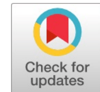
Technological Relationship Between Capital Structure and Financial Efficiency in ACC Ltd

R. Pradeep Kumar Patnaik, Chintala Balaji, M S Narayana



Abstract: Capital structure is extreme noticeable adjustment of organization's processes. The relations between capital structure and profitability of an organization have been received substantial thought in the financial management. Capital structure is very important part in the financial decision, as it directly related to the risk and return of an organization. Whether the capital structure of an organization has impact on the financial performance is a matter of investigation for important decision making. Therefore, this study purposes is to find out the interrelationship between Capital Structure and Financial Efficiency of ACC for a period of ten years from 2005-06 to 2014-15. The collected data has examined through the correlation and regression analysis for finding out the interrelationship between capital structure and financial efficiency of ACC. Correlation analysis has used for finding out the connection between capital structure and financial efficiency. The study has considered the secondary data for the period. The different financial ratios (capital structure ratios and profitability ratios) have been used for the investigation.

Keywords: Capital Structure, Financial Performance; Debt Equity Ratio and Profitability Ratios.

I. INTRODUCTION

Financial structure is the combination of all liabilities (both short term as well as long term) whereas Capital structure is the combination of only long-term liabilities an organization. Hence Capital structure is the combination of an organization's common share capital, preferred share capital, long-term debt and retained earnings, which have been used to finance its general practices and development. Capital structure is a genuine important financial decision as it directly associated to the risk and return of an organization. Any inappropriate combination of capital structure decision can be resulted in high cost of capital; thus the organization's value will suffer though inappropriate capital structure decision Optimum capital structure is that capital structure which leads to the maximum value of the firm and minimize the organization's cost of capital. More or less, different researchers have different view and use to defined capital structure in their personal manner. The capital structure has derived by Weston and Brigham (1979) as the permanent financing of a firm signified by long-term debt, preferred stock and shareholders' funds. Van Horne and Wachowicz(1995), defined capital structure is the mix of a firm's permanent long-term financing represented by debt, preferred stock, and common stock equity. Therefore, it can be imitative that capital structure syndicates mainly equity and long-term debt. If an organization financed by means of debt or borrowed funds then it has to pay the interest to the money lender and if it financed by equity, it has to distribute some part of profits as dividends to the shareholders. In the other hand organization keeps its undistributed profit as retained profit in reverses and surplus, which is a part of shareholders' funds. The interrelationship between capital structure and profitability or financial efficiency of the organization is very important part that received substantial consideration in the financial management. An organization's profitability use to measure by maximizing the shareholders' funds is at the end of a period as compare to at the beginning the period. The main objective of shareholders from the business is to increase wealth from the investments. Thus the dimension of financial performance of the organization must provide a sign in the way to maximize shareholder wealth which will consequence in the investment over a specific time. It is clear from the above conversation; one significant thing is understandable that the capital structure has great influence on organization's profitability. Therefore, this study purposes is to find out the interrelationship between capital structure and financial efficiency of ACC from2005-06 to 2014-15.

Manuscript published on 30 September 2019.
*Correspondence Author(s)
Dr. R Pradeep Kumar*, Assistant Professor, KL Business School, KLEF, Vadeswaram, Guntur, India-522502. . Email: rpradeep@kluniversity.in.
Dr. Chintala Balaji, Assistant Professor, KL Business School, KLEF, Vadeswaram, Guntur, India-522502. Email: chbalaji@kluniversity.in.
Dr. M Srinivasa Narayana, Professor, KL Business School, KLEF, Vadeswaram, Guntur, India-522502. Email:msn@kluniversity.in.

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an open access article under the CC-BY-NC-ND license http://creativecommons.org/licenses/by-nc-nd/4.0/

II. BRIEF PROFILE OF ACC

ACC Limited is India's leading manufacturer of cement and ready mixed concrete with 17 contemporary cement factories, more than 50 ready mixed concrete plants, and a vast circulation network of over 9,000 dealers and a nationwide range of sales distributors. ACC has been an innovator and well-known brand in cement and concrete technology. ACC was established in 1936 and has an exceptional track record of advanced research, product expansion and expert consultancy services. ACC is identical with cement and appreciates a high level of equity in the Indian financial market. Therefore ACC is a principal brand from last eight decades having un appalled merge with a vision to attend customers, stakeholders and the nation with commitment. Today ACC represents not only a trademark in cement as well as in concrete but also a brand name which reposes on many potentials in high quality building materials, great place to work, reliable business associates and good corporate citizen.

III. LITERATURE REVIEW

Gleason, Lynette, and Ike (2000) found from their research that high debt in the capital structure would decrease the firm's profitability. They experienced that firm's capital structure has a statistically negative result on firm's profitability matrixes. Similarly observed by Fama and French(2002), they identified that extremely profitable companies with lesser risk of financial suffering are really less levered which challenges through the trade-off model. Manawaduge, Zoysa, Chowdhury and Chandarakumara (2011) determined that most of the Sri Lankan companies' use short-term debt as in contradiction of the long-term debt and firm profitability is negatively affected by the use of debt. Similar Khairul (2013) observed remarkable negative association amongst performance and leverage in Bangladeshi companies. Tianyu (2013) inspected the effect of capital structure on firm's profitability in both industrialized and developing markets using OLS regression technique, he recognized that capital structure has a negative result on company's profitability in China, Margaritis and Psillaki (2010) in their article observed an important positive relation among capital structure and companies financial performance. In the same way Samuel (2013) examined the connotation amongst capital structure and firm profitability that positive and important relation amongst them. Aliakbar, Seyed and Pejman (2013) have also originated an important connection among capital structures and firm profitability in the Tehran Stock Exchange. Nor and Fatihah (2012) exasperated to discover the influence of debt and equity on the profitability of the companies listed in Bursa Malaysia by using 130 companies from 2001to 2010 through multiple regression analysis, they mentioned a statistical important negative relationship among capital structure and companies' profitability. Ali and Iman (2011) investigated that company's performance, intended by EPS and Tobin's Q, is positively connected through the capital structure, although they got a negative relation among capital structure and ROA. Though, they observed no important association among ROE and capital structure.

IV. OBJECTIVES OF THE STUDY

The attention of this study is interrelationship between capital structure and financial efficiency of ACC

1. To analyses the capital structure and profitability position of ACC
2. To measure the interrelationship between capital structure and financial efficiency of ACC.

V. METHODOLOGY OF THE STUDY

For fulfilling the above stated research objectives, the data for this study has been collected from the financial statements of published annual report of ACC. The collected data has investigated through the correlation, regression analysis for finding out the interrelationship between capital structure and financial efficiency of ACC, Correlation analysis has used for finding out the connection between capital structure and financial performance. The study has considered the secondary data for a period of ten years from 2005-06 to 2014-15. The different financial ratios (capital structure and profitability ratios) have been used for the investigating as follows:

- Capital Structure Ratios: Total Debt to Equity Ratio (TDER) and Long Term Debt to Equity Ratio (LTDER)
- Profitability Ratios: Operating Profit Margin (OPM), Net Profit Margin (NPM), Return on Capital Employed (ROCE), Return on Assets (ROA) and Return on Equity (ROE).

VI. DATA ANALYSIS AND INTERPRETATION

Analysis of different Capital Structure Ratios of ACC

The table -1 shows the different capital structure ratios and the trend of these ratios of sample companies have elaborated below.

The total debt to equity ratio (TDER) is the relationship between total debt and shareholder's funds. It is the greatest straight-forward measure of an organization's long term solvency. Normally a lower total debt to equity ratio is a sign of lower risk to the organization. On the contrary, a higher total debt to equity ratio designates higher risk to the organization or the long term solvency position of the organization is not good. Table I reveals that TDER fluctuated between 0.52 in the last year of study 2014-15 and 0.88 in the first year of study 2005-06. The average TDER of the ACC throughout the study period was 0.66, which was very low to the standard ratio of 2:1. However the ratio demonstrates a decreasing trend throughout the study period, it found to be lesser than the standard ratio of 2:1 throughout the study period. Hence, TDER is unsatisfactory all the years of study period; the company's aptitude to encounter its long-term requirements was unsatisfactory.

Table-1 Capital Structure Ratios

Year	TDER	LTDER
2005-06	0.88	0.39
2006-07	0.69	0.19
2007-08	0.73	0.17
2008-09	0.68	0.15
2009-10	0.72	0.14
2010-11	0.65	0.14
2011-12	0.62	0.15
2012-13	0.55	0.13
2013-14	0.54	0.08
2014-15	0.52	0.07
Average	0.66	0.16
Maximum	0.88	0.39
Minimum	0.52	0.07

Similarly, long term debt to equity ratio (LTDER) is also a measure of long term solvency of an organization. It is the relationship between long term debt and shareholder's funds. From the table it can find out LTDER has also shown a decreasing trend during the study period and varied between 0.07 in the year 2014-15 to 0.39 in the year 2005-06. The average LTDER of the ACC throughout the study period was 0.16. A ratio of less than one in this category indicates a higher reliance on capital provided by owners than capital provided by outsiders of the company.

Retrieval Number: K21820981119/19©BEIESP
DOI: 10.35940/ijitee.K2182.0981119
Journal Website: www.ijitee.org

Published By:
Blue Eyes Intelligence Engineering
and Sciences Publication (BEIESP)
© Copyright: All rights reserved.

Therefore LTDER of ACC was found to be very low as compare to the standard ratio. Henceforth, like TDER, LTDER is also unacceptable all the years of study period; the company's ability to meet its long-term requirements was disappointing all over the study period.

Analysis of different Profitability Ratios of ACC

The table-2 revels the different Profitability ratios and their trend of ACC have elaborated below.

Operating Profit Maegan (OPM) demonstrates firm's operating efficiency. It is the relationship between operating profit and sales. From the table it can observe that OPM shows a declining movement during the study period from 2005-06 to 2014-15. It recorded a highest of 26.03% in 2005-06 and a lowest of 7.22% in 2014-15 with an average of 18.47%. In the case of Net Profit Margin (NPM) indicates the overall efficiency of a firm. By studying the ACC's NPM, it can observe that NPM of ACC also have a decreasing trend and came down from 21.23% in the first year 2005-06 to 5.01% in the last year 2014-15 with a mean of 14.11% for study period.

Table-2 Profitability Ratios (in Percentage

Year	OPM	NPM	ROCE	ROA	ROE
2005-06	26	21.2	34.49	20.8	39.1
2006-07	24	20.5	35.15	20.5	34.6
2007-08	24.3	16.6	30.92	14.2	24.6
2008-09	29.6	20.0	34.31	15.9	26.7
2009-10	19.6	14.5	20.64	10.0	17.3
2010-11	17.3	14.0	19.92	11.1	18.4
2011-12	13.7	9.34	18.1	8.77	14.3
2012-13	11.4	9.81	14.76	9.19	14.0
2013-14	10.3	9.91	13.70	9.22	14.1
2014-15	7.22	5.01	9.43	4.61	7.01
Average	18.4	14.1	23.15	12.4	21.0
Maximum	29.6	21.2	35.15	20.86	39.19
Minimum	7.22	5.01	9.43	4.61	7.01

Likewise OPM and NPM other profitability ratios (ROCE, ROA and ROE) of ACC have shown a diminishing trend. The ROCE, ROA and ROE of ACC have come down from 34.49%, 20.86% and 39.19% respectively to 9.43%, 4.61% and 7.01% during the study period from 2005-06 to 2014-15. These ratios have recorded average of 23.15%, 12.46% and 21.05% correspondingly for ROCE, ROA and ROE of ACC throughout the study period.

Analysis of Correlation

Correlation analysis concludes the strength and direction of the linear association among different capital structure and profitability ratios elaborated at Table 3. The correlation results of different ratios have elaborated below.

Table-3 Correlation Matrix

Particulars	TDER	LTDER	OPM	NPM	ROCE	ROA	ROE
TDNW	1.00						
LTDNW	0.89	1.00					
OPM	0.81	0.63	1.00				
NPM	0.84	0.72	0.96	1.00			
ROCE	0.81	0.70	0.97	0.97	1.00		
ROA	0.80	0.80	0.87	0.95	0.95	1.00	
ROE	0.85	0.85	0.87	0.95	0.94	0.99	1.00

Total debt to equity ratio is positively related to all profitability ratios (OPM, NPM, ROCE, ROA and ROE). It is highly correlated to ROE (0.85) and poorly correlated to ROA (0.80). Similarly long term debt to equity ratio also positively correlated to all profitability ratios. The long term debt to equity ratio has extremely correlated to ROE (0.85) and lowest correlated to OPM (0.63).

Regression Analysis Total Debt to Equity Ratio and Profitability Ratios

The below table's i.e, 4(a), (b) and (c) derived the regression analysis between TDER as dependent variable with the profitability ratios as independent variables. The goodness of fit consequences of standard linear multiple regressions through TDER as the dependent variable and numerous determinants as forecasters are described in Table 4(a), the model result has elaborated in Table 4(b). The model coefficients have revealed in Table 4(c) and the outcomes designate that no one of the indicators of TDER is significant ($p>0.05$) except ROA and ROE. This study indicates that, the association among TDER and profitability ratios by suggesting that statistically insignificant associations among TDER and on the profitability ratios except ROA and ROE.

Table-4Regression Results for Total Debt to Equity Ratio as Dependent Variable and Various Factors as Predictors

a) Model Summary

Multiple R	R Square	Adjusted R Square	Standard Error
0.99	0.98	0.95	0.02

b) Goodness of Fit – ANOVA

Particulars	SS	MS	F	Significance F
Regression	0.10	0.02	38.45	0.00
Residual	0.00	0.00		
Total	0.11			

c) Regression Coefficients

Particulars	Coefficients	Standard Error	t Stat	P-value
Intercept	0.56	0.03	19.93	0.00
OPM	-3.23	2.40	-1.35	0.25
NPM	5.21	2.78	1.87	0.13
ROCE	2.34	1.72	1.36	0.24
ROA	-14.23	3.75	-3.80	0.02
ROE	5.67	0.83	6.81	0.00

Retrieval Number: K21820981119/19©BEIESP
DOI: 10.35940/ijitee.K2182.0981119
Journal Website: www.ijitee.org

Published By:
Blue Eyes Intelligence Engineering
and Sciences Publication (BEIESP)
© Copyright: All rights reserved.

The adjusted R Square values of 0.95 designate that around 95% of the variation in TDER is clarified by the independent variables included in the model. The complete significance of the model was measured by ANOVA. The result designate that the model is statistically significant relation as demonstrated in the F value of 38.45 and a P-value < 0.01. NPM, ROCE and ROE have positive coefficient and ROE have marks the maximum influence to the forecast of the TDER with a coefficient of 5.67.While the t statistic and the Sig-values of OPM, NPM and ROCE designate insignificant associations on TDER at 5% levels. Whereas ROA and ROE have designated significant associations on TDER at 5% levels.

Regression Analysis Long Term Debt to Equity Ratio and Profitability Ratios

The below table's i.e, 5(a), (b) and (c) derived the regression analysis between TDER as dependent variable with the profitability ratios as independent variables. The goodness of fit consequences of standard linear multiple regressions through LTDER as the dependent variable and numerous determinants as forecasters are described in Table 5(a), the model result has elaborated in Table 5(b). The model coefficients have revealed in Table 5(c) and the outcomes designate that no one of the indicators of LTDER is significant (p>0.05) except ROE. This study indicates that, the association among LTDER and profitability ratios by suggesting that statistically insignificant associations among LTDER and on the profitability ratios except ROE.

Table-5 Regression Results for Long Term Debt to Equity Ratio as Dependent Variable and Various Factors as Predictors

a) Model Summary

Multiple R	R Square	Adjusted R Square	Standard Error
0.98	0.97	0.93	0.02

b) Goodness of Fit – ANOVA

Particulars	SS	MS	F	Significance F
Regression	0.07	0.01	25.16	0.00
Residual	0.00	0.00		
Total	0.07			

c) Regression Coefficients

Particulars	Coefficients	Standard Error	t Stat	P-value
Intercept	0.10	0.03	3.58	0.02
OPM	3.78	2.44	1.55	0.20
NPM	-4.59	2.82	-1.63	0.18
ROCE	-2.98	1.75	-1.70	0.16
ROA	-0.44	3.81	-0.12	0.91
ROE	3.57	0.85	4.23	0.01

The adjusted R Square values of 0.97 designate that around 97% of the variation in LTDER is clarified by the independent variables included in the model. The complete significance of the model was measured by ANOVA. The result designate that the model is statistically significant relation as demonstrated in the F value of 25.16 and a P-value < 0.01. OPM and ROE have positive coefficient and ROE have marks the maximum influence to the forecast of the LTDER with a coefficient of 3.57.While the t statistic and the Sig-values of all profitability ratios designate insignificant associations on TDER at 5% levels except ROE.

VII. CONCLUSION

This study is mainly related to interrelationship between capital structure and financial efficiency of ACC of ten years from 2005-06 to 2014-15. To find out the interrelationship the data has been investigated through the correlation, regression analysis. Correlation analysis has used for finding out the connection between capital structure and financial performance whereas the relationship between the ACC's financial performance is existence examined through the regression model measured with respect to capital structure. The different financial ratios like Capital Structure Ratios (Total Debt to Equity Ratio and Long Term Debt to Equity Ratio) in addition to Profitability Ratios (Operating Profit Margin, Net Profit Margin, Return on Capital Employed, Return on Assets and Return on Equity) have been considered for the investigation. Both the capital structure as well as profitability ratios have shown significantly decreased over the span of ten years from 2005-06 to 2014-15. A significant declining trend in the long-term debt paying competence of ACC was observed during the period under study. Furthermore, all the measures of profitability ratios of the ACC stepped down remarkably by means of the passage of time during the study period. All these negative characteristics had definitely an adversarial impact on the overall long term solvency position of ACC. Correlation analysis revealed that both the capital structure ratios are highly correlated with all the profitability ratios. The regression analysis by taking total debt to equity ratio as dependent variable indicates that, there are statistically insignificant associations among total debt to equity ratio and the profitability ratios except ROA and ROE. On the other hand, the regression analysis by taking long term debt to equity ratio as dependent variable reveals that, there are statistically insignificant associations among long term debt to equity ratio and the profitability ratios except ROE/

REFERENCES

1. Aliakbar, R., Seyed, H. S. N., &Pejman, M. (2013). The relationship between capital structure decisions with firm performance: Comparison between big and small industries in firms listed at Tehran Stock Exchange.World of Sciences Journal, 1(9), 83–92.
2. Alom, K. (2013). Capital structure choice of Bangladeshi firms: An empirical investigation. Asian Journal of Finance & Accounting, 5(1), 320–333.
3. Chowdhury, A., & Chowdhury, S. P. (2010). Impact of capital structure on firm's value: Evidence from Bangladesh. Business and Economic Horizons, 3(3), 111–122. http://dx.doi.org/10.15208/beh.2010.32
4. Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order prediction, about dividends and debt.Review of Financial Studies, 15(1), 1–33.
5. Fosu, S. (2013). Capital structure, product market competition and firm performance: Evidence from South Africa. The Quarterly Review of Economics and Finance, 53(2), 140–151.
6. Gleason, K. C., Lynette, K M., & Ike, M. (2000). The Interrelationship between culture, capital structure, and performance: Evidence from European retailers. Journal of Business Research, 50(2), 185–191.
7. Margaritis, D., &Psillaki, M. (2010). Capital structure, equity ownership and firm performance. Journal of Banking & Finance, 34(3), 621–632.
8. Mohamad, N. E. A. B., & Abdullah, F. N. B. A. (2012). Reviewing relationship between capital structure and firm's performance in Malaysia. International Journal of Advances in Management and Economics, 1(4), 151–156.

Retrieval Number: K21820981119/19©BEIESP
DOI: 10.35940/ijitee.K2182.0981119
Journal Website: www.ijitee.org

Published By:
Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP)
© Copyright: All rights reserved.

9. Saeedi, A., &Mahmoodi, I. (2011). Capital Structure and firm performance: Evidence from Iranian companies. International Research Journal of Finance and Economics, 70, 20–29.
10. Jaggavarapu, B.R., Kishore Babu, B. "Effect of working capital on the profitability with reference to Cognizant and Wipro in Hyderabad" Journal of Advanced Research in Dynamical and Control Systems, 2017, 9(Special Issue 18), pp. 1453-1474

AUTHORS PROFILE

Dr.R.Pradeep Kumar Patnaik working as an Assistant Professor in K L Business School, K.L.E.F, Vadeswarm had 17 years of teaching experience in India. He authored one book in Management and published 9 research papers in International and National journals. His area of interest are Finance, Marketing and Information Technology. He attended and acted as a resource person in various conference, workshops and guest lectures

Dr Chintala Balaji, Working as an Assistant Professor in K L Business School, K L E F, Vadeswaram had 13 years of teaching experience in India & Abroad. He authored one book in Management and published 30 research papers in International and national journals. His areas of interest are Finance, Banking & Insurance. He attended and acted as a resources person in various conferences, workshops and guest lectures. He got best teacher award from Vidyasree Foundation in 2006, received outstanding research paper from University of Mumbai in 2017 & best paper presentation award from Acharaya Nagarjuna University in 2017.

Dr. M S Narayana, K L Business School, K L E F, Vadeswaram had 30 years of experience in the education field. 12 Ph.D were awarded under his guidance. He was awarded the best teacher by JNTU(N) in 2017.

© Copyright: All rights reserved.