Journal of Financial Economics 000 (2017) 1–22

Contents lists available at ScienceDirect

Journal of Financial Economics

journal homepage: www.elsevier.com/locate/jfec

It pays to write well☆

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ARTICLE INFO

Article history:
Received 3 December 2015
Revised 23 May 2016
Accepted 16 June 2016
Available online xxx

JEL classification:
M40
M41
M48

Keywords:
Disclosure characteristics
Readability
Firm value

ABSTRACT

We quantify the effects of easy-to-read disclosure documents on firm value by analyzing shareholder reports of closed-end investment companies in which the company's value can be estimated separately from the value of the company's underlying assets. Using a copy-editing software application that counts the pervasiveness of the most important 'writing faults' that make a document harder to read, our analysis provides evidence that issuing financial disclosure documents with low readability causes firms to trade at significant discounts relative to the value of their fundamentals. Our estimates suggest that a one-standard-deviation decrease in readability decreases firm value by a full 2.5%. In situations in which investors are more likely to rely on annual reports, the readability effect on firm value increases to 3.3%.

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1. Introduction

The question of how corporate disclosure affects investor perceptions and firm outcome variables has motivated a significant body of research (Core, 2001; Fields, Lys, and Vincent, 2001; Healy and Palepu, 2001; Beyer, Cohen, Lys, and Walther, 2010). Corporate disclosure comes in the form of accounting numbers framed or accompanied by a substantial amount of text. While earlier academic work has (somewhat narrowly) focused on the informativeness of the accounting numbers, more recent work has begun to extend such analyses to the informativeness of the text and the ease with which the text in corporate disclosure documents can be processed (e.g., Miller, 2010; Lehavy, Li, and Merkley, 2011; Lawrence, 2013; Loughran and McDonald, 2014). These studies use readability proxies such as number of sentences, average sentence length, fraction of complex words, and size of the annual report to tie readability to firm outcome variables such as stock return volatility, analyst dispersion, analyst forecast accuracy, and trading volume. Our paper contributes to this relatively new literature stream by examining the readability of annual reports of equity closed-end investment companies (CEFs) and by using a measure of readability that is probably more refined than readability measures based on document length or sentence length.

CEFs are publicly traded companies. Rather than using the proceeds from an initial public offering (IPO) and subsequent seasoned equity offerings (SEOs) to invest in real assets, these companies acquire portfolios of equity

☆ The authors would like to thank Santosh Anagol, Soo Kim, Tim Loughran, Bill McDonald, Kenneth Merkley, Olivia S. Mitchell, Kristina Rennekamp, Scott Yonker as well as seminar participants at the Chinese University of Hong Kong, Cornell University, HKUST, KAIST, Korea University, Queen's University, Sungkyunkwan University, the University of Binghamton, the University of Hong Kong, the University of Missouri, the University of Utah, and Yale University for helpful comments.

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http://dx.doi.org/10.1016/j.jfineco.2017.01.006
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securities. Like all publicly traded corporations, CEFs file annual reports with the Securities and Exchange Commission (SEC) and their shareholders.

Studying CEFs appears interesting for several reasons: CEFs tend to be small by market capitalization, they are not covered by analysts, they do not stage earnings conference calls, and their managers rarely appear in the news. Annual reports therefore represent the primary channel through which CEFs communicate with current and potential investors. This feature likely increases the power of our analysis.

More importantly, because a CEF itself is traded on a stock exchange, we can compare the market value of the fund against the market value of the fund's underlying assets and assess whether the "discount" between these two figures is tied to the readability of its annual report. That is, we can shed light on the actual value implications of having more difficult-to-read documents and determine the degree to which the recent emphasis on the structure of the text is warranted by fundamentals.

If lower readability undermines investors' belief that a source can be trusted, lowers investors' assessment of a firm and its managers, or subconsciously causes investors to evaluate the firm less favorably (e.g., McGlone and Tofighbakhsh, 2000; Oppenheimer, 2006; Alter and Oppenheimer, 2008), then we expect to see a negative association between readability and the discount between the fund's market value and the market value of the fund's underlying assets. On the other hand, if the readability of a CEF's annual report does not influence investor demand for the CEF's shares, then we should observe no association between readability and CEF discount.

Our measure of readability draws on the *Plain English Handbook* (1998) of the SEC, which was developed to help firms make their disclosure documents easier to read. In the *Handbook*, the SEC discusses eight language-related factors that make a document less readable.[1] We save each annual report as a Word document. We then apply copyediting software to each document and count the number of times these factors appear in the text. We are able to do so for five of the eight factors and we use their (scaled) pervasiveness as our measure of readability.

To assess the validity of our measure, we randomly assign undergraduate business students annual reports that, as per our measure, earn "high readability" scores and annual reports that, as per our measure, earn "low readability" scores. We find that students largely agree with the output generated by our readability measure, as they perceive reports with high readability scores to be significantly easier to read than those with low readability scores. When sorting annual reports by readability measures employed in prior studies (Fog Index and Flesch-Kincaid Index) and assigning these reports to students, we find that students generally agree to a lesser extent with the results than with our measure.

Results from additional experiments show that annual reports with high readability scores (as per our measure) are associated with more positive moods than annual reports with low readability scores. We also find hints in the data that higher readability generates more trust and higher perceived managerial skill.

When relating the readability of annual reports to CEF discounts within a regression framework, we find that CEFs with less easily readable annual reports trade at greater discounts relative to CEFs with more easily readable annual reports. In line with the results from our experimental setting, the association between readability and CEF discounts is much stronger for our measure of readability than for the Fog Index or the Flesch-Kincaid Index. Our results easily survive the inclusion of various controls and are robust to research design choices. Our results are also economically meaningful. In particular, our estimates suggest that a one-standard-deviation increase in readability leads to a 2.48% decrease in the CEF discount.

To gauge whether it is readability per se that generates our patterns, we examine whether our effect is stronger in situations in which investors are more likely to rely on the fund's annual report. The primary alternative to annual reports as an information source is the fund's past performance. We conjecture that investors rely less on past performance and, consequently, more on annual reports when the CEF has a relatively new manager, when the CEF is relatively young, and when past performance has been very volatile. Our results strongly corroborate these hypotheses.

In a second attempt to provide evidence of causality, we use the Plain Writing Act (PWA) of October 2010 as a positive shock to the readability of CEF disclosure documents. The PWA was designed to make documents produced by the government or government agencies easier to read by the general public (Public Law 111–274, 111th Congress, October 13, 2010). Its passage marks the first time that plain writing was legislated at the federal level in the United States. We conjecture that the PWA had an incremental positive impact on the readability of documents filed with the SEC.

We find that the PWA disproportionately affected the readability of funds that, previously, had earned low readability scores. In particular, after the PWA took effect, funds with previously low readability experienced sudden and lasting improvements in their readability scores relative to funds with high readability. Our results show that the disproportionate rise in readability is accompanied by an abnormal and lasting drop in CEF discounts. We find no such patterns around one hundred randomly drawn placebo events.

In our final analysis, we examine whether our findings extend to regular publicly traded corporations. We randomly draw one hundred firms from the Center for Research in Security Prices (CRSP) and Compustat universe and assess how the readability of their annual reports relates to their Tobin's *Q*. Our analysis reveals that higher readability is associated with higher valuation ratios even among regular publicly traded corporations. However, the effect is weaker than that found for CEFs. One reason for the weaker effect could be that the strong CEF results are

[1] We describe these factors in detail in Section 3.2: (1) passive voice, (2) weak/hidden verbs, (3) superfluous words, (4) legal and financial jargon, (5) numerous defined terms, (6) abstract words, (7) unnecessary details, (8) long sentences, and (9) unreadable design and layout.

Please cite this article as: B.-H. Hwang, H.H. Kim, It pays to write well, Journal of Financial Economics (2017), http://dx.doi.org/10.1016/j.jfineco.2017.01.006

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