

Does the Management Discussion and Analysis Section of the 10-K Provide Information for Retirement Decisions?

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Increasingly, people are asked to make investment decisions that affect their retirement. In the past, “experts” in the federal government, pension plans, and/or other money management entities made these decisions. The “expert” investor’s skill set includes the ability to read and understand financial material. Wilkinson and Czyzewski (2013) found that the footnotes of the financial statements were written at a very high post graduate level. This paper will examine another piece of financial information investors use to help make investment decision. The purpose of the study is to determine the reading level of Management Discussion and Analysis Section of the 10-K. 100 firms’ Management Discussion and Analysis Section(MDA) of the 10-K were analyzed using Word (from Office 2003 Suite) Spelling and Grammar check. The average Flesch Index reading level of the MDA was 13.052. This score indicates it is very difficult to read the MDA. In fact based on the average reading level of adults, a large portion of the U.S. population are unable to understand them.

INTRODUCTION

Previously, individuals depended on the expertise of others to manage their retirement funds. In the past “experts” in the federal government, pension plans, and/or other money management entities made investment decisions for retirement funds. The driving force behind this change in decision makers is the conversion from defined benefit plans to defined contribution plans. The change requires an individual to actively manage their portfolio rather than be dependent on decisions made by experts. This is requiring the employee to become an expert in determining worthwhile investments for retirement (AARP, 2007).

A “one size fits all” plan with outsourced decision making was the retirement plan of the past. This meant the “experts” were knowledgeable in economic trends, Security and Exchange Commission (SEC) regulations and pronouncements, finance and investment vocabulary, and accounting announcements. These experts had connections to colleagues with expertise in investments and specific industries and resources to obtain more information necessary for decision making. Many experts specialized in the economic trends of a particular industry (McCarthy &Turner, 2000). These experts provided an investment skillset workers trusted. The professional investor’s skillset includes the ability to read and understand financial material. Many professional investors have more than a college degree steeped in financial minutia; they have focused experience, certification and/or training that deals only with the

financial information; which can be quite complex. An expectation in all of this sophisticated financial training is a higher than average reading level (The Princeton Review, n.d.).

Even the well-educated professional has problems reading and understanding financial documentation. In an analysis of 40 companies, a private firm found that the companies' compensation discussion and analysis fell short of accepted standards of readability. Most of the disclosure statements failed to meet the readability standards states require for insurance forms, (Cox, 2007).

With the conversion from defined benefit plans to defined contribution plans, each individual now has control of their retirement decision making rather than the well-funded, well connected, and well educated investment expert. The general population lacks the funding, connections, and education to make critical decision concerning their retirement investments. Of these three, education is the easiest to acquire (McCartney & Turner, 2000).

This change in retirement investment culture causes concerns regarding the general population's lack of reading literacy. Without basic literacy skills it is extremely difficult to acquire education. Reading is a necessary skill to educate individuals regarding financial literacy. (Canadian Foundation for Economic Education 2012) This skill includes, obtaining, processing and understanding information. (Egbert and Nanna 2009)

The general population's reading level may affect their ability to understand the necessary information critical for financial decision making. Does reading ability of the general population match with the reading level of financial documents? Is financial information written at a reading level appropriate for the general population? Financial stability of many Americans will depend on that.

PURPOSE

The purpose of the study is to determine the reading level of Management Discussion and Analysis Section (MDA) in the 10-K. The study will also address the issue of tables and their impact on readability of the MDA Section in the 10-K. The underlying purpose of MD&A is to provide investors with "information that the registrant believes to be necessary to an understanding of its financial condition, changes in financial condition and results of operations." (U.S. Securities and Exchange, 2010a) "[i]t is the responsibility of management [in MD&A] to identify and address those key variables and other qualitative and quantitative factors which are peculiar to and necessary for an understanding and evaluation of the company." (Securities Act Rel. No. 6349)

"The Commission has long recognized the need for a narrative explanation of the financial statements, because a numerical presentation and brief accompanying footnotes alone may be insufficient for an investor to judge the quality of earnings and the likelihood that past performance is indicative of future performance. MD&A is intended to give the investor an opportunity to look at the company through the eyes of management by providing both a short and long-term analysis of the business of the company. The Item asks management to discuss the dynamics of the business and to analyze the financials." (SEC 1987)

The MDA Section is becoming more important to the general population rather than just to the financial analysts because the "average person" is being asked to be the expert in their own retirement decisions.

The following questions will be addressed in the study:

1. Does the readability of MDA Section significantly exceed the average reading level of the U.S. population?
2. Are there differences in the readability of the MDA Section with or without headers and tables?

LITERATURE REVIEW

The following literature review will cover importance of literacy in financial decision making. The role of MDA will also be discussed as well as definition of readability.

Importance of Literacy

The American population of the United States is suffering from a literacy deficit. Startling statistics regarding the deficiencies of the general population are identified in the following studies:

- Average reading level of adults in the U.S. is ninth grade (Know your readers, n.d.)
- More than 20 % of adults read far below the level needed to earn a living wage, - at or below a fifth-grade level (Griswold, 2008)
- The estimated cost of illiteracy to business and the taxpayers is \$20 billion per year, (The truth about literacy in the United States, n.d.).

There is significant education and/or literacy gap between the average American who is now making financial decisions with their retirement funds and those experts who in the past managed those retirement funds. The average expert financial analyst is educated past the postsecondary level and has the ability to read and comprehend financial documentation. Roughly 42% of all adults over the age of 16 lack the basic literacy skills to enroll in any education at the postsecondary level, (National Commission on Adult Literacy, 2008). To add to the concern, 42% of the population lack the skills necessary to acquire basic postsecondary education much less learn the much more advanced, sophisticated financial knowledge needed to make decisions that affect their retirement, (National Commission on Adult Literacy, 2008).

With these literacy concerns of the general population, “The Plain English Rule” (Rule 421(d)) was issued by the Security and Exchange Commission (SEC) in 1998. This rule required companies to use “plain English” in the forefront of prospectuses and encouraged these guidelines be incorporated in other financial disclosures, including the MDA. Rule 421(d) requires short sentences, everyday language, active voice, tables for complex information, no legal jargon, and no multiple negatives. Arthur Levitte then SEC chairman noted in the foreword of “A Plain English Handbook,” “Because many investors are neither lawyer, accountant or investment bankers, we need to start writing discloser documents in a language investors can understand” (p.3). The underlying argument for the plain English disclosure regulation is that (1) a disclosure could hide adverse information using vague language and format and (2) capital market inefficiency could result from average investors not understanding complex documents (Security and Exchange Commission, 1998).

Management Discussion

MDA’s have an important role in the explanation of information presented by a business entity. The communication and interpretation is crucial to making sound investment decisions. The SEC stated in Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations:

. . . We believe that management's most important responsibilities include communicating with investors in a clear and straightforward manner. MD&A is a critical component of that communication. The Commission has long sought through its rules, enforcement actions and interpretive processes to elicit MD&A that not only meets technical disclosure requirements but generally is informative and transparent.... (April 2010).

SEC Commissioner Cynthia A. Glassman stated “... management needs to tell a story... that provides full and fair disclosure. The most effective way to tell this story is in the MDA.” (U.S Securities and Exchange Commission, 2003) Others also stated that the MDA is very or the most important information

in analyzing the 10-K.(US Securities and Exchange Commission, 2003). Clarkson, Kao, and Richardson (1999) found that the MDA is part of a firm's overall disclosure package. Tavcar (1990) states that the MDA "is arguably the most read and most important component of the financial section."

The SEC in a press release gave the following guidance:

" . . . reminds companies of existing disclosure requirements and provides additional guidance, designed to elicit more informative and transparent MD&A that satisfies the principal objectives of MD&A: (1) to provide a narrative explanation of a company's financial statements that enables investors to see the company through the eyes of management; (2) to enhance the overall financial disclosure and provide the context within which financial information should be analyzed; and (3) to provide information about the quality of, and potential variability of, a company's earnings and cash flow, so that investors can ascertain the likelihood that past performance is indicative of future performance." (U.S. Securities and Exchange Commission, Dec 2003)

Specifically, the guidance issued today emphasizes that MD&A should not be merely a recitation of financial statements in narrative form or an otherwise uninformative series of technical responses to MD&A requirements, neither of which provides the important management perspective called for by MD&A. Instead, the release encourages top-level management involvement in the drafting of MD&A, and provides guidance regarding:

" . . . the overall presentation and focus of MD&A (including through executive-level overviews, a focus on the most important information and a reduction of duplicative information); emphasis on analysis of financial information; known material trends and uncertainties; key performance indicators, including non-financial indicators; liquidity, and capital resources; and critical accounting estimates." (U.S. Securities and Exchange Commission, Dec 2003)

Which investors use MDA for investment decision making? Arnold, Bedard, Phillips, and Sutton (2010), found there was indeed a gap between the types of investors and their use of information. Table 1 shows gaps in use of information between professionals and non-professional investors. A large gap between these two groups was the use of the MDA with 85 % of the professional investors using them and 59% of the nonprofessional investors using them. Does education play a role in the gap between professional and non-professional investors when analyzing the MDA Section of the 10-K for decision making?

Changes in SEC regulations have significantly increased the complexities of financial information over the years. The benefits of these statements are questioned by many analysts, lawyers, and accountants as they are hard to read and long in length. Arthur Radin, managing partner of Radkin, Glass, & Company LLP, stated, "I have to admit that while I am paid to read the 10-K's of the public companies my firm audits, and it is my responsibility, it ain't easy," (Radin, 2007 p. 8). As important as the information may be in the financial information provided by companies they are not written to be read; they are written to comply with rules, (Radin 2007).

TABLE 1
WHAT INFORMATION DO INVESTORS USE?

	A. Percentage viewing at least one category item		B. Mean number of items viewed within category	
	Investment Professionals	Nonprofessional Investors	Investment Professionals	Nonprofessional Investors
All annual report categories	100%	99%	32.8	15.7
Financial Statements	94%	68%	5.3	2.4
Financial Statement Footnotes	68%	30%	4.4	1.7
Auditor and Management Reports	70%	60%	1.7	1.3
Management Discussion & Analysis	85%	59%	6.2	2.3
Business Data and Risk Factors	97%	82%	10.6	5.4
Other required Information	58%	37%	2.7	1.5
Summary Information from Company Website	99%	79%	1.9	1.1

Source: Clatworthy and Jones (2001)

Readability

The Free Dictionary defines readability as “the quality of written language that makes it easy to read and understand.” Three elements have typically identified readability. These elements are interesting, legibility, and ease of understanding (as cited by Jones & Shoemaker, 1994). Readability is measured many different ways by different scales. The two measures of readability used in this study are the Flesch Index and the Flesch-Kincaid Index.

The average number of syllables per word and words per sentence are used in computing the Flesch Index scores. The higher the Flesch Index score the easier the document is to read. The Flesch Index score for standard documents should be 60 or 70. Many states’ insurance departments, by law, require that insurance policies have a minimum Flesch Index score of 40 to 45, (Hansenn n.d..) Table 2 shows the comparison of Flesch Index scores to educational level.

A derivation of the Flesch Index is the Flesch-Kincaid Index. This index use the same core measures (word length and sentence length), they have different weighting factors, so the results of the two tests correlate inversely: a text with a comparatively high score on the Flesch Index test should have a lower score on the Flesch-Kincaid, (Kincaid, Fishburne, Rogers, & Chissom, 1975).

A variety of industries use these models to evaluate the readability of documents. The Security and Exchange Commission, (SEC) chairperson, Christopher Cox named the Flesch-Kincaid and the Flesch Index as two of the three models used to measure readability metrics of financial information, (Cox, 2007).

TABLE 2
COMPARISON OF FLESCH INDEX SCORES TO GRADE LEVEL

Score	Grade Level
0 to 30	College Graduate
30 to 50	13 to 16 grades
50 to 60	10 to 12 grades
60 to 70	8 and 9 grades
70 to 80	7 grade

Source: Adapted from Flesch, R. (1949). *The art of readable writing*. New York: Harper. p.149

Need for Financial Literacy for Managing Retirement Funds

As firms move from defined benefit plans to defined contribution retirement plans the need for nonprofessionals to understand financial documents has accelerated. Traditionally these plans were managed by professionals (McCarther and Turner, 2000). Of the workers participating in a private pension plan in 1993, 60% indicated that a defined contribution plan was there primary plan (US Department of Labor, 1994). Individual responsibility for managing pension portfolios has grown along with a growth in 401 (k) plans. According to an Employee Benefit Research Institute (1996) survey, a majority of working Americans have a limited financial knowledge about financial retirement issues such as planning and savings. The Boston College Center for Retirement Research found that defined benefit plans decreased from 60% of workers in 1981 with a pension plan to 10% in 2003. While defined contribution plans went from 20% in 1981 to just over 60% in 2003 (Buessing and Soto, 2006). This was to a large degree perpetuated by FASB 87 “Employees Accounting for Pensions” (Issued in December of 1985). Firms moved from defined benefit plans to avoid recording large pension liabilities on their balance sheets required by FASB 87. For example General Motors had \$185 billion of total liabilities on its balance sheet, of which \$54 billion was various retirement liabilities. At the same time Stockholders Equity was approximately \$12 billion. Wilkinson and Czyzewski (2013) found that the footnotes to the financial statement were written at a post graduate level. How can the typical worker read important information regarding their retirement when it is written and a very sophisticated level?

METHODOLOGY

Data Collection

To determine the importance of readability regarding MDA a total of 100 firms were randomly selected from the Edgar Database. The database contains approximately 90,000 firms from 16 years. The 10-Ks from the selected firms were down loaded. The MDA Section from the 10-K were cut and pasted into a separate document. A separate file which had the headers and tables removed was constructed next. The researchers had two files of MDA Sections from the same firm, one with the headers and tables and one without the headers and tables. The Word (from Office 2003 suite) Spelling and Grammar check was run on both files. The researchers collected the following data on each file, Flesch Kincaid Grade Level, Flesch Reading Ease Score, Passive Sentences Percent, Word Count, Number of Paragraphs, Number of Sentences, Sentences per Paragraph, Words per Sentence. The firms were from nine different industries groups identified by the SIC and from 16 different years. The nine different categories were:

- Mining
- Construction
- Manufacturing
- Transportation and Public Utilities
- Wholesale trades

- Retail Trades
- Finance, insurance, and Real Estate
- Services
- Public Administration) (U.S. Securities and Exchange Commission).

The hypotheses for the study were:

H₁: The readability of MDA Section is statistically different with headers and tables than without headers and tables.

H₂: The readability of MDA Section significantly exceeds the average Reading level of the U. S. population.

For H₁, a MANOVA was run to determine the significance of the differences among the MDA Sections. The two groups compared were the same financial statement of each company; group one had headers and group two was without headers. For H₂, a one sample t-test using the average reading level of the U.S. population which is 8th grade as independent variable. The one sample t-test was performed using both the Flesch Index score and the Flesch-Kincade score as the independent. SPSS 19th edition was used to analyze the data.

Results

The financial statements of the 100 were “pulled” from the Edgar database. The financial statements were then analyzed for their readability scores using Word 2003. Table 3 presents the descriptive information based on the readability measures regarding the sample.

**TABLE 3
DESCRIPTIVE DATA FOR VARIABLES**

Variable	Minimum	Maximum	Mean	Standard Deviation
Flesch Index	0	24.4	13.052	5.648
Flesch Kincade	13	21	17.39	1.29
Passive Sentences	0	.5	.192	.0582
Words per Sentence	6.3	33.7	24.55	3.153
Sentences per Paragraph	1.1	18	3.809	1.85
Total Sentences	9	1151	263.01	198.574
Total Paragraphs	8	2310	210.66	296.74
Total Words	234	28144	6886.07	5011.97

**TABLE 4
INDEPENDENT T-TEST RESULTS BY READABILITY SCORE OF FLESCH INDEX AND FLESCH-KINCADE INDEX**

Readability Index	T	df	P
Flesch Index	130.076	199	.000**
Flesch-Kincade Index	102.925	199	.000**

Note ** p < .01

Test Value for Flesch Index was 65; Test value for Flesch-Kincade Index was 8

Analyzing the data for H₂, there are significant differences at .01 found between readability scores of the MDA Sections and the Flesch score (65) of the reading level of the average U.S. citizen which is 8th

grade level. Significant difference was also found between the readability scores of the financial statements and the Flesch-Kincade score (9) of the reading level of the average U.S. citizen at .01 (see Table 4).

TABLE 5
MAVOVA READING SCORES REGARDING MANAGEMENT DISCUSSIONS WITH AND WITHOUT FOOTNOTES

Reading Scores	SS	Df	MS	F	Partial eta ²
Group				3.964	.142
Between Subjects					
Paragraph	1292992.80	1	1292992.805	15.774**	.074

Note *p < .05, ** p < .01

In analyzing the data for H₁, significant differences were found among the two groups regarding the different reading scores. Financial statements with MDA Sections that include headers were significantly higher at the .01 (see Table 5) in their reading scores than the MDA Sections that do not include headers with a fairly strong effect size of partial eta² .142. The univariate analysis did not yield significance at .01 for the Flesch Index and Flesch-Kincade score and yielded significance at .01 in paragraph scores. There was little practical significance with effect sizes measured partial eta² score of .074 respectively.

Discussion

While there were statistically differences between the files with and without headers and tables the differences were not practical differences. The differences were so small has not to have any practical use. Future research will be easier as there will be no need to remove headers and footers.

The average Flesch Index reading level of the MDA Sections was 13.052. This score indicates it is very difficult to read. Based on the average reading level of adults, a large portion of the U.S. population are unable to understand it. Forty-three percent of the U. S. populations are not able to do the following:

1. reading and understanding moderately dense, less commonplace prose texts as well as summarizing, making simple inferences, determining cause and effect, and recognizing the author's purpose
2. locating information in dense, complex documents and making simple inferences about the information
3. locating less familiar quantitative information and using it to solve problems when the arithmetic operation is not specified or easily inferred. (Kutner et al, 2007)

Eight-seven percent of the U. S. population do not have the skills to do the following:

1. read lengthy, complex, abstract prose texts as well as synthesizing information and making complex inferences
2. integrating, synthesizing, and analyzing multiple pieces of information located in complex documents
3. locating more abstract quantitative information and using it to solve multistep problems when the arithmetic. (Kutner et al, 2007)

Increasingly, people are being asked to make invest decisions that affect their retirement. In the past, these decisions were made by "experts". This phenomenon is driven by the conversion from defined benefit plans to defined contribution plans which requires an individual to become an expert in determining worthwhile investments for retirement (AARP, 2007). An important part of the expert's sophisticated financial training is a higher than average reading level.

Ironically the general population lacks the basic abilities to become financial literate. It is extremely difficult to acquire an education, even with easy access, without the basic literacy skills. Reading is a necessary skill for educating the general population. People need more education or the document reading level changed to be able to understand financial documents. Since such a large proportion of the population does not read at a post graduate level and the lack of success to improve their reading level it would seem to indicate that making the MDA Sections easier to read would be more easily attainable, (Gifford, November 19, 2007) .

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