2017-2018

Number of research papers per teacher in the Journals notified on UGC website during the last five years

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1	Comparative study of FDI Determinants of India and Russia	Dr. Bipin Namdev Bandekar, Dr. K.G. Sankaranarayanan	Commerce	International Journal of Research and Analytical Reviews	4-7
2	Trends and determinants of FDI in BRICS countries: A panel data analysis	Dr. Bipin Namdev Bandekar, Dr. K.G. Sankaranarayanan	Commerce	ZENITH International Journal of Business Economics & Management Research	8-9
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4	Awareness and usage of Digital India Programme: A study of Bicholim Taluka	Ms. Shweta M Borkar	Economics	ZENITH International Journal of Business Economics & Management Research	11-12
5	Performance and practices of Corporate Social Responsibility in India : A peep into the select Manufacturing Companies	Dr. Pravin Sawant	Commerce	Journal of Management Research and Analysis	13-14
6	Impact of Video and Computer Gaming on Students in Goa: An Empirical Study	Dr. Pravin Sawant	Commerce	International Journal of Management Studies	15-16
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8	Corporate Social Responsibility and impact on the profitability of select Private ,Public and Multi-National Companies In India : San Empirical Study	Dr. Pravin Sawant	Commerce	Ajanta : An International Multidisciplinary Quarterly Research Journal	-
9	CSR Practices make company perfect: understanding the importance of walk with stakeholders	Dr. Pravin Sawant	Commerce	The Management Accountant Monthly Journal from The Institute of Cost Accountants of India	30
10	Consumer Perception of Service Quality of Convenience Stores and its Influence on Consumer Satisfaction :A Study with Reference to Goa	Dr. Rajendra Kumbharjuvenkar	Commerce	Ajanta- An International, Multidisciplinary Quarterly Research Journal	31-33
11	Analysis of NPA of select public and Private sector Banks in India: A study	Dr Pravin Sawant	Commerce	Ajanta- An International, Multidisciplinary Quarterly Research Journal	34-42
12	Exploring the casualty between EVA and stock market returns: Evidence from India	Dr. Narayan Parab	Commerce	Ajanta- An International, Multidisciplinary Quarterly Research Journal	43-49
13	The impact of liquidity and leverage on profitability: Evidence from India	Dr. Narayan Parab	Commerce	The IUP Journal of Accounting Research & Audit Practices	50-65
14	Analyzing the Impact of Demonetization on the Indian Stock Market: Sectoral Evidence using GARCH Model	Dr. Narayan Parab	Commerce	Australasian Accounting, Business and Finance Journal	66-67
15	Exploring the casual relationship between stock returns,volume and turnover across sectoral indices in Indian stock market	Dr. Narayan Parab	Commerce	Metamophosis: A Journal of Management	68-86

16	Financial Performance Indicators and Accounting Quality: A Comparative Study in the context of IFRS and Indian Accounting Standards	Dr. K.G. Shankarnarayanan	Commerce	International Research Journal of Commerce, Arts and Science	87-88
17	Psychological contract of Manufacturing Sector Employees in North Goa: Importance-Performance Analysis Approach	Dr. K.G. Shankarnarayanan	Commerce	AJANTA-An International Multi-disciplinary Quarterly Research Journal	89
18	Consumption Pattern of Cosmetics among Female College Students: A Cluster Analytic Segmentation Approach	Dr. K.G. Shankarnarayanan	Commerce	International Research Journal of Commerce, Arts and Science	90-91

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A COMPARATIVE STUDY OF FDI DETERMINANTS OF INDIA AND RUSSIA

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ABSTRACT *Developing economies like India and Russia are growing gradually and efficiently benefiting from Foreign Direct Investments. These nations received FDI of $ 34 and 40 Billion annually last five years. They received FDI of $ 44 and 11 Billion respectively in the year 2015.Their FDIs and GDPs are equal i.e. $ 2050 Billion during 2014 and 2015. This paper analyzes, understands and compares the factors determining the flow of FDI in India and Russia. The empirical analysis is based on database for the period 1991-2015. Data was tested using OLS and found that FDI attracts to India due to trade openness and availability of natural resources whereas large market size, trade openness and low labor cost are major factors for Russia. Thus, globalization policy is the only common factor for FDI inflow.*

Keywords: *FDI Determinants, India, Russia, OLS Model.*

1. Introduction:

Developing economies need foreign capital along with domestic capital for their growth and development. Foreign Direct Investment (FDI) is one of the major sources of foreign capital for these countries. FDI is an investment made by an investor into a company located in a country outside the investors' country. IMF defines "FDI as a category of International Investment that reflects the objectives of a resident in one economy i.e Direct Investor, obtaining a lasting interest in an enterprise resident in another economy i.e. Direct Investment Enterprise." It involves direct acquisition of a foreign company, participation in enterprise management, Joint Ventures, Strategic alliance as well as transfer of technology and enterprise. Thus FDI is an investment made by foreign countries in other countries. The relationship between FDI and Macroeconomic variables and other variables has been an interesting area of study.

FDI has been considered to be a key driver of any economy which provides financial stability, promote economic development and improve social well being. On the other hand various factors can influence FDI in developing countries.

FDI is especially important for developing economies like India. Since adoption of LPG policy in 1991, India could attract FDI and ranks fourth after China, Brazil and Russia, among the developing nations $ 34 Billion annually (2011-2015). India is Asia's third largest economy but its FDI inflow was less than 0.1% of GDP before 1991 and 1.5 to 2% within 2013-2015. According to UNCTAD's World Investment Report (WIP), India's FDI inflow was less than $ 1 Billion in 1991, highest $ 47 Billion in 2008 which reduced to $ 44 Billion in 2015. The 2017 A.T. Kearney FDI Confidence Index ranked India at 11th, 9th and 8th for the years 2015, 2016 and 2017.

Russia attracted FDI over last 25 years and grown from $ 1 Billion (1992) to $ 53 Billion economy (2013). Russia received FDI of $ 368 Billion during 2001-2011 securing 8th place among world top FDI recipients. In 2008, FDI was highest i.e. $ 75 Billion. According to UNCTAD's WIP, FDI fell by 70% to $ 11 Billion in the year 2015 due to economic slowdown.

2. Literature Review:

The literature has considered different factors of FDI at country level. In India Market Size, Infrastructure and Industrialization are the important FDI determinants. Political Risk and Economic instability hinder FDI. The evidence on Trade Openness, Transport costs, Tax Rate is mixed (Lim, 2001). As expected, political risks in developing nations are found to be significantly negative for FDI (Lecraw, 1991). Market size, financial market development, risk, human capital affects FDI in India (Dreher, 2011). India attracted more FDI than Nigeria due to its larger GDP, higher real interest rate, trade openness and currency depreciation (Efe, Zelda, & Sekar, 2012). Market size, trade openness, infrastructure development and reserves are the significant determinants during the period 1991-2012 (Bandekar & K. G., 2014)

Natural resource endowments, human capital and labor force and market size were rather high in Russia (Fabry & Zeghni, 2002). Iwasaki and Suganuma (2005) and Broadman and Recantini (2001) focus on market factors, resource endowments factors and social development factor. Natural resources and market seeking factors are important (Gonchar & Marek, 2013). GDP, average wage, labor force and electricity

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production are the most important determinants (Kotenkova, Davletshin, & Volkova, 2015). GDP of investor, GDP per capita of recipient, openness, economic situation, innovative capacity and FDI of the previous period identified as factors (Mariev, Drapkin, Chukavina, & Rachinger, 2016)

3. Objectives of the study:

The basic objective of this study is to identify and compare the determinants influencing flow of FDI in India and Russia.

4. Research Methodology:

4.1 Hypothesis: Ho: There is no significant relationship between FDI inflows and independent variables.

4.2 Data Collection: The data consists of yearly observations for the period 1991-2015 i.e. 25 years. The secondary data has been obtained from UNCTAD's WIP and World Bank's World Development Indicators (WDI) and World Governance Indicators (WGI).

4.3 Research Design: Econometric Equation/Model is estimated with FDI inflow as dependent variable and 12 independent variables.

$$y = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + \beta_{11} x_{11} + \beta_{12} x_{12} + u$$

y = FDI inflow (Dependent Variable), a = Constant, b = Regression Coefficients of variables,
X_1 to X_{12} = Independent Variables u = error term X_1 = GDP, X_2 = GDP Growth, X_3 = Inflation Rate (CPI), X_4 = Trade openness (Import Export % of GDP), X_5 = Exchange Rate, X_6 = Electric Power Consumption,(EPC) X_7 = Natural Resources, X_8 = Labor Cost, (Compensation of Employees) X_9 = Research and Development, (R&D)
X_{10} = Political Stability, X_{11} = Export, X_{12} = External Debt
The time series data is analyzed applying Stepwise Multiple Regression Analysis (Ordinary Least Square (OLS) using Gretl software. The trend of FDI inflows is shown in graphical form. (Diagram 1)

5. Analysis and Discussion:

5.1 FDI Determinants in India:

The result of OLS regression is summarized in Table No.1. Stepwise regression provides a fit model (Model 7) (Annexure 1) which offers the best predictors as the R square value is 0.92. This model explains 92% of total variation in FDI inflows. Moreover, Inflation rate, Trade openness, Exchange Rate, EPC, Natural Resources and Exports are the six significant variables. Availability of natural resources is significant as expected at 1% level and Trade openness at 5% level. F statistics is 35.87. Since the model shows the significant P value 0.00 which is less than 0.01, we fail to accept null hypothesis. Thus, with 99% confidence level it is concluded that these significant factors can be used to predict India's FDI Inflow.

5.2 FDI Determinants in Russia:

The result of OLS regression is summarized in Table No.1. A final regression model (Model 8) (Annexure 2) recommends the best predictors as R square value is 0.91. This model explains 91% of total variation in FDI Inflows. GDP, Trade openness, Labor cost, R&D and Exports are the five significant variables. GDP and labor cost are significant as expected at 1% level and Trade openness at 5% level. R&D and Exports are significant but express unexpectedly inverse relation. F statistics is 38.69. Since the model shows P value 0.00 which is less than 0.01, we fail to accept the null hypothesis at 1% level of significance. Thus, it is concluded that this model is a Good Fit and there is significant relationship between FDI and explanatory variables.

5.3 Comparison between FDI Determinants in India and Russia:

The comparison of FDI flow in India and Russia (Diagram 1) depicts that in 2008 they had historical highest inflow i.e. India $ 47 Billion (3.65% of GDP) and Russia $ 75 Billion (4.5% of GDP). From 2011, India is progressing in terms of FDI inflows and crossed $ 44 Billion (2.1% of GDP) whereas Russia's FDI is drastically reduced to $ 11 Billion (0.48% of GDP) in 2015.

The statistical analysis reflect that there exists significant relationship between India's FDI inflow and its determinants i.e. Inflation rate, Trade openness, Exchange Rate, EPC, Natural Resources and Exports. But only Trade openness and Natural Resources results expected positive relation.

The statistical analysis proves that there exists significant relationship between Russia's FDI inflows and its determinants i.e. GDP, Trade openness, Labor cost, Exchange Rate, R&D and Exports. But only GDP and Trade openness results expected positive relation and Labor cost shows expected negative relation.

The comparison of FDI determinants in India and Russia reflects the result that trade openness and availability of natural resources has a significant effect on flow of FDI in India whereas Market size, trade openness and low cost of labor has a significant effect on flow of FDI in Russia. Thus, trade openness is evident as the only common factor.

6. Conclusion:

The study infers that growth of FDI in India is due to globalization policy and availability of natural resources. Russia's FDI is determined by its large market size, globalization policy and low labor cost. Thus, globalization policy or openness is the most important and only common factor for flow of FDI in India and Russia.

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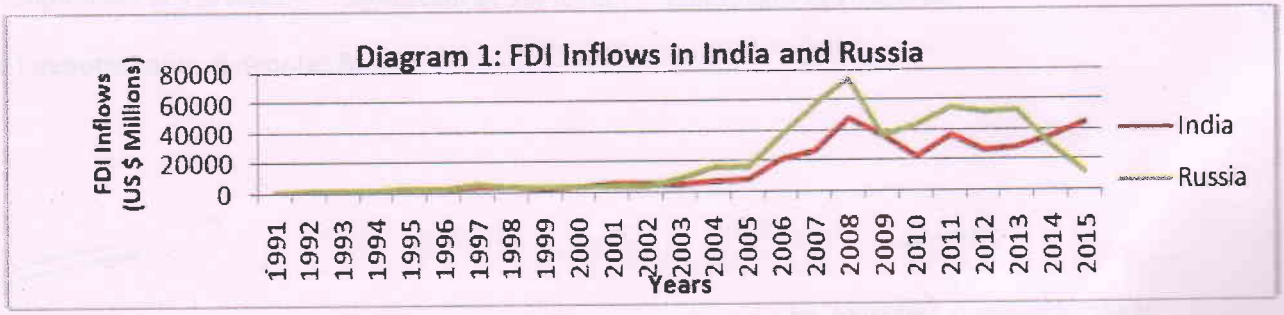
Table: 1 Estimated Results of Regression Models

Model	R^2	Adjusted R^2	S.E. of Regression	F value	P value
India Model 7	0.92	0.897	4973.14	35.87	4.63E-09
Russia Model 8	0.91	0.89	7801.193	38.69	2.55E-09

a. Dependent Variable: IFDIINF, RFDIIF
b. Predictors: (Constant), IINFL, IIMPEXP, IEXCHR, IEPC, INATR, IEXP.
Predictors: (Constant), RGDP, RIMPEXP, RCOMPE, RR&D, REXP.
Source: Authors compilation from regression models.



Source: UNCTAD

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Annexure 1: Model 7: OLS, using observations 1991-2015

Dependent variable: IFDIIF

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	−68178.2	13606.2	−5.011	<0.0001	***
IINFL	976.027	406.192	2.403	0.0273	**
IIMPEXP	6637.49	2407.21	2.757	0.0130	**
IEXCHR	1209.24	252.454	4.790	0.0001	***
IEPC	−52.1003	24.3255	−2.142	0.0461	**
INATR	10610.1	2764.44	3.838	0.0012	***
IEXP	−6315.38	2752.55	−2.294	0.0340	**

Annexure 2: Model 8: OLS, using observations 1991-2015

Dependent variable: RFDIIF

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	51532.5	23672.2	2.177	0.0423	**
RGDP	5.14508e-08	4.71220e-09	10.92	<0.0001	***
RIMPEXP	3396.13	1528.46	2.222	0.0386	**
RCOMPE	−2.00893e-08	3.71542e-09	−5.407	<0.0001	***
RR&D	−41541.5	20281.7	−2.048	0.0546	*
REXP	−2938.32	1274.77	−2.305	0.0326	**

*** Significant at 1% level ** Significant at 5% level * Significant at 10% level

Note: I denotes India, R denotes Russia.

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TRENDS AND DETERMINANTS OF FDI IN BRICS COUNTRIES: A PANEL DATA ANALYSIS

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TRENDS AND DETERMINANTS OF FDI IN BRICS COUNTRIES: A PANEL DATA ANALYSIS

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ABSTRACT:

This study explores the trends of individual and aggregate FDI inflows in BRICS countries using annual dataset for the period 1991 to 2015. The study further examines the determinants of FDI inflows in Brazil, Russia, India, China and South Africa i.e. BRICS countries using annual dataset for the period of 22 years i.e. 1991 to 2012. The study employs pooled OLS model and Fixed Effect model on panel data set. The result shows that Economic Growth, Economic stability, Natural Resources, Exchange Rate, Market size, Total Reserves and National Income are the potential determinants of FDI inflows in BRICS where as Trade openness, Gross Capital Formation and Infrastructure facilities are insignificant determinants.

KEYWORDS: BRICS, Determinants, Foreign Direct Investment, Panel Data.

INTRODUCTION:

Trade is a vital part of economy which reaches to the international level with globalization. Foreign Direct Investment (FDI) plays an important role in this development. The continuous increase in FDI flows across countries is one of the signs of the globalization of the world economy over last two decades. (UNCTAD, 2006). According to UNCTAD, Foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting

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Women empowerment through select welfare schemes: A study of bicholim taluka

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Abstract

Women empowerment has been at the centre stage of discussion in recent years. The Government of India and Goa have launched a number of welfare schemes to promote equity and empowerment of women. They aim to solve the problems of poverty, hunger and disease. Infant mortality rate in rural areas of North Goa is very high. The present study examines the benefits received by women throughselect government welfare schemes in Bicholimtaluka. The study is based on select welfare schemes for women namely Griha Aadhar, Laadli Laxmi, Integrated Child Development Scheme (ICDS) and Indira Gandhi Matritva SahyogYojana (IGMSY). The results reveal that women are really economically empowered through the schemes. It has improved their interaction with the bankers/government and non- government organization. This has increased their awareness on political issues. The schemes had a positive impact on health.

Keywords

Awareness, Empowerment, Interaction, Welfare Schemes.

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AWARENESS AND USAGE OF DIGITAL INDIA PROGRAMME: A STUDY OF BICHOLIMTALUKA

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ABSTRACT

Digital India is a flagship programme of Government of India which aims to transform our country into a digitally empowered society and knowledge economy. Together with the existing policies to popularise use of e-governance, it has a number of smaller proposals and programmes that would be rolled out gradually. Goa is one of the leading states in implementing Information Technology in the government sector. The present study conducted in BicholimTaluka found that significant number of respondents is aware about Digital India Programme through media and friends/relatives. It was observed that most of the respondents have linked their Aadhaar Card to Government Welfare Schemes, Ration Card as well as LPG connections to avail subsidy. It is worth noting that sizeable numbers of respondents are using net banking and e–commerce services. The study also suggests that most of the respondents do not experience any major difficulties while availing the benefit of Digital India initiatives. However, majority of the respondents are not using e-Governance Services for checking registration of property and paying traffic fines online and they have not benefitted from the free computer training programmes conducted by the government.

KEYWORDS: Digital India, E-Governance, Internet, Awareness, Aadhaar Card.

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PERFORMANCE AND PRACTICES OF CORPORATE SOCIAL RESPONSIBILITY IN INDIA: A PEEP INTO THE SELECT MANUFACTURING COMPANIES

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Abstract: Corporates are not merely profit making institutions they have a responsibility to help out society to overcome their problems. Some of the areas in which corporate social responsibility has to be practiced are health, environmental issues, education, community and rural development, promotion of art and culture and sports, climate change and aid towards relief fund etc. CSR measure the impact of a company's actions on society. Corporate Social Responsibility is a business idea that stresses the importance of keeping the best interests of stakeholders in mind. This paper revealed that The average actual % of expenditure on CSR of current year profit differs significantly from the reference value 2.0% for all the financial years and with regards to CSR activities undertaken by the companies, it is seen that out of 32 activities and out of 40 companies under study on an average atleast 7 to 8 activities are budgeted by the companies towards CSR Investments.

Keywords: Corporate Social Responsibility, Companies Act 2013, CSR Practices

INTRODUCTION

Corporate Social Responsibility is not a new concept in India. However what is new is the shift in focal point from making profits to meeting societal challenges. CSR is usually described in terms of a company considering, managing and balancing the economic, social and environmental impacts of its activities. CSR measure the impact of a company's actions on society. Corporate social responsibility is a business idea that stresses the importance of keeping the best interests of stakeholders in mind. Earning profit every year and taking business to new heights is likely to be the main objective of every corporates, but it is also important to consider the stakeholders in the business as well. However, corporate social responsibility is not just about picking a charity to donate every year; it is the responsibility of every business to pay back to every stakeholder who is attached with the business directly or indirectly. Corporates are not merely profit making institutions. They have a responsibility to help out society to overcome their problems. Some of the areas in which corporate social responsibility has to be practiced are health, environmental issues, education, community and rural development, promotion of art and culture and sports, climate change and aid towards relief fund etc.

CSR u/s 135 of Companies Act 2013

It is Applicable to all the Companies registered with the Registrar of Companies. The Applicability is with effect from 1st April, 2014. The conditions are the Company should have a profit of Rs. 5 Crores or more or a net worth of Rs. 500 Crores or more, or turnover of Rs. 1000 Crores or more in the current financial year. The scope of this section 135 extends to cover all companies percentage to spend is 2% of the average profits of the preceding three financial years.

CSR Activities

Covered in the Schedule VII of the Companies Act 2013. The schedule contains various elements such as:

Elements	Elements	Elements
1] Eradicating hunger and poverty	6] Hostels for women and orphans	11] Contributions to PM relief fund
2] Promotion of education and employment	7] Old age homes	12] Measures to benefit armed forces veterans
3] Lively hood enhancement projects	8] Day care	13] War widows and dependents
4] Promoting gender equality	9] Environmental sustainability	14] Promotion of sports
5] Women empowerment	10] Protection of flora and fauna	15] Rural development projects

LITERATURE REVIEW

Abul Kalam (2012), he made a study on Corporate Social Responsibility and its impact on corporate profitability of select 8 private commercial banks in Bangladesh in which he investigated the linkage between Corporate Social Responsibility (CSR) and Profitability. The main objective of his study was to analyze the CSR activities and its impact on financial performance of the selected banks operating in Bangladesh and to

investigate the relationship between CSR and profitability of the selected commercial banks and found that there is a significant negative relationship between CSR and ROA and there is no relationship among ROE, EPS and CSR.

Yadav, M.P. and Gupta, M. (2015), aimed at seeing the influence of CSR activities on financial performance of 5 private companies in India such as Tata Steel, RIL, Mahindra & Mahindra, Infosys and Larsen & Toubro for the year 2010-14. They have taken return on net worth, profit before tax and EPS as the financial performance indicators. With the help of regression analysis and ANOVA, they pointed out that CSR has an insignificant relationship with return on net worth but it has a positive relationship with EPS of these companies.

Alok Kumar Mathur and Aditi Vyas (2012), in their study highlighted the importance of CSR, its role in the pharmaceutical sector and the social initiatives taken up by some of the pharmaceutical companies in varied dimensions. Five pharmaceutical companies were selected for the study. It has come to the fore that the pharmaceutical companies are making considerable contribution to the society in varied spheres, in particular, environment. Other areas of corporate social responsibility are health, education, community care, livelihood & skill development, etc. and are actively involved in social activities or responsibilities other than profit making.

Rajani Bhalla (2013), study was confined to various dimensions, features and the impact of CSR on the Indian Corporate Sector i.e. TATA Consultancy Services, Coca Cola India, BHEL and Wipro. She studied the practices followed by select companies in the field of CSR for attaining sustainability. The time period considered by researcher was from 2009-2012. The outcome of her study shows that the companies under study are following the CSR practices in many fields like Education, Community development, Environmental Protection, Energy Conservation, Waste Material Management, Health Management, Waste Management etc. and are trying to encourage CSR awareness among different parts of the society.

Ramendra Singh and Sharad Aggarwal (2013), discussed the broad patterns of CSR Practices among top 200 Indian corporation which are categorized in "A" category by Bombay Stock Exchange (BSE) Variables used by them in their study are education, health, community welfare, entrepreneurship development, market place and environment and rural development. They have used content analysis technique in their study. In their study they observed that most firms have adopted the same sectors for CSR e.g. Health care or education and then they spend CSR budgets on a project to project basis like health camp, adopting village, building road etc.

Chandaniaswal and Poojarani (2014), their study made an attempt to know whether the size of the company affects CSR activities or not. the authors studied the sustainability reports of top 50 selected Indians companies and determined the effect of size of the company i.e. natural log of Total assets on CSR score which is calculated by using 12 sustainability variables such as water, electricity, education, women empowerment, rural development, global compact, sustainability, employee welfare, HIV aids, disaster, health & safety, waste management and used regression analysis technique. By analysing the company's sustainability reports authors concluded that HIV aids, disaster, and electricity are to be focused more as they are in demand to contribute into particular variables. Companies are paying more attention to education, sustainability, rural development and health & safety which is the demand of the current scenario. The study concludes that size and CSR score are significant to each other.

B Charumathi, Padmaja Gaddam, (2015), made an attempt to understand the status of CSR initiatives and practices made by Maharatna Central Public Sector Enterprises (CPSEs) in India by measuring their CSR disclosure. For this, an original Corporate Social Responsibility Disclosure Index for Maharatna Central Public Sector Enterprises (CSRDI - MRCPSE) was constructed and used. The required data for the period of five years from 2010-2011 to 2014-15 was collected from the annual reports of Maharatna companies using content analysis. It is found that the Maharatna CPSEs focus their CSR initiatives in the areas of education, environment, health and community and rural development as well as the capacity building and skill development.

Nisha Single, R. Arora (2015), basically at examining social disclosure practices of 22 Indian manufacturing units belonging to different industries. The study examines the social disclosure practices of 22 manufacturing companies belonging to four industries namely consumer goods, pharmaceuticals, industrial manufacturing and energy. The companies were selected from CNX 100 index of NSE. The data has been collected from secondary sources. The study was based on 18 voluntary items of Corporate Social Disclosure Index. The social disclosure practices have been examined corresponding to years 2008-09 and 2013-14 which represent negative and positive sentiments of market respectively. It has been empirically tested whether there is any significant difference in social disclosure scores of companies with regard to market sentiments.

The Scope of the Study

This study makes an attempt to assess the Performance of corporate social responsibility and the profitability of the Companies in the Indian context. It examines commitments of the companies towards the thrust areas, the practice and implementation aspects of Corporate Social Responsibility (CSR) of some selected industries across India have been studied during the financial years 2004-05 to 2014-15.

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Impact of Video and Computer Gaming on Students in Goa: An Empirical Study

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ABSTRACT

The gaming industry has gone through significant technological change, high growth rates, and new product development. Gaming has become lucrative business, especially during the last decade and industry has captured the techno savvy children in their net, The top 10 gaming companies now have combined revenue of more than $24 bn, and the market is estimated to be worth of $50 bn. Despite the economic crisis, the online gaming segment is still booming, resulting in fast growth of the leading companies in the market.
Majority of the video gamers are youth in the age of 14 to 24 years. Racing type of games is mostly desired by local gamers followed by fighting game genre. Games requiring IQ application are least favourite. The Survey concludes that there is a very high degree of correlation between the Duration of playing video games by the respondents and the Companionship during Video gaming.

Keywords: Video Games, Computer Games, Mobile Games, Economic crisis.

INTRODUCTION:

Video, Computer Gaming and Mobile Gaming has become a part of kids' life and it became finger tip job. First generation video game players have now become adult and carry their passion to adulthood. The video game industry has witnessed significant growth and now the computer gaming via internet. Video, computer games has captured a wide market, and now has huge opportunities for capital investments. Over the decades, the gaming industry has gone through significant technological change, high growth rates, and new product development. There are many gaming companies in the International market engaged in designing, developing & distributing video game's hardware and software, highlighting games on computers through internet by charging fees but it is seen that there is no clear market leader. Gaming has become lucrative business, especially during the last decade and industry has captured the techno savvy children in their net.
The top 10 gaming companies now have combined revenue of more than $24 bn, and the market is estimated to be worth of $50 bn. Despite the economic crisis, the online gaming segment is still booming, resulting in fast growth of the leading companies in the market.

LITERATURE REVIEW:

Christopher J. Ferguson (2009), The impact of violent video games on youth and adults who play these games has been a source of great controversy for years. This paper reviews the research on violent video games across three main areas: general effects on aggression, negative effects on specific high-risk populations, and effects on visuospatial cognition.
Greitemeyer & Osswald (2010), researchers set out to see if there are always negative social outcomes to playing video games. In particular, they wanted to examine if playing games with prosocial content could lead to promoting prosocial or helping behavior. In their first experiment they wanted to see how participants responded to spontaneous un-requested assistance, picking up spilled pencils, after playing either a prosocial

neutral, or violent video game. It was predicted that the prosocial gamers would be more likely to assist in picking up the pencils then the violent video game players. They had 54 students ages 19-43 years old randomly assigned to play one of the three game conditions for 8 minutes.

A British study found that those aged under 16 years rank playing videogames as their most popular entertainment form (Pratchett, 2005), whilst US studies have reported similar findings with time spent playing games continuing to increase for both children and adolescents (Anderson, Gentile & Buckley, 2007; Escobar-Chaves & Anderson, 2008; Gentile & Anderson, 2003). In Ireland, research has indicated that over half of nine-year old girls were recorded as playing videogames on an average weekday, compared with only 25% of boys. Almost 30% of boys (compared with 12% of girls) were reported as spending one or more hours daily playing these games (Williams et al., 2009).

Rochelle Cade, Jasper Gates (2016), Gamers are a growing population and video game culture remains unfamiliar to the majority of counselors. Little scholarship exists that would aid counselors in gaining awareness and knowledge about gamers and video game culture. Such information has implications for counselors to better meet the needs of gamers, their partners, and families seeking counseling. The authors discuss elements of gaming culture including a brief history, population characteristics, terminology, healthy and unhealthy gaming, and implications for counselors.

Video games show a decline in school performance and they take time away from their families. Actually if played as a family, video games can become a fun bonding activity. For example, it gives a chance for the child to "lead the way"(Shatzkin, 2005) and show their parent/guarding how to play.

Games can be used for learning as well, at home or in the classroom. One of the many hidden skills in video games is problem solving skills. The child will want to solve the problem in the game because it interests them more than a boring story problem at school. Games also enable the development of different learning styles, since speed and level difficulty can be adjusted according to the players (Jenkins, 2002)

Jack Hollingdale , Tobias Greitemeyer (2014),The results identified that participants who played a violent video game exhibited more aggression than those who played a neutral video game. Furthermore, this main effect was not particularly pronounced when the game was played online These findings suggest that both playing violent video games online and offline compared to playing neutral video games increases aggression

OBJECTIVES OF THE STUDY:

The main objectives of the study are:

- To analyse the video gaming preferences of Students in Goa
- To Assess the Impact of video games on Academic performance of Students in Goa.
- To Evaluate the satisfaction level of Students with the gaming services available in Goa.

ANALYSIS OF VIDEO GAMERS AND COMPUTER GAMERS:

This investigation is based on feedback from randomly allotted to local gamers.

Table No 1: Showing Age Groups of Gamers

Age Groups of Gamers	Respondents %
4-13	12(8%)
14-24	126(84%)
25-34	12(8%)
35-44	0
Total	**100%**

Source: Primary

From the above Table we can say that:

12 Respondents (8%) are in the age between 4 year and 13 years. Similarly, another set of 12 Respondents (8%) are between the age of 25 and 34 years. 126 Respondents (84%) fall in the age from 14 years up to 24 years. From this we can say that, majority of the video gamers are youth in the age of 14 to 24 years.

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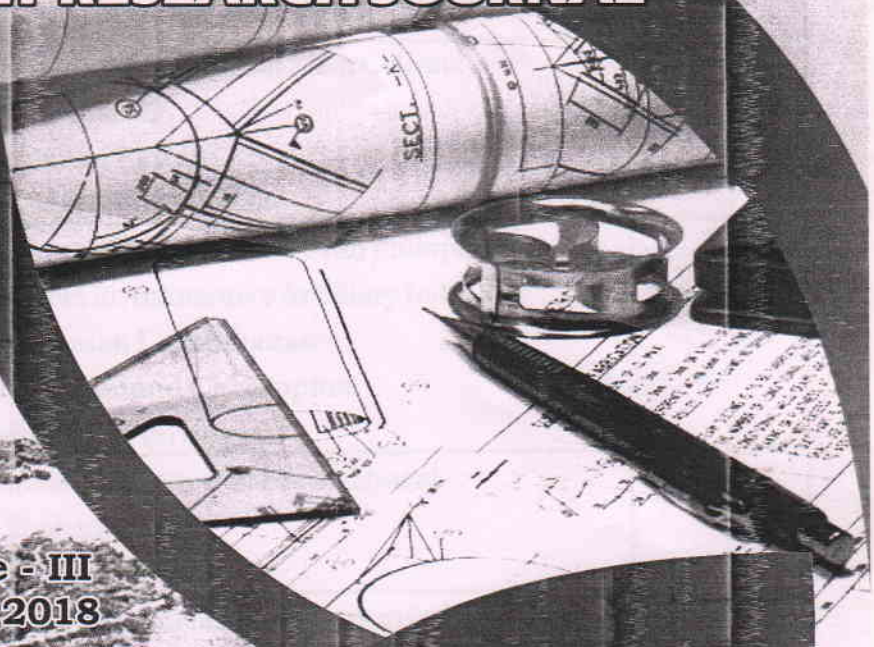

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7. Analysis of Financial Health of Pharmaceutical Industry in India

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Abstract

The Indian pharmaceutical industry has contributed immensely not just to Indian but global healthcare outcomes. India continues to play a material role in manufacturing various critical, high- quality and low-cost medicines for Indian and global markets. The Indian pharmaceutical Industry, which is expected to grow over 15 per cent per annum between 2016 and 2020, will outperform the global pharma Industry, which is set to grow at an annual rate of 6-9 per cent between the same period. The market is expected to grow to US$ 55 billion by 2020 thereby emerging as the sixth largest pharmaceutical market globally by absolute size. Branded generics dominate the pharmaceuticals market, constituting nearly 80 per cent of the market share (in terms of revenues). The sector is expected to generate 58,000 additional employment opportunities by the year 2025.

The current paper strives to analyse the financial health of five select pharmaceutical companies in India for the past 10 years, from 2006-07 to 2015-16 by using Altman's Z-score Model. The study revealed the bankruptcy zone, healthy zone and grey zone/zone of ignorance.

Key Words: Pharmaceutical Industry, Altman's Zcoremodel , Financial health

1.1 Introduction To Pharmaceutical Industry

India is the largest provider of generic drugs globally. Indian pharmaceutical sector Industry supplies over 50 per cent of global demand for various vaccines, 40 per cent of generic demand in the US and 25 per cent of all medicine in UK.India enjoys an important position in the global pharmaceuticals sector. The country also has a large pool of scientists and engineers who have the potential to steer the industry ahead to an even higher level. Presently over 80 per cent of the antiretroviral drugs used globally to combat AIDS (Acquired Immuno Deficiency Syndrome) are supplied by Indian pharmaceutical firms.

The pharmaceutical sector was valued at US$ 33 billion in 2017. The country's pharmaceutical industry is expected to expand at a CAGR of 22.4 per cent over 2015–20 to reach US$ 55 billion. India's pharmaceutical exports stood at US$ 17.27 billion in 2017-18 and are expected to reach US$ 20 billion by 2020.

Indian companies received 304 Abbreviated New Drug Application (ANDA) approvals from the US Food and Drug Administration (USFDA) in 2017. The country accounts for around 30 per cent (by volume) and about 10 per cent (value) in the US$ 70-80 billion US generics market.

India's biotechnology industry comprising bio-pharmaceuticals, bio-services, bio-agriculture, bio-industry and bioinformatics is expected grow at an average growth rate of around 30 per cent a year and reach US$ 100 billion by 2025. Biopharma, comprising vaccines, therapeutics and diagnostics, is the largest sub-sector contributing nearly 62 per cent of the total revenues at Rs 12,600 crore (US$ 1.89 billion).

1.2. Literature Review

1) Vijaykumar,A and GomathiP.,(2013) studied the assessment of financial health of Indian oil refineries hasbeen made by using Altman's Z score. The analysis shows that the financial health of oil refineries in India during the study period was lying in too healthy zone. It may be attributed to the positive changes in the net operating profit from the increased sales volume and market capitalization of the equity, maintaining sufficient working capital and effective utilization of capacity.

2) Vijaykumar (2012) in his study made an attempt to assessing the financial health of Indian Automobile Companies using Altman's Bankruptcy Model. The analyses of operational efficiency using the model revealed that except few companies, the financial health of Indian Automobile Companies were good during the study period.

3) Venkat Janardhan Rao and Durga Prasad(2009) in their research work entitled "Z-score Analysis –A Tool to Predict Financial Health", have critically examined the possibility of the failure of the firms with reasonable accuracy by using statistical tool Z-score, developed by Altman which is a measure of a company's health and which utilizes several key ratios for its formulation. The model incorporates fine weighted financial ratios into the calculations of the Z-score. Making use of this Z-score, the authors have examined the overall financial performance, to predict the financial health and viability of Mahindra and Mahindra Limited and Eicher

Motors. They have observed that after comparing the financial performance of both companies, performance of Eicher Motors is better than Mahindra and Mahindra Limited.

1.3. Objectives of the Study

1. To evaluate the financial health of select pharmaceutical companies in India.
2. To evaluate Z score of consolidated Altman's "Z" score model.

1.4. Scope of the Study

The research paper titled "Analysis of financial health of pharmaceutical Industry In India" is restricted to only 5 Pharmaceutical companies in India. It is based on the Audited Annual Reports of the select companies for past 10 years from 2006-07 to 2015-16. An attempt was made to evaluate the financial health of these select companies with the help of Altman's Z score Model.

1.5 Research Methodology

This study has been based on secondary data. The data has been collected from the Annual reports of five pharmaceuticals companies in India. Other information related to pharmaceutical industry has been collected from official websites and Accounting journals . No primary data has been collected.

1.6 Sampling Techniques

The top 5 Pharmaceutical Companies were selected on the basis of ownership, revenue earned , number of employees more than 15000,established before LPG era and listed on NSE and BSE.

1.7 Tools of Analysis

A) Ratio Analysis: The present study uses various ratios for financial analysis which has been used in Edward Altman model.

1) X1=Working Capital/Total Assets (Stand for liquidity measure)
2) X2=Retained Earnings/Total Assets (Stand for measure of reinvested earning)
3) X3=Earnings Before Interest and taxes/Total Assets (Stand for profitability measure)
4) X4=Market Value Equity/Total Liability (Stand for leverage measure)
5) X5=Sales/Total Assets (Stand for sales generating ability).

B) Edward Altman Model

Rather than searching for single best ratio professor Edward Altman has introduced new model in 1968 called Altman Z-score is used for predicting liquidity position and financial

economist. The Z-score is composite credit score for manufactures involving measure of firm's performance including measures of corporate liquidity, cumulative and current profitability, leverage and sales productivity. Each measure is assigned a compute determined weighting such, that when an analyst multiplies the weights lines the financial performance and sums up this five factors, the result is the overall Z-score.

The lower the score, the higher the odds are that a company is headed for bankruptcy. A Z-score of lower than 1.8, in particular, indicates that the company is heading towards bankruptcy.Companies with scores above 3 are unlikely to enter bankruptcy. Scores in between 1.8 and 3 lie in a grey area or the Zone of Ignorance.

1.8 Financial Health of Pharmaceutical Industry-An Analysis:

List of Select Pharmaceutical Companies:

1. Sun Pharmaceutical
2. Lupin Ltd
3. Dr Reddy's Laboratories Ltd.
4. Cipla Ltd.
5. Aurobindo Pharma Limited

1. Sun Pharmaceutical

Table No.1: Z-Score of Sun Pharmaceutical.

YEAR	WC/TA*	RE/TA*	EBIT/TA*	MVE/TL*	S/TA*	TOTAL
	1.2	**1.4**	**3.3**	**0.6**	**1.0**	
2006-07	0644	2.428	5.828	0.516	0.458	**9.874**
2007-08	0.520	0.321	3.425	0.665	0.535	**5.466**
2008-09	0.413	0.335	0.809	0.692	0.523	**2.772**
2009-10	0.221	-2.146	5.343	0.444	0.315	**4.177**
2010-11	0.391	0.283	0.700	0.117	0.282	**1.773**
2011-12	0.388	0.260	0.624	0.108	0.440	**1.820**
2012-13	0.354	0.783	2.366	0.325	0.263	**4.091**
2013-14	1.271	-2.862	-6.679	-0.594	2.044	**-6.820**
2014-15	1.795	-0.552	-1.373	-0.977	2.141	**1.039**
2015-16	1.226	-0.440	-1.030	-0.790	2.227	**-1.193**

Sun Pharmaceutical recorded the highest (9.874) during 2006-07 and was found to be in healthy zone during the years 2007-08, 2009-10 and 2012-13, whereas the financial viability was

found to be in grey zone during 2008-09 and 2014-15 and bankruptcy zone during 2013-14 a 2015-16 which reveals the situation of uncertainty of the company during few periods.

2. Lupin Ltd

Table No.2: Z-Score of Lupin.

YEAR	WC/TA*	RE/TA*	EBIT/TA*	MVE/TL*	S/TA*	TOTAL
	1.2	**1.4**	**3.3**	**0.6**	**1.0**	
2006-07	0.682	2.279	7.055	1.194	1.062	**12.272**
2007-08	0.589	2.580	7.653	1.348	1.057	**13.227**
2008-09	4.346	2.377	6.336	1.224	1.181	**15.464**
2009-10	0.514	2.527	6.504	1.236	1.012	**11.793**
2010-11	0.499	2.628	6.468	0.251	0.099	**9.945**
2011-12	1.930	1.828	0.538	0.175	0.874	**5.345**
2012-13	0.322	0.251	0.809	0.239	1.011	**2.632**
2013-14	0.488	0.370	1.178	0.352	1.016	**3.404**
2014-15	5.224	3.051	9.629	2.893	8.860	**29.657**
2015-16	4.171	2.841	9.065	2.689	0.793	**19.559**

With respect to Lupin Ltd it was found that the company was showing healthy situation in the entire study period. Except the period of the year 2012-13(2.632) the company was found to be in the grey area or the zone of ignorance.

3. Dr.Reddy's Labs

Table No.3: Z-Score Of Dr.Reddy's Labs.

YEAR	WC/TA*	RE/TA*	EBIT/TA*	MVE/TL*	S/TA*	TOTAL
	1.2	**1.4**	**3.3**	**0.6**	**1.0**	
2006-07	0.748	0.346	0.947	0.929	0.788	**3.758**
2007-08	0.492	1.240	3.597	0.314	0.621	**6.264**
2008-09	0.534	1.310	4.019	0.332	0.668	**6.863**
2009-10	0.355	1.807	0.548	0.456	0.672	**3.838**
2010-11	0.451	1.653	0.459	0.416	0.690	**3.669**
2011-12	2.160	12.352	4.019	3.108	6.386	**28.025**
2012-13	2.555	1.478	4.825	3.712	6.735	**19.305**
2013-14	3.965	1.865	5.584	0.468	6.545	**18.427**
2014-15	4.175	1.429	4.132	3.580	6.008	**19.324**
2015-16	3.619	1.079	2.970	2.704	5.651	**16.023**

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Dr.Reddy's labs reveals excellent financial situation during all the years. The company recorded healthy scores during the entire period of the study. Hence the financial health of Dr.Reddy's Lab lies in the healthy zone.

4. Cipla

Table No.4: Z-Score Of Cipla.

YEAR	WC/TA*	RE/TA*	EBIT/TA*	MVE/TL*	S/TA*	TOTAL
	1.2	**1.4**	**3.3**	**0.6**	**1.0**	
2006-07	0.654	2.694	7.679	1.487	0.990	**13.504**
2007-08	0.668	2.190	6.168	1.207	0.891	**11.124**
2008-09	0.664	1.994	5.452	1.099	0.909	**10.118**
2009-10	0.618	0.248	5.141	0.134	0.879	**7.020**
2010-11	0.590	1.851	0.521	0.099	0.844	**3.905**
2011-12	0.484	0.175	0.521	0.094	0.776	**2.050**
2012-13	0.774	1.835	5.775	0.980	7.137	**20.501**
2013-14	2.490	1.504	4.643	0.802	7.258	**16.697**
2014-15	2.354	1.088	3.346	0.579	0.667	**8.034**
2015-16	2.534	1.222	3.584	0.650	0.751	**8.741**

During 2011-12(2.050) the financial viability of Cipla was found to be in the zone of ignorance. From 2006-07 to 2015-16 Cipla was found to be in a healthy zone.Cipla recorded healthy scores during the entire period of study.

5. Aurobindo Pharma:

Table No.5: Z-Score Of Aurobindo Pharma.

YEAR	WC/TA*	RE/TA*	EBIT/TA*	MVE/TL*	S/TA*	TOTAL
	1.2	**1.4**	**3.3**	**0.6**	**1.0**	
2006-07	0.757	1.079	2.567	0.697	0.632	**5.732**
2007-08	0.712	1.336	3.732	0.848	0.733	**7.361**
2008-09	0.713	0.512	1.475	0.340	0.795	**3.835**
2009-10	0.619	1.862	4.369	1.262	0.822	**8.934**
2010-11	0.619	1.659	5.495	0.222	0.825	**8.820**
2011-12	0.724	-0.995	-0.759	-0.146	0.715	**-0.461**

2012-13	1.517	1.018	2.723	0.149	0.795	**6.202**
2013-14	0.247	0.192	0.584	0.281	0.829	**2.133**
2014-15	2.842	2.076	6.260	3.049	7.916	**22.143**
2015-16	2.455	1.900	5.917	1.394	7.681	**19.347**

Aurobindo Pharma recorded highest (22.143) during 2014-15 and was found to be in the healthy zone during the years 2006-07 (5.732), 2007-08 (7.361), 2008-09 (3.835), 2009-10 (8.934), 2010-11 (8.820), 2012-13 (6.202), 2015-16 (19.347), whereas the financial viability was found to be in the grey zone during the period 2013-14 and bankruptcy zone during 2011-12which reveals the situationof uncertainty of company during that period.

Z Score Of Consolidated Altman's 'Z' Score Model

Years	**Sun Pharmaceuticals**	**Lupin**	**Dr.Reddy's Labs**	**Cipla**	**Aurobindo Pharma**
2006-07	9.874	12.272	3.758	13.504	5.732
2007-08	5.466	13.227	6.264	11.124	7.361
2008-09	2.772	15.464	6.863	10.118	3.835
2009-10	4.177	11.793	3.838	7.020	8.934
2010-11	1.773	9.945	3.669	3.905	8.820
2011-12	1.820	5.345	28.025	2.050	-0.461
2012-13	4.091	2.632	19.305	20.501	6.202
2013-14	-6.820	3.404	18.427	16.697	2.133
2014-15	1.039	29.657	19.324	8.034	22.143
2015-16	-1.193	19.559	16.023	8.741	19.347
Z	**2.300**	**12.330**	**12.550**	**10.169**	**8.405**

1.9 Findings

1) In the year 2007 financial status of the Sun Pharma company is higher which is 9.874 as compared to it in 2016 which is (1.193).
2) Lupin shows healthy zone during entire period of study except during the year 2012-13 which falls in grey zone.

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3) We have seen that for the last 5 years financial health of Dr.Reddy's Lab is much higher i.e,28.025,19.305,18.427,19.324,16.023 from 2011-12 to 2015-16 as compared to remaining years from 2006-07 to 2010-11.

4) CiplaCompany shows a good score of 20.501 in the year 2012-13 and a lower score of 2.050 in the year 2011-12.

5) For last two years Aurobindo Pharma is having higher score in 2014-15 and 2015-16, 22.143and 19.347 respectively and negative score in the year 2011-12 (0.461).

1.10 Conclusion

The Indian pharmaceutical market is huge and compared to the world market, the contribution is less than its potential. The focus on other than generic market is the need of the time and Indian pharmaceutical companies constantly searching for new avenues in the innovation driven sector. The constant increase in the size of the Indian pharmaceutical market, due to a change in life style and high demand for quality health care is making this sector as a one of the promising contributors of the Indian economy. The regulatory policies need be improved, especially in the area of patent and price control, to boost the growth and create an impression as the destination for new generation pharmaceutical market.

To sum up,the financial viability of five pharmaceutical industries taken for the study revealed the bankruptcy zone, healthy zone and grey zone or zone of ignorance.

Sun Pharma reveals the bankruptcy zone during most of the years.

Lupin revealed that the financial viability is in a healthy zone except during the year 2010-11 which lies in the Grey zone.

Dr.Reddy's Labs revealed marginally lower during the first half of the study period and was increasing during second half of the study period.

Aurobindo Pharma revealed the healthy zone except for the year 2011-12.

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- AUROBINDO PHARMA LIMITED

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CSR Practices Make Company Perfect: Understanding the Importance of Walk With Stakeholders

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Abstract

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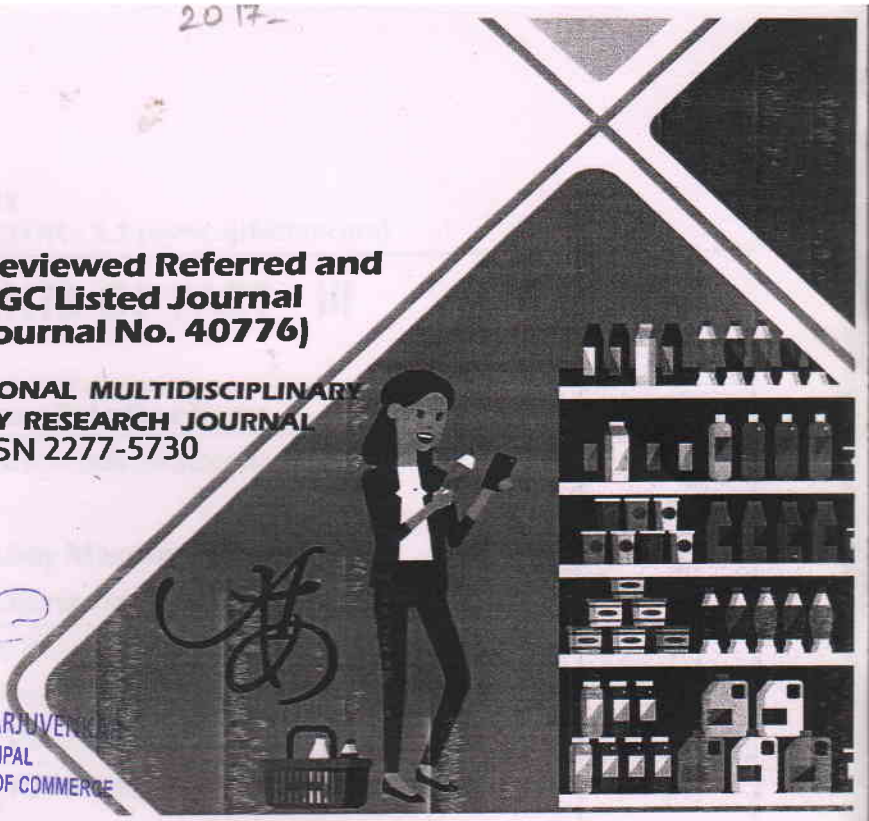

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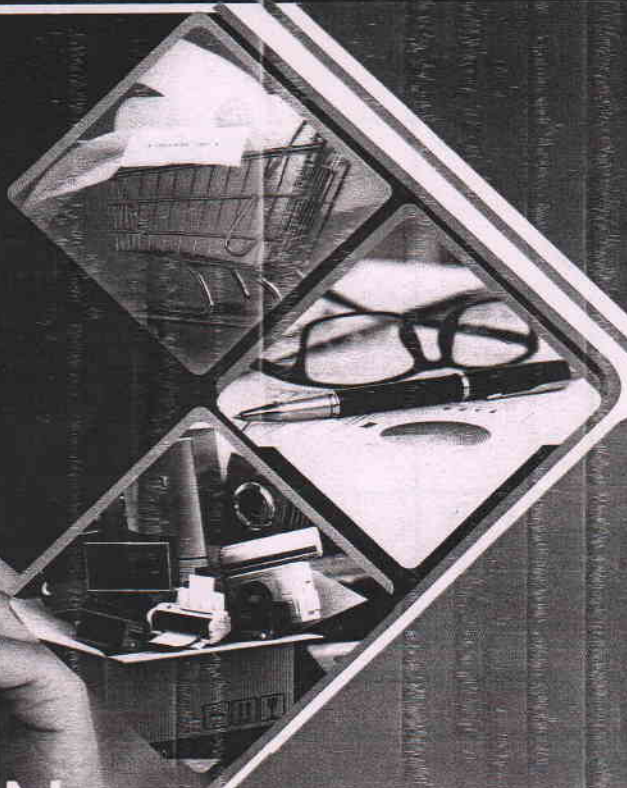

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4. Analysis of NPAs of select Public & Private Sector Banks in India - A Study

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Abstract

Recently A fraud of Rs. 12,600 crore at India's second-biggest state-run lender Punjab National Bank has shaken the nation's financial sector, triggering a massive probe and regulatory changes. Non-Performing Asset is a buzz word and a matter of concern for the Public and Private sector banks as managing and controlling NPA is a difficult task. Public sector banks have much larger NPAs compared with the private sector banks. This raises a distress in the industry and academia because it is generally felt that NPAs reduce the profitability of a bank, weaken its financial health and erode its solvency. The current paper strives to analyse the NPAs of select public and private sector banks in India for the period 2015-16 and 2016-17. By using Pearson Correlation and Spearman's Rank Correlation, it is found that, there is a significant association between ranks obtained by Public sector banks and Private sector banks in their Non Performing Assets.

Key Words: NPA, Public sector banks, Private sector banks.

1.1 Introduction:

The banking business has boomed since Independence, particularly after the LPG reforms. The sector is currently valued at Rs 115 lakh crore and expected to more than double at Rs 288 lakh crore by 2020. Out of this 70 per cent of business is being done by PSU banks. An interesting fact is that SBI's market share out of total banking business is 22 per cent. Looking at the enormous size of the banking industry, the NPAs are a big cause of concern. NPAs reflect the performance of banks. A high level of NPAs suggests high probability of a large number of credit defaults that affect the profitability and net-worth of banks and also erodes the value of the asset. The NPA growth involves the necessity of provisions, which reduces the overall profits and shareholders' value. The issue of Non Performing Assets has been discussed all over the world. The problem of NPAs is

not only affecting the banks but also the whole economy. In fact high level of NPAs in Indian banks is nothing but a reflection of the state of health of the Industry and trade.

1.2 What are Non-Performing Assets?

- A loan or lease that is not meeting its stated principal and interest payments.
- A loan is an asset for a bank as the interest payments and the repayment of the principal amount create a stream of cash flows.
- Banks usually treat assets as non-performing if they are not serviced for some time. If payment has not been made as of its due date then the loan gets classified as past due.
- Once a payment becomes really late the loan gets classified as non-performing. A non performing asset (NPA) is a loan or advance for which the principal or interest payment remained overdue for a period of 90 days.

1.3 Literature Review:

Rajput, N., Arora, A. P. and Kaur, B. (2012) focus on management of non-performing assets of the public sector banks under asset classification norms. The study also tried to trace the issue of non-performing assets present in the public sector banks and also analysed their performance in managing the NPA.

Ranjan, R. and Dhal, S. C., (2013) discover an experimental approach to the analysis of Indian commercial banks' non-performing loans by regression analysis. The empirical analysis evaluates as to how the NPA's are influenced by some economic and financial factors, i.e., terms of credit, macroeconomic shocks and bank size induced risk preferences.

Arora, N. and Ostwal, N., (2014) analyse the comparison and classification of loan assets of private and public sector banks. The study concluded that the NPA's are a big issue for the banks. According to them, the financial companies and public sector banks have higher NPA's as compare to Private sector banks.

1.4 Objectives of the study:

- To analyse the NPA of select Public & Private sector banks in India.
- To compare the NPAs of select Public & Private sector banks in India.
- To know the association between Public & Private sector banks in their Non Performing Assets.

1.5 Scope of the study:

In this study we have taken into consideration only select Public sector banks (excluding SBI and its associate banks) and Private sector banks in India for the period of two

years, 2015-16 & 2016-17. Our study focuses on only Non Performing Assets of 21 select Pu sector & 21 select Private sector banks in India.

1.6 Research Methodology:

- **Sample of the study:** Only 21 select public sector banks and 21 select private sect banks has been studied.
- **Source of Data:** The study is based on only secondary data which was collected fro different websites.
- **Period of the study:** The study consists for the period of two years, 2015-16 & 2016-17
- **Tools and Analysis:** Percentages, Pearson Correlation and Spearman's Rank Correlatio were used to analyse the data.

1.7 Data Analysis and Interpretation:

Table no. 1 Public sector banks

Banks	2015-16	2016-17	Variance	% change in NPA
ALLAHABAD BANK	102925	134335	31410	30.52
ANDHRA BANK	60357	103548	43191	71.56
BANK OF BARODA	194065	180802	-13263	-6.83
BANK OF INDIA	279964	253050	-26914	-9.61
BANK OF MAHARASHTRA	69193	112296	43103	62.29
BHARATIYA MAHILA BANK LTD.	7	462	455	6500.00*
CANARA BANK	208329	216490	8161	3.92
CENTRAL BANK OF INDIA	132420	142180	9760	7.37
CORPORATION BANK	91601	116922	25321	27.64
DENA BANK	52305	77351	25046	47.88
IDBI BANK LIMITED	146434	252058	105624	72.13
INDIAN BANK	54194	56066	1872	3
INDIAN OVERSEAS BANK	192126	197493	5367	2.79
ORIENTAL BANK OF COMMERCE	99322	141178	41856	42.14
PUNJAB AND SIND BANK	29495	43751	14256	48.33
PUNJAB NATIONAL BANK	354226	327021	-27205	-7.68
SYNDICATE BANK	90149	104110	13961	15.49
UCO BANK	114436	107034	-7402	-6.47
UNION BANK OF INDIA	140259	188321	48062	34.27
UNITED BANK OF INDIA	61107	65919	4812	7.87
VIJAYA BANK	42768	41182	-1586	-3.71

Interpretation:

From the above table no.1 it can be observed that, IDBI bank ltd. recorded a NPA increase of 1,05,624 millions resulting in the highest percentage change of 72.13 over the previous year as compared to all other 21 public sector banks analysed followed by NPA increase of 31,410 millions of Andhra bank in the year 2016-17. The 3rd bank in the list of

highest NPA was Punjab & Sind bank which recorded a % increase of 48.33. It is a high time that these banks take measures to recover their pervious and control their present NPAs.

Bank of India has recorded a NPA decrease of 13263 million over the previous year 2015-16 which reveals the banks efficiency in controlling and managing their bad loans followed by Punjab National Bank which recorded a percentage change of NPA over last year by (7.68). BOB is third in the list of NPA decrease of 13263 million in the year 2016-17 as compared to the year 2015-16.

Table no. 2 Private sector banks

Banks	2015-16	2016-17	Variance	% change in NPA
AXIS BANK LIMITED	25221	86266	61045	242.04
BANDHAN BANK LIMITED	102	612	510	500.00
CATHOLIC SYRIAN BANK LTD	3452	4476	1024	29.66
CITY UNION BANK LIMITED	3232	4083	851	26.33
DCB BANK LIMITED	975	1244	269	27.59
FEDERAL BANK LTD	9500	9412	-88	-0.93
HDFC BANK LTD.	13204	18440	5236	39.65
ICICI BANK LIMITED	129631	252168	122537	94.53
IDFC BANK LIMITED	11390	5765	-5625	-49.39
INDUSIND BANK LTD	3218	4389	1171	36.39
JAMMU & KASHMIR BANK LTD	21640	24254	2614	12.08
KARNATAKA BANK LTD	7955	9747	1792	22.53
KARUR VYSYA BANK LTD	2162	10335	8173	378.03
KOTAK MAHINDRA BANK LTD.	12620	17181	4561	36.14
LAKSHMI VILAS BANK LTD	2316	4184	1868	80.66
NAINITAL BANK LTD	277	395	118	42.60
RBL BANK LIMITED	1244	1899	655	52.65
SOUTH INDIAN BANK LTD	11853	6746	-5107	-43.09
TAMILNAD MERCANTILE BANK LTD	2007	3819	1812	90.28
THE DHANALAKSHMI BANK LTD	1932	1665	-267	-13.82
YES BANK LTD.	2845	10723	7878	276.91

The above table no. 2 shows the % change in NPA over the previous year of Private sector bank. It can be seen that, among 21 private sector banks analysed , ICICI bank recorded a highest percentage increase of NPA by 94.53% followed by Tamilnad Mercantile bank ltd. of % increase of 90.28. Lakshmi Vilas bank ltd. was 3rd on the list.

IDFC bank ltd. recorded a highest decrease in their NPA over the previous year by 5625 million followed by South Indian bank ltd. whose NPA decrease percentage stood -43.09 over the year 2015-16

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Table no. 3 Ranking of Public sector banks with regards to their NPAs

Banks	2015-16	2016-17
ALLAHABAD BANK	10	10
ANDHRA BANK	16	15
BANK OF BARODA	4	7
BANK OF INDIA	2	2
BANK OF MAHARASHTRA	14	12
BHARATIYA MAHILA BANK LTD.	21	21
CANARA BANK	3	4
CENTRAL BANK OF INDIA	8	8
CORPORATION BANK	12	11
DENA BANK	18	16
IDBI BANK LIMITED	6	3
INDIAN BANK	17	18
INDIAN OVERSEAS BANK	5	5
ORIENTAL BANK OF COMMERCE	11	9
PUNJAB AND SIND BANK	20	19
PUNJAB NATIONAL BANK	1	1
SYNDICATE BANK	13	14
UCO BANK	9	13
UNION BANK OF INDIA	7	6
UNITED BANK OF INDIA	15	17
VIJAYA BANK	19	20

It can be observed from the above table no. 3 that, PNB was ranked 1st, BOI stood 2nd, Indian overseas bank ranked 5th & Allahabad bank stood 10th for both the years i.e. 2015-16 & 2016-17. Whereas UCO bank, United bank of India , Bank of Baroda was able to recover their NPAs to some extent for the year 2016-17. Oriental bank of Commerce, IDBI bank ltd., Bank of Maharashtra & Dena bank situation of NPAs worsened in the year 2016-17 as compared to the year 2015-16 and requires prompt action.

Table no. 4 Ranking of Private sector banks with regards to their NPAs

Banks	2015-16	2016-17
AXIS BANK LIMITED	2	2
BANDHAN BANK LIMITED	21	20
CATHOLIC SYRIAN BANK LTD	10	12
CITY UNION BANK LIMITED	11	15

DCB BANK LIMITED	19	19
FEDERAL BANK LTD	8	9
HDFC BANK LTD.	5	4
ICICI BANK LIMITED	1	1
IDFC BANK LIMITED	7	11
INDUSIND BANK LTD	12	13
JAMMU & KASHMIR BANK LTD	3	3
KARNATAKA BANK LTD	9	8
KARUR VYSYA BANK LTD	15	7
KOTAK MAHINDRA BANK LTD.	4	5
LAKSHMI VILAS BANK LTD	14	14
NAINITAL BANK LTD	20	21
RBL BANK LIMITED	17	17
SOUTH INDIAN BANK LTD	6	10
TAMILNAD MERCANTILE BANK LTD	16	16
THE DHANALAKSHMI BANK LTD	18	18
YES BANK LTD.	13	6

Axis bank, DCB bank ltd.,ICICI bank ltd., RBL and Dhanalaxmi bank's NPA rank remained same for both the years i.e. 2015-16 & 2016-17. Yes bank's rank in NPA for the year 2015-16 was 13 which changed in the next following year to 6 followed by Karur Vysya bank ltd which reveal us that, banks were not successful in managing their NPAs during this period and measures have to been taken to improve their NPA ranking. City Union bank, IDFC bank , South Indian bank ltd showed a good sigh with regards to NPA ranking as compared to the previous year.

Public Sector Banks

H0: There is no significant association between ranks obtained by the Public Sector banks in their non performing assets

H1: There is significant association between ranks obtained by the Public Sector banks in their non performing assets

Correlations			
		npa	npa1
npa	Pearson Correlation	1	.962**
	Sig. (2-tailed)		.000

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	N	21	21
npa1	Pearson Correlation	.962**	1
	Sig. (2-tailed)	.000	
	N	21	21
**. Correlation is significant at the 0.01 level (2-tailed).			

Correlations

			npa	npa1
Spearman's rho	npa	Correlation Coefficient	1.000	.962**
		Sig. (2-tailed)	.	.000
		N	21	21
	npa1	Correlation Coefficient	.962**	1.000
		Sig. (2-tailed)	.000	.
		N	21	21
**. Correlation is significant at the 0.01 level (2-tailed).				

The value of 0.962 reveals a strong positive association between the ranks on Non performing assets of public sector banks for the two periods. In this case it is found the significance value is 0.000 at 1% percent level of significance. So at 99% confidence level there is a statistical evidence to reject null hypothesis. Hence it can be concluded that there is significant association between ranks obtained by the Public sector banks in their non performing assets.

Private Sector Banks

H0: There is no significant association between ranks obtained by the Private sector banks in their non performing assets

H1: There is significant association between ranks obtained by the Private sector banks in their non performing assets

Correlations

		npa	npa1
npa	Pearson Correlation	1	.888**
	Sig. (2-tailed)		.000
	N	21	21
npa1	Pearson Correlation	.888**	1
	Sig. (2-tailed)	.000	
	N	21	21

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations				
			npa	npa1
Spearman's rho	npa	Correlation Coefficient	1.000	.888**
		Sig. (2-tailed)	.	.000
		N	21	21
	npa1	Correlation Coefficient	.888**	1.000
		Sig. (2-tailed)	.000	.
		N	21	21
**. Correlation is significant at the 0.01 level (2-tailed).				

The value of 0.888 reveals a strong positive association between the ranks on Non performing assets of private sector banks for the two periods. In this case it is found the significance value is 0.000 at 1% percent level of significance. So at 99% confidence level there is a statistical evidence to reject null hypothesis. Hence it can be concluded that there is significant association between ranks obtained by the private sector banks in their non performing assets.

1.8 Findings:

- It was observed that, highest Non Performing Asset recorded was of Punjab National bank i.e. 354226 million & 327021 million in the year 2015-16 and 2016-17 respectively followed by BOI NPAs of 279964 & 253050 in the year 2015 & 2016 respectively.
- It was found that, least NPA recorded was of Bharatiya Mahila bank ltd. of 7 million in the year 2015 & 462 in the year 2016 as bank itself was incorporated in the year 2014 followed by Punjab and Sind Bank.
- Incase of Private sector bank, ICICI bank ltd. recorded a highest NPA of 129631 & 252168 in the year 2015-16 & 2016-17 respectively among 21 banks analysed followed by Axis bank which stood second.
- Bandhan bank ltd. & Nainital bank ltd. recorded a lowest NPA of 102 & 277 in the year 2015 respectively among Private sector banks.
- PNB is at the top most position in their NPAs followed by BOI on second position. Whereas Bharatiya Mahila bank stood last at 21st position showing a good sign to the bank.

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- The study reveals that ICICI bank is at 1st rank and Axis on 2nd with regards to their NP showing a matter of concern for the banks.
- Nainital bank and Bandhan bank ltd. were able to manage their NPAs effectively takin last position in the NPA ranking.
- The value of 0.962 reveals a strong positive association between the ranks on No performing assets of public sector banks for the two periods and at 99% confidence leve there is a statistical evidence to reject null hypothesis.
- The value of 0.888 reveals a strong positive association between the ranks on No performing assets of private sector banks for the two periods and 99% confidence leve there is a statistical evidence to reject null hypothesis.

1.9 Conclusion:

From our study it can said that, Private sector banks are on the better side of NPAs witl regards to their management and control is concerned as compared to Public sector banks. Publi sector banks needs immediate attention to their NPA problem which will reduce the profitability of banks, weaken its financial health and erode its solvency

It can be concluded that, there is significant association between ranks obtained by the Public sector banks and ranks obtained by the private sector banks in their non performing assets

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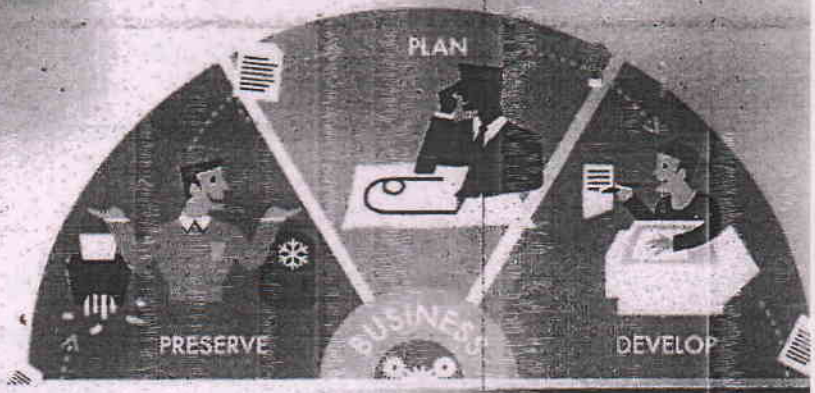

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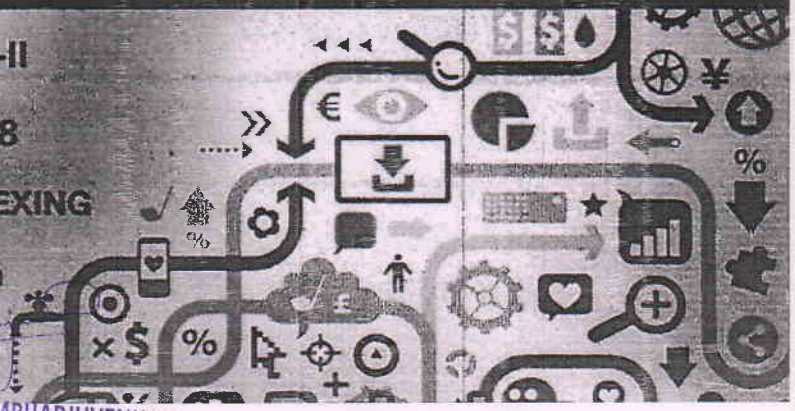

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16. Exploring the causality between EVA and Stock Market Returns: Evidence from India

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Abstract:

The modern performance measure EVA gained significant importance since last 2 decades. The present study aims to examine the impact of EVA on Stock Market Returns and investigate the presence of causality. The pooled data related to 50 companies listed on Nifty 50 has been collected for the period 2003-2017. To examine the impact, Fixed Effect Model and Random Effect Model has been used and Wald Test is considered to evaluate the causality between EVA and Stock Market Returns. Fixed Effect Model was found to be appropriate model for the study and it showed a positive impact of EVA on Stock Market Returns. The study also found the evidence of bi-directional causality between EVA and Stock Market Returns.

Key Words: EVA, Stock Returns, FEM, REM, Wald Test

Introduction:

Economic Value Added is a foundation of ambitious finance due to its effectiveness towards creation of policy of raising wealth & value of shareholders and even it is an estimating tool of efficiency & performance of the firm. Its methodology exercised for the invention of prosperity along with owner's capital of the corporation by framing ample of policies. This tool was coined by Stern Stewart & Co.

EVA applied for framing desires of the organizations, estimating performance, incentives formation, exchanging information among investors in addition to shareholders, superiors inspiration, funds allocation, corporate valuation and equities estimation. Garvey & Milbourn (2000) found out the association between EVA and stock return to have genuinely stable control to their value as an incentive contracting technique. These conclusions are definite and important for determining about the companies which has really followed Economic Value Added. In a simple words EVA estimating tool shows, the outcomes of shareholders wealth. If gain or yield

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superior than cost it raises wealth whereas, if the gain or yield is lesser than cost, it leads to decline of wealth. The present study examines the impact of EVA on Stock Market Returns and investigates if there exists causality between the said variables

Review of Literature:

Garvey & Milbourn (2000) found out that the association between EVA and stock return is genuinely stable to their value as an incentive contracting technique. Visaltanachoti, Luo & Yi (2008) explained the analysis of EVA which grants very few initiations of stock return among 90 companies study witnessed linkage among traditional accounting and sector return. Also positive association of EVA with sector returns has been identified. Ismail (2006) examined if the net earnings after deduction of tax and net income performance is better measure than EVA. Study highlighted that changes of Economic Value Added have relevantly less role in exploring stock return. Study concluded that other variable must be included for evaluating the unnoticeable changes stock returns. In another research study Ismail (2012) summarized that, the share of EVA per unit capable to associate and had a meaningful association of stock return as compared to accounting formal techniques for the firms of Bursa Malaysia. Taufik, Isnurhadi & Widiyanti (2008) witnessed that the accounting approach and EVA has control over the yield on stock of the banking companies of Jakarta Stock Exchange. For the estimation purpose Linear Regression Multiple Model had been applied for proving effect this effect on stock return of the banking companies. The results showed meaningful effect of these techniques on stock return. Similar tools were used by Maditions, Sevic & Theriou (2009) to explore the ability of EVA and Shareholder Value Added by considering accounting tools such as Earning per Share, Return on Investment and Return on Equity of Athens Stock Exchange (ASE). Study noticed a strong correlation of stock return with EPS and EVA. Whereas, EPS signified significant impact over stock return. Singh & Mehta (2012) showed the ability of EVA for the generation of shareholders wealth. The study identified that, Information Technology companies are most probably interested in the creation of shareholders value. The study also scrutinizes the influence and association among EVA and Traditional Techniques and found such an association. Moreover, Nakhaei & Hamid (2013) reviewed association among EVA, ROA and ROE with MVA of Tehran Stock Exchange containing 87 non-banking financial companies. The Karl Pearson Correlation Matrix and Regression Analysis were conducted for proving outcome. The results show a strong association of EVA and ROE with MVA where else; there was no significant correlation coefficient among ROA and MVA. In a research study of Parvaei & Farhadi (2013) estimated the basic enforcement tools such as Residual Income, Net Income, Free Cash Flow and Economic Value Added of the corporation to observe if Economic Value Added

beneficial as compared to another enforcement tool. It determined EVA as a better tool for estimation of desires of corporation. Even it observed that EVA includes lower forecasting measure whereas, Free Cash Flow includes better forecasting measures as compare to other tools.

Research Design:

The present study aims to examine the impact of EVA on Stock Market Returns and investigate if there exists causality between the said variables. For the purpose of study, the data pertaining to EVA has been extracted from Bloomberg Terminal and the data relating to Stock Market Returns were extracted from BSE website. The data is secondary in nature. The pooled data belonging to 50 companies listed on Nifty 50 has been collected for the period 2003-2017.

The stock returns were computed using the formula Ln (Po/P1). Where, Po is the price at the end of the period and P1 signifies price at the beginning of the period. The required analyses have been performed by using statistical software E-Views and MS Excel. Unit root test has been applied to identify stationarity of data. To find out the impact, Fixed Effect Model and Random Effect Model has been used and Wald Test taken into consideration to examine the causality between EVA and Stock Market Returns.

Results and Discussion:

Unit root test: Table 2

Panel Unit Root Test	EVA		SENSEX	
	Statistic	P-value	Statistics	P-value
Levin, Lin & Chu t*	-5.86	0.0000***	-26.68	0.0000***
ADF - Fisher Chi-square	225.59	0.0000***	675.96	0.0000***
PP - Fisher Chi-square	259.71	0.0000***	678.90	0.0000***

Source: Compiled using E-views

The Panel unit root test of EVA and Stock Market Returns as depicted in Table 1 presents the stationary level of the data. For analyzing this, Levin, Lin & Chu t test, ADF – Fisher Chi-square and PP- Fisher Chi-square techniques has been adopted. In all techniques, the data probability with regards to EVA as well as Stock Market Return is less than 0.01 at 1% level of significance. Thus the data is stationary.

Impact of SENSEX on EVA and analysis showing Causality:

Table 3

	Variable	Coefficient	P-value
Fixed Effect Model	C	15.43395	0.0000
	SENSEX(-1)	-0.37448	0.0000***

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	SENSEX(-2)	-0.02729	0.4937
	EVA(-1)	0.072833	0.6822
	EVA(-2)	0.398579	0.0244**
Random Effect Model	C	15.87895	0.0000
	SENSEX(-1)	-0.35109	0.0000***
	SENSEX(-2)	-0.00654	0.8678
	EVA(-1)	-0.08089	0.6203
	EVA(-2)	0.27058	0.0967*
Hausman Test	**Test Summary**	**Chi-Sq. Statistic**	**P-value**
	Cross-section random	9.579623	0.0481**
Wald Test	**Test Statistic**	**Value**	**P-value**
	F-statistic	4.428697 (2, 530)	0.0124**
	Chi-square	8.857395	0.0119**

Source: Computed using E-views

Note: ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level.

In the above Table 2, the fixed and random effect model has been applied to find the impact of EVA on Stock Market Returns by considering Stock Market Returns as a dependent variable. For identifying appropriate model, Hausman Test has been applied and it shows p-value less than 0.05 at 5% level of significance. Therefore Fixed Effect Model was found to be appropriate model and it shows a positive impact of EVA on Stock Market Returns.

To find the causation effect of EVA on Stock Market Returns, Wald Test has been applied. The p-value in case of Wald test is found to be less than 0.05 at 5% level of significance. Hence, there exists causality from EVA and Stock Returns.

Impact of EVA on SENSEX and analysis showing Causality:

Table 4

	Variable	Coefficient	P-value
Fixed Effect Model	C	0.61807874	0.0000
	EVA(-1)	0.551617521	0.0000***
	EVA(-2)	-0.003414359	0.9342
	SENSEX(-1)	0.010455708	0.2565
	SENSEX(-2)	0.028475925	0.0024***
Random Effect Model	C	-0.068397529	0.8385
	EVA(-1)	0.695616588	0.0000***
	EVA(-2)	0.108605778	0.0045***
	SENSEX(-1)	-0.000642794	0.9432
	SENSEX(-2)	0.01850544	0.0447**
Hausman Test	**Test Summary**	**Chi-Sq. Statistic**	**P-value**

Wald Test	**Cross-section random**	76.01848026	0.0000***
	Test Statistic	**Value**	**P-value**
	F-statistic	4.646029858	0.0099***
	Chi-square	9.292059715	0.0095***

Source: Computed using E-views

Note: ***Significant at 1% Level, **Significant at 5% Level.

In the above Table 3, the fixed and random effect model has been applied to find the impact of Stock Market Returns on EVA by considering EVA as a dependent variable. For identifying appropriate model Hausman Test has been applied and it shows p-value less than 0.01 at 1% level of significance. Hence Fixed Effect Model was found to be appropriate model and it shows a positive impact of Stock Market Return on EVA.

To find the causation effect of Stock Market Return on EVA, Wald Test has been applied. As per Wald Test, p-value is less than 0.01 at 1% level of significance and hence there exist causality from Stock Return to EVA.

Conclusion:

Economic Value Added is a foundation of ambitious finance due to its effectiveness towards creation of policy of raising wealth & value of shareholders and even it is an estimating tool of efficiency & performance of the firm. The present study aimed to examine the impact of EVA on Stock Market Returns and investigate if there exists causality between the said variables. The pooled data belonging to 50 companies listed on Nifty 50 has been collected for the period 2003-2017.

Unit root test had been applied to identify stationarity of data. To find out the impact, Fixed Effect Model and Random Effect Model had been used and Wald Test taken into consideration to examine the causality between EVA and Stock Market Returns and vice versa. Fixed Effect Model was found to be appropriate model for the study and it showed a positive impact of EVA on Stock Market Returns. The study also found the evidence of bi-directional causality between EVA and Stock Returns.

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Contents

The Impact of Liquidity and Leverage on Profitability: Evidence from India

Y V Reddy and Parab Narayan***

The combination of liquidity variables and capital structure variables has been always a major concern for the financial managers in different companies. The present study attempts to analyze the relationship between liquidity and profitability and investigate the impact of financial leverage and liquidity on the financial performance of select pharmaceutical companies for the period from 2006-07 to 2015-16. The results of the study show that the liquidity of the companies which is reflected in the ongoing ability to pay financial obligations, affects the firm's capital structure. The increase in liquidity of the firm leads to decrease in the leverage and vice versa. However, no significant impact of leverage on profitability and capital structure is evidenced in the present study.

Introduction

Liquidity plays a key role in the upliftment of a company. Liquidity is the ability of a company to meet the short-term obligations, and convert its assets into cash. Short-term liquidity generally signifies obligations which mature within one accounting year. It also reflects the operating cycle: buying, selling manufacturing, and collecting. A company that cannot pay its creditors on time and continues not to honor its obligations to the suppliers of credit, services, and goods can be declared a sick company or bankrupt company. Inability to meet the short-term liabilities may affect the company's operations and in many cases it may affect its reputation too. Lack of cash or liquid assets on hand may force a company to miss the incentives given by the suppliers of credit, services and goods. Loss of such incentives may result in higher cost of goods which in turn affect the profitability of the business. So, there is no standard norm for liquidity. It depends on the nature of the business, scale of operations, location of the business and many other factors. Every stakeholder has interest in the liquidity position of a coinpany. Supplier of goods will check the liquidity of the company before selling goods on credit. Employees also have interest in the liquidity, as they wish to know whether the company can meet its employees-related obligations, including salary, pension, provident fund, etc. Shareholders are interested in understanding the liquidity due to its huge impact on the profitability. Shareholders may not like high liquidity, as liquidity and profitability are inversely related. However, shareholders are also aware that non-liquidity will prevent the company from getting incentives from the suppliers, creditors, and bankers.

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Capital structure is a mix of long-term sources of funds used by a firm. It is made up of debt and equity securities and refers to permanent financing of a firm. It is composed of long-term debt, preference share capital and shareholders' funds. Decisions relating to financing of assets of a firm are crucial in every business and the finance manager is often caught in the dilemma over the optimum proportion of debt and equity capital in financing the firm's assets. Capital structure is usually designed to serve the interest of the equity shareholders. Capital structure simply reflects the efficiency of a firm in term of its assets in use, financed through different options. Generally speaking, a company with a high level of debt as compared to equity is thought to carry higher risk, though some analysts do not believe that capital structure matters with regard to risk or profitability. Investment returns help to generate earnings through assets, which can be obtained by dividing the firm's annual earnings by its total assets and it is shown as a percentage. Most often, it is considered as a 'return on investment'. The capital of the firm represents the amount of fund which is used for the firm's fixed assets, accounts receivable, marketable securities and inventories. Any business firm needs to be very selective in establishing the capital structure for the firm to achieve its objectives.

The combination of liquidity variables and capital structure variables has been always a major concern for the financial managers of different companies. There is always an issue with these variables as to how best to combine these elements to improve the firm's financial performance. This research is intended to find the gray area with reference to the impact of these variables on the financial performance of selected pharmaceutical companies listed on National Stock Exchange, India.

Literature Review

Ondiek (2010) aimed at determining the relationship between capital structure and financial performance of companies listed on Nairobi Stock Exchange. The population for this study comprised all companies quoted at the Nairobi Stock Exchange Market as of 2010. The change in the firm's capital structure was measured by various Debt Ratios (DRs), profits and Return on Assets (ROA) using regression analysis. Qasim and Ramiz (2011) analyzed the relationship between liquidity and profitability. The study was conducted between the years 2004 and 2009 after collecting data about the financial positions as a result of annual activities of oil and gas companies to evaluate the effect of liquidity ratios on profitability by applying panel and multiple regression models. Pratheepkanth (2011) conducted a study to identify the impact of capital structure on financial performance in Colombo Stock Exchange. The researcher considered all firms representing the period 2005-2009. Ben et al. (2013) conducted a study based on liquidity management and profitability of manufacturing companies in Nigeria. The analysis was based on a sample of 30 manufacturing companies listed on the Nigeria Stock Exchange for the period from 2006 to 2010.

Aqsa and Ghulam (2014) aimed to examine the relationship between the firms' high profits and their choice of high leverage, by using different statistical tools for 12 listed public limited firms listed on Karachi Stock Exchange. Mahira (2014) focused on investigating the effect of leverage, liquidity and inflation on firm's profitability in respect of the food

industries of Pakistan. Mobeen and Waqas (2014) aimed at making a financial performance analysis of Pakistani companies. They compiled the data of ten listed chemical companies of Pakistan for a period of nine years from 2001-2009. Ali (2014) conducted a study to identify the relationship between financial leverage and performance of chemical companies in Pakistan. The data was collected from financial statement analysis of companies (non-financial) listed on Karachi Stock Exchange during the period 2006-2013 and also from annual reports of the chemical companies published on the companies' websites. Panel data and correlation analysis were used. Mahira (2014) tested alternative theories about the effect of asset liquidity on capital structure. The results were found to be consistent with the hypothesis that the costs of managerial discretion increase with asset liquidity.

Pramit and Pramit (2015) conducted a study to analyze the impact of liquidity, efficiency and capital structure on profitability in selected textile companies, and the study tried to explore the effect of various liquidity, efficiency and capital structure ratios on the profitability in panel framework of some selected textile companies in India. For this purpose, they had chosen ten textile companies covering the period from 2005 to 2014. Natasa and Martina (2015) investigated the impact of liquidity, leverage and inflation on firm profitability with reference to food sector of Pakistan. The study aimed at finding the relationship between liquidity ratios and leverage ratios. The researchers also applied statistically significant correlations analysis. Safiuddin *et al.* (2015) studied to find the effect of financial structure on the performance of the firms during recent years in Bangladesh. For the purpose, they chose 40 firms comprising 20 financial and 20 non-financial companies for the period 2008-2012. Asian (2015) assessed the impact of liquidity and profitability ratios on pharmaceutical firms in Nigeria. Various panel data analyses were used to indicate significant contributions of all the variables to profit growth of pharmaceutical companies in Nigeria implying that continued improvement in the variables lead to increases in growth of profit. Nawaz and Atif (2015) investigated the impact of financial leverage, company's growth, non-current/total assets ratio, and firm's size as independent variables on profitability. A sample of 25 Jordanian industrial companies listed on Amman Stock Exchange for a period of 10 years was used for the purpose. Thuraisingam (2015) made an attempt to analyze the liquidity and its impact on profit earning capacity during 2008 to 2012. Based on the nature of data collection through different tools, the following statistical techniques were employed: descriptive analysis, correlation and regression. Mwangi and Birundu (2015) conducted a study on the effect of capital structure on financial performance in Small and Medium Enterprises (SMEs). The study was conducted on 40 SMEs in Thika sub-county, Kenya, which were in operation for five years from 2009 to 2013, using multiple linear regression.

Hiran (2016) aimed to study the relationship between liquidity and profitability, and between leverage and profitability of Indian automobile sector. For the purpose, he collected the data of 25 Indian automobile companies out of 29 companies which is part of CNX500 Index of NSE, for the period of five years from 2011 to 2015. Alina *et al.* (2016) collected the data of 15 cement sector firms for the period from 2008 to 2014. The statistical approaches, i.e., correlation, fixed effect, random effect and Hausman tests were applied, to indicate, that both capital structure and liquidity play a vital role in growth and profitability of the

irm. Ismail (2016) examined the impact of liquidity management on the performance of the Pakistani firms constituting the KSE 100 Index. The regression analysis was used to find the impact of liquidity on performance.

From the above literature review it can be seen that many researchers have conducted studies in the area of liquidity management and financial leverage. There is always an issue with these variables as to how best to combine these elements to improve the firm's financial performance. This is the reason to carry out the present study in finding out the impact of liquidity and leverage on profitability of selected companies of pharmaceutical sector listed on NSE.

Objective

The study aims to:

- Analyze relationship between liquidity and profitability in the select pharmaceutical companies.
- Investigate the impact of financial leverage and liquidity on the financial performance of select pharmaceutical companies.

Data and Methodology

For research purpose, the sample selected consists of pharmaceutical companies from Nifty index. The present study is based on secondary data. The data required for this study have been collected from the annual reports of selected companies, previous research papers, journals, various websites, and financial statements of the companies, Bloomberg database, and www.nse.com. The study covers a period of 10 years for all the companies starting from 2006-07 to 2015-16 (see Appendix). The study comprises calculation of ratios to find the impact of liquidity and leverage ratios on profitability. Detail of the ratios used in the study is presented in Table 1.

Test and Selection of Models

Regression Analysis

This study uses panel regression analysis. The study uses the pooled regression type of panel data analysis. The pooled regression, also called the constant coefficients model, is one where both intercepts and slopes are assumed to be constant.

The following regression models are used:

$$ROI = B_0 + B_1CR + B_2QR + B_3D/E + B_4ICR + B_5D/A + \mu$$

$$ROA = B_0 + B_1CR + B_2QR + B_3D/E + B_4ICR + B_5D/A + \mu$$

The two residual model paneling methods used by the Generalized Least Square (GLS) to select appropriate model for the test is the Fixed-Effects Model (FEM) and the Random Effect Model (REM).

Descriptive Statistics

Descriptive analysis gives insight into the behavior of the variable. The researcher obtained descriptive statistics of the variables, namely, mean, maximum, minimum, standard deviation, median, etc. The return rate measured by ROA and ROI, have an average of 14.118 and 16.409 and a median of 13.16 and 17.105, respectively (Table 2). The variable *D/E* ratio has mean of 50.02 and median of 43.79. The value indicates that approximately 50% of the total assets are determined by equity funds, whereas ICR shows 84% of Debt Ratio (DR) is maintained. The above position reveals that the companies are financially leveraged with a large percentage of total DR. It is seen that mean value of the DR, i.e., ICR has a higher volatility as compared to ROA. The standard deviation of ICR is higher which means it highly volatile, while ROA has a lower standard deviation which means it is less volatile. Skewness is the extent to which a distribution of values deviates from symmetry around the mean. ROI is negatively skewed, while all independent variables have positive skewness. The kurtosis value for all variables is more than one so they are leptokurtic.

Table 2: Descriptive Statistics of the Variables

	ROA	*ROI*	*QR*	*CR*	*D/E*	*ICR*	*D/A*
Mean	14.11820	16.40910	1.216100	2.257800	50.02850	84.20200	21.37920
Median	13.16000	17.10500	0.930000	1.780000	43.79500	16.91000	23.25000
SD	15.30636	9.319433	0.908423	1.672196	47.47820	155.1658	16.75068
Skewness	6.461806	–0.111820	1.945102	2.515911	0.999094	2.516952	0.163547
Kurtosis	57.11337	3.165766	8.120927	12.12471	4.159651	8.651858	1.830233
Jarque-Bera	12,896.99	0.322887	172.3233	452.4145	22.23977	238.6821	6.147276
Probability	0.000000	0.850914	0.000000	0.000000	0.000015	0.000000	0.046253
Observations	100	100	100	100	100	100	100

Correlation Analysis

In order to fulfill the first objective of the study, the correlation matrix was calculated on Eviews. Correlation investigation was employed to determine the strength and course of the linear association among the variables in concern. The correlation coefficients are displayed in Table 3. It is observed that liquidity ratios (QR and CR) have positive relation with profits of the firm, whereas leverage ratios D/E ratio and D/A ratio have negative relation with the profits of the firm. This implies that firms' profitability will decrease as the leverage increases, and this may be due to increased financing costs. QR is negatively related to leverage impact. Similarly, DR (ICR) is positively correlated with liquidity ratios, i.e., as the leverage increases, liquidity of the firm decreases. This is due to increased cost of capital and lack of efficiency of the firm in meeting short-term obligations.

Table 3: Correlation Coefficients

	ROA	ROI	QR	CR	D/E	ICR	D/A
ROA	1.000000	0.242874	0.416862	0.393991	–0.191365	0.161491	–0.304635
ROI	0.242874	1.000000	0.240114	0.212052	–0.408151	0.313062	–0.396904
QR	0.416862	0.240114	1.000000	0.754079	–0.459390	0.514108	–0.520424
CR	0.393991	0.212052	0.754079	1.000000	–0.377750	0.418234	–0.428574
D/E	–0.191365	–0.408151	–0.459390	–0.377750	1.000000	–0.400176	0.952941
ICR	0.161491	0.313062	0.514108	0.418234	–0.400176	1.000000	–0.439517
D/A	–0.304635	–0.396904	–0.520424	–0.428574	0.952941	–0.439517	1.000000

Panel Data Analysis

Dependent Variable: ROI (Profitability)

The data being panel data the regression equation so developed have been run into three different models and test are conducted to select the appropriate one. The models run are pooled OLS, FEM and REM. For the purpose of selection of the appropriate model *F*-test, Breusch-Pagan LM test and Hausman test were used respectively. For choosing the appropriate model, three different hypotheses were framed and tested.

- Choosing between pooled OLS and FEM.

  H_0: *Pooled OLS is appropriate.*

  H_1: *FEM is appropriate.*

- Choosing between pooled OLS and REM.

  H_0: *Pooled OLS is appropriate.*

  H_1: *REM is appropriate.*

- Choosing between REM and FEM.

  H_0: *REM is appropriate.*

  H_1: *FEM is appropriate.*

The data is regressed and interpreted at 5% significance level. The results are presented in Table 4. Since the *p*-value is more than 0.05, the null hypothesis was accepted and the alternate was rejected.

Model 1: Pooled OLS, Using 100 Observations

The regression equations with the best fitted variables are fitted to measure the impact of working capital management on profitability. The following hypotheses are tested:

H_0: *There is no significant impact of liquidity management on profitability.*

H_1: *There is significant impact of liquidity management on profitability.*

H_0: *There is no significant impact of leverage and debt on profitability.*

H_1: *There is significant impact of leverage and debt on profitability.*

Table 4: Results of Panel Data Models for Selection of Best Model – ROI

Choosing the Model	H_0 (Null Hypothesis)	Test	Test Statistics	*p*-Value	Decision
Between Pooled OLS and FEM	*Pooled OLS is appropriate*	*F*-test	0.521895	0.854929	Accept
Between Pooled OLS and REM	*Pooled OLS is appropriate*	Breusch-Pagan LM Test	1.29786	0.254604	Accept
Between REM and FEM	*REM is appropriate*	Hausman Test (*H*-test)	2.30514	0.805511	Accept

The results presented in Table 5 show that the liquidity ratio, CR shows a positive but insignificant impact on ROI, which suggests that the null hypothesis cannot be rejected. Similarly, QR shows negative and insignificant relationship with ROI and thus, the null hypothesis is accepted. The leverage ratio, *D/A ratio* shows statistically insignificant negative

Table 5: Pooled OLS Output – ROI

	Coefficient	Std. Error	*t*-Ratio	*p*-Value
Const.	18.7022	2.6598	7.0314	<0.00001
CR	0.194198	0.788229	0.2464	0.80593
QR	–0.331927	1.59126	–0.2086	0.83522
D/E	–0.0709108	0.0605872	–1.1704	0.24480
D/A	0.0140746	0.179549	0.0784	0.93769
ICR	0.0109116	0.0066773	1.6341	0.10558

Mean Dependent Var.	16.40910	SD Dependent Var.	9.319433
Sum Squared Resid.	6931.093	SE of Regression	8.586911
R-Squared	0.193903	Adjusted *R*-squared	0.151025
F(5, 94)	4.522241	*p*-value (*F*)	0.000973
Log-Likelihood	–353.8240	Akaike Criterion	719.6480
Schwarz Criterion	735.2790	Hannan-Quinn	725.9741
Rho	–0.056797	Durbin-Watson Stat.	1.814173

Note: *** 1% level of significance.

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ation, and *D/E ratio* and *ICR* also show no significant impact, but has a positive relation with profitability. Thus, the null hypotheses are accepted.

The model probability value equates to 0.05 with a lower R^2 and probability of *F*-statistics is less than 0.05 proving that independent variables have significant impact on the ROI. The Durbin-Watson value is 1.81, which is close to 2 and this implies that there is no autocorrelation problem. The White's test for heteroskedasticity was performed. The LM test statistic for the null hypothesis that heteroskedasticity is not present, was obtained as 43.1001 with *p*-value = *p*(chi-square (20) > 43.1001) = 0.00198293. Thus, there is no heteroskedasticity and that it is unbiased.

Model 2: FEM Using 100 Observations

The results of FEM are presented in Table 6.

Table 6: Fixed Effects Model Output – ROI

	Coefficient	Std. Error	*t*-Ratio	*p*-Value
Const.	18.8302	2.80883	6.7039	<0.00001***
CR	0.203784	0.848172	0.2403	0.81071
QR	–0.542626	1.63882	–0.3311	0.74138
D/E	–0.0766464	0.0644065	–1.1900	0.23734
D/A	0.0266031	0.189027	0.1407	0.88841
ICR	0.0124041	0.00712316	1.7414	0.08523*

Mean Dependent Var.	16.40910	SD Dependent Var.	9.319433
Sum Squared Resid.	6568.141	SE of Regression	8.790464
R-squared	0.236114	Adjusted *R*-squared	0.110298
F (14, 85)	1.876658	*p*-value (*F*)	0.040405
Log-Likelihood	–351.1347	Akaike Criterion	732.2693
Schwarz Criterion	771.3469	Hannan-Quinn	748.0847
rho	–0.097737	Durbin-Watson Stat.	1.924017

Test for Differing Group Intercepts:

Null hypothesis: The groups have a common intercept.

Test Statistic: *F*(9, 85) = 0.521895

With *p*-value = *P*(*F*(9, 85) > 0.521895) = 0.854929

Note: *** 1% level of significance; and * 10% level of significance.

Model 3: REM (GLS), Using 100 Observations

While using the REM, the following hypotheses are tested:

H_0: *There is no significant relationship between profitability and the independent variables (QR, CR, D/E, D/A, ICR).*

H_1: *There is a significant relationship between profitability and the independent variable (QR, CR, D/E, D/A, ICR).*

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The results are presented in Table 7. The REM results state that no variable individually has an impact on the dependent variable ROI. There are no random changes in the variables that affect the ROI, i.e., they have insignificant impact on the profitability. For example, for every 1% change in CR there is 0.194198% change in ROI. But the result is insignificant.

Table 7: Random Effects Model Output – ROI

	Coefficient	Std. Error	*t*-Ratio	*p*-Value
Const.	18.7022	2.6598	7.0314	<0.00001***
CR	0.194198	0.788229	0.2464	0.80593
QR	-0.331927	1.59126	-0.2086	0.83522
D/E	-0.0709108	0.0605872	-1.1704	0.24480
D/A	0.0140746	0.179549	0.0784	0.93769
ICR	0.0109116	0.0066773	1.6341	0.10558

Mean Dependent Var.	16.40910	SD Dependent Var.	9.319433
Sum Squared Resid.	6,931.093	SE of Regression	8.541597
Log-Likelihood	-353.8240	Akaike Criterion	719.6480
Schwarz Criterion	735.2790	Hannan-Quinn	725.9741

'Within' variance = 77.2722

'Between' variance = 5.16951

Theta used for quasi-demeaning = 0

Breusch-Pagan Test:

Null hypothesis: Variance of the unit-specific error = 0

Asymptotic test statistic: Chi-square(1) = 1.29786

with *p*-value = 0.254604

Hausman Test:

Null hypothesis: GLS estimates are consistent.

Asymptotic test statistic: Chi-square(5) = 2.30514

With *p*-value = 0.805511

Dependent Variable: ROA

OLS Model

The regression equations with the best-fitted variables have been driven to measure the impact of working capital management on profitability. The following hypotheses are tested.

H_0: *There is no significant impact of leverage and liquidity management on profitability.*

H_1: *There is significant impact of leverage and liquidity management on profitability.*

The hypothesis that FEM is more appropriate than REM is tested using Hausman test and the result is presented in Table 8. The Hausman test results show *p*-value is 0.03, i.e., it is

Table 8: Results of Panel Data Models for Selection of Best Model – ROA					
Choosing the Model	H_0 (Null Hypothesis)	Test	Test Statistics	*p*-Value	Decision
Between Pooled OLS and FEM	*Pooled OLS is appropriate*	*F*-Test	1.32874	0.23439	Accept
Between Pooled OLS and REM	*Pooled OLS is appropriate*	Breusch Pagan LM Test	0.149216	0.699286	Accept
Between REM	*REM is appropriate* and FEM	Hausman Test (*H* Test)	11.7603	0.0382239	Reject

tatistically significant at the conventional level of 0.05. Thus, the null hypothesis that REM s more appropriate than FEM in analyzing the relationship between profit and the independent ables is rejected. Therefore, the FEM shall be applied to test the null hypothesis that here is no statistically significant relationship between profitability and independent variables.

Model 4: Pooled OLS, Using 100 Observations

The results in Table 9 show that there is statistically significant impact of the leverage ratios, i.e., the D/E ratio shows positive and significant impact, while the D/A ratio shows negative and significant impact on the profits of the firms. Here, the null hypothesis is rejected and the alternate hypothesis is accepted. However, the ICR shows no significant

Table 9: Pooled OLS Model Output – ROA				
	Coefficient	Std. Error	*t*-Ratio	*p*-value
Const.	12.4587	4.10612	3.0342	0.00312***
CR	1.57745	1.21685	1.2963	0.19803
QR	3.82281	2.45655	1.5562	0.12303
D/E	0.307102	0.093533	3.2834	0.00144***
D/A	–0.979531	0.277183	–3.5339	0.00064***
ICR	–0.0115581	0.0103082	–1.1213	0.26504
R-Squared	0.287819	Mean Dependent Var.		14.11820
Adjusted *R*-Squared	0.249937	SD Dependent Var.		15.30636
SE of Regression	13.25624	Akaike Info Criterion		8.064939
Sum Squared Resid.	16518.43	Schwarz Criterion		8.221249
Log-Likelihood	–397.2470	Hannan-Quinn		8.128201
F-Statistic	7.597799	Durbin-Watson Stat.		1.651605
Prob (*F*-Statistic)	0.000005			

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impact, thus the null hypothesis is accepted. Similarly, liquidity shows insignificant but positive impact on the profits of the firms. QR and CR are positively but insignificantly related to the ROA. Also the R^2 and adjusted R^2 is 0.2878 and 0.2499, respectively. The Durbin-Watson statistic obtained as 1.651, which is close to 2, shows the reliability of model, i.e., there is no autocorrelation. Hence, the independent variables have impact on ROA.

Model 5: Random-Effects (GLS), Using 100 Observations

The results of REM are presented in Table 10.

Table 10: Random Effects Model Output – ROA

	Coefficient	Std. Error	*t*-Ratio	*p*-Value
Const.	12.4587	4.10612	3.0342	0.00312***
CR	1.57745	1.21685	1.2963	0.19803
QR	3.82281	2.45655	1.5562	0.12303
D/E	0.307102	0.093533	3.2834	0.00144***
D/A	–0.979531	0.277183	–3.5339	0.00064***
ICR	–0.0115581	0.0103082	–1.1213	0.26504

Mean Dependent Var.	14.11820	SD Dependent Var.	15.30636
Sum Squared Resid.	16518.43	SE of Regression	13.18629
Log-Likelihood	–397.2470	Akaike Criterion	806.4939
Schwarz Criterion	822.1249	Hannan-Quinn	812.8201

'Within' variance = 170.366

'Between' variance = 7.47856

Theta used for quasi-demeaning = 0

Breusch-Pagan Test:

Null hypothesis: Variance of the unit-specific error = 0

Asymptotic test statistic: Chi-square(1) = 0.149216, With *p*-value = 0.699286

Hausman Test:

Null Hypothesis: GLS estimates are consistent.

Asymptotic test statistic: Chi-square(5) = 11.7603, With *p*-value = 0.0382239

Model 6: FEM, Using 100 Observations

While using the FEM, the following hypotheses are framed:

H_0: *There is no significant relationship between profitability and the independent variables (QR, CR, D/E, D/A, ICR).*

H_1: *There is a significant relationship between profitability and the independent variables (QR, CR, D/E, D/A, ICR).*

The FEM estimation results show that QR and CR have a positive but insignificant relation with profit growth (Table 11). The D/A ratio has a negative relation with profit growth, nevertheless, with a *p*-value of 0.0006, which implies that leverage ratio significantly contributes to profit. The D/E ratio has a positive relationship with profit growth and a *p*-value of 0.0009. Hence, the D/E ratio significantly contributes to profit growth. ICR has a negative relationship with profit growth with a *p*-value of 0.08. Thus, it can be said that ICR does not significantly contribute to profit growth. The analysis also shows a *p*-value of 0.00009 which is lower than 0.05 conventional level of significance. Therefore, we conclude that there is a statistically significant relationship between profitability and all the independent variables. Durbin-Watson statistic is close to 2, which indicates that there is no problem of autocorrelation in the modeled variables. The *F*-statistic is 3.653, and probability of *F*-statistic is <0.05, which indicates that the model as a good fit. As *p*-value is <0.05, the H_0 is rejected and hence there is a significant relationship between profitability and the independent variables (*QR, CR, D/E, D/A, ICR*).

Table 11: Fixed Effects Model Output – ROA

	Coefficient	Std. Error	*t*-Ratio	*p*-Value
Const.	11.7887	4.17066	2.8266	0.00586***
CR	2.02141	1.2594	1.6051	0.11219
QR	3.71386	2.43338	1.5262	0.13067
D/E	0.31859	0.0956333	3.3314	0.00128***
D/A	–0.988663	0.280675	–3.5225	0.00069***
ICR	–0.0184387	0.0105767	–1.7433	0.08489*

Mean Dependent Var.	14.11820	SD Dependent Var.	15.30636
Sum Squared Resi.	14,481.09	SE of Regression	13.05242
R-squared	0.375658	Adjusted *R*-squared	0.272825
F(14, 85)	3.653096	*p*-value (*F*)	0.000095
Log-Likelihood	–390.6653	Akaike Criterion	811.3306
Schwarz Criterion	850.4081	Hannan-Quinn	827.1460
Rho	–0.227717	Durbin-Watson	1.626305

Test for Differing Group Intercepts:
Null hypothesis: The groups have a common intercept.
Test statistic: $F(9, 85) = 1.32874$
With *p*-value = $P(F(9, 85) > 1.32874) = 0.23439$

Conclusion

The study used data of 10 companies of pharmaceutical sector listed on National Stock Exchange for the period 2006-07 to 2015-16. Results reveal that D/A ratio and D/E ratio are negatively correlated with the profits of the firm and also the liquidity ratios. However, ICR

has positive correlation with profits of the firm and also with the liquidity of the firm. It was found while analyzing that the liquidity ratios have positive correlation with the profits of the firm. This negative relationship and insignificance of debt ratio and debt to asset ratio with profits of the sampled companies shows that an increase in debts might lead to a reduction in the assets utilization potential of the company. This means that pharmaceutical companies do not assign much value to the debt financing for the growth of their companies. The ICR of the financial leverage of the quoted pharmaceutical companies shows positive relationship with ROI. It is insignificant and cannot be considered as an important variable affecting the financial performance of pharmaceutical companies. ICR is not used in financing the company's growth. So, there is no significant effect of ICR on profitability of quoted pharmaceutical companies.

The empirical findings of this model can thus be used for future policy and managerial strategy formulation to enhance the profitability of the pharmaceutical companies listed on NSE. The study concludes that liquidity has a statistically significant impact on the profitability and capital structure of the select companies. However, no such significant impact of leverage on profitability and capital structure is evidenced in the study.

In line with the findings of this study, the following recommendations are made: the capital structure proxies show negative impact on firm performance, so it is suggested that the firm's financial managers should wisely use the combination of debt and equity. They should ensure such a combination which will help the firm in achieving its goals. Both QR and CR have positive impact on the financial proxies of the pharmaceutical sector firms. It is therefore opined that, more the firms have cash and are near to cash resources, the better the firms will perform financially. The results of this research showed that the liquidity of the company, which is reflected in the ongoing ability to meet financial obligations, affects the firm's capital structure. The increase of liquidity of the firm leads to decrease of the leverage and vice versa. More often than not, it is rare for any firm to depend solely on equity finance, thus, management seeks other sources of funding. Therefore, managers should employ financial leverage in a way that enhances value for their company and maintains financial stability. The amount of debt finance in the financial mix of the firm should be at the optimal level so as to ensure adequate utilization of the firm's assets. And also the leverage has to be efficiently maintained in terms of returns to owners and total assets.

Limitations: The present study is totally based on secondary data and therefore the quality of the research entirely depends upon the accuracy, reliability and quality of the secondary data source. The study was conducted for a limited period of 10 years from 2006-07 to 2015-16. Further, the study was restricted to analyze the financial position based on limited variables.■

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Analyzing the Impact of Demonetization on the Indian Stock Market: Sectoral Evidence using GARCH Model

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Analyzing the Impact of Demonetization on the Indian Stock Market: Sectoral Evidence using GARCH Model

Abstract

On 8th November 2016, the Government of India demonetized its two highest currency notes in the denomination of Rs. 500 and Rs. 1000. The purpose of demonetization was to tackle the corruption and black money prevailing in the country. The stock market is one of the areas which pools a large amount of funds, the present study is an analytical attempt to examine the impact of demonetization on Indian stock market. For the purpose of the study, various statistical techniques have been used such as Graphical Analysis, Summary Statistics (i.e. Mean, Standard Deviation, Skewness, and Kurtosis), Augmented Dickey-Fuller Test and GARCH Model. The study utilizes the GARCH model to examine the impact of demonetization on Nifty 50 Index and across sectoral indices in India considering a period of 200 days prior and post event date by framing necessary dummy variables. The study found the data to be stationary using the Augmented Dickey-Fuller Test. A significant negative impact of demonetization on stock market returns was evidenced from Nifty 50 Index and sectoral indices such as Nifty Auto Index, Nifty Financial Services Index, Nifty FMCG Index, Nifty IT Index, Nifty Media Index, Nifty Private Bank Index, and Nifty Realty Index. The study found the Nifty Realty Index to be affected most because of demonetization. The results of the study will help the Governing bodies to examine the impact of demonetization and frame necessary policies. The results will also be useful for investors and other market participants for framing investment and trading strategies.

Keywords

Demonetization, Stock Market Returns, Sectoral Indices, GARCH, Demonitisation.

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Exploring the Causal Relationship Between Stock Returns, Volume, and Turnover across Sectoral Indices in Indian Stock Market

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Abstract

The traditional saying "Market Discounts Everything" is applicable to stock returns, trading volume, and turnover as well. The present study is an analytical attempt to examine the causal relationship between stock returns, trading volume, and turnover across 10 sectoral indices of National Stock Exchange (NSE) for the period 2006–2016. To critically examine this relation, the study uses various statistical techniques such as descriptive statistics, correlation analysis, regression analysis, and econometric tests such as Granger causality test and augmented Dickey–Fuller test. The required analyses have been performed using statistical software E-views, SPSS, and Microsoft Excel. The study noticed a weak positive relationship between stock returns and turnover for Nifty Auto Index, Nifty Bank Index, Nifty Financial Services Index, Nifty Media Index, Nifty Metal Index, and Nifty Private Bank Index. The study also found a significant impact of turnover on stock returns in the case of Nifty Auto Index, Nifty Bank Index, Nifty FMCG Index, Nifty Metal Index, and Nifty Pharma Index and a significant impact of volume on stock returns in the case of Nifty Bank Index, Nifty FMCG Index, and Nifty Pharma Index. Augmented Dickey–Fuller test suggests that there exists no unit root in the data ($p < 1$) and the data are stationary. It is evident from the study that the causal relationship between stock returns, turnover, and volume varies across the sectoral indices.

Keywords

Stock returns, trading volume, share turnover, sectoral indices

Executive Summary

The present study aims to explore the association between stock returns, volume, and turnover; examines the impact of volume and turnover on stock returns; and analyses the causal relationship between stock returns, volume, and turnover across sectoral indices. The analyses have been performed across 10 sectoral indices of National Stock Exchange (NSE), that is, Nifty Auto, Nifty Bank, Nifty Financial Services, Nifty FMCG, Nifty IT, Nifty Media, Nifty Metal, Nifty Pharma, Nifty Private Bank, and Nifty Energy. The required data have been extracted from the official website of NSE and the period of study is confined to 10 years, that is, from 1 November 2006 to 31 October 2016. Various statistical techniques such as descriptive statistics, correlation analysis, regression analysis, and econometric tests such as Granger causality test and augmented Dickey–Fuller test have been used to achieve the objectives. All necessary analyses have been carried out using statistical software E-views, SPSS, and Microsoft Excel. The study analysed the association between stock returns, volume, and turnover using Karl Pearson's correlation analysis; examined the impact of volume and turnover on stock returns with the help of regression analysis; investigated the causal relationship between the variables using Granger causality test; and tested for stationarity of the data using augmented Dickey–Fuller test. The study noticed a negative daily average growth in respect of turnover across all the sectoral indices. The augmented Dickey–Fuller test suggested that the data are stationary. The study witnessed a weak positive relationship between stock

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return and turnover for Nifty Auto Index, Nifty Bank Index, Nifty Financial Services Index, Nifty Media Index, Nifty Metal Index, and Nifty Private Bank Index and a weak negative return–volume relationship across Nifty FMCG Index, Nifty IT Index, Nifty Pharma Index, and Nifty Energy. The present study also noticed a significant impact of turnover on stock returns in the case of Nifty Auto Index, Nifty Bank Index, Nifty FMCG Index, Nifty Metal Index, and Nifty Pharma Index. Also, there exists an impact of turnover on stock returns in the case of Nifty Financial Service Index and Nifty Media Index. The results indicated a significant impact of volume on stock returns in the case of Nifty Bank Index, Nifty FMCG Index, Nifty Pharma Index, Nifty Auto Index, Nifty Financial Services Index, and Nifty Energy Index. The study also showed causal evidence of volume Granger causing the returns and turnover Granger causing volume in the case of Nifty Auto Index. Also, for Nifty Financial Services Index, Nifty FMCG Index, and Nifty Energy Index, the study found the evidence of turnover Granger causing the volume. The study reflected a significant evidence of turnover and volume Granger causing the returns in the case of Nifty FMCG Index and Nifty IT Index. It was evident from the study that the causal relationship between stock returns, turnover, and volume varies across the sectoral indices.

Introduction

With the growth of well-regulated stock market in India, companies are now able to raise funds from a large pool of investors. Also, the investors expect better returns and hence consider equity investment or trading better than other investment alternatives like fixed income securities. Equity investment or trading involves high risk. But a wise strategy can accumulate huge wealth over the years. What is essential is knowledge of market, experience, and use of fundamental and technical analysis in picking right stocks. Fundamental analysis is normally used by long-term investors who study in depth about the economy, industry, and company before investing, whereas technical analysis helps day traders, scalpers, or other short-term investors who aim to make quick profits within a short time span. Technical analysis serves this need by identifying trend and thereby helping the traders in identifying the timing of buying and selling the stocks. In taking such a decision, various indicators help investors which include new high/new low price, volume, opening and closing price, turnover, and so on. Therefore, in a country like India where investors are rapidly rising, it becomes vital to know if these indicators play any significant role. The present study will evaluate the relationship of stock returns with volume and turnover and analyse the impact, if any.

In stock market, volume refers to the quantity of securities which are traded for a particular period of time. For a given stock, volume is the number of shares purchased and sold during a particular day. The trading volume can get affected by numerous factors such as any positive or negative news about company, its financial status, changes in ownership, and so on. In technical analysis, therefore, volume is regarded as one of the important indicators. Another crucial element along with volume is that the liquidity of stocks is measured by share turnover. The number of shares traded is divided by the average number of shares to obtain the share turnover. It is an accepted phenomenon that when the share turnover is high, the stocks of the company are assumed to be more liquid. Trading volume and turnover are closely related and used while analysing the liquidity. The present study will examine this association between trading volume and turnover and also examine its relationship with stock returns. As we know, the stock returns also tend to get affected by various factors related to economy and company as well, it becomes evident to know how the returns move as regards to volume and turnover. The association of stock returns and volume has been investigated by various researchers from various countries over past several years. Ning and Wirjanto[1] examined the volume and return association in six East-Asian emerging markets. The study witnessed a significant and asymmetric association between the said variables. In a similar study evidenced from emerging Asian markets, Lin[2] analysed the dynamic relationship between stock returns and volume. The study concluded that volume Granger cause the stock returns. A thorough literature review will provide more insights about the significant contribution of numerous researchers and help us to identify the research gaps.

Review of Literature

Darrat, Rahman, and Zhong[3] examined the relationship between stock return volatility and trading volume of stocks forming the part of Dow Jones Industrial Average Index. The researchers measured volatility using E-GARCH model and five-minute intraday data. The study evidenced no contemporaneous relation between stock return volatility and trading volume; however, lead–lag relations were noticed. Caselani and Eid Jr[4] studied the impact of historical volatility, interest rates, financial gearing, and turnover on the present stock volatility. The researchers also examined the relationship between changes in prices and volume. The results revealed that decrease in stock prices is related with increase in volatility. Also, increase in trading volume tends to have a rise in volatility. De Medeiros and Van Doornik[5] conducted an empirical study to investigate the relationship between stock returns volatility, stock returns, and volume. The researchers utilized the data from Brazilian stock market for the period 2000–2005. Various econometric models and tests such as unit root test, cross-correlation analysis, GARCH, VAR, simultaneous equations regression analysis, and Granger causality test were implemented to prove the results. The study evidenced a dynamic association between trading volume and stock returns. Eastman and Lucey[6] investigated the distribution of trading volumes

and futures markets returns. The researchers used non-parametric tests to conclude that trading volume and daily returns were asymmetric.

The trading volume and price relationship was investigated by Kumar, Singh, and Pandey[7] using vector auto-regression, variance decomposition, Granger causality test, and impulse response function. The results revealed a significant positive and asymmetric association between changes in prices and volume. The study also indicated a bi-directional relationship between stock returns and volume. The variance decomposition results implied a weak dynamic association between volume and returns. Mubarik and Javid[8] explained the relationship between returns, volatility, and trading volume, considering the Pakistani stock market for the period 1998–2008. To test for stationarity, the researchers used Dickey–Fuller test. The association between volume, return, and volatility was analysed using ARCH and GARCH-M models. The study found a feedback relationship between volume and stock returns. But the results indicated a more causal relation from return to volume and not reverse. The findings of the study also suggested the effect of trading volume on stock return. Chiang, Qiao, and Wong[9] evaluated the relationship between trading volume and stock returns volatility using Granger causality test. The study showed that there exists no causal relation from trading volume to stock return volatility, but in reverse direction, such a causation effect exists.

Senger[10] examined the relationship between stock returns and trading volume taking a sample of companies from Nile Stock Exchange. The study indicated that for most of the companies selected, the volume influences the stock returns, and the same is also evidenced vice versa. Pathak[11] analysed the dynamic relationship between stock returns and futures volume using Granger causality test. The researcher conducted study with reference to National Stock Exchange (NSE) for the period July 2009–September 2009. Dickey–Fuller test was implemented to test for stationary of data. The results revealed a weak causal association between stock returns and futures volume. Yamani, Hindy, and Hanafy[12] investigated the association between trading volume and stock return in Egyptian Securities Exchange (ESE). The study examined the power of volume in forecasting the future stock returns. The researchers made use of Granger causality test and GARCH model to prove the results. No significant evidence of the role played by volume in forecasting stock returns was noticed.

Lakshmi and Alagappan[13] evaluated the association of stock returns volatility and trading volume of foreign institutional investment (FII) flows. Using ordinary least square (OLS), the researchers examined the asymmetry and correlation between returns of Nifty and trading volume of FII. The study evidenced the positive association between volume and returns. The researchers also studied the relationship between volume and conditional volatility using GARCH model. But the study did not notice any strong influence of FII values on stock volatility. Sheikh and Riaz[14], using multivariate time series analysis, investigated the relationship between stock returns volatility, trading volume, and overconfidence bias. The researchers performed the analysis taking data from Karachi Stock Exchange. The study noticed a positive relationship between stock returns and volume but did not find any significant positive relationship between overconfidence and returns volatility.

Chen, So, and Chiang[15] examined the association between stock returns and trading volume by presenting a quantile regression model which included the specification of GARCH. The study revealed that under low quantile levels, there exists negative effect of abnormal volume on stock returns. And under high quantile levels, the study evidenced a positive effect. The researchers also indicated in the study that with various quantile levels, the market beta also varied. This reflects that it captures various states of conditions of market. Takeda and Wakao[16] examined the relationship of trading volume and stock returns of Japanese stocks with the Google search intensity. The period of study was from 2008 to 2011, and sample consisted of 189 stocks. The study revealed that the correlations of volume and search intensity were strongly positive and the correlations of returns and search intensity were weakly positive.

Singh[17], using the data from NSE, conducted a study to examine the association between volume, return, and volatilities in stock market. The researcher showed that ARCH models prove to be superior to traditional OLS models. Also, among the volatility models, that is, TARCH, EGARCH, and GARCH, using SIC and AIC criteria, the TARCH model was found to be better fitted. The study witnessed the causality from volatility to trading volume and stock returns to trading volume. Considering the behaviour of DJIA stock portfolio, Gold[18] evaluated some of the opposing viewpoints in finance literature related to trading volume and stock returns, that is, first, association of trading volume with information asymmetry which revealed higher uncertainty in returns; second, viewpoint being trading volume associated with informed trading; and third, viewpoint which supported the efficient market hypotheses (EMH). The analysis of the study clearly supported the asymmetry information that had significant importance with relation to investment strategies.

Lee, Kim, and Kim[19] showed in their study that the trading volume predictability is more related with trading activity that is not represented by past volume. The study found the forecasting power to be negative of trading activity, and it remains for a longer period of time. The study also concluded that the investors' attention and biases in behaviour also help in explaining the trading volume. In a similar study, Liu, Mao, and Seasholes[20] investigated the dynamics of return–volume using CRSP (Center for Research in Security Prices) data on monthly basis. The study documented that the returns forecasting is stronger for companies that show inferior performance before the volume shocks, for the companies which receive news that is mostly positive and the companies which have information asymmetry.

Research Gap

The review of literature indicates that considerable amount of research has been done analysing the relationship between stock returns and volume, but less contribution is noticed evaluating the association of stock returns with volume and turnover together. The present study breaches this gap and critically examines the relationship of stock returns with volume as well as turnover and analyses the impact and causal relationship between the said variables. The association is analysed across 10 sectoral indices of NSE to investigate the significance of such relation across various sectors which is one of a kind. Every sectoral index represents the major companies of that particular sector. Any news pertaining to the sector will have impact on companies forming part of the sector and will be reflected through sectoral index. Thus, the present study considers 10 sectoral indices of NSE which will represent 10 sectors in India.

Objectives of the Study

The following are the objectives of the present study:

1. To investigate the association of stock returns with volume and turnover across sectoral indices.
2. To examine the impact of volume and turnover on stock returns across sectoral indices.
3. To analyse the causal relationship between stock returns, volume, and turnover across sectoral indices.

Research Methodology

The motive behind conducting the present study is to analyse the association of stock returns with volume and turnover across sectoral indices. The present study makes use of one of the most widely used statistical techniques, Karl Pearson's correlation analysis, to analyse such a relation. The technique of Karl Pearson's correlation analysis not only explains the relationship between variables but also helps us to understand whether the relation is significant or not. These analyses have been performed using SPSS software. The required data pertaining to stock returns, volume, and turnover have been extracted from the official website of NSE, India. The period of the study is 10 years, that is, from 1 November 2006 to 31 October 2016. The stock returns of 10 sectoral indices of NSE are computed with the help of daily closing prices using the formula ln(P0/P1), where P0 reflects the current price of the stock and P1 indicates the previous-day price of the stock. Thus, it is evident from the formula that the returns are converted into log form for normality purpose. The data relating to volume and turnover are taken in the form of growth, that is, they are converted into percentage for the purpose of analysis. The required data are sorted and tabulated using Microsoft Office Excel. The impact of volume and turnover on stock returns is examined using OLS model where volume and turnover are assumed to be regressors and stock returns to be dependent variable. It is important to note that the present study did not use multiple regression analysis as the variables volume and turnover are highly correlated with each other which account for multicollinearity. Dropping of the variables is not done considering the significant importance of both the variables, that is, volume and turnover in present study. The study made use of regression analysis using OLS as it provides us with the output of coefficients and *p*-values which are crucial in examining the impact and accounted for structural breaks using Bai–Perron test. The presence of structural breaks can distort the results and hence structural breaks were identified using Bai–Perron test, and the impact thereby examined for various sub-periods. Bai–Perron test was selected considering its efficiency in identifying multiple breaks in the data. The suitability of the model was evaluated using CUSUM test which is based on the cumulative sum of the recursive residuals. Also, the present study attempts to analyse the causal relationship between stock returns, volume, and turnover for which Granger causality test have been implemented. The correlation analysis merely explains the relationship between regressors and dependent variables. Regression analysis examines only the impact of regressors on dependent variables. But both these techniques fail to evaluate which variable causes the other variable. Hence, Granger causality test has been used in the present study. The study also provides summary statistics across the selected variables. The variables analysed under summary statistics include mean, standard deviation, skewness, and kurtosis. Mean is used to measure the performance, that is, to identify highest returns, volume, and turnover among sectoral indices, and standard deviation to signify the amount of variation. The symmetry of data and its flatedness have been interpreted using skewness and kurtosis. To check the stationarity of the data relating to stock returns, volume, and turnover across the selected sectoral indices, augmented Dickey–Fuller test has been used. As the data involve daily returns, considering the high frequency of data, the present study preferred to use augmented Dickey–Fuller test over Dickey–Fuller test or traditional unit root test. The required analysis relating to summary statistics, correlation, examination of impact, causal relationship, and stationarity have been done using statistical software E-views.

The core part of the study involves performing all these mentioned analyses sector-wise. Thus, the relationship of stock returns with volume and turnover, impact of volume and turnover on stock returns, and the causal relationship between stock returns, volume, and turnover are investigated across 10 sectoral indices of NSE. Table 1 enumerates the list of selected sectoral indices for the present study:

Table 1. Details of Sectoral Indices and Market Representation

Sr. No.	Name of the Sectoral Index	Number of Companies Consisting the Index	Market Representation, i.e., Percentage of Free Float Market Capitalization of the Stocks Forming Part of Respective Sector
1	Nifty Auto	15	91.1
2	Nifty Bank	12	93.3
3	Nifty Financial Services	15	75.8
4	Nifty FMCG	15	80.4
5	Nifty IT	10	91.9
6	Nifty Media	15	72.8
7	Nifty Metal	15	87.9
8	Nifty Pharma	10	79.9
9	Nifty Private Bank	10	97.7
10	Nifty Energy	10	83.8

Source: Compiled using data from official website of NSE.

Hypotheses Development

The following hypotheses were developed for the purpose of analysis:

Hypothesis I: H0: There exists no significant impact of volume on stock returns across sectoral indices.

Hypothesis II: H0: There exists no significant impact of turnover on stock returns across sectoral indices.

Hypothesis II: H0: Turnover does not Granger cause stock return.

Hypothesis III: H0: Stock return does not Granger cause turnover.

Hypothesis IV: H0: Volume does not Granger cause stock return.

Hypothesis V: H0: Stock return does not Granger cause volume.

Hypothesis VI: H0: Volume does not Granger cause turnover.

Hypothesis VII: H0: Turnover does not Granger cause volume.

Results and Discussion

Descriptive Statistics

Table 2 portrays the results of summary statistics for the stock returns, turnover, and volume. For the purpose of analysis, the turnover and volume variables are converted into percentages and are expressed as growth. The key constituents of summary statistics examined during the study include mean, standard deviation, skewness, and kurtosis. In statistics, mean is regarded as a performance measure and higher mean value is considered as favourable. For the selected period of study, the mean return of Nifty Private Bank Index has been highest, that is, 0.07 per cent, followed by Nifty Auto Index, Nifty FMCG Index, and Nifty Pharma Index being 0.06 per cent, 0.06 per cent, and 0.06 per cent respectively. This signifies the growing bullish behaviour of investors towards private bank stock for the selected period. It is evident that the private banks have been able to attract large pool of customers, thereby generating investors' faith in the stocks. The performance in terms of returns has been least for Nifty Energy Index (0.02%) and Nifty Metal Index (0.02%). The daily average

Table 2. Summary Statistic Results of Stock Returns, Volume and Turnover

	Returns (%)				Turnover (%)				Volume (%)			
Indices	Mean	Std Dev.	Skewness	Kurtosis	Mean	Std Dev.	Skewness	Kurtosis	Mean	Std Dev.	Skewness	Kurtosis
Nifty Auto	0.06	1.47	−0.10	9.09	−0.04	43.98	−0.40	17.82	−0.01	43.19	−0.12	14.86
Nifty Bank	0.05	2.01	0.11	7.94	−0.01	43.22	0.10	29.23	−0.01	43.53	0.02	29.64
Nifty Financial Services	0.05	1.96	0.11	8.80	−0.16	45.36	−0.51	18.66	−0.13	44.06	−0.45	18.34
Nifty FMCG	0.06	1.28	−0.21	6.74	−0.09	46.71	0.36	20.36	−0.09	48.84	0.39	19.18
Nifty IT	0.03	1.70	−0.14	8.41	−0.06	47.12	0.23	22.18	−0.07	45.55	0.11	24.06
Nifty Media	0.03	1.75	−0.21	7.88	−0.08	50.49	−0.03	8.89	−0.07	46.19	0.13	6.26
Nifty Metal	0.02	2.26	0.58	15.15	−0.14	41.71	−0.08	16.23	−0.10	41.56	−0.06	15.17
Nifty Pharma	0.06	1.23	−0.43	10.22	−0.003	47.43	0.32	23.35	−0.04	49.05	0.36	23.63
Nifty Private Bank	0.07	2.07	0	8.74	−0.71	44.71	−0.52	8.16	−0.53	42.55	−0.22	5.98
Nifty Energy	0.02	1.65	−0.25	11.97	−0.09	43.76	0.12	22.51	−0.06	44.36	0.04	22.17

Source: Compiled using E-views and MS Excel.

returns for Nifty Bank Index, Nifty Financial Services Index, Nifty IT Index, and Nifty Media Index were noticed to be 0.05 per cent, 0.05 per cent, 0.03 per cent, and 0.03 per cent respectively. The study noticed a negative daily average growth in respect of turnover across all the sectoral indices. The negative daily growth was found to be lowest for Nifty Pharma Index, that is, –0.003 per cent, and highest for Nifty Private Bank Index, that is, –0.71 per cent. A similar negative trend has been noticed in the case of volume where negative daily growth was lowest for Nifty Auto Index and Nifty Bank Index, that is, –0.01 per cent and –0.01 per cent respectively, and highest for Nifty Private Bank Index, that is, –0.53 per cent. The present study witnessed an interesting aspect, that is, the daily average returns are higher for Nifty Private Bank Index as compared to the other sectoral indices, but its turnover and volume are also showing higher negative growth as compared to other sectoral indices. The standard deviation is used to reflect the variation in data. Statistically accepted theory is that the lower the variations are the better it is. In respect of returns, the variations have been low for Nifty Pharma Index, that is, 1.23, and highest for Nifty Metal Index. In the case of turnover and volume, the variation was found to be least in the case of Nifty Metal Index, that is, 41.71 and 41.56, as compared to the other sectoral indices. A near-to-perfect symmetry is noticed for Nifty Private Bank Index; positive skewness in the case of Nifty Bank Index, Nifty Financial Services Index, and Nifty Metal Index; and negative skewness in the case of Nifty Auto Index, Nifty Energy Index, Nifty FMCG Index, Nifty IT Index, Nifty Media Index, and Nifty Pharma Index. The trend in skewness relating to turnover and volume has been almost similar. The data across all the sectoral indices have been leptokurtic as the kurtosis are found to be more than 3. More clear evidence about the relationship between stock returns, volume, and turnover will be indicated using correlation analysis, regression analysis, and Granger causality test.

Augmented Dickey–Fuller Test

The present study also tests for stationarity of data for the variables, that is, stock returns, turnover, and volume, across sectoral indices. For true results from the analysis, the data selected for the period of study need to be stationary, that is, their mean, variance and co-variance should be stable over a period of time. If the data are non-stationary, it reflects the presence of unit root ($p = 1$) in the data. The present study uses augmented Dickey–Fuller test to examine if there is presence of unit root in the data. For this purpose, the following hypothesis was developed.

H0: There exists unit root in the data.

The output in Table 3 is obtained using statistical software E-views and sorted using MS Excel. The results across sectoral indices for the selected variables, that is, stock returns, turnover, and volume, show the p-value close to 0. This suggests that across all the indices, the null hypothesis is rejected at 1 per cent level of significance. Thus, there exists no unit root in the data ($p < 1$), and the data is stationary.

Correlation Result

The correlation result between stock returns, volume, and turnover across sectoral indices is reflected in Table 4. The study noticed a weak positive relationship between stock return and turnover for Nifty Auto Index, Nifty Bank Index, Nifty Financial Services Index, Nifty Media Index, Nifty Metal Index, and Nifty Private Bank Index, that is, 0.03, 0.01, 0.03, 0.10, 0.08, and 0.02 respectively, and a weak negative return–volume relationship across Nifty FMCG Index, Nifty IT Index, Nifty Pharma Index, and Nifty Energy Index, that is, –0.01, –0.03, –0.7, and –0.04 respectively. A similar trend has been noticed while analysing the relationship between stock return and volume, where weak positive relationship was found for Nifty Financial Services Index, Nifty Media Index, Nifty Metal

Table 3. Stationarity Results of Stock Returns, Volume and Turnover

		Return (%)		Turnover (%)		Volume (%)	
	Indices	*t*-statistic	*p*-value	*t*-statistic	*p*-value	*t*-statistic	*p*-value
Augmented Dickey–Fuller test statistic	Nifty Auto	–43.0896	0	–16.6718	0	–19.911	0
	Nifty Bank	–44.0698	0.0001	–22.274	0	–22.6926	0
	Nifty Financial Services	–44.1522	0.0001	–16.2132	0	–15.9242	0
	Nifty FMCG	–48.7336	0.0001	–24.6473	0	–24.622	0
	Nifty IT	–36.8355	0	–27.8547	0	–26.7226	0
	Nifty Media	–45.4319	0.0001	–19.2104	0	–19.1425	0
	Nifty Metal	–45.1052	0.0001	–22.5094	0	–22.9076	0
	Nifty Pharma	–47.7871	0.0001	–25.6334	0	–25.6738	0
	Nifty Private Bank	–44.2151	0.0001	–12.9064	0	–13.0965	0
	Nifty Energy	–47.1101	0.0001	–25.0333	0	–25.1407	0

Source: Compiled using E-views and MS Excel.

Notes: Test critical values are –3.43, –2.86, and –2.56 at 1%, 5%, and 10% levels of significance.

Table 4. Results Showing Relationship of Stock Returns with Volume and Turnover

Indices			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Auto	Return (%)	Pearson correlation	1	−0.003	Return (%)	Pearson correlation	1	0.033
		Sig. (2-tailed)		0.923		Sig. (2-tailed)		0.227
	Volume (%)	Pearson correlation	−0.003	1	Turnover (%)	Pearson correlation	0.033	1
		Sig. (2-tailed)	0.923			Sig. (2-tailed)	0.227	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Bank	Return (%)	Pearson correlation	1	−0.006	Return (%)	Pearson correlation	1	0.016
		Sig. (2-tailed)		0.770		Sig. (2-tailed)		0.423
	Volume (%)	Pearson correlation	−0.006	1	Turnover (%)	Pearson correlation	0.016	1
		Sig. (2-tailed)	0.770			Sig. (2-tailed)	0.423	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Financial Services	Return (%)	Pearson correlation	1	0.017	Return (%)	Pearson correlation	1	0.033
		Sig. (2-tailed)		0.536		Sig. (2-tailed)		0.242
	Volume (%)	Pearson correlation	0.017	1	Turnover (%)	Pearson correlation	0.033	1
		Sig. (2-tailed)	0.536			Sig. (2-tailed)	0.242	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty FMCG	Return (%)	Pearson correlation	1	−0.034	Return (%)	Pearson correlation	1	−0.012
		Sig. (2-tailed)		0.094		Sig. (2-tailed)		0.559
		N	2,474	2,474		N	2,474	2,474
	Volume (%)	Pearson correlation	−0.034	1	Turnover (%)	Pearson correlation	−0.012	1
		Sig. (2-tailed)	0.094			Sig. (2-tailed)	0.559	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty IT	Return (%)	Pearson correlation	1	−0.039	Return (%)	Pearson correlation	1	−0.037
		Sig. (2-tailed)		0.050		Sig. (2-tailed)		0.063
	Volume (%)	Pearson correlation	−0.039	1	Turnover (%)	Pearson correlation	−0.037	1
		Sig. (2-tailed)	0.050			Sig. (2-tailed)	0.063	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Media	Return (%)	Pearson correlation	1	0.084	Return (%)	Pearson correlation	1	0.102
		Sig. (2-tailed)		0.002		Sig. (2-tailed)		0
	Volume (%)	Pearson correlation	0.084	1	Turnover (%)	Pearson correlation	0.102	1
		Sig. (2-tailed)	0.002			Sig. (2-tailed)	0	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Metal	Return (%)	Pearson correlation	1	0.069	Return (%)	Pearson correlation	1	0.086
		Sig. (2-tailed)		0.012		Sig. (2-tailed)		0.002
	Volume (%)	Pearson correlation	0.069	1	Turnover (%)	Pearson correlation	0.086	1
		Sig. (2-tailed)	0.012			Sig. (2-tailed)	0.002	
			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Pharma	Return (%)	Pearson correlation	1	−0.102	Return (%)	Pearson correlation	1	−0.077
		Sig. (2-tailed)		0		Sig. (2-tailed)		0
	Volume (%)	Pearson correlation	−0.102	1	Turnover (%)	Pearson correlation	−0.077	1
		Sig. (2-tailed)	0			Sig. (2-tailed)	0	

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Indices			Return (%)	Volume (%)			Return (%)	Turnover (%)
Nifty Private Bank	Return (%)	Pearson correlation	1	0.004	Return (%)	Pearson correlation	1	0.026
		Sig. (2-tailed)		0.957		Sig. (2-tailed)		0.718
	Volume (%)	Pearson correlation	0.004	1	Turnover (%)	Pearson correlation	0.026	1
		Sig. (2-tailed)	0.957			Sig. (2-tailed)	0.718	
Nifty Energy	Return (%)	Pearson correlation	1	−0.058	Return (%)	Pearson correlation	1	−0.046
		Sig. (2-tailed)		0.004		Sig. (2-tailed)		0.022
	Volume (%)	Pearson correlation	−0.058	1	Turnover (%)	Pearson correlation	−0.046	1
		Sig. (2-tailed)	0.004			Sig. (2-tailed)	0.022	

Source: Compiled using SPSS.

Index, and Nifty Private Bank Index and a weak negative association for Nifty Auto Index, Nifty Bank Index, Nifty FMCG Index, Nifty IT Index, Nifty Pharma Index, and Nifty Energy Index. The study evidenced low and insignificant relationship across all the sectoral indices which suggest that although volume and turnover are very useful indicators in technical analysis, but its association with daily stock returns is limited.

Regression Result

The regression analyses have been performed using OLS model to examine the impact of turnover and volume on stock returns across sectoral indices. Residual diagnostic tests were performed before obtaining the regression output. As the period of the study involves 2008 financial crises, for the specified period study noticed heteroscedasticity and autocorrelation. Also, the data were found to be not normally distributed. Omitting the impact of financial crises, the study fulfils the assumptions of classical linear regression model. The study accounted for the presence of structural breaks in the data and hence analysed the impact for various sub-periods. The structural breaks were identified using Bai–Perron test. The structural breaks varied across sectoral indices. As the purpose of the present study is to analyse the impact across 10 sectoral indices, accordingly, volume is regressed over returns, and turnover is regressed over returns separately. The study did not use multiple regression analysis as the variables volume and turnover are highly correlated with each other which account for multicollinearity. Dropping of the variables is not done considering the significant importance of both the variables, that is, volume and turnover in the present study. The output as reflected in Tables 5 and 6 is obtained using statistical software E-views and sorted using MS Excel for simplification.

The sampling errors in the data are reflected by the standard error. As can be noticed from the output, the standard errors for the selected variables across all the sectoral indices have been close to 0, and hence it is favourable for the study. The present study while analysing the impact of turnover on stock returns and volume on stock returns, the appropriate level of significance (1%, 5%, 10%), is considered based on the *p*-value.

The present study noticed a significant impact of turnover on stock returns in the case of Nifty Bank Index, Nifty Media Index, and Nifty Metal Index. The study also noticed an impact before structural break in the case of Nifty FMCG Index, Nifty IT Index, Nifty Pharma Index, and Nifty Energy Index. Low impact was evidenced from the period 2009–2010 as most of these sectors were gradually recovering from the financial crises. However, impact of turnover on stock returns was not found in the case of Nifty Auto Index, Nifty Financial Services Index, and Nifty Private Bank Index. Also, the impact of volume on stock returns was not evidenced. This is due to the fact that the companies forming part of these sectoral indices have been able to generate large volumes consistently, and the investment decision of investors have been motivated more by other factors such as future growth prospects of these companies, change in management, government policies towards the sector, and other company-related factors, rather than only volumes or turnover. The study witnessed a significant impact of volume on stock returns in the case of all other sectoral indices, but the impact seemed to be reduced from the period 2009–2010 as reflected in Tables 5 and 6.

The present study used the CUSUM test which is based on the cumulative sum of the recursive residuals to evaluate the stability of the linear regression models. The CUSUM test plots the cumulative sum together with 5 per cent critical lines. The model is said to be instable if the cumulative sum goes outside the area between two critical lines. The present study noticed all the cumulative sums within the 5 per cent critical lines for regression models of volume and stock returns as well as for regression models of turnover and stock returns across sectoral indices. The CUSUM test results are exhibited in the Annexure.

Granger Causality Test

The present study aims to analyse the causal relationship between stock returns, turnover, and volume. To achieve this objective, the necessary analyses have been performed using Granger causality test which is depicted in Table 7.

Table 5. Bai-Perron Test Results Indicating Structural Breaks

	Variable	Coefficient	Std Error	*t*-statistic	*p*-value
Nifty Auto	Volume (1 November 2006–15 September 2014)	0.001672	0.000919	1.820012	0.069*
	Volume (16 September 2014–30 October 2016)	–0.004716	0.001497	–3.151004	0.001***
Nifty Bank	Volume (1 November 2006–18 May 2009)	–0.007284	0.002011	–3.620558	0.000***
	Volume (19 May 2009–30 October 2016)	0.001620	0.001045	1.549976	0.121
Nifty Financial Services	Volume (1 November 2006–30 October 2016)	0.000558	0.000907	0.614965	0.538
Nifty FMCG	Volume (1 November 2006–20 May 2009)	–0.003671	0.001024	–3.585654	0.000***
	Volume (21 May 2009–30 October 2016)	0.00012	0.000615	0.194929	0.845
Nifty IT	Volume (1 November 2006–28 May 2009)	–0.005201	0.001283	–4.053985	0.000***
	Volume (29 May 2009–30 October 2016)	0.000444	0.000918	0.483468	0.628
Nifty Media	Volume (1 November 2006–30 October 2016)	0.00253	0.000834	3.032915	0.002***
Nifty Metal	Volume (1 November 2006–30 October 2016)	0.002842	0.001132	2.510523	0.012**
Nifty Pharma	Volume (1 November 2006–22 May 2009)	–0.006985	0.000885	–7.888734	0***
	Volume (25 May 2009–9 April 2015)	0.000633	0.000675	0.937682	0.348
	Volume (10 April 2015–30 October 2016)	–0.004821	0.001293	–3.728171	0.000***
Nifty Private Bank	Volume (1 November 2006–1 March 2016)	–0.014337	0.00522	–2.746636	0.006***
	Volume (2 March 2016–30 October 2016)	0.002589	0.002175	1.190397	0.235
Nifty Energy	Volume (1/ November 2006–18 May 2009)	–0.010696	0.001718	–6.225219	0***
	Volume (19 May 2009–30 October 2016)	–0.000199	0.00082	–0.242186	0.808

Source: Compiled using E-views and MS Excel.

Notes: 1. *10% level of significance, **5% level of significance, ***1% level of significance.
2. Least Squares with Breaks (Y = Returns, X = Volume).
3. Break type: Bai–Perron tests of L + 1 vs L sequentially determined breaks.
4. Break selection: Trimming 0.15, Max. breaks 5, Sig. level 0.05.

Table 6. Least Squares with Breaks (Y = Returns, X = Turnover)

	Variable	Coefficient	Std Error	*t*-statistic	*p*-value
Nifty Auto	Turnover (1 November 2006–30 October 2016)	0.000929	0.000772	1.203936	0.228
Nifty Bank	Turnover (1 November 2006–18 May 2009)	–0.004862	0.002098	–2.318014	0.020**
	Turnover (19 May 2009–30 October 2016)	0.002143	0.001045	2.050159	0.040**
Nifty Financial Services	Turnover (1 November 2006–30 October 2016)	0.001027	0.00088	1.166632	0.243
Nifty FMCG	Turnover (1 November 2006–9 September 2008)	0.005117	0.001492	3.429243	0.000***
	Turnover (10 October 2008–22 March 2010)	–0.004786	0.001083	–4.421172	0***
	Turnover (23 March 2010–30 October 2016)	0.000353	0.000705	0.500351	0.616

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	Variable	Coefficient	Std Error	t-statistic	p-value
Nifty IT	Turnover (1 November 2006–29 May 2009)	–0.005263	0.001399	–3.76265	0.000***
	Turnover (1 June 2009–30 October 2016)	7.58E-05	0.000843	0.089927	0.928
Nifty Media	Turnover (1 November 2006–30 October 2016)	0.002816	0.000762	3.696947	0.000***
Nifty Metal	Turnover (1 November 2006–30 October 2016)	0.003507	0.001127	3.113238	0.001***
Nifty Pharma	Turnover (1 November 2006–22 May 2009)	–0.006577	0.000948	–6.940201	0***
	Turnover (25 May 2009–9 April 2015)	0.000938	0.000687	1.365043	0.172
	Turnover (10 April 2015–30 October 2016)	–0.004107	0.001358	–3.02447	0.002***
Nifty Private Bank	Turnover (1 November 2006–30 October 2016)	0.000674	0.001947	0.346107	0.729
Nifty Energy	Turnover (1 November 2006–18 May 2009)	–0.012202	0.001874	–6.511995	0***
	Turnover (19 May 2009–30 October 2016)	0.000261	0.000818	0.318922	0.749

Source: Compiled using E-views and MS Excel.
Notes: 1. *10% level of significance, **5% level of significance, ***1% level of significance.
2. Break type: Bai–Perron tests of L + 1 vs L sequentially determined breaks.
3. Break selection: Trimming 0.15, Max. breaks 5, Sig. level 0.05.

Table 7. Results Showing Causation Effect between Stock Returns, Volume and Turnover

		Null Hypothesis					
		Turnover (%) does not Granger cause return (%)	Return (%) does not Granger cause turnover (%)	Volume (%) does not Granger cause return (%)	Return (%) does not Granger cause volume (%)	Volume (%) does not Granger cause turnover (%)	Turnover (%) does not Granger cause volume (%)
Nifty Auto	F-statistic	2.268	1.673	2.852	0.986	0.588	3.056
	P-value	0.104	0.188	0.0581*	0.374	0.556	0.0474**
Nifty Bank	F-statistic	0.217	1.148	0.177	0.231	0.098	1.606
	P-value	0.805	0.317	0.838	0.794	0.907	0.201
Nifty Finance Services	F-statistic	0.579	0.840	0.436	0.512	1.235	3.152
	P-value	0.561	0.432	0.647	0.600	0.291	0.0431**
Nifty FMCG	F-statistic	3.301	0.766	2.372	0.393	0.283	2.447
	P-value	0.037**	0.465	0.0935*	0.675	0.753	0.0868*
Nifty IT	F-statistic	6.616	1.295	6.667	1.101	3.369	1.521
	P-value	0.0014***	0.274	0.0013***	0.333	0.0346**	0.219
Nifty Media	F-statistic	0.760	0.689	0.092	1.044	0.396	1.446
	P-value	0.468	0.502	0.912	0.352	0.673	0.236
Nifty Metal	F-statistic	1.212	0.484	0.627	1.620	0.863	2.093
	P-value	0.298	0.616	0.535	0.198	0.422	0.124
Nifty Pharma	F-statistic	2.275	3.173	2.727	0.910	0.305	0.538
	P-value	0.103	0.0421**	0.0656*	0.403	0.737	0.584
Nifty Private Bank	F-statistic	0.093	1.767	0.150	2.286	0.482	0.352
	P-value	0.911	0.174	0.861	0.104	0.618	0.704
Nifty Energy	F-statistic	1.087	7.654	1.146	4.058	0.076	4.488
	P-value	0.337	0.0005***	0.318	0.0174**	0.927	0.0113**

Source: Compiled using E-views and MS Excel.
Notes: *10% level of significance, **5% level of significance, ***1% level of significance.

The study noticed the causal evidence of volume granger causing the returns at 10 per cent level of significance and turnover Granger causing volume at 5 per cent level of significance for Nifty Auto Index. Also, for Nifty Financial Services Index, Nifty FMCG Index, and Nifty Energy Index, the study found the evidence of turnover Granger causing the volume. The study found a significant evidence of turnover and volume Granger causing the returns in the case of Nifty FMCG Index and Nifty IT Index. Nifty IT Index also indicates the causation from volume to turnover. However, in the case of Nifty Pharma Index and Nifty Energy Index, the causation from return to turnover is witnessed. Thus, it is evident from the study that the causal relationship between stock returns, turnover, and volume varies across the sectoral indices.

Conclusion

The stock returns tend to get affected by various factors related to economy and company as well. Also, trading volume can get influenced by numerous factors such as any positive/negative news about company, its financial status, changes in ownership, and so on. Thus, it becomes evident to know how the returns move as regards to volume and turnover. The motive behind conducting the present study was to analyse the association between stock returns, volume, and turnover across sectoral indices. The impact of volume and turnover on stock returns was examined using OLS model where volume and turnover were assumed to be regressors and stock returns to be dependent variable. The present study attempted to analyse the causal relationship between stock returns, volume, and turnover for which Granger causality test had been implemented. To check the stationarity of the data relating to stock returns, volume, and turnover across the selected sectoral indices, augmented Dickey–Fuller test had been used. The mean of Nifty Private Bank Index was highest, that is, 0.07 per cent, followed by Nifty Auto Index, Nifty FMCG Index, and Nifty Pharma Index being 0.06 per cent, 0.06 per cent, and 0.06 per cent respectively. The performance in terms of returns had been least for Nifty Energy Index (0.02%) and Nifty Metal Index (0.02%). The study noticed a negative daily average growth in respect of turnover across all the sectoral indices. The augmented Dickey–Fuller test suggested that across all the indices, the null hypothesis was rejected at 1 per cent level of significance, and thus there exists no unit root in the data ($p < 1$) and the data is found to be stationary. The study witnessed a weak positive relationship between stock return and turnover for Nifty Auto Index, Nifty Bank Index, Nifty Financial Services Index, Nifty Media Index, Nifty Metal Index, and Nifty Private Bank Index, that is, 0.03, 0.01, 0.03, 0.10, 0.08, and 0.02 respectively, and a weak negative return–volume relationship across Nifty FMCG Index, Nifty IT Index, Nifty Pharma Index, and Nifty Energy Index, that is, –0.01, –0.03, –0.7, and –0.04 respectively. The present study noticed a significant impact of turnover on stock returns in the case of Nifty Bank Index, Nifty Media Index, and Nifty Metal Index. The study also witnessed a significant impact of volume on stock returns in the case of all other sectoral indices, but the impact seemed to be reduced from the period 2009–2010. Low impact was evidenced from the period 2009–2010 as most of these sectors were gradually recovering from the financial crises. The study used the CUSUM test and found the regression models stable.

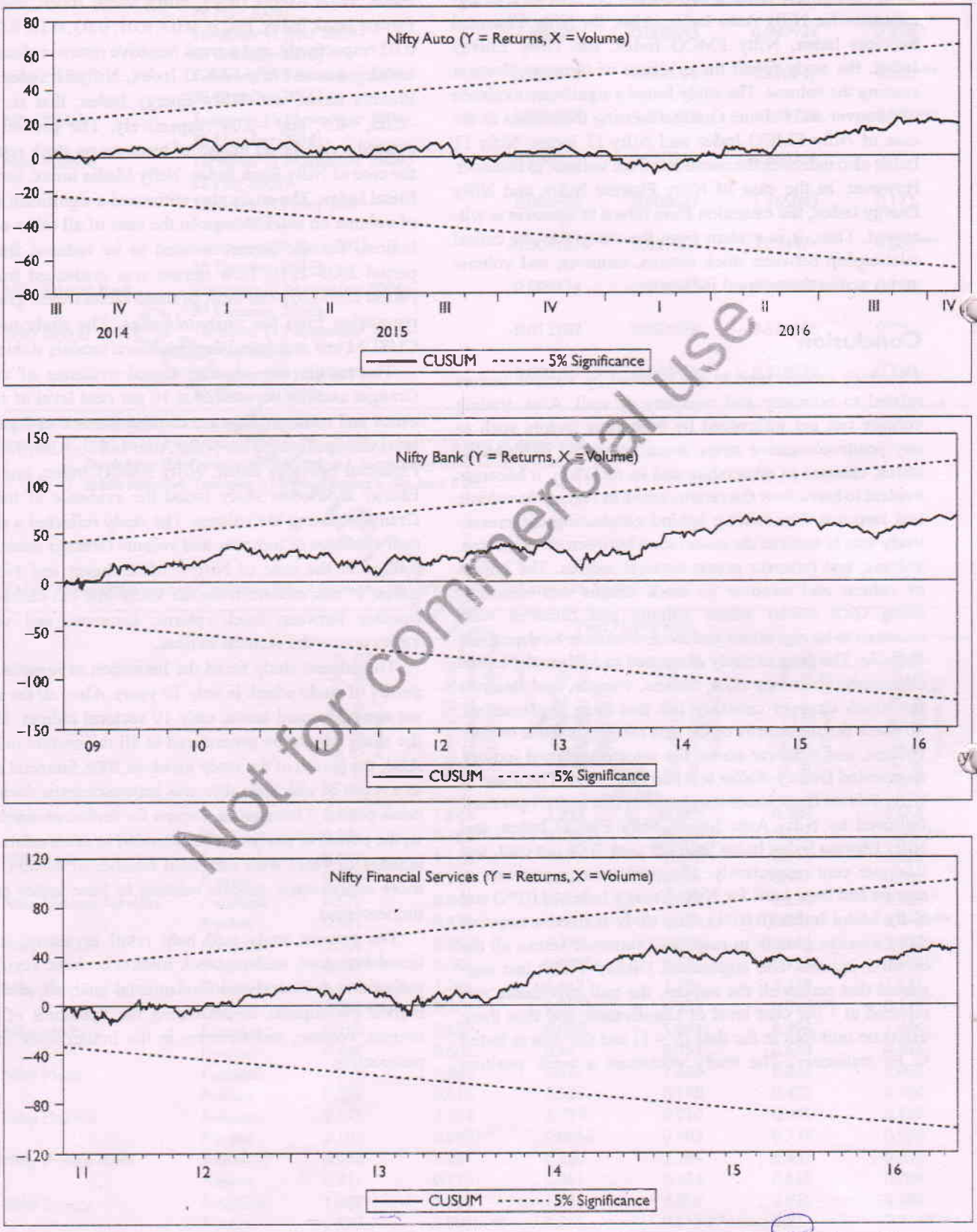
The results also showed causal evidence of volume Granger causing the returns at 10 per cent level of significance and turnover Granger causing volume at 5 per cent level of significance for Nifty Auto Index. Also, for Nifty Financial Services Index, Nifty FMCG Index, and Nifty Energy Index, the study found the evidence of turnover Granger causing the volume. The study reflected a significant evidence of turnover and volume Granger causing the returns in the case of Nifty FMCG Index and Nifty IT Index. It was evident from the study that the causal relationship between stock returns, turnover, and volume varies across the sectoral indices.

The present study faced the limitation as regards to the period of study which is only 10 years. Also, all the analyses are performed across only 10 sectoral indices. Hence, the study cannot be generalized to all the sectors in India. Also, the period of the study involves 2008 financial crises, as a result of which the data was heteroscedastic during the crisis period. There exists a scope for further research, that is, the period of study can be extended to accumulate more number of years with increased number of sectors. Also, more econometric models relating to time series can be implemented.

The present study will help retail investors, institutional investors, traders, stock market brokers, regulatory authorities, technical and fundamental analysts, and other market participants in evaluating the dynamics of stock returns, volume, and turnover in the Indian stock market perspective.

Annexure

Figure A1. Results of CUSUM Test (Y = Returns, X = Volume)



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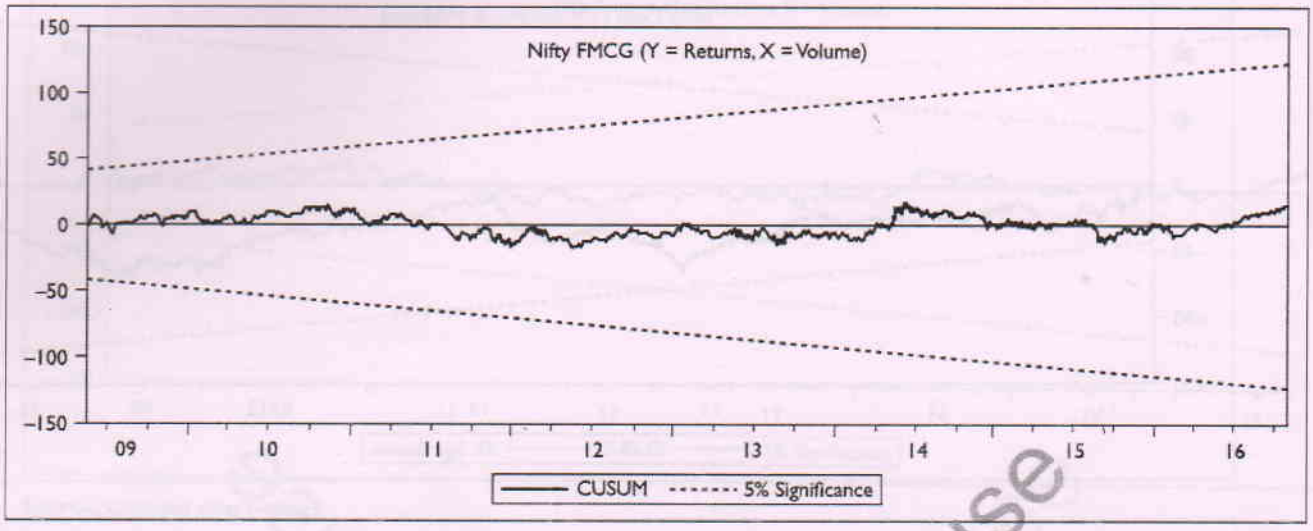

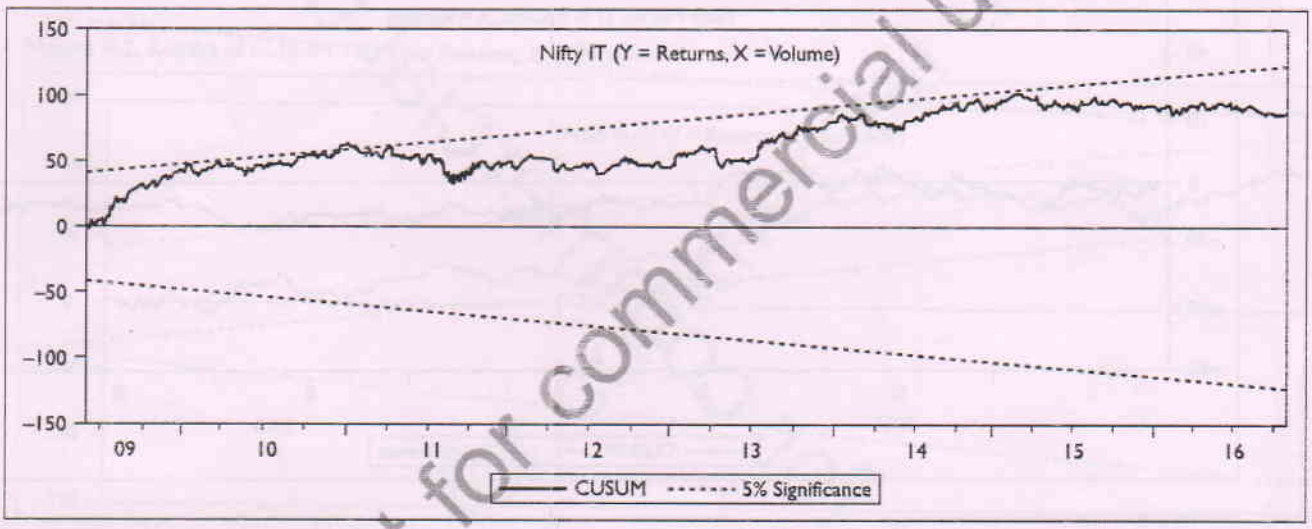

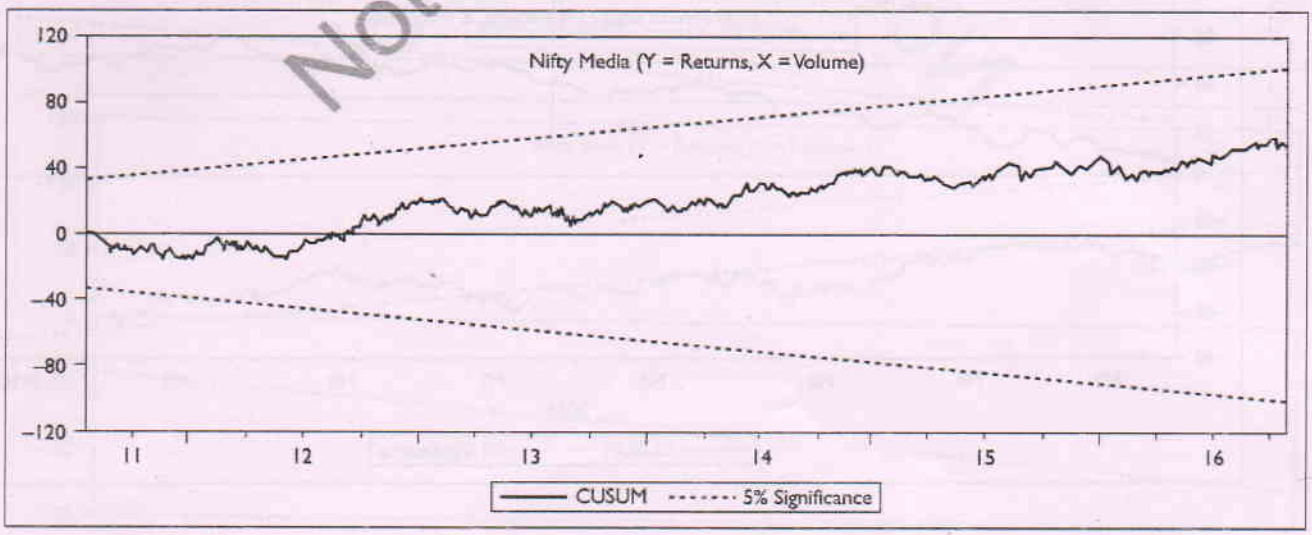

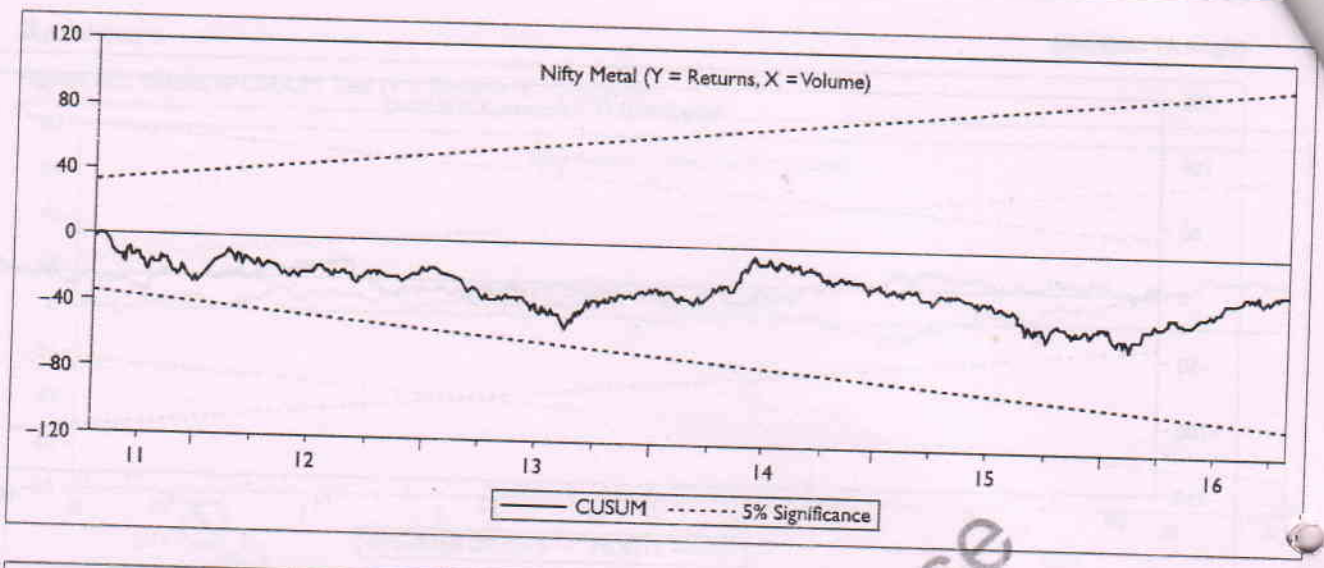

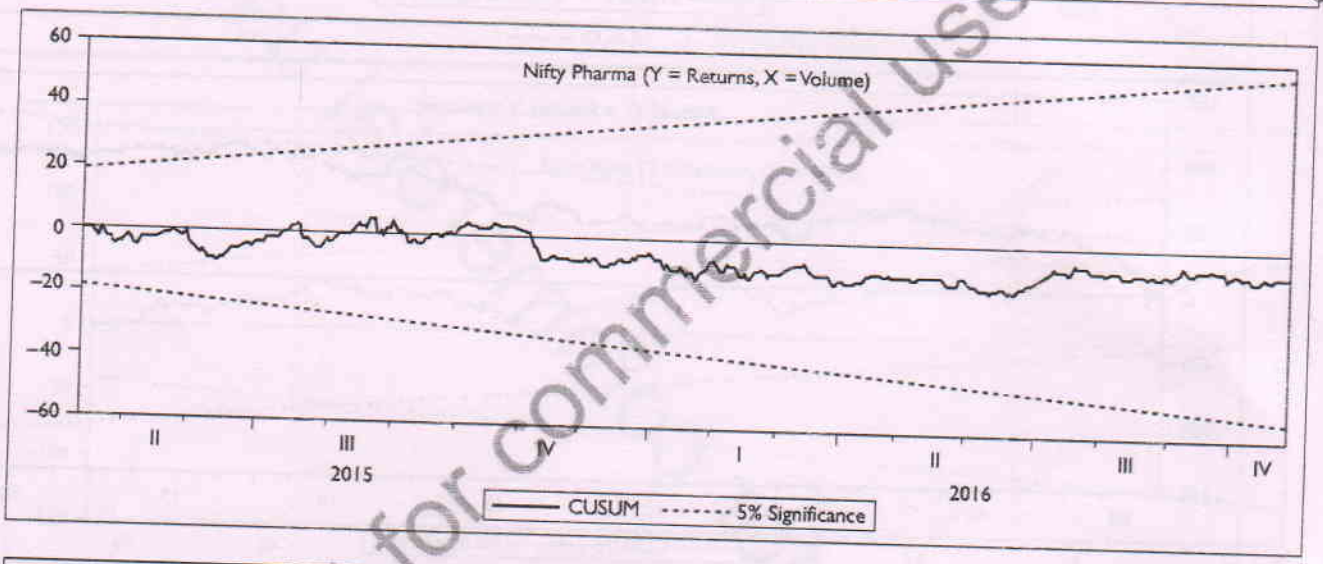

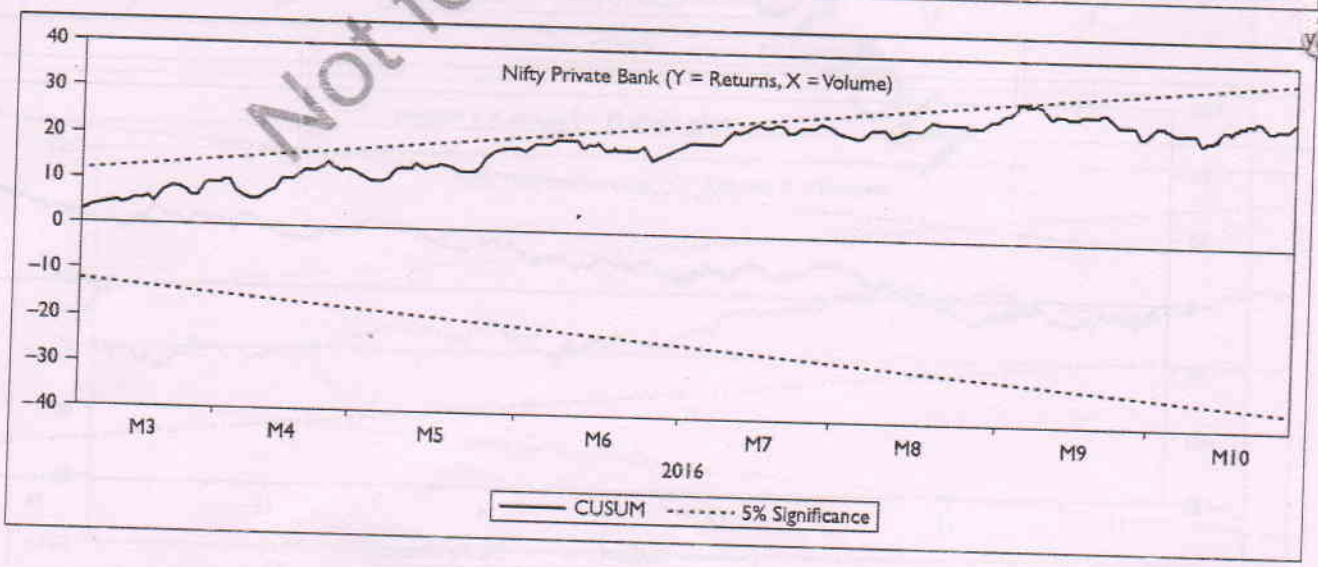

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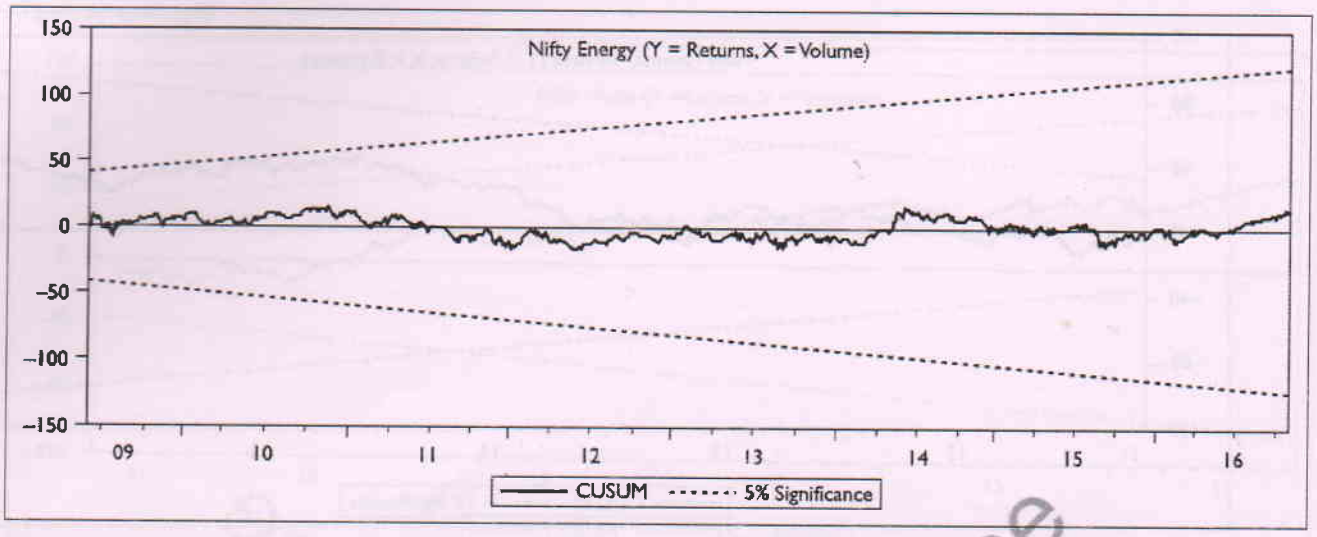
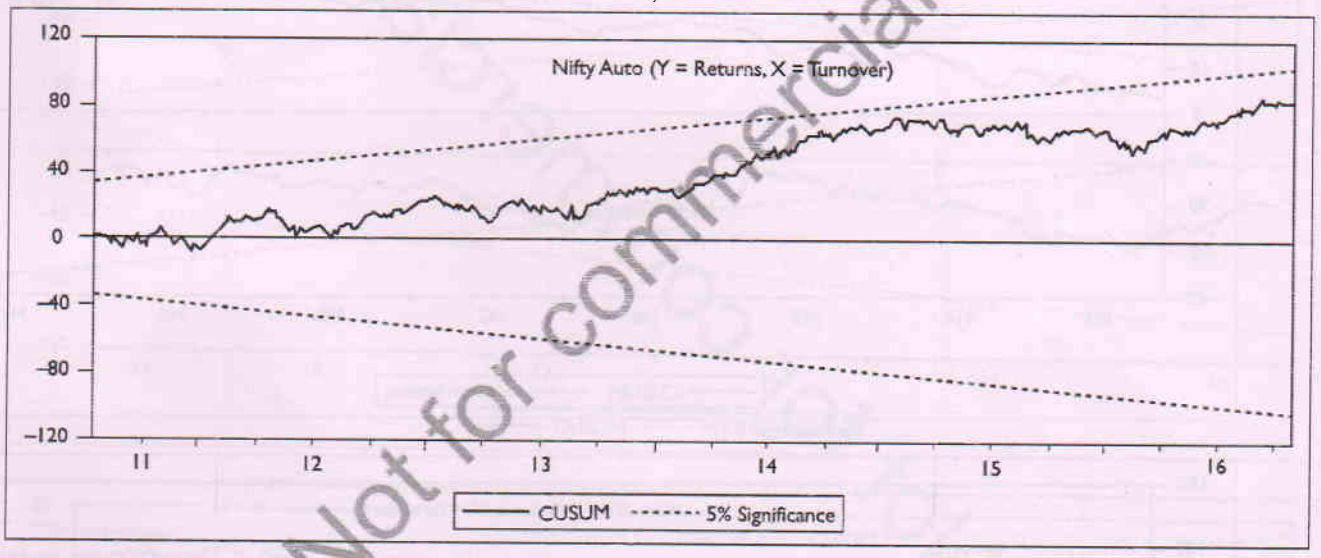
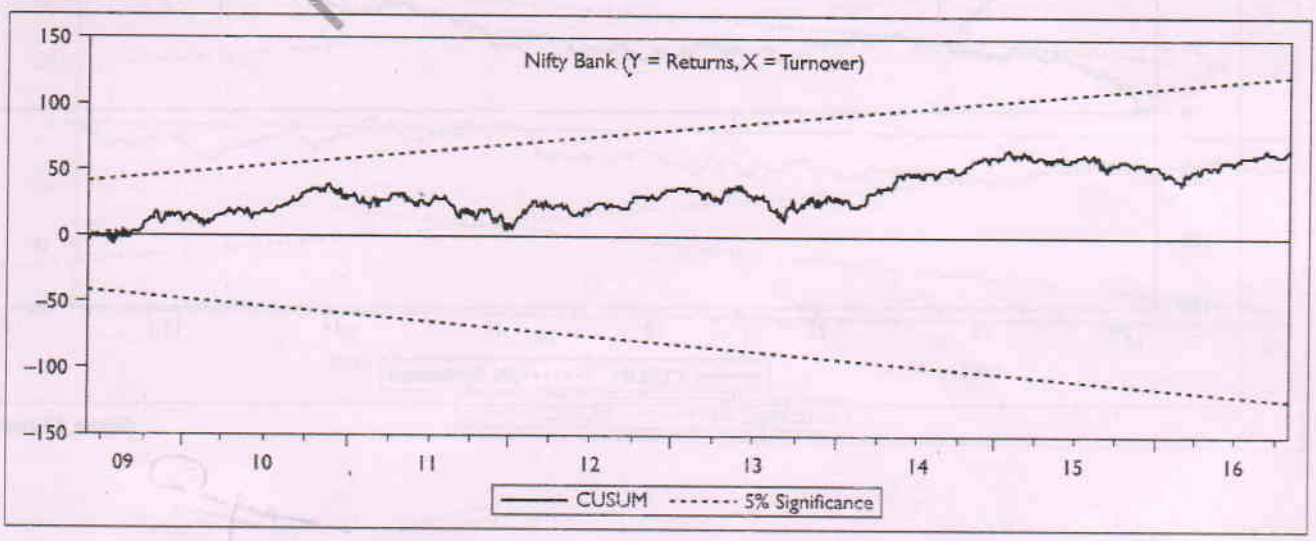
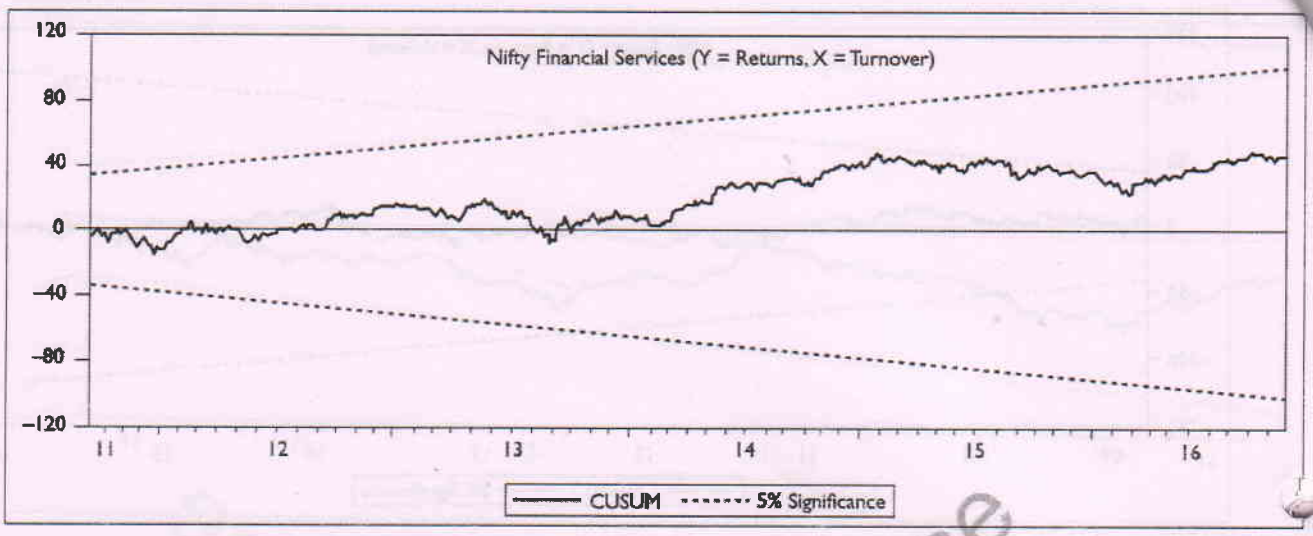


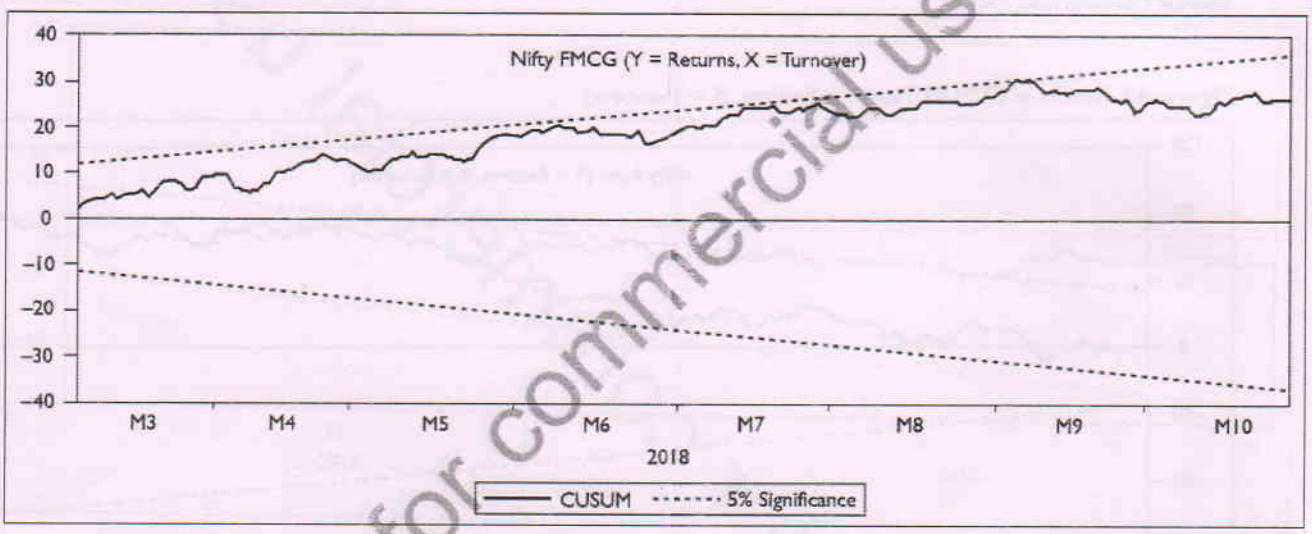
Source: Compiled using E-views.

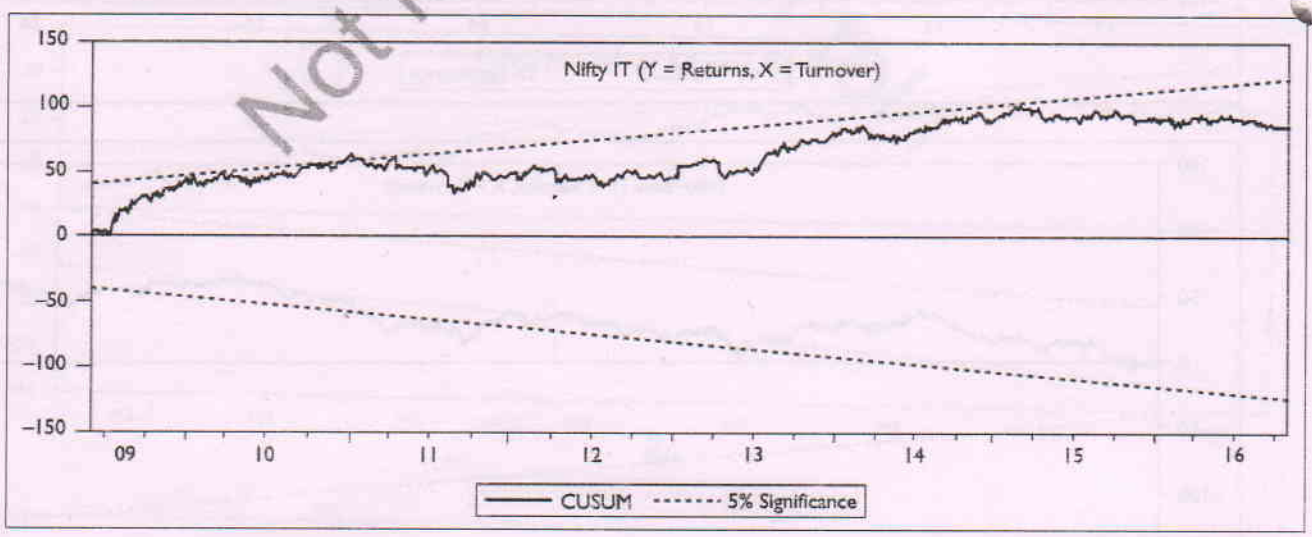
Figure A2. Results of CUSUM Test (Y = Returns, X = Turnover)











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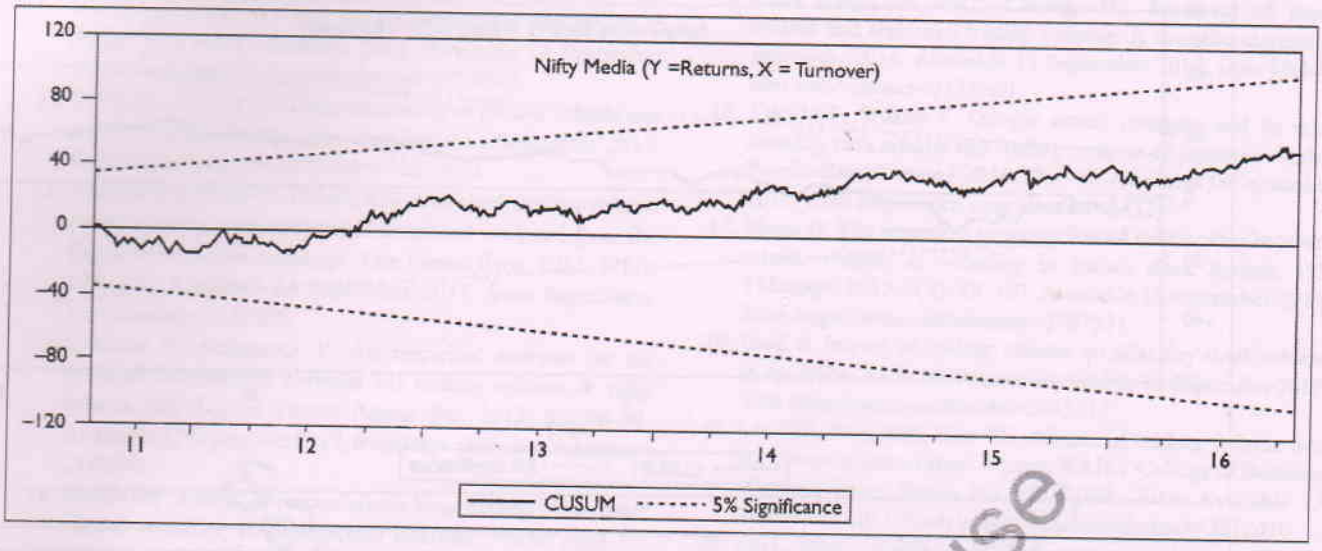

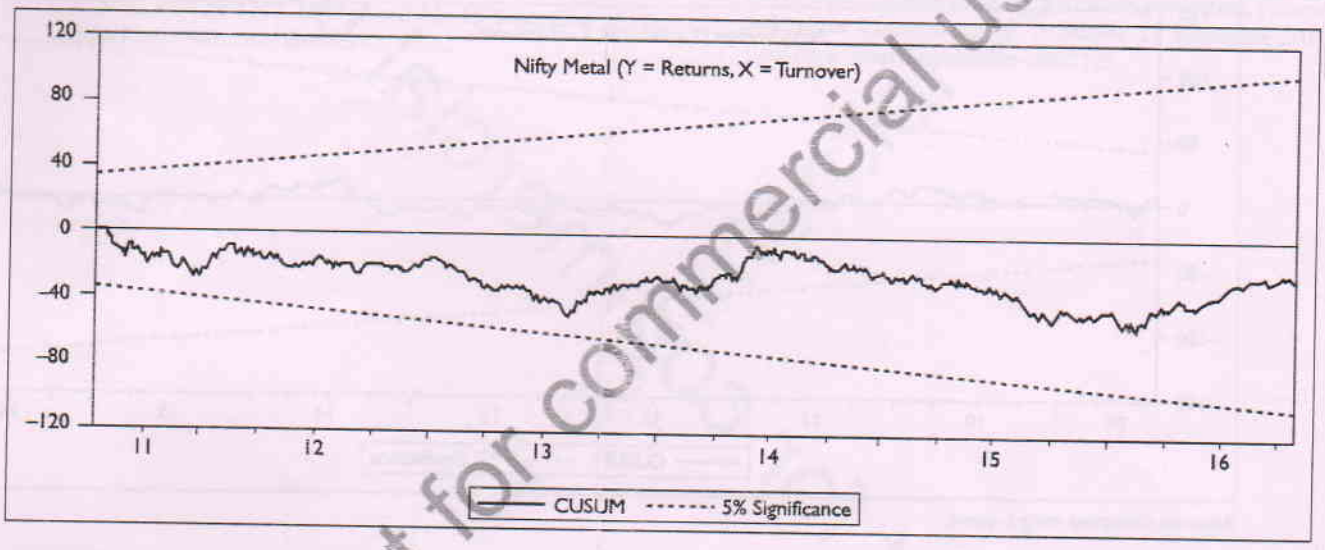

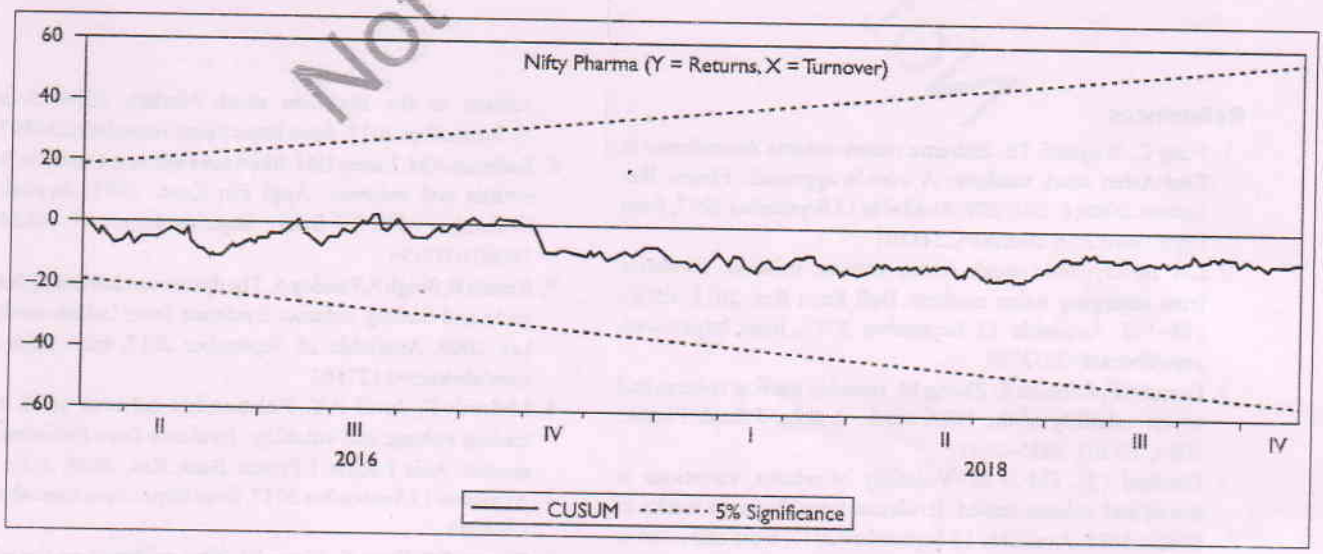

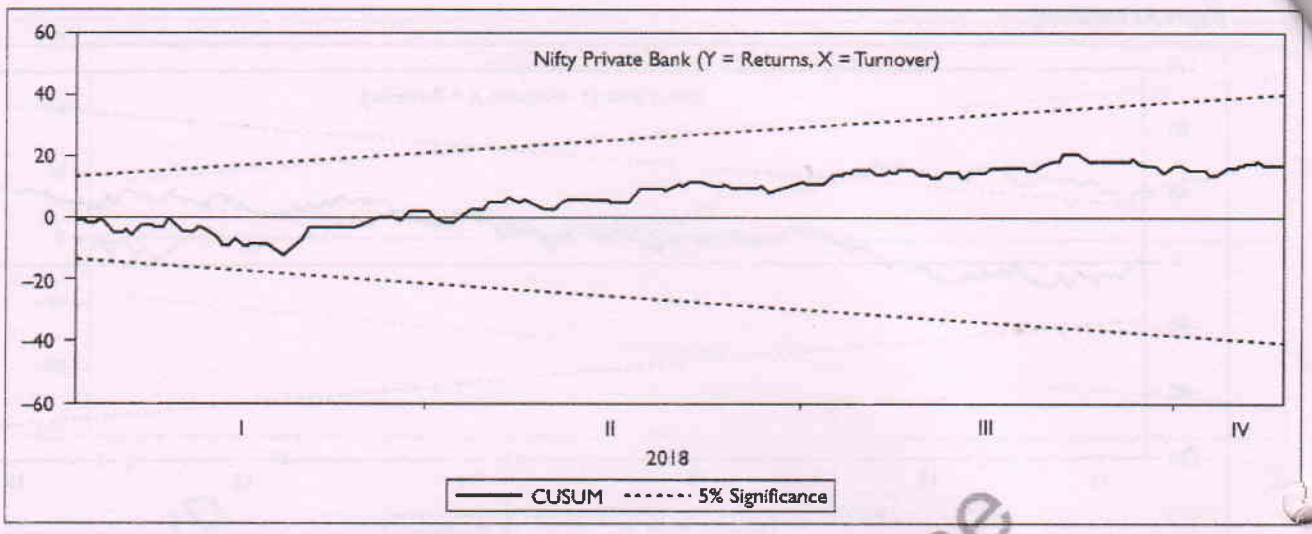

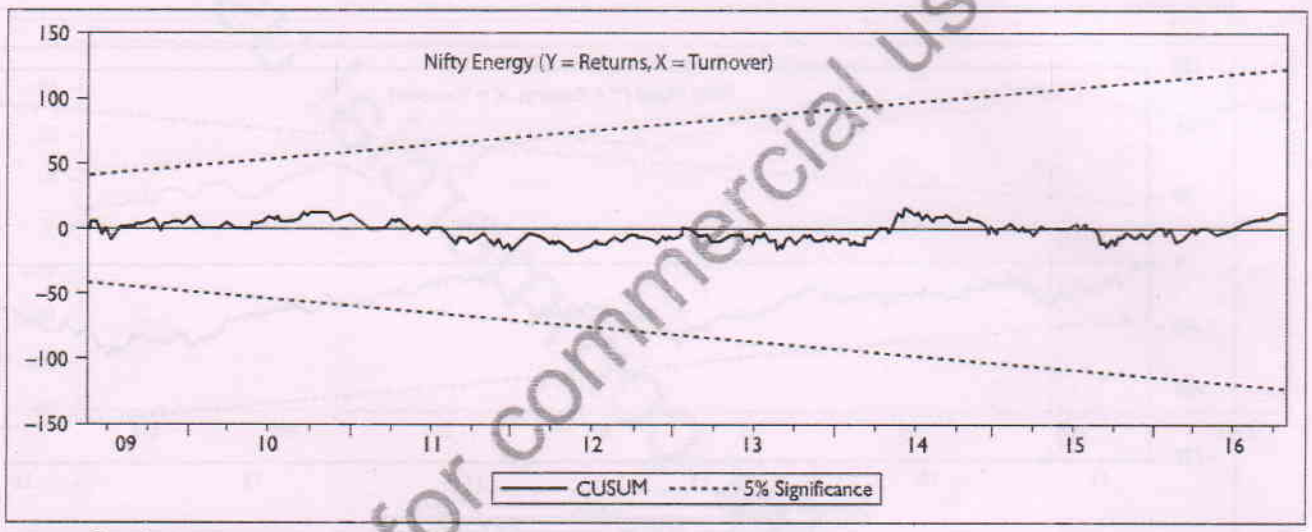

Source: Compiled using E-views.

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12. Psychological Contract of Manufacturing Sector Employees in North Goa: Importance - Performance Analysis Approach

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Abstract

Effective management depends on the ability to assess the quality of services provided. Importance-Performance Analysis (IPA) is simple and useful techniques that can help superiors to identify which attributes should be improved to increase overall satisfaction of the employees. From the research prospective, this study supports the adoption of the IPA as an alternative framework for evaluating employee satisfaction with regards to two aspects of Psychological Contract.

The objective of the study is to examine the Psychological contract of employees in manufacturing sector using Importance Performance Analysis. Using a sample of 100 workers working in manufacturing companies in two Industrial estates in North Goa, this study concludes that the attributes considered most important by employees of Manufacturing sector of their Psychological contract and on which the employer has performed well are Respect & Dignity. The other important aspects of Psychological contract of employees are Work-Life balance and Leadership & Motivation on which the employer has not performed well. Employer has failed to fulfill the expectations of the employees on the respective aspects of their Psychological contract.

Keywords: Psychological Contract, Importance Performance Analysis, Expectations-Performance

Introduction

The employment relationship has undergone a number of significant changes in recent years. In large part, this transformation has been brought about by the increasing globalization of business, by the dramatic rise in the number of mergers, restructurings, and layoffs, and by the increasing rate of change that permeates all of organizational life today (Kissler, 1994; McLean Parks & Kidder, 1994). As a result of these events, psychological contracts have become increasingly important in helping to define the contemporary employment relationship.

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CONSUMPTION PATTERN OF COSMETICS AMONG FEMALE COLLEGE STUDENTS: A CLUSTER ANALYTIC SEGMENTATION APPROACH

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ABSTRACT

College going girl students are one of the main targets of cosmetic companies. Differences occur among these students in terms of usage, amount spent, benefits sought, brands preferred and attitudes held. It will be of use and interest to both academics and marketers to explore whether different segments exist in this market and the characteristics of these segments. An attempt is made in this research to segment this market using usage, attitude and benefit perception. A sample of 120 college going students has been surveyed using a questionnaire and the data have been analysed using cluster analysis. This resulted in three clusters with differing usage, attitude and benefit perceptions (independent non believers, Heavy benefit seekers and dependent occasional). Cross tabulation of profiling variables with cluster membership and chi square analysis revealed no significant differences in demographic profile, behavioural characteristics, and brand preferences across clusters. The segments were found to differ in terms of their average spending on cosmetics with occasional being the highest spenders followed by heavy benefit seekers and independent non believers being the lowest spenders. The findings are of theoretical and practical significance.

INTRODUCTION

Use of cosmetics is not a latest trend. It has its roots deep within the annals of history. The cosmetics depict had found its origin in the 4th century BC. Indian too has not remained far behind in the development and frequent usage of cosmetics. Household utility like haldi, chandan, etc. have been used over centuries to preserve the natural beauty of skin. The cosmetics industry, which started growing in the early 1990s, is expanding exponentially. With more women and men becoming conscious of their beauty and willing to spend on their grooming, this industry has been growing at 20-25 percent for the last few years. No wonder now the shelves are stocked with a plethora of products and brands, targeted at various segments, catering to the various needs of customers. The enormous growth in this segment has not only attracted many MNCs but also provided space for many Indian companies to foray or expand their product range.

An ORG-Marg study reveals that while most FMCG products were affected by the general slowdown, this segment witnessed relatively good growth in volume and value. Not only have more people started using cosmetics, they are also willing to pay more to look and feel good. The penetration rate is higher in the skin-care segment compared to lipstick. This means that consumers are willing to spend the extra bit to look and feel good, but also indicates the constant up- gradation from mass to premium products. Though mass products still constitute a major portion of the market, a certain segment is obviously ready to upgrade to the next category as disposable income rises. Increased media exposure and the willingness to spend more on personal care, consciousness about looks, and advertisements and promotions targeting various consumer segments are some of the reasons for these trends in consumption and penetration. The growth trends definitely send positive signals about the industry prospects.

Though most players see huge opportunity in this industry, what would actually work wonders for the players is strong brand promotion, good distribution network, constant innovation and quality improvement, the ability to provide a variety of products and introduce affordable products without compromising on quality. Cosmetics are still seen as elitist products and may be the last thing on an average Indian consumer's mind. Though the low penetration levels for most cosmetics products suggest much potential, the market for cosmetic products may remain a niche market accessed by a small proportion of the consumers. The cosmetic segment primarily comprises of colour cosmetics (face, eye, lip and nail care products), perfumes, talcum powder and deodorants. All these are very small segments. Talcum powder is the most popular cosmetic product in India. This market is estimated at Rs. 3.5 bn and is yet growing at 10-12 % in pa. Cosmetics awareness is very high with 80% having penetration of 45.4 % in urban areas and 25.2 % in rural areas.

Literature Review

Women are constantly bombarded with images of what our society deems as beautiful. As a result, many women tend to feel inadequate and their feelings of confidence and expectations of self are affected. When one's body is disliked because of deviation from norms of function or appearance, replicated evidence shows that anxiety, insecurity and low self –esteem are regular correlates (Jourard,1964).A study by Turner et al.(1997) found that the media shapes, rather than reflects, societal perceptions of the female body. In addition, they found that women's body image satisfaction is influenced by their exposure to the thin ideal presented in fashion magazines. More often than not, the images these women are seeing have been computer-edited and their models have been airbrushed and piled with makeup to camouflage any slight flaws that may, in reality, exist.

For the most part, what a woman observes in the mirror is what she uses as a measure of her worth as a human being(Lerner ,Karabenick,&Stuart,1973).The majority of research on women and their self-esteem has historically been related to how they feel about their body shape and