**Web Appendices**

**Does Disclosure of Advertising Spending Help Investors and Analysts?**

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| **Web Appendix A**  **Disclosure of Advertising Spending by Publicly Listed Firms in the Sample over Years** |
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| Notes:  a. The vertical axis represents the percentage of firms that disclose advertising spending in our sample.  b. Given our empircal models have the lag structures in the first stage models and focal models, the focal models exploit the variation of disclosure of advertising spending from fiscal year 1996 to 2018. |
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**Web Appendix B. The Literature on Marketing Outcomes, Actions, and Idiosyncratic Risk**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Key Independent Variable** | **Dependent Variable(s)** | | | **Mechanism Studied** | **Moderator(s)**  **Examined** | **Main Finding** |
| **Idiosyncratic Risk** | **Analyst Uncertainty** | **Firm**  **Value** |
| *Marketing Outcomes* |  |  |  |  |  |  |  |
| Sorescu and Spanjol (2008) | Breakthrough Innovation  Incremental Innovation |  |  |  |  | Interaction of Incremental and Breakthrough Innovation | Breakthrough innovation is associated with increases in Tobin’s q, abnormal stock returns, and idiosyncratic risk whereas incremental innovation is associated with an increase in Tobin’s q only. |
| Tuli and Bharadwaj (2009) | Customer Satisfaction |  |  |  |  |  | Customer satisfaction lowers not only overall systematic and idiosyncratic risk but also downside systematic and idiosyncratic risk. |
| Luo, Homburg, and Wieseke (2010) | Customer Satisfaction |  |  |  | Analyst Stock Recommendation (ASR)  & ASR Dispersion | Product Market Competition  Financial Market Uncertainty | Positive changes in customer satisfaction improve ASR and lower ASR dispersion. These effects are stronger when product markets are more competitive and financial markets are more uncertainty. |
| *Marketing Actions* |  |  |  |  |  |  |  |
| Osinga et al. (2011) | Direct-to-Consumer Advertising (DTCA)  Direct-to-Physician (DTP) Marketing |  |  |  |  | Relaxation of Regulation | DTCA increases stock returns (the strongest effect after the regulation relaxation) and idiosyncratic risk and lowers systematic risk. In contrast, DTP marketing has modest positive effects on stock returns and idiosyncratic risk. |
| Fang, Palmatier, and Grewal (2011) | Customer and Innovation Asset Configuration |  |  |  |  | Industry Dynamism | A configuration strategy using deep customer and broad innovation assets or deep innovation and broad customer assets has a positive effect on firm performance. In contrast, deep-deep or broad-broad asset configurations decrease firm performance variability. These effects of configuration strategies are stronger in more dynamic industry environments. |
| Dotzel, Shankar, and Berry (2013) | Internet-Enabled Service Innovativeness (EI)  People-Enabled Service Innovativeness (PI) |  |  |  | Customer Satisfaction | Types of Service Innovations  Human-Dominated Industry | EI has a positive and direct effect on firm value and PI has an overall positive effect on firm value through its positive effect on customer satisfaction only in human-dominated industries. In addition, whereas EI & PI have positive effects on idiosyncratic risk, PI indirectly lowers idiosyncratic risk by increasing customer satisfaction in human-dominated industries. |

**Web Appendix B. The Literature on Marketing Outcomes, Actions, and Idiosyncratic Risk (Cont’d)**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Key Independent Variable** | **Dependent Variable(s)** | | | **Mechanism Studied** | **Moderator(s)**  **Examined** | **Main Finding** |
| **Idiosyncratic Risk** | **Analyst Uncertainty** | **Firm**  **Value** |
| *Marketing Actions* |  |  |  |  |  |  |  |
| Thomaz and Swaminathan (2015) | Marketing Alliances  Firm Network Density  Partner Network Density |  |  |  |  | Repeat Partnership | Marketing alliances reduce firm risk only for a new partnership. At high levels, a firm’s network density increases idiosyncratic risk, and a partner’s network density increases systematic risk. |
| McAlister et al. (2016) | Advertising Spending |  |  |  |  | Disclosure of Advertising Spending | Advertising increases sales regardless of firm strategy but increases firm value only for differentiators. |
| Han, Mittal, and Zhang (2017) | Relative Strategic Emphasis |  |  |  |  | Relative Performance  Demand Instability | Relative strategic emphasis on value appropriation reduces idiosyncratic risk. This effect is weaker when firms have larger positive or negative relative performance, and the contingent effects are stronger if industry demand instability is high. |
| Colicev et al. (2018) | Earned Social Media (ESM)  Owned Social Media (OSM) |  |  |  | Customer Satisfaction  Purchase Intent  Brand Awareness |  | ESM improves customer mindset metrics, whereas OSM increases customer satisfaction and brand awareness. Purchase intent and customer satisfaction enhance shareholder value. |

**Web Appendix C**

**Timeline for Measuring Disclosure, Analyst Uncertainty, and Idiosyncratic Risk**

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**Web Appendix D**

**Construction of Disclosure Quality**

Consistent with Chen, Miao, and Shevlin (2015), we start by counting the non-missing items in both the firm’s balance sheet and its income statement. A firm’s annual report (i.e., 10-K filing) has the hierarchical nesting feature such that one item consists of multiple disaggregated items. For example, *current assets total* includes *inventory (IVT) total* and other seven second-level accounts, and *IVT total* includes four more disaggregated accounts, *IVT raw material*, *IVT work-in-progress*, *IVT finished goods*, and *IVT other*. By using this nesting feature of a 10-K annual report, we calculate the ratio of non-missing items to the total items in the balance sheet and income statement. For the balance sheet, we identify 11 groups, which are associated with 25 second-level items and 93 subaccounts. We count the non-missing items in 93 subaccounts for the balance sheet and generate the value-weighted ratio of the non-missing items for each group based on the magnitude of the group over the total assets. For the income statement, we generate the equal-weighted ratio of the non-missing items to the total items. Note that we do not include the item of advertising spending in calculating the ratio of the non-missing items to the total items in the income statement to avoid the possibility that disclosure quality takes into account disclosure of advertising spending. Then, we use the average of the ratios for the balance sheet and income statement as disclosure quality of a firm. The higher the level of disaggregation of the annual report of a firm, the greater is the information available to investors, and therefore, the greater is the quality of its financial disclosures (see Chen, Miao, and Shevlin 2015 for detailed discussion on the construction of the measure and its validity).

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| **Web Appendix E**  **Measures, Data Sources, and the Supporting Literature for Control Variables** | | | |
| *Variable* | *Measure* | *Data Source* | *The Supporting Literature* |
| Estimated Adv Spendingi,j,t-1 | Kantar Media advertising spending estimates, scaled by total assets | Kantar Media | Ramani and Srinivasan (2019)  Wies et al. (2019) |
| Analyst Followingi,j,t-1 | Natural log of the number of analysts reporting earnings forecasts of a firm between the day of the release of the firm’s annual report and the day before the release of the firm’s annual report in the following year | I/B/E/S | Lehavy, Li, and Merkley (2011)  Lang and Lundholm (1996) |
| Institutional Ownershipi,j,t-1 | Percentage of outstanding shares owned by institutional investors | Thomson Reuters | Bayer, Tuli, and Skiera (2017) |
| Firm Agei,j,t-1 | Natural log of number of years since the firm stock’s first listing | CRSP | McAlister, Srinivasan, and Kim (2007) |
| Firm Sizei,j,t-1 | Natural log of the total assets of a firm | COMPUSTAT | Rego, Billett, and Morgan (2009) |
| SG&Ai,j,t-1 | Selling, general, and administrative expense, scaled by total assets | COMPUSTAT | Chakravarty and Grewal (2016)  Ptok, Jindal, and Reinartz (2018) |
| ROAi,j,t-1 | Income before extraordinary items, scaled by total assets | COMPUSTAT | Kurt and Hulland (2013)  Rego, Billett, and Morgan (2009) |
| Cash Flowsi,j,t-1 | Net operating cash flows, scaled by total assets |  | Gruca and Rego (2005)  Bayer, Tuli, and Skiera (2017) |
| Industry Growthj,t-1 | Natural log of sales of an industry in the current fiscal year less natural log of sales of an industry in the prior year | COMPUSTAT | Dotzel, Shankar, and Berry (2013) |
| Demand Uncertaintyj,t-1 | The standard deviation of 5-year industry sales, scaled by the average of 5-year industry sales. | COMPUSTAT | Fang, Palmatier, and Steenkamp (2008) |

Note: We deduct estimated advertising spending in the calculation of SG&Ai,j,t-1.

**Web Appendix F**

**Identification Strategies**

**Relevance and Validity of Proposed Instruments for Disclosure of Advertising Spending**

*Arguments for Industry and Sector Peers*. Industry and Sector peer instruments are conceptually relevant because peer firms’ disclosures arguably reflect the industry and sector norms that are followed by firms either due to learning (Han, Mittal, and Zhang 2017) or to gain legitimacy (Sine, Haveman, and Tolbert 2005). Indeed, prior research shows that firms are likely to follow their industry and sector norms for decisions such as advertising spending (Sridhar et al. 2016) or disclosure of advertising spending (Shi, Grewal, and Sridhar 2021). Importantly, sector and industry peer disclosures are unlikely to be related to omitted variables in the error term. For example, consider the unobserved managerial foresight. Decisions guided by managerial foresight may be correlated with advertising spending disclosure and also idiosyncratic risk. However, it is highly unlikely that instruments based on sector and industry peers correlate with managerial foresight for a specific firm. First, it is very difficult for peer firms to observe and measure a focal firm’s managerial foresight. Even if a peer firm is able to observe an individual manager’s foresight, it is highly unlikely that all peer firms can observe it and even more improbable that all peers will be able to collectively and strategically act on it (also see Germann, Ebbes, and Grewal 2015).

*Arguments for Auditor Peers*. We also propose that the proportion of disclosures of advertising spending by Auditor Peers is also a relevant and valid instrument. Firms rely on auditors to make accounting- and disclosure-related decisions (e.g., Glendening, Mauldin, and Shaw 2019). Auditors have particular structured processes and internal rules of conducting an audit that characterize a particular audit style (Francis, Pinnuck, and Watanabe 2014). The particular audit style, in turn, may act as norms not only for auditing and but also for accounting decisions such as information disclosures, resulting in similar financial statements of client firms sharing the same auditor (Johnston and Zhang 2021). Indeed, empirical studies suggest that firms sharing the same auditor show similar disclosure patterns (e.g., Brown and Knechel 2016). Therefore, we expect that a firm’s disclosure of advertising spending is positively related to those of its auditor peers.

Auditor peer disclosure of advertising spending, however, is unlikely to be correlated with the potential omitted variables (e.g., managerial foresight). Given business confidentiality, an auditor is unlikely to share its clients’ decision rules shaped by managerial foresight that may influence disclosure decisions. Therefore, there is no reason to expect the auditor peer instrument for disclosure of advertising spending correlates with unobservable omitted variables. To strengthen the identification of the proposed econometric approaches, we construct auditor peers as firms which hire the same auditor as the focal firm but do not operate in the same industry as the focal firm (i.e., non-overlapping peers).

**Potential Endogeneity of Estimated Advertising Spending**

Advertising spending is likely to be endogenous because managers strategically plan and implement advertising. For example, managers may spend more on advertising if firm sales are expected to decline. It is also possible that managers may cut advertising budgets to meet earnings expectation in the short-term (Mizik 2010). Thus, there may be unobservable factors that influence both idiosyncratic risk and analyst uncertainty, and advertising spending decisions. Accordingly, we adopt the control function approach and use the weighted averages of estimated advertising spending levels of both industry and sector peers as instruments for a focal firm’s estimated advertising spending (for precedence see Sridhar et al. 2016). We estimate the following auxiliary regression:

Est. Adv Spendingi,j,t-1 = κ0 + κ1WIPASi,j,t-2 + κ2WSPASi,j,t-2

+ **Θ'Controlsi,j,t-1**+ kYeart-1 + ξi + ηi,j,t-1,

where Est. Adv Spendingi,j,t-1 = Kantar Media estimates of advertising spending scaled by total assets, WIPASi,j,t-2 = weighted average of estimated advertising spending scaled by total assets of industry peers other than firm *i*, and WSPASi,j,t-2 = weighted average of estimated advertising spending scaled by total assets of sector peers excluding industry peers in industry *j* at fiscal year *t-2*; ξi = a firm random effect, and ηi,j,t-1 = the random error term.

After estimating the model, we generate the residual,  i,j,t-1, and include it in the final models to address potential endogeneity of estimated advertising spending.

**Potential Selection Bias for the Inclusion of Estimated Advertising Spending**

Equation 2-5 may face a selection bias due to the inclusion of Est. Adv Spendingi,j,t-1, which requires data from Kantar Media. The coverage of firms by Kantar Media to estimate advertising spending, in turn, could create a potential selection bias (see Frennea, Han, and Mittal 2019). To account for this potential selection bias, we need to identify exclusion restrictions that predict the probability of coverage by Kantar Media but do not have an impact on the error terms related to idiosyncratic risk and analyst uncertainty. Consistent with our instrumentation approach, we adapt the approach followed by Han, Mittal, and Zhang (2017) and use the weighted proportion of both industry and sector peers covered by Kantar Media as exclusion restrictions. Specifically, in the first stage, we estimate the following probit model:

Pr(KMi,j,t-1 = 1)

= Ф(ω0 + ω1WIPKMi,j,t-1 + ω2WSPKMi,j,t-1 + **Ω'Controlsi,j,t-1** + kYeart-1),

where KMi,j,t-1 = Kantar Media advertising coverage (i.e., one if a firm is covered by kantar media and zero otherwise), WIPKMi,j,t-2 = weighted proportion of industry peers other than firm *i* whose Kantar Media advertising spending is available, and WSPKMi,j,t-2 = weighted proportion of sector peers excluding industry peers whose Kantar Media advertising spending is available in industry *j* at fiscal year *t*.

After estimating the probit model, we generate the inverse Mills ratio (i.e., IMRi,j,t-1) and include it in the final models to control for the selection bias.

**Potential Endogeneity of Analyst Uncertainty**

Analyst uncertainty in the mediation model (i.e., Equation 4) is likely to be endogenous because the control variables in the model may not be able to capture all unobservable factors that can influence analysts’ and investors’ ability to predict firm future performance. Therefore, we apply the control function approach to account for the potential endogeneity of analyst uncertainty and use the weighted averages of sector and industry peers’ analyst uncertainty as instruments. The proposed instruments are likely to be relevant and valid. Financial analysts tend to specialize in a specific industry or business sector and incorporate industry analysis in publishing the research reports. Industry expertise is one of the important aspects of analyst research (Brown et al. 2015) and comparison of firms within an industry is an important part of valuing stocks (Boni and Womack 2006). “Financial analysis textbooks commonly recommend the use of peer firms in valuation” (Healy and Palepu 2007; De Franco, Hope, and Larocque 2015, p. 84). When forecasting a firm’s future performance, analysts incorporate their industry knowledge and their interpretation of industry specific information, i.e., intra-industry information transfer (Piotroski and Roulstone 2004). Thus, analyst uncertainty of a firm may correlate with those of its industry and sector peers.

The proposed instruments are unlikely to be correlated with the error term in the idiosyncratic risk model because we control for a wide range of time varying industry factors that take into account the competitive conditions, growth, and uncertainty of demand. Therefore, we estimate the following model to obtain the residual term:

AUi,j,t = δ0 + δ1WIPAUi,j,t + δ2WSPAUi,j,t + **Φ'Controlsi,j,t-1** + kYeart + ςi + υi,j,t,

where AUi,j,t = analyst uncertainty; WIPAUi,j,t = weighted average of analyst uncertainty of industry peers other than firm *i* and WSPASi,j,t = weighted average of analyst uncertainty of sector peers excluding industry peers in industry *j* at fiscal year *t*; ςi, = a firm random effect; and υi,j,t = the random error term.

Then, we include i,j,t as an additional covariate in the final model to test the mediating effect of analyst uncertainty.

**Web Appendix G**

**Examples of Firms Included in Industry, Sector, and Auditor Peers to Calculate Instruments**

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**Web Appendix H**

**Estimation of the Weights for Peers**

We follow Lim, Tuli, and Grewal (2020) to estimate the weights for sector, industry, and auditor peers. Using the classical multidimensional scaling method (MDS), we first draw a positioning map with two dimensions based on firms’ similarity for each sector based on the two-digit NAICS, each industry based on the four-digit NAICS, and each auditor in each fiscal year. We estimate firms’ similarity based on several important firm characteristics. To account for firms’ similarity reflected in firm size and profitability, we include natural log of sales and return on assets. In addition, we include financial leverage (long-term debt scaled by total assets) to capture a firm’s capital structure. Next, in the positioning maps generated by MDS, we calculate the Euclidean distances between all firms in each sector, industry, and for each auditor in each fiscal year. The Euclidean distance between a pair of firms represents dissimilarity between firms. Thus, as a next step, we measure the weights as follows:

Weighti,p,j,t = (Total Distancei,j,t – Distancei,p,j,t / Total Distancei,j,t),

where Total Distancei,j,t = the total Euclidean distance between the focal firm and all its peers in sector *j*, industry *j*, or auditor *j*; Distance = the Euclidean distance between the focal firm and its peer *p* in fiscal year *t*.

Finally, taking into account the weight, we measure the instruments as follows:

|  |  |
| --- | --- |
| Weighted Peer Instrumenti,j,t-2 = | i,p,j,t-2 × Peer Variablep,j,t-2 |
| i,p,j,t-2 |

where wi,p,j,t-2 = weight of the similarity between firm *i* and peer *p* in the sector, industry, or auditor *j* at fiscal year *t-2*; and Peer Variablep,j,t-2 = a relevant peer variable for instruments (e.g., disclosure of advertising spending or estimated advertising spending level).

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| **Web Appendix I**  **Results of the First Stage Probit Model for**  **Disclosure of Advertising Spending** | | |
| *Dependent Variable = ADi,j,t-1* |  | |
| *Independent Variables* | *Coef.* | *SE* |
| Weighted Industry Peer Disclosurei,j,t-2 | 1.630 | (.190) \*\*\*\* |
| Weighted Sector Peer Disclosurei,j,t-2 | 1.133 | (.251) \*\*\*\* |
| Weighted Auditor Peer Disclosurei,j,t-2 | 3.817 | (.578) \*\*\*\* |
| Financial Liquidityi,j,t-1 | .036 | (.018) \*\* |
| Financial Leveragei,j,t-1 | .354 | (.166) \*\* |
| Disclosure Qualityi,j,t-1 | 1.918 | (.455) \*\*\*\* |
| Competitive Intensityj,t-1 | .090 | (.268) |
| Analyst Followingi,j,t-1 | -.038 | (.045) |
| Institutional Ownershipi,j,t-1 | .116 | (.134) |
| Firm Agei,j,t-1 | .005 | (.052) |
| Firm Sizei,j,t-1 | .078 | (.029) \*\*\* |
| SG&Ai,j,t-1 | 1.569 | (.177) \*\*\*\* |
| ROAi,j,t-1 | .071 | (.232) |
| Cash Flowsi,j,t-1 | .676 | (.303) \*\* |
| Industry Growthj,t-1 | -.175 | (.097) \* |
| Demand Uncertaintyj,t-1 | -.536 | (.258) \*\* |
| Intercept | 1.273 | (.176) \*\*\*\* |
| Year Fixed Effects | Yes | |
| Number of Firm-Year Observations  (Number of Firms) | 15,297  (2,285) | |
| Wald χ2 (df) | 667.65 (38) \*\*\*\* | |
| Log Pseudolikelihood | -8,481.26 | |
| Notes:  a. ADi,j,t-1 is disclosure of advertising spending for firm *i* in industry *j* in fiscal year *t-1*.  b. Weighted Industry Peer Disclosurei,j,t-2 is the weighted proportion of industry peer firms that disclose advertising spending, Weighted Sector Peer Disclosurei,j,t-2 is the weighted proportion of sector peer firms that disclose advertising spending, and Weighted Auditor Peer Disclosurei,j,t-2 is the weighted proportion of auditor peer firms that disclose advertising spending in fiscal year *t-2*. SG&Ai,j,t-1 represents selling, general, and administrative expense (excluding estimated advertising spending), scaled by total assets for firm *i* in industry *j* in fiscal year *t-1*. ROAi,j,t-1 is return on assets for firm *i* in industry *j* in fiscal year *t-1*.  c. The result of Wald test for joint significance of Weighted Industry Peer Disclosurei,j,t-2, Weighted Sector Peer Disclosurei,j,t-2, and Weighted Auditor Peer Disclosurei,j,t-2 is 239.41 (*p* < .001).  d. We use the clustered robust standard errors of the estimates at the firm level; We mean center all continuous variables.  e. SE = standard error; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* <.01, \*\*\*\* *p* < .001 (two-tailed). | | |

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| **Web Appendix J**  **Results of the Auxiliary Regression Model for**  **Estimated Advertising Spending** | | |
| *Dependent Variable = Est. Adv Spendingi,j,t-1* |  | |
| *Independent Variables* | *Coef.* | *SE* |
| Weighted Industry Peer Est. Adv Spendingi,j,t-2 | .106 | (.024) \*\*\*\* |
| Weighted Sector Peer Est. Adv Spendingi,j,t-2 | .059 | (.016) \*\*\*\* |
| Financial Liquidityi,j,t-1 | -.000 | (.000) |
| Financial Leveragei,j,t-1 | .001 | (.002) |
| Disclosure Qualityi,j,t-1 | -.018 | (.006) \*\*\* |
| Competitive Intensityj,t-1 | .009 | (.004) \*\* |
| Analyst Followingi,j,t-1 | -.000 | (.000) |
| Institutional Ownershipi,j,t-1 | .004 | (.002) \*\*\* |
| Firm Agei,j,t-1 | -.002 | (.001) \*\* |
| Firm Sizei,j,t-1 | -.003 | (.000) \*\*\*\* |
| SG&Ai,j,t-1 | .001 | (.004) |
| ROAi,j,t-1 | .000 | (.002) |
| Cash Flowsi,j,t-1 | -.000 | (.004) |
| Industry Growthj,t-1 | -.000 | (.001) |
| Demand Uncertaintyj,t-1 | -.002 | (.002) |
| IMRi,j,t-1 | -.012 | (.003) \*\*\*\* |
| Intercept | .009 | (.003) \*\*\* |
| Year Fixed Effects | Yes | |
| Number of Firm-Year Observations  (Number of Firms) | 15,297  (2,285) | |
| Wald χ2 (df) | 123.38 (38) \*\*\*\* | |
| Notes:  a. Est. Adv Spendingi,j,t-1 is Kantar Media (KM) estimates of advertising spending scaled by total assets for firm *i* in industry *j* in fiscal year *t-1*.  b. Weighted Industry Peer Est. Adv Spendingi,j,t-2 is the weighted average of industry peer firms’ KM advertising spending scaled by total assets and Weighted Sector Peer Adv Spendingi,j,t-2 is the weighted average of sector peer firms’ KM advertising spending scaled by total assets at fiscal year *t-2*. SG&Ai,j,t-1 represents selling, general, and administrative expense (excluding KM advertising spending), scaled by total assets for firm *i* in industry *j* in fiscal year *t-1*. ROAi,j,t-1 is return on assets for firm *i* in industry *j* in fiscal year *t-1*. IMR represents the inverse Mills ratio to correct for a selection bias of KM coverage of firms.  c. The result of Wald test for joint significance of Weighted Industry Peer Adv Spendingi,j,t-2 and Weighted Sector Peer Adv Spendingi,j,t-2 is 36.91 (*p* < .001).  d. We use the clustered robust standard errors of the estimates at the firm level; We mean center all continuous variables.  e. SE = standard error; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* <.01, \*\*\*\* *p* < .001 (two-tailed). | | |

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| **Web Appendix K**  **Results of the Selection Model for**  **Estimated Advertising Spending** | | |
| *Dependent Variable = KMi,j,t-1* |  | |
| *Independent Variables* | *Coef.* | *SE* |
| Weighted Industry Peer KMi,j,t-1 | .772 | (.113) \*\*\*\* |
| Weighted Sector Peer KMi,j,t-1 | 1.005 | (.213) \*\*\*\* |
| Financial Liquidityi,j,t-1 | -.005 | (.007) |
| Financial Leveragei,j,t-1 | .144 | (.080) \* |
| Disclosure Qualityi,j,t-1 | 1.905 | (.223) \*\*\*\* |
| Competitive Intensityj,t-1 | -.365 | (.130) \*\*\* |
| Analyst Followingi,j,t-1 | .148 | (.022) \*\*\*\* |
| Institutional Ownershipi,j,t-1 | .025 | (.022) |
| Firm Agei,j,t-1 | .208 | (.027) \*\*\*\* |
| Firm Sizei,j,t-1 | .113 | (.015) \*\*\*\* |
| SG&Ai,j,t-1 | .683 | (.088) \*\*\*\* |
| ROAi,j,t-1 | .038 | (.068) |
| Cash Flowsi,j,t-1 | .462 | (.111) \*\*\*\* |
| Industry Growthj,t-1 | .025 | (.048) |
| Demand Uncertaintyj,t-1 | -.138 | (.123) |
| Intercept | -3.494 | (.207) \*\*\*\* |
| Year Fixed Effects | Yes | |
| Number of Firm-Year Observations  (Number of Firms) | 36,817  (5,091) | |
| Wald χ2 (df) | 1,110.17 (38) \*\*\*\* | |
| Log Pseudolikelihood | -22,570.66 | |

Notes: a. KMi,j,t-1 is Kantar Media advertising coverage (i.e., one if a firm is covered by Kantar Media and zero otherwise) for firm *i* in industry *j* in fiscal year *t-1*.

b. Weighted Industry Peer KMi,j,t-1 is the weighted proportion of industry peer firms covered by Kantar Media and Weighted Sector Peer KMi,j,t-1 is the weighted proportion of sector peer firms covered by Kantar Media. SG&Ai,j,t-1 represents selling, general, and administrative expense, scaled by total assets. ROAi,j,t-1 is return on assets for firm *i* in industry *j* in fiscal year *t-1*.

c. The result of Wald test for joint significance of Weighted Sector Peer KMi,j,t-1 and Weighted Industry Peer KMi,j,t-1 is 91.92 (*p* < .001).

d. We use the clustered robust standard errors of the estimates at the firm level.

e. SE = standard error; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* <.01, \*\*\*\* *p* < .001 (two-tailed).

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| **Web Appendix L**  **Results of the Auxiliary Regression Model for Analyst Uncertainty** | | |
| *Dependent Variable = Analyst Uncertaintyi,j,t* |  | |
| *Independent Variables* | *Coef.* | *SE* |
| Weighted Industry Peer Analyst Uncertaintyi,j,t | .005 | (.002) \*\*\* |
| Weighted Sector Peer Analyst Uncertaintyi,j,t | .003 | (.001) \*\* |
| Financial Liquidityi,j,t-1 | .001 | (.001) |
| Financial Leveragei,j,t-1 | .016 | (.015) |
| Disclosure Qualityi,j,t-1 | -.122 | (.032) \*\*\*\* |
| Competitive Intensityj,t-1 | -.022 | (.025) |
| Analyst Followingi,j,t-1 | -.005 | (.003) |
| Institutional Ownershipi,j,t-1 | .022 | (.013) \* |
| Firm Agei,j,t-1 | -.008 | (.004) \* |
| Firm Sizei,j,t-1 | .040 | (.003) \*\*\*\* |
| SG&Ai,j,t-1 | .039 | (.015) \*\*\* |
| ROAi,j,t-1 | -.029 | (.017) \* |
| Cash Flowsi,j,t-1 | -.010 | (.021) |
| Industry Growthj,t-1 | .002 | (.010) |
| Demand Uncertaintyj,t-1 | .048 | (.018) \*\*\* |
| Intercept | -.043 | (.010) \*\*\*\* |
| Year Fixed Effects | Yes | |
| Number of Firm-Year Observations  (Number of Firms) | 15,297  (2,285) | |
| Wald χ2 (df) | 997.74 (37) \*\*\*\* | |

Notes:

a. Weighted Industry Peer Analyst Uncertaintyi,j,t is the weighted average of industry peer firms’ analyst uncertainty and Weighted Sector Peer Analyst Uncertaintyi,j,t is the weighted average of sector peer firms’ analyst uncertainty in fiscal year *t*. SG&Ai,j,t-1 represents selling, general, and administrative expense (excluding estimated advertising spending), scaled by total assets. ROAi,j,t-1 is return on assets for firm *i* in industry *j* in fiscal year *t-1*.

b. The result of Wald test for joint significance of Weighted Industry Peer Analyst Uncertaintyi,j,t and Weighted Sector Peer Analyst Uncertaintyi,j,t is 11.83 (*p* < .01).

c. We use the clustered robust standard errors of the estimates at the firm level; We mean center all continuous variables.

d. SE = standard error; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* <.01, \*\*\*\* *p* < .001 (two-tailed).

**Web Appendix M**

**Results of First Stage Models with Alternative Instruments**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *Alternative Instruments (1)*  *Removing Industry Peers* | | *Alternative Instruments (2)*  *Removing Sector Peers* | | *Alternative Instruments (3)*  *Removing Auditor Peers* | | *Alternative Instruments (4)*  *Second Degree Peers* | |
| *DV = ADi,j,t-1* |  | |  |  |  | |  | |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* | *Coef* | *SE* | *Coef* | *SE* |
| Weighted Industry Peer Disclosurei,j,t-2 |  |  | 2.1245 | (.1548)\*\*\*\* | 1.5427 | (.1891)\*\*\*\* |  |  |
| Weighted Sector Peer Disclosurei,j,t-2 | 2.3250 | (.2039)\*\*\*\* |  |  | 1.1117 | (.2521)\*\*\*\* | 2.2596 | (.2082)\*\*\*\* |
| Weighted Auditor Peer Disclosurei,j,t-2 | 3.3789 | (.5681)\*\*\*\* | 3.7760 | (.5754)\*\*\*\* |  |  | 3.3814 | (.5690)\*\*\*\* |
| Second Degree Peer Disclosurei,j,t-2 |  |  |  |  |  |  | .5315 | (.5798) |
| Joint Sig. χ2 (df) | 156.46 (2)\*\*\*\* | | 213.64 (2)\*\*\*\* | | 202.76 (2)\*\*\*\* | | 155.51 (3)\*\*\*\* | |
| Wald χ2 (df) | 586.55 (37) | | 660.56 (37) | | 620.08 (37) | | 587.33 (38) | |
| Obs | 15,297 (2,285) | | 15,297 (2,285) | | 15,297 (2,285) | | 15,263 (2,282) | |
| *DV = Est. Adv Spendingi,j,t-1* |  |  |  |  |  |  |  |  |
| Weighted Industry Peer Est. Adv Spendingi,j,t-2 |  |  | .1100 | (.0244)\*\*\*\* |  |  |  |  |
| Weighted Sector Peer Est. Adv Spendingi,j,t-2 | .0669 | (.0157)\*\*\*\* |  |  |  |  | .0657 | (.0155)\*\*\*\* |
| Second Degree Peer Est. Adv Spendingi,j,t-2 |  |  |  |  |  |  | .0148 | (.0318) |
| Joint Sig. χ2 (df) | 18.26 (1)\*\*\*\* | | 20.40 (1)\*\*\*\* | |  | | 18.35 (2)\*\*\*\* | |
| Wald χ2 (df) | 127.42 (37) | | 116.41 (37)\*\*\*\* | |  | | 128.90 (38) | |
| Obs | 15,297 (2,285) | | 15,297 (2,285) | |  | | 15,263 (2,282) | |
| *DV = KMi,j,t-1* |  |  |  |  |  |  |  |  |
| Weighted Industry Peer KMi,j,t-1 |  |  | .9259 | (.1088)\*\*\*\* |  |  |  |  |
| Weighted Sector Peer KMi,j,t-1 | 1.4794 | (.2026)\*\*\*\* |  |  |  |  | 1.4213 | (.2075)\*\*\*\* |
| Second Degree Peer KMi,j,t-1 |  |  |  |  |  |  | .3363 | (.4490) |
| Joint Sig. χ2 (df) | 53.34 (1)\*\*\*\* | | 72.36 (1)\*\*\*\* | |  | | 52.46 (2)\*\*\*\* | |
| Wald χ2 (df) | 1,144.50 (37) | | 1,090.14 (37) | |  | | 1,149.83 (38) | |
| Obs | 37,340 (5,137) | | 37,340 (5,137) | |  | | 37,230 (5,130) | |
| *DV = AUi,j,t* |  |  |  |  |  |  |  |  |
| Weighted Industry Peer AUi,j,t |  |  | .0045 | (.0017)\*\*\* |  |  |  |  |
| Weighted Sector Peer AUi,j,t | .0025 | (.0013)\* |  |  |  |  | .0025 | (.0013)\* |
| Second Degree Peer AUi,j,t |  |  |  |  |  |  | .0013 | (.0015) |
| Joint Sig. χ2 (df) | 3.75 (1)\* | | 7.29 (1)\*\*\* | |  | | 4.59 (2)† | |
| Wald χ2 (df) | 994.82 (36) | | 990.13 (36) | |  | | 996.43 (37) | |
| Obs | 15,297 (2,285) | | 15,297 (2,285) | |  | | 15,263 (2,282) | |

Notes: a. AUi,j,t = analyst uncertainty; ADi,j,t-1 = disclosure of advertising spending; KMi,j,t-1 = information availability of Kantar Media advertising spending for firm *i* in industry *j* in fiscal year *t-1*. b. We use the clustered robust standard errors of estimates at the firm level. c. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed); † *p* <.10 (one-tailed). d. All models are significant at *p* < .001 and include year fixed effects. e. For alternative instruments (3), we report the results of the first stage model for ADi,j,t-1 only as the rest of the first stage models are equivalent to those in the main analyses.

**Web Appendix N**

**Constructing the Word Count of Advertising in 10-K Reports of Firms**

To account for the extent to which a firm qualitatively mentions its advertising in its 10-K report in our empirical models, we analyze the 10-K reports of firms and collect the textual data on the frequency of the occurrence of the word, *“advertising”*. First, we use the Text Parse Macro (i.e., TEXTPARSE.SAS) provided by the WRDS SEC Analytics Suite (see Lim, Tuli, and Grewal 2020 for a recent application) and extract 300 characters preceding the matched line that includes the key word, *“advertising”*. Next, we count the number of *“advertising”* mentioned in each extracted text (i.e., 300 characters) and calculate the sum of its frequency for each 10-K report.

Then, we divide the raw word count of advertising in each 10-K report by its industry mean to generate the variable of the word count of advertising, i.e., Adv Word Counti,j,t-1 for firm *i* in industry *j* in fiscal year *t-1* (Kim et al. 2021). We include Adv Word Counti,j,t-1 in the focal models as an additional control variable to account for the extent to which a firm qualitatively mentions its advertising in its 10-K report (see Web Appendix O for the descriptive statistics and P for the results).

**Web Appendix O**

**Distribution and Descriptive Statistics of the Word Count of Advertising**

|  |
| --- |
| *Panel A: Distribution of the Word Count of Advertising* |
|  |
| *Panel B: Percentage of Firms Mentioning Advertising in 10-K Reports* |
|  |
| *Panel C: The Average of the Word Count of Advertising over Years* |
|  |

Notes: a. The variable is the word count of advertising mentioned in the 10-K reports of firms in the sample before scaling it by its industry mean. B. # of Obs (# of firms) = 15,297 (2,285); Mean = 10.880; SD = 25.978; Min = 0; Max = 1,087. C. Given our empircal models have the lag structures in the first stage models and focal models, the models exploit the variation of the variable from fiscal year 1996 to 2018.

**Web Appendix P**

**Additional Analyses for the Word Count of Advertising**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *DV = Idiosyncratic Riski,j,t* | | *DV = Analyst Uncertaintyi,j,t* | | *DV = Idiosyncratic Riski,j,t* | | *DV = Analyst Uncertaintyi,j,t* | |  |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* | *Coef* | *SE* | *Coef* | *SE* |  |
| ADi,j,t-1 | -.0018 | (.0005) \*\*\*\* |  |  | -.0008 | (.0004) \* |  |  | *H1 (-): Supported* |
|  |  |  | -.0547 | (.0090) \*\*\*\* |  |  | -.0560 | (.0098) \*\*\*\* | *H2 (-): Supported* |
| Analyst Uncertaintyi,j,t |  |  |  |  | .0196 | (.0010) \*\*\*\* |  |  |  |
| Indirect Effect (βm × γ1) |  |  |  |  | -.0011 | (.0002) \*\*\*\* |  |  | *H3 (-): Supported* |
| ADi,j,t-1× Financial Liquidityi,j,t-1 |  |  |  |  |  |  | -.0041 | (.0016) \*\*\* | *H4 (-): Supported* |
| ADi,j,t-1× Financial Leveragei,j,t-1 |  |  |  |  |  |  | .0349 | (.0182) \* | *H5 (+): Weakly Supported* |
| ADi,j,t-1× Disclosure Qualityi,j,t-1 |  |  |  |  |  |  | .0846 | (.0248) \*\*\* | *H6 (+): Supported* |
| ADi,j,t-1× Competitive Intensityj,t-1 |  |  |  |  |  |  | -.0528 | (.0242) \*\* | *H7 (-): Supported* |
| Financial Liquidityi,j,t-1 | -.0001 | (.0001) \*\* | .0011 | (.0011) | -.0002 | (.0001) \*\*\* | .0031 | (.0012) \*\* |  |
| Financial Leveragei,j,t-1 | .0029 | (.0006) \*\*\*\* | .0207 | (.0104) \*\* | .0025 | (.0006) \*\*\*\* | .0028 | (.0148) |  |
| Disclosure Qualityi,j,t-1 | -.0038 | (.0016) \*\* | -.0806 | (.0332) \*\* | -.0019 | (.0018) | -.1203 | (.0368) \*\*\* |  |
| Competitive Intensityj,t-1 | .0016 | (.0008) \*\* | -.0297 | (.0150) \*\* | .0021 | (.0007) \*\*\* | .0014 | (.0196) |  |
| Adv Word Counti,j,t-1 | .0003 | (.0001) \*\*\*\* | .0084 | (.0015) \*\*\*\* | .0002 | (.0001) \*\*\* | .0089 | (.0014) \*\*\*\* |  |
| Est. Adv Spendingi,j,t-1 | .0044 | (.0065) | -.2136 | (.1012) \*\* | .0082 | (.0053) | -.2177 | (.0992) \*\* |  |
| Analyst Followingi,j,t-1 | -.0003 | (.0002) \*\* | -.0050 | (.0027) \* | -.0002 | (.0002) | -.0049 | (.0028) \* |  |
| Institutional Ownershipi,j,t-1 | -.0031 | (.0005) \*\*\*\* | .0227 | (.0084) \*\*\* | -.0036 | (.0005) \*\*\*\* | .0227 | (.0090) \*\* |  |
| Firm Agei,j,t-1 | -.0023 | (.0002) \*\*\*\* | -.0082 | (.0035) \*\* | -.0021 | (.0002) \*\*\*\* | -.0082 | (.0033) \*\* |  |
| Firm Sizei,j,t-1 | -.0024 | (.0001) \*\*\*\* | .0423 | (.0023) \*\*\*\* | -.0032 | (.0001) \*\*\*\* | .0425 | (.0024) \*\*\*\* |  |
| SG&Ai,j,t-1 | .0025 | (.0007) \*\*\* | .0713 | (.0136) \*\*\*\* | .0015 | (.0007) \*\* | .0714 | (.0135) \*\*\*\* |  |
| ROAi,j,t-1 | -.0177 | (.0013) \*\*\*\* | -.0250 | (.0172) | -.0171 | (.0013) \*\*\*\* | -.0246 | (.0179) |  |
| Cash Flowsi,j,t-1 | -.0085 | (.0013) \*\*\*\* | .0067 | (.0211) | -.0086 | (.0013) \*\*\*\* | .0041 | (.0219) |  |
| Industry Growthj,t-1 | -.0013 | (.0005) \*\*\* | -.0016 | (.0098) | -.0013 | (.0005) \*\*\* | -.0017 | (.0100) |  |
| Demand Uncertaintyj,t-1 | .0080 | (.0009) \*\*\*\* | .0405 | (.0139) \*\*\* | .0071 | (.0008) \*\*\*\* | .0385 | (.0139) \*\*\* |  |
| *PR\_ADi,j,t-1* | .0014 | (.0005) \*\*\* | .0531 | (.0094) \*\*\*\* | .0005 | (.0005) | .0559 | (.0104) \*\*\*\* |  |
| I,j,t-1 | -.0082 | (.0114) | .4067 | (.1679) \*\* | -.0143 | (.0101) | .4676 | (.1668) \*\*\* |  |
| IMRi,j,t-1 | -.0012 | (.0009) | .0117 | (.0169) | -.0014 | (.0009) \* | .0114 | (.0164) |  |
| i,j,t |  |  |  |  | -.0063 | (.0013) \*\*\*\* |  |  |  |
| Intercept | .0003 | (.0010) | -.0338 | (.0172) \*\* | .0013 | (.0009) | -.0343 | (.0168) \*\* |  |
| # of observations (# of firms) | 15,297 (2,285) | | 15,297 (2,285) | | 15,297 (2,285) | | 15,297 (2,285) | |  |
| Wald χ2 (df) | 12,449.61 (41) | | 3,392.18 (41) | | 21,661.30 (43) | | 4,210.56 (45) | |  |

Notes: a. DV = dependent variable; SE = standard error. b. ADi,j,t-1 is disclosure of advertising spending; Adv Word Counti,j,t-1 is the word count of advertising mentioned in the 10-K report of a firm; SG&Ai,j,t-1 is selling, general, and administrative expense (excluding estimated advertising spending) scaled by total assets; ROAi,j,t-1 is return on assets; IMRi,j,t-1 is the inverse Mills ratio to control for sample selection due to the inclusion of estimated advertising spending; *PR\_ADi,j,t-1* is the probit residual of ADi,j,t-1 for firm *i* in industry *j* in fiscal year *t-1*; i,j,t-1 and i,j,t are the control function correction terms for Adv Spendingi,j,t-1 and Analyst Uncertaintyi,j,t. c. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors. d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed); e. All models include year fixed effects and are significant at *p* < .001.

**Web Appendix Q**

**Accounting for Industry Fixed Effects**

It would be possible to argue that accounting for industry effects is important because advertising spending disclosure practices vary across different industries (Shi, Grewal, and Sridhar 2021) and firms in different industries are likely to have different levels of financial market risks. Though our empirical models do include industry-level control variables and use industry- and sector-based peers as instruments, we test if our conclusions remain consistent after accounting for industry-fixed effects. To account for unobservable industry-related effects, we include industry fixed effects and estimate the models. Specifically, we conduct two robustness checks, one using NAICS2 dummies and the other using 7 major sector dummies (see Table T1 in Web Appendix T for the definition of 7 major sectors).

As shown in Table Q1 and Table Q2, both robustness analyses accounting for industry fixed effects provide support for our hypotheses H1-H7. We note that, the mediation effect of analyst uncertainty is stronger in the model accounting for NAICS2 fixed effects as we find the main effect of disclosure of advertising spending is significant only at *p* < .10 (one-tailed). In addition, the moderating effect of competitive intensity is weaker as the interaction of disclosure of advertising spending and competitive intensity is significant only at *p* < .10 (one-tailed) in the model accounting for NAICS2 fixed effects. Table Q1 outlines the results of the models accounting for NAICS2 fixed effects and Table Q2 outlines those accounting for 7 major sector fixed effects.

**Table Q1**

**Robustness Analyses Accounting for Industry Fixed Effects (1)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *DV = Idiosyncratic Riski,j,t* | | | *DV = Analyst Uncertaintyi,j,t* | | | *DV = Idiosyncratic Riski,j,t* | | | *DV = Analyst Uncertaintyi,j,t* | | |  |
|  | *Coef* | *SE* |  | *Coef* | *SE* |  | *Coef* | *SE* |  | *Coef* | *SE* |  |  |
| ADi,j,t-1 | -.0028 | (.0009) | \*\*\* |  |  |  | -.0013 | (.0009) | † |  |  |  | *H1 (-): Supported* |
|  |  |  |  | -.0925 | (.0158) | \*\*\*\* |  |  |  | -.0915 | (.0164) | \*\*\*\* | *H2 (-): Supported* |
| Analyst Uncertaintyi,j,t |  |  |  |  |  |  | .0190 | (.0011) | \*\*\*\* |  |  |  |  |
| Indirect Effect (βm × γ1) |  |  |  |  |  |  | -.0018 | (.0003) | \*\*\*\* |  |  |  | *H3 (-): Supported* |
| ADi,j,t-1× Financial Liquidityi,j,t-1 |  |  |  |  |  |  |  |  |  | -.0038 | (.0017) | \*\* | *H4 (-): Supported* |
| ADi,j,t-1× Financial Leveragei,j,t-1 |  |  |  |  |  |  |  |  |  | .0350 | (.0189) | \* | *H5 (+): Weakly Supported* |
| ADi,j,t-1× Disclosure Qualityi,j,t-1 |  |  |  |  |  |  |  |  |  | .0731 | (.0234) | \*\*\* | *H6 (+): Supported* |
| ADi,j,t-1× Competitive Intensityj,t-1 |  |  |  |  |  |  |  |  |  | -.0345 | (.0213) | † | *H7 (-): Weakly Supported* |
| Financial Liquidityi,j,t-1 | -.0002 | (.0001) | \*\* | .0011 | (.0012) |  | -.0002 | (.0001) | \*\*\* | .0030 | (.0013) | \*\* |  |
| Financial Leveragei,j,t-1 | .0031 | (.0006) | \*\*\*\* | .0228 | (.0109) | \*\* | .0027 | (.0005) | \*\*\*\* | .0044 | (.0161) |  |  |
| Disclosure Qualityi,j,t-1 | -.0043 | (.0019) | \*\* | -.0864 | (.0374) | \*\* | -.0022 | (.0019) |  | -.1228 | (.0364) | \*\*\* |  |
| Competitive Intensityj,t-1 | .0021 | (.0009) | \*\* | -.0422 | (.0170) | \*\* | .0028 | (.0008) | \*\*\* | -.0204 | (.0200) |  |  |
| Est. Adv Spendingi,j,t-1 | .0045 | (.0067) |  | -.2472 | (.1007) | \*\* | .0087 | (.0067) |  | -.2545 | (.1029) | \*\* |  |
| Analyst Followingi,j,t-1 | -.0007 | (.0002) | \*\*\* | -.0108 | (.0033) | \*\*\* | -.0004 | (.0002) | \*\* | -.0107 | (.0033) | \*\*\* |  |
| Institutional Ownershipi,j,t-1 | -.0029 | (.0005) | \*\*\*\* | .0306 | (.0084) | \*\*\*\* | -.0035 | (.0005) | \*\*\*\* | .0305 | (.0088) | \*\*\* |  |
| Firm Agei,j,t-1 | -.0027 | (.0002) | \*\*\*\* | -.0178 | (.0047) | \*\*\*\* | -.0024 | (.0002) | \*\*\*\* | -.0179 | (.0042) | \*\*\*\* |  |
| Firm Sizei,j,t-1 | -.0026 | (.0001) | \*\*\*\* | .0389 | (.0029) | \*\*\*\* | -.0033 | (.0001) | \*\*\*\* | .0389 | (.0027) | \*\*\*\* |  |
| SG&Ai,j,t-1 | .0019 | (.0010) | \*\* | .0868 | (.0187) | \*\*\*\* | .0008 | (.0010) |  | .0855 | (.0166) | \*\*\*\* |  |
| ROAi,j,t-1 | -.0177 | (.0013) | \*\*\*\* | -.0158 | (.0176) |  | -.0174 | (.0013) | \*\*\*\* | -.0159 | (.0169) |  |  |
| Cash Flowsi,j,t-1 | -.0093 | (.0014) | \*\*\*\* | -.0111 | (.0220) |  | -.0090 | (.0013) | \*\*\*\* | -.0143 | (.0214) |  |  |
| Industry Growthj,t-1 | -.0015 | (.0005) | \*\*\* | -.0050 | (.0101) |  | -.0014 | (.0005) | \*\*\* | -.0051 | (.0101) |  |  |
| Demand Uncertaintyj,t-1 | .0079 | (.0009) | \*\*\*\* | .0414 | (.0151) | \*\*\* | .0070 | (.0009) | \*\*\*\* | .0402 | (.0166) | \*\* |  |
| *PR\_ADi,j,t-1* | .0026 | (.0009) | \*\*\* | .0929 | (.0159) | \*\*\*\* | .0011 | (.0009) |  | .0931 | (.0165) | \*\*\*\* |  |
| i,j,t-1 | -.0096 | (.0116) |  | .4496 | (.1660) | \*\*\* | -.0164 | (.0113) |  | .5055 | (.1696) | \*\*\* |  |
| IMRi,j,t-1 | -.0036 | (.0014) | \*\* | -.0381 | (.0266) |  | -.0029 | (.0014) | \*\* | -.0397 | (.0227) | \* |  |
| i,j,t |  |  |  |  |  |  | -.0056 | (.0013) | \*\*\*\* |  |  |  |  |
| Intercept | .0082 | (.0022) | \*\*\*\* | .1158 | (.0386) | \*\*\* | .0062 | (.0020) | \*\*\* | .1149 | (.0337) | \*\*\* |  |
| Wald χ2 (df) | 14,032.18 (57) \*\*\*\* | | | 3,819.56 (57) \*\*\*\* | | | 22,164.32 (59) \*\*\*\* | | | 4,273.94 (61) \*\*\*\* | | |  |
| Year and Industry Fixed Effects | Yes | | | Yes | | | Yes | | | Yes | |  |  |

Notes: a. # of observations (# of firms) = 15,297 (2,285); DV = dependent variable; SE = standard error. b. ADi,j,t-1 is disclosure of advertising spending; SG&Ai,j,t-1 is selling, general, and administrative expense (excluding estimated advertising spending) scaled by total assets; ROAi,j,t-1 is return on assets; IMRi,j,t-1 is the inverse Mills ratio generated from the probit model to control for sample selection due to the inclusion of estimated advertising spending; *PR\_ADi,j,t-1* is the probit residual of ADi,j,t-1 for firm *i* in industry *j* in fiscal year *t-1*;  i,j,t-1 and i,j,t are the control function correction terms for Adv Spendingi,j,t-1 and Analyst Uncertaintyi,j,t. c. The models include industry fixed effects using NAICS2 dummies. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors. d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed); † *p* < .10 (one-tailed).

**Table Q2**

**Robustness Analyses Accounting for Industry Fixed Effects (2)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *DV = Idiosyncratic*  *Riski,j,t* | | | *DV = Analyst Uncertaintyi,j,t* | | | *DV = Idiosyncratic Riski,j,t* | | | *DV = Analyst Uncertaintyi,j,t* | | |  |
|  | *Coef* | *SE* |  | *Coef* | *SE* |  | *Coef* | *SE* |  | *Coef* | *SE* |  |  |
| ADi,j,t-1 | -.0036 | (.0008) | \*\*\*\* |  |  |  | -.0020 | (.0008) | \*\*\* |  |  |  | *H1 (-): Supported* |
|  |  |  |  | -.0997 | (.0144) | \*\*\*\* |  |  |  | -.0989 | (.0151) | \*\*\*\* | *H2 (-): Supported* |
| Analyst Uncertaintyi,j,t |  |  |  |  |  |  | .0203 | (.0010) | \*\*\*\* |  |  |  |  |
| Indirect Effect (βm × γ1) |  |  |  |  |  |  | -.0020 | (.0003) | \*\*\*\* |  |  |  | *H3 (-): Supported* |
| ADi,j,t-1× Financial Liquidityi,j,t-1 |  |  |  |  |  |  |  |  |  | -.0042 | (.0017) | \*\* | *H4 (-): Supported* |
| ADi,j,t-1× Financial Leveragei,j,t-1 |  |  |  |  |  |  |  |  |  | .0356 | (.0189) | \* | *H5 (+): Weakly Supported* |
| ADi,j,t-1× Disclosure Qualityi,j,t-1 |  |  |  |  |  |  |  |  |  | .0774 | (.0233) | \*\*\* | *H6 (+): Supported* |
| ADi,j,t-1× Competitive Intensityj,t-1 |  |  |  |  |  |  |  |  |  | -.0483 | (.0214) | \*\* | *H7 (-): Supported* |
| Financial Liquidityi,j,t-1 | -.0001 | (.0001) | \* | .0020 | (.0011) | \* | -.0002 | (.0001) | \*\*\* | .0040 | (.0013) | \*\*\* |  |
| Financial Leveragei,j,t-1 | .0032 | (.0006) | \*\*\*\* | .0236 | (.0110) | \*\* | .0027 | (.0006) | \*\*\*\* | .0049 | (.0161) |  |  |
| Disclosure Qualityi,j,t-1 | -.0029 | (.0018) |  | -.0529 | (.0366) |  | -.0013 | (.0017) |  | -.0898 | (.0350) | \*\* |  |
| Competitive Intensityj,t-1 | .0014 | (.0008) | \* | -.0153 | (.0165) |  | .0015 | (.0008) | \* | .0142 | (.0196) |  |  |
| Est. Adv Spendingi,j,t-1 | .0049 | (.0066) |  | -.2929 | (.0996) | \*\*\* | .0102 | (.0056) | \* | -.3028 | (.1020) | \*\*\* |  |
| Analyst Followingi,j,t-1 | -.0005 | (.0002) | \*\*\* | -.0058 | (.0030) | \* | -.0003 | (.0002) | \* | -.0055 | (.0031) | \* |  |
| Institutional Ownershipi,j,t-1 | -.0029 | (.0005) | \*\*\*\* | .0293 | (.0083) | \*\*\*\* | -.0035 | (.0005) | \*\*\*\* | .0293 | (.0087) | \*\*\* |  |
| Firm Agei,j,t-1 | -.0023 | (.0002) | \*\*\*\* | -.0128 | (.0039) | \*\*\* | -.0020 | (.0002) | \*\*\*\* | -.0129 | (.0037) | \*\*\* |  |
| Firm Sizei,j,t-1 | -.0024 | (.0001) | \*\*\*\* | .0407 | (.0026) | \*\*\*\* | -.0032 | (.0001) | \*\*\*\* | .0408 | (.0024) | \*\*\*\* |  |
| SG&Ai,j,t-1 | .0033 | (.0009) | \*\*\*\* | .1044 | (.0163) | \*\*\*\* | .0016 | (.0008) | \* | .1039 | (.0145) | \*\*\*\* |  |
| ROAi,j,t-1 | -.0176 | (.0013) | \*\*\*\* | -.0252 | (.0175) |  | -.0169 | (.0013) | \*\*\*\* | -.0252 | (.0171) |  |  |
| Cash Flowsi,j,t-1 | -.0086 | (.0014) | \*\*\*\* | .0046 | (.0220) |  | -.0086 | (.0014) | \*\*\*\* | .0017 | (.0214) |  |  |
| Industry Growthj,t-1 | -.0015 | (.0005) | \*\*\* | -.0020 | (.0101) |  | -.0015 | (.0005) | \*\*\* | -.0020 | (.0102) |  |  |
| Demand Uncertaintyj,t-1 | .0077 | (.0009) | \*\*\*\* | .0309 | (.0149) | \*\* | .0068 | (.0008) | \*\*\*\* | .0293 | (.0165) | \* |  |
| *PR\_ADi,j,t-1* | .0034 | (.0008) | \*\*\*\* | .0995 | (.0144) | \*\*\*\* | .0018 | (.0008) | \*\* | .1002 | (.0151) | \*\*\*\* |  |
| i,j,t-1 | -.0084 | (.0115) |  | .4987 | (.1668) | \*\*\* | -.0162 | (.0109) |  | .5633 | (.1691) | \*\*\* |  |
| IMRi,j,t-1 | -.0020 | (.0012) | \* | -.0098 | (.0217) |  | -.0019 | (.0011) | \* | -.0104 | (.0186) |  |  |
| i,j,t |  |  |  |  |  |  | -.0070 | (.0013) | \*\*\*\* |  |  |  |  |
| Intercept | .0009 | (.0013) |  | .0277 | (.0222) |  | .0008 | (.0012) |  | .0274 | (.0209) |  |  |
| Wald χ2 (df) | 12,487.37 (46) \*\*\*\* | | | 3,476.09 (46) \*\*\*\* | | | 15,593.07 (48) \*\*\*\* | | | 3,272.05 (50) \*\*\*\* | | |  |
| Year and Industry Fixed Effects | Yes | | | Yes | | | Yes | | | Yes | |  |  |

Notes: a. # of observations (# of firms) = 15,297 (2,285); DV = dependent variable; SE = standard error. b. ADi,j,t-1 is disclosure of advertising spending; SG&Ai,j,t-1 is selling, general, and administrative expense (excluding estimated advertising spending) scaled by total assets; ROAi,j,t-1 is return on assets; IMRi,j,t-1 is the inverse Mills ratio generated from the probit model to control for sample selection due to the inclusion of estimated advertising spending; *PR\_ADi,j,t-1* is the probit residual of ADi,j,t-1 for firm *i* in industry *j* in fiscal year *t-1*;  i,j,t-1 and i,j,t are the control function correction terms for Adv Spendingi,j,t-1 and Analyst Uncertaintyi,j,t. c. The models include industry fixed effects using major sector dummies. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors. d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed).

**Web Appendix R**

**Alternative Measurement Windows for Analyst Uncertainty and Idiosyncratic Risk**

Our empirical model to test H3 (i.e., the mediating effect of analyst uncertainty) assumes that investors are affected by analyst uncertainty simultaneously as we measure both of the variables in the same measurement window. To establish the casual effect of analyst uncertainty on idiosyncratic risk, it is important to assure that analyst uncertainty precedes idiosyncratic risk. To address this timing issue, we use alternative measurement windows to measure analyst uncertainty and idiosyncratic risk such that analyst uncertainty precedes idiosyncratic risk in the mediation model. First, we measure analyst uncertainty for the time window between the day following the release of a firm’s annual report (i.e., 10-K) at fiscal year *t-1* and the day before its release of a quarterly report for the first quarter of fiscal year *t*. Then, we measure idiosyncratic risk after this period, i.e., the time window between the day following the release of a firm’s quarterly report for the first quarter of fiscal year *t* and the day before its release of the annual report for fiscal year *t*. We replace the dependent variables used in the models with these alternative measures for analyst uncertainty and idiosyncratic risk.

As outlined in Table R1 we consistently find support for H1-H7 and our substantive conclusions are not sensitive to the alternative measurement windows for analyst uncertainty and idiosyncratic risk. However, we note that the mediating effect of analyst uncertainty is stronger in this additional analysis as the main effect of disclosure of advertising spending is marginally significant at *p* < .10 (two-tailed). Further, the moderating effect of competitive intensity is also weakly supported as the interaction of disclosure of advertising spending and competitive intensity is significant only at *p* < .10 (two-tailed) in this analysis (see Table R1).

**Table R1**

**Alternative Measures of Idiosyncratic Risk and Analyst Uncertainty Accounting for Measurement Timing**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *DV = Idiosyncratic Riski,j,t* | | | *DV = Analyst Uncertaintyi,j,t* | | | *DV = Idiosyncratic Riski,j,t* | | | *DV = Analyst Uncertaintyi,j,t* | | |  |
|  | *Coef* | *SE* |  | *Coef* | *SE* |  | *Coef* | *SE* |  | *Coef* | *SE* |  |  |
| ADi,j,t-1 | -.0024 | (.0007) | \*\*\* | -.0703 | (.0086) | \*\*\*\* | -.0012 | (.0007) | \* | -.0703 | (.0084) | \*\*\*\* | *H1 (-): Supported* |
|  |  |  |  |  |  |  |  |  |  |  |  |  | *H2 (-): Supported* |
| Analyst Uncertaintyi,j,t |  |  |  |  |  |  | .0221 | (.0012) | \*\*\*\* |  |  |  |  |
| Indirect Effect (βm × γ1) |  |  |  |  |  |  | -.0016 | (.0002) | \*\*\*\* |  |  |  | *H3 (-): Supported* |
| ADi,j,t-1× Financial Liquidityi,j,t-1 |  |  |  |  |  |  |  |  |  | -.0036 | (.0013) | \*\*\* | *H4 (-): Supported* |
| ADi,j,t-1× Financial Leveragei,j,t-1 |  |  |  |  |  |  |  |  |  | .0387 | (.0145) | \*\*\* | *H5 (+): Supported* |
| ADi,j,t-1× Disclosure Qualityi,j,t-1 |  |  |  |  |  |  |  |  |  | .0551 | (.0191) | \*\*\* | *H6 (+): Supported* |
| ADi,j,t-1× Competitive Intensityj,t-1 |  |  |  |  |  |  |  |  |  | -.0319 | (.0184) | \* | *H7 (-): Weakly Supported* |
| Financial Liquidityi,j,t-1 | -.0001 | (.0001) |  | .0021 | (.0009) | \*\* | -.0002 | (.0001) | \*\* | -.1999 | (.0825) | \*\* |  |
| Financial Leveragei,j,t-1 | .0030 | (.0007) | \*\*\*\* | .0376 | (.0080) | \*\*\*\* | .0021 | (.0006) | \*\*\*\* | .0032 | (.0026) |  |  |
| Disclosure Qualityi,j,t-1 | -.0046 | (.0018) | \*\* | -.0153 | (.0215) |  | -.0034 | (.0016) | \*\* | -.0020 | (.0069) |  |  |
| Competitive Intensityj,t-1 | .0020 | (.0008) | \*\* | -.0215 | (.0124) | \* | .0021 | (.0007) | \*\*\* | -.0067 | (.0028) | \*\* |  |
| Est. Adv Spendingi,j,t-1 | .0070 | (.0064) |  | -.1980 | (.0774) | \*\* | .0094 | (.0064) |  | -.0392 | (.0243) |  |  |
| Analyst Followingi,j,t-1 | -.0003 | (.0002) | \* | .0029 | (.0025) |  | -.0004 | (.0002) | \*\* | .0353 | (.0018) | \*\*\*\* |  |
| Institutional Ownershipi,j,t-1 | -.0022 | (.0005) | \*\*\*\* | -.0022 | (.0073) |  | -.0023 | (.0005) | \*\*\*\* | .0918 | (.0105) | \*\*\*\* |  |
| Firm Agei,j,t-1 | -.0022 | (.0002) | \*\*\*\* | -.0069 | (.0027) | \*\* | -.0021 | (.0002) | \*\*\*\* | -.0691 | (.0163) | \*\*\*\* |  |
| Firm Sizei,j,t-1 | -.0023 | (.0001) | \*\*\*\* | .0351 | (.0019) | \*\*\*\* | -.0030 | (.0001) | \*\*\*\* | .0572 | (.0187) | \*\*\* |  |
| SG&Ai,j,t-1 | .0031 | (.0008) | \*\*\*\* | .0914 | (.0099) | \*\*\*\* | .0019 | (.0008) | \*\* | .0175 | (.0111) |  |  |
| ROAi,j,t-1 | -.0155 | (.0014) | \*\*\*\* | -.0691 | (.0159) | \*\*\*\* | -.0138 | (.0014) | \*\*\*\* | .0039 | (.0010) | \*\*\*\* |  |
| Cash Flowsi,j,t-1 | -.0085 | (.0014) | \*\*\*\* | .0591 | (.0163) | \*\*\*\* | -.0097 | (.0015) | \*\*\*\* | -.0024 | (.0168) |  |  |
| Industry Growthj,t-1 | -.0017 | (.0005) | \*\*\* | -.0014 | (.0071) |  | -.0016 | (.0005) | \*\*\* | -.0012 | (.0076) |  |  |
| Demand Uncertaintyj,t-1 | .0082 | (.0008) | \*\*\*\* | .0532 | (.0121) | \*\*\*\* | .0067 | (.0008) | \*\*\*\* | .0514 | (.0113) | \*\*\*\* |  |
| *PR\_ADi,j,t-1* | .0021 | (.0007) | \*\*\* | .0735 | (.0087) | \*\*\*\* | .0009 | (.0007) |  | .0747 | (.0086) | \*\*\*\* |  |
| i,j,t-1 | -.0027 | (.0116) |  | .3262 | (.1181) | \*\*\* | -.0060 | (.0113) |  | .3713 | (.1247) | \*\*\* |  |
| IMRi,j,t-1 | -.0018 | (.0010) | \* | .0248 | (.0122) | \*\* | -.0025 | (.0010) | \*\* | .0260 | (.0121) | \*\* |  |
| i,j,t |  |  |  |  |  |  | -.0129 | (.0017) | \*\*\*\* |  |  |  |  |
| Intercept | .0018 | (.0011) |  | -.0212 | (.0133) |  | .0028 | (.0011) | \*\* | -.0231 | (.0133) | \* |  |
| Wald χ2 (df) | 11,535.05 (40) \*\*\*\* | | | 3,070.20 (40) \*\*\*\* | | | 12,855.85 (42) \*\*\*\* | | | 3,166.77 (44) \*\*\*\* | | |  |

Notes: a. # of observations (# of firms) = 13,585 (2,090); DV = dependent variable; SE = standard error. For this robustness analysis, we use alternative windows to measure AU and IR. Specifically, we measure AU using the time window between the day following the release of a firm’s annual financial report at fiscal year *t-1* and the day before its release of a quarterly report in the first quarter of fiscal year *t*. We measure IR using the time window between the day following the release of a firm’s quarterly report in the first quarter of fiscal year *t* and the day before its release of the annual report at fiscal year *t*. b. ADi,j,t-1 is disclosure of advertising spending; SG&Ai,j,t-1 is selling, general, and administrative expense (excluding estimated advertising spending) scaled by total assets; ROAi,j,t-1 is return on assets; IMRi,j,t-1 is the inverse Mills ratio generated from the probit model to control for sample selection due to the inclusion of estimated advertising spending; *PR\_ADi,j,t-1* is the probit residual of ADi,j,t-1 for firm *i* in industry *j* in fiscal year *t-1*;  i,j,t-1 and i,j,t are the control function correction terms for Adv Spendingi,j,t-1 and Analyst Uncertaintyi,j,t. c. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors. d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed).

**Web Appendix S**

**Using Stock Return Volatility as a Measure of Investor Uncertainty**

In this study, we examine disclosure of advertising spending lowers uncertainty faced by investors about firm future performance that is reflected in idiosyncratic risk. It is well established in academic research on disclosure that disclosure and more transparent financial reporting reduce investor uncertainty (see Billing, Jennings, and Lev 2015, p. 161), and investor uncertainty is a fundamental concern for senior managers, analysts, and regulators (see Huang et al. 2021; Bayer, Tuli, and Skiera 2017; SEC 2017; FASB 2013). Both stock return volatility and idiosyncratic risk are widely used to measure investor uncertainty in the accounting literature (see Barth et al. 2020; Huang et al. 2021). Therefore, we use stock return volatility to test the robustness of the results estimated from models in which the dependent variable is idiosyncratic risk. We consistently find support for all of our hypotheses in which the dependent variable is idiosyncratic risk (i.e., H1 and H3).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *DV = Stock Return Volatilityi,j,t* | | *DV = Stock Return Volatilityi,j,t* | |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* |
| Analyst Uncertaintyi,j,t |  |  | .0211 | (.0010)\*\*\*\* |
| ADi,j,t-1 | -.0043 | (.0007)\*\*\*\* | -.0026 | (.0007)\*\*\*\* |
| Financial Liquidityi,j,t-1 | .0000 | (.0001) | .0000 | (.0001) |
| Financial Leveragei,j,t-1 | .0024 | (.0006)\*\*\*\* | .0017 | (.0006)\*\*\* |
| Disclosure Qualityi,j,t-1 | -.0054 | (.0018)\*\*\* | -.0037 | (.0019)\* |
| Competitive Intensityj,t-1 | .0021 | (.0009)\*\* | .0025 | (.0007)\*\*\* |
| Est. Adv Spendingi,j,t-1 | -.0053 | (.0066) | -.0024 | (.0061) |
| Analyst Followingi,j,t-1 | -.0004 | (.0002)\*\* | -.0002 | (.0002) |
| Institutional Ownershipi,j,t-1 | -.0015 | (.0005)\*\*\* | -.0021 | (.0005)\*\*\*\* |
| Firm Agei,j,t-1 | -.0026 | (.0002)\*\*\*\* | -.0024 | (.0002)\*\*\*\* |
| Firm Sizei,j,t-1 | -.0023 | (.0001)\*\*\*\* | -.0031 | (.0001)\*\*\*\* |
| SG&Ai,j,t-1 | .0026 | (.0009)\*\*\* | .0011 | (.0008) |
| ROAi,j,t-1 | -.0190 | (.0014)\*\*\*\* | -.0183 | (.0014)\*\*\*\* |
| Cash Flowsi,j,t-1 | -.0087 | (.0015)\*\*\*\* | -.0088 | (.0014)\*\*\*\* |
| Industry Growthj,t-1 | -.0016 | (.0006)\*\*\* | -.0015 | (.0006)\*\*\* |
| Demand Uncertaintyj,t-1 | .0114 | (.0010)\*\*\*\* | .0105 | (.0009)\*\*\*\* |
| *PR\_ADi,j,t-1* | .0039 | (.0007)\*\*\*\* | .0023 | (.0007)\*\*\* |
| I,j,t-1 | -.0005 | (.0122) | -.0060 | (.0111) |
| IMRi,j,t-1 | -.0038 | (.0010)\*\*\*\* | -.0038 | (.0010)\*\*\*\* |
| i,j,t |  |  | -.0065 | (.0013)\*\*\*\* |
| Intercept | .0024 | (.0012)\*\* | .0029 | (.0011)\*\*\* |
| # of observations (# of firms) | 15,297 (2,285) | | 15,297 (2,285) | |
| Wald χ2 (df) | 14,337.51 (40) | | 17,423.64 (42) | |

Notes: a. DV = dependent variable; SE = standard error. Stock Return Volatility is the standard deviation of stock returns and we measure Stock Return Volatilityi,j,t following the release of a firm’s annual report at fiscal year *t-1* and before its release of the annual report at fiscal year *t*. b. ADi,j,t-1 is disclosure of advertising spending; SG&Ai,j,t-1 is selling, general, and administrative expense (excluding estimated advertising spending) scaled by total assets; ROAi,j,t-1 is return on assets; IMRi,j,t-1 is the inverse Mills ratio to control for sample selection due to the inclusion of estimated advertising spending; *PR\_ADi,j,t-1* is the probit residual of ADi,j,t-1 for firm *i* in industry *j* in fiscal year *t-1*; i,j,t-1 and i,j,t are the control function correction terms for Adv Spendingi,j,t-1 and Analyst Uncertaintyi,j,t. c. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors. d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed); e. All models include year fixed effects and are significant at *p* < .001.

**Web Appendix T**

**Estimating the Nuanced Effects of Disclosure of Advertising Spending for 7 Major Sectors**

To provide the nuanced implications of disclosure of advertising spending, we classify firms into more aggregated industry groups. Specifically, we construct the following 7 major sectors: Manufacturing, High Tech, Consumer Services, Business Services, Healthcare, Information, and Others (see Table T1 for the details). Then, to account for sector-specific nuanced effects, we include the major sector dummies and interact them with ADi,j,t-1 (i.e., disclosure of advertising spending) in the main effects models. Specifically, the following model is used to estimate the nuanced effects of disclosure of advertising spending for each major sector:

DVi,j,t = β0 + β1ADi,j,t-1

+ β2ADi,j,t-1×Hi Techg + β3ADi,j,t-1×Consumer Servicesg + β4ADi,j,t-1×Business Servicesg

+ β5ADi,j,t-1×Healthcareg + β6ADi,j,t-1×Informationg + β7ADi,j,t-1×Othersg

+ β8Hi Techg + β9Consumer Servicesg + β10Business Servicesg + β11Healthcarej + β12Informationg + β13Othersg

+ **Δ’Controlsi,j,t-1**+ kYeart

+ βaPR\_ADi,j,t-1 + βb i,j,t-1 + βcIMRi,j,t-1 + μi + εi,j,t,

where, DVi,j,t = Idiosyncratic riski,j,t, Analyst Uncertaintyi,j,t, Tobin’s qi,j,t , or Log of Market Capitalizationi,j,t,

Hi Techg = high tech sector dummy, Consumer Servicesg = consumer service sector dummy,

Business Servicesg = business service sector dummy, Healthcareg = pharmaceutical and healthcare sector dummy,

Informationg = information sector dummy, Othersg = other sector dummy,

PR\_ADi,j,t-1 = the probit residual of disclosure of advertising spending,

I,j,t-1 = the control function correction term for advertising spending,

IMRi,j,t-1 = the inverse Mills ratio to control for the sample selection due to the inclusion of estimated advertising spending.

We use Manufacturingg as a baseline whose effect is captured by β1 in the specified model above. The models are estimated using the procedures outlined in the methods section to estimate the impact of disclosure of advertising spending on idiosyncratic risk and analyst uncertainty. Table T1 outlines the construction of 7 major sectors, and Table T2-T3 outline the results of the models used to estimate marginal effects of disclosure of advertising spending on idiosyncratic risk, analyst uncertainty, Tobin’s q, and log of market capitalization for each major sector (see Table 5 in the main manuscript).

**Table T1 Construction of 7 Major Sectors**

|  |  |
| --- | --- |
| Major Sector | Construction |
| Manufacturing | Manufacturing (NAICS2 31-33) except High Tech and Healthcare firms. |
| High Tech | Computer and Peripheral Equipment Manufacturing (NAICS4 3341)  Communications Equipment Manufacturing (NAICS4 3342)  Semiconductor and Other Electronic Component Manufacturing (NAICS4 3344)  Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS4 3345)  Aerospace Product and Parts Manufacturing (NAICS4 3364)  Software Publishers (NAICS4 5112)  Other Telecommunications (NAICS4 5179)  Internet Service Providers and Web Search Portals (NAICS4 5181)  Data Processing, Hosting, and Related Services (NAICS4 5182)  Architectural, Engineering, and Related Services (NAICS4 5413)  Computer Systems Design and Related Services (NAICS4 5415)  Scientific Research and Development Services (NAICS4 5417) |
| Consumer Services | Retail Trade (NAICS2 42 & 45)  Leisure and Hospitality (NAICS2 71 & 72)  Personal and Laundry Services (NAICS3 811). |
| Business Services | Wholesale Trade (NAICS2 42)  Professional and Business Services (NAICS2 54-56). |
| Healthcare | Pharmaceutical and Medicine Manufacturing (NAICS4 3254)  Medical Equipment and Supplies Manufacturing (NAICS4 3391)  Ambulatory Health Care Services (NAICS 621)  Hospitals (NAICS 622)  Nursing and Residential Care Facilities (NAICS 623) |
| Information | Information (NAICS2 51) except High Tech |
| Others | Mining, Quarrying, and Oil and Gas Extraction (NAICS22 21)  Construction (NAICS2 23)  Transportation and Warehousing (NAICS2 48-49)  Real Estate and Rental and Leasing (NAICS2 53)  Educational Services (NAICS 61). |

Note: Decker et al. (2020) include NAICS4 3254 and 5161 to classify High Tech firms. We do not observe firms in NAICS4 5161 in our sample and define NAICS4 3254 as Healthcare.

**Table T2**

**The Nuanced Effects of Disclosure of Advertising Spending on**

**Idiosyncratic Risk and Analyst Uncertainty for Major Sectors**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *DV = Idiosyncratic Riski,j,t* | *Major Sector Fixed Effects* | | *Interactions with Major Sector Fixed Effects* | |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* |
| ADi,j,t-1 | -.0036 | (.0008)\*\*\*\* | -.0018 | (.0008)\*\* |
| ADi,j,t-1× Hi Techg |  |  | -.0038 | (.0005)\*\*\*\* |
| ADi,j,t-1× Consumer Servicesg |  |  | .0001 | (.0007) |
| ADi,j,t-1× Business Servicesg |  |  | -.0042 | (.0008)\*\*\*\* |
| ADi,j,t-1× Healthcareg |  |  | -.0012 | (.0009) |
| ADi,j,t-1× Informationg |  |  | -.0013 | (.0008) |
| ADi,j,t-1× Othersg |  |  | -.0013 | (.0019) |
| Industry Fixed Effects | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | |
| Wald χ2 (df) | 12,487.37 (46)\*\*\*\* | | 12,948.92 (52)\*\*\*\* | |
|  |  | |  | |
| *DV = Analyst Uncertaintyi,j,t* | *Major Sector Fixed Effects* | | *Interactions with Major Sector Fixed Effects* | |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* |
| ADi,j,t-1 | -.0997 | (.0144)\*\*\*\* | -.1007 | (.0161)\*\*\*\* |
| ADi,j,t-1× Hi Techg |  |  | .0011 | (.0087) |
| ADi,j,t-1× Consumer Servicesg |  |  | .0180 | (.0105)\* |
| ADi,j,t-1× Business Servicesg |  |  | -.0382 | (.0112)\*\*\* |
| ADi,j,t-1× Healthcareg |  |  | .0243 | (.0152) |
| ADi,j,t-1× Informationg |  |  | -.0033 | (.0149) |
| ADi,j,t-1× Othersg |  |  | -.0134 | (.0227) |
| Industry Fixed Effects | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | |
| Wald χ2 (df) | 3,476.09 (46)\*\*\*\* | | 3,654.57 (52)\*\*\*\* | |

Notes:

a. # of observations (# of firms) = 15,297 (2,285); DV = dependent variable; SE = standard error.

b. ADi,j,t-1 is disclosure of advertising spending for firm *i* in industry *j* in fiscal year *t-1.* To account for unobservable industry-related effects, we use fixed effects for the 7 major sectors.

c. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors.

d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed).

**Table T3**

**The Nuanced Effects of Disclosure of Advertising Spending on**

**Tobin’s q and Log of Market Capitalization for Major Sectors**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *DV = Tobin’s qi,j,t* | *Major Sector Fixed Effects* | | *Interactions with Major Sector Fixed Effects* | |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* |
| ADi,j,t-1 | .2674 | (.0984)\*\*\* | .4502 | (.1051)\*\*\*\* |
| ADi,j,t-1× Hi Techg |  |  | -.2336 | (.0688)\*\*\*\* |
| ADi,j,t-1× Consumer Servicesg |  |  | -.2767 | (.0805)\*\*\*\* |
| ADi,j,t-1× Business Servicesg |  |  | .0211 | (.1063) |
| ADi,j,t-1× Healthcareg |  |  | -.1397 | (.1749) |
| ADi,j,t-1× Informationg |  |  | -.3640 | (.1230)\*\*\* |
| ADi,j,t-1× Othersg |  |  | -.4720 | (.1238)\*\*\*\* |
| Industry Fixed Effects | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | |
| Wald χ2 (df) | 4,147.78 (46)\*\*\*\* | | 4,395.45 (52)\*\*\*\* | |
|  |  | |  | |
| *DV = Log of Market Capitalizationi,j,t* | *Major Sector Fixed Effects* | | *Interactions with Major Sector Fixed Effects* | |
| *Variable* | *Coef* | *SE* | *Coef* | *SE* |
| ADi,j,t-1 | .1490 | (.0663)\*\* | .2591 | (.0739)\*\*\*\* |
| ADi,j,t-1× Hi Techg |  |  | -.1382 | (.0408)\*\*\* |
| ADi,j,t-1× Consumer Servicesg |  |  | -.2214 | (.0580)\*\*\*\* |
| ADi,j,t-1× Business Servicesg |  |  | -.0016 | (.0613) |
| ADi,j,t-1× Healthcareg |  |  | -.0513 | (.0701) |
| ADi,j,t-1× Informationg |  |  | -.1142 | (.0697) |
| ADi,j,t-1× Othersg |  |  | -.4121 | (.1145)\*\*\*\* |
| Industry Fixed Effects | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | |
| Wald χ2 (df) | 35,036.94 (46)\*\*\*\* | | 30,033.61 (52)\*\*\*\* | |

Notes:

a. # of observations (# of firms) = 15,292 (2,282); DV = dependent variable; SE = standard error.

b. ADi,j,t-1 is disclosure of advertising spending for firm *i* in industry *j* in fiscal year *t-1*. To account for unobservable industry-related effects, we use fixed effects for the 7 major sectors.

c. We use the clustered robust standard errors of estimates at the firm level and use 200 bootstrapping replications to calculate the standard errors.

d. We mean center all continuous variables; \* *p* < .10, \*\* *p* < .05, \*\*\* *p* < .01, \*\*\*\* *p* < .001 (two-tailed).

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