QUALITATIVE DISCLOSURE, FIRM LIFE CYCLE AND AUDIT FEES

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Abstract - The objective of this study is to examine whether and to what extent qualitative disclosure features, such as complexity, and ambiguity of annual reports are associated with audit fees. Using 47,582 observations for the years 2000 to 2014, we observe that these narrative disclosure traits have positive audit pricing consequences. We infer from these findings that these narrative disclosure characteristics play important roles in auditors’ client risk estimation and therefore audit fee determination process. We further posit that the audit fee consequences of these disclosure traits would vary across different phases of a client firm’s corporate life cycle. While, the positive association of the narrative disclosure traits with audit fees do not seem to considerably vary between introduction and growth phases, this association is moderated when firms enter the maturity phase. Finally, these lexical features seem to play more important role in audit fee determination process when firms advance from maturity to decline phase. We argue, based on these findings, that to examine the audit fee consequence of management disclosure strategy, one needs to treat a client firm as a dynamic evolving entity.

I. INTRODUCTION

In recent years, qualitative or narrative disclosures made in financial reports has attracted the attention of accounting and finance researchers. While several of these studies show that different users of financial reports, such as investors, credit rating agencies, and financial analysts are benefited from narrative disclosure, researchers have only sparingly tested the impact of such disclosure on audit fees. This is surprising given that narrative disclosure can play a vital role in auditors’ estimation of audit risk, and therefore audit fees. For instance, while quantitative disclosure can depict a client’s past and current economic condition and financial position, textual disclosure can provide more forward looking information on client business risk (Stanley 2011). Further, various qualitative disclosure traits could facilitate auditors’ audit risk estimation by helping them identify managerial incentives. We attempt to fill up this void in literature by examining audit pricing consequences of different artifacts of narrative disclosure, such as complexity, and ambiguity of such disclosure.

II. BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 Textual features and audit fees

Simunic’s (1980) production-based analytical model postulates that auditors incorporate any information related to engagement risk into their audit pricing decisions. Because of the difficulty of adjusting negotiated audit fees after the engagement letter is issued, auditors, during the audit fee negotiation process, usually spend a considerable amount of time and effort to appraise client specific information, available from both private and public sources, such as anticipated future financial performance, litigation risk, business strategies, discontinued operations, industry, and even macroeconomic information, to assess riskiness of the audit engagement (Bell, Landsman and Shakelford, 2008; Picconi and Reynolds 2013). More specifically, auditors typically consider three types of risks while estimating the overall risk of any engagement: (1) client business risk, which is the risk associated with client’s profitability, and survival; (2) audit risk, which is the risk that auditors might fail to modify their opinion on financial statements that are materially misstated1; and (3) auditor business risk, which is the risk of potential litigation risk and loss of reputation capital (DeFond, Lim and Zhang, 2015).

Less readable disclosure are likely to signal greater level of engagement risk to auditors. Several studies show that less readable financial report indicates the lack of transparency in disclosure, is a manifestation of structural complexity, and managerial attempt to conceal value-relevant adverse news from stakeholders; therefore, the lesser the readability, the greater is the firm’s information risk (Barry and Brown 1984; Easley, Hvidjkaer and O’Hara 2002; Easley and O’Hara 2004; Loughran and McDonald 2011, Li 2010). Further, Loughran and

1This audit risk consists of (1) Inherent risk; the risk of material misstatement of an assertion before considering client’s internal control; (2) control risk: the risk that a material misstatement can occur in an assertion and such misstatement could not be prevented or detected on timely basis by the client’s internal control; and (3) detection risk: the risk that the auditor’s procedures will not detect any material misstatement that exists in an assertion (Whittington and Pany, 2016).

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McDonald (2014) find that less readable disclosure is associated with greater likelihood of accounting fraud and self-reporting material weakness in internal controls.

On backdrop of all these arguments, we cannot conjecture any specific type of association between various linguistic characteristics and audit fees, and, therefore, we form our first hypothesis in null form as follows:

H1: There no association between qualitative disclosure characteristics and audit fees.

1. III. RESEARCH METHOD

We use the following model to test the audit price consequence of financial reporting characteristics:

\[ \text{Audit fees} = \beta_0 + \beta_1 \text{Complexity-Measure} + \beta_2 \text{Size} + \beta_3 \text{Market-Book} + \beta_4 \text{Loss} + \beta_5 \text{Leverage} + \beta_6 \text{ROA} + \beta_7 \text{M&A} + \beta_8 \text{Inventory Receivable} + \beta_9 \text{Foreign} + \beta_{10} \text{Extraordinary} + \beta_{11} \text{Discontinued} + \beta_{12} \text{Auditor Change} + \beta_{13} \text{Big 4} + \beta_{14} \text{Restatement} + \beta_{15} \text{Material-weakness} + \epsilon \]

The dependent variable, Audit fees, is the natural logarithm of annual audit fees. We use three different proxies to measure financial reporting complexity (Complexity-Measure): Bog-Index, File-Size and Words. Bog-Index is the complexity measure of annual reports developed by Bonsall, Leone, Miller, and Rennekamp (2017).\(^2\) We construct File-size and Words using the data available on textual characteristics at Bill McDonald’s website. File-size is the logarithm of annual report size measured in megabytes; Words is the logarithm of total numbers of words in annual reports. Auditors are expected to exert more effort and charge higher fees with increase in complexity of financial reports. Therefore, we expect to observe positive coefficient of the three complexity measures (\(\beta_i > 0\)).

IV. SAMPLE

4.1. Sample Selection and Distribution

We start our sample selection process by selecting all firms with audit fee data available at Audit Analytics database, for the sample period 2000 to 2014. We could gather this data for a total of 26,276 firms (177,323 firm year observations). For these sample firms we need to collect firm-specific data on annual report complexity (bogindex, file size of annual reports, and number of words included in annual reports), ambiguity (sum of weakmodal and uncertain words contained in annual reports), and tone (positive and negative words used in annual reports) from Miller and Mcdonald’s databases.\(^3\) We are unable to collect data on annual report complexity and ambiguity for a total of 13,865 firms (89,824 firm year observations). For the remaining sample firms we could not gather adequate data to form our control variables for 2,944 firms (30,400 firm years). From the remaining 9,467 firms (57,099 firm years) firms we delete a total of 1,457 firms (9,850 firm years), belonging to the banking and finance sector (with SIC code of 6000 to 6999). To remove any adverse effect of outliers, we winsorize top and bottom 1% of the corresponding distributions of all continuous variables.

V. RESULTS

Consistent with similar studies (e.g. Hasan et al. 2016; Drake and Martin 2015) in multivariate regression analyses, to avoid multicollinearity issues, we omit shake-out phase, which is theoretically ambiguous (Dickinson, 2011). Table 1 displays the results of regression estimation testing the association between audit fees and different proxies for financial report complexity. We observe that all the three measures of complexity, Bog-Index (coefficient 0.027, p-value 0.00), File-size(coefficient 0.467, p-value 0.00), and Words(coefficient 0.443, p-value 0.00) are significantly positively associated with audit fees. These findings imply that auditors charge higher audit fees to clients filing more complex annual reports, which is inconsistent with our first hypothesis of no audit price consequence of textual characteristics.

CONCLUSION

Auditors are likely to incorporate all client specific information available from public and privates sources to ascertain audit risks. Extant literature asserts and finds that numeric disclosures made in financial reports such as annual reports play an important role in auditors’ audit risk and therefore audit fee determination process. Given that qualitative disclosure made in annual reports could help auditors gauge audit risks by (1) helping them project future firm performance, and (2) identify managerial incentives, we argue that such disclosure would also systematically impact audit fees. More specifically, we project that different narrative disclosure traits such as complexity and ambiguity of narrative disclosure would have audit pricing implications. The empirical findings of this study render support to our projection as we observe that all these features of qualitative disclosure made in annual report impact audit remunerations.

\(^2\) Bog-index data is available at: https://kelley.iu.edu/bpm/activities/bogindex.html

\(^3\) While the bogindex data is available at https://kelley.iu.edu/bpm/activities/bogindex.html, data on filesize, words, weakmodal and uncertain words is available at http://www3.nd.edu/~mcdonald/Word_Lists.html.

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### Appendix A: Variable Definitions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
</table>
| **Dependent Variable**  | **Audit-fees**  
Logarithm of total audit fees.                                                                                                           |
| **Complexity and Ambiguity Variables** | **Bog-index**  
Financial report complexity measure developed by Bonsall, Leone, Miller, and Rennekamp (2017).  
File-size  
Logarithm of annual report size measured in megabytes.  
Words  
Logarithm of total numbers of words in annual reports.  
Ambiguity  100 multiplied by the sum of number of uncertain and weak modal words, divided by the total number of words in the annual report |
| **Life Cycle Variables** | **Introduction**  
Indicator variable with a value of 1 if Operating cash flow (OCF) <0, Investment cash flow (ICF) <0, and financial cash flow (FCF)>0, 0 otherwise.  
**Growth**  
Indicator variable with a value of 1, if OCF>0, ICF <0, and FCF>0, 0 otherwise.  
**Mature**  
Indicator variable with a value of 1 if OCF>0, ICF <0, and FCF<0.  
**Decline**  
Indicator variable with a value of 1 if OCF<0, ICF>0 and FCF<0, 0 otherwise. |
| **Control Variables**   | **Size**  
Logarithm of total assets  
**Market-Book**  
Market value of equity divided by book value of equity.  
**Loss**  
Indicator variable with a value of 1 if a firm has a loss in the current year, 0 otherwise.  
**Leverage**  
Sum of long-term debt and debt in current liabilities divided by total assets.  
**ROA**  
Net income divided by total assets.  
**M&A**  
Indicator variable with a value of 1 if a firm is involved in merger or acquisition, 0 otherwise.  
**Inventory_Receivable**  
Sum of receivables and inventory, scaled by total assets.  
**Foreign**  
Indicator variable with a value of 1 if a firm has foreign operations, 0 otherwise.  
**Extraordinary**  
Indicator variable with a value of 1 if a firm reports any extraordinary item in the annual report, 0 otherwise.  
**Discontinued**  
Indicator variable with a value of 1 if a firm discontinues operations, 0 otherwise.  
**Auditor-Change**  
Indicator variable with a value of 1 if there is a change in auditor, 0 otherwise.  
**Big4**  
Big4 is 1 if a firm is audited by any of the big four auditors, 0 otherwise.  
**Restatement**  
Indicator variable with a value of 1 if the firm announces a financial statement restatement, 0 otherwise.  
**Material-weakness**  
Indicator variable with a value of 1 if the firm reports any internal control weakness, 0 otherwise. |

Bogindex data is available at https://kelley.iu.edu/bpm/activities/bogindex.html

File-size, Words and Ambiguity variables are available at http://www3.nd.edu/~mcdonald/Word_Lists.html
### TABLE 1: Complexity and Audit Fees

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>p-value</th>
<th>Coefficient</th>
<th>p-value</th>
<th>Coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bog-index</td>
<td>0.027***</td>
<td>0.000</td>
<td>0.469***</td>
<td>0.000</td>
<td>0.443***</td>
<td>0.000</td>
</tr>
<tr>
<td>File-size</td>
<td>0.457***</td>
<td>0.000</td>
<td>0.410***</td>
<td>0.000</td>
<td>0.414***</td>
<td>0.000</td>
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<tr>
<td>Words</td>
<td>0.001</td>
<td>0.191</td>
<td>0.000</td>
<td>0.193</td>
<td>0.000</td>
<td>0.196</td>
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<tr>
<td>Size</td>
<td>0.179***</td>
<td>0.000</td>
<td>0.178***</td>
<td>0.000</td>
<td>0.177***</td>
<td>0.000</td>
</tr>
<tr>
<td>Market-Book</td>
<td>0.039***</td>
<td>0.000</td>
<td>0.040***</td>
<td>0.000</td>
<td>0.040***</td>
<td>0.000</td>
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<tr>
<td>Loss</td>
<td>-0.016***</td>
<td>0.000</td>
<td>-0.016***</td>
<td>0.000</td>
<td>-0.016***</td>
<td>0.000</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.216***</td>
<td>0.000</td>
<td>0.217***</td>
<td>0.000</td>
<td>0.216***</td>
<td>0.000</td>
</tr>
<tr>
<td>ROA</td>
<td>0.131**</td>
<td>0.000</td>
<td>0.131***</td>
<td>0.000</td>
<td>0.128***</td>
<td>0.000</td>
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<tr>
<td>M&amp;A</td>
<td>0.553***</td>
<td>0.000</td>
<td>0.554***</td>
<td>0.000</td>
<td>0.556***</td>
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<tr>
<td>Inventory_Receiveable</td>
<td>0.023***</td>
<td>0.000</td>
<td>0.022***</td>
<td>0.000</td>
<td>0.022***</td>
<td>0.000</td>
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<tr>
<td>Foreign</td>
<td>-0.363</td>
<td>0.220</td>
<td>-0.370</td>
<td>0.235</td>
<td>-0.371</td>
<td>0.231</td>
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<tr>
<td>Extraordinary</td>
<td>-0.324***</td>
<td>0.000</td>
<td>-0.345***</td>
<td>0.000</td>
<td>-0.344***</td>
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</tr>
<tr>
<td>Discontinued</td>
<td>0.223***</td>
<td>0.000</td>
<td>0.223***</td>
<td>0.000</td>
<td>0.223***</td>
<td>0.000</td>
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<tr>
<td>Auditor-Change</td>
<td>0.057***</td>
<td>0.000</td>
<td>0.057***</td>
<td>0.000</td>
<td>0.056***</td>
<td>0.000</td>
</tr>
<tr>
<td>Big4</td>
<td>0.414***</td>
<td>0.000</td>
<td>0.416***</td>
<td>0.000</td>
<td>0.413***</td>
<td>0.000</td>
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<tr>
<td>Material-weakness</td>
<td>8.883***</td>
<td>0.000</td>
<td>8.443***</td>
<td>0.000</td>
<td>8.688***</td>
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<td>Industry fixed effect</td>
<td>Included</td>
<td></td>
<td>Included</td>
<td></td>
<td>Included</td>
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<tr>
<td>Year fixed effect</td>
<td>Included</td>
<td></td>
<td>Included</td>
<td></td>
<td>Included</td>
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</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>71.05%</td>
<td></td>
<td>71.78%</td>
<td></td>
<td>71.69%</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>47,582</td>
<td></td>
<td>47,582</td>
<td></td>
<td>47,582</td>
<td></td>
</tr>
</tbody>
</table>

The variables are defined in Appendix A.

*, **, *** indicates significance at the 10 percent, 5 percent, and 1 percent levels, respectively.