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A FINANCIAL PERFORMANCE ANALYSIS OF RANBAXY USING ALTMAN'S Z SCORE MODEL

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Abstract: Financial performance analysis is a tool to estimate the financial position and also the strength and weakness of the company's management. These analysis are useful to increase the credibility of the company.

The present study discusses financial performance of Ranbaxy for the period prior and post to the merger between Ranbaxy and Daiichi Sankyo Co. Ltd for ten years (2003 to 2012). The goal of this analysis is to determine the efficiency and performance of firm's management, as reflected in the financial records and reports. The main reasons for financial performance analysis are to know i) Financial distress ii) The extent of the company's leverage iii) Efficiency in generating profits iv) The solvency v) The ability in handling competition. This paper extends on the well-known Altman Z-score model presented by Altman (1968).

Keywords: Financial performance, Z score, financial distress, leverage, solvency

INTRODUCTION :-

Financial performance analysis is the process of determining the operating and financial characteristics of a firm. The goal of such analysis is to determine the efficiency and performance of firm's management, as reflected in the financial records and reports. Management of working capital in terms of liquidity and profitability management is essential for sound financial image as it has a direct impact on profitability of the company (Rajesh and Ramana Reddy, 2011). The crucial part in managing working capital is required maintaining its liquidity in day-to-day operation to ensure its smooth running and meets its obligation (Eljelly, 2004). The main reasons for financial performance analysis are to know i) Financial distress ii) The extent of the company's leverage iii) Efficiency in generating profits iv) The solvency v) The ability in handling competition.

The present study discusses financial performance of Ranbaxy for the period prior and post to the merger between Ranbaxy and Daiichi Sankyo Co. Ltd. This analysis is particularly important at this point to scrutinize SUN Pharma's decision of acquiring stake in Ranbaxy.

OBJECTIVE:

The main objectives of the study are

- To evaluate the financial performance of Ranbaxy prior to acquisition by Daiichi-Sankyo.
- To evaluate the financial performance of Ranbaxy prior to acquisition by SUN Pharma.

RESEARCH METHODOLOGY:

The data used for the study is collected from the annual reports of Ranbaxy available on the company's website. The period of the study is 10 years from 2003 to 2012 as five years prior and post to acquisition by Daiichi Sankyo Co. Ltd on 11th June 2008. The data has been analysed through Altman's Z score model and few accounting ratios. As It explicitly measure(s) a firm's relatively all aspects of corporate performance, lead to clearer conclusions, avoid judgment bias, reliability.

COMPANY PROFILE:

Ranbaxy Laboratories Limited was incorporated in 1961, promoted by Ranbir Singh and Gurbax Singh. It was listed on Bombay Stock Exchange on 1973 and it became one of the largest pharmaceutical companies in India.

Ranbaxy at the time of takeover by Daiichi Sankyo Co. Ltd on 11th June 2008 was among the top 100 pharmaceuticals in the world and that it was the 15th fastest growing company in India. Daiichi Sankyo Co. Ltd was Japan's third-largest drug maker. Daiichi Sankyo Co. Ltd had its operations in 21 countries at the time of the deal. The deal with Ranbaxy would expand its presence to 56 countries and provide it the platform to launch its innovator products at competitive prices and expand its global operations. But there is sharp decline in the market value of Ranbaxy in recent times.

On April 7 2014 to increase presence in global and domestic market, Sun Pharmaceuticals Industries acquires Ranbaxy Laboratories Ltd for \$4 billion.

LITERATURE REVIEW:

Financial longevity of a business is a concern to internal and external stakeholders. Internal stakeholders might be interested in whether skills are transferable, while external stakeholders might be concerned directly with their investment or profits (Mossman et al, 1998). To address these concerns, it may be of particular importance to the industry to predict bankruptcy or financial distress. Various authors (Dugan and Zavgren, 1989; Chen and Shimerda, 1981) have outlined seven financial factors that can help to predict financial distress: return on investment, financial leverage, capital turnover, short-term liquidity, cash position, inventory turnover and receivables turnover. By using financial ratios, the accuracy of predicting bankruptcy of a firm is greater than 90% (Chen and Shimerda, 1981).

One important tool that predicts the volatility and has gained popularity since 1985 is Edward Altman's Z Score Model (Altman, 1968). It is a multivariate formula used for the measurement of the financial health. It has gained wide acceptance with a variety of stake holders like investors, financial analysts, consultants, bankers, auditors, management accountants, courts, and database systems. Further it is also used for evaluation of loans (Eidleman, 2003), as it offers an excellent measure for evaluating the financial health of a subject business. It explicitly measure(s) a firm's relative liquidity, longevity, operating profitability, leverage, solvency, and productivity—virtually all aspects of corporate performance, lead to clearer conclusions, avoid judgment bias, reliability.

The Altman model uses various ratios to consider the seven factors noted above. It should be noted that some researchers (i.e. Morris, 1998) argue that in so far as bankruptcy is due to unforeseeable events and therefore, it cannot be predicted. The widely popular Z-score function used for analyzing and predicting bankruptcies was first published in 1968 by Edward I. Altman (Altman, 1968). The z-score is used as a basic research tool in exploring such areas as merger and divestment activity (e.g. Shrieves and Stevens, 1979; Lasfer et al., 1996; Sudarsanam and Lai, 2001), asset pricing and market efficiency (e.g. Altman and Brenner, 1981; Katz et al., 1985; Dichev, 1998; Griffin and Lemmon, 2002; Ferguson and Shockley, 2003), capital structure determination (e.g. Wald, 1999; Graham, 2000; Allayannis et al., 2003; Molina, 2005), the pricing of credit risk (see Kao, 2000 for an overview), distressed securities (e.g. Altman, 2002: ch. 22; Marchesini et al., 2004), and bond ratings and portfolios (e.g. Altman, 1993: ch. 10; Caouette et al., 1998: ch 19). Z-score models are also extensively used as a tool in assessing firm financial health in going-concern research (e.g. Citron and Taffler, 1992; Carcello et al., 1995; Mutchler et al., 1997; Louwers, 1998; Citron and Taffler, 2001 and 2004; Taffler et al., 2004).

Z score model

Altman (1968) is of the opinion that ratios measuring profitability, liquidity, and solvency are the most significant ratios. However, it is difficult to know which is more important as different studies indicate different ratios as indicators of potential problems. Altman's 1968 model took the following form:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5$$

Where:

X_1 = working capital/total assets,

X_2 = retained earnings/total assets,

X_3 = earnings before interest and taxes/total assets,

X_4 = book value equity/book value of total liabilities,

X_5 = sales/total assets.

X_1 : This is a measure of the net liquid assets of a firm relative to capitalization. Working Capital is calculated by subtracting the firm's current assets from current liabilities.

X_2 : This measures a firm's cumulative profits relative to size. When a firm generates a profit, some of the profit is distributed to the shareholders as dividends and the rest is accumulated to the balance sheet in an account in the equity section. These retained earnings are used to pay off debt or invest in research and development. The age of the firm is implicitly considered due to the fact that relatively young firms have a lower ratio and the incidence of business failures is much higher in a firm's early years. It

is also an indication of the firm's use of external capital to fund its investments and operations.

X_3 : This is a measure of the earning power of the firm's assets without any influence from tax or leverage factors.

X_4 : This measures the extent to which a firm's assets can decline in value before book value becomes negative and the firm becomes insolvent. This assesses the ability of a firm to fund its operations with equity capital, the cost of equity and the market's outlook for the firm's prospects. This also adds a market basis dimension to the calculation. Market Capitalization is another name for market value of equity and is calculated by multiplying the company's stock price by the total amount of shares outstanding.

X_5 : This is a turnover ratio that measures the sales generating capacity of the firm's assets.

The zones of discrimination are:

$Z < 1.81$ -- Distress

$1.81 < Z < 2.99$ -- Inconclusive

$Z > 2.99$ -- Solvent

ANALYSIS & INTERPRETATION:

Z score variables : Table 1

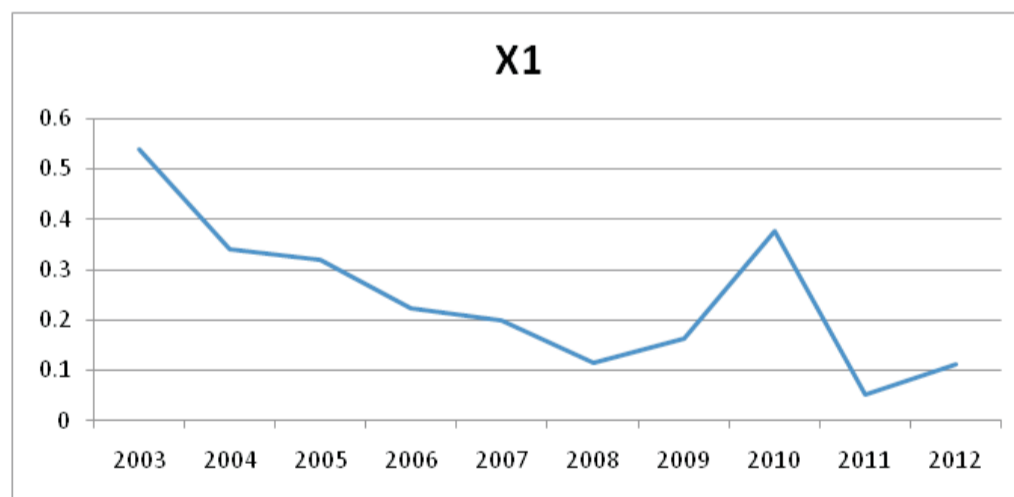
YEAR	X_1	X_2	X_3	X_4	X_5	Zscore
2003	0.53867	0.14457	0.38726	0.30333	1.37605	1.39776
2004	0.33925	0.08136	0.22517	0.31229	1.25341	1.26667
2005	0.32015	0.01590	0.05715	0.14457	0.96721	0.97306
2006	0.22240	0.00830	0.07801	0.06612	0.69945	0.70450
2007	0.20003	0.03437	0.12305	0.06725	0.64692	0.65362
2008	0.11460	-0.11153	-0.21845	0.02241	0.58549	0.57764
2009	0.16318	-0.03384	0.14191	0.06124	0.60616	0.61209
2010	0.37755	0.07270	0.16664	0.06214	0.56070	0.57156
2011	0.05258	-0.16542	-0.21288	0.03145	0.52203	0.51298
2012	0.11161	-0.19516	-0.01267	0.04145	0.47128	0.46924

Source: Annual reports(variables computed)

INTREPRETATION

Net Working Capital to Total Assets

Fig 1 Graphical presentation of Net Working Capital to Total Assets



As shown in the above figure 1 the working capital of this company is never been stable during the study period but total assets decreased year by year except in the years of 2010 and 2012. It means the company shows its keen interest on investing in fixed assets rather in working capital. The ratio X1 range from 0.05258 to 0.53867. It clearly shows that the working capital management of the company is neither satisfactory nor effective.

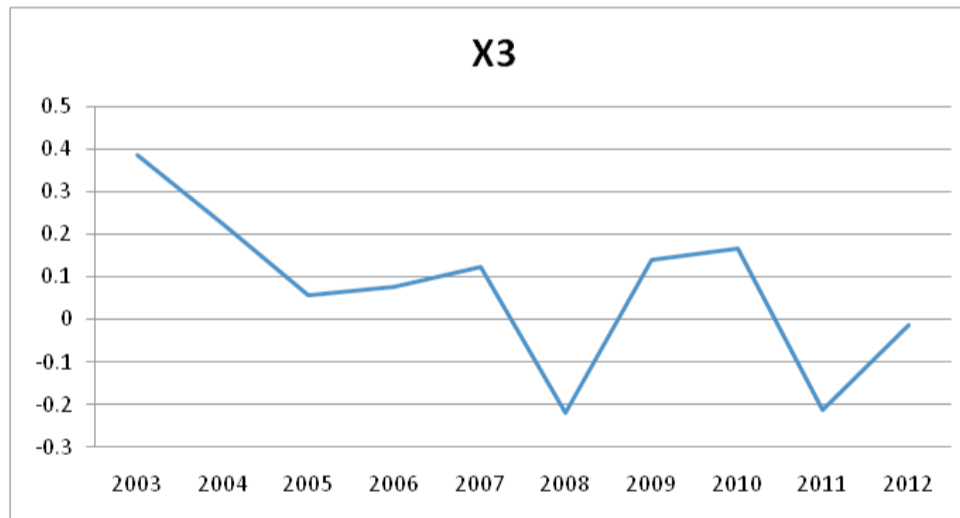
Retained Earnings to Total Assets

Fig 2 graphical presentation of Retained Earnings to Total Assets



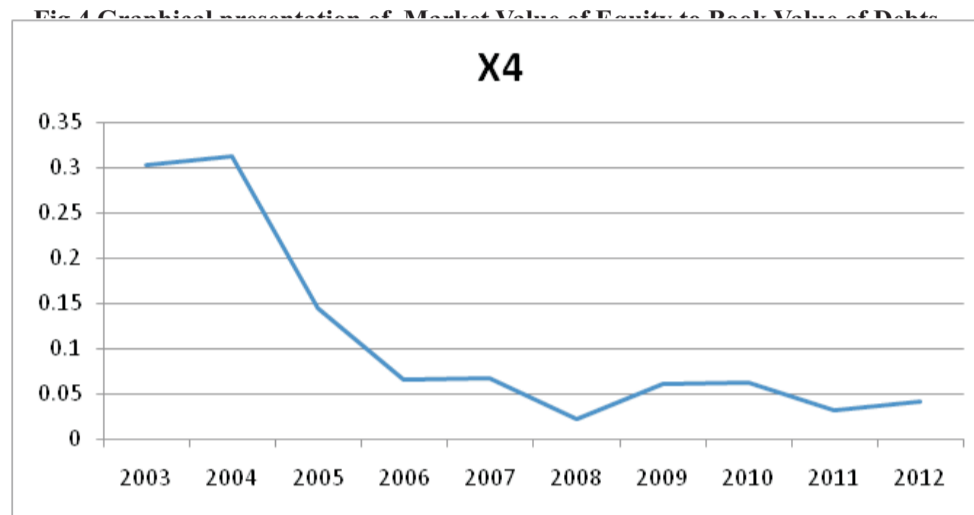
As shown in the above figure 2 the ratio of retain earnings to total assets is declined over the years. The range of this ratio X2 is from -0.19516 to 0.14457. This shows this company financing capital expenditure through borrowings rather than retained earnings.

Earnings Before Interest and Tax to Total Assets



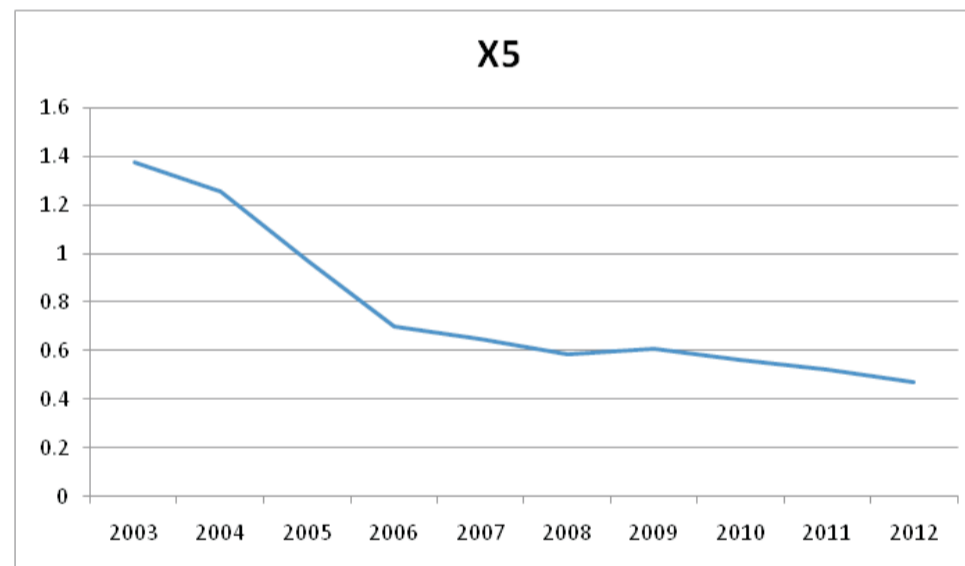
The ratio EBIT to Total Assets indicates the operating performance and productivity capacity of assets which leads to company success or failure. The ratio X3 ranges from -0.21845 to showing a low operating efficiency of the company and also indicates that the company is unable to operate the fixed assets properly.

Market Value of Equity to Book Value of Debts



The ratio market value of equity to book value of debts measures the long term solvency of the company. As shown in figure 4 the ratio is fluctuating during the study period. The ratio X4 of the company ranges from 0.02241 to 0.31229. It shows the long term solvency of the firm is doubtful

Sales to Total Assets.



The ratio of Sales to Total Assets is a turnover ratio that measures the sales generating capacity of the firm's assets. The ratio X5 ranges from 0.47128 to 1.37605, which is declined over the study period. It shows the management is unable to generate sales using assets significantly

Z Score Value

The financial analysis of the company Ranbaxy is analysed through Altman's Z score model, which shows financial soundness and efficiency of the management. As shown in Table 1 and in the figure below the Z score declined over the years. The Z score range from 0.46924 to 1.39776. As per the result the financial position is too weak during the study period.



DISCUSSION AND SUGESSTION :

The financial performance of the Company Ranbaxy is not sound whether it's prior or post to Daiichi Sankyo Co. Ltd acquisition. Even though the company is generating revenue over the years but the financial efficiency is not good enough.

A steady net working capital shows that the capacity of liquidity maintenance but the company is unable to achieve a steady working capital growth, which affects the firms liquidity image negatively. The retained earnings also is not very much significant for the company as it comes down to negative figures, which means the company is comes to very much closer to bankruptcy after the acquisition by Daiichi Sankyo Co. Ltd.

The company is very much capable of expanding its sales volume to the desired level. Sun Pharma after acquiring Ranbaxy should strategise to boost the sales to desired level as soon as possible and maintain it.

CONCLUSION:

It can be concluded that the Z score of Ranbaxy over a period of ten years (2003 to 2012) Prior and post to acquisition by Daiichi Sankyo Co. Ltd ranges from 1.39776 to 0.46924., which shows the company is getting closer to bankruptcy before acquisition by Sun Pharma. The financial performance was on declining mode after acquisition by Daiichi Sankyo Co. Ltd too. Finally it can be concluded that the overall financial health of Ranbaxy is not sound and Sun Pharma has very tough task to rebuild Ranbaxy's healthy image.

REFERENCES

1. Allayannis, G., Brown, G.W., and Klapper, L.F. (2003). Capital structure and financial risk: evidence from foreign debt use in East Asia. *Journal of Finance*, 58(6): 2667- 2709.
2. Altman, E. (1968). Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy, *Journal of Finance*.
3. Altman, E.I. (1993). *Corporate financial distress and bankruptcy*. New York: John Wiley, 2nd edition.
4. Altman, E.I. (2002). *Bankruptcy, credit risk, and high yield junk bonds: a compendium of writings*. Oxford: Blackwell Publishing.
5. Altman, E. (2003). Financial Ratios, Discriminant Analysis, and Prediction of Corporate Bankruptcy, *Journal of Finance*, 23(4), 589-610.
6. Altman, E., Baidya, T., & Dias, L. (1979). Assessing Potential Financial Problems for Firms in Brazil, *Journal of International Business Studies*, 10(2), 9-24.
7. Altman E.I. and Brenner, M. (1981). 'Information effects and stock market response to signs of firm deterioration'. *Journal of Financial and Quantitative Analysis*, 16(1):35-52.
8. Altman, E., Haldeman, R. R. & Narayanan, P. (1997). ZETA Analysis: A New Model to Identify Bankruptcy Risk of Corporations, *Journal of Banking and Finance*, June.
9. Altman E. & Hotchkiss E. (2006). *Corporate Financial Distress and Bankruptcy* (3rd ed.), New Jersey, USA: John Wiley & Sons, Inc.
10. Altman, E., and Menachem Brenner. (1981). Information effects and stock market response to signs of firms deterioration, *Journal of Financial and Quantitative Analysis*, 16, 35-51.

11. Carcello, J.V., Hermanson, D.R. and Huss, H.F. (1995). 'Temporal changes in Bankruptcy-related reporting'. *Auditing: A Journal of Practice and Theory*, 14 (2): 133-143.
12. Caouette, J.B., Altman, E.I. and Narayanan, P. (1998). *Managing credit risk: the next great financial challenge*. New York
13. Chen, K. H., and Thomas A Shimerda, *An Empirical Analysis of Useful Financial Ratios*, *Financial Management*, Spring 1981, v10(1), 51-60.
14. Citron, D.B. and Taffler, R.J. (1992). 'The audit report under going concern uncertainties: an empirical analysis'. *Accounting and Business Research*, 22 (88): 337-345
15. Citron, D.B. and Taffler, R.J. (2001) 'Ethical behaviour in the U.K. audit profession: the case of the self-fulfilling prophecy under going-concern uncertainties'. *Journal of Business Ethics*, 29(4):353-363.
16. Citron, D.B. and Taffler, R.J. (2004). 'The comparative impact of an audit report 24 standard and an audit going-concern standard on going-concern disclosure rates'. *Auditing: A Journal of Practice and Theory*, 23(2):119-130.
17. Dichev, I. (1998). Is the Risk of Bankruptcy a Systematic Risk? *The Journal of Finance*, 53(3), 1131-1147
18. Dugan, M. T., and Christine V. Zavgren, How a Bankruptcy Model Could be Incorporated as an Analytical Procedure, *The CPA Journal*, May 1989, v59(5), 64-65
19. Eidleman, G. J., Z scores – A Guide to Failure Prediction, *The CPA Journal*, February 1995, v65(2), 52-53
20. Eljelly, A., 2004. Liquidity-profitability trade off: An empirical investigation in emerging market. *Int. J. Comm. Manage.*, 14(2): 48-58.
21. Ferguson, M.F. and Shockley R.L. (2003). Equilibrium anomalies, *Journal of Finance*, 58(6): 2549-2580.
22. Graham, J.R. (2000). 'How big are the tax benefits of debt?' *Journal of Finance*, 55(5): 1901- 1941.
23. Griffin, J. and Lemmon, L. (2002). Book-to-market equity, distress risk, and stock returns. *Journal of Finance*, 57(5): 2317-2336.
24. Kao, D.L. (2000). 'Estimating and pricing credit risk: an overview'. *Financial Analysts Journal*, 56(4): 50-66.
25. Katz, S., Lilien, S. and Nelson, B. (1985). 'Stock market behaviour around bankruptcy model distress and recovery predictions'. *Financial Analysts Journal*, 41(1): 70-74.
26. Lasfer, M., Sudarsanam, P.S. and Taffler, R.J. (1996). Financial distress, asset sales, and lender monitoring. *Financial Management*, 25(3): 57-66.
27. Louwers, T.J. (1998). The relation between going-concern opinions and the auditor's loss function. *Journal of Accounting Research*, 36(1): 143-156.
28. Marchesini, R., Perdue, G. and Bryan, V. (2004). Applying bankruptcy prediction models to distressed high yield bond issues. *Journal of Fixed Income*, 13(4): 50-56
29. Mutchler, J.P., Hopwood, W. and McKeown, J.C. (1997). The influence of contrary information and mitigating factors on audit opinion decisions on bankrupt companies. *Journal of Accounting Research*, 35(2):295-301.
30. Molina, C.A. (2005). Are firms underleveraged? An examination of the effect of leverage on default probabilities, *Journal of Finance*, 60(3):1427-1459
31. Morris, R., *Bankruptcy Prediction Models: Just How Useful Are They?* *Credit Management*, May 1998, 43-45.
32. Mossman, C. E., Geoffrey G. Bell, L Mick Swartz, and Harry Turtle, *An Empirical Comparison of Bankruptcy Models*, *The Financial Review*, May 1998, v33(2), 35-52.
33. Rajesh, M. and N.R. V. Ramana Reddy, 2011. Impact of working capital management on firms' profitability. *Global J. Finan. Manage.*, 3(1): 151-158.
34. Shrieves, R. E. and D. L. Stevens (1979). Bankruptcy Avoidance as a Motive for Merger, *Journal of Financial and Quantitative Analysis*, 501-515.
35. Sudi Sudarsanam and Jim Lai (2001). Corporate financial distress and turnaround strategies: An empirical analysis, *British Journal of Management*, 12(3), 183-199.
36. Taffler, R.J. Lu, J. and Kausar, A. (2004). 'In denial? Stock market underreaction to going-concern audit report disclosures'. *Journal of Accounting & Economics*, 38(1-3):263-296.
37. Wald, J.K. (1999). How firm characteristics affect capital structure: an international comparison. *Journal of Financial Research*, 22(2):161-187.



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