Chapter – 7

Findings, Conclusions and Suggestions

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7.1 Introduction

Accounting information system, as a subcategory of management information system, is based upon principles and assumptions whose observation brings about reliable and comparable presentation of fiscal information. Attention to the method used in this system, on one hand, and analyzing the results, on the other hands, together with its effect on the aware and informed decision makers’ decisions, have been the objectives of the current study. In this study has been focused on examining the accounting methods used in Pharmaceutical firms across Maharashtra State and the effects on the performance of these Pharmaceutical firms and modern manufacturing technology and current manufacturing technology.

Examining management and fiscal reports and independent auditors’ reports of the statistical sampling Pharmaceutical firms shows that all the firms have emphasized using accounting systems based on accrual method but researcher has converted the variables taken, including Net Profit Ratio, Operating Profit Ratio, Gross Profit Ratio, Return on Equity, Return on Investment, Total Research and Development Expenditure Ratio (Total R&D Exp/Net Sale), Revenue Research and Development Expenditure Ratio (Revenue R&D Exp/ Net Sale) for this study from accrual method to cash method for achievement to more perfect conclusions. In order to conduct the research the Net Profit Ratio (NPR) has been selected as an important index in using the accrual and cash methods and the independent variable on the other hand. For modern production technology total Research and Development Expenditures Ratio and for current production technology, Revenue Research and Development Expenditure Ratio have been selected as dependent
variables. Total Research and Development expenditures including Capital and Revenue Research and Development expenditures in the balance sheet and profit and loss account respectively. Also, in order to evaluate the performance of Pharmaceutical companies, dependent variables including Operating Profit Ratio (OPR), Return on Working Capital (ROWC), Return on Investment (ROI), Return on Equity (ROE) and Gross Profit Ratio (GPR) and their relationship with the independent variable ‘NPR’ has been studied and analyzed. The data required pertains to the operations of 9 Pharmaceutical companies during 5 fiscal years from among 40 Pharmaceutical companies across Maharashtra State (State of Maharashtra). Results of analyzing data gathered and testing the assumptions have been referred to in the previous chapter. In this chapter, the results and findings of the research have been mentioned generally in brief and finally some suggestions have been proposed for researchers and companies.

7.2 Empirical research and findings

In this study the researcher has investigated accounting methods used in pharmaceutical industry and the impact on decision making by managers regarding

1. Investment in advanced manufacturing technology (AMT).
2. Continuance of current manufacturing technology.

The hypotheses have been examined by the relationship between Net Profit Ratio (NPR) as an independent variable and (R&D expenditure/Sale), (Revenue R&D Exp/Sale), Operating Profit Ratio, Gross Profit Ratio, Return
on Investment, Return on Equity and Return on Working Capital as dependent variables.

7.3 Conclusions

H1 is rejected. Null hypothesis is accepted.

H2 is accepted. Null hypothesis is rejected.

H3 is accepted. Null hypothesis is rejected.

After gathering data and analyzing and testing the hypotheses, the following results have been obtained.

1. In the first hypothesis, in order to test the hypothesis, I have used SPSS software and Karl Pearson correlation of coefficient. I have analyzed the impact of Net Profit Ratio as an independent variable and the index of the influences of accounting methods used in Pharmaceutical Industry on Research and Development expenditure/Sale as an index of investment in advanced manufacturing technology.

Data analysis as per accrual accounting method is showing correlation of coefficient between two variables Net Profit Ratio and Total Research and Development Ratio is 0.201 and P-value is 0.186. The p-value obtained is higher than 0.05. So correlation between two variables is not significant in 0.05 levels. Then there is no positive relationship between the two variables.

So null hypothesis is accepted and I can say accrual accounting method doesn’t have positive impact on decision making regarding to investment in advanced manufacturing technology.

According to data analyzed in cash method, correlation of coefficient between Net Profit Ratio and Total Research and Development Ratio is not
significant at the 0.05 levels. Because the amount of correlation is -0.54 and P-value is 0.724. The P-value obtained is higher than 0.05. Then there is not relationship between two variables.

So null hypothesis is accepted and I can say cash accounting method doesn’t have positive impact on making decision regarding to investment in advanced manufacturing technology.

2). In the second hypothesis the Net Profit Ratio (NPR) has been selected as an indicator of accounting methods used in this industry and it is an independent variable.

Gross Profit Ratio (GPR), Operating Profit Ratio (OPR), Return on Working Capital (ROWC), Return on Equity (ROE), Return on Investment (ROI) have been selected as indicator of performance measurement and those are dependent variables. We have analyzed the impact of Net Profit Ratio as index of the methods of accounting used and on dependent variables, Operating Profit Ratio, Gross Profit Ratio, and Return on Investment, Return on Equity, and Return on Working Capital as indexes of performance measurement.

In the second hypothesis data has been analyzed via SPSS Software and has been tested by Karle Pearson correlation of coefficient.

As per data analyzed in accrual method p-value between NPR with GPR, OPR, ROWC, ROE and ROI is 0.001, 0.000, 0.002, 0.000 and 0.000 respectively. Correlation between NPR with GPR, OPR, ROWC, ROE and ROI are 0.476, 0.539, 0.444, 0.803 and 0.878. All p-value obtained are less than 0.01. So correlation of coefficient is significant at the 0.01 levels. Then there is a positive relationship between NPR with dependent variables (Gross
Profit Ratio, Operating Profit Ratio, Return on Working Capital, Return on Equity, and Return on Investment) under accrual method.

So accrual method has positive impact on decision making regarding to performance measurement in pharmaceutical manufacturing industry.

3. The selected variables are derived from the current accounting methods in sample companies, so, the relationship between the variables was investigated to analyze better finding. In this case, therefore, one of the variables as the independent variable is analyzed its relationship with the rest variables as the dependent variables.

The results from accrual method have been stated below:

3.1) According to data analysis p-value between GPR with NPR and OPR are less than 0.01. So the correlation of coefficient between GPR with NPR and OPR is significant at the 0.01 levels. (P-value) between GPR and ROI 0.047 is less than 0.05, so correlation of coefficient between GPR and ROI at the 0.05 levels is significant. There is a positive and significant relationship between GPR with other NPR, OPR, and ROI.

P-value between GPR with ROWC and ROE are higher than 0.05. So, there is no relationship between with ROE and GPR with ROWC and correlation is not significant at 0.05 levels.

3.2) The analysis of the correlation between operating profit ratio and the rest of the variables showed The There is no significant relationship between OPR with ROWC, OPR with ROE, and OPR with ROI because P-value between OPR with ROWC, ROE and ROI are higher than 0.05. So correlation is not
significant at the 0.05 levels. But correlation is significant at 0.01 levels between OPR with NPR and OPR with GPR. Then there is a significant relationship between OPR with NPR and GPR.

In this case, I figured out Operating Profit Ratio as an indicator of the company performance and a ratio derived from income statement as having a relationship with variables that are derived from profit & loss statement and balance sheet. So, the ratios (ROI, ROE and ROWC) that are derived from balance sheet have no significant relationship / correlation with operating profit ratio. But those ratios (NPR, GPR) that are derived from income statement have significant correlation with Operating profit ratio

3.3) The analysis of the relationship between Return on Working Capital and the rest of the variables showed this indicator has a significant relationship with ROI, ROE, and NPR. Correlation between ROWC with GPR and ROWC with OPR is not significant at the 0.05 level. So there is no significant relationship between ROWC with GPR and OPR.

Comparing the aforementioned variables reveal that; in order to calculate four variables, we use the Ratio of Net Profit to [Investment, Working Capital, Equity and Net Sales], and, in my opinion, it is indicator of the correlations among these variables.

3.4) The analysis of the relationship between selected variables showed that Return on investment (ROI) and Return on equity (ROE) would be good indicators of the performance measurement of the companies if we select NPR as an indicator of accounting methods used in Pharmaceutical Industry.
The analysis between NPR and other variables in cash method has been shown correlation between NPR with OPR, ROE, ROI, and ROWC is significant at the 0.01 levels. So there is a significant and positive relationship between NPR with (OPR, ROE, ROI, and ROWC).

Then I can say the cash method of accounting in Pharmaceutical Industry has positive impact on decision making regarding to performance measurement.

But P-value between NPR and GPR is 0.281 and higher than 0.05. So there is not significant correlation between two variables at the 0.05 levels.

As per correlation analysis of NPR with GPR, p-value between two variables was 0.001 in accrual method whereas correlation between two variables is 0.281 in cash method. So despite cash method, there is significant correlation between two variables at the 0.01 levels in accrual method.

According to analysis of data, the correlation between GPR with OPR is significant at the 0.01 levels. But there is no any significant correlation between GPR to rest variables (NPR, ROE, ROI, and ROWC) at the 0.05 levels.

According to analysis of correlation between GPR to rest variables in cash method as compared with accrual method there is no significant correlation between GPR with NPR and ROI whereas there is significant correlation between GPR with NPR at the 0.01 levels and with ROI at the 0.05 levels.
Correlation between OPR with NPR, GPR is significant at the 0.01 levels. There is no significant correlation between OPR with ROE, ROI, and ROWC at the 0.05 levels.

In cash method also correlation between OPR with those ratios that are derived balance sheet statement is not significant. But there is significant correlation between OPR with the ratios that are derived profit and loss account.

According to analysis of correlation of ROE to rest variables in cash method there is no significant correlation between ROE with GPR and OPR at the 0.05 levels. Because P-value between ROE with GPR and OPR are higher than 0.05. But there is a significant correlation between ROE with NPR, ROI, and ROWC at the 0.01 levels. So there is no significant relationship between ROE with GPR and OPR. But there is a positive relationship between NPR, ROI and ROWC.

Correlation between ROI with NPR, ROE, and ROWC is significant at the 0.05 levels. Then there is no positive relationship between ROI with NPR, ROE and ROWC. But correlation is not significant at the 0.05 levels between ROI with GPR and OPR. So there is no positive relationship between ROI with GPR and OPR.

As per data analyzed correlation between ROWC with GPR and OPR is not significant at the 0.05 levels. Then there is no positive relationship between ROWC with GPR and OPR. Whereas correlation is significant at the 0.01 levels between ROWC with NPR, ROE and ROI. So there is a positive relationship between ROWC with NPR, ROE and ROI.
4. The impact of accounting method used in pharmaceutical industry (here Net Profit Ratio as a good and proper indicator of accounting information system) on making decision regarding continuance of current manufacturing technology here, (Revenue R&D expenditure/Sale) as a good indicator) was investigated as the third hypothesis. The analysis of the correlation between two variables by using Pearson correlation has been shown.

According to the analysis of correlation between NPR and Revenue Research and Development Expenditure Ratio (R&D Exp /Sale) in accrual method, P-value between NPR and Revenue R&D Exp Ratio is 0.001 and this figure is less than 0.01. So correlation is significant at the 0.01 levels between two variables. Then there is a positive relationship between (NPR) and (Revenue R&D expenditure/Sale).

So accrual method has positive impact on decision making regarding to continuance of current manufacturing technology in Pharmaceutical manufacturing Industry.

According to the analysis of correlation between NPR and Revenue Research and Development Expenditure Ratio (R&D Exp /Sale) in cash method, correlation is significant at the 0.01 levels between two variables. So there is a positive relationship between two variables.

So cash method has positive impact on decision making regarding to continuance of current manufacturing technology in Pharmaceutical manufacturing Industry.
In order to examine difference between two methods, accrual and cash method, Independent Sample T-test has been used.

According to data analyzed and obtained, there is significant different in the amounts of Net Profit Ratio, Operating Profit Ratio and Return on Working Capital between two methods, accrual and cash. But there is no significant different between cash and accrual method in the amounts of Gross Profit Ratio, Return on Investment, Return on Equity, Total Research and Development Expenditure Ratio and Revenue Research and Development Expenditure Ratio.

As per analysis of difference between two methods, the amounts of NPR and OPR obtained from accrual method are higher than amounts obtained from cash method. But in cash method, amount of ROWC is higher than ROWC from accrual method.

Comparing two performance indexes of ROI and ROE, due to being influenced by the fiscal structure of the firm, will be problematic in conclusion since in calculating these two ratios, net profit is used as numerator while different rates are being used as denominators. In order to calculate ROI, fixed amounts of assets are used mainly as denominators while in calculating ROE, the salary of the stock holders is being used as the denominators. So, ROE calculation is influenced by fiscal structure and it will be more in some such companies where the debt to asset ratio is more on the other hand, in comparing two companies and the two ratios of ROI and ROE, if a company enjoys more ROI, it doesn’t imply having more ROE, too, since the fiscal
structures of the companies under question will be influential in determining ROE ratio.

Research and development expenditure, in particular for the time being, has paved the way for technological advancements and products with higher quality. Allocation these expenses bring about updating information and the ways in which companies operate and, as a result, competition and stability in market. Their being purposed and appropriate management of these expenses is a key in so doing. For one thing its categorization in fiscal reports of balance sheet or loss/profit statement, too, has an impact on the way aware decision makers decide what made clear in this study is that the categorization of research development expenses in the expenditure and loss/profit statement has a better relationship with performance indexes, namely, NPR.

<table>
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<th>value of (P)</th>
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<td>Cash</td>
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<tr>
<td>Between NPR and OPR</td>
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<tr>
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<td>Cash</td>
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<td>0.001</td>
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Table (7.1): Summary of hypothesis test

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7.4 Suggestions to companies:

1. It is suggested they to use a combination of profitability and performance ratios. So that their analysis and evaluation of performance will be done appropriately and can be a reliable basis for the management's decision. Since every financial ratio indicates the relationship between small parts of financial statements, so in order to a comprehensive analysis of financial statements, several fiscal ratios for example liquidity ratio, solvency ratio, activity ratio should be used simultaneously to get to a reliable analysis and interpretation.

2. Regarding the fact that Pharmaceutical companies deal with productions whose expiration date is limited and of course with people's health and life, attention in production and supervising the production process is of particular significance. In order to update information in these companies, awareness of the health status of the society, to supervise and detect the influences of the used medication and the combination of these medications and to use natural resources in producing them, purposeful allocation of Research and Development expenditure is suggested.

3. Since the financial structure of the company has an impact on combination financial ratios (balance sheet and profit & loss statement) and in order to compare companies to each other, financials structure must be taken in to consideration and due to the high flow of goods and material in the Pharmaceutical companies, timely and suitable supplying of cash is necessary and so it is suggested that Pharmaceutical companies supply the firm's liquidity support and in the mean time their own financial support by
appropriate management of current resources and providing cash flow statements.

7.5 Suggestions for further Researcher:

1) It is suggested researchers to take steps to study the relationship between Research and Development expenditure with the company performance in other industries to get a more reliable and certain conclusion.

2) It is suggested researchers to examine the efforts of allocating Research expenditures on Development and using modern technological system (computerized) and the extent to which manufacturing companies use electronic machines.

3) It is suggested researchers to study the effort of fiscal structure and lever on evaluating firms’ performance in manufacturing companies and in different companies.

4) It is suggested researchers to examine and study the effect of cash flow on evaluating company’s performance as a fiscal report on cash basis.

5) It is recommended researchers to examine and study the relationship between profitability ratios and investment ratios with company’s value.

6) It is recommended researchers to examine the efforts of categorizing Research and Development expenditure as an asset in balance sheet or the expenses in loss / profit statement on managers’ decisions and the financial performance of the companies.