



---

**COMPARATIVE ANALYSIS OF PHARMACEUTICAL SECTOR IN INDIA**

**Dr. Dhanjay Yadav**

**Asst. Professor, Dept. of Management,IGDTUW  
dhananjayyadav@igdtuw.ac.in**

**Pooja Valecha, Scholar**

**Abstract**

The paper focuses on fundamental analysis of pharmaceutical companies. Estimation of real worth of a stock is made by considering the earning potential of the company which depends on investment environment and factors relating to specific industry, competitiveness, quality of management, operational efficiency, profitability, capital structure and dividend policy. For investing in a company many people use fundamental analysis for the selection and technical analysis to make their buy and sell decisions. It relates to the examination of the intrinsic worth of a company to find out whether the current market price is fair or not, whether it is overpriced or underpriced. It is believed that analyzing the economy, strategy, management, product, financial status and other related information will help to choose shares that will outperform the market and provide consistent gains to the investor. It is the examination of the underlying forces that affect the interest of the economy, industrial sectors and companies.

Here an attempt has been made to analyze the fundamental analysis through analyzing the financial performance of 5 selected Pharma and Healthcare companies by using various statistical techniques. The secondary data were collected with the help of manuals of company, journals, annual reports, and websites. The analysis was done through intrinsic value calculation and ratio analysis. Over the period of study, it shows the overall efficiency of the firm.

**Keywords; Pharma Sector, Fundamental Analysis , Comparative analysis, Industry Analysis**

**INTRODUCTION**

**Background**

The Indian pharmaceuticals market is the third largest in terms of volume and thirteen largest in terms of value, as per a report by equity master. Branded generics dominate the pharmaceuticals market, constituting nearly 70 to 80 per cent of the market. Five company's five years stock prices were selected for the study under NSE. The pharmaceuticals manufacturing is one of the core industries in India and is optimistic of posting good sales in the coming few years. The Pharmaceutical industry is the third largest in terms of volume in India. Pharmaceutical industries have been topmost players in the health care segment in an epoch of aging populations, rising health care costs, and the ongoing development of new and extremely profitable medicines. Therefore, the investment in shares and securities of pharmaceutical companies seems to be cost-effective. An investment is an asset or item

that is purchased with the hope that it will generate income or will appreciate in the future. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. It is mainly done in order to ensure safety and also hedge against inflation. Investment in various types of assets is an interesting activity that attracts people from all walks of life irrespective of their occupation, economic status, education and family background. Stocks are a unique investment because they allow us to take limited ownership in a company. Because of this, the returns are potentially greater and they have a history of being a judicious way to invest our money. Investments in securities are profitable as well as rousing. It is indeed rewarding, but involves a great deal of risk and calls for precise knowledge as well as inventive skill. In such investments, both rational and emotional responses are involved.

Investment in financial securities is one of the most risky as well as the best avenues of investment. Investors have a plethora of options available to them ranging from mutual funds, equities to fixed income instruments like bonds and bank deposits. Choosing the right one depends upon the risk and return characteristics of the securities. So, before making investments an investor should analyze the risk and return associated with the particular investment and how well it is performing. Now, risk return analysis and security analysis gain more importance under these circumstances. The effectiveness of the companies in the portfolio will be confirmed by analytical studies, i.e. both security analysis and portfolio analysis. Security analysis is accompanied by scrutinizing fundamental and technical aspects.

#### Problem Statement

Pharmaceutical companies have been top performers in the healthcare sector in an era of aging populations, rising healthcare costs, and the ongoing development of new and extremely profitable medicines. Investors seeking to invest in the best pharmaceutical companies are faced with a wide array of publicly traded companies from which to choose. To make informed choices, investors need to consider the key financial ratios that are most helpful in the analysis and equity evaluation of pharma firms. Investment is the choice of individual to place or lend money in a property, security that shows lower risk and has higher possibility of return over a certain period of time. Financial investments are dynamic in nature, susceptible to various changes occurring at every moment. It is the process by which any assets can be purchased or installed as a whole.

#### Objectives of the Study

The following are the objective of the study:

- To study the growth and performance of pharma sector.
- To study on the Fundamental Analysis for five company scrips to recommend for better choice of investment.
- To analyse the Intrinsic value and forecast the future value through fundamental analysis.

#### LITERATURE REVIEW

**Ashok Panigrahi (2019)** in their research paper titled “Fundamental Analysis of Indian Pharmaceutical Companies” stated that For investing in a company many people use fundamental analysis for the selection and technical analysis to make their buy and sell decisions. It relates to the examination of the intrinsic worth of a company to find out whether the current market price is fair or not, whether it is overpriced or underpriced. It is believed that analyzing the economy, strategy, management, product, financial status and other related information will help to choose shares that will outperform the market and provide consistent gains to the investor. It is the examination of the underlying forces that affect the interest of the economy, industrial sectors and companies.

**Shirur S. (2013)** stated the reason why finance managers arrive at wrong decisions like the subprime crisis. The reason explained by author was, investors are dealing with the fundamental analysis issues while the tools used are applicable for technical analysis. The author also suggested that instead of segregating risk into systematic and unsystematic risk, it should be segregated into bankruptcy and liquidity risk, to determine the true value of the company, which helps investors to determine in which security to invest. The primary motivation for this research is to identify mispriced securities. However, these authors demonstrate that the information in the earnings prediction signals is helpful in generating abnormal stock returns.

**The research** emphasized the importance of fundamental and technical analysis on Indian stock market. In fundamental analysis, the author stressed investors to know about macroeconomic environment and development of the country, future prospects of the industry to which the firm belongs and projected performance of the company. As far as technical analysis is concerned, the author advised few tools like a line chart, bar chart, point and figure chart, trend chart, moving average analysis, relative strength, resistance and support levels, break-out theory, head and shoulders pattern, double top and bottom formation to predict future stock prices. Fundamental analysis was the only investment method that was given any sincerity in the past. Now that has changed as the arrival of high-speed computing has made a technical analysis easier. Many large investment firms use black box trading, or computer modeling, to determine their entry and exit points. However, it was found that financial managers are not able to use the right tools to analyze future market trends.

**Ritika Goel (2019)** in his research work “Fundamental Analysis of Pharmaceutical Companies” explained that Fundamental analysis is a method of evaluating a security in an attempt to assess its intrinsic value, by examining related economic, financial, and other qualitative and quantitative factors. Fundamental analysts study anything that can affect the security's value, including macroeconomic factors (e.g. economy and industry conditions) and microeconomic factors (e.g. financial conditions and company management). The end goal of fundamental analysis is to produce a quantitative value that an investor can compare with a security's current price, thus indicating whether the security is undervalued or overvalued. Fundamental analysis uses real, public data in the evaluation a security's value. Although most analysts use fundamental analysis to value stocks, this method of valuation can be used for just about any type of security. For example, an investor can perform fundamental analysis on a bond's value by looking at economic factors, such as interest rates and the overall state of the economy.

## **RESEARCH METHODOLOGY**

### **Research Design**

This study is partially descriptive in nature and partially analysis. The main purpose of the descriptive research is the description of the state of affairs as it exists in the present. The main characteristic of the descriptive research is that the researcher has no control over the variables. This Methodology is most suitable for study of fundamental analysis. Analysis is conducted for valuation of shares.

### **Data Source**

The data was mostly collected from the annual reports of companies, company websites and company brochures and from moneycontrol.com.

### **Sampling Plan**

**Sampling size:** A total of 5 companies are selected from the Pharmaceutical sector which is listed in NSE for last 5 years from 2016 to 2020.

**Sampling Procedure:** The data for this study is selected on the basis of convenience sampling method. Among the companies listed with major stock exchange of India namely, National Stock Exchange of India, 5 pharmaceutical companies on the basis of market capitalization are selected. The following are the selected Pharmaceutical companies of this study:

1. Dr. Reddy's Laboratories Limited
2. Cipla Limited
3. Glenmark Pharmaceuticals Limited
4. Sun Pharmaceutical Industries Limited
5. Pfizer Limited

### **EIC Analysis**

EIC Analysis is nothing but Economic Industry Company analysis is In security selection process, a traditional approach EIC analysis is the abbreviation of economic, industry and company. The person conducting EIC analysis examines the conditions in the entire economy and then ascertains the most attractive industries in the light of the economic conditions. At last the most attractive companies within the attractive industries are pointed out by the analyst.

### **Economic Analysis**

Every common stock is susceptible to market risk. This feature of almost all types of a common stock indicates their combined movement with the fluctuations in the economic conditions towards the improvement or deterioration.

Stock prices react favorably to the low inflation, earnings growth, a better balance of trade, increasing gross national product and other positive macroeconomic news. Indications that unemployment is rising, inflation is picking up or earnings estimates are being revised downward will negatively affect the stock prices.

### **Industry Analysis**

It is clear there is a certain level of market risk faced by every stock and the stock price decline during the recession in the economy. Another point to be remembered is that the defensive kind of stock is affected less by the recession as compared to the cyclical category of stock.

Threats of new entrants evaluate the expected reaction of current competitors to new competitors and obstacles to entry into the industry. In certain industries, it is quite difficult for new companies to compete successfully.

There are certainly other industries where the entry of a new company is easier like the financial planning industry. No extraordinary efforts are required in such kind of industries to establish any new company. The growth in the industry is slowed down through the rivalry among the current competitors.

Profits of the company are reduced when it tries to cover more market share because under existing rivalry the company has to invest a large portion of its earnings in this enhancing market share. The industry where the rivalry is friendly or modest among competitors provides greater opportunity for product differentiation & increased profits.

The intense competition is favorable for the customer but not good for the producer of the product. In the case of the airline industry, there are common fare price wars among competitors. When one airline company reduces its price then the other must also adjust its price accordingly in order to retain the existing customers.

Another threat faced by the company in the industry is the threat of substitutes which prevents companies to enhance the price of their products. When there is much increase in the price of a particular product, then the consumer simply switches to other alternative products which has a lower price.

### **Company Analysis**

In company analysis, different companies are considered and evaluated from the selected industry so that the most attractive company can be identified. Company analysis is also referred to as a security analysis in which stock picking activity is done. Different analysts have different approaches to conducting company analysis like:

Value Approach to Investing Growth Approach to Investing

Additionally in company analysis, the financial ratios of the companies are analyzed in order to ascertain the category of stock as value stock or growth stock. These ratios include price to book ratio and price-earnings ratio. Other ratios like return on equity etc. can also be analyzed to ascertain the potential company for making an investment.

## **DATA ANALYSIS & FINDINGS**

### **Economic Analysis**

In economic analysis, the present performance of the economy as a whole is indentified using economic factors like GDP, Inflation rate and Unemployment rate.

### **INDUSTRY ANALYSIS**

Some Important Facts and Figures:

- Indian pharmaceutical industry is expected to reach approximately US \$ 130 billion by 2030
- India ranks 3rd worldwide for pharmaceutical production by volume and 14th by value
- India accounts for 20% of global exports in generics. Indian health care sector, one of the fastest growing sectors, is expected to cross US \$ 372 billion by 2023
- Indian pharmaceutical sector is expected to grow at a CAGR of 22.4% in the near future and medical device market expected to grow US \$ 25 billion by 2025



**Figure 4.4 Porter's Five Forces**

**Bargaining Power of Buyers:** Pharma is unique among industries because the medical patient has an absolute lack of power regarding pricing. The only entities with any negotiating power are the pharmacies and medical institutions that fulfil the medical patients' prescriptions. First-to-market generics and biosimilars offer significant cost savings for insurance companies in the developed markets. In branded markets, patients/pharmacists cannot usually substitute between brands. Thus, bargaining power of buyers is HIGH

**Bargaining Power of Suppliers:** Suppliers have very little power in the pharma industry. The raw materials for manufacturing drugs are usually commodity products in the chemical industry, which are available from many sources. Most of the equipment used in manufacturing and research is available from various manufacturers. The suppliers usually offer multiple products to the manufacturer, which moderates pricing on rarer materials and unique equipment. The bargaining power is high for API companies with difficult to manufacture product. These supply companies command premium prices. However, a majority of API suppliers have low bargaining power since they produce products which are simple to manufacture or commoditized. Thus, bargaining power of suppliers as a whole is MEDIUM.

**Rivalry and Existing Competitors:** The growth opportunities for pharma companies are expected to grow manyfold in the next few years with many drugs going off patent in India and emerging countries coming into the focus. To make the most of the generic opportunity, many innovator companies are trying. establish themselves by acquiring or striking joint venture deals with generic companies. Thus, apart from other generic players, Indian companies may also face competition from these big pharma companies who are backed by significant market capital or funding. Thus, the competitive rivalry is HIGH

**Threat of Substitutes Products:** The threat of substitution is higher in unbranded markets where one generic can be substituted by another by the pharmacists. In branded markets and for biosimilars, it is the doctor or physician who can substitute one drug for another. The effect of substitutes is dependent on the individual drug. A new FDA-approved blockbuster drug that has patent protection, treats a major health condition, and is first to market in its category has a license to print billions of dollars

however, it may require a huge amount of money in research and development. Overall, there is a first mover/creator advantage but as time goes on, chances of a substitute increase exponentially. Thus, threat of substitution is somewhat HIGH

**Threat of New Entrants:** Entry barriers in the emerging markets are high due to its branded nature. The opportunities (through which generic manufacturers can challenge patented products and get a chance to sell their medicine/drug) can be highly lucrative. However, the company requires extensive legal knowledge combined with the ability. develop the product earlier than competition. This is possible for only a few top companies. Biosimilars which is emerging as the next growth driver requires clinical trials, extensive regulatory know-how, logistics network and branded presence, thus making it difficult for everyone to enter this segment Conversely, many companies are focusing on markets like US and UK which are unbranded in nature. These markets work on a tender system wherein companies require little infrastructure (they don't have to setup the extensive marketing networks) and are relatively easy to enter.

Thus, the entry barriers are between LOW and MEDIUM

## COMPANY ANALYSIS

In company analysis the financial performance of the selected companies are analyzed in order to analyze the profitability of the firm. An investor should be aware of the financial performance of the company to know the risk and return associated with particular share. For the purpose of analysis various ratios such as EPS, Book Value, P/E ratio, Return on equity and Dividend payout ratio are used.

### EARNINGS PER SHARE

#### Net Income of the Company

#### Outstanding Shares

Earnings per share is computed by dividing profit after interest and preference dividend by number of equity shareholders. EPS indicates the earning capacity of the company. **Table 4.2 showing EPS**

(in Rs. Cr.)					
Year	Dr. Reddy's Laboratories	Cipla	Glenmark	Sun Pharmaceutical	Pfizer
2016	83.05	12.13	75.86	0.10	73.61
2017	34.19	18.25	35.95	1.30	78.70
2018	76.98	23.45	57.49	3.40	93.78
2019	177.23	28.76	48.00	13.40	111.28
2020	131.84	30.61	58.46	8.92	108.77
CAGR	9.68	20.34	-5.08	145.51	8.12

Figure 4.5 Dr. Reddy's Laboratories

Source: Annual Financial Statements

Above table depicts that Dr. Reddy's, Cipla, Sun Pharma and Pfizer are having a positive CAGR while Glenmark is having negative CAGR. Positive CAGR reveals increase of EPS over years and Negative CAGR reveals decrease in EPS over years.

### PRICE TO EARNINGS RATIO

$$\frac{\text{Share Price}}{\text{EPS}}$$

The P/E Ratio is a measure of the price paid for share relative to income or profit earned by the firm per share. A higher P/E ratio means that investors are paying more for unit of income.

Table 4.3 showing P/E ratio

(in Rs. Cr.)					
Year	Dr. Reddy's Laboratories	Cipla	Glenmark	Sun Pharmaceutical	Pfizer
2016	31.70	48.88	11.23	6881.50	26.02
2017	60.85	29.89	14.64	380.85	27.77
2018	36.12	22.55	11.26	140.84	35.47
2019	17.76	15.62	4.44	28.06	36.13
2020	34.80	26.73	8.27	68.47	41.85
CAGR	1.88	-11.37	-5.94	-60.23	9.97

Source: Annual Financial Statements

### RETURN ON EQUITY

$$\frac{\text{Net Profit After Tax}}{\text{Shareholder Fund}}$$

Return on equity is a measure of profitability of company that reveals how profit is generated by the company with the money shareholders have invested. It is computed by dividing profit after tax with net worth.



**Table 4.4 showing Return on equity**

(in Rs. Cr.)					
Year	Dr. Reddy's Laboratories	Cipla	Glenmark	Sun Pharmaceutical	Pfizer
2016	11.93	7.61	22.68	-0.10	13.92
2017	4.80	10.40	9.76	1.36	13.41
2018	10.07	11.96	13.58	3.57	14.24
2019	19.33	13.32	10.24	13.16	14.99
2020	12.87	12.38	11.13	8.54	20.79
CAGR	1.53	10.22	-13.27	58.30	8.38

### DIVIDEND PAYOUT RATIO

**Total Dividend**

---

**Net Income**

The DPR measures what a company's pay out to investors in the form of dividends. It can be calculated by dividing the annual dividends per share by the Earnings per share. It can be computed by DPS divided by EPS. **Table 4.5 showing Dividend payout ratio**

(in Rs. Cr.)					
Year	Dr. Reddy's Laboratories	Cipla	Glenmark	Sun Pharmaceutical	Pfizer
2016	24.22	16.50	3.17	-1053.76	24.52
2017	70.41	10.95	6.69	261.00	30.58
2018	25.99	12.79	4.19	58.67	25.70
2019	13.32	24.34	5.02	42.94	24.37
2020	18.96	16.33	4.27	72.86	303.38
CAGR	-4.78	-0.21	6.14	-158.61	65.38

Source: Comiled by researcher from Annual Financial Statements

**Above table shows** dividend payout ratio for last five years, in that Glenmark and Pfizer are providing shareholders with high dividend whereas Dr. Reddy's Laboratories, Cipla and Sun Pharma declined in their dividend payout ratio.

## BOOK VALUE

### Shareholder Fund

#### Outstanding Shares

This ratio indicates the share of equity shareholders after the company has paid all its liabilities, creditors, debenture holders and preference shareholders.

**Table 4.6 showing Book Value**

(in Rs. Cr.)					
Year	Dr. Reddy's Laboratories	Cipla	Glenmark	Sun Pharmaceutical	Pfizer
2016	699.67	159.11	334.43	87.58	528.72
2017	711.31	175.30	368.27	93.04	586.49
2018	764.10	195.88	423.22	95.21	658.22
2019	914.07	215.85	468.73	101.68	742.18
2020	1020.66	247.10	524.84	104.36	523.07
CAGR	7.84	9.20	9.43	3.57	-0.21

**TABLE 4.7 VALUATION OF SHARE**

Ratio	Dr. Reddy's Laboratories	Cipla	Glenmark	Sun Pharmaceutical	Pfizer
Average DPR ( $\sum \text{DPS} / \text{No. of years}$ )	0.31	0.16	0.05	-1.24	0.82
Average Retention Ratio (1-DPR)	0.69	0.84	0.95	2.24	0.18
Average ROE (ROE/ No. of years)	0.12	0.11	0.13	0.05	0.15

Growth in Equity (Avg. Retention Ratio * Avg. ROE)	0.08	0.09	0.13	0.12	0.03
Normalized Average P/E ratio ( $\sum$ P/E Ratio/No. of Years)	36.24	28.74	9.97	1499.94	33.44
Projected EPS (Current EPS * (1 + Growth in equity))	142.57	33.47	65.97	9.98	111.85
Intrinsic Value (Projected EPS * Normalized Avg. P Ratio)	5167.40	961.68	657.53	14967.27	3740.66
Market Value	4380.5	1023.55	478.05	925.40	4476.45

**Dr. Reddy's Laboratories:** Intrinsic Value > Market Value, it is undervalued, so it is recommended to buy the stock as value of share may increase in future.

**Cipla:** Intrinsic Value < Market Value, it is overvalued, so it is recommended to sell the stock as value of share may fall in future.

**Glenmark:** Intrinsic Value > Market Value, it is undervalued, so it is recommended to buy the stock as value of share may increase in future.

**Sun Pharma:** Intrinsic Value > Market Value, it is undervalued, so it is recommended to buy the stock as value of share may increase in future.

**Pfizer:** Intrinsic Value < Market Value, it is overvalued, so it is recommended to sell the stock as value of share may fall in future.

## RECOMMENDATIONS

The production of new drugs and various methods and techniques in vaccines are the key strengths of Pharma industry in India. Fundamental analysis suggests and insists, which steps should be

undertaken in terms of purchasing, and selling of shares, on the basis of market? The fundamental analysis strengthens the investor to make the right decision for the company.

Based on the calculations made it can be concluded that investors should analyze the market on a continuous basis in order to select the right companies to include in their portfolio.

It is recommended to buy and hold the shares which are undervalued such as Dr. Reddy's Laboratories, Glenmark and Sun Pharma as their share prices have a propensity to raise in the future.

Every investor is recommended to make a thorough analysis of the capital market, about the company and industry before making any investment decisions.

It is suggested to sell the overvalued shares such as Cipla and Pfizer as their shares prices have a tendency to decrease in the future.

Investing in one share alone is not suggested as returns may not be favorable always. Investing in multiple or diversified shares reduces the risk and provides a stable returns.

Technology and it might expand the product range. This will build the export sales. The outcome will be increasing the foreign exchange earnings. The companies may focus on their cost of production, investment in fixed assets and their business turnover to enhance their profitability.

## FINDINGS & CONCLUSION

India has developed as a key goal for worldwide pharmaceutical organizations because of its high development prospects. The government is resolved to make India one of the world's major destination for end to end drug discovery and advancement by 2023. Indian pharma sector would keep on experiencing solid development in up and coming years. The specialized examination helps in assessing the present pattern and risks of the scrip. It helps the investors in understanding the information of financial market and essential money related contributions for better investment

India needs to increase its rate of employment growth and create 90 million non-farm jobs between 2023 and 2030s, for productivity and economic growth according to McKinsey Global Institute. The net employment rate needs to grow by 1.5% per year from 2023 to 2030 to achieve 8-8.5% GDP growth between 2023 and 2030.

**EPS:** Above analysis depicts that Dr. Reddy's, Cipla, Sun Pharma and Pfizer are having a positive CAGR while Glenmark is having negative CAGR. Positive CAGR reveals increase of EPS over years and Negative CAGR reveals decrease in EPS over years.

**P/E Ratio:** Above analysis shows a positive CAGR in Dr. Reddy's Laboratories and Pfizer whereas Cipla, Glenmark and Sun Pharma shows negative CAGR as its P/E ratio during last five years have a downward trend.

**ROE:** Above analysis depicts that Return on equity of Dr. Reddy's Laboratories, Cipla, Sun Pharma and Pfizer. On the other hand Glenmark showing a downward trend.

**DPR:** Above analysis shows that dividend payout ratio for last five years, in that Glenmark and Pfizer are providing shareholders with high dividend whereas Dr. Reddy's Laboratories, Cipla and Sun Pharma declined in their dividend payout ratio.

**Book Value:** Above analysis depicts book value where Dr. Reddy's Laboratories, Cipla, Glenmark and Sun Pharma shows a positive CAGR and Pfizer is showing a negative CAGR.

## REFERENCES

Christopher J. Neely & Paul A. Weller & Robert Dittmar, "Is technical analysis in the foreign exchange market profitable? a genetic programming approach," Working Papers 1996- 006, Federal Reserve Bank of St. Louis 1997

Clausen, James. (2009), "Accounting 101 – Income Statement: Financial Reporting and Analysis of Profit and Loss """, Journal of income statement.

Clausen, James. (2009), "Basic Accounting 101- Asset Turnover Ratio: Inventory, Cash, Equipment and Accounts Receivable Analysis""", Journal of asset turnover ratio.

Diane, White. (2008), "Accounts Receivable: Analysing the Turnover Ratio""", Journal of account receivable.

Goel, R. (2019). Empirical Analysis of Pharmaceutical Companies. *Available at SSRN 3547201*.

Hutchinson, James (2010), "Long Term Debt to Equity Ratio of a Business: Understand a Company's Value to its Investors and Owners""", Journal of long term debt to equity ratio.

Jenkins, Lucia. (2009). "Contribution Margin and Breakeven Analysis: Determining when a Company will realize a Profit """, Journal of contribution margin and breakeven analysis.

L. Blume, D. Easley, and M. O'hara, "Market Statistics & Technical Analysis :the role of volume," Journal of Finance, vol. 49, pp. 153-181, 1991

Marshall, D., McManus, W., Viele, D. (2003). Managerial Accounting and Cost- Volume-

Mtetwa, Munya. (2010). "Fixed Assets: Capital Expenditure """, Journal of fixed assets in accounting.

Nelgadde, Jo. (2009). "Inventory Analysis: A Guide to Analysing Inventory for Small Business Owners """, Journal of inventory analysis.

Nelgadde, Jo. (2010). "Accounts Receivable Analysis: A Guide to Analysing Trade Debtors for Small Business Owners""", Journal of accounts receivable analysis.

Panigrahi, Ashok, Analysis of Financial Performance: A Study of Selected Pharmaceutical Companies (2019). GLOBAL MANAGEMENT HORIZON, Annual Referred Journal of Global Institute of Management, Dec. 2019, Volume - VIII, Page - 47-56, Available at SSRN: <https://ssrn.com/abstract=4143386>

Shirur, Srinivas. "Are managers measuring the financial risk in the right manner? An exploratory study." *Vikalpa* 38.2 (2013): 81-94.