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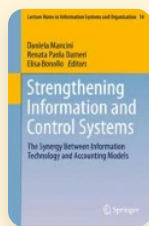
Management Discussion and Analysis in the US Financial Companies: A Data Mining Analysis

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[Strengthening Information and Control Systems](#)

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Abstract

This research aims to analyse how managers react to firm's financial conditions, in issuing the Management Discussion and Analysis (MD&A) and if MD&A content could be used to forecast firms' future financial performance. To do so, we appeal to text mining techniques such as natural language processing and sentiment analysis. The main assumption is that the MD&A content varies depending on

financial and economic conditions companies are experiencing. The study is conducted on a sample of US listed financial companies which experienced, between 1995 and 2011, different financial conditions, namely: (1) companies which filed for Chap. [11](#), thus having a high risk of bankruptcy; (2) companies not filing for Chap. [11](#), but with a medium risk of bankruptcy according to their economic and financial performance ratios; (3) companies not filing for Chap. [11](#), with a healthy financial situation. Empirical results reveal some interesting findings regarding the association between the bankruptcy risk levels and the content of the MD&A. This research also provides useful statistical instruments in supporting the stakeholders to investigate the reliability of the MD&As, examining the language used by the companies (effect), as response to financial conditions (cause). Text mining analysis allows to reveal some information that would otherwise remain implicit or even hidden behind complex periods and sentences. Contrary to our expectations, results suggest that companies experiencing high risk of bankruptcy use more positive words than those with medium and low bankruptcy risk. Also, findings show that companies with medium and low bankruptcy risk make a more appropriate use of positive and negative words. Moreover, we found that negative words contained in MD&A are an useful indicator to forecast a worsening of the main financial ratios. Regarding to the future researches, this study provides the starting point for analysing the role of MD&A in supporting the independent auditors' reports. Recent studies show that audit firms often fail in predicting the bankruptcy risk of distressed companies and such an error could be due to the role of MD&A, as auditors may take it as a base for releasing their independent report.



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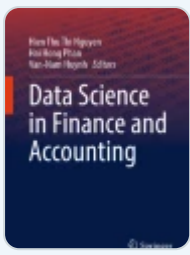
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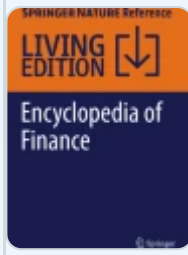
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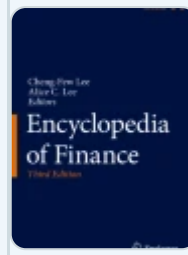
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References

1. Securities Act Release 33-4936 (Dec 9, 1968)
2. Securities Act Release IC-8175 (Jan 10, 1974)
3. Li, F.: The information content of forward-looking statements in corporate filings—a naïve bayesian machine learning approach. *J. Acc. Res.* **48**(5), 1049–1102 (2010)
4. Tavcar, L.R.: Make the MD&A more readable. *CPA J. Online* (1998). <http://nysscpa.org/cpajournal/1998/0198/newsViews/0198NV7.htm> 03 June 2014

5. Knutson, P.H.: *Financial Reporting in the 1990s and Beyond*. Association for Investment Management and Research, Charlottesville, VA (1993)
6. Rogers, R.K., Grant, J.: Content analysis of information cited in reports of sell-side financial analysts. *J. Finan. Statement Anal.* **3**, 17-30 (1983)
7. Security Exchange Commission.: *Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations; Rule* (2003)
8. Sutton, S., Arnold, V., Bedard, J.C., Phillips, J.R.: Enhancing and structuring the MD&A to aid investors when using interactive data. *J. Inf. Syst.* **26**(2), 167-188 (2012)
9. Brown, S.V., Tucker, J.W.: Large-sample evidence on firms' year-over-year MD&A modifications. *J. Acc. Res.* **49**, 309-346 (2011)
10. Pava, M.L., Epstein, M.J.: How good is MD&A as an investment tool? *J. Accountancy* **175**, 51-53 (1993)
11. Securities Exchange Commission.: *Commission Statement about Management's Discussion and Analysis of Financial Condition and Results of Operations*, Release Nos. 33-8056; 34-45321; FR-61 (2003a)
12. Securities Exchange Commission.: *Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations*. 17 CFR Parts 211, 231, and 241. Release Nos. 33-8350, 34-48960, and FR-72. Washington, D.C.: SEC (2003b)
13. Cohen, J.R., Gaynor, L.M., Holder-Webb, L.L., Montague, N.: *Management's discussion and analysis: Implication for audit practice and research*. *Curr.*

14. Meiers, D.H.: The MD&A challenge: The difficulty of crafting a quality disclosure. *J. Accountancy* **201**(1), 59-66 (2006)
15. Verrecchia, R.E.: Discretionary disclosure. *J. Account. Econ.* **5**, 179-194 (1983)
16. Holder-Webb, L.L., Cohen, J.R.: The association between disclosure, distress and failure. *J. Bus. Ethics* **75**, 301-314 (2007)
17. Graham, J.R., Harvey, C.R., Rajgopal, S.: The economic implications of corporate financial reporting. *J. Account. Econ.* **40**(1-3), 3-73 (2005)
18. Desai, H., Hogan, C.E., Wilkins, M.S.: The reputational penalty for aggressive accounting: Earnings restatement and management turnover. *Acc. Rev.* **81**(1), 83-112 (2006)
19. Kothari, S.P., Wysocki, P.D., Shu, S.: Do managers withhold bad news? *J. Acc. Res.* **47**(1), 241-276 (2006)
20. Feldman, R., Govindaraj, S., Livnat, J., Segal, B.: The incremental information content of tone change in management's discussion and analysis. Working Paper. Electronic copy available at: <http://ssrn.com/abstract=1126962> (2008)
21. Clarkson, P.C., Kao, J.L., Richardson, G.D.: Evidence that management discussion and analysis (MD&A) is a part of firm's overall package. *Contemp. Acc. Res.* **16**(1), 111-134 (1999)
22. Huang, X., Teoh, S.H., Zhang, Y.: Tone management. Working Paper.

23. Li, F.: Annual report readability, current earnings, and earning persistence. *J. Account. Econ.* **45**(2/3), 221-247 (2008)
24. Feldman, R., Govindaraj, S., Livnat, J., Segal, B.: Management's tone change, post earnings announcement drift and accruals. *Rev. Acc. Stud.* **15**, 915-953 (2010)
25. Hales, J., Kuang, X.J., Venkataraman, S.: Who believes the hype? An experimental examination of how language affects investor judgments. *J. Account. Res.* **49**, 223-255 (2011)
26. Davis, A.K., Tama-Sweet, I.: Managers' use of language across alternative disclosure outlets: Earnings press releases versus MD&A. *Contemp. Account. Res.* **29**(3), 804-837 (2012)
27. Lang, M., Lundholm, R.: Corporate disclosure policy and analyst behaviour. *Acc. Rev.* **71**(4), 467-492 (1996)
28. Barron, E.E., Kile, C.O., O'Keefe, T.B.: MD&A quality as measured by the SEC and analysts' earnings forecasts. *Contemp. Account. Res.* **16**(1), 75-109 (1999)
29. L'Her, J., Suret, J.: Consensus, dispersion and security prices. *Contemp. Account. Res.* **13**(Spring), 209-228 (1996)
30. Bamber, L.S., Barron, O., Stober, T.: Trading volume and different aspects of disagreement coincident with earnings announcements. *Acc. Rev.* **72**(October), 575-597 (1997)

31. Ajinkya, B., Atiase, R., Gift, M.: Volume of trading and the dispersion in financial analysts' earnings forecasts. *Acc. Rev.* **66**(2), 389–401 (1991)
32. Clarkson, P.C., Kao, J.L., Richardson, G.D.: The voluntary inclusion of forecasts in the MD&A section of annual reports. *Contemp. Account. Res.* **11**(1-II), 423–450 (1994)
33. Hutton, A.P., Lee, F.L., Shu, S.Z.: Do managers always know better? the relative accuracy of management and analyst forecasts. *J. Acc. Res.* **50**(5), 1217–1244 (2012)
34. Loughran, T., McDonald, B.: When is a liability not a liability? textual analysis, dictionaries, and 10Ks. *J. Finan* **66**(1), 35–64 (2011)
35. Bird, S., Klein, E., Loper E.: *Natural Language Processing with Python*, O'Reilly Media, Inc. (2009)
36. Bird, S.: *NLTK: The Natural Language Toolkit*. In: *Proceedings of the COLING/ACL on Interactive presentation sessions*. Association for Computational Linguistics (2006)
37. Porter, M.: *Snowball: A Language for Stemming Algorithms* (2001)
38. Caserio, C., Panaro, D., Trucco, S.: A Statistical Analysis of Reliability of Audit Opinions as Bankruptcy Predictors. *Discussion Papers del Dipartimento di Scienze Economiche—Università di Pisa*, (<http://www-dse.ec.unipi.it/ricerca/discussion-papers.htm>) n. 2014/174 (2014)
39. Hodges, C., Cluskey Jr, G.R., Lin, B.: Analysing bankruptcy predictors using time series data. *J. Account. Finance Res.* **13**(1), 159–168 (2005)

40. Malgwi, C.A., Emenyonu, E.N.: Audit effectiveness preceding Cankruptcy in UK financial institutions. *Int. J. Account. Auditing Perform. Eval.* **1**(4), 503–518 (2004)

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