pill” was rated as a financial concern by both coders. In 2002, Colgate-Palmolive received these two complaints, resulting in a shareholder complaint nonfinancial percentage value of .33 for this firm-year observation.

***E.3.2. Face validity of operationalization of shareholder complaint type***

Based on theoretical arguments from stakeholder theory, we expect that nonfinancial shareholder complaints hold broader legitimacy compared to financial shareholder complaints. To test the validity of this conjecture, we examined (1) whether nonfinancial shareholder complaints are indeed perceived as more legitimate than financial shareholder complaints and (2) whether differences in legitimacy between type sub-categories might require further differentiation than nonfinancial versus financial type.

We sampled 18 shareholder complaints, two from each of the three financial sub-categories (Board of directors, Executive compensation, and Takeovers and other shareholder rights) and six nonfinancial sub-categories (Environment, Diversity, Community, Product, Human rights, and Vices) as per the classification described below (and Table E1). We then presented each of 42 online participants with a random sample of 9 complaint statements and asked them to rate the extent to which they agreed that each statement affects the broader public on a scale from 1 (“strongly disagree”) to 7 (“strongly agree”). We then asked them to indicate the extent to which they agreed that each complaint statement was legit and appropriate according to social norms (adapted from Agle, Mitchell, and Sonnenfeld 1999), using the same 1-7 scale. Finally, participants indicated to which extent they perceived each statement to relate to nonfinancial versus financial stakeholders on a 7-point scale from 1 (“relates to nonfinancial stakeholders”) to 7 (“relates to financial stakeholders”).

First, our data confirm the complaint type classification into financial and nonfinancial sub-categories. In particular, participants rated complaints from the financial sub-categories significantly above the scale midpoint (MFinancial = 5.40, t = 8.48, p < .001), while they rated complaints from the nonfinancial sub-categories significantly below the scale midpoint (MNonfinancial = 2.97, t = -4.35, p < .001). In addition, the results of a two-sample unequal variances t-test between financial and nonfinancial complaints show that participants view nonfinancial complaints to affect the broader public significantly more than financial complaints (MFinancial = 3.84, SD = 1.68; MNonfinancial = 5.83, SD = .78; t(58) = -6.96, p < .01). Moreover, participants perceive nonfinancial complaints as significantly more legit and appropriate according to social norms than financial complaints (MFinancial = 4.58, SD = 1.24; MNonfinancial = 6.03, SD = .87; t(74) = -6.23, p < .01).

While these results provide substantial support for our operationalization of legitimacy through financial versus nonfinancial complaint types, it is still not clear whether the variation in legitimacy within sub-categories of the financial and nonfinancial complaint types requires a further differentiation. To evaluate this, we use two one-way ANOVAs to compare the variances in legitimacy ratings within and between the sub-categories of financial and nonfinancial types. The results show that ratings for the extent to which complaint statements affect the broader public within financial complaints vary only marginally (MBoard\_dir = 3.90, MExec\_comp = 4.33, MTakeovers = 3.29; F(2, 123) = 3.07, p = .05) and do not vary significantly within nonfinancial complaints (MEnvironment = 5.98, MDiversity = 5.67, MCommunity = 5.95; MProduct = 6.12; MHRights = 5.79; MVices = 5.48; F(5, 246) = 1.19, p = .31). Moreover, we find that ratings for the extent to which complaint statements are legit and appropriate according to social norms do not vary significantly within financial complaints (MBoard\_dir = 4.38, MExec\_comp = 4.74, MTakeovers = 4.62; F(2, 123) = .57, p = .57) or nonfinancial complaints (MEnvironment = 6.00, MDiversity = 5.93, MCommunity = 6.29; MProduct = 6.21; MHRights = 5.93; MVices = 5.83; F(5, 246) = .89, p = .49). In sum, these findings confirm the face validity of our operationalization of shareholder complaint legitimacy as financial versus nonfinancial complaints.

**E4. Operationalizing Shareholder Complaint Type Sub-Categories**

We use the following procedure to further classify shareholder complaint content into type sub-categories. First, we use the sub-categories of the KLD database to augment our dichotomous financial/nonfinancial classification. As a leading standard for ratings on firms’ corporate governance and nonfinancial performance, the KLD data have found wide acceptance in both academia and business (e.g., Groening, Mittal, and Zhang 2015). KLD differentiates between financial (i.e., financial/corporate governance) and nonfinancial (i.e., social responsibility) performance, comparable to the RiskMetrics classification, but provides more detailed sub-categories, as depicted in Column II.1 of Table E1. We combine sub-categories if their frequencies among all complaints are below 5% or if their applications substantially overlap (e.g., diversity issues tend to relate to diversity issues among employees), leading to the final list of nine sub-categories as depicted in Column II.2 of Table E1.

Second, we pull all shareholder complaint descriptions from RiskMetrics and code each complaint into the respective sub-category. RiskMetrics summarizes the content of each complaint in a short description of not more than nine words (91% of summaries are less than six words), which we clean and use as topic to match with the respective sub-category. If we cannot sort a complaint’s content into any of the sub-categories, we place the complaint in the residual sub-category “Other.” Two independent and experienced coders were asked to validate our choice of assigning topics to sub-categories. The inter-rater reliability measure of κ = .98 reflects that complaint topics are unambiguous. In the process of assigning topics to sub-categories, we create dictionaries of words that describe each sub-category which are available from the authors upon request.

*Example*: Shareholder complaint description of “Request for independent board chairman,” was classified as financial concern by RiskMetrics and the two coders, and then assigned into the sub-category “Board of directors” by one of the authors and a coder.

**E5. Effect Sizes of Shareholder Complaint Salience Moderators**

Figure E1 reports effect sizes of an advertising investment response for low (high) values of the shareholder complaint salience moderators, respectively. We identify low levels of each moderator variable by values one standard deviation below its mean, and high levels of the respective variable by values one standard deviation above its mean, based on estimating Equation 2 as reported in Table 3.

**Figure E1: ESTIMATED Advertising Investment Response for Shareholder Complaint Salience Moderators**



**Table E1: Sub-Categories of Shareholder Complaint type**

|  |  |  |
| --- | --- | --- |
| **Category level I** | **Sub-category level II** | |
| **Categories provided by RiskMetrics** | **(1)**  **Sub-categories provided by KLD** | **(2)**  **Sub-categories used in analysis** |
| **Financial** (corporate governance) | * Board of directors * Executive compensation * Takeovers | * Board of directors * Executive compensation * Takeovers and other shareholder rights |
| **Nonfinancial** (social responsibility) | * Environment * Employees * Community * Diversity * Product * Human rights * Alcohol * Firearms * Gambling * Military * Nuclear power * Tobacco | * Environmenta * Diversity (incl. Employees) * Communityb * Productc * Human rightsd * Vicese (i.e., Alcohol, Firearms, Gambling, Military, Nuclear power, Tobacco) |

*Notes*: a includes animal welfare concerns, b includes political concerns, c includes consumer and marketing concerns, d includes other ethical concerns, e includes pornography concerns.

**Table E2: Advertising Investment Response (TYPE Sub-Categories)**

|  |  |
| --- | --- |
|  | **Advertising investments** |
|  | **(*UADV*)** |
|  |  |
| Shareholder complaints (*SHC*) | .0720\*\* |
|  | (.030) |
| Shareholder complaints (*SHC*) \* Institutional submitter (*INST*) | .1099 |
|  | (.106) |
| Shareholder complaints (*SHC*) \* Topic media attention (*MEDIA*) | .0261\*\*\* |
|  | (.010) |
| Shareholder complaints (*SHC*) \* Board of directors | -.0422 |
|  | (.073) |
| Shareholder complaints (*SHC*) \* Executive compensation | -.0107 |
|  | (.078) |
| Shareholder complaints (*SHC*) \* Takeovers and other shareholder | -.1357\* |
| rights | (.070) |
| Shareholder complaints (*SHC*) \* Environment | .0023 |
|  | (.005) |
| Shareholder complaints (*SHC*) \* Diversity | .0152 |
|  | (.127) |
| Shareholder complaints (*SHC*) \* Community | .0645 |
|  | (.075) |
| Shareholder complaints (*SHC*) \* Product | .4793\*\* |
|  | (.213) |
| Shareholder complaints (*SHC*) \* Human rights | -.0525 |
|  | (.160) |
| Shareholder complaints (*SHC*) \* Vices | -.0035 |
|  | (.006) |
| Shareholder complaint institutional submitter (*INST*) | .0196 |
|  | (.092) |
| Shareholder complaint topic media attention (*MEDIA*) | -.0452\*\*\* |
|  | (.000) |
| Shareholder complaints excluded | -.0370\*\* |
|  | (.018) |
| Shareholder complaint voting support | -.0025 |
|  | (.014) |
| Board of directors | -.1921\*\*\* |
|  | (.066) |
| Executive compensation | .0499 |
|  | (.073) |
| Takeovers and other shareholder rights | .0088 |
|  | (.065) |
| Environment | -.0052 |
|  | (.005) |
| Diversity | -.0213 |
|  | (.116) |
| Community | -.0849 |
|  | (.076) |
| Product | .0070 |
|  | (.008) |
| Human rights | -.0068 |
|  | (.166) |
| Vices | -.6384\*\* |
|  | (.267) |
| Firm size | .0000\* |
|  | (.000) |
| Cash flows | -.0008 |
|  | (.001) |
| Stock returns | .0063 |
|  | (.008) |
| Sales growth | .0021 |
|  | (.006) |
| Financial leverage | .0002 |
|  | (.000) |
| Constant | -.2836\*\*\* |
|  | (.023) |
|  |  |
| Observations | 4,428 |
| Adjusted R-squared | .101 |
| Model F-statistic (DF) | 11.55 (42)\*\*\* |

*Notes*: Coefficients scaled by 10-1 to improve readability. Standard errors in parentheses. Predictors calculated at period t-1. Firm and year fixed effects not reported. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

# WEB APPENDIX F: Switching Regression Method

We examine what the performance of a firm not increasing advertising investments would have been if it had opted to increase its advertising investments, and vice versa. To do so, we employ a switching regression method, implemented as a two-step Heckman-type estimation structure. This procedure is discussed, among others, in Fang (2005) and Cao and Sorescu (2013), and is a generalized version of the traditional Heckman model that accounts for the effect of unobservables by using inverse Mills ratios. It consists of a binary equation that reflects selection into increasing advertising investments, and two regression equations on firm value. Formally:

(F1) I\*i = Zi’γ + εi, discretized as: Ii = 1 iff I\*I > 0 and I\*i =0 iff I\*i <=0,

(F2) y1i = xi’β1 + u1i,

(F3) y2i = xi’β2 + u2i.

The dependent variable I\*i indicates whether a firm increases its advertising investments or not, and this choice is explained by variables in the vector Zi including firm size, profitability, stock returns, sales growth and financial leverage, as well as industry earnings response sensitivity and whether the firm operates in a B2B industry (for the justification and operationalization hereof, see the nomological validity analyses in the paper). The latter two variables serve as exclusion restrictions as they should be correlated with the firm’s choice to increase advertising investments, but be independent of Tobin’s q. We estimate this first-stage equation with a probit model. Using the estimates, the inverse Mills ratio can be computed, calculated as a ratio of the cumulative distribution of the standard normal function and its density function.

Equation F2 analyzes firm value, proxied by Tobin’s q, following shareholder complaints for firms that increase their advertising investments, while Equation F3 does the same for firms that did not increase advertising investments (based on Equation 3). Given that either Equation F2 or F3 is realized depending on the firm increasing advertising investments, the observed firm value is a conditional variable and the models cannot be consistently estimated by means of ordinary least squares (OLS). We therefore augment both equations F2 and F3 with the inverse Mills ratio as additional regressor, generating Equations F2’ and F3’, respectively, which we estimate using bootstrapped standard errors. Next, one can compute the hypothetical firm value for firms increasing their advertising investments had they not increased advertising investments using Equation F3’, and the hypothetical firm value for firms not increasing their advertising investments had they increased their advertising investments using equation F2’. Specifically, the estimates of F3’ can be used to compute the mean of firm value for firms that increased their advertising investments had they chosen not to do so, and the estimates of F2’ can be used to predict the mean value of firms that did not increase advertising investments had they chosen to do so. A comparison of the expected firm value for firms under their chosen advertising investment strategy and the expected firm value under the nonpreferred advertising investment alternative provides a measure of the likely change in Tobin’s q if firms were forced to switch to the other alternative. Table F1 presents the results of this counterfactual analysis. The difference between actual firm value, as proxied by Tobin’s q, of firms that chose to advertise and the hypothetical firm value estimated from the above what-if analysis yields the firm value improvement attributable to increasing advertising investments after shareholder complaints.

**Table F1: Actual and Hypothetical Firm Value Following Advertising Investment Response for Firms Receiving Shareholder Complaintsa**

|  |  |  |  |
| --- | --- | --- | --- |
| **Firms increasing advertising investments** | | | |
|  | Actual firm value | Firm value had firms not increased advertising investments | Firm value improvement through increasing advertising investmentsb |
| Mean | 1.617 | 1.560 | .057\*\* |
| **Firms not increasing advertising investments** | | | |
|  | Actual firm value | Firm value had firms increased advertising investments | Firm value deterioration through not increasing advertising investmentsb |
| Mean | 1.465 | 1.617 | -.152\*\*\* |

*Notes*: a Firm value proxied by Tobin’s q. b Statistical significance calculated using rank-sum test. \*\*\**p*<.01, \*\**p*<.05, \**p*<.1.

# WEB APPENDIX G: Marginal Effects Analysis

**G1. Managerial Decision Aid: Obtaining Marginal Effect of Advertising Investments**

In the face of shareholder complaints, managers can use the following four-step procedure to calculate customized firm-specific marginal effects of their advertising investments on firm value in order to determine whether or not to further adjust their advertising investments.

1. Obtain data on current firm value as proxied by Tobin’s q (TQ, calculation described in main body of the paper; data can be retrieved from firm income statement and balance sheet), the number of shareholder complaints received (SHC, log-transformed as described in main body of the paper), and current unexpected size-adjusted advertising investments (UADV, derivation described in main body of the paper).[[1]](#footnote-1) Denote the coefficient estimates for the interaction of shareholder complaints and advertising investments (β = .003) from Table 3, Column 3, and the corresponding variance-covariance matrix (∑TQ) of the focal estimated coefficients.
2. Draw 1000 values of βj (j = 1, 2, ..., 1000) from a multivariate normal distribution with means given by the estimated coefficients from Table 3 and covariances given by the estimated covariance matrix of the coefficients, N(β, ∑TQ), for instance following the procedure suggested by Krinsky and Robb (1986). The result of this step is a representative set of simulated β estimates, obtained with associated uncertainty.
3. (a) Denote the marginal effect of advertising investments on firm value, obtained by differentiating Equation 3 with regard to advertising investments, resulting in the expression: . (b) Use the simulated parameters to evaluate TQ´, the number of shareholder complaints received (SHC), and advertising investments (ADV) and denote the 1000 resulting simulated estimates for the marginal effect of advertising investments on Tobin’s q as ME\_ADVj.
4. From the 1000 values of ME\_ADVj, obtain the lower and upper limits of a 95% confidence interval, that is, the 26th and 976th estimates of the sorted simulated values.

Once the marginal effect of advertising investments on Tobin’s q is calculated as described above, managers can easily assess whether it is positive and statistically significant, negative and statistically significant, or not significantly different from zero. In particular, the marginal effect is positive (negative) and statistically significant if both the lower and upper limits of the 95% confidence interval are positive (negative) values. The effect is not significantly different from zero if the lower limit is negative and the upper limit is positive. In order to guide strategic decision making, managers can next interpret the marginal effect as follows: If the marginal effect turns out to be positive (negative) and significant, firm’s current advertising investments are too low (high) and should be further increased (decreased) in order to buffer the detrimental effects of received shareholder complaints (and protect firm resources). An insignificant effect means that the current advertising investments are at or close to an optimal level. We encourage managers to use this practical four-step procedure and assess whether their firms’ current advertising investments are sufficient when receiving shareholder complaints.

**G2. Application to Sample Firms**

Following the procedure applied by Srinivasan, Lilien, and Sridhar (2011), and as described in the diagnostic decision tool in E1, we calculate marginal effects (ME) for all firms in our sample to assess their advertising investment response when facing shareholder complaints in the prior year. We provide results in Table G1. Each cell gives the proportion of firms that underinvest, overinvest, or invest at nearly optimal levels in a given year when encountering shareholder complaints in the prior year, split over shareholder complaint institutional submitter (yes/no), shareholder complaint nonfinancial type (yes/no), and shareholder complaint topic media attention (above versus below median). Results indicate that, on average, the majority of firms underinvest in post-complaint advertising. However, if complaint topics receive larger media attention, firms invest close to an optimal level. With respect to shareholder complaint type, we find that firms advertise close to an optimal level if complaints relate to nonfinancial concerns. We also note that most firms increase their investment levels to an nearly optimal level when complaints are submitted by institutional investors.

**Table G1: Marginal Effects Analysis of Advertising Investment Response**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Advertising investment response** | | |
|  |  | **Underinvesting** | **Nearly optimal** | **Overinvesting** |
| Shareholder complaint | Yes | 37% | 61% | 2% |
| institutional submitter | No | 69% | 27% | 5% |
| Shareholder complaint | Yes | 13% | 74% | 13% |
| nonfinancial type | No | 78% | 22% | 1% |
| Shareholder complaint topic media attention | High | 1% | 96% | 3% |
| Low | 72% | 28% | 0% |

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1. If managers wish to use current levels as provided directly in the income statement instead of unexpected scale-adjusted advertising investments, we provide the following derived coefficient estimates using this measure of advertising: . [↑](#footnote-ref-1)