Annual report readability, current earnings, and earnings persistence

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Outline

Motivation

- SEC has continually attempted to make public company prospectuses more readable and easier to comprehend. E.G: plain English disclosure guidelines
- It is important to bear in mind, however, that the sample sizes of the previous studies were very small before this paper. So why is this paper important? it scales up with computational methods

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Research Question

Management obfuscation hypothesis,: it is possible to use linguistic features and examine the management obfuscation hypothesis

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Hypothesis Data

1. the management obfuscation hypothesis predicts that the profits (losses) of firms with more complex annual reports are less (more) persistent
2.A sample of 55,719 firm-years with annual report filing dates between 1994 and 2004. Since most of the firms have a December fiscal year end, my sample mainly covers the fiscal years 1993–2003.

First Proxies

- 1. fog index:

$$Fog = (\text{words\_per\_sentence} + \text{percent\_of\_complex\_words}) \times 0.4, \quad (1)$$

where complex words are defined as words with three syllables or more. The relation between the Fog and reading ease is as follows: $FOG \geq 18$ means the text is unreadable; $14 - 18$ (difficult); $12 - 14$ (ideal); $10 - 12$ (acceptable); and $8 - 10$ (childish).

Second Proxies

- 2. length of the document

$$Length = log(NWords) \tag{2}$$

where NWords is the number of words in the document.

Control Variables

Ex ante, there are many factors that might non-strategically affect annual report readability

size, market-to-book ratio

firm age

special items

volatility

complexity of operations

financial complexity

firm events.

Incorporation state

and (year and industry)

Current earnings and annual report readability

These results indicate that the annual report of loss firms are more difficult to read than those of profit firms.(they get a dummies for profit or loss)

Table 3
(A) Firm performance and annual report *Fog* and *Length* (level specification); (B) Firm performance and annual report *Fog* and *Length* (change specification)

Dependent variable	Whole annual report				MD&A section				Notes to the financial statements			
	[1] *Fog*	[2] *Fog*	[3] *Length*	[4] *Length*	[5] *Fog*	[6] *Fog*	[7] *Length*	[8] *Length*	[9] *Fog*	[10] *Fog*	[11] *Length*	[12] *Length*
(A)												
Independent variable												
Earnings	−0.458[−4.44]***	−0.508[−12.93]***			−1.659[−8.38]***		−0.284[−4.93]***		−0.185[−2.53]**		−0.551[−5.80]***	
Profit|loss dummy		−0.163[−3.95]***		−0.184[−17.61]***		−0.625[−6.28]***		−0.095[−5.53]***		−0.037[−1.32]		−0.179[−10.87]***
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	41,100	41,100	41,100	41,100	32,099	32,099	32,099	32,099	35,533	35,533	35,533	35,533
Adj. R^2-squared	0.08	0.08	0.19	0.18	0.10	0.10	0.09	0.09	0.06	0.06	0.13	0.13

	Whole annual report				MD&A section				Notes to the financial statements			
	[1] ΔFog	[2] ΔFog	[3] $\Delta Length$	[4] $\Delta Length$	[5] ΔFog	[6] ΔFog	[7] $\Delta Length$	[8] $\Delta Length$	[9] ΔFog	[10] ΔFog	[11] $\Delta Length$	[12] $\Delta Length$
(B)												
Independent variable												
Change in earnings	−0.238[−2.79]***		−0.194[−5.37]***		−0.399[−4.87]***		−0.012[−0.23]		−0.317[−3.32]***		−0.238[−5.47]***	
Earnings ± dummy		−0.094[−4.85]***		−0.053[−5.56]***		−0.117[−4.31]***		0.01t[1.24]		−0.066[−3.37]***		−0.061[−5.89]***
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	34,481	34,481	34,481	34,481	23,606	23,606	23,606	23,606	27,526	27,526	27,526	27,526
Adj. R-squared	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.01

Figure: stats

Earnings persistence and annual report readability

the positive earnings of firms with “foggier” or longer annual reports are less persistent On the other hand, I find little evidence that the annual report readability affects the persistence of losses.

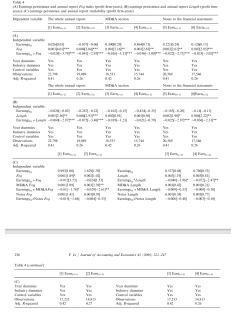

Figure: stats

other concerns:writing-style measures

five categories of writing styles of the MDA section: the relative frequencies of self-referential words, exclusive words, causation words, positive emotion words, and future tense verbs

Table 6
Firm performance and writing styles

Dependent variable	[1] *IssU*	[2] *IssI*	[3] *Cause*	[4] *PssN*	[5] *FssP*
Independent variable					
Earnings	−0.334[−8.49]***	−0.037[−2.26]**	−0.012[−0.41]	0.015[0.42]	−0.188[−5.60]***
SIZE	0.036[9.63]***	−0.011[−4.53]***	0.003[1.34]	0.023[7.12]***	0.012[6.85]***
MTB	0.004[1.58]	0.002[2.45]**	0.004[2.52]**	0.001[0.45]	0.005[7.37]***
AGE	−0.007[−7.90]***	−0.002[−7.45]***	−0.003[−5.87]***	0.001[2.90]***	−0.003[−9.50]***
SI	0.001[0.03]	0.016[1.16]	0.035[1.08]	0.009[0.52]	0.012[0.58]
RET_VOL	0.579[11.74]***	0.076[3.13]***	0.045[1.00]	−0.083[−2.17]**	0.138[5.39]***
NBSEG	0.001[0.04]	−0.006[−1.43]	−0.018[−1.90]*	−0.002[−0.50]	−0.009[−2.09]**
NGSEG	0.019[0.85]	−0.001[−0.29]	0.03[4.28]***	−0.011[−2.92]***	−0.005[−1.01]
NITEMS	−0.084[−1.31]	−0.016[−0.29]	0.099[1.83]*	−0.181[−2.24]**	−0.021[−0.40]
SEO	0.143[7.65]***	0.011[1.40]	−0.03[−2.55]**	0.006[0.62]	0.015[2.04]**
MA	0.021[2.62]**	−0.016[−3.80]***	−0.003[−0.49]	0.01[2.27]**	−0.006[−1.25]
DLW	0.001[0.07]	0.030[2.69]***	0.006[0.46]	0.000[0.04]	0.033[3.46]***
Year dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
Observations	32,099	32,099	32,099	32,099	32,099
Adj. *R*-squared	0.34	0.09	0.09	0.20	0.11

Figure: stats

Other factors related:

- 1.one alternative explanation is that perhaps bad news is inherently more difficult to present and requires more complicated language. using unexercised stock options. as proxy.
- 2.Future stock returns Prof. Li run Fama-MacBeth regression but find fog index is not linked to return, while length did.

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Conclusion

This is the first large-sample evidence on the determinants and implications of the lexical properties of corporate disclosures:

Annual reports of firms with poor performance are more difficult to read. The effect is statistically significant (but not economically significant).

The profits of firms with annual reports that are easier to read are more persistent. The effect is economically significant.