



CEO-CFO Business Education and Financial Reports Readability

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INTRODUCTION

METHODS

RESULTS

What factors may influence the financial report readability? Recent studies in accounting have identified some influencing factors on readability, such as firm-level factors (e.g., Li and Zhang, 2015; Lo et al., 2017; Lim et al., 2018) and managerial-level factors (e.g., Asay et al., 2018; Chakrabarty et al., 2018; Hasan, 2018). Most of the studies testing managerial-level factors focus on managerial pay incentives or career concerns, and make arguments under the framework of agency theory. Upper echelons theory, on the other hand, suggests that managers' demographic factors may be used to capture their cognitive values, and have impact on corporate strategies and outcomes (Hambrick and Mason, 1984). Follow this suggestion, Xu et al. (2018) examine the association between executive age and financial report readability. The objective of this paper is to explore the potential influence of another managerial demographic factor, education. In particular, we focus on the CEO/CFO educational background in business because typically CEO and CFO are the top commanders in charge of firms' financial reporting activities, and it is important to learn whether trainings in business at early ages distinguish them from colleagues with different trainings when deciding the use of language in financial disclosure. We therefore examine how business education affects CEOs' and CFOs' decision-making on the annual report readability.

We manually collect the educational background data of S&P 1500 CEOs and CFOs between 1994 and 2015. Using alternative measures of financial annual report's readability developed by Bonsall and Miller (2017), Bonsall et al. (2017a) and Loughran and McDonald (2014), we find that the CEO (CFO) with a business degree is associated with better (worse) readability of annual reports. This suggests that different roles and responsibilities in CEO/CFO rather than an educational degree itself may explain various degrees of readability in financial reporting chosen by executives. Moreover, we find that in deciding the readability of annual reports CEO and CFO may have a conflict of interest. On the one hand, the pressure from a CEO with a business degree can mitigate the lower readability of annual report derived from a CFO with a business degree. On the other hand, the positive relation between the CEO with a business degree and annual reports' readability is moderated (1) by the CFO with a business degree or (2) if the CEO is promoted from an CFO role. Additional tests suggest both internal monitoring, such as corporate governance, and external monitoring, such as financial analysts following, may strengthen (moderate) the positive (negative) relation between CEO (CFO) with a business degree and annual reports' readability. Finally, we find different types of educational degrees may have different effects on executives' financial reporting decisions.

This paper contributes to the current literature of readability in several ways. First, we identify a new managerial-level factor, educational background, is related to financial disclosure readability. Second, this study enriches this line of literature by distinguish the influence of CEO business education from the influence of CFO business education, within the framework of corporate governance mechanism. Third, our findings have implications to regulators and educators.

Annual Reports' Readability

We implement two methods to measure the readability of annual reports. First, Bonsall et al. (2017) develop a new measure of readability, Bog Index, based on plain English attributes of 10-K filings recommended by the SEC. We use the Bog Index to inversely measure the readability of annual reports. Second, we implements the two proxies recommended by Loughran and McDonald (2014), the file size of 10-K document and the number of words contained in 10-K, to inversely measure annual reports' readability. A larger file size (FileSize) or a larger number of words (NWords) indicates a lower degree of readability.

CEO and CFO Business Education Background

The educational data is collected from alternative sources. We first download the list of S&P 1500 CEOs and CFOs from EXECUCOMP database with some basic information, including their names, IDs and company affiliations. Then according to this list, we manually collect the educational data from some databases containing managers' demographical information, including Marquis Who's Who on the Web, Zoominfo.com, and Capital IQ. We finally supplement some missing data with general online searches. This paper codes CEO_Bdegree or CFO_Bdegree as one if a CEO or CFO has at least one business degree from the bachelor, master, or PhD level.

We develop the following OLS regression to test the relation between CEO/CFO's education background and the readability of annual reports:

$$Readability = \beta_0 + \beta_1 Education + \beta_2 ABSDC + \beta_3 LogAge + \beta_4 RetVolatility + \beta_5 EarnVolatility + \beta_6 NOGeoseg + \beta_7 NOBusseg + \beta_8 SIZE + \beta_9 BM + \beta_{10} ROA + \beta_{11} SI + \beta_{12} MA + \beta_{13} CT + \beta_{14} ComplexACCT + \beta_{15} LogNonmiss + \beta_{16} Delaware + \beta_{17} Time + \beta_{18} Industry + \epsilon_1$$

where Readability refers alternatively to the Bog Index developed by Bonsall et al. (2017), and Nwords and FileIndex developed by Loughran and McDonald (2014). Education refers alternatively to the CEO/CFO with at least one business degree (CEO_Bdegree or CFO_Bdegree). All the variables in the above equation, except dummy variables, are winsorized at top and bottom 1 percent level. We conduct standardized regressions using the above equation to directly interpret the relative importance of each variable. Following previous papers, we control fixed time effect and fixed industry effect, and we cluster the coefficients' standard errors of multivariate regressions at both firm-level and year-level.

Table 3. The relation between CEO/CFO business education and readability of 10-Ks

Variables	Dependent = Bog Index		Dependent = NWords		Dependent = FileSize	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CEO_BDegree	-0.0240	0.0012	-0.0131	0.1508	-0.0158	0.0844
Control Variables	Included		Included		Included	
Industry Fixed Effect	Yes		Yes		Yes	
Year Fixed Effect	Yes		Yes		Yes	
Adjusted R-Square	0.4387		0.2956		0.2741	
Sample Size	11,217		9,335		9,335	

Table 4. The interaction between CEO/CFO business education and its relation to readability of 10-Ks

Variables	Dependent = Bog Index		Dependent = NWords		Dependent = FileSize	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CEO_Bdegree	-0.1978	<.0001	-0.1310	0.0008	-0.1412	0.0007
CFO_Bdegree	0.0410	0.0691	0.0005	0.0981	0.0012	0.0967
CEO_Bdegree*CFO_Bdegree	0.1475	0.0011	0.1648	0.0001	0.1746	0.0003
Control Variables	Included		Included		Included	
Industry Fixed Effect	Yes		Yes		Yes	
Year Fixed Effect	Yes		Yes		Yes	
Adjusted R-Square	0.4774		0.3895		0.4001	
Sample Size	2,474		2,324		2,324	

Table 4. The interaction between CEO/CFO business education and its relation to readability of 10-Ks

Variables	Dependent = Bog Index		Dependent = NWords		Dependent = FileSize	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CFO_Bdegree	0.0489	0.0830	0.0144	0.0633	0.0165	0.0585
Control Variables	Included		Included		Included	
Industry Fixed Effect	Yes		Yes		Yes	
Year Fixed Effect	Yes		Yes		Yes	
Adjusted R-Square	0.5258		0.4271		0.4173	
Sample Size	1,147		1,084		1,084	

Table 3. The relation between CEO/CFO business education and readability of 10-Ks

Variables	Dependent = Bog Index		Dependent = NWords		Dependent = FileSize	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CFO_BDegree	0.0540	<.0001	0.0490	<.0001	0.0486	<.0001
Control Variables	Included		Included		Included	
Industry Fixed Effect	Yes		Yes		Yes	
Year Fixed Effect	Yes		Yes		Yes	
Adjusted R-Square	0.4142		0.3680		0.3768	
Sample Size	8,021		7,833		7,833	

Table 4. The interaction between CEO/CFO business education and its relation to readability of 10-Ks

Variables	Dependent = Bog Index		Dependent = NWords		Dependent = FileSize	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CFO_Bdegree	0.1168	<.0001	0.1002	0.0004	0.0994	0.0004
Control Variables	Included		Included		Included	
Industry Fixed Effect	Yes		Yes		Yes	
Year Fixed Effect	Yes		Yes		Yes	
Adjusted R-Square	0.5708		0.4730		0.4800	
Sample Size	1,327		1,240		1,240	

Table 4. The interaction between CEO/CFO business education and its relation to readability of 10-Ks

Variables	Dependent = Bog Index		Dependent = NWords		Dependent = FileSize	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
CEO_Bdegree	-0.0226	0.0024	-0.0134	0.0146	-0.0161	0.0082
CEO_Bdegree*Promote_from_CFO	0.0016	0.0242	0.0082	0.0908	0.0084	0.0636
Control Variables	Included		Included		Included	
Industry Fixed Effect	Yes		Yes		Yes	
Year Fixed Effect	Yes		Yes		Yes	
Adjusted R-Square	0.4512		0.3049		0.2980	
Sample Size	11,217		9,335		9,335	

DISCUSSION

This paper investigates how the CEO/CFO's education background is associated with the readability of financial annual reports. Different from prior studies which focus on the educational background of either CEO or CFO, we discuss the interaction between CEO's and CFO's education background and provide additional evidence for the conflict of interest between CEO and CFO in corporate governance. Specifically, we find that the CEO (CFO) with a business degree is associated with better (worse) readability of annual reports and the positive (negative) relation is strengthened (moderated) by internal corporate governance and external analyst following. Moreover, this paper suggests business education is helpful for a CEO to oversee and control a firm's financial reporting and ethical topics in the business education can encourage practitioners to behave more professional ethically, although a business degree is not directly related to the quality of financial reporting. Our paper has the implication for academic literature, business education, industry practitioners, and standards setting. Future research may further investigate how to design executive contracts to mitigate a conflict of interest between CEO and CFO and how to improve course contents and course structures in the business education.