

## Financial Performance Analysis-A Case Study

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**Abstract:** The present study aims to identify the financial strengths and weaknesses of the Indian public sector pharmaceutical enterprises by properly establishing relationships between the items of the balance sheet and profit and loss account. The study covers two public sector drug and pharmaceutical enterprises listed on BSE. The study has been undertaken for the period of twelve years from 1997-98 to 2008-09 and the necessary data have been obtained from CMIE database. The liquidity position was strong in case of both the selected companies thereby reflecting the ability of the companies to pay short-term obligations on due dates and they relied more on external funds in terms of long-term borrowings thereby providing a lower degree of protection to the creditors. Financial stability of both the selected companies has showed a downward trend and consequently the financial stability of selected pharmaceutical companies has been decreasing at an intense rate. The study exclusively depends on the public sectors published financial data and it does not compare with private sector pharmaceutical enterprises. This is a major limitation of the research. The study is of crucial importance to measure the firm's liquidity, solvency, profitability, stability and other indicators that the business is conducted in a rational and normal way; ensuring enough returns to the shareholders to maintain at least its market value. The study will help investors to identify the nature of Indian pharmaceutical industry and will also help to take decision regarding investment.

**Key words:** Financial performance, indian pharmaceutical industry, multiple regressions, performance indicators, public sector

## INTRODUCTION

Finance always being disregarded in financial decision making since it involves investment and financing in short-term period. Further, also act as a restrain in financial performance, since it does not contribute to return on equity (Rafuse, 1996). A well designed and implemented financial management is expected to contribute positively to the creation of a firm's value (Padachi, 2006). Dilemma in financial management is to achieve desired trade off between liquidity, solvency and profitability (Lazaridis *et al.*, 2007). Management of working capital in terms of liquidity and profitability management is essential for sound financial recital 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). Ultimate goal of profitability can be achieved by efficient use of resources. It is concerned with maximization of shareholders or owners wealth (Panwala, 2009). It can be attained through financial performance analysis. Financial performance means firm's overall financial health over a given period of time.

Financial performance analysis is the process of determining the operating and financial characteristics of a firm from accounting and financial statements. The goal of such analysis is to determine the efficiency and performance of firm's management, as reflected in the financial records and reports. The analyst attempts to measure the firm's liquidity, profitability and other indicators that the business is conducted in a rational and normal way; ensuring enough returns to the shareholders to maintain at least its market value.

Indian pharmaceutical industry has played a key role in promoting and sustaining development in the vital field of medicines. It boasts of quality producers and many units have been approved by regulatory authorities in USA and U.K. International companies associated with this sector have stimulated, assisted and spearheaded this dynamic development in the past 58 years and helped to put India on the pharmaceutical map of the world. The public sector has been the backbone of the Indian economy, as it has acted as a strategic partner in the nation's economic growth and development. Public sector enterprises possess strong prospects for growth because they harness new business opportunities, and at the same time expanding the scope of their current business.

The ability of an organization to analyze its financial position is essential for improving its competitive position in the marketplace. Through a careful analysis of its financial performance, the organization can identify opportunities to improve performance of the department, unit or organizational level. In this context researcher has undertaken an analysis of financial performance of pharmaceutical companies to understand how management of finance plays a crucial role in the growth.

## LITERATURE REVIEW

Financial performance analysis is vital for the triumph of an enterprise. Financial performance analysis is an appraisal of the feasibility, solidity and fertility of a business, sub-business or mission. Altman and Eberhart (1994) reported the use of neural network in identification of distressed business by the Italian central bank. Using over 1,000 sampled firms with 10 financial ratios as independent variables, they found that the classification of neural networks was very close to that achieved by discriminant analysis. They concluded that the neural network is not a clearly dominant mathematical technique compared to traditional statistical techniques.

Gepp and Kumar (2008) incorporated the time "bias" factor into the classic business failure prediction model. Using Altman (1968) and Ohlson's (1980) models to a matched sample of failed and non-failed firms from 1980's, they found that the predictive accuracy of Altman's model declined when applied against the 1980's data. The findings explained the importance of incorporating the time factor in the traditional failure prediction models.

Campbell (2008) constructed a multivariate prediction model that estimates the probability of bankruptcy reorganization for closely held firms. Six variables were used in developing the hypotheses and five were significant in distinguishing closely held firms that reorganize from those that liquidate. The five factors were firm size, asset profitability, the number of secured creditors, the presence of free assets, and the number of under-secured secured creditors. The prediction model correctly classified 78.5% of the sampled firms. This model is used as a decision aid when forming an expert opinion regarding a debtor's likelihood of rehabilitation. No study has incorporated the financial performance analysis of the central public sector enterprises in Indian drug & pharmaceutical Industry. Nor has any previous research examined the solvency position, liquidity position, profitability analysis, operating efficiency and the prediction of financial health and viability of public sector drug & pharmaceutical enterprises in India.

**Objectives of the study:** The main objectives of the present work are to make a study on the overall financial

performance of selected public sector drug & pharmaceutical enterprises in India. More specifically, it seeks to dwell upon mainly (i) to assess the short-term and long-term solvency, (ii) to assess the liquidity and profitability position and trend, (iii) to know the efficiency of financial operations and (iv) to analyze the factors determining the behavior of liquidity and profitability. Keeping the above objectives in mind, the following null and alternative hypotheses have been formulated and tested statistically.

## METHODOLOGY

The present study covers two public sector drug & pharmaceutical enterprises listed on BSE. The sample of the companies has been selected on a convenient basis and the necessary data have been obtained from CMIE database and public enterprises survey. We select Karnataka Antibiotics and Pharmaceuticals Ltd. (KAPL) and Rajasthan Drugs and Pharmaceuticals Ltd. (RDPL). The study has been undertaken for the period of twelve years from 1997-98 to 2008-09. In order to analyze financial performance in terms of liquidity, solvency, profitability and financial efficiency, various accounting ratios have been used. Various statistical measures have been used i.e., A.M., S.D., C.V., linear multiple regression analysis and test of hypothesis t-test.

## RESULTS

Financial analysts often assess the firm's liquidity, solvency, efficiency, profitability, operating efficiency and financial stability in both short-term and long-term. Ratio analysis provides relative measures of the company's performance and can indicate clues to the underlying financial position. For measuring financial position and financial efficiency, appropriate level of financial performance indicators are required with whom comparison can be made. Generally liquid ratio, debt-equity ratio, interest coverage ratio, inventory turnover ratio, return on investment ratio and debt to net worth ratio are highly useful in determining financial position, financial performance and the financial stability or otherwise of such management.

**Liquid ratio:** It is the ratio of liquid assets to current liabilities. Liquid ratio is more rigorous test of liquidity than the current ratio because it eliminates inventories and prepaid expenses as a part of current assets. Usually a high liquid ratio an indication that the firm is liquid and has the ability to meet its current or liquid liabilities in time and on the other hand a low liquidity ratio represents that the firm's liquidity position is not good. Table 1 show that liquid ratio is not satisfactory in the case of KAPL and liquid ratio is more satisfactory in the case of RDPL

Table 1: Selected liquidity ratios

| Year     | Liquid ratios |       |                  | Debt-equity ratios |       |                  |
|----------|---------------|-------|------------------|--------------------|-------|------------------|
|          | KAPL          | RDPL  | Industry average | KAPL               | RDPL  | Industry average |
| 2001-02  | 0.68          | 1.06  | 0.82             | 0.11               | 0.42  | 0.73             |
| 2002-03  | 0.77          | 1.04  | 0.74             | 0.06               | 0.55  | 0.70             |
| 2003-04  | 0.92          | 1.04  | 0.70             | 0.01               | 0.43  | 0.66             |
| 2004-05  | 0.83          | 1.16  | 0.78             | 0.07               | 0.41  | 0.72             |
| 2005-06  | 0.65          | 1.13  | 0.84             | 0.18               | 0.64  | 0.75             |
| 2006-07  | 0.75          | 0.71  | 0.90             | 0.29               | 0.81  | 0.63             |
| 2007-08  | 0.75          | 0.79  | 0.78             | 0.21               | 1.34  | 0.59             |
| 2008-09  | 0.49          | 1.01  | 0.70             | 0.17               | 1.12  | 0.78             |
| Mean     | 0.73          | 0.99  | 0.78             | 0.14               | 0.72  | 0.70             |
| S.D.     | 0.13          | 0.16  | 0.07             | 0.09               | 0.35  | 0.06             |
| C.V. (%) | 17.81         | 16.16 | 8.74             | 64.29              | 48.61 | 8.57             |

CMIE database

Table 2: Selected profitability ratios

| Year     | Return on investment ratios |       |                  | Debt to net worth ratios |       |                  |
|----------|-----------------------------|-------|------------------|--------------------------|-------|------------------|
|          | KAPL                        | RDPL  | Industry average | KAPL                     | RDPL  | Industry average |
| 2001-02  | 9.87                        | 17.21 | 11.62            | 0.06                     | 0.48  | 0.74             |
| 2002-03  | 13.85                       | 25.51 | 13.38            | 0.06                     | 0.55  | 0.73             |
| 2003-04  | 11.85                       | 14.12 | 13.99            | 0.007                    | 0.43  | 0.52             |
| 2004-05  | 12.61                       | 6.66  | 12.51            | 0.07                     | 0.41  | 0.46             |
| 2005-06  | 9.95                        | 19.47 | 13.07            | 0.18                     | 0.64  | 0.58             |
| 2006-07  | 10.59                       | 16.62 | 15.58            | 0.29                     | 0.81  | 0.26             |
| 2007-08  | 12.14                       | 15.43 | 13.21            | 0.21                     | 1.34  | 0.59             |
| 2008-09  | 12.46                       | 20.32 | 8.77             | 0.17                     | 0.94  | 0.70             |
| Mean     | 11.67                       | 16.92 | 12.77            | 0.13                     | 0.70  | 0.57             |
| S.D.     | 1.40                        | 5.44  | 1.98             | 0.10                     | 0.32  | 0.16             |
| C.V. (%) | 12.00                       | 32.51 | 15.51            | 76.92                    | 45.71 | 28.07            |

CMIE database

because the ratio is more than industry average. KAPL have not been able to meet their matured current obligations under the study period. Coefficient of variation of liquid ratio of KAPL and RDPL is 17.81 and 16.16%, respectively, which shows less consistency during the study period because coefficient of variation of industry as a whole is 8.74%. Greater variability in the liquid ratio indicates improper or inefficient management of fund inasmuch.

**Debt/equity ratio:** The debt-to-equity ratio (D/E) is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a company's assets. The two components are often taken from the firm's balance sheet or statement of financial position, but the ratio may also be calculated using market values for both, if the company's debt and equity are publicly traded, or using a combination of book value for debt and market value for equity financially. A high debt/equity ratio generally means that a company has been aggressive in financing its growth with debt. This can result in volatile earnings as a result of the additional interest expense. This can result in volatile earnings as a result of the additional interest expense. A low debt/equity ratio usually means that a company has been friendly in financing its growth with debt and more aggressive in financing its growth with equity. Table 2 shows that debt-equity ratio in case of KAPL is very low as its average is 0.14. This is an

indication of improper debt-equity management. A high debt-equity ratio is observed in case of RDPL with an average of 0.72, which means the company has been aggressive in financing its growth with debt. Coefficient of variation of debt-equity ratio of KAPL and RDPL is 64.29 and 48.61%, respectively, which shows more consistency during the study period because coefficient of variation of industry as a whole is 8.57%. Lower variability in the debt-equity ratio indicates proper or efficient management of debt-equity.

**Interest coverage ratio:** A ratio used to determine how easily a company can pay interest on outstanding debt. The interest coverage ratio is calculated by dividing a company's Earnings Before Interest and Taxes (EBIT) of one period by the company's interest expenses of the same period. The lower the ratio, the more the company is burdened by debt expense. When a company's interest coverage ratio is lower, its ability to meet interest expenses may be questionable and it indicates that the company is not generating sufficient revenues to satisfy interest expenses.

The interest coverage ratio is a measure of the number of times a company could make the interest payments on its debt with its earnings before interest and taxes, also known as EBIT. The lower the interest coverage ratio, the higher is the company's debt burden and the greater the possibility of bankruptcy or default.

Table 3: Selected solvency ratios

| Year     | Interest coverage ratios |       |                  | Inventory turnover ratios |       |                  |
|----------|--------------------------|-------|------------------|---------------------------|-------|------------------|
|          | KAPL                     | RDPL  | Industry average | KAPL                      | RDPL  | Industry average |
| 2001-02  | 1.34                     | 1.98  | 1.18             | 7.12                      | 9.44  | 3.89             |
| 2002-03  | 0.06                     | 0.55  | 1.35             | 7.53                      | 8.04  | 3.02             |
| 2003-04  | 25.24                    | 8.93  | 1.63             | 7.57                      | 7.03  | 3.87             |
| 2004-05  | 23.52                    | 4.53  | 1.98             | 5.64                      | 6.22  | 4.11             |
| 2005-06  | 0.18                     | 0.64  | 0.97             | 5.76                      | 12.29 | 3.59             |
| 2006-07  | 0.29                     | 0.81  | 1.34             | 7.34                      | 7.41  | 3.63             |
| 2007-08  | 11.40                    | 4.96  | 1.56             | 8.59                      | 11.07 | 4.68             |
| 2008-09  | 11.08                    | 3.66  | 1.51             | 8.37                      | 12.86 | 3.98             |
| Mean     | 9.14                     | 3.26  | 1.44             | 7.24                      | 9.30  | 3.85             |
| S.D.     | 10.53                    | 2.89  | 0.31             | 1.07                      | 2.52  | 0.48             |
| C.V. (%) | 115.21                   | 88.65 | 21.53            | 14.78                     | 27.10 | 12.47            |

CMIE database

For bond holders, the interest coverage ratio is supposed to act as a safety gauge. It gives you a sense of how far a company's earnings can fall before it will start defaulting on its bond payments. For stockholders, the interest coverage ratio is important because it gives a clear picture of the short-term financial health of a business. Table 3 shows that interest coverage ratio in case of KAPL and RDPL is more than industry averages as its averages are 9.14 and 3.26, respectively. This is an indication of debt burden and the greater the possibility of bankruptcy. Coefficient of variation of interest coverage ratio of KAPL and RDPL is 115.21 and 88.65%, respectively, which shows less consistency during the study period because coefficient of variation of industry as a whole is 21.53%. Greater variability in the interest coverage ratio indicates improper or inefficient management of debt-fund.

**Inventory turnover ratio:** The inventory-turnover ratio gives a general view on the inventories of a company. In order to calculate it you should divide the annual sales/cost of sales of the company by its inventory. If the value of the inventory-turnover ratio is low, then it indicates that the management team doesn't do its job properly in managing inventories. This ratio should be compared against industry averages. A low turnover implies poor sales and, therefore, excess inventory. A high ratio implies either strong sales or ineffective buying. High inventory levels are unhealthy because they represent an investment with a rate of return of zero. It also opens the company up to trouble should prices begin to fall. Table 3 shows that inventory-turnover ratio of KAPL and RDPL during the period of study is very satisfactory as its average are 7.24 and 9.30, respectively, which is much higher than 3.85, grand industry average, which is taken as standard. This is a sign of strong sales. Coefficient of variation of inventory-turnover ratio of RDPL is 27.10%, which shows less consistency during the study period because coefficient of variation of industry as a whole is 12.47%. Greater variability in the inventory-turnover ratio indicates improper or inefficient

management of inventory. Whereas Coefficient of variation of inventory-turnover ratio of KAPL is 14.78% i.e., more than its grand industry C.V. that shows less consistency and proper management of inventory as well.

**Return on investment ratio:** Return on investment ratio is used by financial analysts to ascertain the best investment plans. It is also an important tool used by investors and shareholders, while making investment decisions. Return on Investment ratio for a company shows how much profit a company is making against the investments made by the shareholders and the investors. Return on Investment ratio is also used to compare different investment options by an investment advisor. An investment with a higher ROI ratio is more lucrative option as compared to an investment with a lower ROI ratio. An investment with a negative or lower ROI ratio is most likely to be discontinued by the investors. Table 2 exemplifies that return on investment ratio of RDPL is very higher as its average is 11.67 than grand industry averages of 12.77 and this ratio of KAPL is very lower as its average is 16.92 than grand industry averages of 12.77. It indicates more wealth for the shareholders or investors of RDPL. Coefficient of variation of return on investment ratio of RDPL is 32.51%, which shows less consistency during the study period because coefficient of variation of industry as a whole is 15.51%. Coefficient of variation of return on investment ratio of KAPL is 12.00%, which shows more consistency during the study period because coefficient of variation of industry as a whole is 15.51%. Lesser variability in the return on investment ratio indicates proper or efficient management of wealth.

**Debt to net worth ratio:** Debt to net worth Ratio measures is used in the analysis of financial statements to show the amount of protection available to creditors. The ratio equals total liabilities divided by total stockholders' equity; also called debt to net worth ratio. A high ratio usually indicates that the business has a lot of risk because it must meet principal and interest on its obligations. Potential creditors are reluctant to give financing to a

Table 4: Multiple regression coefficients (a) of KAPL

| Model | Unstandardized Coefficients |          | Standardized Coefficients |         |       |
|-------|-----------------------------|----------|---------------------------|---------|-------|
|       | B                           | SE       | Beta                      | t       | Sig.  |
| 1     | Constant                    | 10.400   | 1.752                     | 0.222   |       |
|       | LR                          | - 0.846  | - 0.077                   | - 0.165 | 0.884 |
|       | DER                         | - 63.907 | - 4.165                   | - 1.687 | 0.234 |
|       | ICR                         | - 0.019  | - 0.143                   | - 0.276 | 0.808 |
|       | ITR                         | 0.542    | 0.414                     | 1.043   | 0.407 |
|       | DNWR                        | 52.855   | 3.607                     | 1.545   | 0.262 |

a. Dependent Variable

Model Summary

| Model | R        | R <sup>2</sup> | Adjusted R <sup>2</sup> | SE of the Estimate |
|-------|----------|----------------|-------------------------|--------------------|
| 1     | 0.842(a) | 0.710          | -0.016                  | 1.41907            |

company with a high debt position. However, the magnitude of debt depends on the type of business. Usually, book value is used to measure a firm's debt and equity securities in calculating the ratio. Market value may be a more realistic measure, however, because it takes into account current market conditions. Table 2 exemplifies that debt to net worth ratio of KAPL and RDPL during the period of study is lower and higher as its averages are 0.13 and 0.70, respectively than 0.57, grand industry average, which is in use as standard. It is an indication less risk and more risk about debt obligations of those companies. Coefficient of variation of debt to net worth ratio of KAPL and RDPL is 76.92 and 45.71% respectively, which shows less consistency during the study period because coefficient of variation of industry as a whole is 28.07%. Greater variability in the debt to net worth ratio indicates improper or inefficient management of financial risk.

#### Financial performance through multiple regressions:

In this section an attempt has been made to examine composite impact of financial performance indicators on profitability through the sophisticated statistical techniques. Accordingly, multiple regression techniques have been applied to study the joint influence of the selected ratios indicating company's financial position and performance on the profitability and the regression coefficients have been tested with the help of the most popular 't' test. In this study, LR, DER, ICR, ITR and DNWR have been taken as the explanatory variables and ROIR has been used as the dependent variable. The regression model used in this analysis is  $ROIR = \alpha + \beta_1 LR + \beta_2 DER + \beta_3 ICR + \beta_4 ITR + \beta_5 DNWR$  where  $\alpha, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ , are the parameters of the ROIR line.

#### Joint impact of performance indicators on profitability of KAPL:

Multiple regression analysis of KAPL has been tabulated in Table 4. Table 4 proves the potency of relationship between the dependent variable, ROIR and all the independent variables taken together and the impact of these independent variables on the profitability. It was observed that for one unit increase in LR, the

profitability of the company decreased by 0.846 units, which was statistically significant at 1% level. However, when DER increased by one unit, the ROIR of the company decreased by 63.907 units though the influence of DER on ROIR was very significant. For one unit increase in ICR, the profitability of the company decreased by 0.019 units. Again, ITR increased by one unit, ROIR increased by 0.542 which was statistically at 1% level. However, when DNWR increased by one unit, the ROIR of the company increased by 52.855 units though the influence of DNWR on ROIR was very noteworthy.

The multiple correlation coefficient between the dependent variable ROIR and the independent variables LR, DER, ICR, ITR and DNWR taken together was 0.842. It indicates that the profitability was perfectly influenced by its independent variables. It is also evident from the value of R<sup>2</sup> that 71% of variation in ROIR was accounted by the joint variation in all the independent variables. Coefficient of determination is negatively 1.6% varied. Standard error of estimate is flawlessly associated with regression analysis. Such a significant variation could be justified as the impact of many other financial performance indicators, which have not taken into the study, in addition to the effect of the used in the study

#### Joint impact of performance indicators on profitability of RDPL:

Multiple regression analysis of RDPL has been tabulated in Table 5. Table 5 proves the power of relationship between the dependent variable, ROIR and all the independent variables taken together and the impact of these independent variables on the profitability. It was observed that for one unit increase in LR, the profitability of the company increased by 9.681 units, which was statistically significant at 1% level. However, when DER increased by one unit, the ROIR of the company increased by 16.205 units though the influence of DER on ROIR was very significant. For one unit increase in ICR, the profitability of the company decreased by 0.108 units. Again, ITR increased by one unit, ROIR decreased by 0.770 which was statistically at 1% level. However, when DNWR increased by one unit,

Table-5: Multiple regression coefficients (a) of RDPL

| Model        | Unstandardized Coefficients |            | Standardized Coefficients |        |       |
|--------------|-----------------------------|------------|---------------------------|--------|-------|
|              | B                           | Std. Error | Beta                      | t      | Sig.  |
| 1 (Constant) | 5.085                       | 10.431     | 0.488                     | 0.711  |       |
| LR           | 9.681                       | 10.422     | 1.122                     | 0.929  | 0.523 |
| DER          | 16.205                      | 41.225     | 3.658                     | 0.393  | 0.762 |
| ICR          | -0.108                      | 0.312      | -0.228                    | -0.347 | 0.787 |
| ITR          | -0.770                      | 0.689      | -1.164                    | -1.118 | 0.465 |
| DNWR         | -9.992                      | 44.327     | -2.213                    | -0.225 | 0.859 |

a. Dependent Variable: ROIR

Model Summary

| Model | R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | SE of the Estimate |
|-------|-------|----------------|-------------------------|--------------------|
| 1     | 0.829 | 0.688          | -0.874                  | 2.02696            |

the ROIR of the company decreased by 9.992 units though the influence of DNWR on ROIR was very noteworthy.

The multiple correlation coefficient between the dependent variable ROIR and the independent variables LR, DER, ICR, ITR and DNWR taken together was 82.9. It indicates that the profitability was perfectly influenced by its independent variables. It is also evident from the value of R<sup>2</sup> that 68.8% of variation in ROIR was accounted by the joint variation in all the independent variables. Coefficient of determination is negatively 87.4% varied indicates that the regression line partially fits the data. Standard error of estimate is flawlessly associated with regression analysis. Such a significant variation could be justified as the impact of many other financial performance indicators, which have not taken into the study, in addition to the effect of the used in the study.

## CONCLUSION

From the study of the financial performance of the select pharmaceutical it can be concluded that the liquidity position was strong in case of KAPL and it was so poor in case of RDPL thereby reflecting the ability of the companies to pay short-term obligations on due dates.

Long-term solvency in case of KAPL is lower which shows that companies relied more on external funds in terms of long-term borrowings thereby providing a lower degree of protection to the creditors.

Financial stability ratios in the vein of debt to net worth ratio in case of RDPL have showed a downward trend and consequently the financial stability has been decreasing at an intense rate.

The Indian pharmaceutical industry will witness an increase in the market share. The sector is poised not only to take new challenge but to sustain the growth momentum of the past decade.

## LIMITATIONS OF THE STUDY

The study suffers from certain limitations.

- Study exclusively depends on the published financial data, so it is subject to all limitations that are inherent in the condensed published financial statements.

- The drug and pharmaceutical enterprises selected have been taken from CMIE database. The study covers a period of only twelve years from 1998 to 2009. The data collected is only for ten companies and this might not be true representation of the population. This is a major limitation of the research.

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