

Analysis of Capital Structure of Selected Units of Pharmaceutical As Well As Some Pharmaceutical Engineering Units

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Abstract : Business is an economic activity as it is concerned with earning money and acquiring wealth through the production and distribution of goods and services. Businesses are predominant in capitalist economies, most being privately owned and formed to earn profit that will increase the wealth of its owners and grow the business itself. The main objective of any business owner or operator is to generate a financial return in exchange for work and acceptance of risk. The main concepts in the study of corporate finance are applicable to the financial problems of all kinds of firms. The discipline can be divided into long-term and short-term decisions and techniques. Capital investment decisions are long-term choices about which projects receive investments, whether to finance that investment with equity or debt, and when or whether to pay dividends to shareholders. On the other hand, the short term decisions can be grouped under the heading “Working capital management”.

IndexTerms – DER, ICR, FAR, LRP, LRE.

I. INTRODUCTION

The most crucial decision of any company is involved in formulation of its appropriate capital structure. Capital structure ordinarily implies the proportion of debt and equity in the total capital of a company. The best design or structure of the capital of a company obviously helps the management to achieve its ultimate objectives of minimizing overall cost of capital, and also maximizing the value of the firm. It is thus apparent that the design of the capital structure of a company may have a bearing on the profitability of the company.

Ordinarily, increase in debt in the capital structure i.e., improvement of debt-equity ratio implies greater amount of interest payment than before. So, the company must have to be sure enough of getting steady return so as to bear the additional burden of interest. Actually, a negative correlation should always exist between cost of capital and profitability. So, increase in cost of capital means decrease in profitability.

The present study is undertaken to find out the relationship between the capital structure and profitability and to analyze the capital structures of the selected pharmaceutical and engineering units.¹

The short- term creditors, like bankers and suppliers of raw material, are more concerned with the firm’s current debt-paying ability. On the other hand, long-term creditors, like debenture holders, financial institutions, etc. are more concerned with the firm’s long-term financial strength. In fact, a firm should have a strong short as well as long-term financial position. To judge the long-term financial position of the firm, financial leverage or capital structure ratios are calculated.

Leverage ratios are calculated to measure the financial risk and the firm’s ability of using debt to shareholder’s advantage. Leverage ratios may be calculated from the balance sheet items to determine the proportion of debt in total financing. They are also computed from the profit and loss items by determining the extent to which operating profits are sufficient to cover the fixed charges.

These ratios help in ascertaining the long-term solvency of a firm which depends basically on three factors:

1. Whether the firm has adequate resources to meet its long-term funds requirements;
2. Whether the firm has used an appropriate debt-equity mix to raise long-term funds;
3. Whether the firm earns enough to pay interest and installment of long-term loans in time.

II. LEVERAGE RATIOS OF SELECTED PHARMACEUTICAL COMPANIES

2.1 Debt-Equity Ratio

The debt-equity ratio which is declining over the years is said to be a good one since the burden of the company seems to be decreasing and thus the proportion of income left for the owners seems to be increasing. We can see from the above study that Sun Ltd. has a declining debt-equity ratio over the five year period. In 2007 it is 1.61 and thereafter falls to 1.18, 0.4, 0.03 and 0.002 in 2008, 2009, 2010 and 2011 respectively. There is a drastic fall from 2007 onwards. It is observed that Alembic has an extreme opposite trend. It has an increasing debt-equity ratio. In 2007 it has a ratio of 0.76 which slightly falls to 0.54 in 2008 and then goes on continuously increasing from 0.87 to 1.45 till 2012. The debt-equity ratio of Cadila and Torrent exhibit a similar trend. There is a slight fall in the ratio in the middle period of study and then it ultimately grows by the end of the period. Lupin shows a better debt-equity ratio. There is a rise in the ratio from 0.93 in 2007 to 1.48 in 2008 but thereafter it falls from 0.97 to 0.73 in 2008 with a slight rise to 0.86 in 2012.

Cadila had the highest average debt-equity ratio of 1.61 times during 2007 to 2012, followed by Torrent with 1.51 times. The average debt-equity ratio of the other three companies under study was lesser than one. Alembic had an average debt-equity ratio of 0.97 times, Sun Pharma had 0.64 times and Lupin had an average ratio of 0.99 times. The above study revealed that the average debt-equity ratio is higher in the pharmaceutical industry than the engineering industry.

2.2 Interest Coverage Ratio

The interest coverage ratio of Sun Ltd. shows exorbitant increase from 2008 to 2012. It was zero in 2005 and increased rapidly every year to reach as high as 489.91 in 2012. This growth seems to be quite abnormal. All other units under study have a very low ICR in comparison to Sun Ltd. It ranges approximately between 4 and 21. Cadila, Alembic and Lupin show a fluctuating ICR over the years. It rises and falls during the five year period. For Cadila it was 11.02 in 2007, rose to 13.34 in 2008 and then started falling and reached to 6.91 in 2012. The ICR of Alembic has the lowest range. It was 6.08 in 2007. It doubled to 12.21 in 2008 and then fell steeply to 2.63 by 2012. Lupin had a rising ICR from 4.83 in 2005 to 15.56 in 2011 and fell to 11.74 in 2012. The trend of ICR in Torrent Ltd. is opposite to that of all other units. The ICR in this company is constantly falling for the first three years. It was 21.74 in 2007 and falls as low as 8.66 in 2007. There is a slight rise to 10.94 in 2011 and it again falls to 7.47 in 2012.

The highest average ICR was seen in Sun Pharma. It was 167.43 during 2007 to 2012. The average ICR in all the other units under study was very much lower compared to Sun Pharma. Cadila had an average ICR of 10.26 times, Torrent had an average ICR of 12.54 times, Lupin's average ICR was 10.61 and the lowest average ICR was of Alembic at 6.01 times.

If we compare the ICR of the pharmaceutical and engineering units under study it was seen that the average ICR during 2007 to 2012 of pharmaceutical industry was higher than the engineering industry but the range of overall average of the engineering units under study was higher than the pharmaceutical industry.

2.3 Fixed Assets Ratio

The FAR of all the pharmaceutical units under study is below 1. Cadila had the highest range of FAR. It shows a declining trend over the five years period. It was maximum in 2007 at 0.69 and reached to 0.41 in 2012. The second highest ratio is that of Alembic. It has its highest FAR in 2007 at 0.65 and fell to 0.42 in 2008; thereafter it slightly increased to 0.49 and 0.5 in 2010 and 2011 respectively. The FAR of Torrent fluctuated within a range of 0.4 to 0.56. It was at 0.4 in 2007 and 2012. In 2007 it rose to 0.56 and then fell to 0.54 and 0.48 in the next two years. Sun and Lupin showed a similar tendency in all the years except for the last year. It increases during the first three years and falls in the fourth year. The fluctuation in the FAR of Sun was the minimum among all the units under study. It had a FAR of 0.15 in 2005 rose to 0.17 in 2008 and remained at the same level in 2009. Thereafter it fell back to 0.15 and 0.14 in 2011 and 2012 respectively. Lupin had the lowest FAR among all the units in 2005 at 0.06. Then there was a great rise to 0.35 and 0.42 in the next two years. In 2010 it slightly fell to 0.38 and again rose to 0.42 in 2012.

The study showed that there weren't many variations in the average FAR of all the pharmaceutical units under study. Cadila had an average FAR of 0.54 times during 2007 to 2012. Alembic followed it with an average FAR of 0.53 times and Torrent with an average FAR of 0.48 times. Lupin had an average FAR of 0.32 whereas Sun Pharma had the lowest average FAR of 0.16 times during the period of study.

III. LEVERAGE RATIOS OF PHARMACEUTICALS ENGINEERING UNITS

3.1 Debt-Equity Ratio

The debt-equity ratio is determined to ascertain the soundness of the long-term financial policies of the company. This ratio indicates the relationship between loan funds and net worth of the company, which is known as gearing. A debt-equity ratio of 2:1 is the norm accepted by financial institutions for financing of projects. Higher debt-equity ratio may be permitted for highly capital intensive industries like petrochemicals, fertilizers, etc. A debt-equity ratio which shows a declining trend over the years is usually taken as a positive sign reflecting on increasing cash accrual and debt repayment.

Debt-equity ratio can be calculated as:

$$\text{Debt-equity ratio} = \frac{\text{Long-Term Debt}}{\text{Shareholders Funds}}$$

The above graph shows that Elecon has the highest range of debt-equity ratio among all the five units under study. The debt-equity ratio increased from 1.31 times in 2007 to 2 times in 2012. It slightly decreased in the next year and then started rising and reached its highest 2.15 times in 2009. Ingersoll is having no debt in its capital structure thus its ratio is zero. FAG Bearings had 0.67 times debt-equity ratio in 2007 which was reduced to zero thereafter. Bosch has a declining debt-equity ratio from 2007 to 2008 and there is an increase in 2012. GMM has a fluctuating ratio decreasing and increasing over the years and ultimately falling to zero in 2012.

It can be seen from the above table that on an average the debt-equity ratio of Elecon was 1.74 times. The average debt-equity ratio of Bosch was 0.5 times during the 2007 to 2012. It means on an average during the entire period under study there was almost 50% debt and 50% equity in the company. GMM had an average 0.09 times debt-equity ratio during 2008 to 2012. The highest average debt-equity ratio is that of Elecon and the lowest is of Ingersoll which is zero as there is no debt in the company.

3.2 Interest Coverage Ratio

This ratio is used to test the firm's debt-servicing capacity. The interest coverage ratio shows the number of times the interest charges are covered by funds that are ordinarily available for their payment. Since taxes are computed after interest, interest coverage is calculated in relation to before tax earnings. This ratio indicates the extent to which earnings may fall without causing any embarrassment to the firm regarding the payment of the interest charges. A higher ratio is desirable; but too high a ratio indicates that the firm is very conservative in using debt, and that it is not using credit to the best advantage of shareholders. A lower ratio indicates excessive use of debt, or inefficient operations. 4

The interest coverage ratio is computed as:

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

The interest coverage ratio of Ingersoll and FAG Bearings shows wide fluctuations during 2007 to 2012. Ingersoll has an increasing ICR, being the lowest at 22.06 times in 2007 and reaching its highest at 589.64 times in 2012. FAG Bearings has an ICR of 83.28 times in 2007 which decreased during the next two years. It fell to as low as -65.43 times in 2008; thereafter it rose as high as 359.14 times in 2008 and then fell again to 182.37 times. Elecon has the lowest range of interest coverage ratio. It has increased in the initial period from 3.88 times in 2007 to 5.05 times in 2012 and then shown a downtrend reaching to 2.97 times in 2011. Bosch and GMM Pfaudler exhibit a similar trend of decreasing ICR from 2007 to 2012.

The interest coverage ratio was 4.10 times on an average in Elecon during 2007 to 2012. Ingersoll showed an average ICR of 171.99 being the highest among all the five units under study, whereas FAG had an average ICR of 121.71. Bosch and GMM had an average ICR of 12.02 and 20.04 during 2005 to 2009.

3.3 Fixed Assets Ratio

This ratio explains whether the firm has raised adequate long-term funds to meet its fixed assets requirements. The ratio should not be more than 1. If it is less than 1, it shows that a part of the working capital has been financed through long-term funds. This is desirable to some extent because a part of working capital termed as core working capital is more or less of a fixed nature. Fixed assets include net fixed assets and trade investments. Long-term funds include share capital reserves and long-term loans.

It is expressed as:

$$\text{Fixed Assets Ratio} = \frac{\text{Fixed Assets}}{\text{Long - term funds}}$$

As mentioned above, that the ideal fixed assets ratio should be less than 1, all the companies under the study have the ideal ratio, except for Elecon which has too high FAR of 3.61 in 2007. Ingersoll has the lowest range of FAR. It shows a decreasing trend from 0.1 in 2007 and then gradually falls from 0.09 in 2008 & 2009 and 0.03 in 2011 & 2012. FAG Bearings has an FAR of 0.43 in 2007, it slightly rises to 0.45 in 2008, and then there is fall to 0.41, 0.37 & 0.31 till 2012. The FAR of Bosch shows an inclining tendency from 0.26 to 0.28, 0.29, and 0.3 from 2007 to 2012. There is a slight fall to 0.27 in 2012. It is observed that the variations in the FAR are not much. GMM has an opposite trend to that of Bosch. Its FAR goes on falling in the initial four years and then there is slight increase. It falls from 0.45 in 2007 to 0.32 in 2009 and it becomes 0.34 in 2012.

The study showed that the FAR of Elecon on an average was 0.95 times during the five year study, which was the highest among all the five companies under study. Ingersoll had the lowest average FAR of 0.07 times. The average FAR of FAG, Bosch and GMM were 0.39, 0.28 and 0.37 times respectively.

IV. STATISTICAL ANALYSIS

Table 1: Statement showing the Debt-Equity Ratio of Engineering & Pharmaceutical Units

Engineering Units	Year	DEQR	Pharmaceutical Units	Year	DEQR
Elecon	Mar ' 08	1.31	Cadila	Mar ' 08	1.6
Ingersoll		0	Alembic		0.76
FAG		0.67	Torrent		1.62
Bosch		0.67	Sun		1.61
GMM		0.12	Lupin		0.93
Elecon	Mar ' 09	2	Cadila	Mar ' 09	1.59
Ingersoll		0	Alembic		0.54
FAG		0	Torrent		1.63
Bosch		0.51	Sun		1.18
GMM		0.04	Lupin		1.48
Elecon	Mar ' 10	1.51	Cadila	Mar ' 10	1.51
Ingersoll		0	Alembic		0.87
FAG		0	Torrent		1.05
Bosch		0.36	Sun		0.4
GMM		0.18	Lupin		0.97
Elecon	Mar ' 11	1.73	Cadila	Mar ' 11	1.7
Ingersoll		0	Alembic		1.24
FAG		0	Torrent		1.58
Bosch		0.38	Sun		0.03
GMM		0.13	Lupin		0.73
Elecon	Mar ' 12	2.15	Cadila	Mar ' 12	1.66
Ingersoll		0	Alembic		1.45
FAG		0	Torrent		1.66
Bosch		0.56	Sun		0.0
GMM		0	Lupin		0.86

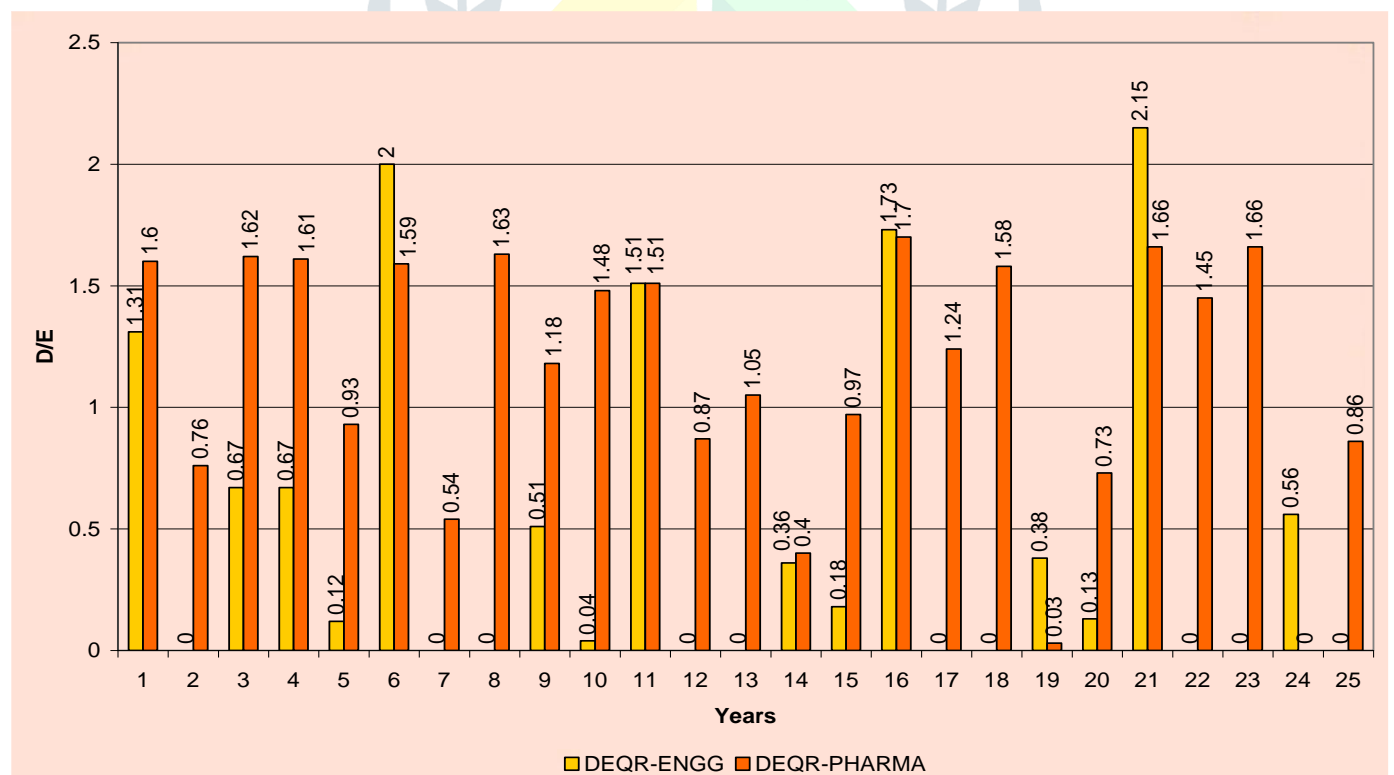


Figure 1: Debt-Equity Ratio of Pharmaceutical & Pharmaceutical Engineering Units

The graph is plotted to compare the debt-equity ratio of all the engineering as well as pharmaceutical units under study. The observation of the debt-equity ratio for a period of five years from 2008 to 2012 for five units each in engineering and pharmaceutical industry has been made. It is seen that the debt-equity ratio in the engineering industry has reached the highest point at 2.15 times. It is also zero in some units in the engineering industry. The variation in the debt-equity ratio is much higher in the engineering industry than in the pharmaceutical industry. But on an average the overall debt-equity ratio in the pharmaceutical industry is higher than that of the engineering industry.

Table 2: Statement showing the Fixed Assets Ratio of Engineering & Pharmaceutical Units

Engineering Units	Year	FAR	Pharmaceutical Units	Year	FAR
Elecon	Mar ' 08	3.61	Cadila	Mar ' 08	0.41
Ingersoll		0.1	Alembic		0.5
FAG		0.43	Torrent		0.4
Bosch		0.26	Sun		0.14
GMM		0.45	Lupin		0.42
Elecon	Mar ' 09	0.28	Cadila	Mar ' 09	0.44
Ingersoll		0.09	Alembic		0.49
FAG		0.45	Torrent		0.48
Bosch		0.28	Sun		0.15
GMM		0.42	Lupin		0.38
Elecon	Mar ' 10	0.26	Cadila	Mar ' 10	0.56
Ingersoll		0.09	Alembic		0.42
FAG		0.41	Torrent		0.54
Bosch		0.29	Sun		0.17
GMM		0.32	Lupin		0.41
Elecon	Mar ' 11	0.27	Cadila	Mar ' 11	0.59
Ingersoll		0.03	Alembic		0.6
FAG		0.37	Torrent		0.56
Bosch		0.3	Sun		0.17
GMM		0.32	Lupin		0.35
Elecon	Mar ' 12	0.33	Cadila	Mar ' 12	0.69
Ingersoll		0.03	Alembic		0.65
FAG		0.31	Torrent		0.4
Bosch		0.27	Sun		0.15
GMM		0.34	Lupin		0.06

The graph shows the comparative FAR of the selected five units in the pharmaceutical and engineering industry. The highest FAR was observed in the engineering industry during 2005 which was 3.61 times whereas the lowest was also in the same industry at 0.03 in 2009. The over all FAR in the pharmaceutical industry was higher than the engineering industry except the highest only during the first year of the study.

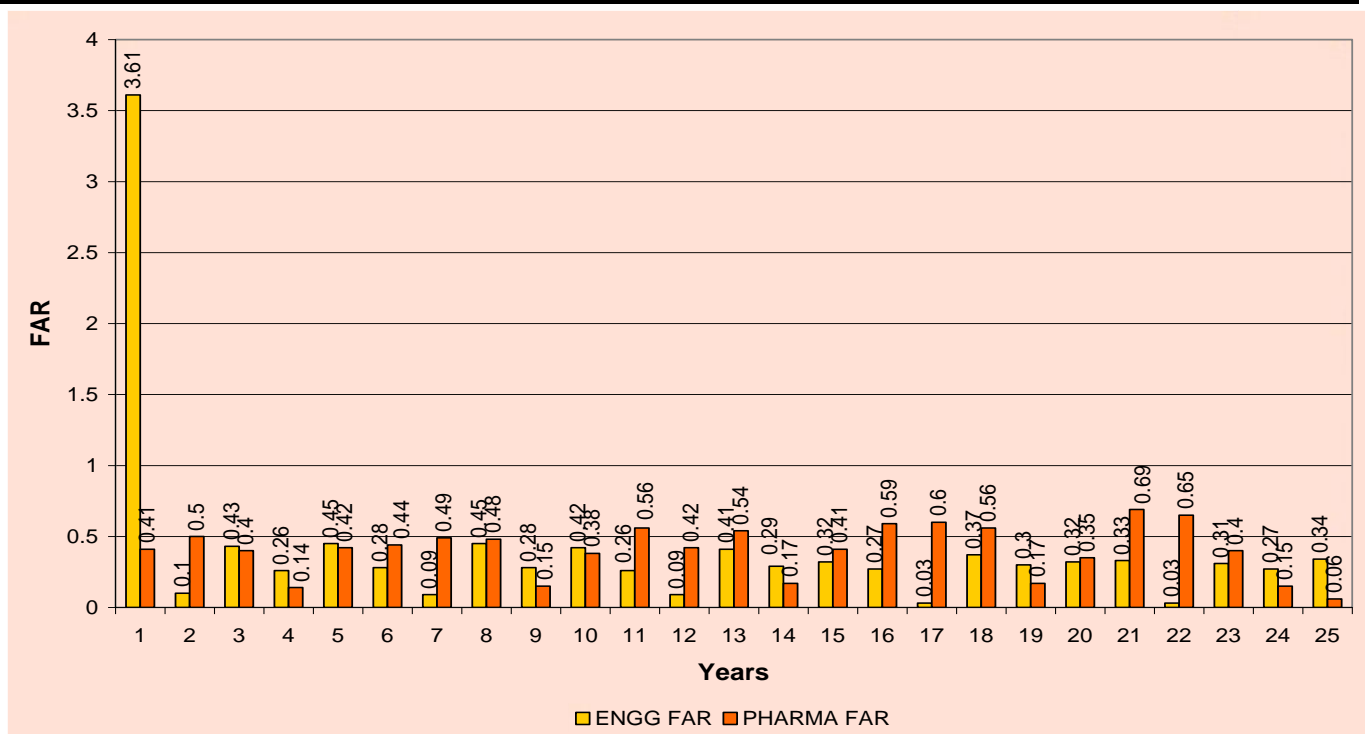


Figure 4.13: Fixed Assets Ratio of Pharmaceutical & Pharmaceutical Engineering Units

Table 3: Statement showing the Interest Coverage Ratio of Engineering & Pharmaceutical Units

Engineering Units	Year	ICR	Pharmaceutical Units	Year	ICR
Elecon	Mar ' 08	3.88	Cadila	Mar ' 08	11.02
Ingersoll		22.06	Alembic		6.08
FAG		83.28	Torrent		21.74
Bosch		18.67	Sun		0
GMM		25.35	Lupin		4.83
Elecon	Mar ' 09	4.01	Cadila	Mar ' 09	13.34
Ingersoll		38.16	Alembic		12.21
FAG		49.2	Torrent		13.88
Bosch		13.66	Sun		48.14
GMM		24.82	Lupin		9.44
Elecon	Mar ' 10	5.05	Cadila	Mar ' 10	11.19
Ingersoll		94.33	Alembic		5.03
FAG		-65.43	Torrent		8.66
Bosch		13.46	Sun		79.05
GMM		18.51	Lupin		11.5
Elecon	Mar ' 11	4.6	Cadila	Mar ' 11	8.82
Ingersoll		115.75	Alembic		4.11
FAG		359.14	Torrent		10.94
Bosch		8.63	Sun		220.03
GMM		15.97	Lupin		15.56
Elecon	Mar ' 12	2.97	Cadila	Mar ' 12	6.91
Ingersoll		589.64	Alembic		2.63
FAG		182.37	Torrent		7.47
Bosch		5.67	Sun		489.91
GMM		15.57	Lupin		11.74

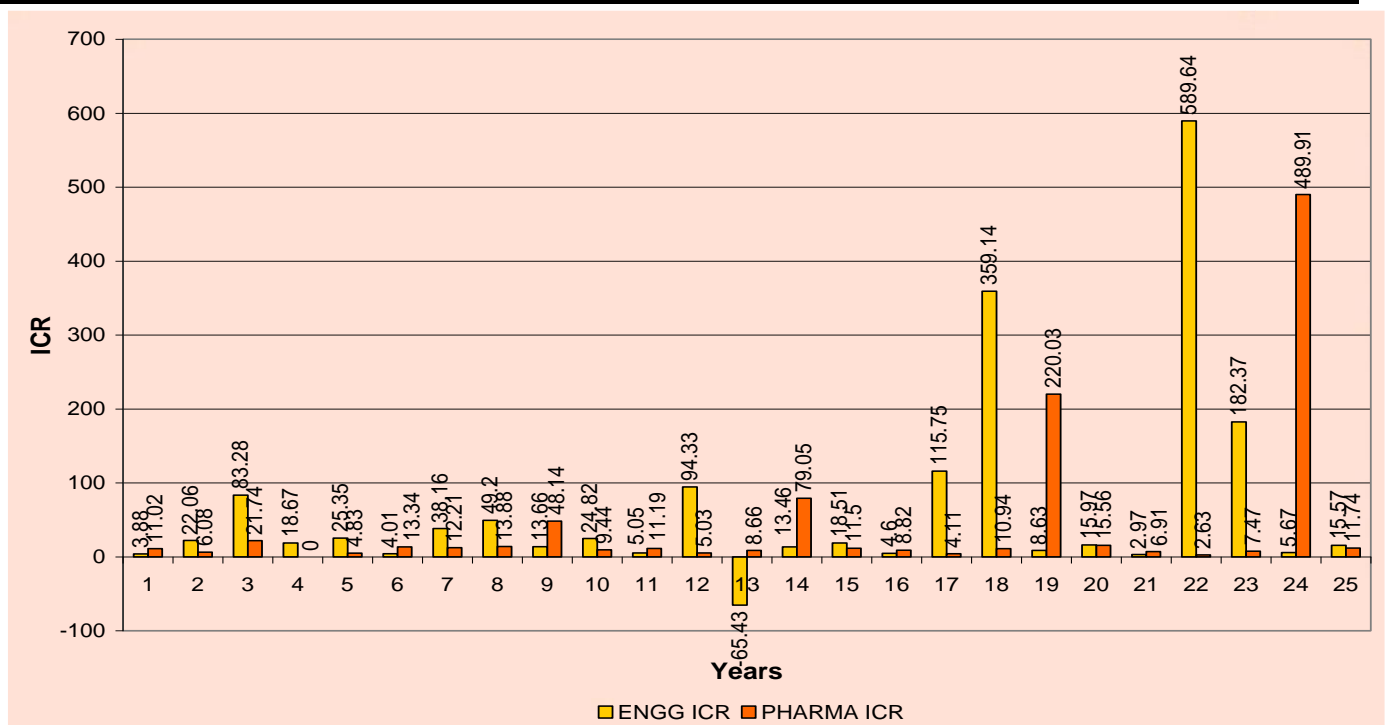


Figure 3: Interest Coverage Ratio of Pharmaceuticals & Pharmaceutical Engineering Units

The above study was made to compare the ICR of the pharmaceutical and engineering units during 2005 to 2009. It was observed that the highest and the lowest ICR were exhibited by the engineering industry. The highest ICR was 589.64 times in the year 2009 and the lowest as a negative ICR of 65.43 in the year 2007. While comparing the ICR of the two industries it was found that on an average the range of ICR was much lower in the pharmaceutical industry.

V. CONCLUSION

This study attempts to explain the variations in the capital structure in the pharmaceuticals companies between process patent period and the transition period. On the basis of capital structure theories and to see if there is any shift in the capital structure in the same period. The results are broadly consistent with the capital structure theories. The most important explanatory variable for the capital structure pattern is asset type measured by the proportion of fixed assets to total assets. The intra-industry variations in the capital structure for the pharmaceutical companies can be explained by the existing theories of capital structure. The higher the proportion of fixed assets to total assets and the higher the growth rate of assets, higher is the industry debt equity ratio. The lower the ratio of operating income to total assets and operating income to net sales, higher is the debt equity ratio.

The study covered the survey only from Gujarat State; further research could be conducted on other wider population may provide richer and more valuable information for the society.

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