

Can Anyone Read Accounting Footnotes Well Enough to Understand Them?

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Abstract

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. While there are many sources of financial information newspapers, mutual fund reports, annual reports and others, the purpose of this study is to determine the reading level of footnotes in financial statements. FASB has issued a Discussion Paper concerning footnote effectiveness (FASB, 2012) supporting the importance of the clarity of the footnotes. 100 firms’ footnotes were analyzed using Word (from Office 2003 suite) spelling and grammar check. The average Flesch Index reading level of the footnotes was 20.4. This score indicates it is very difficult to read the footnotes. In fact based on the average reading level of adults, a large portion of the U.S. population are unable to understand footnotes.

Keywords: Readability, Financial statements, Footnotes, Decisions

1. Introduction

Increasingly, people are asked to make investment decisions that affect their retirement. In the past, these decisions were made by “experts” in the federal government, pension plans, and/or other money management entities. The driving force of this phenomenon is the conversion from defined benefit plans to defined contribution plans which 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). Thirty-eight percent of equities were directly held by households in 2013 as opposed to indirect ownership through mutual or retirement funds. Approximately 8% of equities were held by households in 1985. Twenty percent of equities were indirectly owned by individuals’ through mutual funds. While mutual funds information is important this research is concerned with just the footnotes (Ro, 2013).

Traditionally, employees did not make *any* decisions regarding their retirement. Employees contributed to a “one size fits all” plan which typically a company outsourced to an investment house managed by the investment house analysts. These expert investment analysts were educated and dedicated to the business of investments. These experts were knowledgeable in the investment and finance vocabulary, Security and Exchange Commission (SEC) regulations, accounting pronouncements, and economic trends. These experts had connections to the companies themselves, colleagues with expertise in investment areas, and resources to obtain more information needed for decision making. Many of these expert analysts specialize in the economic trends of particular industries (McCarthy and Turner, 2000).

The professional investor’s skill set includes the ability to read and understand financial material. Many professional investors have more than just a college degree steeped in financial minutia; they have focused experience, certification and/or training that deals only with the financial information that 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 with the readability of financial documentation

“For more than forty years, I’ve studied the documents that public companies file. Too often, I’ve been unable to decipher just what is being said or, worse yet, had to conclude that nothing was being said”(Warren E. Buffett, SEC, 1998, Pg. 1).

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, the financial decision making moved from a small group of well educated, well connected, and well-funded individuals to the general population. This general population lacks the education, connections, and key information to make critical decisions about their investments. Of the three, education is the easiest to acquire (McCartney and Turner, 2000).

The irony is the general population lacks the basic abilities to be financial literate. As easy as education is to access, there are still many Americans that do not acquire the necessary literacy skills to function in the business world. To educate the general population regarding financial literacy, reading is a necessary skill. (Canadian Foundation for Economic Education, 2012) This skill includes, obtaining, processing and understanding information. (Egbert and Nanna, 2009)

2. Purpose

The reading level of the general population may affect their ability to gather necessary information critical to financial decision making. How does the material used to make financial decision match the reading ability of the typical U.S. citizen? Is financial information written at a reading level appropriate for the general population to make critical retirement decisions?

This study will determine if the footnotes are contributing to this high reading level. This study will not include analysis of the complete 10-K. The purpose of the study is to determine the reading level of footnotes in financial statements. The study will also address the issue of tables and their impact on readability of the footnotes. Previous studies (Li, 2008) removed tables and headers so they would not affect the readability scores. We tested to determine if this work is necessary. The footnotes are becoming more important as information to the general population as the “average person” is now expected to be the expert in their own retirement decisions.

The study addresses the following questions:

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

3. Literature Review

3.1 Literacy

The United States is suffering from a literacy deficit. Multiple studies have identified startling statistics regarding the inadequacies of the general population regarding basic literacy skills. Some of the statistics are:

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

It should be noted that 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). Conversely, expert financial analyst has an education past the postsecondary and is employed in the financial services industry, while 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)

3.2 Role of Communication in Accounting

Accounting’s primary purpose is as a communication tool (Belkaoui, 1995). Financial statements are the main vehicle used to provide needed information for investors, creditors, and other financial information users in making

rational investment, credit, and other decisions. To achieve this, the information should be comprehensible to all users (FASB, 2010).

In 1998 the Security and Exchange Commission (SEC) issued “The Plain English Rule” (Rule 421(d)). This rule required companies to use “plain English” in the forepart of prospectuses and encouraged these guidelines be incorporated in other financial disclosures. 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 disclosure documents in a language investors can understand” (p.3). The underlying argument for the plain English disclosure regulation is that (1) firms could use vague language and format in disclosure to hide adverse information, and (2) average investors may not understand complex documents which could result in capital market inefficiency, (U.S. Security and Exchange Commission, 1998).

Rule 421d encouraged use of the “Plain English” guidelines in all other financial disclosures. This includes footnotes to the financial statements “The accompanying notes are an integral part of these statements,” is a common phrase at the bottom of financial statements. These notes serve to explain, clarify, and expand upon the Balance Sheet, Income Statement, and Statement of Cash Flows. They may provide some additional information such as accounting methods used and additional detail to name a few (U.S. Security and Exchange Commission, 1998).

3.3 Purpose of Disclosures to the Reader

The purposes of the disclosures were to . . .”explain, clarify, and expand on financial information,” (Raiborn, Payne, and Pier, 2008 p. 69). For the casual investor the disclosures should be the key to unlock the information of the financial statements so good investment decisions could be made. This has proven NOT to be the case. The purpose of the disclosures is to explain accounting to people who are not accountants. Instead, disclosures are written in “legalese” for a variety of reasons.

Warren Buffett, in the preface of the *A Plain English Handbook*, identified the most common problem with readers of corporate disclosures as “. . . well-intentioned and informed writer simply fails to get the message across to an intelligent and interesting reader,” (as cited by Raiborn, Payne, and Pier, 2008). Other researchers see the use of complex writing to be a way to confuse the consumer investor to hide adverse information that may affect stock prices. The term for this type of communication is “obfuscation,” (Li, 2008). Whether the language used was intention or unintentional the issue is the consumer investor can’t read the disclosures which can lead to mistrust and suspicion, (Li, 2008).

3.4 Footnotes

Footnotes are considered an integral part of the financial statements (Dyckman, Dukes, and Davis, 2001; Marshall, 1993; Kimmel, Weygandt, and Kieso, 2009). The financial statements are condensed and any explanatory information that cannot be abbreviated is added in greater detail in the footnotes. Most would say the footnotes contain some of the most important information in the financial statements (Ye, 2008; Wayman, 2003).

As early as 1939 then Chief Accountant of the Securities and Exchange Commission, William W. Wertz, spoke to the importance of footnotes in a speech to the Minnesota Statistical Association and the Minnesota Society of Certified Public Accountants. Also in 1947 King, Chief Accountant of the Securities and Exchange Commission, in a speech identified the importance of the accompanying documentation (King, 1947).

FASB has recognized that accountants may need more guidance when preparing footnotes. (FASB, 2012) FASB issued a Discussion Paper with the intent to “improve the effectiveness of disclosures in notes to financial statements by clearly communicating the information to users of each entities financial statements.”(FASB, 2012, p. 1) They also mention understandability and ease of accessing the information. Both of these elements are part of readability.

With the importance of footnotes established, how do investors use them 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. 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: Arnold, Bedard, Phillips, and Sutton (2010)

Table 1 shows gaps in use of information between professionals and non-professional investors. The largest gap between these two groups was the use of footnotes with 68 % of the professional investors using them and 30% of the nonprofessional investors using them?

3.5 Understanding Financial Statements

Studies that examined the association between readability and other variables, include the identity of the external auditor Smith and Smith (1971); Barnett and Leoffler (1979) and corporate profitability Courtis (1986); Baker and Kare (1992). Subramanian, Insley, and Blackwell (1993) found that profitable firms' annual reports were significantly easier to read than those of poor performers.

Previous studies' sample sizes, however, are very small. Of the thirty-two studies reviewed by Jones and Shoemaker (1994) only two had a sample size slightly larger than 100. The papers examined for the information in Table I of Clatworthy and Jones (2001) 14 had a sample size of 50 or smaller out of 16 and the largest sample size is 120. Li (2008) had a sample size of approximately 50,000. This paper was the first large-sample study to examine the cross-sectional variation in annual report readability and its implications for current earnings and earnings persistence. Lehavy, Li, and Merkley (2011) found that the higher the readability of the annual report the more information a financial analyst's report contained. Lehavy, Li, and Merkley (2011) also found that there was greater variation, uncertainty, and accuracy for earnings forecasts for the higher readability annual reports. Li (2010) focused on studies done in the last year with larger samples sizes.

Loughran and McDonald (2013) found that the length of the 10-K was a good proxy for and required less work to compute than the Fog Index. Loughran and McDonald (2013) also developed a negative word list because 75% of the negative words identified by the Harvard Dictionary are not considered negative in a financial context. The words were used to analyze 10-Ks, trading volume, fraud, material weakness, return volatility, and unexpected earnings. They found announcement returns were significantly related to the negative word list they developed on the 10-K filing date. Loughran and McDonald (2014) found firms responded to the SEC's plain English rule. This rule requires issuers to use short sentences, active voice, definite, concrete everyday language, tabular presentation of complex information, and not use legal jargon or multiple negatives.

The complexities of the financial information increased significantly over the years due to SEC regulations. Many accountants, analysts and lawyers question the benefit of these statements as they are long in length and hard to read. Arthur Radin, managing partner of Radkin, Glass, and 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 is not written to be read but written to comply with regulations (Radin, 2007).

Results of a survey reported by The Financial Executives Research Foundations (1987) found individual investors were not comfortable with the language and complexity of traditional annual reports. They felt plainer language and understandable language without the technical jargon would improve the reports. However, professional investors did not see any problems with the way annual reports were written, (Marsh and Montondon, 2005).

3.6 Readability

Readability is typically identified by three elements. Those three elements are: interesting, legibility, and ease of understanding (Jones and Shoemaker, 1994). There are many different readability scales and each measure readability different ways. The two measures of readability used in this study are the Flesch Index and the Flesch-Kincaid Index.

Flesch Index scores are based on average number of syllables per word and words per sentence. Table 2 shows the comparison of Flesch Index scores to educational level.

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

Flesch-Kincaid Index is a derivation of the Flesch Index. Although they 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, and Chissom, 1975). 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, (Hansen, D. D., n.d.) To explain the role of readability in a document, Kinnersley and Fleischman (2001) created a list of commonly known documents. As shown in Table 3. They are listed from highest to lowest grade level.

Table 3. Flesch-Kincaid Grade Level of Other Writing

Publications	Flesch-Kincaid Grade Level of Other Writing
Microsoft Word User's Guide	15
US Constitution including Amendments	14
New York Times (one article)	14
Gettysburg Address	13
Associated Press Story (one article)	13
Wall Street Journal	11
Time	11
Newsweek	11
1040EZ Instructions	11
Cosmopolitan	5
Hemingway Short Story	4
National Enquirer	3

These models are common tools used in a variety of industries to evaluate the readability 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).

The need for nonprofessionals to understand financial disclosures has accelerated as firms move away from defined benefit retirement plans to defined contribution plans. Traditionally defined contribution and defined benefit plans were managed by professional money managers (McCarthy and Turner, 2000). Sixty percent of the workers participating in a private pension plan in 1993 indicated that a defined contribution plan was their primary plan (U.S. Department of Labor, 1994). Along with a growth in 401 (k) plans there has been a growth in individual responsibility managing their pension portfolios. According to an Employee Benefit Research Institute (1996) survey, a majority of working Americans have a limited financial knowledge about financial retirement issues, retirement 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 away from defined benefit plans to avoid recording large pension liabilities on their balance sheets required by FASB 87. For example General Motors in 1994 had approximately \$54 billion of various retirement liabilities out of total liabilities of \$185 billion on its balance sheet when at the same time the Stockholders equity was approximately \$12 billion.

Current literature indicates people need more financial literacy. The general population reads at about the eighth grade level or a Fletsch Index score of 60 to 70 (Kirsch, Jungeblut, Jenkins, and Kolstad, 1993 and Winslow and Jacobson, 1998). There are two ways to increase readability: one increase knowledge or peoples' reading ability or two write in such a way readers can understand. Many entities are doing the second, trying to write at a level the general public can understand, credit card companies (Prater, 2010) institutional review boards (IRBs) (Paasche-Orlow, Taylor, and Brancati, 2003), and state insurance commissions for example. (Carr, March 29, 2010) The second was chosen because attempts at the first have not been very successful. The average reading level in the United States has not increased despite efforts to do so (Gifford, 2007).

4. Methodology

4.1 Data Collection

A total of 100 firms were randomly selected from the Edgar Database. The sample size was determined using the formula from Chou (1972). A confidence level of 95% and a sampling error of 10% were used to compute the sample size. The database contains approximately 90,000 firms within a 16 year interval. The 10-Ks from the selected firms were downloaded. The footnotes from the 10-K were cut and pasted into a separate document. The researchers had two files of footnotes from the same firm, one with the headers and tables and one without the headers and tables. The Word (Office 2003 Suite) spelling and grammar check was run on both 10-K files which yielded the following data: Flesch Kincaid Grade Level, Flesch Reading Ease Score, and 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 Standard Industrial Classification (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)

4.2 Hypotheses

The hypotheses for the study were:

H₁: The readability of financial statement footnotes is statistically different with headers and tables than without headers and tables.

H₂: The readability of financial statement footnotes 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 financial statement footnotes. 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 Kincaid score as the dependent variable. SPSS 19th edition was used to analyze the data.

5. Results

The financial statements of the 100 companies were “pulled” from the Edgar database. The financial statements were then analyzed for their readability scores using Word 2003. The Table 4 presents the descriptive information based on the readability measures regarding the sample.

Table 4. Descriptive Data for Variables

Variable	Minimum	Maximum	Mean	Standard Deviation
Flesch Index	0	27.1	15.075	5.542
Flesch Kincaid	14	22	16.909	1.06
Passive Sentences	1	0.5	0.284	0.048
Words per Sentence	14.8	28.7	23.403	2.612
Sentences per Paragraph	1.4	8.7	3.44	1.075
Total Sentences	34	1138	287.47	215.449
Total Paragraphs	11	5168	435.284	715.577
Total Words	805	32620	8035.47	6104.28

In analyzing the data for H₁, significant differences were found among the two groups regarding the different reading scores. Financial statements with footnotes that include headers were significantly higher at the .01 level of significance in their reading scores than the financial statements with footnotes that do not include headers with a fairly strong effect size of partial eta² .231. The univariate analyses yield significance at .01 for the Flesch Index and Flesch-Kincaid score and yielded significance at .05 in paragraph scores. There was little practical significance with effect sizes measured partial eta² scores of .043, .031, and .133 respectively.

Table 5. MANOVA Reading Scores Regarding financial Statements with and without footnotes

Reading Scores	SS	Df	MS	F	Partial eta2
Between Subjects					
Group				9.668	0.231
Within Subjects					
Flesch Index	262.892	1	262.892	8.991**	0.043
Paragraph	1.22E+08	1	12170204	30.331**	0.133
Flesch Kincaid	6.919	1	6.919	6.321*	0.031

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

Analyzing the data for H₂, there are significant differences at .01 found between readability scores of the financial statements 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-Kincaid score (9) of the reading level of the average U.S. citizen at .01.

Table 6. Independent t-Test Results by Readability Score of Flesch Index and Flesch-Kincaid Index

Readability Index	t	df	P
Flesch Index	-80.526	99	.000**
Flesch-Kincaid Index	76.11	99	.000**

Note ** $p < .01$

6. Discussion

While there were statistical differences between the files with and without headers and tables the differences were not practical significant differences. This indicates that removing the headers and tables will not impact the results. Future research will be easier not needing to remove the headers and tables.

The average Flesch Index reading level of the footnotes was 20.4. 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. read and understand moderately dense, less commonplace prose text as well as summarizing, making simple inferences, determining cause and effect, and recognizing the author's purpose
2. locate information in dense, complex documents and make simple inferences about the information
3. locate less familiar quantitative information and use it to solve problems when the arithmetic operation is not specified or easily inferred. (Kutner , Greenberg, Jin, Boyle, Hsu, and Dunleavy, 2007)

Eighty-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, Greenberg, Jin, Boyle, Hsu, and Dunleavy, 2007).

Increasingly, people are asked to make investment 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 financial training is a higher than average reading level.

The general population lacks the basic abilities to become financial literate. As easy as education is to access, without the basic literacy skills, it is extremely difficult to acquire. To educate the general population regarding financial literacy, reading is a necessary skill. There are two ways to enable people to understand documents that are this difficult, educate them or change the reading level of the document. Since such a large proportion of the population does not read at this level and the lack of success to improve their reading level it would seem to indicate that making the footnotes easier to read would be more easily attainable, (Gifford, November 19, 2007) .

Although the lack of financial literacy may be an issue for the consumer investor in making investment decisions, writing financial statement disclosures such as footnotes at a reasonable reading level that is more in line with the reading level of the consumer investor would be helpful. Footnotes are the narrative to the financial statements and play an important role in the communication of how well a company is doing. Writing them at a level beyond plain English in "legal jargon and obtuse language" leads to distrust, and therefore no investing (Loughran & McDonald, 2013).

Future research will examine if the footnotes can be rewritten at a lower reading level. The Texas Office of Consumer Credit Commissioner has examples of documents on its website written traditionally and in plain English. The traditional version of a home equity loan contract consists of 139 words and has a very low Flesch Reading Ease score of 13.9. The plain English version contains only 42 words and has a high Flesch Reading Ease of 77.8 (Office of Consumer Credit Commissioner, Texas).

Traditional

"Unless applicable law requires a different method, any notice that must be given to me under this Note will be given by delivering it or by mailing it by first class mail to me at the Property Address above or at a different address if I give the Note Holder a notice of my different address.

Any notice that must be given to the Note Holder under this Note will be given by delivering it or by mailing it by first class mail to the Note Holder at the address stated in Section 3(A) above or at a different address if I am given a notice of first class mail to the Note Holder at the address stated in Section 3(A) above or at a different address if I am given a notice of that different address. “(Office of Consumer Credit Commissioner, Texas)

Plain English

“You or I may mail or deliver any notice to the address above. You or I may change the notice address by giving written notice. Your duty to give me notice will be satisfied when you mail it by first class mail.” (Office of Consumer Credit Commissioner, Texas)

If a home loan can be rewritten from a Flesch of 13.9 to 77.8 it would seem reasonable that the footnotes could be rewritten at a lower grade level. Rewriting the footnotes is easier than raising the reading level of the general population. Readable footnotes would lead to better decisions for investments.

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