Rating Of Debt Instruments - A Model For Evaluation

** Dr. K. Viyyanna Rao*
*** A. Maruthi Varaprasad*

CREDIT RATING IN INDIA

The Indian capital market has witnessed a tremendous growth in the past few years. Companies are relying on capital markets, rather than on institutions, for financing existing operations as well as for new projects. In this process, the average size of securities issued, the number of companies issuing such securities and the number of investors have grown substantially. As the number of companies tapping capital market increases, investors find that the company's size or name is no longer a sufficient assurance of the timely payment of interest and principal. They felt the need for an independent and credible agency, which can judge the quality of debt obligations of different companies and assist individual and institutional investors in making investment decisions. Credit-rating agencies describe their rating as a symbolic indicator of the current options on the relative capability of the issuer to serve its debt obligation in a timely fashion, with specific reference to the instrument being rated. Rating is focused on communicating to the investors, the relative ranking, usually expressed in alphabetical or alphanumeric symbols, and are a simple and easily comprehensible aid for investors.

Credit rating is being recognized as a significant measure towards investors' protection and a self-check for the corporate enterprises for their financial and operational strength. Credit rating, as it exists in India, is done for specific instruments and not for a company as a whole. Credit rating is neither a general-purpose evaluation of a corporate entity, nor is an overall assessment of the credit risk likely to be involved in all the debt contracted or to be contracted by such issues. It does not amount to any recommendation to buy, hold or sell an instrument, as it does not take into consideration factors such as market prices, personal risk preferences of investors and such other considerations, which may influence an investment decision. It is an opinion expressed by an independent professional organization after making a detailed study of all the relevant factors. Credit rating is extremely useful to the investors, issuers, intermediaries, banks and financial institutions.

Though credit rating in India is of a recent origin, it has got the required momentum. The growing acceptance of rating as a concept and deepening of the debt and equity markets resulted in the setting up of four rating agencies in India. Credit Rating Information Services of India Limited (CRISIL) the first credit-rating agency, was promoted by Industrial Credit and Investment Corporation of India Limited (ICICI) and the Unit Trust of India (UTI) in 1987; Investment Information and Credit Rating Agency of India Limited (ICRA) was promoted by Industrial Finance Corporation of India (IFCI) in 1991; Credit Analysis and Research Limited (CARE) was promoted by the Industrial Development Bank of India (IDBI) in 1994; and Duff and Phelps Credit Rating India (P) Ltd. was promoted by Duff and Phelps in 1996. Keeping in view of the increasing trend towards globalization, these agencies later entered into strategic alliances with their counterparts operating on the global scale.

LITERATURE REVIEW

There has been a constant focus on the functioning of the credit rating institutions of the country. A good number of papers were published emphasising on the changing capital market scenario and the significance of credit rating. In this context, mention may be made of the studies carried out by **Y.V. Reddy and others**. **Pattanaik,U.C.** and **Satyanarana,G. (1993)** studied that credit rating was recognized as a significant measure both towards investor protection and self check for the corporate enterprises of their financial and operational strength.

Khan, Akbar Ali (1993) examined the role of credit rating agencies in the development of the Indian capital market. **Kumar, P.S.Mohana (1995)** analyzed credit rating in the light of further developments, particularly in the banking sector. He concluded that capital framework rests on three pillars, viz., minimum capital requirements, supervisory

* *Professor,* Department of Commerce and Business Administration & *Rector*, Acharya Nagarjuna University, Nagarjuna Nagar, Guntur, Andhra Pradesh. E-mail : kodativrao@yahoo.com
** *Professor & Head,* MBA Department, Nalanda Institute of P.G.Studies, Kantepudi, Guntur Dist., Andhra Pradesh.
E-mail : maruthi_alaparthi@rediffmail.com

review process and effective use of market discipline.

Mallikharjunappa, T. (1996) believed that liberalization measures initiated by the GOI as well the RBI have made the Indian economy look for 21st century with more hopes of strengthening the economy. **Rajiv Goel (1998)** opined that credit rating needs to be understood in two parts. The first area of regulation relates to prescribing entry norms for rating agencies and regulating the operational aspects. This is a welcome measure and is what the SEBI has attempted currently. **Rao, P. Mohana (1999)** has expressed that the significant factor of credit rating is its simplicity. **Ravi Mohan, R. (2000)** opined that credit rating has gained importance over the years. Other factors like globalization of the Indian economy, regulatory reforms and also shift in benchmarks and criteria of credit rating agencies also contributed to this increased activity. **Reddy, Y. V. (2000)** in his empirical research expressed that ratings are very useful for investors, issuers and regulators, but they need to be used carefully. He concluded by saying that credit ratings are like lampposts, which are meant to provide illumination for all, though a drunkard could use them for support.

Subramanian, K. (2002) explained how rating firms have dominated the market and even gained public support for their activities. Further, there are a couple of studies highlighting the credibility of the rating institutions. In his paper, **Choudhury, P. K. (2003)** has expressed that the most important ingredient of an effective credit rating system is the independence of the agencies. The most critical success factor of a credit rating agency is its credibility.

Suveera Gill (2005) tested the reliability of ratings assigned by Investment Information and Credit Rating Agency of India (ICRA) on the basis of actual default rate, experienced on long-term debt across five sectors. The study found the fact that excessive dependence on credit ratings needs to be reduced; since the governance of the rating agencies is in doubt, adequate steps have to be taken to make them more accountable.

Rao, K.Viyyanna and Varaprasad, A.Maruthi (2009) examined the rating methodologies of major rating agencies and further tested the default probabilities of top five NASSCOM ranked Information Technology (IT) Companies. The study suggested the need of rating agencies as a caution against default, by acting as information intermediaries between issuers and investors.

It is evident from the available literature that there has been a reasonable focus on credit rating activity. Nevertheless, the present researchers could identify the gap in the literature to the extent of lack of focus on the performance consistency evaluation of instruments rated by rating agencies.

HYPOTHESES OF THE STUDY

In the light of the above, the study attempts to test the following hypotheses:

1. The ratings awarded by CRISIL are in accordance with the credit worthiness of the clients.

2. The top four rating classes of instruments rated by CRISIL are able to sustain their rating in the subsequent period.

TEST HYPOTHESES

In order to test the rating reliability of the selected rating grades of rated instruments, the following hypothesis is developed:

- **Null Hypothesis (Ho): There is no significant difference between the performance of the rated instruments in the pre-rating period and post-rating period.**
- **Alternative Hypothesis (H_1): There is significant difference between the performance of the rated instruments in the pre-rating period and the post- rating period.**

DATA COLLECTION

As per the general phenomenon, the superior rated instruments symbolize performance reliability. In order to seek performance reliability in the superior rated instruments, the top four grades of instruments rated by CRISIL were chosen for critical evaluation. Among 325 instruments of companies rated by CRISIL, only 62 instruments are falling under the criteria of top four rating class. A judgment sample consisting of top four instruments of ten CRISIL rated companies had been selected for the study. The sample represents about 16 per cent of the instruments, falling under

the chosen criteria. While selecting the sample, care had been taken to include such companies that were in existence for a period of at least five years, so as to enable the researchers to compare the rating period and post-rating performances. Table-1 shows the details of companies, whose instruments were rated by CRISIL for the period under consideration, i.e., 2005-09.

Table 1: List Of Sample Companies' Instruments Rated By CRISIL

S.No	Name of the Company	Instrument Rated	Year 2007	Rating Assigned
1.	Asian Paints	Long-term Debt Instruments	"	AAA
2.	Dabur India Ltd.	Long-term Debt Instruments	"	AA+
3.	E.I.D. Parry (India) Ltd.	Long-term Debt Instruments	"	AA-
4.	Finolex Cables Ltd.	Long-term Debt Instruments	"	AA
5.	Hindalco Industries Ltd.	Long-term Debt Instruments	"	AAA
6.	Larsen & Toubro Ltd.	Long-term Debt Instruments	"	AA+
7.	Madras Cements Ltd.	Long-term Debt Instruments	"	AA
8.	Mahindra & Mahindra Ltd.	Long-term Debt Instruments	"	AA
9.	Reliance Industries Ltd.	Long-term Debt Instruments	"	AAA
10.	VST Industries Ltd.	Long-term Debt Instruments	"	AA

Efforts have been made to draw the relevant information from annual reports and websites of the sample companies rated by CRISIL. The Annual Reports considered for the present study cover a period of five years during 2005-2009, which include rating period of three years from 2005 to 2008 and post-rated period of two years, i.e., 2008 and 2009. This period of five years for the study has been viewed considerable, since ratings are revised every year.

METHODOLOGY AND TOOLS EMPLOYED

As a matter of fact, credit rating serves as an investment advisory function and depends on both qualitative and quantitative factors. The ultimate combined result of these factors will be reflected in the quality of ratings. Quality of rating will be expressed in terms of the degree of safety inherent in timely payment of interest and principal, as and when they fall due. Thus, the degree of safety associated with the timely payment of interest and principal on maturity (dependent variable) is a function of a large number of independent variables.

The researchers examined the benchmarks of Standard and Poor's (S&P) ratings and found out their key financial ratios, then tried to identify the nearest corresponding to them in the Indian context (see Table 2). Further, the key financial ratios recommended by financial analysts have been considered with due attention. Having regard to the fact in mind that the rating of the debt issues lies on the degree of safety associated with timely payment of interest and principal on maturity (dependent variable) is a function of large number of (independent variables), key quantitative

Table 2: Indian Equivalent Of Standard And Poor's Ratios

S.No	Standard and Poor's Ratios	Indian Ratios
1	Pretax Interest Coverage	EBIT / INT
2	Pretax Fixed Charges Coverage	None
3	Funds from Operations to Long Term Debt (%)	(PAT + DEP) / LTD
4	Funds from Operations to Total Debt (%)	(PAT + DEP) / LTD
5	Pretax Return on Permanent Capital (%)	EBIT / (TD + NW)
6	Operating Income to Sales (%)	OI / SALES
7	Capital to Long Term Debt	(LTD + NW) / LTD
8	Capital + Short Term Debt to Total Debt	(TD + NW) / TD
9	Pretax Return on Permanent Capital	None
10	Equity to Total Liabilities	NW / TL

factors such as liquidity, profitability, return, capital structure and growth aspects were considered for the present study. Finally, for operationalisation of the above quantitative factors, ratio analysis is employed as a financial tool by considering the key financial ratio such as: **(1)** Net Profit Margin **(2)** Return on Long-Term Funds **(3)** Debt-Equity Ratio **(4)** Current Ratio **(5)** Sustainable Rate of Growth **(6)** Financial Charges Coverage Ratio by the investigator (see Table-3). For the purpose of assigning the rating, a statistical tool, viz., **Quartile** was adopted, since the sample instruments fall under four different rating classes. The performance consistency of rated instruments during the pre-rating period and post- rating period was tested with the help of popular statistical tool **t-test**.

PAT - Profits After Tax
EBIT - Earnings Before Interest and Tax
INT - Interest Charges
DEP - Depreciation
TD - Total Debt
(including short term borrowings but excluding current liabilities)
NW - Net Worth
OI - Operating Income
LTD - Long-Term Debt
TL - Total Liabilities (including current liabilities).

Table 3: Key Financial Ratios Opted For The Study

S. No	Financial Ratios	Formula	Effect (Positive / Negative)
1	Net Profit Margin	(PBIT / Sales) x 100	Positive
2	Return on Long-Term Funds	(PAT / Avg. CE) x 100	Positive
3	Debt-Equity Ratio	LTD / SF	Negative
4	Current Ratio	CA / CL	Positive
5	Sustainable rate of Growth	ROE x (1- D / P Ratio)	Positive
6	Financial Charges Coverage Ratio	PBIDT / INT	Positive

PBIT - Profit Before Interest and Tax
PAT - Profit After Tax
CE - Capital Employed
LTD - Long-Term Debt
SF - Shareholder's Fund
CA - Current Assets
CL - Current Liabilities
ROE - Return on Equity
D / P Ratio - Dividend Payout Ratio
PBIDT - Profit Before Interest, Depreciation and Tax
INT - Interest Charges

The present study is superior to the earlier studies in respect of the methodology and provides operational flexibility on the following grounds:

1. As each parameter is the product of a ratio for obtaining their average, instead of Arithmetic Mean (A.M.), the more appropriate tool, Geometric Mean (G.M) was adopted.

2. As only top **four** rating classes were considered for the study, the tool **Quartile** was adopted. But for operational justification, the tool is subjected to change in accordance with the number of rating classes chosen.

3. There has been a serious allegation against the rating agencies regarding their rating reliability, particularly after ratings are awarded .The present study makes an effort to study the post-rating performance of the rated instruments through t-test.

Table 4: Summary Ratings Of Sample Companies

Rating Class	Rating Code	Number of Companies taken from each Rating Class
AAA	4	3
AA+	3	2
AA	2	4
AA-	1	1

Table 5: Key Factor Values Of Debentures For The Pre-Rating Period - (2005 -2007)

(In Per Cent)

Companies ? → Key Factor ? ↓	Asian Paints Ltd.	Dabur India Ltd.	E.I.D. Parry (India) Ltd.	Finolex Cables Ltd.	Hindalco Industries Ltd.	Larsen & Toubro Ltd.	Madras Cements Ltd.	Mahindra & Mahindra Ltd.	Reliance Ind. Ltd.	VST Ind. Ltd.
Net Profit Margin	15.3438	11.1812	8.9036	15.3769	45.3137	11.3749	26.1276	8.2299	18.4568	24.0788
Return on Long-Term Funds	39.1388	21.4706	14.3743	11.2527	19.0194	13.3217	12.1027	8.5040	14.0030	65.0014
Debt -Equity Ratio	0.1841	0.2785	0.7146	0.1815	0.1586	0.7592	2.0072	0.7002	0.7308	0.2488
Current Ratio	1.2883	2.2607	1.6247	3.1339	3.9113	1.5547	1.0326	1.4938	1.8192	1.7070
Sustainable Rate of Growth	13.6583	12.3663	5.5019	5.2034	13.6796	6.1487	7.2832	3.9236	13.0643	32.1724
Financial Charges Coverage Ratio	15.2562	5.6690	2.5737	4.8172	18.6470	2.5123	2.4107	3.4479	4.8000	13.1105

Table 6: Rating Symbols Assigned To Debentures For The Pre-Rating Period - (2005-2007)

Companies ? → Key Factor ? ↓	Asian Paints Ltd.	Dabur India Ltd.	E.I.D. Parry (India) Ltd.	Finolex Cables Ltd.	Hindalco Industries Ltd.	Larsen & Toubro Ltd.	Madras Cements Ltd.	Mahindra & Mahindra Ltd.	Reliance Ind. Ltd.	VST Ind. Ltd.
Net Profit Margin	AA	AA	AA-	AA+	AAA	AA	AAA	AA-	AA+	AAA
Return on Long-Term Funds	AAA	AAA	AA+	AA-	AA+	AA	AA	AA-	AA	AAA
Debt - Equity Ratio	AA+	AA+	AA	AAA	AAA	AA-	AA-	AA	AA-	AA+
Current Ratio	AA-	AAA	AA	AAA	AAA	AA	AA-	AA	AA+	AA+
Sustainable Rate of Growth	AAA	AA+	AA	AA-	AAA	AA	AA	AA-	AA+	AAA
Financial Charges Coverage Ratio	AAA	AA+	AA	AA+	AAA	AA-	AA-	AA	AA	AAA
Weighted Aggregate	**AA+ (3.000)**	**AAA (3.167)**	**AA (2.000)**	**AA+ (2.667)**	**AAA (3.833)**	**AA- (1.667)**	**AA- (1.834)**	**AA- (1.500)**	**AA (2.334)**	**AAA (3.667)**

Table 7: Key Factor Values Of Debentures For The Post-Rating Period - (2008 and 2009)- (In Per Cent)

Companies ? → Key Factor ? ↓	Asian Paints Ltd.	Dabur India Ltd.	E.I.D. Parry (India) Ltd.	Finolex Cables Ltd.	Hindalco Industries Ltd.	Larsen & Toubro Ltd.	Madras Cements Ltd.	Mahindra & Mahindra Ltd.	Reliance Ind. Ltd.	VST Ind. Ltd.
Net Profit Margin	15.0476	13.3238	12.4837	8.0147	24.2365	7.6150	22.5934	10.6828	18.9064	27.7147
Return on Long-Term Funds	43.1739	44.6291	15.458	5.2698	14.6707	26.2042	12.5262	21.7196	16.2979	54.8341
Debt - Equity Ratio	0.0748	0.0283	0.2249	0.1095	0.2683	0.3376	1.5860	0.5477	0.4427	0.0400
Current Ratio	1.0330	0.8216	1.7572	1.7097	1.5106	1.4840	0.7849	1.0854	1.3448	0.8395
Sustainable Rate of Growth	11.3181	16.7283	12.5308	2.9647	8.3307	14.1368	10.1601	15.0827	15.2074	16.1613
Financial Charges Coverage Ratio	40.5121	26.6228	8.6618	4.2137	10.0847	4.1678	3.7888	15.9417	8.0137	103.0558

PROCEDURE

The instruments considered for evaluation belong to **four rating classes** (see Table 4). The performance of each instrument was examined through **Ratio Analysis**, a popular financial tool, which considered six key financial ratios and each ratio served as a parameter. Since the value of each parameter is obtained from a ratio, the **Geometric Mean (G.M)** is opted as an appropriate measure to derive the mean value. The weighted aggregate of G.M for all the parameters was obtained for classifying each instrument's performance with the help of **Quartile** (see Table-5). The values so obtained were converted into rating symbols (see Table-6) for pre- rating grades. The procedure adopted for rating period was repeated for post-rating and the values obtained (see Table-7) were presented in the form of rating symbols (seeTable-8). An attempt has also been made to test the performance consistency during the rating period and the post rating period (see Table-9) with the help of well-known **t-test** for significance.

Table 8: Rating Symbols Assigned To Debentures For The Post-Rating Period - (2008 And 2009)

Companies ? → Key Factor ? ↓	Asian Paints Ltd.	Dabur India Ltd.	E.I.D. Parry (India) Ltd.	Finolex Cables Ltd.	Hindalco Industries Ltd.	Larsen & Toubro Ltd.	Madras Cements Ltd.	Mahindra & Mahindra Ltd.	Reliance Ind. Ltd.	VST Ind. Ltd.
Net Profit Margin	AA+	AA	AA	AA-	AAA	AA-	AAA	AA	AA+	AA
Return on Long-Term Funds	AAA	AAA	AA	AA-	AA	AA+	AA-	AA+	AA	AAA
Debt - Equity Ratio	AA+	AAA	AA+	AA+	AA	AA	AA-	AA-	AA-	AAA
Current Ratio	AA	AA-	AAA	AAA	AAA	AA+	AA-	AA	AA+	AA
Sustainable Rate of Growth	AA	AAA	AA	AA-	AA-	AA+	AA	AA+	AAA	AAA
Financial Charges Coverage Ratio	AAA	AAA	AA	AA	AA+	AA-	AA-	AA+	AA	AAA
Weighted Aggregate	**AAA (3.000)**	**AAA (3.167)**	**AA (2.500)**	**AA (1.667)**	**AA+ (2.667)**	**AA (2.167)**	**AA- (1.500)**	**AA (2.333)**	**AA (2.500)**	**AAA (3.333)**

Table 9 : Pre And Post-Rating Values

Name of the Companies	Pre-Rating Values	Post-Rating Values
Asian Paints	3.000	3.000
Dabur India Ltd.	3.167	3.167
E.I.D. Parry (India) Ltd.	2.000	2.500
Finolex Cables Ltd.	2.667	1.667
Hindalco Industries Ltd.	3.833	2.667
Larsen & Toubro Ltd.	1.666	2.167
Madras Cements Ltd.	1.834	1.500
Mahindra & Mahindra Ltd.	1.500	2.333
Reliance Industries Ltd.	2.333	2.500
VST Industries Ltd.	3.667	3.333

The following computations are made in the statistical analysis:

- The performance of each instrument is measured through six key financial ratios and each ratio serving as parameter.
- Calculation of Geometric Mean across the years for each parameter for each instrument of a company.
- The Geometric Mean of all the instruments of the companies is categorized into four groups (since four rating classes were considered) by dividing them with the help of the lower quartile, median, third quartile and upper quartile.
- Grading of an instrument with respect to a parameter is made as:
- **AA^- :** If the Geometric Mean falls below the first quartile.
- **AA :** If the Geometric Mean falls in between the first quartile and the median.
- **AA^+ :** If the Geometric Mean falls in between the median and the third quartile.

❁ **AAA :** If the Geometric Mean falls above third quartile.

❁ The frequency count of each grading across the six parameters for each instrument was noted in order to get the weighted aggregate rating.

❁ Grading is done with the help of quartiles to the weighted aggregate rating. This speaks about rating of an instrument of a company with respect to all the six parameters jointly into one of four equi-probable categories named as AA^-, AA, AA^+, AAA in the ascending order.

RESULTS AND DISCUSSION

The results of the study recorded a variation in the actual rating given to the instrument of a company and the expected rating (see Table-10). Out of the ten selected instruments, rating differences could be noticed in case of four companies, namely, Dabar India Ltd., Finolex Cables Ltd., Reliance Industries Ltd., and VST Industries Ltd. Among these four instruments, the actual rating of VST Industries Ltd. was found to be downgraded by two notches, and the rest were up-graded by one notch to the expected ratings. These rating variations between the awarded ratings and the expected ratings could be ascribed to the omitted qualitative factors in the study. Further, if one peeps into the various issues of the *"Rating Scan"* published by CRISIL, it reveals that considerable emphasis is laid on business analysis factors (i.e., qualitative factors).

Table 10: Comparison Of Actual And Expected Ratings For The Sample Companies

Name of the Company	Actual Rating Classes	Expected Rating as per Empirical Debt Rating Model	Differences in Rating Classes
Asian Paints Ltd.	4	4	0
Dabur India Ltd.	3	2	1
E.I.D Parry (India) Ltd.	1	1	0
Finolex Cables Ltd.	2	1	1
Hindalco Industries Ltd.	4	4	0
Larsen & Toubro Ltd.	3	3	0
Madras Cements Ltd.	2	2	0
Mahindra & Mahindra Ltd.	2	2	0
Reliance Industries Ltd.	4	3	1
VST Industries Ltd.	2	4	-2

NOTE: AA^- = 1; AA = 2; AA+ = 3; AAA = 4

The frequency count of the sample instruments on the basis of the number of rating classes by which the expected rating differs from actual rating were examined. The results showed a variation of 40 per cent (4 out of 10) in the actual rating, and the expected rating given by the rating agencies (see Table-11). Further, the researchers verified for bias categories, in which expected ratings vary from the actual ratings by more than two rating classes. The difference of two rating class confidence interval has been considered to justify the omitted qualitative factors in the present study. The confidence interval shall provide a more meaningful evaluation for the rating bias. None of the sample instruments were observed under the bias category (see Table-10). The methodology adopted for the present study proved 60 percent uniformity with the ratings awarded by CRISIL. The remaining 40 percent with permissible variation indicating omission of qualitative factors was unbiased.

Table 11: Rating Mismatch For Sample Companies

Number of Rating Classes for which Actual Rating Differs from Expected Ratings	Number of Companies
0	6
1	3
2	1

The rating is a function of the volume of debt to be raised, the tenure during which the debt is to be serviced and the cash flow that is likely to be generated during the period of debt servicing. Therefore, the rating cannot be the same for

an entity under different circumstances. A rating agency has the responsibility of regularly tracking its migration of ratings in the form of upgrades and downgrades, particularly in the context of frequency and severity of downgrades in its ratings compared with its earlier ratings.

Fairly, the severity as well as the frequency of downgrades is more in the case of debt offerings, which are rated in the lower category, compared with those rated in the higher category and vice-versa. Having regard to this fact in mind, the investigator turned attention to test the rating reliability during pre-rating period and post-rating period among the top four grades of selected instruments by applying renowned statistical tool **t-test** for significance.

The following computations were made:

Number of sample instruments **n= 10,**

Mean difference between grades of rating period and post rating period

$\bar{d}$ **= 0.083,**

Standard Deviation, s **= 0.644**

The test statistic 't' is given by

$$t = \frac{\bar{d}}{s/\sqrt{n-1}} \sim t_{n-1,\ \alpha}$$

t = 0.4094

The test found that the calculated value of t (0.4094) is less than the table value of t (2.262) at 95% confidence level with (n-1) i.e., 9 degrees of freedom and proved to accept H_0. The testing of hypothesis revealed that there is no significant difference between the performance of the selected instruments in the pre-rating period and post-rating period.

CONCLUSION

The results of this study present the following facts about the ratings assigned by CRISIL to the Long Term Debt Instruments of various issuers:

❁ The Rating agencies consider both qualitative and quantitative factors to award ratings. The present study evaluated the quantitative factors through ratio analysis, and ignored qualitative factors owing to the reason that there is no specific parameter to measure them. The earlier research studies could focus only the impact of quantitative factors in rating the instruments. The present study is also carried in that direction with an improvement in the methodology employed.

❁ The results showed a variation of 40 per cent (4 out of 10) between the expected rating and actual rating given by the rating agencies. The variation between expected ratings and actual ratings up to two rating class confidence interval has been considered justifiable and could be ascribed to the omitted qualitative factors. The confidence interval shall provide more meaningful evaluation for rating bias. None of the sample companies are observed under bias category. The study reveled that the ratings awarded by CRISIL are in accordance with the credit worthiness of the rated instruments, thus, proving the first hypothesis of the study.

❁ Though the methodology adopted in the present study considered only quantitative factors, expected ratings found 60 percent (6 out of 10) consistency with the actual ratings awarded by CRISIL. The study revealed that quantitative factors have a significant impact on rating assessment.

❁ The reliability of ratings awarded by the rating agencies lies on the accuracy of information considered by them. If Rating agencies simply process the audited information which has greater scope for window dressing supplied by their clients, there will not be much use. The rating agencies are required to pierce through the qualitative aspects like transparency and ethical code of conduct on the part of the corporates.

❁ The study also attempted to test the rating sustainability between rating period and post rating period of select instruments through *t-test*. The researchers found that there is no significant difference between the performance of the rated instruments in the pre-rating period and post-rating period, thus proving the second hypothesis of the study.

BIBLIOGRAPHY

1) Chowdhury P. K. (2003), *Credit Rating: Agencies Diversity Services*, THE HINDU Survey of Indian Industry, pp. 61-63.

2) Debasis Mallik. (2001), "Credit Rating Agencies: Risky Conflicts", *Chartered Financial Analyst,* July, pp. 32-35.

3) Eugene, F. Fama. (1979), "Components of Investment Performance", *Journal of Finance*, June 27, pp. 551-567.

4) George, E. Pinches., and Kent, A. Mingo. (1973). "A Multivariate Analysis of Industrial Bond Ratings", *Journal of Finance*, March, pp. 1-18.

5) Goel, Rajiv. (1998), "Need of Regulations for Credit Rating Agencies", *Chartered Secretary*, Volume 28, Issue 11, p. 38.

6) Khan, Akbar Ali. (1993), "CRISIL Rating in India: A New Financial Service in Capital Market", *Finance India*, Volume 7, Issue 3, p. 13.

7) Kumar, P. S. Mohana. (1995), "Credit Rating: An Efficiency Chip to Banks", *Management Accountant*, Volume 30, Issue 6, p. 407.

8) Mallikharjunappa, T. (1996), *Credit rating: A Pre-Requisite for the Success of Economic Liberalisation*, Management of Financial Services, Deep & Deep publications, pp. 159-171.

9) Mukhopadhyay, D. (1996), "A Glimpse of Credit Rating", *The Management Accountant,* Volume 31, Issue 2, pp. 133-116.

10) Pattanaik, U.C., and Satyanarayana, G. (1993), "Credit Rating in Indian Corporate Sector", *Chartered Secretary*, Volume 23, Issue 6, p. 39.

11) Raghunathan, V., and Jayanth, R. Varma. (1992), "CRISIL Rating: When does AAA mean B?", *Vikalpa*, Volume 17, Issue 2, pp. 35-42.

12) Rao, P. Mohana. (1999), "Credit Rating", *Management Accountant*, Volume 34, Issue 10, p. 767.

13) Ravi Mohan, R. (2000), "Credit Rating: A Paradigm Shift", *Chartered Finance Analyst*, December, pp. 71-73.

14) Ravishankar, T. J. (1997), *Credit Rating Agencies: Inspecting the Inspectors*, The Economic Times, July 7.

15) Reddy, Y. V. (2000), Credit Rating: Changing Perspectives, *Reserve Bank of India Bulletin*, Volume 54, Issue 5, pp. 507-525.

16) Robert, J. Shiller. (1981), "Do stock prices move too much to be justified by subsequent changes in dividends?", American *Economic Review*, June, pp. 421-436.

17) Sanjay Sehgal and Mamta Arora. (2002), "Developing A Model for Bond Rating in the Indian Debt Market", *Decision*, Volume 29, Issue 2, pp. 89-106.

18) Sarkar, A.K. (1994), "Credit Rating in India: A New Feather in the Capital Market's", *Management Accountant*, Volume 29, Issue 7, pp. 496-500.

19) Simha, S.L.N. (1994), *Assessing Credit Rating Agencies in India*, Readings in Financial Management, IIF, New Delhi.

20) Sowdeepti, A. (2004), "Rating Agencies Inducing Competition", *Chartered Financial Analyst.*

21) Subramanian, K. (2002), *The Rise of Rating Agencies*, Business Line, July 16.

22) Subramanian, K. (2002), *The Fall of Rating Agencies*, Business Line, July 17.

23) Suveera Gill. 2005. An Analysis of Default of Long-Term Related Debts, *Vikalpa,* Vol.30(1): pp 35-50.

24) Viswanathan, R. 2002. Rating Agencies: Are They Credit Worthy?, *The Economic Times*, April 2.

25) Viyyanna Rao, K. and Maruthi Varaprasad, A. (2009). Rating Methodologies: A Diagnosis of Corporate Defaults, *BVIMSR's Journal of Management Research*, Vol.1(2): pp. 179-188.