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# Analysis of Capital Structure and Revolution of pharmaceutical industry in Pakistan over the Decade

By Saleha, Javed Iqbal, Yasir Hassan

*University of Lahore, Pakistan*

**Abstract** - This study is conducted to analyze the pharmaceutical sector and its affiliated factors that affects its performance / profitability. We have chosen these factors i.e. Paid up capital, financial charges, stock dividend, sales (mill), cash dividend, taxation, PBT, tax, no of shares etc. from 2001 to 2010. For our analysis we use regression analysis and generate our results.

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# Analysis of Capital Structure and Revolution of pharmaceutical industry in Pakistan over the Decade

Saleha<sup>a</sup>, Javed Iqbal<sup>σ</sup>, Yasir Hassan<sup>P</sup>

**Abstract** - This study is conducted to analyze the pharmaceutical sector and its affiliated factors that affects its performance / profitability. We have chosen these factors i.e. Paid up capital, financial charges, stock dividend, sales (mill), cash dividend, taxation, PBT, tax, no of shares etc. from 2001 to 2010. For our analysis we use regression analysis and generate our results.

Profit of the pharmaceutical industry depends upon the sales, investment, cash etc. Also, Pakistan pharmaceutical industry do not have so much these above particulars as compare to the multinational pharmaceutical companies, due to which the growth factor reduces a lot. So, overcome these multinational and make a good share in the market the policies of government should be according to the favor of this industry and the industry should also take prominent steps for its growth.

**Keywords :** *Pharma, Material, Demographic and paid up capital*

## I. INTRODUCTION

There was a time when we do not have any Pharma unit in our country but it was the time of 1960s when we start investment in this sector, with the passage of time we got many multinationals and local producers in our country that are full filling the medical needs of the patients. But today also the market is leaded by the multinationals, this is because of many reasons i.e. low investment, policies etc. multinationals realize this opportunity and come with the great power to become leader this is because 30 multinational are working today due to which the expenditure on the health has been doubled. Raw material, machinery is purchased from China and India. Many different companies sell a diverse range of drugs and pharmaceutical products, the biggest household names of which include:

- Ferozsons Laboratories
- Getz Pharma
- Herbion.
- Remington Pharmaceuticals

- Barrett Hodgson Pakistan
- Zahoor Pharmaceutical Industry PVT LTD
- Bosch Pharmaceuticals
- Nucleus Pharmaceuticals (Pvt) Limited
- Shaf Pharma
- Macter International Limited.

Pakistan also took step and manage a board to review all these issues, here we see the example of Punjab Pharmacy Council (based in Lahore) is a government department, new schools also has been introduce to teach the new generation about this field, this PPC is responsible for taking examination and all other activities of the students of this field. Also new generation is showing a courage and interest in this field.

The Pakistan Pharmacists Society is the board in the Pakistan, which is dealing with all the producers, sellers, exporter and make policies according to the government instructions and deal with the all related issues.

World pharmaceutical reports are followed to see in depth the actual things, so this is because of knowing about the world progress in this sector and our weaknesses and opportunities. The reports provide us the following information:

- How to see the economic, demographic, health expenditure, health workforce and pharmaceutical market indicators.
- New researches and development in the field.
- Analysis of each market on the basis of demography and other related factors.
- A separate statistical health file, expenditure, infrastructure, services and personnel.
- The reports are updated quarterly, providing you with the latest information for a full year. In addition, the service will keep you up to date with market and industry news on a regular basis

## II. LITERATURE REVIEW

Pakistan is a country where the pharmaceutical industry is grooming very well, it is playing an important role in the medicines and chemical industry. Through this many people are getting treatment. The overall market is estimated to be US \$1.25 billion (Budget, 2004/05).

*Author : <sup>a</sup> Lecturer: Department of Pharmacy, the University of Lahore, Pakistan. E-mail : salehayasir@hotmail.com*

*Author : <sup>σ</sup> Head of department: Department of Pharmacy, the University of Lahore, Pakistan.*

*Author : <sup>P</sup> Lecturer: Lahore Business School, the University of Lahore, Pakistan. E-mail : Yasir.uol@hotmail.com*

If we talk about the growth of this industry then we come to know that the annual growth is 9.4% and the companies registered is about 400 in which the market share of multinationals are 53.3 % and other public companies market share is of 46.7%.of market share,(IMS health, 2007; Drug Control Organization, 2007, Jamshed, Babar, Ibrahim, & Hassali, 2009).<sup>[1]</sup>

It is the most important and vital industry for Pakistan. It is a high knowledge-based industry which has significant contribution in economic growth and development.

The role of this industry in providing employment and a true health care medicines for the individuals so that they can live a healthy life.

At affordable prices the medicines are selling to millions of Pakistani people and thus promoting and sustaining development in the critical filed of medicine within the country but it also contributing in the international markets (Prof Dr Rashid Jooma, ministry of health)<sup>[2]</sup>

If we talk about the prices then we come to know that this industry has been forced to sustain a fix price regardless of increasing inflation rate, this is because the government is not givining a true attention to this sector, and all the policies are not so much suitable for this sector. Now we are seeing a change in price on 10 December 2001. (Sector profile of the pharmaceutical industry, Francis Weyzig)<sup>[3]</sup>

Now if we see the purchasing of raw material then we analyze that the Pharmaceutical Industry are importing their raw material from Europe, China and other countries. While if we see the cost then there is a tremendous increase in almost all costs. Euro has registered an increase of petrol by 125%, 95%, US Dollar by 15%, , the diesel used for boilers and power generation has registered an increase of 245%, as compared to 10 December 2001 when the last price adjustment in the prices of medicines was allowed.

Another burden on this sector is of research and development cost, the organizations has to invest a lot on the new researches which cost them a lot while the return on this investment is very low, but since it is the major part of the Pharma organizations that's why they have to bear this expense. (Jawaid Tariq Khan, June 16, 2008)<sup>[4]</sup>

Now because of the inflation, different costs to the organization, government policies and low advance technology the local industry is not gromming well, but if we see the multinationals in this perspective because of the large capita they are dealing well with all these issues that's why they are exporting their medicines and competing the market. (Business Monitor International May 2010).<sup>[5]</sup>

In presence of all these threads and issues the organizations has to make a strong strategy and they have to insist the government to give them a prominent

concession i.e. tax rebates and other easy policies, so that the local companies can stand against the multinationals, so that the real profit could be utilize in the country welfare and increasing the efficiency in the medicines, chemicals and all other related sectors. (Nadir Khan, research paper)<sup>[6]</sup>

Now because of the increasing companies in this sectors and seeing the potential in this sector, government is trying to compile all the hospitals, chemical industry, pharmaceutical companies and all other related sectors under one roof. This is because the government trying to realize the companies that if they will sit together then they could easy approach the problem and thus find the answer. Because of this the government will also took prominent step and will make law and will create opportunities for the sector. (two regime- issues and prospects, Muhammad Usman Awan)<sup>[7]</sup>

Now if we see the local industry production then it is a fact that they are producing low price medicines for the public whose production and raw material is not so much expenses but if we talk about the high quality medicines and for different diseases then it is very hard for the organizations to produce them at low price that's this is because of low investment and low management. So, review and refocusing of policies, regulations and educational interventions are needed to improve affordability, availability and acceptability of low cost, good quality medicines in the private sector.( the netwok.org.pk)<sup>[8]</sup>

Now if we talk about our industry sector with the Indian sector then we come to know that the Indian industry is contributing 6.7% in their GDP, which is more than our progress. They are playing a vital part of the agriculture and industrial development in India. With a current turnover of about US \$30.8 billion, it accounts for 14 percent of the total manufacturing output in India.

During the last five years, it grew at twice the rate of growth in Asia and five times the world growth for the sector. India is becoming the laboratory of the world for the global chemical industry and leading global players like Dow Chemicals, DuPont, and General Electric have set up their own laboratory or using Indian laboratories.(industry research paper.)<sup>[9]</sup>

If we talk about the unethical practices in the pharmaceutical industry in Pakistan, then we see that the companies are not doing ethical practices which affect its image, i.e. the quality of the medicines are not so much good, then some time they develop a shortage in the market then they rise their price which at last effect the patients. (Pharmaceutical industry in Pakistan, Rizwan Ahmad, SZABIST Karachi.)<sup>[10]</sup>

### III. METHODOLOGY

Since our analysis is to check the, "Dependence of profitability on the different particulars i.e. sales, tax paid up capital etc."

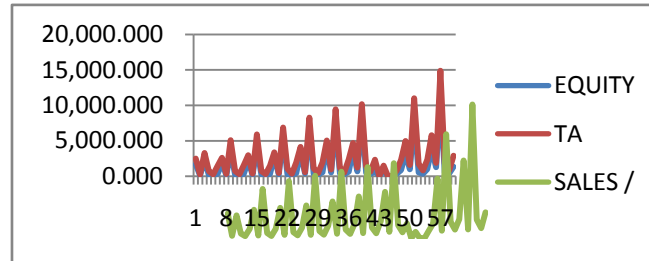
For this purpose we have taken some following factors i.e. paid in capital, financial charges, stock dividend, sales (mill), cash dividend, taxation, PBT, tax, no of shares etc. For analyzing the literature review we have taken some past articles from different journals.

For getting the regression analysis we get the whole data of pharmaceutical sector from 2001 to 2010. For this purpose our kind teachers consults us and give us the data for our convenience.

Then on our data we performed regression analysis through which we will analyze the true dependency of profitability on the different particulars.

#### a) Graphs

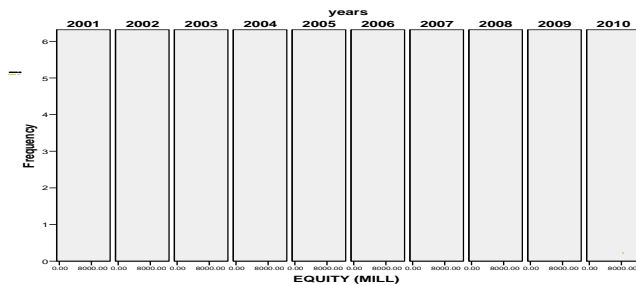
Here is the graphical representation of the given data; this shows that what the actual condition of different particulars was in different years of the sector.



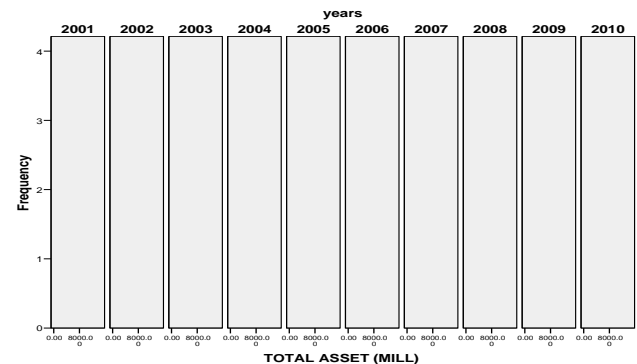
In the above we have taken only three particulars for the analysis, here we could see that how the sales, total assets and equity are changing with the passage of time, the total assets and equity are changing with the same theme and sale is increasing so much.

The equity graph shows that the year 2008 was the best year for Equity because it has on the average maximum value in 2008. While from 2001 to 2007 the average value of Equity almost same but in year 2010 the Equity was on its minimum stage.

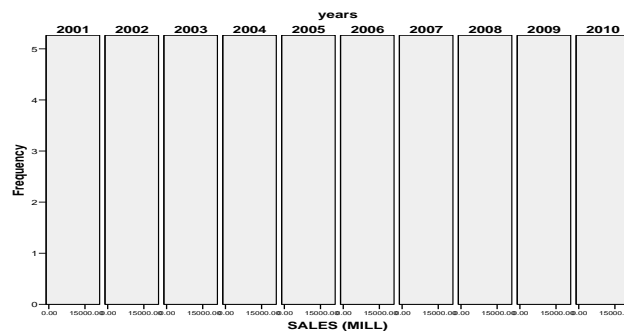
*Equity*



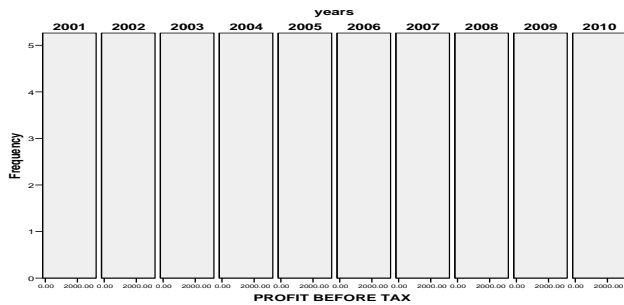
*Total assets*



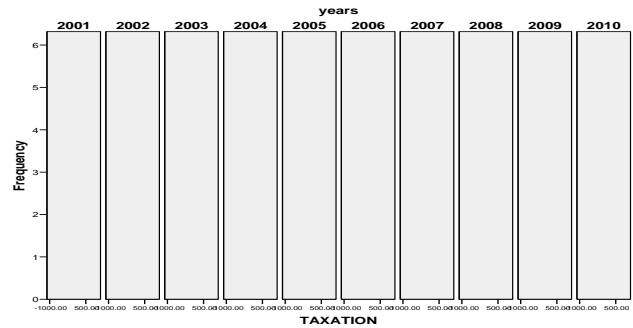
*Sale*



PBT



Tax



The Sale, TA, Tax and PBT showing the same trends from 2001 to 2010. There was a tough competition in year 2001 and 2008 for taxation.

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999(a)	.998	.997	25.82693

**A Predictors:** (Constant), (Bank) / Financial Charges, Stock Dividend, Sales (Mill), Cash Dividend, Taxation, Paid-Up Capital (Rs. In Mil), Profit Before Tax, Equity (Mill), Total Asset (Mill)

result are almost 100% real time data and explanation power of the model is almost 100%, its mean that all the variables are explaining well the whole regression model.

### IV. EXPLANATION POWER OF THE MODEL

Now if we see the "R" and "R square", we come to know that the variables that we have put to get our

a) *Hypothesis:*

H<sub>0</sub>: The model is significant

H<sub>1</sub>: The model is not significant

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	14036781.692	11	1276071.063	1913.063	.000
Residual	31350.427	47	667.030		
Total	14068132.119	58			

**A Predictors:** (Constant), (Bank) / Financial Charges, Stock Dividend, Sales (Mill), Cash Dividend,

Taxation, Paid-Up Capital (Rs. In Mil), Profit Before Tax, Equity (Mill), Total Asset (Mill)

### B Dependent Variable : Profit After Tax

If we see the significance value and F test value, we come to know that the significance value is less than the significance value, so we will accept the "H1"

hypothesis. Also we get the value of the F test by dividing the Mean Square Value.

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
	B	Beta	B	Std. Error

1	(Constant)	23.527	10.470		2.247	.029
	PAID-UP CAPITAL (Rs. In mil)	-.014	.015	-.014	-.920	.362
	EQUITY (MILL)	-.013	.015	-.066	-.919	.363
	TOTAL ASSET (MILL)	-.033	.012	-.205	-2.762	.008
	SALES (MILL)	.014	.005	.112	2.769	.008
	(BANK) / FINANCIAL CHARGES	-.034	.036	-.007	-.945	.350
	PROFIT BEFORE TAX	.754	.016	1.157	47.537	.000
	TAXATION	-.015	.023	-.009	-.630	.532
	CASH DIVIDEND	-.506	.186	-.033	-2.724	.009
	STOCK DIVIDEND	.541	.437	.012	1.237	.222
	CODES = 5 (FILTER)	.376	.153	.029	2.454	.018
	VAR00001	-.025	.021	-.010	-1.172	.247

### A Dependent Variable: Profit After Tax

The above are the results generating by the spss, now we will discuss these result below.

### Interpretation of Regression Analysis:

$PAT = 22.527 - 0.014 (\text{paid in capital}) - 0.013 (\text{equity}) - 0.033 (\text{total assets}) + 0.04 (\text{sales}) - 0.034 (\text{bank charges}) + 0.754 (\text{PBT}) - 0.015 (\text{tax}) - 0.506 (\text{cash dividend}) + 0.541 (\text{stock}) + 0.376 (\text{total dividend}) - 0.025 (\text{no of shares})$

So the above model shows that by changing the 1 unit in paid in capital, equity, total assets, sales, bank charges, PBT, tax, cash dividend, stock, total dividend and no of shares respectively the PAT decrease by -0.014 and increase by 0.013, 0.033, 0.04, 0.034, 0.754, 0.015, 0.506, 0.541, 0.376 and 0.025 respectively.

### b) Ignorance & Non Ignorance of coefficient

Here will we will decide that which factor we should include in the regression model and which is not.

Since the significance values of the, total assets, sale, profit before tax, cash dividend, and total dividends is less than the 5%, so we will reject the null hypothesis and accept the alternative hypothesis, its means that they will be included in the regression model.

Also the significance value of paid up capital, equity, bank charges, taxation, stock dividend and no. of shares is greater than the 5% that's why we will reject the alternative hypothesis and accept the null hypothesis, thus we will not include these factors in the regression model.

## V. CONCLUSION

According to our conclusion, profitability of the pharmaceutical depends a lot on the sale, cash, investment. If we see the local industry then because of

less investment i.e. capital and other resources the local industry is not grooming very well, while multinationals are grooming very well and thus get the most of the market share. Also if we compare our industry with the Indian industry then we come to know that the Indian local industry is getting more profit then the multinationals, this depicts that how the policies of Indian government protect Indian industry, while if we see our government policies then we come to know that our industry is not satisfy with the policies, due to which they have not so much opportunities for the progress.

So, we suggest that if we want to save our pharmaceutical industry then government policies, infrastructure, regular investment, management and research and development should be improved a lot.

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