Financial Ratio Analysis: A Theoretical Study

MR. KALPESH U. SUTHAR
Research Scholar, Rai University, Saroda.
Visiting Lecturer- D D Thakar Arts and K J Patel Commerce collage, Khedbrahma, Gujarat (India)

Abstract:
Financial ratio is most important tool for accounting analysis. In this paper, researcher will study on ratio analysis, its usefulness, its effectiveness with using various past published papers and articles. This paper is based on review of literature. There are so many ratios are used by different user as research tool. The ratio analysis has long history in its own field. Day by day ratios are developed by its user. As account researcher, knowledge of ratio is very useful for financial management. This paper contain theoretical concept of ratio analysis.

Keywords: *Ratio, Finance, Analysis*

1. Introduction

Financial statement represents images of the firms and accounting ratios are an important tool for financial statement analysis. A ratio is a mathematical calculation to analyze relationship of two or more variables by using fraction, proportion, percentage and a number of times. When figures are calculated by referring to two accounting numbers derived from the financial statement, it is termed as accounting ratio. Ratio analysis is indispensable part of interpretation of results revealed by the financial statement. It provides users with crucial financial information and points out the areas which require investigation. Ratio analysis is a technique which involves regrouping of data by application of arithmetical relationships, though its interpretation is a complex matter. It requires a fine understanding of the way and the rules used for preparing financial statements. The concept of ratio analysis has long history of its development. Study is based on review and theory presented in published papers, article, books, news etc.

2. Objectives

1. To know the development of ratio analysis;
2. To know relationship between ratio analysis and research

3. Development of Ratio

The ratio analysis was presented by Euclid in his book 5, 'Elements' in about 300 B.C. At that time, ratio was not used as financial tool. The first time financial statement analysis was done by American industries in Nineteenth Century to comparison of financial results have two purposes. There was much overlap, the development path of ratio analysis for creditor purposes and for managerial purposes were different. Credit analysis emphasized measures of ability to pay whereas managerial analysis emphasized profitability measures. During the period prior of World War-1, some important developments in ratio analysis occurred.

In 1912 Alexander Wall has used financial statement of commercial paper brokers. In 1919, Wall studied 981 to credit barometric study. At that time, the Du-Pont company used top three ratio; ROI (profit/total assets), PMR (profit/sales) and CTR (sales/total assets) to evaluation of its operating results. In 1920, interest in ratio analysis was increased by trade associations, universities, credit agencies and

individual analysts. This process was called "scientific ratio analysis". Wall attempted to mitigate the effects of ratio proliferation by developing a ratio index. Bliss presented a models ratio analysis in 1920. (Bliss, 1923)

In 1925 Gilman objected that their changes over time cannot be interpreted because the numerator and denominator, ratios are artificial measures, ratio divert the analyst's attention from comprehensive view of the firm and their reliability as indicators varies widely between ratios. In 1930, there were two significant developments in this decade relating directly to the ratio analysis.

In 1933, Foulken identified fourteen ratios for comparison of various firms or company. In 1940, ratio development was on the base of direct and indirect implementation. After 1940 to date, the development of ratio analysis in the universal has continued along various paths. In Australia, ratio-especially the current ratio- have been subjected to rigorous scrutiny in order to determine their logicality and they have been used as the basic ingredients of an application of the scientific method to financial management. (RJChambers, August, 1948) In England, on other side, a very distinct 'common thread' in ratio analysis has developed. The British Institute of Management has generated interest in ratio as tool for inter-firm comparisons. In general, ratio analysis in England is developing within a management orientation (R.G.H.Nelson, 1960) In France; interest in ratio was in systematic framework like British idea of exchanging information between firms. (JeanNataf, 1957)In India, there appears to have been extensive borrowing from American sources of not only types of ratio but their criteria as well. (R.K.Dalal, 1956) (N.N.Pai, 1964) In Japan, aggregate statistics of a large number of financial ratios are available by broad industry groupings and by size of firm categories. (Economic Statistics of Japan, 1963) In Russia and China, working capital turnover and return on investment ratios are used to comparisons and measurement. And after the step by step, every country has developed their ratios as interest and requirement for firm analysis.

4. Ratio by Various Researchers

James O. Horrigan studied on financial ratio analysis. Researcher has briefly explained Liquidity Ratio, Solvency Ratio, Capital Turnover Ratio, Profit Margin Ratio and Return on Investment with illustration. (Horrigan, July-1965) James M. Patton studied on ratio analysis and efficient markets in introductory financial accounting. Researcher has presented potential contributions of ratio analysis. (Patton, July-1982) Kent John Chabotar studied on Financial Ratio Analysis Comes to Non-profits. Researcher has explained current ratio, quick ratio, available funds ratio, debt-equity ratio, debt-service ratio, sources of fund, uses of funds and net operating ratio with illustrative explanation. (Chabotar, March-April, 1989) Martin L. Leibowitz studied on the corporate finance approach of used the return parameters of the unlevered company with target P/E. Researcher presented ROA and P/E vs. Debt Ratio for Specified Levered ROE. (Martin, Nov-Dec, 2002) M.I.Gonzalez-Bravo studied on prior ratio analysis procedure to improve data envelopment analysis for performance measurement; researcher introduced Data Envelopment Analysis for six ratios; profit/fixed assets, profit/total assets, value-added/total assets, profit/labour, value-added/fixed assets, sales revenue/fixed assets and sales revenue/total assets were used. (Gonzalez, Sep-2007) Radu Marginean and others have used ratios of profit and loss account to performance analysis with the data of 2006 to 2013; using large enterprises with more than 700 employees of Romania. (RaduMarginean, 2015) There are so many researches done by using various ratios as per requirement of study. Researcher has tried to list some of the formulas in next topic.

5. Various Types of Ratios

Here is a list of some financial ratios, which are used in Financial and Accounting research by researcher in past as analytical tools.

Profitability Ratios

1. Gross Profit Rate = Gross Profit ÷ Net Sales

2. Return on Sales = Net Income ÷ Net Sales
3. Return on Assets = Net Income ÷ Average Total Assets
4. Return on Equity = Net Income ÷ Average Stockholders' Equity

Liquidity Ratios

1. Current Ratio = Current Assets ÷ Current Liabilities
2. Quick Ratio = Quick Assets ÷ Current Liabilities
3. Cash Ratio = (Cash + Marketable Securities) ÷ Current Liabilities
4. Net Working Capital Ratio= Net Working Capital ÷ Total Assets
5. Net Working Capital = Current Assets - Current Liabilities

Management Efficiency Ratios

1. Receivable Turnover = Net Credit Sales ÷ Average Accounts Receivable
2. Days Sales Outstanding = 365 Days ÷ Receivable Turnover
3. Inventory Turnover = Cost of Goods Sales ÷ Average Inventory
4. Days Inventory Outstanding = 365 Days ÷ Inventory Turnover
5. Accounts Payable Turnover = Net Credit Purchases ÷ Ave. Accounts Payable
6. Days Payable Outstanding = 360 Days ÷ Accounts Payable Turnover
7. Operating Cycle = Days Inventory Outstanding + Days Sales Outstanding
8. Cash Conversion Cycle = Operating Cycle - Days Payable Outstanding
9. Total Asset Turnover = Net Sales ÷ Average Total Assets

Leverage Ratios

1. Debt Ratio = Total Liabilities ÷ Total Assets
2. Equity Ratio = Total Equity ÷ Total Assets
3. Debt-Equity Ratio = Total Liabilities ÷ Total Equity
4. Times Interest Earned = EBIT ÷ Interest Expense

Valuation and Growth Ratios

1. Earnings per Share = (Net Income - Preferred Dividends) ÷ Numbers of Equity Shares
2. Price-Earnings Ratio = Market Price per Share ÷ Earnings per Share
3. Dividend Pay-out Ratio = Dividend per Share ÷ Earnings per Share
4. Dividend Yield Ratio = Dividend per Share ÷ Market Price per Share
5. Book Value per Share = Common SHE ÷ Average Common Shares

There are other financial ratios in addition those listed above. The ones listed here are the most common ratios used in evaluating a business. In interpreting the ratios, it is better to have a basis for comparison, such as past performance and industry standards.

6. Conclusion

The available evidence proves that the ratios do have predictive value, at least in respect of financial difficulties. Hence, the ratios are certainly very admirable tools because it is simple and it has predictive value. In present, ratios are not only used for financial analysis but also used for the economical, scientific and other analysis. The future of role of ratio analysis may be important one. Everywhere, need for fairly simple analytical tool, ratios will be useful. There is no any end for development of ratio analysis.

References

1. Bliss, J. H. (1923). Financial and Operating Ratio in Management,. The Ronald Press Company, pp. 34-38.
2. Chabotar, K. J. (March-April, 1989). Financial Ratio Analysis Comes to Non-profit. Taylor & Francis-The Journal of Higher Education,Vol.60, No.2. ,pp. 188-208.
3. Economic Statistics of Japan. (1963). Statistics Department, Bank of Japan ,pp. 233-236.
4. Gonzalez, B. M. (Sep-2007). Prior-Ratio-Analysis Procedure to Improve Data Envelopment Analysis for Performance. The Journal of the Operational Research Society, Vol.58, No.9 ,pp. 1214-1222.
5. Horrigan, J. O. (July-1965). Some Empirical Bases of Financial Ratio Analysis. American Accounting Association- The Accounting Review, Vol-40, No.3 ,pp. 558-568.
6. JeanNataf. (1957). 'A New View of Financial Ratio' in Organization for European Economic Co-operation,. Paris: Europian Productivity Agency, Project No.379, pp. 95-101.
7. Martin, L. L. (Nov-Dec, 2002). The Levered P/E Ratio. Financial Analysis Journal, CFA Institute, Vol.58, No.6 ,pp. 68-77.
8. N.N.Pai. (1964). Use of Accounting Ratios in Management Accounting. Chowdhary, Analysis of Company Financial Statements, Asian Publication House .
9. Patton, J. M. (July-1982). Ratio Analysis and Efficient Markets in Introductory Financial Accounting. American Accounting Association-The Accounting Review, Vol.57, No.3 ,pp. 627-630.
10. R.G.H.Nelson. (1960, February 13). The Use of Ratios in Financial and Cost Accounting. The Accountant , pp. 188-191.
11. R.K.Dalal. (1956, May). Accounting Ratio. The Chartered Accountant(India) , pp. 452-457.
12. RaduMarginean, D. a. (2015). Structure ratios of Profit and Loss Account-source of information for performance analysis. Science Direct-Procedia, Economics and Finance ,pp. 396-403.
13. RJChambers. (August, 1948). Business Finance and the analysis of Financial Statements. The Ausralian Accountant ,pp. 253-265.