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Vol.XLVIII (2) December, 2016
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◆◆◆
Dear Members,
Greetings!

I’d first like to wish you all a Happy New Year, 2017 and thank each of you for giving me an opportunity to serve the Indian Accounting Association (IAA) as a President.

Today, IAA is one of the most influential associations in the world of Accounting and Finance globally. This is because of the dedicated efforts of our Past Presidents, EC members, office bearers, Branch Chairpersons as well as Secretaries and the members at large. As a Life Member of IAA, I am well aware of their contribution over the last two decades. Inaugurated on February 14, 1970, the Association crossed several milestones over a period of time like building a wide network of branches across the country and gathering a huge corpus of funds including crores of rupees, all under the dynamic leadership of Prof. D. Prabhakara Rao as the General Secretary. The strength of this Association is its ever-growing membership of around 5000 resourceful members as of now. By 2020, when the Association would complete fifty years, this number is likely to cross 12,000.

With rapid growth in the economy, careers in the field of Accounting and Finance have gained tremendous popularity as one of the most prestigious career options. IAA is an excellent family of members from academic organisations, professional bodies as well as Government departments, teeming with ideas and enthusiasm to affect sustainable policies in the financial frontiers of nation building. The academic institutions help in providing the much needed support in the domain of teaching and research. The professional bodies are accredited with applied knowledge in the ever changing legal and behavioral framework for better governance. This association strives to bridge the gap between theory and practicality, while focusing on the emerging developments in the financial markets across the globe. Hence, IAA is proficient in fostering confidence of various stakeholders by disseminating high quality of research findings in different All India Conferences and International Seminars.

At the 39th All India Accounting conference of IAA held at Bangalore University, resourceful presentations and lively discussions took place in various technical sessions. The first Technical Session was about ‘GST and its Implications’; the second pertaining to the ‘Ethical Issues in Accounting’ and the third Technical Session revolved around ‘IFRS and their Implications’. An International Seminar on Accounting Education and Research was also held in the same.
Topics of burning interest will be focused at in the 40th All India Accounting Conference, to be held at Mohanlal Sukhadia University, Udaipur. These would include ‘Demonetization: Issues and Challenges with special reference to accounting and finance’ in the first Technical Session, ‘Accounting for Local Government’ in the second Technical Session and ‘Cloud Computing and Accounting’ in the third Technical Session. This would be followed by another International Seminar on Accounting Education and Research.

We request the members of the Association to attend same in large numbers and contribute to accounting research paper presentations. I seek your suggestions for any improvement required for the IAA constitution amendment.

On behalf of all of us, I congratulate our Past Presidents, Prof. Nageshwar Rao for occupying the coveted position of Vice-Chancellor of Uttarakhand Open University and Prof. Pratap Sinh Chauhan on attaining the prestigious Vice-Chancellorship of Saurashtra University. I would also like to take this opportunity to congratulate our other IAA members who have also been appointed as Vice-Chancellors in various other Universities.

I acknowledge the strong support of Prof. Gabriel Simon Thattil, Prof Sanjay Bhayani and Prof S.S Modi as General Secretary, Treasurer and Chief Editor, respectively. Moreover, I would like to express admiration for the laudable efforts put by Prof. Sanjay Bhayani in creating an impressive website for the Association also.

Looking forward to a warm reunion at the 40th All India Accounting Conference, being held at Mohanlal Sukhadia University, Udaipur, with Prof. G. Soral as the Conference Secretary.

January 1, 2017

**Best regards,**

Prof. Arvind Kumar  
President: IAA &  
Dean Faculty of Commerce  
University of Lucknow, Lucknow.
Dear friends and colleagues,

It is a tremendous honor for me to be elected as the Chief Editor of such a prestigious and well-regarded journal i.e. Indian Journal of Accounting (IJA). I am grateful to the Indian Accounting Association (IAA) for giving me this opportunity to shape the premiere publication forum in my field. The journal provides a forum for new advances in the field of accounting research and practice that spans a wide swath of topics. I express my sincere thanks to all the former Chief Editors of IJA for leading the journal for forty eight long years.

It is now my pleasant duty to lead the journal along with my younger and most energetic colleagues Prof. (Dr.) Daksha Pratap Sinh Chauhan and Prof. (Dr.) M.C. Sharma as the Editors and we cordially welcome the new members of the Editorial Board and look forward to an excellent collaboration with the new and continuing members of the Editorial Board. Together, we will work hard to enhance the quality of papers, reduce the turnaround time for manuscripts, provide fair reviews and smoothen the editorial management process. We wish to take the journal in a direction where it encompasses all the emerging areas, reflecting the research oriented approach, which is an essential link between academic research and professional practice in the field of accounting. Our main objective will be to strengthen the boundaries of the journal, to strengthen the reviewer database, and to motivate potential authors to contribute to the journal. In parallel, we all should join hands in preventing plagiarism, duplicate articles and unreliable research. I invite the authors to submit original and first-hand articles, which will help to achieve our goal of obtaining higher Global Impact Factor for the journal to maintain the relevance of the journal in a highly competitive field. We are looking forward to work with you all closely to enhance the reputation of the journal and promote scholarly development of research in the field of accounting fraternity.

I would also like to thank the members of the Advisory and Editorial Boards whose excellence and international recognition is crucial for the credibility and quality of the IJA. I am delighted to welcome you to Volume XLVIII (2) of the journal.

Finally, I thank my editorial team, technical team, authors and well wishers, who are promoting this journal. With these words, I conclude and promise that the standards will be maintained.

Prof. (Dr.) SS Modi
Chief Editor
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ACCOUNTING EDUCATION IN INDIA: A COMPARATIVE ANALYSIS

Prof. K. V. Achalapathi∗
M. Janakiram∗∗

ABSTRACT

The expectations of stakeholders have become an important component in accounting system giving birth to prescriptive accounting system. Hence, the curriculum of accounting also must have undergone change from descriptive model to a prescriptive model. Internationally European accounting system has moved towards prescriptive accounting system by adopting International Financial Reporting Standards (IFRS). While the accounting system in USA is rule based like in India, European system of accounting is principles based. In India Joint stock companies must follow the schedule 3 of Companies act 1956, revised in 2013. It also gives a prescribed format in financial reporting. Since, most of the students at Under Graduate (U.G.) level look for jobs in corporate field, the B.Com syllabus mostly focuses on “how” part of financial reporting and in accordance with the Companies Act.

In view of the above it is felt necessary that the accounting curriculum in most of the state Universities as well as in private Universities need be examined with the above theoretical framework. This paper attempts:

• To examine the relevance of the accounting curriculum in different Universities in the context of changing dimensions of stake holders and technology.

• To examine the pedagogy planned in State as well as Private Universities in the light of Choice Based Credit System (CBCS).

• To examine the evaluation system planned in terms of Choice Based Credit System (CBCS).

KEYWORDS: CBCS, IFRS, Accounting System, Prescriptive Model, Accounting Standards.

Introduction

Accounting education in India is as old as of CHANAKYA age. “Accounting” comes from the word “Accountability” i.e., Answerability. Most of the Accounting in traditional system was maintained by Munchies in India focusing on receivables & payables of a firm. The Double entry book keeping system borrowed from western countries, innovated by Luka Pacioli in 15th century also follows the descriptive method of accounting. Most of the traditional Indian universities were following descriptive accounting system till 20th century. Whereas 21st century influenced by the information technology revolution is facing a challenge from global stake holders.

Hence, the expectations of stake holders have become an important component in accounting system giving birth to prescriptive accounting system. Hence, the curriculum of accounting also must

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have undergone change from descriptive model to a prescriptive model. Internationally European accounting system has moved towards prescriptive accounting system by adopting International Financial Reporting Standards (IFRS). While the accounting system in USA is rule based like in India, European system of accounting is principles based (Achalapathi 2016). In India Joint stock companies must follow the schedule 3 of Companies act 1956, revised in 2013. It also gives a prescribed format in financial reporting. Since, most of the students at Under Graduate (U.G.) level look for jobs in corporate field, the B.Com syllabus mostly focuses on “how” part of financial reporting and in accordance with the Companies Act. In view of the above, it is felt necessary that the accounting curriculum in most of the state Universities as well as in private Universities need to be examined with the above theoretical frame work.

The purposes of this paper are three:
- To examine the relevance of the accounting curriculum in different Universities in the context of changing dimensions of stake holders and technology.
- To examine the pedagogy planned in State as well as Private Universities in the light of Choice Based Credit System (CBCS).
- To examine the evaluation system planned in terms of Choice Based Credit System (CBCS).

Methodology

In order to examine the relevance of the curriculum in different universities, an attempt is made to download the curricula of different universities in India from the websites of respective universities. As per the University Grants Commission, Ministry of Human Resource Development, Government of India website, there are 759 universities, of which 350 are State Universities, 47 are Central Universities, 239 are Private Universities, whereas, 123 are deemed to be Universities. Since, the deemed to be universities stand on a different footing in terms of extended version of a Private College; it is felt that they don’t fit into the comparative analysis. Hence, 123 Deemed Universities are not included in the analysis. Out of 636 State, Central & Private Universities 10 per cent of them are selected in sample for a detailed analysis, this works out to 64 universities. To have the appropriate weightage of the size of the states it is ensured that 10 per cent of the Universities in each state are included in the list. In the process, websites of few universities did not have the data required. Accordingly, 7 Universities were eliminated from list for want of appropriate information.

Ultimately, 57 Universities covering 25 states, including 43 State Universities, 2 Central Universities and 12 Private Universities are selected for analysis.

A comparative analysis is made keeping the theoretical frame work of moving from descriptive to prescriptive model of accounting system as a parameter.

The paper is conveniently arranged in 3 sections.
Section I: Relevance of the accounting curricula in different universities.
Section II: Pedagogy planning in different universities.
Section III: Evaluation system planned in different universities

Section I: Relevance of Accounting Curricula in Different Universities

As observed earlier, accounting curriculum should cover the Why & How part of accounting systems, so that, students get absorbed in corporate field as a supplementary to the professionals like Chartered Accountants & Cost Accountants.

Accordingly, lead is taken always by Institute of Chartered Accounts of India in revising the curriculum in accordance with the expectations of global stake holders and in line with changes in Information Technology Sector. It is observed that the Integrated Proficiency Competence Course (IPCC) syllabus is updated with the introduction of “Accounting Standards” both at National Level and International Level (website of ICAI & ICMA)(2).
An attempt is made to examine the curriculum of all the universities selected in the sample. At first, importance given to Accounting in the commerce curricula by universities in India is examined and presented in Table I.

**Table I: Statement showing the Importance Given to “Accounting” in Commerce Curriculum by Universities in India**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Weightage Given</th>
<th>State University</th>
<th>Central University</th>
<th>Private University</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Less than 10%</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Between 10% - 20%</td>
<td>15</td>
<td>1</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Between 20% - 30%</td>
<td>16</td>
<td>1</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>Between 30% - 40%</td>
<td>11</td>
<td>0</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>More than 40%</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>57</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Websites of respective universities

It can be observed in Table I that majority of the universities (41) gave a weightage more than 10% and less than 30% to “accounting” in commerce curriculum. It is observed that 31 state universities both the Central Universities selected, and 8 private universities are giving weightage of more than 10% but less than 30% importance in the total number of papers offered in Commerce course. It is also observed that 11 state universities and 2 private universities out of 57 selected gave importance to “accounting” in commerce curriculum more 30% but less than 40%. In fact, one private university and one state university have prescribed curriculum by having weightage to accounting more than 40%. Most the students give highest importance to the subject of “accounting” as relatively it will have large number of modules in every semester. Within the “accounting” subjects, Titles of different papers are picked up from different universities and they are grouped.

**Table II: Statement Showing the Titles of Accounting Papers Offered in Different Universities**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Title / List of Accounting Papers</th>
<th>State</th>
<th>Central</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FA - I &amp; II / Principles of A/c ing / Fund. Of A/c ing</td>
<td>43</td>
<td>2</td>
<td>12</td>
<td>57</td>
</tr>
<tr>
<td>2</td>
<td>Corporate A/c ing / Company A/c ing / FA-III &amp; IV</td>
<td>37</td>
<td>2</td>
<td>9</td>
<td>48</td>
</tr>
<tr>
<td>3</td>
<td>Cost Accounting</td>
<td>30</td>
<td>2</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td>4</td>
<td>Mgt. Accounting</td>
<td>22</td>
<td>2</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Advanced Accounting</td>
<td>19</td>
<td>1</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td>Cost &amp; Mgt. Accounting</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>7</td>
<td>International Accounting / A.S.</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Fin Statement Reports</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Other titles</td>
<td>11</td>
<td>0</td>
<td>2</td>
<td>13</td>
</tr>
</tbody>
</table>

Source: Websites of respective universities

Table II explains a group of accounting papers offered in different universities. For example in some universities they called FA I & II, in another universities the title is “Principles of Accounting” or “Fundamentals of Accounting”. These papers reflect the first level of accounting imparted to the student at the first or second level of semesters. In fact, it lays the foundation for accounting. It is observed that 43 state universities, 2 central universities and 12 private universities are offering this level of accounting to every student who joins in B.Com.

The next importance is gained by the paper titled “Corporate Accounting / Company Accounting FA-III and FA-IV”. It is offered in 37 State Universities, 2 Central Universities and 9 Private Universities covering total 48 out of 57 Universities. “Cost Accounting & Management Accounting” also assumed importance in more than 30 Universities.
It can be observed from Table-II that “International Accounting / Accounting Standards” as one of the titles of “accounting” papers, in states as well as private universities, do not find place in most of the universities either in Government or in Private sector. There are hardly 5 state universities out of 57 sample universities selected where this paper finds place. This reflects that IFRS or Ind-AS do not find place in the curricula in most of universities in India. Hence the relevance of “accounting” curricula in different universities is not significant in the context of expectations of global stake holders and changing technology. Though a detailed analysis is not made in this paper, a glance at curricula of deemed universities suggest that they have updated their curriculum in accordance with the expectations of the global stake holders. It is also observed that curricula of different universities have been stressing on “how part” of accounting that too on rule based accounting rather than the principles based. Hence, it does not meet the expectation of global stake holders at all. The students who get graduated through this curriculum will not be able to maintain accounts in accordance with the international accounting standards. The “why” part of the accounting is totally missing in many Universities in India. Advanced Accounting, Corporate Accounting, Cost Accounting and Management Accounting are most common titles in most of the universities in Central, State as well as Private sector. It is also observed that the “Computerized Accounting” is not a part of curricula in majority number of universities. It can therefore be concluded that accounting curriculum at present in India is not relevant to the changing Information Technology (IT) and not in accordance with expectations of global stake holders.

Section – II: Pedagogy Planning Under Different Universities

In section I, a comparative analysis of different universities in designing the curricula in “Accounting” field is examined in terms of its relative importance in Commerce course and the titles of “Accounting” modules at different levels. While the curricula takes care of the content that needs to be imparted to the students, the way in which it is delivered matters in increasing the employability of the students. Hence, the subsequent paragraphs are catered to the pedagogy expected and the pedagogy being executed in different universities. While the western universities focus on learning models (student centric model) Indian system focuses on teaching centric model.

In most of the colleges in different universities the teacher is a substitute for hard work. Hence, attending the classes regularly, noting down the points in a lecture and reproducing them in the examination has been accepted as a norm in Indian system. Hence, the students are more or less examination oriented. A teacher who trains well for the examination is considered to be the popular teacher. However, based on the western experience and on the basis of brain storming sessions by experts at policy making bodies, Ministry of Human Resource Development (MHRD) through UGC is planning to move the Indian system towards the learner model. The success of the learner model depends upon the motivation levels of students and determination of the students and ultimately placement of the students in employment field. The “think tank” of UGC opined that the student should be given full freedom to choose the subject of his choice to study, timing of his evaluation and the choice of the institution to get himself graduated. Hence, the Choice Based Credit systems are recommended to be implemented in different universities. An attempt is made in this paper to examine whether the pedagogy system is moving from teacher centric to the learning model or not in different universities.

As the UGC made it mandatory for all universities to move to Choice Based Credit System (CBCS), most of the universities are in the process of modifying their curriculum. It is observed that by the time the websites are downloaded, 8 out of 57 universities selected for study have moved towards CBCS. Even in those universities, the faculty at delivery levels (college level) are not clear about the significance as well as the procedural part of CBCS system. The teachers are accustomed to award marks individually rather than the grading system. Most of the “Accounting” teachers are still following the
teacher centric model only. That is the reason why they are finding that the teaching time allotted for the subject to be insufficient and the students are becoming indifferent in attending to the classes.

Thanks to the Information Technology, the students who are trying to learn the solutions for the probable questions in “Accounting” through internet information. Since, the exit of the student from the institution is more dependent on end examination; the teacher is not assuming the importance in the transition period of moving from teacher centric to learning model. In western models including the African and Middle East countries, the teacher assumes high importance in assessing the student as well. The pedagogy can improve only when teaching in the class moves from information transfer to activity based. Hence, “Accounting” teachers need to plan “activities” for the student in the class including case studies, group discussions, and problem solving and data interpretation.

It is observed that private universities like ICFAI University, KL University, and Amity University have taken lead in transforming the pedagogy from teacher centric to the learning model. To some extent, Central universities which do not have colleges affiliated to it are also making a beginning. However, out of 57 universities all the 43 state universities are lagging behind in implementing pedagogy in this line (learning model). Most of the state universities in India face the challenge of numbers. Till, 2014, Osmania University was having more than 1000 affiliated colleges under its control. In the name of uniformity, standardization of any pedagogical system sets with low performing college rather than with high performing college. That means to adapt the system to suit the low performing college; standards are diluted in the name of uniformity even for a well performing college.

Section-III: Evaluation System Planned in Different Universities

The evaluation system in universities must be able to assure the employer organizations that its grading system is reliable. In other words, a student graded well by the university should perform well in the jobs at least, that are related to the subjects learnt by the student in the universities. Universities which ensure standards in evaluation of a student and take care that a successful exit of a student from the university is restricted to merit alone, will survive long. It is observed that the universities include state universities as well as Private Universities are making exit of a student easy, assuming no responsibility of placements. By observing the evaluation system planning in different universities, it can be said that semester system is likely to make things worse with the introduction of internal assessment at under graduate level. Many universities have not even recorded in their websites that it is necessary to obtain minimum 40 per cent marks in the end of semester examination. That means a candidate who gets 20 out of 20 in internals and another 20 out of 80 in the end semester exam would also pass in the exam. It is necessary to ensure minimum marks in end semester to prevent the deterioration of standards. In western model, a teacher is the final authority to grade the students and it is also necessary for a teacher to fit the performance of the students in a class in accordance with normal curve. (3)
For example, in a class of 60 students only 6 students (10%) should get A grade, about 12 students may get B grade (20%), about 10 students may get poor grade, with one or two failures, remaining should be (middle majority) placed in C grade. While a student will be given a chance to see the manuscript and seek clarification from the teacher about the grade he got, he/she cannot force the teacher to modify the grade. The maximum a student can protest is, writing his comment on grading system of the teacher in the feed-back. The teacher recommendation has high value for an employer for Job / placement and for further studies in western countries where learning model is followed. A lot need to be done in Indian university system to move to this level. Based on the information collected from a selected 57 universities in India analysis is made in respect of curricula designing, curricula execution and evaluation. Taking the theoretical frame work presented in the first paragraph as a parameter, following conclusions are drawn.

Conclusions

• ‘Accounting’ curricula in Indian universities is observed to be far from relevance in terms of changing information technology and in terms of expectations of global stake holders.

• ‘Accounting’ teaching in India mostly is teacher centric while attempts are being made by the UGC to move towards learning model by introduction of the semester system, it is still in nuts and bolts.

• Though efforts are being made to move towards continuous evaluation system, the arbitrary way of conducting internal assessments through objective type of tests, assessment of a student by the teacher is hardly objective.

Practical exposure to interactive sessions with corporate, participation of industry in curriculum making, execution and evaluation might improve the situation. Let us hope for the best.

References

- Personal experience of the author at Addis Ababa University in Africa (during 1998 – 01) & in Muscat College, Sultanate Oman in Middle East countries (during 2010-12).
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AN IMPACT OF IFRS ON THE VALUE RELEVANCE OF FINANCIAL STATEMENTS:
A STUDY OF SELECTED INDIAN LISTED COMPANY

Dr. Shilpa Vardia∗
Dr. Nisha Kalra∗∗
Prof. G. Soral∗∗∗

ABSTRACT
Value Relevance is being defined as the ability of information disclosed by financial statements to capture and summarize firm value. Value relevance can be measured through the statistical relations between information presented by financial statement and stock market value or returns. The purpose of this study is to examine the effect of mandatory adoption of International Financial Reporting Standards on the value relevance of earning and book value of equity in selected companies in Indian Stock Market. This paper investigates whether the adoption of IFRS increases the value relevance of accounting information for firm listed on the Indian Stock Exchange. Ohlson model framework has been adopted to explore relationships among the market value of equity and two main financial reporting variables namely the Book value of Equity per share (Represent balance sheet) and Earning per share (Represent Income Statement). This study investigate the value relevance of accounting information in pre and post financial periods of International Financial Reporting standards (IFRS) for Indian listed firm from 2011 to 2016. Market value is related to book value and Earning per share by using Ohlson model. Overall book value is value relevant is determine market value or prices. The results of this shows that value relevance of accounting information system has improved in the post IFRS period considering book value while improvement has not been observed in value relevance of earning. In this paper attempt also has been made to access the different opinion of the preparers of financial statements, investors and external users including academicians regarding the adoption of IFRS and found there is no significance relationship between the adoption the IFRS and value relevance of accounting information. As far as value relevance performance indicators are concerned there is a significant effect of value relevance performance indicators on companies that have adopted IFRS in India within the scope of survey considered.

KEYWORDS: Value Relevance, Earning Per Share, Book Value of Equity, IFRS, Ohlson Model.

Introduction
International Accounting Community is in the process of synchronizing accounting standards across the globe. International Financial Reporting Standards (IFRS) is a single set of accounting standards, developed and maintained by the IASB (International Accounting Standard Board) with the

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intention of these standards being capable of applied on a globally consistent basis—by developed, emerging and developing economies—thus providing investors and other users of financial statements with the ability to compare the financial performance of publicly listed companies with their international peers on a like-for-like basis. IASB (2009) states its mission as “to develop, in the public interest, a single set of high quality, understandable and international financial reporting standards (IFRSs) for general purpose financial statements” in order to achieve its goal: “to provide the world’s integrating capital markets with a common language for financial reporting”. Thus, IASB has continuously developed the set of standards with two major concerns, maintaining comprehension and nurturing enforcement, which will become the key for worldwide accounting and financial reporting harmonization. India cannot afford to insulate itself from the developments and modifications taking place worldwide. Indian Government has recently issued new Indian Accounting Standards (Ind. AS) which are converged with IFRS. In phased manner, the companies registered in India will be required to present their annual accounts according to new norms with effect from April, 2016. This development has been described as the most significant event in the history of financial reporting in India. IFRS are considered to be of higher quality than the corresponding national standards. Thus comparability of financial information would be enhanced resulting in the attraction of foreign investors. IFRS are now mandated for use by more than 100 countries, including the European Union and by more than two-thirds of the G20 countries.

Review of Literature

The purpose of this review is to identify the key concepts, characteristics and ideas explaining the IFRS adoption in different countries, their experience with it. The summary of previous studies would also be useful to understand the different approaches that have been carried out by researchers to identify various variables and their interrelationship in explaining the value relevance as well as impact of transition to IFRS in different countries. World is becoming more global day by day and growing number of multinational companies have brought forth the issue of harmonization of accounting standards of all the countries so that corporate reporting may be made global. So this literature review will probe into the question of the relevance of the traditional practices of accounting and the relevant emerging issues.

- **Vafaei and Taylor (2011)** took a sample of 150 randomly selected firms listed on three Stock Exchanges (i.e. London, Hong Kong and Singapore) for the year of adoption of IFRSs (2005). His study investigates whether the quality of accounting figures (earnings per share and book value of equity) has improved as a result of adoption of IFRSs in UK, Hong Kong and Singapore. With regards to value relevance, results indicate no improvement in the value relevance of accounting figures as a result of adoption of IFRSs within the sampled countries. Additionally, results indicate that the extent of adjustments made and the costs of transition incurred in UK for first-time adoption of IFRSs are greater than the adjustments made and the costs incurred in Hong Kong and Singapore.

- **Horton and Serayeim (2010)** in their study of 297 firms listed on London Stock Exchange and their IFRS reconciliation documents tried to found market reaction to, and the value-relevance of, information contained in the mandatory transitional reconciliation disclosure documents required by IFRS compared to the accounting information disclosed under the UK GAAP in a sample of firms listed on London Stock Exchange. Results of this study indicate that the market reacts negatively to firms disclosing lower earnings under IFRS relative to UK GAAP. Additionally, with regards to value relevance, results indicate that reconciliation adjustments in respect of earnings (but not in respect of owners’ equity) are value relevant. Finally, it is concluded that IFRS appears to reveal timely value relevant information.
• **Guenther, Gegenfurtner, Kaserer, and Achleitner (2009)** took a sample of German firms and studied the impact of adoption of IFRS (both mandatory and voluntary) on earning management and value relevance. The conclusion of their study is that earnings management decreases for voluntary but not for mandatory IFRS adopters. Concerning the value relevance of accounting quality, they find no significant improvement for voluntary and mandatory adopters in the post-adoption period.

• **Lopes and Viana (2008)** analyze the total population of listed companies (44) on the Portuguese stock exchange that had to provide reconciliation statement for the transition to IFRS. They provide narrative discussion of transition related disclosures provided by the Portuguese companies but focus less on the quantitative aspect of the subject matter. They report that more companies were affected positively with regard to shareholder equity and net profit than negatively.

• **Hung and Subramanyam (2007)** investigated the effects of adopting IAS on some key financial measures namely: return on equity, asset turnover, leverage, book-to-market ratios and earnings-to-price ratios for a sample of 80 German firms that adopted IASs for the first time during 1998-2002. They found that total assets and book value of equity are significantly larger under IASs than under German GAAP and that cross-sectional variation in book value and net income are significantly higher under IASs than under German GAAP.

• **Gjerde, Knivsfla and Saettem (2007)** investigated to find out whether the association between IFRS accounting numbers and stock market values is stronger than those reported under Norwegian GAAP (NGAAP). In their study they took a sample of 145 firms listed on Oslo Stock Exchange. The firms reported financial statement in accordance to NGAAP in 2004 and restated those reports when adopted IFRS in 2005. Results of the study provide little evidence of increased value relevance after adoption of IFRS when comparing and evaluating two regimes separately. In contrast, when changes in the accounting numbers from NGAAP to IFRS are examined, the results indicate that reconcilement adjustments to IFRS are marginally value relevant, which is due to increased relevance of the balance sheet and the normalized net income.

• **Agca and Aktas (2007)** investigated whether adopting IFRSs in Turkey has an impact on some key financial ratios for Turkish listed firms on the Istanbul Stock Exchange. They examined twelve financial indicators, namely, current ratio, acid-test ratio, cash ratio, inventory turnover, receivables turnover, total liability ratio, long term liability ratio, profit margin, return on assets, return on equity and equity factor. They found that only the change in the ratios of cash ratio and asset turnover are statistically significant.

• **Callao et al. (2007)** used a sample of 26 listed companies in Spain and examine the impact reported in the reconciliation statement of those companies as well as the change in their book to market ratio. They find inter alia that long term and total liabilities increased whilst debtor and shareholder equity decreased.

• **Schiebel (2007)** examined the value relevance of IFRSs and German GAAP on companies listed on the Frankfurt Stock Exchange and publishing exclusively either IFRSs or German GAAP consolidated financial reports over the period 2000-2004. The study concluded that German GAAP is significantly more value relevant statistically than IFRSs.

• **Lin and Paananem (2007)** examined the characteristics of accounting numbers using a sample of German companies reporting under IASs 2000-2002, and IFRSs 2003-2004 and 2005-2006. They investigated the change in accounting quality during these time periods as IASB revises and issues new standards. Contrary to expectations, they found a significant decrease in association
between earnings, and equity book value and the share price, which indicates a decrease in value relevance of both earnings and book value of equity in the IFRSs periods in general.

- **Ahmed and Goodwin (2006)** investigated the effect of AIFRSs on 1378 listed Australian firms over 2004 and 2005. This study uses the reconciliations provided in the notes to financial statements to measure the effects of AIFRS on Australian listed firms. Additionally, this study examines the accounting quality of AIFRS earnings and book values compared to earnings and book values prepared under AGAAP (the metric for measurement of accounting quality is value relevance). Results of this study indicate that AIFRS adjustments increase mean and median earnings and decrease mean and median equity. Additionally, results do not provide evidence supporting AIFRS earnings and book value as being more value relevant than those of AGAAP.

- **HCMC (2006)** examined the transition to IFRS in Greek. This study discusses the differences between Greek GAAP and IFRS. Author found that on average, under IFRS, shareholders’ equity was 2.44% higher and profit after tax 6.16% higher. The strongest impact on shareholders’ equity was caused by adjustments to tangible assets, deferred tax assets and liabilities, and intangible assets. The most frequent adjustments were recognition of deferred tax assets and liabilities, de recognition of start-up costs capitalized as intangible assets and recognition of pension liabilities.

- **Aisbitt (2006)** focuses on the FTSE 100 listed companies’ transition to IFRS in 2005 by using the 2004 reconciliation statements. She finds that, for UK companies, there was no overall significant effect on shareholders’ equity, but that the effect varies for different companies, with no apparent industry effects.

- **Zhang and Qu (2006)** investigated changes in the value relevance of earning and book value as well as the factor associated with those change for U.S. firm 1953 to 1996 using the residual income valuation approach. He developed three measures of value relevance variation measures, portfolio return measures and valuation lag measures. Result for variation measures indicate that the value relevance of book value and earning decline over time.

- **Jermakowicz (2004)** focused his study on the adoption of IFRS by listed companies in Belgium. The study used qualitative part, i.e. a survey of the views of people engaged with the issues relating to the transition to IFRS in the 20 most traded listed firms; and a quantitative part, the impact in the reconciliation statements of three early IFRS adopters. She concludes that a relatively large negative (positive) impact is revealed for two (one) companies both on shareholders’ equity and net income when reconciling Belgian GAAP with IFRS.

- **Street and Grey (2001)** examined the extent of IAS compliance among 279 firms from 32 countries. They used the financial statements and footnotes of 1998 accounts to analysis compliance level. The finding shows significant IAS non-compliance especially in the case of IAS disclosure requirements. They used methods of weighted and unweighted disclosure index to measure compliance. They find different significant associations under each method between the dependent variable (compliance score) and a number of independent variables. This study used both methods of disclosure index and tests the significance of the differences in the compliance scores identified. Additionally it explored the implications of the application of both methods with regards to the factor appearing to explain compliance with IFRS mandatory disclosures.

**Research Gap**

Summary of past studies indicate that there are plethora of opportunities to study the IFRS convergence in Indian context as results of adoption of IFRS by different countries have been varied. There is a need to examine the effect of mandatory adoption of International Financial Reporting Standards on the value relevance of earning and book value of equity in Indian Stock Market. There is also a need for an
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empirical study based on opinion of respondents to determine the perception of users of financial statements of quoted firm in India.

Research Objectives

IFRSs have promised to provide more accurate and transparent financial statements and hence to be more value-relevant to investors than local Accounting Standards used. This study will basically try to explore the impact of transition to IFRS in Indian settings. In broad terms, this research attempts to makes a contribution to knowledge by adding a single country study to the growing literature on implementation of IFRS in different cultural and regulatory context which will be relevant not only to academics but also to regulators and standard settings authorities Based on the identified research gap, the present study is undertaken to attain the following objectives:

• To find out impact of transition to IFRS on financial statements.
• To examine the value relevance of accounting information and observe the changes in value relevance after adoption of IFRS.
• To access the different opinion of the preparers of financial statements, investors and external users including academicians regarding the adoption of IFRS.

Research Hypothesis

\( H_01 \): There is no significance effect of value relevance of book value of equity and earnings per share after the adoption of IFRS.

\( H_02 \): There is no significant relationship between the adoption of IFRS and value relevance of accounting information.

\( H_03 \): There is no significance effect of value relevance performance indicators of the companies that have adopted IFRS in India.

Research Methodology

This study evaluates both primary and secondary data, so research methodology also divided in two parts:

• On the Basis of Secondary Data

First part of this study is based on the secondary data which include websites, books, and journals. The secondary source of accounting data used in this study is as indicated in table 1:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Figures</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Share price</td>
<td>Indian Stock Exchange</td>
</tr>
<tr>
<td>2</td>
<td>Book value of Equity per share</td>
<td>Consolidated balance sheet/consolidated financial position (online version)</td>
</tr>
<tr>
<td>3</td>
<td>Earning per share</td>
<td>Consolidated profit &amp; loss/consolidated income statements (online version)</td>
</tr>
</tbody>
</table>

This study evaluates the effect of IFRS adoption in India on financial reporting quality among listed companies which adopted IFRS on 1st April 2011. For this purpose twelve Indian companies selected as sample which is from different six sectors such as automobile, pharmacy, cement, power, IT, metal & mining each sector include two companies. List of sample companies are as follows:

<table>
<thead>
<tr>
<th>Industrial Sector</th>
<th>Name of Company</th>
<th>Name of Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>Tata Motors</td>
<td>Hero Motors</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>Dr. Reddy</td>
<td>Cipla</td>
</tr>
<tr>
<td>Cement</td>
<td>ACC</td>
<td>Ambuja Cement</td>
</tr>
<tr>
<td>Power</td>
<td>BHEL</td>
<td>NTPC</td>
</tr>
<tr>
<td>Information Technology</td>
<td>Infosys</td>
<td>Wipro</td>
</tr>
<tr>
<td>Metal and Mining</td>
<td>Sesa Goa</td>
<td>Coal India</td>
</tr>
</tbody>
</table>
To evaluate the effect of IFRS adoption in India, on financial reporting quality among listed companies through value relevance test using a relative and incremental research design, this study adopts Ohlson model framework which provide a link between share price and two accounting variables but with a modification to capture the effect of the IFRS adoption. Book value of equity and earnings per share are two accounting variable that are used in this study. Share price constitute the dependent variable. Book value of equity and earnings per share constitute the independent variables.

This study adopt the adjusted coefficient of determination (adj. R2) as the unit to measure the value relevance of book value and earning using least square regression, two metrics for value relevance will be examined.

- The first value relevance metrics will be basic on the explanatory power from a regression of the share price on the book value of equity and earnings per share.

\[ \text{SPit} = \alpha_0 + \alpha_1 \text{BVPSi}, t + \alpha_2 \text{EPSi}, t + \sum \varepsilon_i, t \ldots \]

The following second equation show the relationship between price of share and earnings per share

\[ \text{SPit} = \alpha_0 + \alpha_1 \text{EPSi}, t + \sum \varepsilon_i, t \ldots \]

The following third equation show the relationship between price of share and book value per share

\[ \text{SPit} = \alpha_0 + \alpha_1 \text{BVPSi}, t + \sum \varepsilon_i, t \ldots \]

Equation focuses on extend to which share price can be relatively explained by earning per share and book value per share. The model is analysed on pre and post IFRS data. Pre include (1a, 2a, 3a) and post (1b, 2b, 3b) IFRS eras.

- The second value relevance metrics will determine whether the financial statements prepared pre and post the mandatory adoption of IFRS are incrementally more or less value relevant. Value relevance will be estimated based on following equation:

\[ \text{SPi}, t = \alpha_0 + \alpha_1 \text{BVPSi}, t + \alpha_2 \text{EPSi}, t + \alpha_3 P + \alpha_4 P \times \text{BVPSi}, t + \alpha_5 P \times \text{EPSi}, t + \sum \varepsilon_i, t \ldots \]

To assess whether book value per share and earnings per share all incrementally value relevant in the post IFRS adoption period co-efficient \( \alpha_4 \) and \( \alpha_5 \) have to be positively and significantly from zero as determined by two tailed test. This indicates that the equity value of companies becomes more sensitive to reported earning under IFRS than under the previous Indian AS. This will imply the earning reported by Indian companies have become more informative to equity investor in determining the value of firm following IFRS adoption.

- On the Basis of Responses

In second part of this study primary data are used. For this study adopted a survey research design method to ensure that the researcher cover a larger population aimed at obtaining a subjective opinion of responds. Primary method of data collection was adopted to determine the perception of preparer and users of financial statements. Preparers included chartered accountants and company secretary of companies who are responsible for preparation of financial statement. They are selected as respondents due to their experience in IFRS and can act on behalf of shareholder.

The users of financial statement included investors, represented as investment analysis is picked as respondent for the fact that they are major users of financial statements. Purposive sampling technique was adopted as the population was grouped into two category of preparers and users of annual report. A sample of 216 respondents was selected. The instrument used was as a survey questionnaire on a 5 point likert scale. Total number of 102 questionnaire sent to prepares out of which 88 returns by prepares representing 79%, for the users 104 questionnaire sent to users out of which 92 returned by users , representing 88%.

Analysis & Discussion

Analysis has been done on two sections, viz. on the basis of secondary data and on the basis of responses.
A. On The basis of Secondary Data

a. Descriptive Study

The following table 3 and 4 gives the descriptive study about Earning per share, Book value per share and Market price per share in pre and post IFRS period.

Table 3 : Descriptive Statistics of Earning Per Share, Book Value Per Share and Market Price Per Share in Pre IFRS Period

<table>
<thead>
<tr>
<th>Particulars</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings per share pre IFRS</td>
<td>12</td>
<td>-0.85</td>
<td>1.69</td>
<td>0.55</td>
<td>0.72</td>
</tr>
<tr>
<td>Book Value per share pre IFRS</td>
<td>12</td>
<td>1.27</td>
<td>12.03</td>
<td>6.67</td>
<td>3.42</td>
</tr>
<tr>
<td>Market price per share pre IFRS</td>
<td>12</td>
<td>0.55</td>
<td>17.80</td>
<td>6.35</td>
<td>5.32</td>
</tr>
</tbody>
</table>

Table 3 depicts the general characteristics of the earning per share, book value per share and market share price pre IFRS, the earning per share ranged from 0.85 to 1.69 with a mean of 0.55 and S.D. of 0.72, the book value of equity per share ranged from 1.27 to 12.03 with a mean 6.67 and a S.D. 3.43 while the market price has minimum of 0.55 and maximum 17.80 with the mean of 6.35 and S.D. of 5.32.

Table 4 : Descriptive Statistics of Earning Per Share, Book Value Per Share and Market Price Per Share Post IFRS

<table>
<thead>
<tr>
<th>Particulars</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings per share pre IFRS</td>
<td>12</td>
<td>-0.59</td>
<td>3.19</td>
<td>1.31</td>
<td>1.13</td>
</tr>
<tr>
<td>Book Value per share pre IFRS</td>
<td>12</td>
<td>0.10</td>
<td>16.09</td>
<td>8.22</td>
<td>4.41</td>
</tr>
<tr>
<td>Market price per share pre IFRS</td>
<td>12</td>
<td>0.50</td>
<td>27.40</td>
<td>8.92</td>
<td>8.26</td>
</tr>
</tbody>
</table>

In table 4, the post IFRS earning per share gives a minimum of 0.59 and a maximum 3.19, book value of equity ranged from 0.10 to 16.09 with a mean 8.22 and standard deviation of 4.41. The share price shows a range between 0.50 and 27.40 with a mean of 8.92 and S.D. of 8.26. It should be noted that most of data does not follow normal distribution, there are large difference between minimum and maximum value mean and S.D. also differ noticeably. However the mean of equity per share, show an increase from pre adoption to the post adoption period. This may indicate a growing economic and capital market between pre and post IFRS period.

b. Regression Model

a) Relative Value Relevance

H0: There is no significance effect of value relevance of book value of equity and earnings per share after the adoption of IFRS

Table 5 and 6 show the results of the Regression for pre and post IFRS period. Model 1a and 1b reveal an increase in adjusted R2 between the pre IFRS and post IFRS period from 60.3% to 77.9%. This implies that the book value of equity per share and earning reported under IFRS explain more about share price as compared to the account being reported under Indian AS. This implies that the value relevance of IFRS is significantly high compared to the Indian AS. The coefficient of earning per share increased considerably from 0.348 to 0.670 and book value decreased from 0.631 to 0.250 respectively. This suggest that the market participants have changed the way in which they price their share and these accounting variables may now be relevant or irrelevant.

Table 5 : Value Relevance of Earning and Book Value for All Companies for Pre IFRS Period

<table>
<thead>
<tr>
<th>Model</th>
<th>Regression Coefficient</th>
<th>Adjusted R2</th>
<th>F-Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EPS</td>
<td>BVPS</td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>0.348</td>
<td>0.631</td>
<td>0.603</td>
</tr>
<tr>
<td>2a</td>
<td>0.628</td>
<td>-</td>
<td>0.367</td>
</tr>
<tr>
<td>3a</td>
<td>-</td>
<td>0.785</td>
<td>0.598</td>
</tr>
</tbody>
</table>
The model 2a, 2b, 3a and 3b examine the univariate regression model regression result for the two accounting variable separately. The model for pre and post IFRS reveal that book value and earning do not significantly relate with the share price. However the adjusted R2 36.7 percent for pre IFRS and 76.2 percent for post IFRS. The book value of equity is 59.8 percent for the pre IFRS period. The coefficient of earning per share increased considerably from 0.628 to 0.879 and book value of equity also increased from 0.785 to 0.791. This shows a considerable improvement during the post IFRS periods. The explanatory power of earning per share and book value of equity is higher for post IFRS period.

b) Incremental Value Relevance

Table 7: Incremental Value Relevance of Earning & Book Values for all Companies for Post IFRS Period

<table>
<thead>
<tr>
<th>Model-4</th>
<th>Regression Coefficient</th>
<th>Adjusted R2</th>
<th>F-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EPS</td>
<td>BVPS</td>
<td>P x EPS</td>
</tr>
<tr>
<td>4</td>
<td>0.375</td>
<td>0.552</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Table 7 represent the coefficient, adjusted R2 and f value of model 4, the adjusted R2 is 75.7%. The coefficient of EPS and BVPS are 0.375 and 0.552 respectively. The coefficient for interactive variables P x EPS and P x BVPS are 1.347 and -0.352 respectively. The coefficient of P x BVPS is negative while P x EPS is positive. This result suggests the book value of equity were relevant in pre IFRS and this relevance decreased in post IFRS period. Earnings per share were also relevant in the pre IFRS period and the relevance increased in the post IFRS period. The result indicate that the equity value of companies is not more sensitive of share price under IFRS than under the previous Indian AS while earning per share is more sensitive. This may also imply that earning reported by Indian companies have become more informative to equity investor in determining the value of firm following IFRS adoption.

B. On the Basis of Responses

Find out that the adoption of IFRS by India yielded positive result in relation to the value relevance of accounting information on companies that adopted in India. To effect of adoption of IFRS on value relevance of accounting information lead to the following hypothesis:

H₀₂: There is no significant relationship between IFRS adoption and Value Relevance of Accounting Information.

Table 8: IFRS Adoption and Value Relevance of Accounting Information

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Variable 1</th>
<th>Variable 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>17.20</td>
<td>18.80</td>
</tr>
<tr>
<td>Variance</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.09175171</td>
<td></td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>2.91998558</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.183503419</td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>4.30265273</td>
<td></td>
</tr>
</tbody>
</table>
The finding also revealed that the p value of t statistics is less than the test of significance at 5%. This implies the significant effect of variables. The overall test of significance revealed p value less than test of significance at 5% so null hypothesis is rejected and conclude that there is significance relationship between the adoption the IFRS and value relevance of accounting information within the scope of survey considered. 

\[ H_{03} : \text{There is no significant affect of Value Relevance Performance Indicators on companies that have adopted IFRS in India.} \]

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Variable 1</th>
<th>Variable 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.75</td>
<td>18.46</td>
</tr>
<tr>
<td>Variance</td>
<td>8.5</td>
<td>0.13</td>
</tr>
<tr>
<td>Observations</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>-2.3E</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>7.2E</td>
<td></td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>2.9E</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>1.4E</td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>4.3E</td>
<td></td>
</tr>
</tbody>
</table>

The result of finding from the above table is based on the responses of the respondents on 5 point linkert scale opinion for test questions as regard prepares and users of financial statements respectively. For testing the significant difference of two variables that is first IFRS adoption and second variable is value relevance as prepare perspective Pearson correlation test has been used at two degree of freedom. For testing the significant affect of Value Relevance Performance Indicators on companies that have adopted IFRS in India two variables are tested on the basis of users perspective person correlation used as statistical tool. The finding revealed that p value of t statistics less than the test of significance at 5%. It, therefore, show the significant effect of variable. The overall test of significance revealed that the p value against is calculated value is less than 0.05. On the basis of above result null hypothesis $H_{02}$ is rejected and conclude that there is a significant effect of value relevance performance indicators on companies that have adopted IFRS in India within the scope of survey considered.

**Conclusion**

On the basis of above result it could therefore be concluded that the adoption of IFRS positively and significantly improved the quality of accounting information in the area of value relevance. This study also investigated the value relevance of financial information of Indian Listed Companies. The overall result on accounting presented in this study indicated that earning per share, book value of equity and share price of companies have significantly improved following IFRS adoption. In this paper we attempted to access the different opinion of the preparers of financial statements, investors and external users including academicians regarding the adoption of IFRS and found there is no significance relationship between the adoption the IFRS and value relevance of accounting information. As far as value relevance performance indicators are concern there is a significant effect of value relevance performance indicators on companies that have adopted IFRS in India within the scope of survey considered. The study has further suggested that earning per share and book value of equity share are relevant in determining the value of share in Indian Listed Companies in post IFRS era result. This study also indicated that earning per share Incremental Value Relevant during post IFRS period. Also this study examines the effect of IFRS adoption on reported earning and book value of equity. Accounting number other than equity and book value of equity such as net assets, cash flow might be considered for future research.
References

Appendix

Questionnaire

A. The Relationship Between IFRS Adoption and Value Relevance of Accounting Information

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Test Questions</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IFRS adoption enhances positive contribution to the increase of value relevance of accounting information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IFRS increases the quality of Financial statements coupled with strengthening corporate entities in capital market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>IFRS adoption has significant effect on value relevance variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. The Effect of Value Relevance on Companies that Adopted IFRS

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Test Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Value relevance of accounting information has significant effect on share price and other performance indicators.</td>
</tr>
<tr>
<td>5</td>
<td>Value relevance of accounting information helps to predict future earnings, assess the usefulness and quality of financial statements.</td>
</tr>
<tr>
<td>6</td>
<td>The increase in value relevance of accounting information enhances economic development of quoted companies that adopted IFRS in India.</td>
</tr>
</tbody>
</table>
ABSTRACT

The present research work makes an assessment of the Free Cash Flow position of the HPCL. This study helps to reveal the causes of cash inflows and cash outflows made by the company and make a detailed analysis of its impact on the performance of the company so that fruitful suggestions could be given to improve its performance in future. Cash is the vital input needed to keep business running on a continuous basis. Management of cash involves cash planning, evaluation of cash benefits, sound procedures and practices and finally organization of cash inflows and outflows. Since, Free Cash Flow is a tool for scientific evaluation of the performance of any business concern; the same has been used in the present research study. The study tries to examine the impact of Free Cash Flow and its different variables on company’s performance. The data was collected from the annual reports of HPCL covering the period of ten years starting from 2005-06 to 2014-15 and the data analysis was conducted by using one sample t-test.

KEYWORDS: Free Cash Flow, Free Cash Flow to Equity and to the Firm, Performance Appraisal.

JEL Code : G12, L65 & M41

Introduction

Free Cash Flow measures, surplus of operating cash a company has after paying off its capital expenditures and dividends. Free cash flow helps a company to identify opportunities that are helpful in improving shareholders value like developing new products, increasing dividends, paying off company’s debt or by buy back of its stock. An increase in free cash flow indicates sustainable growth in the company’s earnings, whereas a continuous decrease in free cash flow is an indicator of problems ahead of the company owing which a company may have to resort to internal funding of their operations and growth. A temporary negative or falling free cash flow is however not consider as a trouble provider since it can be because of heavy capital expenditure incurred for launching a new product which will help in future growth as well as increasing future free cash flow. It is imperative to identify the reasons for the increase or decrease in free cash flow. Free cash flow is a significant measure to judge a company’s growth potential. It is the management of the company which decides how to reinvest the excess cash in the business in order to enhance the earning potentials or to use it for the benefit of its investors. In order to grow, a company must have sufficient cash to reinvest in the business. If it is not so, then the company will not be in a position to increase its earnings per share. In the absence of sufficient cash flow even most profitable companies suffers
Dr. S.K.Khatik & Dr. Amit Kumar Nag: Performance Appraisal of HPCL through Free Cash Flow

...financial problems. The managers who are dealing with the cash flows of the company should judicially reinvest the excess cash for the benefit of its investors, in order to enhance the earnings growth potential as well as should try to increase cash flows when the company is having deficit or decreasing cash flows.

Review of Literature

Hartely, W.C.F and Meltzer, Y.L., (1967) opined that ‘Cash forecast is used as a method to predict future cash flow because it deals with the estimation of cash flow (i.e., cash inflows and cash out flows) at different stages and offers the management an advance notice to take appropriate and timely action’.

Orgler, Y. E., (1970) stated that ‘the various collection and disbursement methods can be employed to improve cash management efficiently since it constitutes two sides of the same coin’. Both collections and disbursements exercise a joint impact on the overall efficiency of cash management.

Rama Moorthy (1978) stated that ‘deposit float as the sum of cheques written by the customers that are not yet usable by the firm’. He further stated that in India deposit float can assume sizeable opportunities as cheques normally take a longer time to get realized than in most countries.

Bottan S.E., (2000) stated that ‘Cash is an oil to lubricate the ever turning wheels of business: without it, the process grinds to a stop’. He further stated that ‘Cash shortage is not cost free; it involves cost whether it is expected or unexpected shortage. The expenses incurred as a result of shortage are called short costs.

Justification of the Study

Adequate availability of cash is essential to meet the business needs. Since, it is necessary in daily business operations and is productive, the cash owned by an enterprise at any time should be carefully regulated. Prophecy of cash requirement of a concern is necessary for managing its cash flows, for getting short term borrowings and to meet cash payments. Appropriate cash planning will allow the concern to predict its cash surplus or deficit for any planning period and the surplus cash if any should be invested in short term marketable securities, in order to earn profits. Therefore, an effort has been made in this paper to make a comprehensive study of the HPCL in respect of its Free Cash Flow.

Period of the Study

The present study covers a period of ten years from 2005-06 to 2014-15. To judge the free cash flow position of HPCL based on the various aspects, a period of 10 years is considered to be long enough to study whether sufficient Free Cash Flow was available to equity as well as to the firm.

Objective of the Study

This study has the following objectives:

- To study the concept of Free Cash Flow.
- To examine the Free Cash Flow to Equity of HPCL.
- To analyze the Free Cash Flow to Firm of HPCL.
- To know the impact of free cash flow on the performance of HPCL.

Hypothesis of the Study

H₀₁ : There is no significant difference in the Free Cash Flow to Equity of HPCL during the study period.
H₀₂ : There is no significant difference in the Free Cash Flow to Firm of HPCL during the study period.

Methodology

For the study, statistical data has been collected from the annual reports published by HPCL. The statistical techniques like percentage, averages, coefficient of variation, t-test have also been applied.

Limitations of the Study

As the report is mainly based on secondary data; the following limitations are expected to be part of the required study:

---

The performances of HPCL have been shown for just last ten years, ending 2015. Hence, any uneven trend before or beyond the set period will be the limitations of the study.

This analysis is based on only monetary information, analysis of the non monetary factors are ignored.

As per the requirement of the study some data have been grouped and sub grouped.

Analysis of Impact of Free Cash Flow on the Performance of HPCL

Free Cash Flow analysis of the HPCL has been done with the help of information in the cash flow analysis. Various elements such as Free Cash Flow, Free Cash Flow to Equity and Free Cash Flow to the Firm have been applied for judging the performance of the company.

Free Cash Flow

Free Cash Flow is helpful in gauging a company’s cash flow beyond what is necessary to grow at the normal current rate. In order to exist, develop and grow it is imperative for organization to make capital expenditures and free cash flow considers these expenditures. Free cash flow enables a company to have financial flexibility and in making investments beyond the planned ones. The formula for the calculation of Free Cash Flow is:

\[
\text{Free Cash Flow} = \text{Cash Flow from Operations} - \text{Capital Expenditures}
\]

Where, Cash Flow from Operating Activities (CFO) indicates the inflow of cash from its ongoing and regular activities, i.e., from manufacturing and selling of goods or from providing a service. Cash Flow from Operating Activities (CFO) will never include long term capital expenditure or the investment cost. It is also known as Operating Cash Flow or Net Cash flow from Operating Activities and is therefore calculated as:

\[
\text{Cash Flow from Operating Activities (CFO)} = \text{EBIT} + \text{Depreciation} - \text{Taxes}
\]

And Capital Expenditure incorporates the expenditure incurred by a company to acquire assets or to upgrade physical assets and such outflows are made by the company to increase or to maintain the scope of its operations.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flow From Operations</th>
<th>Capital Expenditures</th>
<th>Free Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>604.59</td>
<td>5626.08</td>
<td>-5021.49</td>
</tr>
<tr>
<td>2006-07</td>
<td>3787.51</td>
<td>8952.07</td>
<td>-5164.56</td>
</tr>
<tr>
<td>2007-08</td>
<td>-1729.93</td>
<td>7683.86</td>
<td>-9413.79</td>
</tr>
<tr>
<td>2008-09</td>
<td>5840.76</td>
<td>18233.67</td>
<td>-12392.91</td>
</tr>
<tr>
<td>2009-10</td>
<td>3281.40</td>
<td>7079.38</td>
<td>-3797.98</td>
</tr>
<tr>
<td>2010-11</td>
<td>1002.42</td>
<td>5424.39</td>
<td>-4421.97</td>
</tr>
<tr>
<td>2011-12</td>
<td>2226.26</td>
<td>4565.13</td>
<td>-2338.87</td>
</tr>
<tr>
<td>2012-13</td>
<td>895.55</td>
<td>4607.45</td>
<td>-3711.90</td>
</tr>
<tr>
<td>2013-14</td>
<td>8807.56</td>
<td>4298.49</td>
<td>4509.07</td>
</tr>
<tr>
<td>2014-15</td>
<td>17841.09</td>
<td>4190.98</td>
<td>13650.11</td>
</tr>
<tr>
<td>Mean</td>
<td>4255.72</td>
<td>7066.15</td>
<td>-2810.43</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5330.24</td>
<td>4020.55</td>
<td>6891.96</td>
</tr>
<tr>
<td>COV %</td>
<td>125.25</td>
<td>56.90</td>
<td>-2.55</td>
</tr>
<tr>
<td>Growth</td>
<td>2850.94</td>
<td>-25.51</td>
<td>-371.83</td>
</tr>
<tr>
<td>Average Annual Growth %</td>
<td>285.09</td>
<td>-2.55</td>
<td>-37.18</td>
</tr>
</tbody>
</table>

Source: Compiled from the annual reports of HPCL. (From 2006 - 2015)

Interpretation

Table 1, shows that the Free Cash Flow was lowest in the year 2008-2009 when it was -Rs.12392.91 crores which then increased to Rs.-3797.98 crores in the year 2009-2010. The Free Cash Flow was highest in the year 2014-2015 when it was Rs.13650.11 crores. Except for 2013-14 and 2014-15 the Free Cash Flow
was negative throughout the study period. The overall average of Free Cash Flow for the whole period of study was Rs.-2810.43 crores. The standard deviation of the Free Cash Flow was 6891.96 with coefficient of variation as -245.23%. The overall growth of the Free Cash Flow during the period of the study was -371.83%, with average annual growth of -37.18%.

- **Free Cash Flow to Equity**

  Free Cash Flow to Equity is basically the adjusted Free Cash Flow for Debt Cash Flows since shareholders or the stakeholders are the sole claimants of the residual of the company. Basically, free cash flow to equity comprises of Net Income, Capital Expenditures, Working Capital and Debt. The Net Income can be identified from the Income statement, Capital Expenditure can be identified from the Cash Flow from Investing Activities section of the Cash Flow Statement, Working Capital Can also be identified from the Cash Flow Statement under the Cash Flow from Operating Activities Section, and Debt or Net borrowings can again be identified from the Cash Flow Statement under the Cash Flow from Financing Activities Section. Free Cash Flow to Equity is used to identify whether repurchases of Stock or payment of dividend are made from Free Cash Flow to Equity or from any other forms of financing. If the amount of Dividend paid or the amount paid for the buyback of shares is less than the amount of Free Cash Flow to Equity, it indicates that the company made funding with either the debt or with the existing Capital. The Free Cash Flow to Equity is:

$$\text{Free Cash Flow to Equity} = \text{Cash Flow from Operations} - \text{Capital Expenditures} + \text{Net Borrowings}$$

**Table 2: Statement Showing Free Cash Flow to Equity (Rs. In Crores)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flow From Operations</th>
<th>Capital Expenditures</th>
<th>Net Borrowings</th>
<th>Free Cash Flow to Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>604.59</td>
<td>5626.08</td>
<td>4311.21</td>
<td>-710.28</td>
</tr>
<tr>
<td>2006-07</td>
<td>3787.51</td>
<td>8952.07</td>
<td>3836.88</td>
<td>-1327.68</td>
</tr>
<tr>
<td>2007-08</td>
<td>-1729.93</td>
<td>7683.86</td>
<td>6099.84</td>
<td>-3313.95</td>
</tr>
<tr>
<td>2008-09</td>
<td>5840.76</td>
<td>18233.67</td>
<td>5602.52</td>
<td>-6970.39</td>
</tr>
<tr>
<td>2009-10</td>
<td>3281.40</td>
<td>7079.38</td>
<td>-978.05</td>
<td>-4776.03</td>
</tr>
<tr>
<td>2010-11</td>
<td>1002.42</td>
<td>5424.39</td>
<td>3040.80</td>
<td>-1381.17</td>
</tr>
<tr>
<td>2011-12</td>
<td>2226.26</td>
<td>4565.13</td>
<td>3691.66</td>
<td>1352.79</td>
</tr>
<tr>
<td>2012-13</td>
<td>895.55</td>
<td>4607.45</td>
<td>3707.16</td>
<td>-4.74</td>
</tr>
<tr>
<td>2013-14</td>
<td>8807.56</td>
<td>4298.49</td>
<td>-4203.56</td>
<td>305.51</td>
</tr>
<tr>
<td>2014-15</td>
<td>17841.09</td>
<td>4190.98</td>
<td>-12380.74</td>
<td>1269.37</td>
</tr>
<tr>
<td>Mean</td>
<td>4255.72</td>
<td>7066.15</td>
<td>1272.77</td>
<td>-1537.66</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5330.24</td>
<td>4020.55</td>
<td>5424.32</td>
<td>2529.19</td>
</tr>
<tr>
<td>COV %</td>
<td>125.25</td>
<td>56.90</td>
<td>426.18</td>
<td>-164.48</td>
</tr>
<tr>
<td>Growth</td>
<td>2850.94</td>
<td>-25.51</td>
<td>-387.18</td>
<td>-278.71</td>
</tr>
<tr>
<td>Average Annual Growth %</td>
<td>285.09</td>
<td>-2.55</td>
<td>-38.72</td>
<td>-27.87</td>
</tr>
</tbody>
</table>

Source: Compiled from the annual reports of HPCL. (From 2006 - 2015)

**Interpretation**

As per table no.2, the Free Cash Flow to Equity was highest in the 2011-12 when it was Rs.1352.79 crores and was lowest in the year 2008-2009 when it was Rs.-6790.39 crores. The Free Cash Flow showed a decreasing trend from the year 2005-2006 to 2008-2009 and then increased to Rs.-4776.03 crores in the year 2009-2010, but still was negative, which further increased and reached its highest in the year 2011-12. The overall average of Free Cash Flow to Equity for the whole period of study was Rs.-1537.66 crores. The standard deviation of the Free Cash Flow to Equity was 2529.19 with coefficient of variation as -164.48%. The overall growth of Free Cash Flow to Equity during the period of the study was -278.71%, with average annual growth of -27.87%.
Free Cash Flow to the Firm

Free Cash Flow to the firm measures the financial performance of a company by calculating the net amount of cash generated for a company or a firm after providing for expenses, taxes, changes in working capital and for investments. It is basically the measurement of a company’s profitability after meeting all expenses and investments. It represents the firm’s ability to pay dividends, buy back its share as well as pay off debt. A negative Free Cash Flow to the firm indicates that the firm has not generated sufficient funds or revenue to cover its cost or investment activities, whereas a positive Free Cash Flow to the firm indicates excess cash left after meeting all expenses. Free Cash Flow to the firm is also known as the unlevered free cash flow since it is the cash flow before interest on debt. Free Cash Flow to the firm is calculated as:

\[
\text{Free Cash Flow to the Firm} = \text{Free Cash Flow to Equity} + \text{Interest Expenses} \times (1 - \text{Tax Rate}) - \text{Net Borrowings}
\]

Table 3: Statement Showing Free Cash Flow to the Firm (Rs. In Crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Free Cash Flow to Equity</th>
<th>Interest Expenses (1-Tax Rate)</th>
<th>Net Borrowings</th>
<th>Free Cash Flow to the Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>604.59</td>
<td>175.88</td>
<td>4311.21</td>
<td>-3530.74</td>
</tr>
<tr>
<td>2006-07</td>
<td>3787.51</td>
<td>422.98</td>
<td>3836.88</td>
<td>373.61</td>
</tr>
<tr>
<td>2007-08</td>
<td>-1729.93</td>
<td>766.10</td>
<td>6099.84</td>
<td>-7063.67</td>
</tr>
<tr>
<td>2008-09</td>
<td>5840.76</td>
<td>2082.84</td>
<td>5602.52</td>
<td>2321.08</td>
</tr>
<tr>
<td>2009-10</td>
<td>3281.40</td>
<td>903.75</td>
<td>-978.05</td>
<td>5163.20</td>
</tr>
<tr>
<td>2010-11</td>
<td>1002.42</td>
<td>884.00</td>
<td>3040.80</td>
<td>-1154.38</td>
</tr>
<tr>
<td>2011-12</td>
<td>2226.26</td>
<td>2224.27</td>
<td>3691.66</td>
<td>758.87</td>
</tr>
<tr>
<td>2012-13</td>
<td>895.55</td>
<td>1412.80</td>
<td>3707.16</td>
<td>-1398.81</td>
</tr>
<tr>
<td>2013-14</td>
<td>8807.56</td>
<td>1336.36</td>
<td>-4203.56</td>
<td>14347.48</td>
</tr>
<tr>
<td>2014-15</td>
<td>17841.09</td>
<td>706.59</td>
<td>-12380.74</td>
<td>30928.42</td>
</tr>
<tr>
<td>Mean</td>
<td>4255.72</td>
<td>1091.56</td>
<td>1277.27</td>
<td>4074.51</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5330.24</td>
<td>636.14</td>
<td>5424.32</td>
<td>10463.33</td>
</tr>
<tr>
<td>COV %</td>
<td>125.25</td>
<td>58.28</td>
<td>426.18</td>
<td>256.80</td>
</tr>
<tr>
<td>Growth</td>
<td>2850.94</td>
<td>301.75</td>
<td>-387.18</td>
<td>-975.98</td>
</tr>
<tr>
<td>Average Annual Growth %</td>
<td>285.09</td>
<td>30.17</td>
<td>-38.72</td>
<td>-97.60</td>
</tr>
</tbody>
</table>

Source: Compiled from the annual reports of HPCL. (From 2006 - 2015)

Interpretation

Table 3, states that the Free Cash Flow to the Firm was highest in the year 2014-2015 when it was Rs. 30928.42 crores and was lowest in the 2007-08 when it was Rs.-7063.67 crores. HPCL witnessed negative Free Cash Flow to the firm in the year 2005-06, 2007-08, 2010-11 & in the year 2012-13. The Free Cash Flow to the firm showed an increasing trend during 2008-09 and 2009-10 when it was Rs.2321.08 crores and Rs.5163.20 crores respectively and then decreased to Rs.-1154.38 crores in the year 2010-11. The overall average of Free Cash Flow to the Firm for the whole period of study was Rs.4074.51 crores. The standard deviation of the Free Cash Flow to the Firm was 10463.33 with coefficient of variation as 256.80%. The overall growth of Free Cash Flow to the Firm during the period of the study was -975.98%, with average annual growth of -97.60%.

Testing of Hypothesis

Null Hypothesis (Ho)
\[ H_0 : \text{There is no significant difference in the Free Cash Flow to Equity of HPCL during the study period.} \]

Table 4: One-Sample Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Cash Flow to Equity</td>
<td>10</td>
<td>-1537.66</td>
<td>2665.99</td>
<td>843.06</td>
</tr>
</tbody>
</table>
### Table 5: One-Sample Test

<table>
<thead>
<tr>
<th></th>
<th>Test Value = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
</tr>
<tr>
<td>Free Cash Flow to Equity</td>
<td>-1.824</td>
</tr>
</tbody>
</table>

**Interpretation of t-test**

\[
t = -1.824 \quad \text{and} \quad t_{0.05} = 2.262
\]

\[
t < t_{0.05}
\]

When degree of freedom (df) is 9 and level of significance is 5%, the critical value is 2.262. Since the calculated value of t is -1.824 which less than the table value, we conclude that there is no significant difference in the Free Cash Flow to Equity of HPCL during the study period. Hence, null hypothesis is accepted.

**H02**: There is no significant difference in the Free Cash Flow to Firm of HPCL during the study period.

### Table 6: One-Sample Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Cash Flow to the Firm</td>
<td>10</td>
<td>4074.51</td>
<td>11029.32</td>
<td>3487.78</td>
</tr>
</tbody>
</table>

### Table 7: One-Sample Test

<table>
<thead>
<tr>
<th></th>
<th>Test Value = 0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t</td>
</tr>
<tr>
<td>Free Cash Flow to the Firm</td>
<td>1.168</td>
</tr>
</tbody>
</table>

**Interpretation of t-test**

\[
t = 1.168 \quad \text{and} \quad t_{0.05} = 2.262
\]

\[
t < t_{0.05}
\]

When degree of freedom (df) is 9 and level of significance is 5%, the critical value is 2.262. Since the calculated value of t is 1.168 which less than the table value, we conclude that there is no significant difference in the Free Cash Flow to Firm of HPCL during the study period. Hence, null hypothesis is accepted.

**Conclusion**

In light of the present research work it can be concluded that the Free Cash Flow to Firm position of HPCL is very satisfactory with highest Free Cash Flow to Firm in the year 2014-2015 when it was Rs. 30928.42 crores showing the efficiency with which the company is going through its Free Cash Flow. As regards to the Free Cash Flow to equity, the least was in the year 2008-2009 when it was Rs.-6790.39 crores. The overall average of free cash flow was not at all satisfactory during the entire period of the study, it was Rs.-2810.43. On analyzing Free Cash Flow to the Firm, it was observed that the company has put in utmost effort to maintain and increase its Free Cash Flow. The average Free Cash Flow to the Firm was Rs.4074.51 crores, with the lowest in the 2007-08 when it was Rs.-7063.67 crores. The study reveals that the performance of the company is satisfactory since it is generating sufficient cash to cover its cost and to meet its investment activities as well as to pay dividends, buy back its share or to pay off its debt.

**Suggestions**

The following suggestions could be laid down in the light of the findings:

- The company needs to minimize its cash expenses in order to increase its cash in hand, cash at bank and other short term securities.
- There is a need to maintain balance between profitability and liquidity which is only possible if the company is having adequate cash balance.
The company should plan to maximize its net income after tax which in turn will help the company to have adequate cash balance which in turn will enable the company to have financial flexibility and will be able to make further investments.

The company should have a check on its Free Cash flow to equity so that the company can have proper flow of cash available for its stakeholders throughout the year.

References
CONTRIBUTING FACTORS TO THE COST OF FACULTY ATTRITION IN TECHNICAL INSTITUTIONS

N. Malati∗
Prakash Sharma∗∗

ABSTRACT

The objective of higher education is to provide students with sufficient knowledge and skill so as to function as creative and productive members of the society. This is fulfilled through its faculty which disseminates knowledge and skill. The faculty is considered to be a vital element in the success of every institution. Increase in number of technical education institutions has lead to an increase in demand for faculty. One major problem faced by these institutions is faculty attrition. Faculty attrition is associated with costs which are in the form of direct, indirect or opportunity. Measurement of this cost becomes imperative to organizations. Quantification of the indirect and opportunity costs is all the more difficult but they have far reaching effects. The current study tries to understand the relationship between indirect and opportunity cost incurred by the institutions and faculty attrition. Factor analysis and CATREG have been employed and it was observed that higher the attrition, higher the indirect costs indicating that as the attrition goes above 25% it creates negativity in the climate leading to lower productivity, loss of motivation of students and faculty, loss of intellectual capital, loss of productivity of faculty in terms of lower participation in research, conferences, new curriculum development resulting in diminishing sense of professional value. The same effect has been observed in the case of opportunity costs too indicating that higher the attrition higher is the loss in terms of decrease in business, students, faculty/adjuncts and institution’s reputation.

KEYWORDS: Faculty Attrition, Indirect Costs, Opportunity Cost, Technical Institutions.

Introduction

Education has been recognized as the most important source of competitive advantage for a nation. The objective of higher education is to provide students with sufficient knowledge and skill to function as creative and productive members of the society. The wealth or poverty of a nation depends on the quality of the higher education (Malcolm Gillis, 1999). The focus on higher education has been increasing and is evident from the government’s progressive policies in the field of education in the 12th Five year Plan. This has also resulted in the rise in number of institutions offering higher education including technical education. Faculty is an important component of every institute and the growth trajectory is largely dependent on the quality of faculty available. There has been huge mismatch in the growing demand for faculty with corresponding availability of quality faculty, resulting in faculty

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attrition. Faculty attrition has quantifiably dire consequences for the nation’s quality of technical educations. Many educational institutions constantly struggle to maintain and rebuild the staff continuously. The talent and acumen remain stored in a leaky bucket. An inordinate amount of their capital – both human and financial – is consumed by the constant process of hiring and replacing faculty who leave before mastering the art of creating a cohesive learning culture for the students. The organizations constantly spend and re-spend its resources on grooming fresh talent that acquires professional know how and exits the system for a better opportunity. This leads to complete wastage of all the capital consumed by the recruitment and training process. As a result of high turnover, institutions are often staffed with unbalanced concentrations of under-prepared, inexperienced teachers who are left on their own to meet student needs. As a consequence of this isolation, many new teachers feel overwhelmed by the challenge they face, eventually leaving their current workplace.

The need of the hour for institutions is to be aware of their attrition problems. The absence of a clear understanding of the attrition trends often lead to costly annual recruitment and hiring cycle, bringing in more and more faculty into institutions only to lose them with an equally fast rate. The process is bound to drain the institutions both financially and intellectually leading to wider student achievement gaps. Hence the current study tries to understand the various costs involved in the faculty attrition with specific focus on the indirect and opportunity costs.

Background for the Study

Technical education is defined as programmes of education, research and training in engineering, technology, architecture, town planning, management, pharmacy, applied arts and crafts and such other programmes or areas as the Central Government may, in consultation with the Council, by notification in the official Gazette, declare. The government on its part aims to increase the Gross Enrolment Ratio (GER) in higher education to 21% by the end of the 12th five year plan period from the current 13.5% and Ministry of Human Resource Development has formulated an action plan to achieve this target. This has led to an unprecedented expansion in the numbers of the premier institutes like IITs, IIM, NITs, and IISERs etc. Permission for private investors in the area of education has resulted in a spurt of technical institutions from 4,491 in 2006-07 to 8,361 in 2011-12 with a corresponding increase in the annual student intake from 9,07,822 in 2007-08 to 20,46,611 in 2011-12. Further, significant number of university level technical institutions, such as deemed universities and private universities established by the State legislatures, have also come into existence in recent years. This has also brought forth pertinent focus on popularity of certain programmes offered, creation of regional balance, ownership pattern, modes of delivery of the programme, degree of regulation, creation and sustenance of talented faculty etc. The National Knowledge Commission (2006-2009) in its ‘Report to the Nation’ also reiterates the high growth. Further, evaluation of the institutions is largely dependent on the ‘Intellectual Capital and Faculty’ making it increasingly important to develop a mechanism to arrest, conserve, retrieve the intellectual capital of the management institutions (Doctor and Ramachandran, 2008). According to a report presented to the Union Government by the University Grants Commission (UGC), India currently has only half of the required strength and needs about 3,00,000 more faculty, revealing the extent of faculty crunch in India’s higher education system. Ministry of Human Resource Development (MHRD) in a statement stated that “establishment of a reliable database itself is a major hurdle in addition to the issue of faculty shortage”. The report also states that India requires about 100,000 more teachers per year in next 10 years for its colleges. The task force has urged the Ministry to immediately order a complete assessment of the academic situation in India, without which higher education policy projections for the 12th Year Five Plan (2012-17) cannot be met. Suneja. K. (2013) states that with 92% of the total institutions imparting technical education comes from the unaided private institutions. It has become essential for
the colleges to comprehend that a higher attrition rate results in lowering of quality, decreasing prestige and lesser attraction of students, all of them also influencing the costs. The study was carried out in Delhi which is the capital city and the education hub.

**Literature Review**

Ingersoll, (2001); NCTAF, (2002), McCullough & Johnson, (2007) put forth various costs of faculty attrition which have an impact on school performance and community. Further, it was observed that high levels of employee turnover are both cause and effect of ineffectiveness and low performance in organizations. In other words, faculty tends to remain in competent schools and leave ineffective or low-performing ones. Ingersoll (2002) stated that teaching was a “revolving door…occupation in which there are relatively large flows in, through, and out of schools”. This ‘revolving door’ was costly to the nation.

Rampant attrition is usually an indicator of organizational inefficiency and proves to be potentially troublesome and expensive (Waters, 2003). The rise in loss of relatively high human capital value employees who choose to leave an organization can cause serious loss and difficulty, (Zhang et al., 2006). Less qualified instructors have been shown to adversely impact student achievement (Hill & Barth, 2004), resulting in a cost to student achievement across the nation. Voluntary turnover costs emanate from an increase in the rate of employee turnover Morrell et al (2004). He further identified direct and indirect costs of voluntary turnover as replacement, recruitment and selection, temporary staff, management time, morale, pressure on remaining staffs, costs of learning, product or service quality, organizational memory, and the loss of social capital. According to Rodgers (2005) and Dooney (2002) the costs related to turnover/attrition of online faculty/adjunct ought to be based on predetermined measures related to costs established by an institution, based on: 1) Direct costs, 2) Indirect costs, and 3) Opportunity costs. The financial costs associated with employee attrition are often described in general terms and do not provide specific line item costs that are critical to annual budgets. Methods for estimating these costs have been available for years (Brogden, 1949; Cronbach and Gleser, 1965) but not until mid-1970’s when the subject attracted the attention of the researchers. These costs are most difficult to measure as there is a lack of direct monetary relationship between the costs and the employee exit behavior. Evaluating these costs is a matter of prime concern since the repercussions may continue to affect the institution in more than one ways. Extensive literature on reasons as to why faculty/adjunct depart from higher education exist (Nagowksi, 2006; Amey, 1996), the line item costs related to turnover/attrition are not readily available. Collins and Smith, (2006) state that, more often than not the cost of replacing employees, or other general costs are typically associated with employees recruitment and training .Literature on financial costs relating to attrition often focuses on employees within corporations (Cork, 2008; Dooney, 2007; Rodgers, 2002) and not higher education. According to O’Connel and Kung (2007) there are three main components of turnover costs- recruitment cost, potential loss of business and training and development cost. Holtom. B.C et. al (2008) reveal that there are no profit and loss statements that specifically depict the “cost of voluntary turnover”. Instead, the costs are concealed in line items like recruitment, selection, temporary staffing and training. Or worse still, the valid but unmeasured costs from losses of customer service continuity or critical implicit knowledge are never calculated. Mehta. S (2012) states that exodus of teachers is a costly phenomenon, both for the students, who lose the value of being taught by an experienced teacher, and to the institute as they have to start from the scratch. Faculty turnover costs the nation in multiple dimensions. The failure to measure the costs may partly be attributed to lack of defined models and frameworks to guide managers in accurately estimating employee attrition costs. Sorensen (1995) also includes supervisory time spent on additional on-the-job training as a cost factor. Loss of productivity is identified as the loss of time invested by the trainer in grooming the trainee and the expanded procedural time. One also needs to account for costs incurred due to learning curve losses which translate into expenses associated
with the time it takes for a new employee to reach full productivity (Fitz-enz, 1997; Pinkovitz et al., 1997). According to Bliss (1997), it takes the average employee approximately five months to reach full productivity. This is most likely a conservative estimate for beginning teachers but may be appropriate for experienced teachers moving into new positions. In education, teacher productivity could be expressed in terms of student performance, but it would be difficult to associate monetary value on performance, making it imperative for the institutions to understand, analyze and arrest the attrition. Often the exit of employees leads to negative changes in the workplace with dip in employee morale and consequent loss of productivity hence measurement of the indirect and opportunity cost becomes essential.

This paper discusses about Indirect and opportunity costs. The indirect cost is characterized by loss of intellectual capital, lower staff productivity, inability to design new courses, inability of faculty for various activities leading to individual as well as institutional growth due to lack of staff, sense of professional value, and faculty motivation. The second cost opportunity cost comprising of costs incurred due to failure to start a new course, failure to offer specialized course, loss of established market sector to competitors, loss of current and potential students to competitors, loss of potential business/educational partnerships, loss of faculty/adjuncts to competitors, loss of potential faculty/adjuncts, decrease in student enrolment, faculty and staff recruitment, possible loss of accreditation or grading by regulatory bodies, decrease in donations, contributions, and decrease in sense of community. Considering both of these costs, this paper explores the relationship between indirect cost and opportunity cost incurred by the institutions at various levels of faculty attrition.

Objective of the Study

To explore the impact of faculty attrition on the indirect and opportunity costs of the technical institutions.

Research Design

A structured questionnaire was designed to collect the data. Different factors were identified through literature review and exploratory study. Exploratory factor analysis was applied to develop the measurement tool for identifying factors of indirect and opportunity costs. For the indirect cost 2 items (comprising of 13 sub-items) were selected on the basis of literature review and for the opportunity cost four items (comprising of 18 sub-items) were selected. The indirect cost and opportunity cost were dependent variables and the levels of faculty attrition was taken as independent variable. Validity of the questionnaire was checked through face validity method and was found to be high. Items were rated on likert scale of five points which is the most popular choice for ordinal scale; the opinion indicated as “very high” has been assigned the weight of 5. To evaluate the indirect and opportunity cost of the institutions total (summated) score was calculated for each respondent by summing across items.

Sampling and Data Collection

The study was conducted in Technical institutions (approved by AICTE) in the Delhi and NCR region. A sample of 55 institutions was drawn using simple random sampling. The data on these items was collected through a sample of fifty five directors/HOD of various technical institutions on a 5 point likert scale. Questionnaires were circulated in 102 institutions and 55 completely filled in questionnaires were received. The response rate was 53.92.

Data Analysis and Results

Exploratory Factor Analysis was undertaken and was followed by categorical regression. The factor analysis generated two components with Eigen value greater than 1. The varimax rotation clubbed the items on one component as shown in Table 1.
Table 1: Rotated Component Matrix and Cronbach $\alpha$

<table>
<thead>
<tr>
<th>Components</th>
<th>Cronbach $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Productivity Costs</td>
<td>.842</td>
</tr>
<tr>
<td>A2 Cost of Morale</td>
<td>.862</td>
</tr>
<tr>
<td>B1 Loss of Business</td>
<td>.802</td>
</tr>
<tr>
<td>B2 Loss of Students</td>
<td>.782</td>
</tr>
<tr>
<td>B3 Loss of Faculty/Adjuncts</td>
<td>.879</td>
</tr>
<tr>
<td>B4 Loss of Reputation</td>
<td>.792</td>
</tr>
</tbody>
</table>

KMO for Sampling Adequacy = 0.75 & Bartlett’s test of Sphericity Significance= 0.00

Items A1 and A2 were clubbed as ‘Indirect Cost’ characterized by Productivity Costs and Cost of Morale.

Further B1, B2, B3, & B4 were clubbed as Opportunity Cost comprising of Loss of Business, Loss of Students, Loss of Faculty/Adjunct and Loss of Reputation. The split half reliability measure cronbach alpha values are found to be acceptable as shown in Table 1.

To assess the indirect cost and opportunity cost of faculty attrition categorical regression was applied with factors of indirect and opportunity cost as dependent variable and four categories of attrition i.e. attrition less than 5%, 5%-less than 15%, 15%- less than 25%, and greater than 25% as independent variables. Results could not be achieved when all the four categories were entered together as it was generating zero tolerance implying high collinearity between the independent variables. So results were generated by removing one of the independent variable every time. The level of tolerance of categories (nearing to 1), have been considered for the study. Further means have been taken to understand the variations across the attrition levels with respect to each of the elements of indirect costs and opportunity costs.

Indirect Cost

The scrutiny of the Table 2 shows that there are significant effects of various attrition categories on indirect cost. In this case also the results depicted in I and II cases will be considered. The results show that in the I case the category of attrition greater than 25% has significant positive effect on indirect cost and in II case the category 15%-less than 25 % has significant adverse effect on indirect cost. This means higher the attrition lower is the indirect cost in case of attrition category 15% to less than 25% while in case of attrition greater than 25% the higher attrition leads to high total indirect cost.

Table-2: Categorical Regression of Faculty Attrition Rate on Indirect Cost

<table>
<thead>
<tr>
<th>R2=.161</th>
<th>Standardized Coefficients</th>
<th>Correlations</th>
<th>Importance</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Std. Error</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td>Greater than 25%</td>
<td>.286</td>
<td>.131</td>
<td>4.784</td>
<td>.033</td>
</tr>
<tr>
<td>15%- less than 25%</td>
<td>-.297</td>
<td>.133</td>
<td>4.941</td>
<td>.031</td>
</tr>
</tbody>
</table>

Also the table of means (Table 3) shows that the total indirect cost incurred is average in institutes having low attrition rates while it is above average in institutes with high attrition rates. The results indicate that till the attrition rate of 15% to 25% the climate of the institute does not lead to be negative to lower
down the productivity, motivation of students and faculty remain intact, loss of intellectual capital is not
detrimental, loss of productivity of faculty in terms of research, conferences, new curriculum development
is not too high, sense of professional value does not diminish but when the attrition raises more than 25%, it
creates negativity in the climate leading to lower productivity, loss of motivation of students and faculty,
loss of intellectual capital is detrimental, loss of productivity of faculty in terms of research, conferences,
new curriculum development is high and diminishing sense of professional value is high.

Table 3: Mean Scores of Institutes on Indirect Costs with respect to Different Attrition Rates

<table>
<thead>
<tr>
<th>Attrition Category</th>
<th>Indirect Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attrition less than 5%</td>
<td>2.93</td>
</tr>
<tr>
<td>Attrition 5%-less than 15%</td>
<td>3.12</td>
</tr>
<tr>
<td>Attrition 15%- less than 25%</td>
<td>3.29</td>
</tr>
<tr>
<td>Attrition Greater than 25%</td>
<td>3.54</td>
</tr>
</tbody>
</table>

Opportunity Cost

In the case of opportunity costs also the results depicted in I and II cases are considered, the results
show that in both I and II case the category greater than 25% has significant positive effect on opportunity
cost. This means higher the attrition higher is the loss opportunity costs. The result shows that in greater
than 25% attrition category the 1 standard deviation changes leads to .332 to .412 standard deviation
increases in total opportunity cost. Also the individual prediction power of attrition category greater than
25% is 11.56% and 16.81%. Looking at the importance of the predictors, the attrition category of greater than
25% attrition is the only important predictor with the importance of 82% which is very high (Table 4).

Table 4: Categorical Regression of Faculty Attrition Rate  Opportunity Cost

<table>
<thead>
<tr>
<th>Standardized Coefficients</th>
<th>Correlations</th>
<th>Importance</th>
<th>Tolerance</th>
<th>After Transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2=.189</td>
<td>Beta</td>
<td>Std. Error</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td>Greater than 25%</td>
<td>.412</td>
<td>.129</td>
<td>1</td>
<td>10.280</td>
</tr>
</tbody>
</table>

Also the screening of means table (Table 5) shows that total opportunity cost incurred by
institution with low attrition rates is average while by institutes having attrition greater than 25% this
cost is above average. This means that in the institutions having attrition below 25% the decrease in
business, students, faculty/adjuncts, and reputation is average while in institutions having attrition
above 25% these costs are above average.

Table 5: Mean Scores of Institutes on Opportunity Costs with respect to Different Attrition Rates

<table>
<thead>
<tr>
<th>Attrition Category</th>
<th>Opportunity Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attrition less than 5%</td>
<td>2.03</td>
</tr>
<tr>
<td>Attrition 5%-less than 15%</td>
<td>2.28</td>
</tr>
<tr>
<td>Attrition 15%- less than 25%</td>
<td>2.94</td>
</tr>
<tr>
<td>Attrition Greater than 25%</td>
<td>3.46</td>
</tr>
</tbody>
</table>

The purpose of the study was to explore the cost of faculty attrition in technical institutions with
focus on indirect and opportunity costs in Delhi and NCR. Measurement of these costs becomes
imperative as it is implied that institutions which experience higher attrition have not invested
adequately in their faculty. It has been observed that that higher the attrition the higher the indirect costs
indicating that as the attrition goes above 25% it creates negativity in the climate leading to lower
productivity, loss of motivation of students and faculty, loss of intellectual capital, loss of productivity of
faculty in terms of lower participation in research, conferences, new curriculum development resulting in diminishing sense of professional value. The same effect has been observed in the case of opportunity costs too indicating that higher the attrition higher is the loss in terms of decrees in business, students, faculty/adjuncts and reputation. The costs have far reaching impact on the institutions both in short run and in the long run. Institutions have to compete for the scarce human resource and ought to understand that higher the attrition higher are the costs. Retaining and managing the talent has become the need of the hour. Hence the motto of the institutions in this age of high competition is “Keep your faculty happy lest you lose them to your competitors and be reduced to training founds for others”.

References

- Bliss, W.G., “Cost of Employee Turnover,” The Advisor (available on line at http://isquare.com/turnover.html);
ABSTRACT

The study attempts to analyze the earnings management practices by select oil companies in India. Further the study tries to test whether the reason behind consistent hike in oil prices by oil companies in India is due to earnings management. Specifically by taking 18 oil companies including exploration and marketing companies during the period from 2003 to 2012, the study analyses the magnitude of use discretionary accruals though estimation of modified Jones model. The paper concludes that oil companies in India are using income decreasing accruals to manage their earnings in order avoid implication of new policies, taxes and political pressure to claim for less subsidies.

KEYWORDS: Earnings Management, Political Cost, Modified Jones Model, Oil Companies.

JEL classification: M41, M48, M49.
Pérez and Henneman, (2010) have established a relationship between the political cost hypothesis, agency cost theory, and debt covenant hypothesis with the earnings management by companies. Further Iatridis and Kadorinis (2009) investigated the motivation behind the firms that engage in earnings management. The findings of the study have shown that firms with low profitability and high leverage are likely to adopt earnings management practices. Moreover, firms in need of more equity or debt finance also try to increase firm’s financial numbers in order to attract more investors. Firms that chose to debt covenants also resort to earnings management to avoid financial distress and lenders disappointment.

Byard (2007) argues that political costs have increased after implementation of Sarbenes and Oxley Act. Oil companies were engaged in earnings management to escape from political pressure and imposition of new taxes like wind fall tax. Using time series for earnings management estimation the study finds earnings management by US based oil companies immediately after impact of Katrina and Rita. Further big oil companies use more income decreasing accruals as compared to smaller oil companies. In similar line, Han (1998) studied political cost and earnings management by oil companies during Persian Gulf crisis. Watt and Zimmerman (1986) argues that during the period of unusual product price increases the reported earnings bring political attraction for scrutiny, so firms engage in earnings management to show lower earnings.

Literature shows that models like Healy (1985), Jones (1991) and Jones (1995) are there to identify the earnings management by firms. Among this Modified Jones model (1995) is one of the powerful model used for detection of earnings management. Prior to Jones model non discretionary accruals was used as a measure of earnings management and discretionary accruals were assumed to be constant. A company can manage its earning through various ways like change of accounting policies, change of capital structure and use of accruals (Jones 1991). Nevertheless, the companies are engaging in earnings management through changes in their accounting policies. Change of capital structure may not be always a better idea as in either way it will attract high leverage or debt covenant hypothesis. From a regulator point of view, it may not be possible to scrutiny the accounting changes of all companies, for which only accruals is a measure of earnings management. Therefore, the accrual models assume that the companies are using only accruals for earnings management. Hence it is a non-trivial exercise to test whether only changes in current accruals affect it or the changes in past also can affect the current earnings. Companies can manipulate its income through change in the policy of capitalization of expenditure. In a similar line, the change in total assets can detect the changes in income due to the change for depreciation. Further, the increase in accounts receivable may increase the EM or vice versa. Through changing revenue recognition policy, companies can manage the position of account receivables. Companies that recognize all future earnings in current period will show less earnings in future. The cookie jar reserves maintained by the companies might have both positive and negative impact. This will help regulator, analyst and investor to know actual effect due to earnings management. The main objective of the paper is to analyze the use of discretionary accruals for earnings management by oil companies in India. By using modified Jones model I have estimated discretionary accruals to analyze earnings management practice by oil companies in India.

Data and Methodology

Data pertaining to earnings management (EM) from 18 oil companies as per availability of data, which consist of both exploration and marketing, are from Centre for Monitoring Indian Economy database (CMIE). The period of the study ranges from 2003 to 2012 during which considerable fluctuation in oil price occurred. The variables of the study include total accruals (TA), calculated as net profit before extra-ordinary item, minus cash flow from operation. Other variables are change in revenue minus change in account receivables (REV-AR) and plant property and equipment (PPE). As use of discretionary accruals cannot be observed directly from company’s financial statement, so we have to use some model for it. Here I have applied modified Jones model to identify use of abnormal accruals by the
companies. The model estimation includes three steps; first is to calculate total accrual which is calculated by deducting cash flow from operation from net profit. The second step to estimate parameters through regression using panel data and calculate non-discretionary accruals. The third is to calculate the discretionary accruals as a proxy of earnings management, which is total accrual minus non-discretionary (NDA) accruals.

**Modified Jones Model (Dechow et al. 1995)**

\[
TA_{it} = \alpha + \beta_1 (\Delta REV_{it} - \Delta AR_{it}) + \beta_2 PPE_{it} + \varepsilon_{it} \tag{1}
\]

\[\Delta AR_{it} = \text{Accounts receivable;} \]
\[\Delta REV_{it} = \text{Annual revenues;} \]
\[PPE_{it} = \text{property, plant, and equipment} \]

By applying regression to equation (1) we have calculated the parameters, and then non-discretionary accruals have been calculated by putting the parameters in equation (2).

\[
NDA_{it} = \alpha + \beta_1 (\Delta REV_{it} - \Delta AR_{it}) + \beta_2 PPE_{it} + \varepsilon_{it} \tag{2}
\]

Here NDA_{it} means non-discretionary accruals and in above equation (1) and (2) all the variables are scaled by total assets in t-1 period. After estimation of NDA, Discretionary accruals (DA) have been calculated as below in equation (3).

\[
DA_{it} = TA_{it} - NDA_{it} \tag{3}
\]

**Results**

The table 1 shows the descriptive statistics of the different variables for sample companies. Here mean of total accruals is 0.194999 and median is 0.007186 which indicates there is presence of accruals. In all cases the variables are statistically significant. Also by taking TA as dependent and other variables as independent we found the R square is 0.027693 and S.E of regression is 1.027848, which gives evidence of presence of discretionary accruals. It means the companies are using abnormal accruals to manage their earnings.

<table>
<thead>
<tr>
<th>Table 1: Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TA</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Std. Dev.</td>
</tr>
<tr>
<td>Skewness</td>
</tr>
<tr>
<td>Kurtosis</td>
</tr>
<tr>
<td>Jarque-Bera</td>
</tr>
<tr>
<td>Probability</td>
</tr>
<tr>
<td>Sum</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

Source: Computed by the author

![Figure 1: Discretionary Accruals for the Period From 2003 to 2012](image-url)
The figure 1 shows the average discretionary or abnormal of sample companies for the period from 2003 to 2012. We can observe the DA is negative in case of all companies. It means the sample companies have engaged in downward earnings manipulation and same also conformed in Table 2.

Table 2: Mean and Standard Deviation of total Accruals, Non-Discretionary Accruals and Discretionary Accruals of Sample Companies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Mean TA</th>
<th>Mean NDA</th>
<th>Mean DA</th>
<th>SD TA</th>
<th>SD NDA</th>
<th>SD DA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bharat Petroleum Corpn. Ltd.</td>
<td>0.00</td>
<td>1.21</td>
<td>-1.21</td>
<td>0.23</td>
<td>0.15</td>
<td>0.26</td>
</tr>
<tr>
<td>Castrol India Ltd.</td>
<td>0.96</td>
<td>1.16</td>
<td>-0.19</td>
<td>1.29</td>
<td>0.31</td>
<td>1.54</td>
</tr>
<tr>
<td>Chennai Petroleum Corpn. Ltd.</td>
<td>0.04</td>
<td>1.19</td>
<td>-1.15</td>
<td>0.48</td>
<td>0.14</td>
<td>0.40</td>
</tr>
<tr>
<td>Essar Oil Ltd.</td>
<td>-1.03</td>
<td>1.23</td>
<td>-2.26</td>
<td>2.42</td>
<td>0.14</td>
<td>2.43</td>
</tr>
<tr>
<td>Goa Carbon Ltd.</td>
<td>0.28</td>
<td>1.19</td>
<td>-0.91</td>
<td>1.72</td>
<td>0.18</td>
<td>1.82</td>
</tr>
<tr>
<td>Gulf Oil Corpn. Ltd.</td>
<td>0.23</td>
<td>1.21</td>
<td>-0.97</td>
<td>0.38</td>
<td>0.04</td>
<td>0.36</td>
</tr>
<tr>
<td>Hindustan Petroleum Corpn. Ltd.</td>
<td>-0.06</td>
<td>1.21</td>
<td>-1.27</td>
<td>0.21</td>
<td>0.10</td>
<td>0.19</td>
</tr>
<tr>
<td>India Carbon Ltd.</td>
<td>0.23</td>
<td>1.19</td>
<td>-0.96</td>
<td>1.01</td>
<td>0.21</td>
<td>1.07</td>
</tr>
<tr>
<td>Indian Oil Corpn. Ltd.</td>
<td>0.34</td>
<td>1.20</td>
<td>-0.86</td>
<td>0.28</td>
<td>0.07</td>
<td>0.29</td>
</tr>
<tr>
<td>Mangalore Refinery &amp; Petrochemicals Ltd.</td>
<td>0.01</td>
<td>1.18</td>
<td>-1.18</td>
<td>0.26</td>
<td>0.16</td>
<td>0.41</td>
</tr>
<tr>
<td>Numaligarh Refinery Ltd.</td>
<td>0.00</td>
<td>1.20</td>
<td>-1.20</td>
<td>0.14</td>
<td>0.05</td>
<td>0.17</td>
</tr>
<tr>
<td>Panama Petrochem Ltd.</td>
<td>1.02</td>
<td>1.47</td>
<td>-0.45</td>
<td>2.05</td>
<td>0.49</td>
<td>1.67</td>
</tr>
<tr>
<td>Reliance Industries Ltd.</td>
<td>-0.01</td>
<td>1.20</td>
<td>-1.21</td>
<td>0.11</td>
<td>0.03</td>
<td>0.11</td>
</tr>
<tr>
<td>Sah Petroleums Ltd.</td>
<td>0.16</td>
<td>1.22</td>
<td>-1.05</td>
<td>0.79</td>
<td>0.13</td>
<td>0.74</td>
</tr>
<tr>
<td>Savita Oil Technologies Ltd.</td>
<td>0.19</td>
<td>1.22</td>
<td>-1.02</td>
<td>0.44</td>
<td>0.08</td>
<td>0.44</td>
</tr>
<tr>
<td>Savita Polymers Ltd.</td>
<td>-0.13</td>
<td>1.20</td>
<td>-1.33</td>
<td>0.21</td>
<td>0.10</td>
<td>0.20</td>
</tr>
<tr>
<td>Southern Refineries Ltd.</td>
<td>0.30</td>
<td>1.21</td>
<td>-0.91</td>
<td>0.45</td>
<td>0.02</td>
<td>0.44</td>
</tr>
<tr>
<td>Tide Water Oil Co. (India) Ltd.</td>
<td>0.33</td>
<td>1.25</td>
<td>-0.92</td>
<td>1.02</td>
<td>0.16</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Source: Computed by the Author

The Table 2 shows the mean and standard deviation of discretionary accruals, non-discretionary accruals and total accruals. Here the discretionary accruals have been taken as a measure for earnings management. If it is positive then it indicates use of income increasing accruals and in case of negative it indicates income decreasing accruals. From the table no: 2 it is very clear that the average abnormal accruals is negative in case of all the companies. It means the companies are using income decreasing accruals. The companies have engaged in downward manipulation of the earnings. We can see that DA is high in case of Essar Oil i.e. 2.26 and low in case of Castrol India Ltd. i.e.0.19. Also the variation is high in case of Essar Oil and low in case of Reliance Industries Ltd. While though in case of Castrol India Ltd. the mean DA is low but variation is more. Out of 18 companies 10 companies have abnormal accruals of more than -1. This may be because the earlier studies say that the company’s higher profit attracts political scrutiny and leads to imposition of new tax etc. So to avoid political scrutiny and imposition of new costs, the companies are showing lesser earnings. In other words, the oil companies are showing less profit and managing earnings so that the prices of the oil products are increased accordingly. This may be due to the political cost hypothesis where oil companies always come under the scrutiny of government policy decisions.

Conclusion

In an emerging economy, it is very highly desirable to watch out corporate actions and their performance, especially in case when the product of firms affects the development of society. Taking into consideration the current scenario of oil prices and political conditions, we studied the earnings management by oil companies in India. At this point of time when the fiscal deficits are high, there exists a need think about subsidies and its requirement. In other words, we need to test whether oil firms are really in need of subsidies. Using modified Jones model I have examined the earnings manipulation by oil companies in India. The results of the study show that the sample companies have been engaged in income decreasing accruals to understate their earnings. Out of 18 companies the mean discretionary accruals is negative for all the companies. Findings of our study revealed that oil companies are indeed...
managing earnings so that the price of oil is enhanced correspondingly. The findings of this study have
several dimensions. It will help the policy makers in making important decisions regarding the hike in oil
prices. It further raises questions to the regulatory authority on the adequacy of the standards that help
oil companies in managing the earnings. Finally, if expropriation risk by the rulers is mitigated average
person will be less vulnerable to oil price hike.

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  hurricanes Katrina and Rita. Journal of Accounting and Public Policy, 26(6), pp.733–748.
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  research, 29(2), pp.193–228.
BENEFITS AND SHORTCOMINGS OF ETHICS EDUCATION:
AN EMPIRICAL ANALYSIS OF PERCEPTION OF
ACCOUNTING STUDENTS AND FACULTY MEMBERS IN INDIA

Dr. Ajay Kumar Singh
Dr. Sakshi Vasudeva

ABSTRACT

Accounting scandals in the past have created the demand to curb such practices by various means. Ethics education have gained importance across the globe as it is believed that unethical practices can be reduced by increasing realization among accounting professionals. Both international and national accounting bodies have mandated the teaching of ethics in all professional courses of accounting. But the right way to deliver such kind of education in an effective manner is still debatable. The current paper is an attempt to understand the various benefits and shortcomings of teaching ethics in India from the perspective of students of professional course of accounting that is chartered accountancy and faculty members teaching them. The results provided an insight that both the groups have positively accepted the benefits of ethics education. Their opinion on various shortcomings revealed that both the groups shared a similar opinion that the text material provided for learning accounting ethics is not sufficient and lacks quality. Current method of delivering ethics education is deficient as it does not provide any practical exposure and just a theoretical discourse. Faculty employed to teach ethics is not formally trained to teach ethics. The study recommends removal of various shortcomings for effective results.

KEYWORDS: Accounting Scandals, Ethics Education, Demand, Accounting Professionals.

Introduction

Accounting scandals in the past have put a question mark on the credibility of audited financial statements. An accountant has responsibility at various fronts such as towards the company, investors, and the society in general. They are supposed to be the protectors of the interest of various stakeholders of the organization. It is expected from them that they will exercise due diligence in the preparation and audit of financial statements. But various unethical practices in the past created an environment of distrust among the stakeholders. Such practices led the policy makers in various countries to bring various amendments in the laws to curb the unethical practices by punitive ways. It also created a critical need for ethics education in the hope that it can create a right mind-set to appreciate the responsibility of the individual towards public interest. As the idea developed, so were various apprehensions. Some raised serious doubts on the effectiveness of ethics education (Piper, Gentile, & Parks, 1993; Rossouw, 2002). But many researchers strongly felt that ethics education can bring in the
desired change. Faculty members also appreciated the impact of ethics education (Said & Al-Tarawneh, 2013; Warinda, 2013).

Ethics education is being promoted by even IFAC through its various publications in all member countries (IAESB, 2006; IAESB, 2015). IAESB always stressed that ethical education should be re-enforced throughout the career of an accountant (IAESB, 2015). It has been realized all over world that teaching ethics to accounting students can create right mind set for ethical decision making among them. There are various perceived benefits of teaching ethics. Some of the important benefits of teaching of ethics are that it increases the demand for individuals possessing ethics education and skills, develop the ability of students to recognize ethical issues, satisfies the need of the society for ethical education, prepares the students to examine fraud related issues, improves the moral orientation of the students and prepares the students to face uncertainties of accounting profession (Said & Al-Tarawneh, 2013, p.74).

There are various shortcomings that prevent the successful delivery of ethics education and effectiveness of ethics education in preventing the scandals. The available ethics material lacks the quality and depth of topic of ethics as advocated by IFAC (Tweedie et al., 2013, p.12). One size may not fit all; the developed ethics material may not address the concerns of students from different family and cultural backgrounds (Cooper et al., 2008, p.416). Ethical development can be best done by institutions outside the formal education such as family or religious institutions (Blanthorne, Kolar & Fisher, 2007). Similarly, lack of trained faculty, students and administrative interest, lack of instructional material, difficulty in integrating ethics with technical nature of accounting, ethics by nature cannot be taught were identified as important barriers (Said & Al-Tarawneh, 2013; Dellaportas et al., 2014). Students are not taught fundamentals of ethics topics, thus they are likely to be frustrated by the superficial discussion and view the “ad hoc, disconnected nature of the coverage as a signal that ethics is secondary to technical ability” (Kidwell et al., 2013, p.48). ‘Integration of ethics is only an ad-hoc list of topics rather than…a synchronized set of topics’ (Miller & Becker, 2011, p.7). Overcrowded curriculum of accounting may act as impediment to the integration of ethics into it. Lack of Opportunities in the area of teaching and research in accounting ethics, lack of reference material, and difficulty of integration of subjective/soft nature of ethics with the technical nature of accounting are some important perceptions affecting the inclusion of ethics into accounting. It is also considered that moral standards of students are already developed and cannot be changed by teaching ethics in accounting education (Dellaportas et al., 2014).

**Literature Review**

<table>
<thead>
<tr>
<th>Name of the Researcher(s), Year of Publication</th>
<th>Objectives of the Study, Country of the Study and Sample Size</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooper et al., 2008</td>
<td>Detailed Discussion of Ethics Education Toolkit developed by IFAC and through review of literature; the paper considers the importance of teaching ethics, the types of ethics intervention and issues in teaching ethics to accounting students. The study was carried out in Australia.</td>
<td>It provided evidence of positive feedback of students who are taught ethics on the basis of guidelines in the toolkit.</td>
</tr>
<tr>
<td>O’Leary, 2009</td>
<td>The impact of teaching of ethics to final year accounting students on the basis of response to five ethical scenarios before and after ethical instruction. The study was carried out in Australia on final year undergraduate accounting class and 155 students completed the survey instrument.</td>
<td>Positive Impact on hypothetical ethical decision-making as a result of ethical instruction thus showed the benefit of ethics education.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Study Details</td>
<td>Findings</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Graham, 2012</td>
<td>Views of students to assess “the goals and effectiveness of the teaching of ethics” in undergraduate accounting programs. The study was carried out in UK. Out of population of 150 students attending the particular second year accounting course, 77 complete usable responses were used.</td>
<td>Students regarded ethics teaching important.</td>
</tr>
<tr>
<td>Said and Al-Tarawneh, 2013</td>
<td>Opinion of accounting instructors on various aspects of teaching of accounting ethics. Total of 70 instructors from seven selected public and private universities from Bahraini universities were targeted and finally results were compiled on the basis of 41 complete responses.</td>
<td>Favorable Opinion of educators about the ethics course. 67% of the educators favored inclusion of ethics in the curriculum. Faculty members showed interest in teaching ethics and believed that topics related to professional practice should be included in the curriculum.</td>
</tr>
<tr>
<td>Singh and Dhingra, 2013</td>
<td>Study was carried out in India to evaluate ethical approach to accounting and auditing practices.</td>
<td>Suggested a multi-dimensional ethical approach.</td>
</tr>
<tr>
<td>Singh and Vasudeva, 2013</td>
<td>Attempted to find an association between ethical values of accounting professionals and their choices in ethical dilemmas in their profession. The study was carried out in India on the basis of opinion of 82 chartered accountants.</td>
<td>Ethical value score of professionals were found to be more explanatory than formal ethical education.</td>
</tr>
<tr>
<td>Tweedie, et al., 2013</td>
<td>Study of IFAC’s strategy in implementing IES4 and evaluation of available ethical resources. The researchers were from Australia.</td>
<td>Available ethics resources lack the “depth and diversity that IFAC’s strategy requires”. Suggested “adopting a ‘thematic’ approach to teaching ethics as an integrated part of accounting curriculum”.</td>
</tr>
<tr>
<td>Warinda, 2013</td>
<td>Preparedness of accounting faculty for accounting ethics education. The study was carried out in Zimbabwe on the basis of complete usable response received from 10 faculty members.</td>
<td>Faculty found ethics as extremely important in personal, business, and accounting education. The results also showed that most of the faculty expressed an interest in teaching ethics topics.</td>
</tr>
<tr>
<td>Dellaportas, et al., 2014</td>
<td>Analyzing the barriers to enhancing ethics education by the opinion survey of Heads of Departments/Schools of Australian universities. The survey was administered via a mail to Heads in 2000 and again in 2012 by keeping an intervening period of 12 years. Valid responses were 24 and 17 from heads in 2000 and 2012 respectively.</td>
<td>Lack of qualified staff was identified to be the most important barrier. Other important barriers were inadequate research opportunities, paucity of curriculum space, and the notion that moral values of students are fixed and cannot change.</td>
</tr>
<tr>
<td>Singh and Vasudeva, 2014</td>
<td>Important causes and consequences about unethical financial reporting from the point of view of chartered accountants and commerce/management teachers in India. The results were compiled on the basis of 200 respondents, out of which there were 84 teachers and 116 chartered accountants.</td>
<td>Inadequacy of ethics education and directions for accounting education was not found to be significant cause.</td>
</tr>
</tbody>
</table>
Research Objectives and Methodology

Objectives
As a contribution to previous research on accounting ethics, this study seeks to elicit the perceptions of students and faculty members in Delhi related to two main aspects concerning ethics in accounting. This study has the following objectives:

• To explore the perceived benefits of teaching ethics to students.
• To identify important shortcomings in the ethics education imparted to future accounting professionals in India.

Hypothesis
The study investigates two main hypotheses with respect to the main research questions.

H\(0_1\): The ranking of faculty members toward identifying various perceived benefits of accounting ethics education by faculty members are not significantly different from the ranking assigned by accounting students.

H\(0_2\): The perceptions of faculty members towards identification of shortcomings related to teaching of ethics as a part of accounting education are not significantly different from the perceptions of future accounting professionals.

Research questions are also analyzed using descriptive statistics.

Significance of the Study
To the best of the authors’ knowledge, this is the first exploratory survey conducted in India to explore various issues regarding integrating ethics into accounting curriculum.

Sample of the Study
The data has been collected from faculty members imparting education to professional students of accounting and students undergoing professional accounting course that is chartered accountancy. The population consisted of all the students undergoing professional accounting course and faculty teaching them accounting or auditing course in geographical area of Delhi. Coaching institutes were randomly chosen from each region of Delhi, thus in total 8 coaching institutes were covered. Some of the students studying at Vishwas Nagar, institute of ICAI were also approached. Minimum 2 years of experience was kept in mind while choosing faculty members. The faculty was contacted from coaching institutes in Delhi, University of Delhi and Board of Studies of ICAI at Noida. Random selection was done of respondents. 350 questionnaires were distributed but only 203 questionnaires were received back. Around 16 questionnaires had to be rejected because of incomplete responses. The results were compiled on the basis of 187 respondents out of which there were 122 students and 65 faculty members. The face validity of the questionnaire was verified by conducting a pilot survey among 10 teachers and 20 students.

Design of the Questionnaire
The questionnaire was divided into three parts. The first part included demographic information related to gender and numbers of years of experience as a faculty member or group/year of course as a student. In the second part, the respondents were asked to express opinion on the benefits of imparting ethics education. The research studies of Said and Al-Tarawneh (2013) was taken as the reference paper for identifying important perceived benefits. The third part was designed from available literature and the purpose was to identify important shortcomings. These shortcomings were taken from the prior research studies (Said and Al-Tarawneh, 2013; Adkins and Radtke, 2004; & Dellaportas, et al., 2014). Respondents were requested to assign ranks to perceived benefits of ethics education. Opinion of respondents was sought on shortcomings of ethics education on Likert Type Scale.

Tools and Techniques
The data were analyzed using descriptive statistics such as mean for general profile of respondents. To analyze the difference in rankings, Mann-Whitney U test was used to compare the
difference in rankings among students and faculty members. Mann-Whitney U test is distribution free. To apply the test, it was ensured that the data met the following basic assumptions for applying the test:

- The dependent variable was difference in ranks assigned by two groups and it was measured on ordinal scale.
- The independent variable was two independent categorical groups, i.e. faculty members and the students. There were different participations in each group and no respondent was in more than one group.
- The responses are not normally distributed. The data which is measured on rankings is not normally distributed (Chawla & Sondhi, 2011, p.419). The technique and assumptions were also studied from some prior studies (Milenović, 2011; Nachar, 2008).

The shortcomings were analyzed by using mean values and t-statistic for the difference in responses among two groups. For testing II hypothesis, robust test of equality of means that is Welch and Brown-Forsythe was used. Spearman’s Rank correlation was used to find out correlation of mean values for both the hypothesis between students and faculty members. We have based our decisions to accept or reject hypothesis on the basis of Spearman’s Rank correlation. It is recommended for testing correlation where both the variables are ordinal. It is a non-parametric technique and does not require data to be normally distributed (Jackson, 2009, p.126).

Analysis and Interpretation

General Profile of Respondents

There were 187 complete responses out of which there were 122 students and 65 faculty members. 45 faculty members (approx. 69%) were having experience above 10 years and 20 faculty members (31%) were having experience less than 10 years. Out of 122 students, 51 (41.8%) were in the second year and 71 (58.2%) students were found to be in the final year of their accountancy course of chartered accountancy.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Faculty Members</th>
<th>Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>43 (66.2%)</td>
<td>35 (28.7%)</td>
<td>78 (41.7%)</td>
</tr>
<tr>
<td>Male</td>
<td>22 (33.8%)</td>
<td>87 (71.3%)</td>
<td>109 (58.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>65 (34.8%)</td>
<td>122 (65.2%)</td>
<td>187 (100%)</td>
</tr>
</tbody>
</table>

On the basis of the table no.1, there were 34.8% faculty members and 65.2% students. Out of 65 faculty members, there were 66.2% females and 33.8% males. Out of 107 students, there were 29% females and 71% males.

Benefits of Teaching Ethics to Accounting Students

The respondents were given eight benefits and were told to rank on the scale of 1 to 8. The most important benefit should be assigned the first rank and the least important benefit should be assigned the lowest rank. The lower the mean value, the higher is its importance among the respondents. (See table no. 2).

The ranks have been shown in parenthesis. The researchers also wanted to test the null hypothesis ‘the ranking of faculty members toward identifying various perceived benefits of accounting ethics education by faculty members are not significantly different from the ranking assigned by accounting students’.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Benefits</th>
<th>Mean Values by Students</th>
<th>Mean Values by Faculty Members</th>
<th>Overall Mean Values</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Makes students capable to recognize ethical dilemmas facing accounting profession and business community.</td>
<td>2.86 (I)</td>
<td>2.71 (I)</td>
<td>2.81 (First)</td>
<td>1.543</td>
</tr>
</tbody>
</table>
Thus, the three most important benefits identified are:

- Helps students learn to face ethical issues that may be faced by them in accounting profession and business community.
- Improve the ethical and moral orientation of students.
- The emphasis on ethical and moral development is important to the accounting profession.

The ranks seem similar for some of the benefits, while look dissimilar for the others. Therefore, Mann-Whitney U Test was used to test that ‘whether benefits measured on ordinal scale, differed between responses of faculty members and students.’ (See Table 3)

Table 3: Test Statistics of Difference in Ranks Among Two Groups for Various Benefits

<table>
<thead>
<tr>
<th>benefit1</th>
<th>benefit2</th>
<th>benefit3</th>
<th>benefit4</th>
<th>benefit5</th>
<th>benefit6</th>
<th>benefit7</th>
<th>benefit8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilcoxon W</td>
<td>1.122E4</td>
<td>1.075E4</td>
<td>5.380E3</td>
<td>5.810E3</td>
<td>5.041E3</td>
<td>1.007E4</td>
<td>1.078E4</td>
</tr>
<tr>
<td>Z</td>
<td>-0.728</td>
<td>-2.079</td>
<td>-2.101</td>
<td>-0.861</td>
<td>-1.760</td>
<td>-4.057</td>
<td>-1.979</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.467</td>
<td>0.038</td>
<td>0.036</td>
<td>0.389</td>
<td>0.078</td>
<td>0.000</td>
<td>0.048</td>
</tr>
<tr>
<td>Exact Sig. (2-tailed)</td>
<td>0.468</td>
<td>0.037</td>
<td>0.035</td>
<td>0.391</td>
<td>0.079</td>
<td>0.000</td>
<td>0.048</td>
</tr>
<tr>
<td>Exact Sig. (1-tailed)</td>
<td>0.234</td>
<td>0.019</td>
<td>0.018</td>
<td>0.195</td>
<td>0.039</td>
<td>0.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Point Probability</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>-0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Thus, it can be inferred that ‘The ranking of faculty members toward identifying various perceived benefits of accounting ethics education by faculty members are not found to be significantly different from the ranking assigned by accounting students.’ Thus, the results indicated that Null Hypothesis could not be rejected for all the statements except ‘The emphasis on ethical and moral development is important to the accounting profession’. Students assigned it fourth rank while faculty members assigned it seventh rank.
The respondents indicated their preference for teaching ethics with respect to recognition of ethical dilemmas (Rank 1), followed by facing of ethical issues (Rank 2). The third rank was assigned to ‘improving the ethical and moral orientation of students.’ The last rank was assigned to ‘examining fraud related issues.’ The respondents also assigned the lowest rank in terms of its importance to the statement that ‘Unethical accounting practices can be reduced by imparting ethical education to the students’ (mean value=5.76). Thus, the respondents though agreed with the importance of teaching of ethics, but seem to be unsure about the impact of teaching of ethics in reduction of unethical accounting practices.

The researchers also calculated the rank correlation between the mean rankings of faculty and the students by Spearman’s Rank Correlation. Thus, results as displayed in table 4 shows that by the method, the correlation was found to be significant. Thus, we fail to reject the null hypothesis and it can be inferred that there is no significant difference between the mean rankings of students and faculty members for various benefits.

### Table 4: Correlations between Mean Ranks of Faculty and Students for Various Benefits

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Rank Students</th>
<th>Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank Faculty</td>
<td>Correlation Coefficient</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.786*</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>---</td>
<td>0.021</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

### Shortcomings Related to Education of Ethics

The various inhibitors to success of ethics education perceived by the researchers on the basis of available literature and discussion with experts which included chartered accountants and faculty members were identified. 17 problem areas were finally identified and respondents were requested to express their opinion on Likert type Scale on the scale of 5 (Strongly Agree) to 1 (Strongly Disagree). Cronbach's Alpha was computed to check the reliability among various statements which was found to be reasonably high as reported in table 5, thus the researchers could use the responses to frame a reliable and valid opinion.

### Table 5: Reliability Statistics

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>No. of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.858</td>
<td>0.857</td>
<td>17</td>
</tr>
</tbody>
</table>

### Table 6: Mean Averages, Standard Deviation, t Values and Significance Level for Shortcomings

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>t values (Cut Off Point 3)</th>
<th>Sig. Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The text material provided for learning accounting ethics is not</td>
<td>3.88</td>
<td>F 3.88</td>
<td>1.146</td>
<td>10.467</td>
<td>Agreement (Highly Significant)</td>
</tr>
<tr>
<td>sufficient (inadequate) to impart moral education.</td>
<td>S 3.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The text material provided for learning accounting ethics lacks</td>
<td>3.52</td>
<td>F 3.42</td>
<td>1.215</td>
<td>5.837</td>
<td>Agreement (Highly Significant)</td>
</tr>
<tr>
<td>quality to impart moral</td>
<td>S 3.58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The accounting ethical values taught to students are not relevant to</td>
<td>2.92</td>
<td>F 3.50</td>
<td>1.444</td>
<td>-.0.760</td>
<td>Not Significant differentiator from neutral opinion</td>
</tr>
<tr>
<td>their culture/ traditions.</td>
<td>S 2.62</td>
<td></td>
<td></td>
<td>0.448</td>
<td></td>
</tr>
</tbody>
</table>
4. The accounting ethical values explained in the texts are not relevant to the situations prevailing in their nation.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.10</td>
<td>3.69</td>
<td>2.80</td>
<td>1.345</td>
<td>0.979</td>
</tr>
</tbody>
</table>

5. Accounting ethics are taught to students only as a text with no relevant explanation on recognizing possible ethical dilemmas in professional life.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.60</td>
<td>3.89</td>
<td>3.46</td>
<td>1.233</td>
<td>6.703</td>
</tr>
</tbody>
</table>

6. Accounting ethics taught to students does not help them to learn dealing with ethical conflicts.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.06</td>
<td>3.34</td>
<td>2.93</td>
<td>1.289</td>
<td>0.681</td>
</tr>
</tbody>
</table>

7. There is no provision of evaluation on the basis of decisions of students on ethical dilemmas in the examination on accounting ethics.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.40</td>
<td>3.58</td>
<td>3.31</td>
<td>1.309</td>
<td>4.134</td>
</tr>
</tbody>
</table>

8. The professional institute imparting accounting course does not give adequate importance to teaching accounting ethics to students.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.68</td>
<td>3.84</td>
<td>3.61</td>
<td>1.192</td>
<td>7.851</td>
</tr>
</tbody>
</table>

9. Faculty members teaching accounting ethics do not give much importance to the paper on ethics.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.25</td>
<td>3.39</td>
<td>3.19</td>
<td>1.354</td>
<td>2.538</td>
</tr>
</tbody>
</table>

10. Faculty members teaching accounting ethics are not formally trained to teach the paper.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.42</td>
<td>3.47</td>
<td>3.41</td>
<td>1.195</td>
<td>4.834</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.63</td>
<td>3.69</td>
<td>3.62</td>
<td>1.235</td>
<td>6.989</td>
</tr>
</tbody>
</table>

12. Imparting moral education at this age of maturity cannot help to make a person behave ethically in their professional lives. In other words, students already know right or wrong from the influence of family, religion, and culture and teaching accounting ethics course is a farce.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.39</td>
<td>3.73</td>
<td>3.20</td>
<td>1.283</td>
<td>4.103</td>
</tr>
</tbody>
</table>

13. Ethics by nature cannot be taught in classroom.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.34</td>
<td>3.50</td>
<td>3.524</td>
<td>1.328</td>
<td>0.001</td>
</tr>
</tbody>
</table>

14. Teaching of ethics cannot be combined with technical expertise required in accounting course.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.02</td>
<td>2.89</td>
<td>3.09</td>
<td>0.997</td>
<td>0.220</td>
</tr>
</tbody>
</table>

15. Teaching of Ethics is only a waste of time of students of accounting.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.97</td>
<td>1.81</td>
<td>2.06</td>
<td>1.235</td>
<td>-11.426</td>
</tr>
</tbody>
</table>

16. Persons cannot change and made to behave ethically by teaching ethics to them.

<table>
<thead>
<tr>
<th>Score</th>
<th>F</th>
<th>S</th>
<th>p-value</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.47</td>
<td>2.55</td>
<td>2.43</td>
<td>1.202</td>
<td>-6.086</td>
</tr>
</tbody>
</table>
Observation of mean values in table no. 6 indicated that values were between 3 and 4. Therefore, to frame valid opinion, one sample t values were calculated. Cut off point of 0 indicated all the results to be significant at 1% level. As the 3 indicated a neutral opinion, therefore, the researchers wanted to see whether the results appear significantly different from neutral opinion. Again, the t values were calculated, cut off point of 3 was fixed and their significance level was calculated. (See table no. 6).

The findings suggested that agreement with respect to the following:

• The text material provided for learning accounting ethics is not sufficient (inadequate) to impart moral education.
• The professional institute imparting accounting course does not give adequate importance to teaching accounting ethics to students.
• Students lack interest in the study of accounting ethics.
• Accounting ethics are taught to students only as a text with no relevant explanation on recognizing possible ethical dilemmas in professional life.
• The text material provided for learning accounting ethics lacks quality to impart moral education.
• There is no provision of evaluation on the basis of decisions of students on ethical dilemmas in the examination on accounting ethics.
• Faculty members teaching accounting ethics are not formally trained to teach the paper.
• Imparting moral education at this age of maturity cannot help to make a person behave ethically in their professional lives. In other words, students already know right or wrong from the influence of family, religion, and culture and teaching accounting ethics course is a farce.
• Ethics by nature cannot be taught in classroom.

The findings suggested that disagreement with respect to the following:

• Teaching of Ethics is only a waste of time of students of accounting (1.97).
• Persons cannot change and made to behave ethically by teaching ethics to them (2.47).
• Ethics cannot be integrated in current accounting curriculum because of lack of administrative support (2.74).

The findings suggested neutral opinion with respect to the following:

• The accounting ethical values taught to students are not relevant to their culture/ traditions (2.92).
• Teaching of ethics cannot be combined with technical expertise required in accounting and finance degrees (3.02).
• Accounting ethics taught to students does not help them to learn dealing with ethical conflicts (3.06).
• The accounting ethical values explained in the texts are not relevant to the situations prevailing in their nation (3.10).
• Faculty members teaching accounting ethics do not give much importance to the paper on ethics (3.25).

**Checking of Hypothesis: Test for Difference in Mean Values**

For testing II hypothesis, robust test of equality of means that is Welch and Brown-Forsythe was used.
The findings were found be significantly different for the three statements:

- The accounting ethical values taught to students are not relevant to their culture/ traditions.
- The accounting ethical values explained in the texts are not relevant to the situations prevailing in your nation.
Imparting moral education at this age of maturity cannot help to make a person behave ethically in their professional lives. In other words, students already know right or wrong from the influence of family, religion, and culture and teaching accounting ethics course is a farce. Thus, the null hypothesis could not be rejected for the rest of 14 statements which implies that there is no difference of opinion among students and faculty members for opinion on other statements that is both the groups shared a similar response on the various statements.

The accounting ethical values taught to students are not relevant to their culture/traditions.
Faculty 3.50  Students 2.62

The accounting ethical values explained in the texts are not relevant to the situations prevailing in their nation.
Faculty 3.69  Students 2.80

Imparting moral education at this age of maturity cannot help to make a person behave ethically in their professional lives. In other words, students already know right or wrong from the influence of family, religion, and culture and teaching accounting ethics course is a farce. Faculty 3.73  Students 3.20

Table 8: Correlations between Mean Values of Faculty and Students for various Shortcomings

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Faculty</th>
<th>Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
<th>Students</th>
<th>Correlation Coefficient</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>1.000</td>
<td>--</td>
<td></td>
<td>0.756**</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>17</td>
<td></td>
<td>N</td>
<td>17</td>
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<tr>
<td></td>
<td></td>
<td>Correlation Coefficient</td>
<td>0.756**</td>
<td></td>
<td>Correlation Coefficient</td>
<td>1.000</td>
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<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td></td>
<td>Sig. (2-tailed)</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>17</td>
<td></td>
<td>N</td>
<td>17</td>
</tr>
</tbody>
</table>

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

We also sought to find association between the mean rankings of faculty members and the students by the method. Thus, results as displayed in table no. 8 shows that by the method, the correlation was found to be positive, reasonably high and significant. Thus, overall, we fail to reject the null hypothesis at 1% level of significance and it can be inferred that there is no significant difference between the rankings on the basis of mean values between students and faculty members and we can form a valid judgment on the basis of combined opinion of both the groups of stakeholders.

Summary of Findings and Discussion

The study was conducted to explore various issues regarding ethics education to accounting students. The sample consisted of students of professional accounting course that is chartered accountancy in India and faculty members teaching them at the institute or various coaching Institutes. They were asked to express their opinion on benefits and shortcomings in delivering ethics education to accounting students. Various findings are reported as:

- There were 187 complete responses out of which there were 122 students and 65 faculty members. There were 34.8% faculty members and 65.2% students. Out of 65 faculty members, there were 66.2% females and 33.8% males. Out of 107 students, there were 29% females and 71% males.

- The respondents indicated their preference for teaching ethics with respect to recognition of ethical dilemmas (Rank 1), followed by facing of ethical issues (Rank 2). The third rank was assigned to ‘improving the ethical and moral orientation of students.’ The last rank was assigned to ‘examining fraud related issues.’ The respondents also assigned the low rank in terms of its importance to the statement that ‘Unethical accounting practices can be reduced by imparting ethical education to the students’ (mean value=5.76). Said and Al-Tarawneh, 2013 found in his study that 92.5% of respondents agreed that “accounting student's ethical skills development is crucial to the development of the accounting profession” (Benefit I, mean of 4.64). The other important benefits identified by him were “increase in demand for individuals possessing accounting ethics education and skills” and helping the
“students to solve ethical and moral issues facing the accounting profession and the business community” (Said and Al-Tarawneh, 2013).

- The results showed that first hypothesis (H01) could not be rejected and also showed that the ranking of faculty members towards identifying various perceived benefits of accounting ethics education by faculty members were not significantly found to be different from the ranking assigned by accounting students by both Mann-Whitney U test and Spearman’s Rank Correlation methods.

- The respondents identified that the most important shortcomings are that the text material provided for learning accounting ethics is not sufficient. The professional institute imparting accounting/finance degrees also gives less importance to teaching accounting ethics to students. Students lack interest in the study of accounting ethics. No practical exposure is provided to students to help them in recognizing possible ethical dilemmas in professional life. Similarly, there is no provision of evaluation on the basis of decisions of students in ethical dilemmas in the examination on accounting ethics. Faculty members are not formally trained to teach ethics. Said and Al-Tarawneh (2013) also found similar results and reported that lack of trained faculty (3.76), less engagement of faculty with the topic of ethics education (3.70), lack of students interest (3.59), lack of interest by administrative authorities (3.51) were found to be significant barriers (p.76). Dellaportas, et al., 2014 also identified that lack of trained faculty and less research opportunities in the area act as significant barriers. Some other authors also identified that business and accounting educators lack adequate training to teach ethics (Cohen and Pant, 1989). Tweedie, et al., 2013 also found that ethics education material lacks quality and depth. Though it was also agreed by faculty that accounting students age is mature to effectively respond to ethics education but students (m= 3.20) were having a neutral opinion towards this statement. But the respondents totally disagreed that teaching of Ethics is only a waste of time of students and persons cannot change and made to behave ethically by teaching ethics to them. Adkins and Radtke (2004) also showed that accounting and business students find ethics education to be important.

- The second hypothesis (H02) also could not be rejected for the 14 statements on the basis of Welch T statistic. Using Spearman’s Rank Correlation method, the correlation was found to be positive, reasonably high and significant. Thus, overall, we fail to reject the null hypothesis at 1% level of significance and it can be inferred that there is no significant difference between the opinion of students and faculty members on the basis of mean values.

Conclusion and Recommendations

Teaching of ethics is important to save the profession of accounting from the perils of unethical accounting practices. The current study and all the previous studies have well realized the benefits of teaching ethics. But there are important shortcomings in the way of ethics education also because the subject is still evolving. The most important shortcomings are lack of teaching material and lack of trained faculty. Both the shortcomings can be overcome by giving adequate attention by policy makers. Faculty can be identified and trained in this area and only trained faculty members should be employed to teach the paper. It is also recommended that the policy makers should design curriculum meticulously that gives adequate exposure to students to learn practical case studies related to ethical issues in accounting. The curriculum should be revised regularly and evaluation of students should be done through their responses to various case studies in the examination paper. The students should learn to recognize ethical dilemmas and face ethical issues. Ethics should not be taught as a theory paper but relevant practical training should be given to students for leading an ethical life. It is multidisciplinary subject; therefore, faculty from different subjects should be engaged to handle the practicality of the paper. Moral education should start from childhood and reinforced during both higher studies and professional life to leave an everlasting impact. Teaching material also needs to be improved on the
guidelines of IFAC and other previous research studies with the involvement of psychologists, philosophers and accountants.

References

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INSIDER TRADING AND BANK MERGER ANNOUNCEMENTS IN INDIA:
TESTING THE VALIDITY OF INFORMATION LEAKAGE HYPOTHESIS

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Prof. M S Senam Raju∗∗
Prof. N V Narasimham∗∗∗

ABSTRACT

Bank mergers are very important to banking regulators and governments owing to their increased public policy implications and its effect on the efficiency of the sector. Merger announcements always result in a diversity of problems to the regulatory authorities because of the significant price affecting information and the involvement of many people in the due diligence process who have material inside information. It creates information asymmetry in the market which strikes at the root of fairness of the securities market. In the post-reform period, Indian banking sector has undergone considerable merger activity. In contrast to the pre-liberalized era, it experienced voluntary or market driven mergers and Universal Banking Models apart from forced deals. The research into announcement effects has found inconsistent returns for bidder banks and significant positive abnormal returns to the target bank shareholders. The recent evidence of fraud, corruption and earnings manipulation in the Indian corporate sector increases the relevance of the research into the insider trading activity prior to bank merger announcements. This issue involves great relevance and remains unexplored particularly in emerging markets like India where the stock market is relatively new, under regulated and segmented. In this backdrop, this paper empirically looks into the insider trading activity prior to bank merger announcements in India.

KEYWORDS: Insider Trading, Bank Merger Announcements, MAAR, Event Study.

Introduction

Mergers and Acquisitions (M&As) is one of the major ways of corporate restructuring or ownership structuring. While merger is used to denote the unification of two or more companies, acquisitions are aimed at gaining the controlling interest. In line with global trends, Indian companies have been using corporate restructuring through M&As since 1970s. Notwithstanding the fact, the new industrial policy introduced in the year 1991 was the key motivating factor behind the increased consolidation process in India. Though mergers became a routine corporate event in real sectors during 1990s, the banking industry, especially the commercial banks stayed away from such corporate events even after the introduction of new industrial policy. It doesn’t mean that M&As is completely a new phenomenon in Indian banking milieu. Till 1999, Indian banking sector experienced 66 merger deals but,
all those were triggered by the weak financials of the target banks or forced mergers u/s 45 (2) of the Banking Regulation Act, 1949. The acquirers were public sector banks. There were no market driven deals till 1999. But, after the implementation of the second Narasimham Committee Report on Banking Sector reforms in 1998, the industry witnessed voluntary or market driven deals. Till date there are eight voluntary mergers. HDFC Bank- Times Bank merger in 2000 was the first of this kind. Again, during this period State Bank of India acquired two of its subsidiaries as per State Bank of India (Subsidiaries Act), 1959. Apart from these developments, banking industry also witnessed Universal Banking Models (Bank-NBFC Merger) and severe consolidation in the cooperative sector.

A careful analysis of Indian financial sector in the post liberalization period would pinpoint the reasons and motives of bank merger activity in India. There are two broad reasons; regulatory interventions and other business environmental reasons. Regulatory intervention means the policy changes announced in the form of economic reforms and the compulsion from RBI to follow prudential norms in asset quality, credit risk management, capital adequacy, etc. Business environmental reasons include the elimination of competition, growth prospects, tax benefits, acquisition of technology, synergies arising from geographical diversification, increased efficiency, cost savings and economies of scale, financial service convergence, etc.

While an impressive body of literature exists on mergers in the international context, few studies are conducted in India particularly in the financial sector. Further, these studies are confined to market performance and efficiency gains. Most of the prior studies on announcement wealth effects of bank mergers have found that returns for the target bank shareholders are significantly positive and have reported inconsistent results for bidder banks (See Dodd and Ruback, 1977, Muller, Firth, 1980, Jenson & Ruback, 1986, Jayadev & Rudrasensarma, 2007, Anand & Singh, 2008, etc.). So it becomes necessary to look into the reasons for this phenomenon.

Global literature suggests that there can be two prominent reasons for the positive abnormal returns of target banks; higher merger premiums or higher valuations and insider trading before merger announcements (Finnerty, 1976, Keown & Pinkerton, 1981, John Elliot et. al 1984, Jarrel & Paulsen, 1989, etc.). The comparison of market prices showed that target banks have got higher prices compared to their market prices at the time of merger. Does it mean that valuations were more favorable to the target bank shareholders? To what extent was the valuation fair? How do different accounting variables relate to the valuation of targets? Was there any leakage of valuation information or merger news prior to the merger announcement? These are highly debatable issues.

In this context, it is relevant to recall the incidents allied to the UTI Bank-Global Trust Bank (GTB) merger scam in the year, 2001 as it involved both the issues mentioned above. In the valuation, swap ratio was fixed at 2.25:1 in favor of GTB. But, before the merger was officially announced, the Bombay Stock Exchange (BSE) witnessed high volumes and sizeable rise in price of GTB shares. On this issue, SEBI started an investigation and that compelled UTI Bank to go for a second valuation for the share swap ratio and suggested a new swap ratio of 2:1, slightly lower than the first valuation and submitted the second valuation report to RBI. Before taking the final decision, RBI awaited SEBI’s report. In the investigation SEBI found the price rigging and concluded that Ketan Parekh, his associates, and two corporate groups were involved in ramping up the stock price before the merger (Insider trading) for getting a higher valuation and finally the merger was called off.

It is generally accepted that corporate insiders have access to information superior to that of outsiders. There has been limited literature available in the global context and the existing studies found that insiders earn abnormal returns prior to corporate announcements. All such studies are retraced upon the assumption of semi-strong efficiency hypothesis which states that all public information is
reflected in the market price of a security so that only those possessing inside information can outperform the market on a risk adjusted price (Keown and Pinkerton, 1981). It means that constant and positive build up in the returns of the target bank shareholders can be treated as the presence of insider trading. It is commonly known as information leakage hypothesis.

Research into buying and selling of shares by keeping insider information has been going on for years in the developed economies. However, this issue didn’t get much attention in the Indian literature. In this backdrop, this paper empirically looks into the insider trading activity prior to bank merger announcements and in India.

**Significance of the Study**

Bank mergers are very important to banking regulators and Governments owing to their increased public policy implications and its effect on the efficiency of the sector. Merger announcements always result in a diversity of problems to the regulatory authorities because of the significant price affecting information and the involvement of many people in the due diligence process who have material inside information. The recent evidence of fraud, corruption and earnings manipulation in the Indian corporate sector increases the relevance of the research into the insider trading activity prior to bank merger announcements. This issue involves great relevance and remains unexplored particularly in emerging markets like India where the stock market is relatively new, under regulated and segmented.

In the post-reform period, Indian banking sector has undergone considerable merger activity. In contrast to the pre-liberalized era, it experienced voluntary or market driven mergers and Universal Banking Models apart from forced deals. The research into announcement effects has found inconsistent returns for bidder banks and significant positive abnormal returns to the target bank shareholders. This leads the researcher to investigate the reason for the significant difference in returns of shareholders of merging entities and the events around the merger announcements.

**Literature Review**

The effect of consolidation on the merging banks and on the economy is a multi-dimensional issue (Altunbas & Ibanez, 2004). The volume and number of business combinations increased in parallel with the economic policies introduced in India during 1990s. M&As have been deeply studied by theoretical and empirical literature examining the reasons and effects of such business combinations. While an impressive body of literature exists on mergers in the international context, few studies are conducted in India particularly in the financial sector. Further, these studies are confined to market performance and efficiency gains.

Asset prices tend to react on corporate announcements of earnings, financial results, acquisitions, etc. and it would affect the trade patterns and stock prices. It is generally accepted that corporate insiders have access to information superior to that of outsiders. Researchers have not given much importance to this burning issue so far. There has been limited literature available in the global context and these studies found that insiders earn abnormal returns prior to corporate announcements. All such studies are retraced upon the assumption of semi-strong efficiency hypothesis. Semi-strong form of efficient market hypothesis states that all public information is reflected in the market price of a security so that only those possessing inside information can outperform the market on a risk adjusted price (Keown & Pinkerton, 1981). Informed trading around M&As has received attention in the finance literature because the target bank’s abnormal returns are always significantly positive. It is argued that unrestricted volume of insider trading will lead to the destruction of the capital market and it demonstrates the inefficiency of the capital market (Agarwal & Singh, 2006).

Finnerty (1976) used numerous financial ratios from annual reports to explain insider trading. Finnerty found a positive correlation between insider purchases and the cross sectional levels of earnings and dividends. The study concludes that the occurrence of profitable insider transactions implies that
“trading on insider trading is wide spread”. *Keown and Pinkerton (1981)* analysed 194 successfully acquired firms between 1975 and 1978 using market model and found that the pre-announcement trading was based on inside information. The study further reported that market reaction to intended mergers begins to occur before the first public announcement. *Elliot et al. (1984)* studied whether profitable trading is associated with the public release of information about earnings, dividends, bond ratings, mergers and bankruptcies or not. They used multivariate tests to examine the relationship between insider trading and public announcements. In contrast to the previous empirical evidence, the study found as follows:

“Although there is some indication that insiders use private information to generate profits, the vast majority of insider trading appears to be unrelated to imminent information releases. Some insider trading probably occurs because of wealth changes, portfolio diversification effects, consumption opportunities, and taxes. Although insiders are not necessarily representative investors, the availability of trading data which are specific as to trader and date allows for the generation and empirical testing of theories on investor trading.”

*Jarrel and Paulsen (1989)* used share price data and trading volume to determine how the market for information operates to anticipate tender offers. The study covers the tender offers between 1981 and 1985 and well documented the stock price reactions to many types of corporate announcements including dividend changes, earnings reports, the sudden deaths of CEOs, regulatory changes and macroeconomic events such as inflation, oil-price shocks and interest changes. The study found that the 26 target firms in the sample that have been identified in government insider trading allegations show high pre bid run-up.

*Agarwal and Singh (2004)* investigated insider trading activity before merger announcements in the Indian corporate sector using daily closing prices and trading volume of 42 target companies. The analysis has taken 165 trading days (150 days prior and 15 days after announcement). They recorded systematic abnormal movements using modified market model. The findings of the study are very important and shed light on the weak regulatory environment in India. The study states:

“The results suggest that there exist significant abnormal returns prior to the merger announcement, beginning approximately one month before the announcement date. Further, this inference becomes more pronounced when the ten-day period immediately preceding the announcement date is considered” *(pp 19 NSE working paper, 2004)*.

**Insider Trading – Legal Framework**

It is a common notion that insiders’ activities in the market create news and they affect the trading volume of other market participants. Insider trading is a term which is subjected to many connotations as it can be of both legal and illegal trading. When a company’s director or chartered accountant or any other employee buy or sell their own shares within the policies and regulations prescribed by company and the law, it is treated as legal insider trading. Illegal insider trading simply means the act of trading, directly or indirectly, in the securities of a publicly listed company by any person, who may or may not be managing the affairs of such company, based on certain information, not available to the public at large, that can influence the market price of the securities of such company. An insider, who has access to critical price sensitive information with respect to a given company, may tend to use such information to his economic advantage, severely impairing the interests of a public shareholder who is not privy to such information.¹

Insider trading is a crime against the shareholders and the market as it demolishes the fairness and equity of the market. Permitting a few people to take the advantage of Unpublished Price Sensitive

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¹ Nishith Desai Associates, a research based international law firm (2013)
Information (UPSI) before it is disclosed to the others is a hefty compromise on fairness and integrity of the stock market. It creates information asymmetry in the market which strikes at the root of fairness of the securities market. A safe and sound market is one in which all information that is relevant to existing and potential investors is in the public domain through disclosures that are correct, complete and contemporaneous. Any information to be price sensitive, the information (i) has to relate to the company, directly or indirectly; and (ii) should have the capability to materially affect the price of the securities of the company when disclosed to the public. Possession of any and every information that relates to the company cannot stop an insider from trading in securities of that company; and therefore, what is of importance is the possession of information that can materially impact the market price of the securities.

Insider trading is a crime difficult to be detected as it is practically impossible to distinguish the legal and illegal insider trading without proper investigation. Direct evidence on insider trading is rare. Unless the insider (trader) confesses his knowledge in some admissible form, evidence is almost entirely circumstantial. But there have been easy cases also. For example, in Dilip Pendse Vs SEBI case, Nishkalpa was a wholly owned subsidiary of TATA Finance Ltd (TFL), which was a listed company. D. P. was the MD of TFL. Nishkalpa had reported a loss of Rs. 79.37 crore and this was bound to affect the profits of TFL. This was basically the unpublished price sensitive information of which Pendse was aware. This information was disclosed to the public only on 30/04/2001. Thus any transaction by an Insider between the period 31/03/2001 to 30/04/2001 was bound to fall within the scope of Insider Trading; ‘DP’ passed on this information to his wife who sold 2, 90,000 shares of TFL held in her own name as well as in the name of companies controlled by her. It was thus very easy for SEBI to prove insider trading.

Although insider trading is a global phenomenon, the study done by global competitiveness survey for International Monetary Fund (IMF) reports that it is relatively high in countries such as India, China, Russia, Mexico, etc. Hindustan Lever Limited – Brooke Bond Lipton merger case (1998), Rakesh Agarwal (2001), KLG Capital (2009), Mhamohan Shetty (2010), etc. were examples. United States was the first country that addressed the insider trading activity through Section 10(b) and Section 10(b) of the Securities Exchange Act of 1934. Apart from this, rest of the world financial markets went without any regulation prior to 1980s.

The first regulation outside US in this direction was the European Community (EC) directive in 1991. In India, except some of the suggestions given by Thomas Committee (1948), Sachar Committee (1977) and Patel Committee (1984), Companies Act, 1956 didn’t have adequate provisions to curb insider trading. In 1992, the Indian parliament enacted the Securities Exchange Board of India Act, 1992 to protect the interest of the investors and to promote the development of securities market in India. Based on this, SEBI (Prohibition of Insider Trading Regulations, 1992) were framed. Later the insider trading regulations were amended two times, in 2002 and 2008.

After two decades since the SEBI Regulations, 1992, in the light of increased insider trading probes and scams, the former SEBI chairman U K Sinha appointed a panel in March 2013 to weed out insider trading activity from Indian capital markets. The high level committee was chaired by N K Sodhi, retired Chief Justice of Karnataka High Court and the former presiding officer of Securities Appellate Tribunal (SAT). The committee submitted its report in December 2013. The major suggestions of the panel are as follows.

1. M Damodaran (Business Today, November 25 2005), Former chairman of SEBI.
• The definition of insider should be simplified and the definition of the connected person should be broadened.
• Public servants, Ministers, Judges and policy makers should be brought under the ambit of insider.
• Financially dependent close relatives of company officials, fund managers, brokers and traders should be treated as insiders.
• There should be clear distinction between generally available information and unpublished price sensitive information.
• Promoters, employees, directors and their immediate relatives should disclose trades exceeding Rs. 10 lakhs.

The market regulator evaluated the pros and cons of the report and has come up with stricter rules on insider trading, SEBI (Prohibition of Insider Trading) Regulations, 2015. As per the new rules, the definitions of insider, connected persons, price sensitive information are widened. In connection with M&As, the regulations contain a specific carve-out for communication and procurement of information, for instance for the purpose of conduct of due-diligence in connection with substantial transactions including mergers and acquisitions.

Data and Methodology

The present study is based on secondary data. The study obtained bank merger data from the websites of RBI, SEBI, NSE, BSE etc. The share price data, share volume data and financials of bidder and target banks have been collected from CMIE Prowess Data Base and Capital Line Plus Data Base. The study is empirical, analytical and descriptive in nature. In addition to the overall picture, it provides a case wise analysis of deals as well.

• Justification of Low Sample Size

Indian banking sector experienced 24 merger deals in the post reform period. In contrast to the pre-reform period, post reform period has witnessed voluntary mergers and Universal Banking Models (Bank-NBFC merger) as per section 44A of the Banking Regulation Act¹. Again, during this period, State Bank of India acquired two of its subsidiaries as per the State Bank of India (Subsidiaries Banks) Act, 1959. The primary reason which motivated the researcher to analyze the insider trading activity is the high valuations of target banks. The study considers all bank merger deals in the post liberalization era in which the target banks are listed and received purchase consideration either in shares or debentures or cash. The reason for this criterion is that the valuation problem doesn’t arise in the absence of purchase consideration. Therefore, out of the 24 commercial bank merger deals occurred in the post liberalization era, 5 deals are chosen which satisfy the conditions.

In the excluded 19 deals, either the target banks are not listed or they do not receive anything as consideration. Further, most of them were local banks². Universal banking models are avoided as the financials of merging institutions are incomparable. Similarly, mergers in the cooperative banking sector are excluded as the issues discussed in the study are not relevant in such cases.

¹ ICICI Bank- ICICI Ltd reverse merger in 2002, IDBI Bank- IDBI Ltd merger in 2004, Ashok Leyland Finance Company –Indusland Bank Ltd deal in 2004, conversion of Kotak Mahindra Finance Ltd to Kotak Mahindra Bank in 2003 are examples of Universal Banking Models. Table 1.1 doesn’t include such deals.
² Though Bareilly Corporation bank- Bank of Baroda deal derived swap ratio, the deal is not considered because of the unavailability of relevant data. Bareilly Corporation bank had 63 branches.
Table 1: Sample Bank Merger Deals

<table>
<thead>
<tr>
<th>Year</th>
<th>Target Bank</th>
<th>Bidder Bank</th>
<th>Nature</th>
<th>Merger Announcement Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Bank of Madura</td>
<td>ICICI Bank</td>
<td>Voluntary Merger</td>
<td>December 07, 2000</td>
</tr>
<tr>
<td>2005</td>
<td>Centurion Bank</td>
<td>Bank of Punjab</td>
<td>Voluntary Merger</td>
<td>June 20, 2005</td>
</tr>
<tr>
<td>2006</td>
<td>United Western Bank</td>
<td>IDBI Bank</td>
<td>Forced Deal</td>
<td>September 16, 2006</td>
</tr>
<tr>
<td>2010</td>
<td>Bank of Rajasthan</td>
<td>ICICI Bank</td>
<td>Voluntary Merger</td>
<td>May 17, 2010</td>
</tr>
</tbody>
</table>

Source: Compilation from RBI data

- **Analysis Using Share Prices**
  The investigation into the insider trading activity is retraced upon the assumption of semi-strong efficiency hypothesis. There are three versions of Efficient market Hypothesis (EMH). EMH argues that it would be impossible to outperform the market consistently. The three versions of EMH are differentiated in their notion about the concept of ‘All available information’ (Fama & Laffer, 1971, Fama et al, 1969). Following are the versions of EMH.

- **Weak form of efficiency**: It states that share prices already reflect all information that can be derived from examining the historic data related to the market.

- **Semi strong form of efficiency**: It asserts that all publicly available information is reflected in the stock prices.

- **Strong form of efficiency**: It argues that all public and private information are reflected in the stock prices.

  The study uses semi-strong efficiency hypothesis which states that all public information is reflected in the market price of a security so that only those possessing inside information can outperform the market on a risk adjusted price (J Keown and John M Pinkerton, 1981). **Event studies** are used to locate this out-performance or abnormal returns earned by the insiders (Ball & Brawn,1968, Fama et al, 1969, Brawn & Warner , 1997, Campell et al, 1997). In US, Security Exchange Commission regularly uses event studies in its investigations and US Courts rely on such studies and reports to locate the fraudulent and unfair market practices. Though there is no unique structure for an event study, there is a general flow. The **event study methodology** used in the present work is described below.

- **Defining the Event Window**
  In the present study, bank merger announcement is the event. The announcement date is defined as the date when the merger news appeared in the national dailies. For this, the study considers online editions of the dailies too. It may not be the official announcement of the merger. The reason is that, in some cases, the news on merger negotiations had appeared before its official announcement. (-60, +14) is the window period. The justification for the said long window period is discussed in the next sections.

- **Calculation of Abnormal Returns and Average Residuals**
  **MAAR (Market Adjusted Abnormal Return)** method is used to measure the abnormal returns around the merger event date. Abnormal Return (AR) is calculated using the following equation.

  \[ AR_{it} = Rit - Rmt \quad \text{-------------------} \quad t = (-60 \ldots .. + 14) \]

  Where,

  \[ AR_{it} = \text{Abnormal return for the stock ‘i’ for the day’t’}. \]

  \[ Rit = \text{Return for the stock ‘i’ for the day’t’}. \]

  \[ Rmt = \text{Return of the Bank Nifty}. \]

  Return of the individual security is found by the following formula;

  \[ Rit = \frac{Pt - Pt-1}{Pt-1} \]
The same method is applicable to the calculation of return of the Bank Nifty. Based on the abnormal return figures, Average Residuals (ε) are calculated. It is the simple arithmetic mean of the estimated abnormal return for all banks in the sample. The average residuals are computed for t = -60 to +14 trading days. The study considers average residuals of 60 trading days before the announcement date and 14 days after the announcement date. Therefore, price movements much before the announcement date can be located and the average residuals so calculated would indicate the unusual price movements. More clearly, the study is more emphasized on the abnormal price movements much before the announcements. The reason is that the abnormal price movements around the announcement date cannot be caused just by insider trading. But, abnormal returns much prior to announcement date is mainly caused by the informed buying and selling of such securities. If the abnormal return tends to zero, one can confirm that there is no unusual price movements and insider trading.

**Calculation of Cumulative Average Residuals (CAR)**

Cumulative Average Residuals (CAR) is calculated by adding the previous daily average residuals which has been determined in the previous step. Mathematically,

\[ \text{CAR}_t = \varepsilon_t + \text{CAR}_{t-1} \quad t = (-60, \ldots, +14) \]

If there are no price movements prior to the announcement, the CAR also tends to zero. If the average residuals and CAR are plotted in a graph, it will indicate whether there is any positive buildup in the CAR or not. The presence of buildup clearly indicates the presence of insider trading activity prior to the merger announcement.

**Testing Significance**

The study tests the following hypotheses;

- **H₀**: There are no significant changes in the share prices of the target bank before the merger announcement.
  
  Mathematically, \[ \text{AR} = 0 \text{ or } \text{CAR} = 0 \]

- **H₁**: There are significant changes in the share prices of the target bank before the merger announcement.
  
  \[ \text{AR} > 0 \text{ or } \text{AR} < 0 \text{ or } \text{CAR} > 0 \text{ or } \text{CAR} < 0 \]

**Analysis Using Trade Volume Data**

In order to confirm the results of share price analysis, an analysis of the trade volume data of target banks is made. The methodology is borrowed from the working paper which is part of the NSE research initiative (Agarwal and Singh, 2006). A short description of the methodology is described below.

The first step is the fixation of two benchmarks. The average trading volume data for the period (-60 to -31 days) and (-100 to -41 days) which represent short term benchmark and long term benchmark respectively. Then these benchmarks are compared with average trading volume data for (-20 to -1), (-10 to -1) and (+1 to +14) windows. This comparison will locate the deals in which higher trade volume is done. If the trade volume is higher by 100% or more compared to short term benchmark, the study considers it as a ‘significant’ change. Similarly, if it is higher by 50% or more compared to long term benchmark, the study considers it as a ‘significant’ change.

**Results and Discussion**

**Aggregate Results**

The basic premise of this analysis is that systematic abnormal price movements in target bank shares can be interpreted as prima facie evidence of insider trading. For the purpose of analysis, the residuals for the target banks for the 60 trading days prior to the announcement date and 15 days on and after the announcement date were estimated. As mentioned in the methodology part, MAAR method is
used to find out the abnormal returns and average residuals. If there are no unusual price movements prior to the announcement date, it means that both AR and CAR fluctuate randomly about zero. At the same time, if the AR show positive trend when trading days \((t)\) approach zero and a corresponding build up in CAR \(t\), it can be taken as an evidence for trading on inside information.

**Figure 1: Average Residual**

Source: Calculations are based on Secondary Data

It is very much evident that (Figure 1 and Figure 2) there exists a constant increase or build up in the CAR of target banks much before the merger announcement. To be more specific, the build-up started almost 45 days preceding the merger announcement. Figure 1 shows that average residuals prior to the merger were positive and turned negative in the post-merger announcement scenario. It pinpoints the trading on insider information. When turning into CAR, the build-up is sharp and very much visible. As per the information leakage hypothesis, the positive and constant build up in the CAR (market adjusted) prior to corporate announcements can be treated as the presence of insider trading. Therefore, it can well be argued that the bank merger information and valuation details of the deals were leaked much before their announcements (the day on which the merger news comes in a national daily). In spite of this, the \(t\) statistics given in the tables do not suggest that AR and CAR are significantly different from zero. We assume that it is because of low sample size and lack of normality.

**Figure 2: Cumulative Average Residual**

Source: Calculations are based on Secondary Data

Therefore, in order to trace out the pattern of movement in CAR in a better way, we divided the 60 days period prior to the merger announcement into seven sub-periods. Then, the CAR build up accounted by the various sub-periods are computed. It is very clear from the Table 2 that about 35% of the total build
up in the CAR is accounted by ten days immediately preceding the announcement day, which is significant at 1% level of significance. If we take the build up for a period of one month preceding the date of announcement out of the total build up in the CAR during the 60 days, it can be seen that 67% of the total build up is accounted by it.

Table 2: CAR- Announcement Effect

<table>
<thead>
<tr>
<th>Sub-periods</th>
<th>CAR</th>
<th>Announcement Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>-60 to -51 days</td>
<td>0.13</td>
<td>0.42%</td>
</tr>
<tr>
<td>-50 to -41 days</td>
<td>1.60</td>
<td>5.18%</td>
</tr>
<tr>
<td>-40 to -31 days</td>
<td>1.82</td>
<td>5.90%</td>
</tr>
<tr>
<td>-30 to -21 days</td>
<td>5.37</td>
<td>17.41%**</td>
</tr>
<tr>
<td>-20 to -11 days</td>
<td>9.98</td>
<td>32.37%**</td>
</tr>
<tr>
<td>-10 to -1 days</td>
<td>10.82</td>
<td>35.09%**</td>
</tr>
<tr>
<td>0 to +1 days</td>
<td>1.08</td>
<td>3.52%**</td>
</tr>
<tr>
<td>-60 to +1 days</td>
<td>30.83</td>
<td>------</td>
</tr>
</tbody>
</table>

** indicates CAR is significantly different from zero at .01 level of significance.

Based on the above results, it can be easily concluded that there exists abnormal returns much before, say one month, before the merger announcement date. Therefore, the study rejects the null hypothesis that there is no abnormal price movement before the merger announcement and validates information leakage hypothesis. Again, to confirm these results, we have analyzed the trading volume pattern of the target banks. As mentioned in the methodology part, the average trading volumes occurred during -20 to -1, -10 to -1 and 1 to +14 are compared to short term and long term benchmarks (-60 to -31 days and -100 to -41 days). The following table reports the results of the analysis.

Table 3: Analysis of Trade Volume Pattern – Aggregate Results

<table>
<thead>
<tr>
<th>Window</th>
<th>-20 to -1</th>
<th>-10 to -1</th>
<th>+1 to +14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Trading Volume</td>
<td>1717513</td>
<td>2344580</td>
<td>999800</td>
</tr>
<tr>
<td>% Change (Compared with Short-term Benchmark)</td>
<td>330%</td>
<td>487%</td>
<td>150%</td>
</tr>
<tr>
<td>% change (Compared with Long-term Benchmark)</td>
<td>522%</td>
<td>749%</td>
<td>262%</td>
</tr>
</tbody>
</table>

Note: Short-term Benchmark (-60 to -31 trading Days) is 399030 and Long-term Benchmark (-100 to -41 trading days) is 276025

The aggregate results of trading volume pattern analysis presented in Table 3 show that target banks’ trading volume is significantly high in all the periods when it is equated with the short term and long term benchmarks. The percentage changes compared to short term benchmark during -20 to -1, -10 to -1 and +1 to 14 are 330%, 487% and 150% respectively and are higher than the 100%. In the case of long term benchmark comparison, the percentage changes are 522%, 749% and 262% respectively. It is interesting and important to note that, in both comparisons, -10 to -1 window shows the highest percentage change. Therefore, our analysis strongly supports the information leakage hypothesis and provides concrete evidence for trading on inside information. Thus, as suggested by global literature (Finnerty, 1976, Keown & Pinkerton, 1981, Gregg A et.al, Pound & Zeckhauser, 1990, Meulbrock, 1992), before the merger announcements, Indian equity markets also experienced unusual or dramatic increases in the trading volumes parallel with the constant buildup in the CAR.

Individual Results

A case by case discussion on individual merger deals is available below:

- **ICICI Bank-Bank of Madura**

Table 4 reports that during one month preceding the announcement date witnessed CAR announcement effect of 68%. Further, 10 days period preceding the announcement accounted for 72% of the announcement effect. It means that about one third of the total CAR announcement effect is accounted by 10 days preceding the merger announcement (see Figure 3).
Figure 3: Cumulative Abnormal Returns – Bank of Madura

Source: Calculations are based on Secondary Data

Table 5 shows the average trading volumes of Bank of Madura for the respective window periods. The average trading volumes for the window period are 30,289, 60,182 and 9,799 respectively. When compared with the short term (13,021) and long term (508) benchmarks, these figures are significantly high. The percentage change of average trading volume compared to the benchmarks is also shown in the following table. The analysis clearly shows that the trading volume has started rising much before the public announcement of the merger. The trading volume is 133% higher to the short term benchmark and 5,868% higher to the long term benchmark in the month before the merger announcement date. Further, it is even higher in the two weeks before the merger announcement.

Table 5: Analysis of Trade Volume Pattern – Bank of Madura

<table>
<thead>
<tr>
<th>Window Period</th>
<th>-20 to -1</th>
<th>-10 to -1</th>
<th>+1 to+14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Trading Volume</td>
<td>30289</td>
<td>60182</td>
<td>9799</td>
</tr>
<tr>
<td>% Change (Compared with Short-term Benchmark)</td>
<td>133%</td>
<td>362%</td>
<td>(32)%</td>
</tr>
<tr>
<td>% Change (Compared with Long-term Benchmark)</td>
<td>5868%</td>
<td>11747%</td>
<td>1828%</td>
</tr>
</tbody>
</table>

Note: Short-term Benchmark (-60 to -31 trading days) is 13021 and Long-term Benchmark (-100 to -41 trading days) is 508. Figures in the parenthesis are negative.

Hence in the ICICI Bank- Bank of Madura deal, CAR for the one month period preceding the announcement is very high and average trading volumes for both the windows, -20 to -1 and -10 to -1 periods are substantially high. In the valuation part, the ICICI Bank paid Rs. 305.80 per share to BoM shareholders when its market price was only Rs. 122.50. Average of 15 days price prior to this date is Rs. 90.31, one month average is Rs. 86.95, two months average is Rs. 79.86 and three months average is Rs. 77.82. The book value per share was Rs. 205.12. Thus, premium to book value and premium to market value are 1.50 times and 2.50 times respectively. By considering the high acquisition price, abnormal CAR and high average trading volume, it can well be argued that Bank of Madura’s shares had undergone insider trading.

- **Centurion Bank – Bank of Punjab**

The news about the Centurion Bank-Bank of Punjab deal was first appeared on June 20, 2005. It is very much clear from Table 6 that in all the seven sub periods, the percentage of announcement effect to the total announcement effect (-60 to +1 window) are significantly high. It includes both positive and negative drifts. Figure 5.4 also does not show any constant build up in CAR. Though the announcement effect accounted by -10 to-1 window is 800% in total build up, the other periods also show similar results. However, -10 to -1window is accounted for the highest portion of the total effect. The analysis of trading volume supplements it. When compared with short term benchmark, the percentage change in trading volume is significant only in -10 to-1 window. In the long term benchmark comparison, none of the periods reflect significant percentage change.
In the Centurion Bank- Bank of Punjab deal, the average trading volumes of Bank of Punjab for the window period are 2, 60,184, 4, 32,923 and 12, 08,035 respectively. Table 9 clearly indicates that these figures are less than the long-term benchmark and slightly higher than the short term benchmark. The percentage change is ‘significant’ only for the (-10,-1) window period. It is interesting here to note that the percentage change in trading volume compared to short term and long term benchmarks is very low as opposed to ICICI Bank-Bank of Madura deal.

In the valuation aspects, the exchange ratio agreed was 9:4. Based on this ratio, the deal value was Rs. 3591 millions. It is important here to remember that Bank of Punjab was a loss making bank it had reported a loss of Rs. 624 millions in the financial year preceding the merger. The acquisition price was Rs. 34.20/share. The book value of Bank of Punjab at the time of merger was Rs. 22.90/share. The premium based on book value and market value are 1.49 times and 1.02 times respectively. It means that premium was not that high compared to the market price of Bank of Punjab at the time of merger.

Table 7: Analysis of Trade Volume Pattern – Bank of Punjab

<table>
<thead>
<tr>
<th>Window Period</th>
<th>-20 to -1</th>
<th>-10 to -1</th>
<th>+1 to+14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Trading Volume</td>
<td>260184</td>
<td>432923</td>
<td>1208035</td>
</tr>
<tr>
<td>% Change (Compared with Short-term Benchmark)</td>
<td>23</td>
<td>104</td>
<td>470</td>
</tr>
<tr>
<td>% Change (Compared with Long-term Benchmark)</td>
<td>(74)</td>
<td>(56)</td>
<td>23</td>
</tr>
</tbody>
</table>

Note: Short-term Benchmark (-60 to -31 trading Days) is 211833 and Long-term Benchmark (-100 to -41 trading days) is 982698. Figures in the parenthesis are negative.

Though the announcement effect of CAR and percentage change in the trading volume are high in the ten day period, by considering high volatility in all sub-periods and the valuation aspects, the study rates it as an uncertain case.
- **IDBI Bank- United Western Bank**
  
  IDBI Bank- United Western Bank deal was a forced merger deal and the news first appeared in the public domain on September 16, 2006. In contrast to other forced deals, the target bank got consideration in the deal and it was a cash transaction. Table 8 provides that the announcement effect was negligible in the ten days period preceding the announcement. However, the one month period before the announcement is accounted for nearly 30% of the total announcement effect. In the trading volume analysis it can be observed that all the windows, in both short term and long term benchmark comparison, show substantially high average trading volumes. The price paid was Rs. 1506 millions. The acquisition price was Rs. 28/share. The premium to book value and market value were 1.90 times and 1.31 respectively.

![Figure 5: Cumulative Abnormal Returns – United Western Bank](image)

### Table 8: CAR- Announcement Effect -United Western Bank

<table>
<thead>
<tr>
<th>Sub-periods</th>
<th>CAR</th>
<th>Announcement Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>-60 to -51 days</td>
<td>0.237</td>
<td>4.38%</td>
</tr>
<tr>
<td>-50 to -41 days</td>
<td>0.042</td>
<td>13.74%</td>
</tr>
<tr>
<td>-40 to -31 days</td>
<td>0.102</td>
<td>1.88%</td>
</tr>
<tr>
<td>-30 to -21 days</td>
<td>2.65</td>
<td>49.07%</td>
</tr>
<tr>
<td>-20 to -11 days</td>
<td>1.74</td>
<td>32.22%</td>
</tr>
<tr>
<td>-10 to -1 days</td>
<td>-0.13</td>
<td>-2.40%</td>
</tr>
<tr>
<td>0 to +1 days</td>
<td>0.06</td>
<td>1.11%</td>
</tr>
<tr>
<td>-60 to +1 days</td>
<td>5.40</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Calculations are based on Secondary Data

In spite of these evidences favoring insider trading, the study doesn’t argue the presence of insider trading in this case. This is because of the fact that the RBI had placed United Western Bank (UWB) under moratorium on September 02, 2006. UWB had been struggling with continuous erosion in their networth, negative CRAR and high NPA. From the moratorium date onwards, there were lot of negotiations between UWB and other banks to come up with a decent plan of merger. These negotiations and the expectations of a merger might have increased the trading volumes and the share prices.

### Table 9: Analysis of Trade Volume Pattern – United Western Bank

<table>
<thead>
<tr>
<th>Window Period</th>
<th>-20 to -1</th>
<th>-10 to -1</th>
<th>+1 to +14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Trading Volume</td>
<td>1976971</td>
<td>3980705</td>
<td>605423</td>
</tr>
<tr>
<td>% Change (Compared with Short-term Benchmark)</td>
<td>7709</td>
<td>15427</td>
<td>2291</td>
</tr>
<tr>
<td>% Change (Compared with Long-term Benchmark)</td>
<td>5332</td>
<td>10700</td>
<td>1564</td>
</tr>
</tbody>
</table>

Note: Short-term Benchmark (-60 to -31 trading Days) is 25314 and Long-term Benchmark (-100 to -41 trading days) is 36394. Figures in the parenthesis are negative.
HDFC Bank- Centurion Bank of Punjab

The news on the HDFC Bank- CBoP first appeared on February 22, 2008. The target bank had acquired Bank of Punjab and Lord Krishna Bank earlier. Table 10 exhibits that -10 to -1 window is accounted only for the 5% of the total build up. However it is surprising to know that one month prior to the merger is accounted for the 236% of the total effect and it was negative too. When all the other target banks in the sample displayed positive effect in the one month period prior to the merger, CBoP showed a substantially high negative pattern. The overtrading activity (Table 11) prior to the merger too indicates the same. The average trading volume is significantly high in (-20,-1) and (-10,-1) window periods compared to short term benchmark.

Table 10: CAR- Announcement Effect - Centurion Bank of Punjab

<table>
<thead>
<tr>
<th>Sub-periods</th>
<th>CAR</th>
<th>Announcement Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>-60 to -51 days</td>
<td>0.113</td>
<td>126.96%</td>
</tr>
<tr>
<td>-50 to -41 days</td>
<td>-0.073</td>
<td>-82.02%</td>
</tr>
<tr>
<td>-40 to -31 days</td>
<td>0.125</td>
<td>138.20%</td>
</tr>
<tr>
<td>-30 to -21 days</td>
<td>0.159</td>
<td>178.65%</td>
</tr>
<tr>
<td>-20 to -11 days</td>
<td>-0.214</td>
<td>-240.44%</td>
</tr>
<tr>
<td>-10 to -1 days</td>
<td>0.004</td>
<td>4.49%</td>
</tr>
<tr>
<td>0 to +1 days</td>
<td>-0.023</td>
<td>-25.84%</td>
</tr>
<tr>
<td>-60 to +1 days</td>
<td>0.089</td>
<td>-----</td>
</tr>
</tbody>
</table>

Note: Short-term Benchmark (-60 to -31 trading Days) is 1323774 and Long-term Benchmark (-100 to -41 trading days) is 4783342. Figures in the parenthesis are negative.

Figure 6: Cumulative Abnormal Returns - Centurion Bank of Punjab

Source: Calculations are based on Secondary Data

Table 11: Analysis of Trade Volume Pattern-Centurion Bank of Punjab

<table>
<thead>
<tr>
<th>Window Period</th>
<th>-20 to -1</th>
<th>-10 to -1</th>
<th>+1 to+14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Trading Volume</td>
<td>4300162</td>
<td>4492584</td>
<td>9987605</td>
</tr>
<tr>
<td>% Change (Compared with Short-term Benchmark)</td>
<td>224</td>
<td>240</td>
<td>654</td>
</tr>
<tr>
<td>% Change (Compared with Long-term Benchmark)</td>
<td>(10)</td>
<td>(06)</td>
<td>108</td>
</tr>
</tbody>
</table>

Source: Calculations are based on Secondary Data

The acquisition price was below the market price of CBoP at the time of merger. The exchange ratio was 1.29. The acquisition price was Rs. 50.85 whereas the market price stood at Rs. 56.44. This should be linked to the negative pattern of CAR prior to the merger announcement. Taking into account the valuation aspects, we presume that the negative drift much prior to the merger can be due the leakage of exchange ratio information.

ICICI Bank- Bank of Rajasthan

The news on ICICI bank- Bank of Rajasthan merger was first appeared on May 17, 2010. When compared with other voluntary mergers, this deal has many oddities in the context and in the background of the merger including various regulatory interventions of authorities like the Reserve Bank...
of India (RBI), Securities and Exchange Board of India (SEBI) and Foreign Investment Promotion Board (FIPB). This deal attained great attention because of poor corporate governance of the target bank and cancellation of Extra Ordinary General Meeting (EGM) by the Calcutta District Civil Court. The promoters of the Bank of Rajasthan (BoR) have been under huge pressure from regulatory authorities to restructure the Bank owing to a diversity of problems since 2009. BoR, controlled by Tayal Group, had been asked to lessen their shareholding to below 10% from 28% by the RBI. According to SEBI, the promoter’s shareholding in the old private sector bank accounted to 55%.

Table 12: CAR- Announcement Effect -Bank of Rajasthan

<table>
<thead>
<tr>
<th>Sub-periods</th>
<th>CAR</th>
<th>Announcement Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>-60 to -51 days</td>
<td>0.075</td>
<td>0.05%</td>
</tr>
<tr>
<td>-50 to -41 days</td>
<td>7.35</td>
<td>4.96%</td>
</tr>
<tr>
<td>-40 to -31 days</td>
<td>8.99</td>
<td>6.07%</td>
</tr>
<tr>
<td>-30 to -21 days</td>
<td>24.03</td>
<td>16.24%</td>
</tr>
<tr>
<td>-20 to -11 days</td>
<td>48.45</td>
<td>32.75%</td>
</tr>
<tr>
<td>-10 to -1 days</td>
<td>53.65</td>
<td>36.26%</td>
</tr>
<tr>
<td>0 to +1 days</td>
<td>5.4</td>
<td>3.38%</td>
</tr>
<tr>
<td>-60 to +1 days</td>
<td>147.95</td>
<td>-----</td>
</tr>
</tbody>
</table>

Source: Calculations are based on Secondary Data

On February 26, 2010, the RBI levied a penalty of Rs. 25 lakhs for a series of violations including irregular property deals, actions against money laundering norms, deletion of corporate records from the information systems, irregularities in the accounts of corporate groups, extension of repayment period over permissible limits on intra-day overdraft, lack of enough credit committees and poor corporate governance. Further, the RBI appointed a new CEO and nominated 5 directors for the Bank. Following this, SEBI banned 100 entities holding BoR Shares for the sake of their promoters from stock market activities. The RBI then asked the BoR to perform an audit of ‘internal delegation of sanctioning powers followed by the banks’ and the provisioning procedure of bad debts. Due to a series of actions from the regulators, the Tayal family decided to merge the bank with ICICI Bank, the second largest bank in India which was looking for a target to increase their customer base and geographical reach in northern India.

Figure 7: Cumulative Abnormal Returns –Bank of Rajasthan

Surprisingly, when the RBI and SEBI were initiating actions against irregularities in BoR, the bank experienced a major 20.9% rise in price and in comparison; the Bank Nifty saw only an increase of 9.9%. It was during this quarter that, the holding of institutional investors increased substantially from 5.73% to 16.24%. It can be thus presumed that the reason for the marked price appreciation was due to information asymmetry or insider trading or both.
Turning into the CAR announcement effect, Table 12 shows that all sub-periods have positive announcement effects. Furthermore, nearly 70% of the announcement effect is accounted by the one month prior to the merger announcement. The build up in the CAR is very much evident in Figure 7. In addition, all periods show substantially high or significant change in the average trading volumes both in short term and long term benchmark comparisons. Exchange ratio fixed in the deal was 1: 4.72. The acquisition price was Rs. 190.90/share. The premium based on book value and market value was 3.29 times and 2.30 times respectively. It means that ICICI Bank paid 2.30 times of market price of BoR. The substantial increase in the trading volume and high CAR much prior to the merger can be read in line with the leakage of higher valuation of the target bank.

Conclusion and Policy Implications

As the analyzed cumulative abnormal return data and trading volume data showed abnormal build up much prior to the bank merger announcements, the study validates the information leakage hypothesis. In other words, the study argues that trading on insider information is present in Indian equity markets. In the case wise analysis, out of the five deals examined, the analysis of three deals clearly supported the argument; ICICI Bank- BoM, HDFC Bank- CBoP and ICICI Bank- BoR deals. The other deals are rated as uncertain cases. Though this paper is not intended to provide measures for preventing insider trading or penalizing insiders, it has relevance and public policy implications. During last five years, SEBI has received 87 cases of insider trading and completed investigations in 72 cases. Merger of Reliance Petroleum with Reliance Industries Limited and Statham Computers signatories issues were the high profile cases. In spite of this high completion rate, what is worrying is that insider trading consistently goes unpunished in India. Otherwise, the offenders often get favorable orders from Securities Appellate Tribunal (SAT). Further, many studies on the legal aspects of insider trading have clearly shown that the enforcement system is not timely, effective and creditable.

At many instances the authorities couldn’t prove the crime beyond doubts and the legal experts argue that existing definitions of ‘Insider’, ‘UPSI’ and ‘Connected person’ are complex and not adequate. In this backdrop, as India is a growing economy, it should bring efficient and effective surveillance and enforcement approach to solve the deficiencies of the system. It is expected that the implementation of Sodhi Committee Report, 2013 will resolve these issues and thereby improve the public confidence in Indian equity markets.

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Securities and Exchange Board of India (Buy back of shares) Regulations, 1998.
IMPACT OF CRUDE OIL PRICES IN CHINA, INDIA AND USA ON THE GOLD PRICES

Prof. Guntur Anjana Raju∗
Shripad Marathe∗∗

ABSTRACT

The paper studies Impact of Inflation, Crude Oil prices and Exchange Rate on Gold Prices Fluctuations in India, China and USA. Applying co-integration and vector error correction models (VECM), Vector Auto Regression (VAR) and Granger Causality to data for 1996–2015 and found that Crude Oil Prices have the Short term Relationship with Gold Prices in India, China and USA and there is a bidirectional Causality in India and USA.

KEYWORDS: Gold Prices, Oil Prices, Co-integration, VAR, VECM, Granger Causality, Co-integration.

Introduction

In India, oil demand for 2015, rose by 0.22 mb/d (Millions barrels per day), products like LPG, gasoline and diesel shows the gain to the Investors. Macro-economic variables also shown the support to low international oil prices but in China oil demand is fall by 0.05 mb/d because of lower growth rate and same situation arise in USA the demand is fall by 0.16 mb/d because of lower growth rate. In (Allese, 2008), (SitiNurulhuda Ibrahim, Rahul Bishnoi (2014), concluded that the relationship between the Oil Prices and Gold prices are positively correlated. (K. S. Sujit, 2011), (Bhunia, 2013) concluded that there is a long term relationship between the oil and Gold prices. So the study has been conducted to see the relevance of the literature and country India, China and USA are taken for the study.

Literature Review

Allese, 2008 studied the development of the price of Gold. The author has studied Gold market and the factors and trends from 1997 to 2007, which effect the Gold prices fluctuation. The study concluded that Oil and Gold Prices and USD positive correlated.

Sujit, 2011 thisstudy shows relationship among Gold price, stock returns, Exchange rate and Oil price. This study takes daily data from January 1998 to June 2011. Using techniques of time series they studies relationship among these variables using vector autoregressive and co integration technique. The results show that Exchange rate is highly affected by stock returns, Exchange rate and Oil price.

Bhunia, 2013 Study investigates the Co-integration relationships among Crude Oil price, domestic Gold price and selected financial variables (Exchange rates and stock price indices) in India for the period from January 2, 1991 to October 31, 2012. Johansen Co-integration test result indicates that there exists a long-term relationship among the selected variables. Granger causality test result shows that there must be either bidirectional or no causality among the variables.
Ibrahim, 2014  This paper analyzed factors that affecting the Prices of Gold in Malaysia covering data for 10 years period which are from 2003 until 2012. The researcher used variables that affect the Prices of Gold which are Crude Oil Prices, CPI rates and Exchange rates. The empirical results have found there is negatively significant relationship between CPI rates and Exchange rates on Gold Prices, while a Crude Oil price is positively significant.

Bishnoi, 2014  This paper analyses the critical factors affecting the price of Gold using ordinary least square, white-test and weighted least squares taken yearly data from 1994 to 2013. The results show that Gold Prices, US dollar to Indian Rupee Exchange rate, and Crude Oil Prices are positively correlated albeit a negative relationship clearly emerges with the Rate of CPI, long run interest rates in the US and their Real GDP.

Dubey, 2014  Present study is based on the Gold price trends and what factors determine the Gold price in India. The paper specially focuses on increase in Gold Prices in India in the years between 2004 to 2013. According to empirical findings, highly positive correlation is found between Gold Prices and CPI rate of our country.

Jaiswal, 2015  The paper deals with various aspects attached to the paper basically uses the data available through journals, reports, articles etc. and concludes that Investing in Gold is potentially a way to maintain purchasing power. The purchasing power of Gold rises and falls as the real price of Gold rises and falls.

Shafiee, 2010  reviews that world Gold market and the historical trend of Gold Prices from January 1968 to December 2008. This is followed by an investigation into the relationship between Gold price and other variables like Oil price and Global CPI over the last 40 years. The study estimates the Gold price for the next 10 years, based on monthly historical data of nominal Gold price.

Objectives of the Study
Is to Study the Impact of Crude Oil Prices in China, India and USA on Gold Prices.

Research Methodology
The Period of the Study is from January 1996 to December 2015 Sample size Contains three countries India, China and USA. The study undertook the secondary data for analysis. The Monthly values of Oil prices taken from US Energy information Administration (oil prices), World Gold Council (Gold Prices) and National Bureau of Statistics of China etc. Statistical Tools and Techniques used are

Unit Root Analysis (Augmented Dickey Fuller), (Phillip Perron)
The ADF Unit root is based on null Hypothesis Ho:-Y_t is Not I(0). If the calculated ADF Statistic is less than the critical value, then the null Hypothesis is rejected; otherwise accepted. ADF and Phillip Perrons is used to see the stationarity between Gold Prices and Exchange rate of Rupee.

Vector Auto Regression
VAR Model is used to predict and analyze interrelated time series and dynamic effects that the random perturbations have on the variables system. There is no need to specify whether some variables are endogenous or exogenous. It shows the response of Exchange Rate and Gold Prices. It focuses more on the increase or decrease in trend. It is also used to detect the causal relationships among the variables.

Johansen Co-integration Test
The trace statistic can be specified as: \[
\Gamma \text{ Trace } = -T \sum \log (1 - \lambda_i)
\]
Johansen Co-integration Test has been applied to check whether the long run Equilibrium relation exists between the Oil Prices and Gold Prices. It is based on two test statistic, i.e. Trace Test Statistic and the Maximum Eigen value test statistic.
Granger Causality Test

The Granger causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another. So study helps to determine whether Exchange Rate helps to determine Gold Prices. A time series Exchange Rate is said to Granger-cause Y if it can be shown, usually through a series of t-tests and F-tests on lagged values of Exchange Rate (and with lagged values of Gold Prices also included), that those Exchange Rate values provide statistically significant information about future values of Gold Prices.

\[
i = \sum_{t=1}^{n} B_{1} Y_{t} - 1 + \sum_{i=1}^{n} a_{i} X_{t} - i
\]

\[
X_{t+\alpha} = 0 + \sum_{i=1}^{n} \alpha_{i} X_{t} - 1 + \sum_{i=1}^{n} \Lambda_{i} Y_{t} - 1
\]

Scope of the study

Growing variability in Gold prices in the recent years, validate the need to examine such fluctuation from January 1996 to December 2015. The data for 20 years has been taken for consideration and the three markets are considered i.e. India, China and USA for studying the determinants of Gold Prices. In reality Gold price did not solely affected by single factor. In the study, the relationship between the Crude Oil Prices, and Gold prices of the countries were being investigated.

Table 1: Descriptive Statistics of Gold Prices and Oil prices from 1996-2015

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Gold prices</th>
<th>Oil Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>China</td>
<td>India</td>
</tr>
<tr>
<td>Mean</td>
<td>2.285630</td>
<td>2.285879</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.282718</td>
<td>0.282779</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.228366</td>
<td>0.229379</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.477696</td>
<td>1.480270</td>
</tr>
<tr>
<td>Jarque-bera</td>
<td>25.26013</td>
<td>25.20037</td>
</tr>
<tr>
<td>Probability</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Authors compilation

Table 2: Unit Root Analysis of Gold Prices and Oil Prices

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>ADF</th>
<th>Phillip-Perron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold price USA has a Unit Root</td>
<td>-13.01519</td>
<td>-13.01519</td>
</tr>
<tr>
<td>Gold price India has a Unit Root</td>
<td>-13.02951</td>
<td>-13.03678</td>
</tr>
<tr>
<td>Gold price China has a Unit Root</td>
<td>-12.99907</td>
<td>-12.99907</td>
</tr>
<tr>
<td>Oil Prices of USA has a Unit Root</td>
<td>-10.06745</td>
<td>-10.108025</td>
</tr>
<tr>
<td>Oil Prices of India has a Unit Root</td>
<td>-9.765815</td>
<td>-9.826013</td>
</tr>
<tr>
<td>Oil Prices of China has a Unit Root</td>
<td>-20.15853</td>
<td>-20.10238</td>
</tr>
</tbody>
</table>

Source: Authors compilation

Above Table 1 highlights the Descriptive Statistics of Oil and Gold Prices. The Data is Converted to logs Because of uniformity. It gives information about Mean, Standard Deviation, Skewness and Kurtosis values of the India, China, USA for the period of January 1996 to December 2015. The dependent variable that is Gold Prices India has a Highest standard deviation i.e. 0.282779 and kurtosis value of 1.480270. which points out that Gold Prices of India moves around 0.0282779, Gold prices have shown an increasing trend because the Average value is increasing over the period of time. Oil price shows a highest standard deviation for USA i.e. 0.52550 Skewness shows that Oil prices are is Negatively Skewed between the three variables. Table 2 shows that the data is significant at 1% level (i.e. p value<1%) and
become stationary at First differenced so this data can be used to find the Johansen (1998) and Johansen and Juselius (1990) Co-integration for long term relationship.

**Johansen Co-integration Test**

To find the long term relationship by Co-integration first we have to decide the Lag length criteria by running a Normal VAR so from the VAR the length which is decided as per the Schwarz information criterion (SIC) is order(2) for Oil and Gold Prices of China, India, USA.

### Table 3: Johansen Co-integration between Oil Prices and Gold Prices

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Alternative Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>Critical Values (0.05%)</th>
<th>P-values*</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: r = 0</td>
<td>H1: r = 0</td>
<td>0.053441</td>
<td>13.58434</td>
<td>15.49471</td>
<td>0.0951</td>
</tr>
<tr>
<td>H0: r = 1</td>
<td>H1: r = 1</td>
<td>0.002393</td>
<td>0.567798</td>
<td>3.841466</td>
<td>0.4511</td>
</tr>
<tr>
<td><strong>India Oil and Gold Prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H0: r = 0</td>
<td>H1: r = 0</td>
<td>0.042209</td>
<td>11.1464</td>
<td>15.49471</td>
<td>0.2027</td>
</tr>
<tr>
<td>H0: r = 1</td>
<td>H1: r = 1</td>
<td>0.003898</td>
<td>0.925514</td>
<td>3.841466</td>
<td>0.336</td>
</tr>
<tr>
<td><strong>USA Oil and Gold Prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H0: r = 0</td>
<td>H1: r = 0</td>
<td>0.030887</td>
<td>8.089691</td>
<td>15.49471</td>
<td>0.4559</td>
</tr>
<tr>
<td>H0: r = 1</td>
<td>H1: r = 1</td>
<td>0.002756</td>
<td>0.653969</td>
<td>3.841466</td>
<td>0.4187</td>
</tr>
<tr>
<td><strong>China Oil and Gold Prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H0: r = 0</td>
<td>H1: r = 0</td>
<td>0.042209</td>
<td>10.22089</td>
<td>14.2646</td>
<td>0.1978</td>
</tr>
<tr>
<td>H0: r ≤1</td>
<td>H1: r &gt; 1</td>
<td>0.003898</td>
<td>0.925514</td>
<td>3.841466</td>
<td>0.336</td>
</tr>
</tbody>
</table>

Max-Eigen Statistic

**India Oil and Gold Prices**

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Alternative Hypothesis</th>
<th>Eigen Value</th>
<th>Trace Statistic</th>
<th>Critical Values (0.05%)</th>
<th>P-values*</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0: r = 0</td>
<td>H1: r &gt; 0</td>
<td>0.053441</td>
<td>13.01654</td>
<td>14.2646</td>
<td>0.078</td>
</tr>
<tr>
<td>H0: r ≤1</td>
<td>H1: r &gt; 1</td>
<td>0.002393</td>
<td>0.567798</td>
<td>3.841466</td>
<td>0.4511</td>
</tr>
<tr>
<td><strong>USA Oil and Gold Prices</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>H1: r &gt; 0</td>
<td>0.042209</td>
<td>10.22089</td>
<td>14.2646</td>
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</tr>
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<td>3.841466</td>
<td>0.336</td>
</tr>
<tr>
<td><strong>China Oil and Gold Prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H0: r = 0</td>
<td>H1: r &gt; 0</td>
<td>0.030887</td>
<td>7.435723</td>
<td>14.2646</td>
<td>0.439</td>
</tr>
<tr>
<td>H0: r ≤1</td>
<td>H1: r &gt; 1</td>
<td>0.002756</td>
<td>0.653969</td>
<td>3.841466</td>
<td>0.4187</td>
</tr>
</tbody>
</table>

Source: Authors Compilation

Table 3 shows that there is no Co-integration equation between India, USA, China Oil and Gold prices or we also find co-integrating variables when p value is less than 0.05% then there is a co-integrating variable in the equation. In above table we can see that all the p values are more than 0.05% then we conclude that there are no co-integrating variables and there is no long term relationship and we use VAR model to determine the Short term relationship between the variables.

Table 4 shows Vector Auto Regression (VAR) between Oil prices and Gold prices of China, India, and USA. It shows that in USA as the time goes Gold prices are decreasing. It means Gold prices are affected by its own past values. In China Gold prices Lag (-1) is significant at 1% level shows that today’s prices are affected by its past one month prices but for Lag (-2) the today’s prices are decreasing and it is accepted at 5 %level of significance.

### Table 4: Vector Auto Regression between Oil Prices and Gold Prices

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Alternative Hypothesis</th>
<th>Eigen Value</th>
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<td>0.0951</td>
</tr>
<tr>
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<td>0.567798</td>
<td>3.841466</td>
<td>0.4511</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H0: r = 0</td>
<td>H1: r &gt; 0</td>
<td>0.042209</td>
<td>11.1464</td>
<td>15.49471</td>
<td>0.2027</td>
</tr>
<tr>
<td>H0: r = 1</td>
<td>H1: r &gt; 1</td>
<td>0.003898</td>
<td>0.925514</td>
<td>3.841466</td>
<td>0.336</td>
</tr>
<tr>
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<tr>
<td>H0: r = 0</td>
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<td>0.030887</td>
<td>8.089691</td>
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<td>0.4559</td>
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<tr>
<td>H0: r = 1</td>
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<td>0.003898</td>
<td>0.925514</td>
<td>3.841466</td>
<td>0.336</td>
</tr>
</tbody>
</table>
Table 5: Granger Causality Test between Gold Prices and Oil prices

<table>
<thead>
<tr>
<th>Nature of Causality</th>
<th>Obs.</th>
<th>F-Statistics</th>
<th>Prob.</th>
<th>Decision</th>
<th>USA Oil prices does not Granger Cause USA Gold Prices</th>
<th>USA Gold Prices does not Granger Cause USA Oil prices</th>
<th>China Oil prices does not Granger Cause China Gold Prices</th>
<th>China Gold Price does not Granger Cause China Oil prices</th>
<th>India Gold Prices does not Granger Cause India Oil Prices</th>
<th>India Oil Prices does not Granger Cause India Gold Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causality</td>
<td>235</td>
<td>2.51144</td>
<td>0.0309</td>
<td>Rejected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No causality</td>
<td>235</td>
<td>0.0476</td>
<td></td>
<td>Accepted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No causality</td>
<td>228</td>
<td>0.9338</td>
<td></td>
<td>Accepted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No causality</td>
<td>228</td>
<td>0.6783</td>
<td></td>
<td>Accepted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Causality</td>
<td>235</td>
<td>0.0211</td>
<td></td>
<td>Rejected</td>
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<tr>
<td>Causality</td>
<td>235</td>
<td>2.71373</td>
<td>0.0171</td>
<td>Rejected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows the results of Granger Causality Test between USA, India, China, Gold prices and Oil prices. The selected lags for USA is Lag (5), China (12), India (5). And If the Probability value is less than 5% then we reject the null hypothesis i.e. There is no Causality between the variables. This test shows that if past values of Oil prices Causes the Present Value of Gold prices from above table we can conclude that USA Oil Prices and Gold Prices Probability is less than 5% so we reject the null hypothesis and Relationship between the USA Gold Prices and Oil prices are bidirectional causality between the variables. So past values of USA Oil prices causes the present value of Gold Prices and vice versa. In China we can conclude that China Oil and Gold Prices doesn’t affect each other. In India we can see that null hypothesis is rejected so Oil prices and Gold prices are causes each other so there is bidirectional causality between the variables. The past values of Oil prices affecting today’s Gold prices.

Conclusion

In this paper we have analyzed the impact of Crude Oil Prices on Gold Prices. We have taken the time series data from January, 1996 to December, 2015 and applied Co intégration, Granger Causality
test and Vector auto Regression to assess the impact of Crude Oil Prices on Gold Prices. In India the relationship between the Crude Oil prices and Gold prices have Insignificant short term Relationship and the variables are not co integrated but the past values of Gold Prices affect the present values of Oil prices and Vice Versa so there is a bidirectional causality between the variables. In USA Gold Prices and Oil Prices are not co integrated and they have insignificant Short term Relationship between the Variables and also there is a bi directional causality i.e. past values of Oil prices affect the Present values of Gold prices and vice versa. In China Gold prices and Oil prices are not co integrated and they have significant positive short term relationship and there is no causality between the variables.

References
IMPACT OF FINANCIAL LEVERAGE ON FIRM'S PERFORMANCE AND VALUATION: A PANEL DATA ANALYSIS

Dr. Amit Kumar Singh*  
Preeti Bansal**

ABSTRACT

In the field of corporate finance, capital structure decisions have gained currency in the academic world as sufficient and in-time availability of required finance from appropriate source and its effective utilization is the key to success in every field. Many firms become insolvent because they have improper capital mix. Thus, it is imperative for companies to have right mix of capital which reduces their insolvency risk and also maximizes their firm value. The present study is an attempt to investigate the impact of financial leverage on firm's financial performance and also on firm's valuation. For this purpose, 60 Fast Moving Consumer Goods (FMCG) companies listed on National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) have been considered for a period of 10 years from 2007 to 2016. These companies constitute S&P BSE FMCG Index. Due to information availability constraint, 2 firms have been excluded and the study is based on remaining 58 companies. Return on Total Assets and Economic Value Added are taken as indicators of firm's profitability, whereas, Enterprise Value and Tobin's Q are taken as indicators of firm's valuation. So, four regression equations have been developed to study the impact of financial leverage on firm's performance and valuation. The technique of panel data regression has been used on SPSS. The results showed that leverage has a significant negative impact on firm's performance indicator EVA and ROA and firm's valuation indicator Tobin's Q.

KEYWORDS: Capital Structure, Enterprise Value, Financial Leverage, Firm Performance, Tobin's Q.

JEL Classification: G3.

Introduction

The corporate sector is one of the most important sectors of any modern economy as they contribute to the economic growth process through increased corporate savings, investments and employment. Several studies have been done to analyze certain issues which are responsible for enhancing the value of the companies. The most important research issues in the area of corporate finance includes financing decision, investment decision and dividend decision. Among these issues, the financing decision or determination of capital structure has gained currency in the academic world. A firm's capital structure is the structure of its liabilities, i.e., the way it finances its assets through some combination of equity, debt and hybrid securities. Selecting the right combination of debt and equity is a

* Associate Professor, Department of Commerce, Delhi School of Economics, University of Delhi, Delhi.
** Research Scholar, Department of Commerce, Delhi School of Economics, University of Delhi, Delhi.
big challenge, to which Stewart C. Myers has called “a capital structure puzzle” (1984). It is imperative to solve this capital structure puzzle as sufficient and in-time availability of required finance from appropriate source and its effective utilization is the key to success in every field. Many firms become insolvent because they have improper capital mix. Thus, it is imperative for companies to have right mix of capital which reduces their insolvency risk and also maximizes their firm value. The present study is an attempt to investigate the impact of financial leverage or capital structure on firm’s financial performance and also on firm’s valuation.

The fund requirement is not the same for all industries as they are driven by different asset structure, technology, cash flows, etc. Therefore, the type of industry is also considered as one of the important determinants of leverage. The present study focuses on FMCG industry and as the name suggests, “Fast Moving Consumer Goods” companies sell goods which have a shorter shelf life, lower price, fast moving and therefore cash flows are predictable. So, it is easier for FMCG company to raise debt as cash flows are swift and predictable. Thus, it is essential to analyze whether use of debt in the capital structure can help FMCG firms to leverage their profitability and valuation.

**Literature Review**

**Impact of leverage on firm’s Performance**

A large number of studies in various countries and industries have been conducted to assess the impact of financial leverage on firm’s performance. But there is no general consensus for any country or for any specific industry. Moreover, the impact of short term and long term debt is also found to have different impact on the firm’s performance measures. Goyal (2013) studied the impact of leverage on profitability of Indian public sector banks and found that there exists a strong relationship between short term debt and all profitability measures (ROA, ROE and EPS). They further suggested that long term debt has a negative relationship with ROA, ROE and EPS. Ibrahim El Sayed Ebaid, (2009) have examined listed non financial Egyptian firms for a period 1997-2005 and propounded that capital structure decision has a weak-to-no impact on firm’s financial performance. Pouraghajan and Malekian (2012) investigated the impact of leverage on the firm’s financial performance for Tehran based companies. They concluded that there exists a significant negative relationship between debt ratio and financial performance of companies. Quang and Xin (2012) analysed Vietnamese Firms and concluded that leverage has a significant negative impact on financial performance as measured by ROA and ROE. Sheikh and Wang (2013) investigates the impact of leverage on performance of non-financial firms listed on the Karachi Stock Exchange Pakistan during 2004-2009. They propounded that all measures of debt (i.e. total debt ratio, long and short-term debt ratio) have significant negative impact on ROA. Chadha and Sharma (2015) analyzed 422 BSE listed Indian manufacturing firms from 2004 to 2013 to assess the impact of financial leverage on firm financial performance. They deduced that financial leverage has no impact on the firm’s financial performance parameters of ROA and Tobin’s Q. However, it has negative and significant impact on ROE.

The impact of financial leverage on firm’s performance also depends upon the book value and market value of debt. Mireku, Mensah and Ogoe (2014) studied the impact of book value & market value of debt on firm’s performance. They analyzed 15 Ghana Stock Exchange listed companies for the period 2002-2007 and concluded that the financial leverage has an impact on firm’s performance, but, the market value of debt has a stronger impact than book value.

**Impact of Leverage on firm’s Valuation**

Limited empirical studies have been done to assess the impact of leverage on firm’s valuation. Modigliani and Miller (1963) have shown that the value of levered firm is higher because of the tax-shield effect that arises due to the deductibility of interest payments. Korotkikh, Konstantin (2012) empirically demonstrated a negative relationship between leverage and firm value.
This study was conducted with reference to Dutch listed companies which had the problem of overinvestment and low growth potential. Sanjay Bhayani (2009) showed that financial leverage has no impact on the firm’s valuation in the Indian Cement industry.

**Objective of the Study**

To assess empirically the impact of financial leverage on the performance and valuation of firms in the selected BSE FMCG firms.

**Rationale of the Study**

Amongst the research issues in the field of corporate finance, financing decision or determination of capital structure is one of the most significant research problems. Sometimes, organizations are under the extreme pressure of debt and, their failure to meet even the interest obligations leads to their bankruptcy. Therefore, it is required for all companies to maintain an optimal capital structure. So, in order to achieve the firm’s financial goals, it is imperative to study the impact of leverage on firm’s performance and valuation indicators. It is also evident in the famous DuPont analysis that the ROE is affected by three things: Operating Efficiency, Asset use efficiency and financial leverage. It is a well established fact that leverage affects profitability. The present study attempts to identify the direction and magnitude of this impact in select BSE listed FMCG firms in the last 10 years.

**Data Sources and Methodology**

The present study is based on the firms that constitute the S&P BSE FMCG Index. The data for the required variables has been collected for a period of 10 years from 2007 to 2016. Though the BSE FMCG Index comprises of 60 firms, only 58 firms have been considered for the analysis. Two firms have been excluded from the study due to their incomplete data for the period of study. The completeness in data of remaining 58 firms have lead to a balanced panel data, where each variable has 580 observations. The four regression equations have 4 dependent variables and 7 independent variables. Thus, a sample of 58 listed FMCG firms with 11 variables have been analyzed for a period of 10 years, with 6380 observations, to assess the impact of leverage on firm’s performance and valuation.

The present study is based on secondary data of the sample companies. The list of companies constituting BSE FMCG Index and their financial time series data has been taken from Prowess—a Centre for Monitoring Indian Economy (CMIE) database. CMIE Prowess was established in 1976 for providing financial time series data of listed companies in India. For analyzing the data, panel data regression has been used and run on IBM SPSS 21 (Statistical Package for Social Sciences).

**Theoretical Framework**

In order to assess the impact of financial leverage on firm’s financial performance and valuation indicators, panel data regression has been applied. Based on past research studies, two performance indicators and two valuation indicators have been selected. The indicators employed for firms’ financial performance are Return on Total Assets (ROA) and Economic Value Added (EVA). Tobin’s Q and Enterprise Value (EV) have been employed as measurement indicators for firm’s valuation. Accordingly, four regression models have been constructed to analyze the said relationship.

**Model 1:** Return on assets (ROA) has been used as a performance indicator with debt-equity ratio, firm’s size, spending on R&D, tangibility and growth rate in sales as the independent variables. ROA measures the profitability of the firm with respect to the assets being employed by the firm and thereby shows the efficiency of the firm in utilizing the assets for firm’s growth.

**Alternative Hypothesis:** Variables like debt-equity ratio, firm’s size, spending on R&D, tangibility and growth in sales significantly affect the ROA.

\[
ROA_{it} = C_i + \beta_1 DE_i + \beta_2 Size_i + \beta_3 Fed_i + \beta_4 Tang_i + \beta_5 Grow_i + \epsilon_{it}
\]
In this equation, the data for ROA, D/E, R&D and Sales Growth have been directly taken from CMIE Prowess. Firm's size has been calculated as Natural Logarithm of Net Sales and Tangibility is ratio of Net Fixed Assets to Total Assets. The data for Net Sales, Net Fixed Assets and Total Assets have been directly taken from CMIE Prowess.

**Model 2:** Economic Value Added (EVA) has been used as a performance indicator with debt-equity ratio, firm's size, spending on R&D, tangibility and Weighted Average Cost of Capital (WACC) as the independent variables. EVA measures the firm's economic profit and therefore the value being created by the firm over and above the shareholders return.

**Alternative Hypothesis:** Variables like debt-equity ratio, firm's size, spending on R&D, tangibility and WACC in sales significantly affect the EVA.

\[ EVA_{it} = \beta_0 + \beta_1 \left(\frac{D}{E}\right)_{it} + \beta_2 (\text{size})_{it} + \beta_3 (\text{R&D})_{it} + \beta_4 (\text{Tangibility})_{it} + \beta_5 (\text{WACC})_{it} + \epsilon_{it} \]

In this equation, the data for D/E, R&D and WACC have been directly taken from CMIE Prowess. Firm's size has been calculated as Natural Logarithm of Net Sales and Tangibility is ratio of Net Fixed Assets to Total Assets. The data for Net Sales, Net Fixed Assets, Total Assets, PAT and Current Liabilities have been directly taken from CMIE Prowess.

**Model 3:** Enterprise Value has been used as a valuation indicator with debt-equity ratio, spending on R&D, WACC, tangibility and profitability as the independent variables.

**Alternative Hypothesis:** Variables like debt-equity ratio, spending on R&D, WACC, tangibility and profitability significantly affect the Enterprise Value.

\[ \text{Enterprise Value}_{it} = \beta_0 + \beta_1 \left(\frac{D}{E}\right)_{it} + \beta_2 (\text{R&D})_{it} + \beta_3 (\text{WACC})_{it} + \beta_4 (\text{Tangibility})_{it} + \beta_5 (\text{Profitability})_{it} + \epsilon_{it} \]

In this equation, the data for firm's Enterprise Value, D/E, R&D and WACC have been directly taken from CMIE Prowess. Firm's Tangibility has been calculated as the ratio of Net Fixed Assets to Total Assets and Profitability has been calculated as PAT/Net Sales. The data for PAT, Net Sales, Net Fixed Assets and Total Assets have been directly taken from CMIE Prowess.

**Model 4:** Tobin's Q has been used as a valuation indicator with debt-equity ratio, spending on R&D, WACC, tangibility and profitability as the independent variables. Tobin's Q compares the firm's value with its total assets.

**Alternative Hypothesis:** Variables like debt-equity ratio, spending on R&D, WACC, tangibility and profitability significantly affect the Tobin's Q.

\[ \text{Tobin's Q}_{it} = \beta_0 + \beta_1 \left(\frac{D}{E}\right)_{it} + \beta_2 (\text{R&D})_{it} + \beta_3 (\text{WACC})_{it} + \beta_4 (\text{Tangibility})_{it} + \beta_5 (\text{Profitability})_{it} + \epsilon_{it} \]

In this equation, the data for D/E, R&D and WACC have been directly taken from CMIE Prowess. Firm's Tangibility has been calculated as the ratio of Net Fixed Assets to Total Assets and Profitability has been calculated as PAT/Net Sales. Firm's Tobin's Q has been calculated by using the formula: (Market Capitalization + Value of Debt)/ Total Assets. The data for PAT, Net Sales, Net Fixed Assets, Total Assets, Market Capitalization and Value of Debt have been directly taken from CMIE Prowess.

**Data Analysis, Findings and their Interpretation**

Table 1 exhibits the descriptive statistics of performance and valuation measures of 58 firms that are a constituent of BSE FMCG Index. The median of performance indicator ROA is 7.3% and that of EVA is 27.60. The median of valuation indicator EV is 13836.27 and that of Tobin's Q is 1.46x. The descriptive statistics shows that the companies are heterogeneous and companies have Tobin's Q as high as 184.47x and median as 1.46x, which is an indicator of being overvalued.
Table 1: Descriptive Statistics of Dependent Variables

<table>
<thead>
<tr>
<th>Statistic</th>
<th>ROA</th>
<th>EVA</th>
<th>Enterprise Value</th>
<th>Tobin's Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>7.3</td>
<td>27.60</td>
<td>13836.27</td>
<td>1.46</td>
</tr>
<tr>
<td>Min</td>
<td>-42.3</td>
<td>-26655.81</td>
<td>220.95</td>
<td>0.21</td>
</tr>
<tr>
<td>Max</td>
<td>131</td>
<td>7689.38</td>
<td>2704946.02</td>
<td>184.47</td>
</tr>
<tr>
<td>Std Dev</td>
<td>11.81</td>
<td>14879.08</td>
<td>277333.51</td>
<td>8.09</td>
</tr>
<tr>
<td>N</td>
<td>578</td>
<td>578.00</td>
<td>578</td>
<td>578.00</td>
</tr>
</tbody>
</table>

Table 2 exhibits the descriptive statistics of independent variables that impact the performance and valuation measures. The mean Debt equity ratio is 0.56 and median WACC is 8.40%. The median R&D and profitability are on the lower side. The median growth in sales is 14.9% with mean tangibility of 26% and size of 9.22 represents the median natural logarithm of Net Sales.

Table 2: Descriptive Statistics of Independent Variables

<table>
<thead>
<tr>
<th>Statistic</th>
<th>D/E</th>
<th>ROG in Net Sales</th>
<th>Size</th>
<th>R&amp;D</th>
<th>WACC</th>
<th>Tangibility</th>
<th>Profitability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>0.56</td>
<td>14.90</td>
<td>9.22</td>
<td>4.00</td>
<td>8.40</td>
<td>0.26</td>
<td>5.80</td>
</tr>
<tr>
<td>Min</td>
<td>0.00</td>
<td>-57.30</td>
<td>-0.51</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-39.96</td>
</tr>
<tr>
<td>Max</td>
<td>5.80</td>
<td>652.00</td>
<td>13.16</td>
<td>2042.00</td>
<td>368.40</td>
<td>0.78</td>
<td>139.03</td>
</tr>
<tr>
<td>Std Dev</td>
<td>1.04</td>
<td>39.82</td>
<td>1.52</td>
<td>207.55</td>
<td>24.93</td>
<td>0.16</td>
<td>13.74</td>
</tr>
<tr>
<td>N</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>580</td>
</tr>
</tbody>
</table>

Table 3 exhibits the correlation coefficient between all independent variables under study. It is evident that there is low correlation between the variables which implies that the problem of high multicollinearity does not exist.

Table 3: Correlation among Independent Variables

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>D/E Ratio</th>
<th>WACC</th>
<th>ROG in Net Sales</th>
<th>R&amp;D</th>
<th>Size</th>
<th>Tangibility</th>
<th>Profitability</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/E Ratio</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WACC</td>
<td>-0.0923</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROG in Net Sales</td>
<td>0.0260</td>
<td>0.0038</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D</td>
<td>-0.2148</td>
<td>0.1288</td>
<td>-0.0639</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>-0.0065</td>
<td>0.0401</td>
<td>-0.1760</td>
<td>0.4696</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibility</td>
<td>0.1107</td>
<td>0.0586</td>
<td>-0.0839</td>
<td>-0.0527</td>
<td>0.0607</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Profitability</td>
<td>-0.3228</td>
<td>0.0263</td>
<td>0.0314</td>
<td>0.1100</td>
<td>-0.1142</td>
<td>-0.1659</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

In order to assess the impact of financial leverage on firm’s performance and valuation, four regression equations have been developed and panel data regression has been run. IBM SPSS 21 gave the following empirical findings for the regression equations.

Table 4: Model 1 (ROA as a Measure of firm’s Performance)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-Stat</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/E</td>
<td>-4.3582*</td>
<td>0.4333</td>
<td>-10.086</td>
<td>0.000</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>0.0074*</td>
<td>0.0025</td>
<td>3.0147</td>
<td>0.0027</td>
</tr>
<tr>
<td>Size</td>
<td>0.6538*</td>
<td>0.3316</td>
<td>1.9715</td>
<td>0.0491</td>
</tr>
<tr>
<td>ROG in Net Sales</td>
<td>0.0318*</td>
<td>0.0111</td>
<td>2.8669</td>
<td>0.0043</td>
</tr>
<tr>
<td>Tangibility</td>
<td>-4.9059</td>
<td>2.6980</td>
<td>-1.8184</td>
<td>0.0695</td>
</tr>
<tr>
<td>Intercept</td>
<td>7.4363*</td>
<td>3.0750</td>
<td>2.4183</td>
<td>0.0159</td>
</tr>
<tr>
<td>Total Panel (balanced observations)</td>
<td>3480</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R2</td>
<td>21.37%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F statistics</td>
<td>32.3664</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob. (F statistics)</td>
<td>0.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*significant at 5% level.
The empirical results of Model 1 are revealed in Table 4. It has been found that leverage has negative and highly significant impact on ROA. Thus, high leverage has significant negative impact on ROA of the FMCG firms. However, other explanatory variables like R&D spending, firm's size, sales growth have significant and positive impact on ROA. Firms which are bigger in size and spend more on R&D have higher ROA. Also, firms which have higher growth rate in sales have a higher ROA. The firm's tangibility has an insignificant negative impact on ROA. The adjusted R2 is 21.37% and the F test shows that the model is highly significant.

Table 5: Model 2 (EVA as a Measure of firm's Performance)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/E</td>
<td>-1577.9123*</td>
<td>570.8263</td>
<td>-2.7643</td>
<td>0.0059</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>-22.0300*</td>
<td>3.2493</td>
<td>-6.7798</td>
<td>0.0000</td>
</tr>
<tr>
<td>Size</td>
<td>611.4039</td>
<td>430.8880</td>
<td>1.4190</td>
<td>0.1564</td>
</tr>
<tr>
<td>WACC</td>
<td>-144.5172*</td>
<td>23.2995</td>
<td>-6.2026</td>
<td>0.0000</td>
</tr>
<tr>
<td>Tangibility</td>
<td>-3138.1331</td>
<td>3547.4767</td>
<td>-0.8846</td>
<td>0.3767</td>
</tr>
<tr>
<td>Intercept</td>
<td>-510.8073</td>
<td>3929.9542</td>
<td>-0.1300</td>
<td>0.8966</td>
</tr>
</tbody>
</table>

Total Panel (balanced) Observations 3480
Adjusted R2 14.39%
F statistics 20.3956
Prob. (F statistics) 0.0000

*significant at 5% level.

The empirical results of Model 2 are revealed in Table 5. It was found that leverage has negative and highly significant impact on EVA. Thus, high leverage has significant negative impact on EVA of the FMCG firms. However, other explanatory variables like R&D spending and WACC have significant negative impact on EVA. The impact of firm's tangibility and firm's size have an insignificant impact on EVA. The adjusted R2 is 14.39% and the F test shows that the model is highly significant.

Table 6: Model 3 (Enterprise Value as a Measure of firm's Valuation)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T Value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/E</td>
<td>1692.3941</td>
<td>6448.4233</td>
<td>0.2625</td>
<td>0.7931</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>1118.3039*</td>
<td>30.8965</td>
<td>36.1952</td>
<td>0.0000</td>
</tr>
<tr>
<td>WACC</td>
<td>549.1402*</td>
<td>252.5518</td>
<td>2.1744</td>
<td>0.0301</td>
</tr>
<tr>
<td>Profitability</td>
<td>243.5563</td>
<td>482.8637</td>
<td>0.5044</td>
<td>0.6142</td>
</tr>
<tr>
<td>Tangibility</td>
<td>15488.2477</td>
<td>38677.0217</td>
<td>0.4005</td>
<td>0.6890</td>
</tr>
<tr>
<td>Intercept</td>
<td>-4977.3529</td>
<td>15538.5070</td>
<td>-0.3203</td>
<td>0.7488</td>
</tr>
</tbody>
</table>

Total Panel (balanced) Observations 3480
Adjusted R2 71.03%
F statistics 283.9798
Prob. (F statistics) 0.0000

*significant at 5% level.

The empirical results of Model 3 are revealed in Table 6. It has been found that leverage has positive but insignificant impact on EV. However, other explanatory variables like R&D spending and WACC have significant and positive impact on EV whereas, profitability and tangibility have insignificant and positive impact on EV. Firms which spend more on R&D and have lower WACC are valued more by the stakeholders. The adjusted R2 is 71.03% and the F test shows that the model is highly significant.

Table 7: Model 4 (Tobin's Q as a Measure of firm's Valuation)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T Value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>D/E</td>
<td>-0.9987*</td>
<td>0.3454</td>
<td>-2.8915</td>
<td>0.0040</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>0.0031**</td>
<td>0.0017</td>
<td>1.9036</td>
<td>0.0577</td>
</tr>
<tr>
<td>WACC</td>
<td>-0.0048</td>
<td>0.0135</td>
<td>-0.3518</td>
<td>0.7251</td>
</tr>
</tbody>
</table>
The empirical results of Model 4 are revealed in Table 7. It was found that leverage has negative and highly significant impact on Tobin's Q. However, other explanatory variable like R&D spending has a positive impact but significant at 10%. Other explanatory variables like WACC, profitability and tangibility have insignificant impact on Tobin's Q. Firms which spend more on R&D are valued more by the stakeholders. As majority of the variables are found to be insignificant at 5%, the adjusted R2 is very low at 2.24% and the F test shows that the model is significant. Thus, financial leverage (D/E) has negative and significant impact on the firm's performance and valuation indicators in case of BSE listed FMCG firms when financial performance indicators are ROA and EVA and valuation indicator is Tobin's Q. The impact of R&D spending has been found to be positive and significant when dependent variables were ROA, EV and Tobin’s Q. Other control variables such as size, sales growth and WACC are found to be significant determinants of firm’s financial performance and valuation in the FMCG sector.

Conclusion

The present study analyzed the impact of financial decisions on firm's financial performance and valuation indicators taking 58 companies of BSE FMCG Index as sample and being analyzed for a period of 10 years from 2007 to 2016. ROA and EVA have been used as a proxy for firm's financial performance whereas, Tobin's Q and EV have been used as firm's valuation indicators. The results showed that financial leverage has significant and negative impact on performance and valuation when firm's financial performance indicators are ROA and EVA and valuation indicator is Tobin’s Q. Out of the control variables, R&D spending, size, growth in sales and WACC significantly impact the firm's performance and valuation. Remaining control variables like tangibility and profitability are found to have insignificant impact on firm's financial performance and valuation. Thus, the empirical findings of this study would augment the existing literature on capital structure. As the study is based on the latest data, it is significant for the Indian FMCG sector in planning their capital structure which can enhance their both performance and valuation indicators.

References


**Annexure**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Company Name</th>
<th>S. No.</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A V T Natural Products Ltd.</td>
<td>30</td>
<td>Jay Shree Tea &amp; Inds. Ltd.</td>
</tr>
<tr>
<td>2</td>
<td>Advanta Ltd.</td>
<td>31</td>
<td>Jyothy Laboratories Ltd.</td>
</tr>
<tr>
<td>3</td>
<td>Agro Tech Foods Ltd.</td>
<td>32</td>
<td>K R B L Ltd.</td>
</tr>
<tr>
<td>4</td>
<td>Avanti Feeds Ltd.</td>
<td>33</td>
<td>Kaveri Seed Co. Ltd.</td>
</tr>
<tr>
<td>5</td>
<td>Bajaj Corp Ltd.</td>
<td>34</td>
<td>Kohinoor Foods Ltd.</td>
</tr>
<tr>
<td>6</td>
<td>Bajaj Hindusthan Sugar Ltd.</td>
<td>35</td>
<td>Kokuyo Camlin Ltd.</td>
</tr>
<tr>
<td>7</td>
<td>Balrampur Chini Mills Ltd.</td>
<td>36</td>
<td>Kwality Ltd.</td>
</tr>
<tr>
<td>8</td>
<td>Bombay Burmah Trdg. Corpn. Ltd.</td>
<td>37</td>
<td>Linc Pen &amp; Plastics Ltd.</td>
</tr>
<tr>
<td>9</td>
<td>Britannia Industries Ltd.</td>
<td>38</td>
<td>Marico Ltd.</td>
</tr>
<tr>
<td>10</td>
<td>C C L Products (India) Ltd.</td>
<td>39</td>
<td>Mcleod Russel India Ltd.</td>
</tr>
<tr>
<td>11</td>
<td>Colgate-Palmolive (India) Ltd.</td>
<td>40</td>
<td>Nestle India Ltd.</td>
</tr>
<tr>
<td>12</td>
<td>Dabur India Ltd.</td>
<td>41</td>
<td>Procter &amp; Gamble Hygiene &amp; Health Care Ltd.</td>
</tr>
<tr>
<td>13</td>
<td>Dhampur Sugar Mills Ltd.</td>
<td>42</td>
<td>Radico Khaitan Ltd.</td>
</tr>
<tr>
<td>14</td>
<td>E I D-Parry (India) Ltd.</td>
<td>43</td>
<td>Ruchi Soya Inds. Ltd.</td>
</tr>
<tr>
<td>15</td>
<td>Emami Ltd.</td>
<td>44</td>
<td>Shree Renuka Sugars Ltd.</td>
</tr>
<tr>
<td>16</td>
<td>Ess Dee Aluminium Ltd.</td>
<td>45</td>
<td>Som Distilleries &amp; Breweries Ltd.</td>
</tr>
<tr>
<td>17</td>
<td>Eveready Industries (India) Ltd.</td>
<td>46</td>
<td>Tata Coffee Ltd.</td>
</tr>
<tr>
<td>18</td>
<td>Future Consumer Enterprise Ltd.</td>
<td>47</td>
<td>Tata Global Beverages Ltd.</td>
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<td>19</td>
<td>Gillette India Ltd.</td>
<td>48</td>
<td>Tilaknagar Industries Ltd.</td>
</tr>
<tr>
<td>20</td>
<td>GlaxoSmithKline Consumer Healthcare Ltd.</td>
<td>49</td>
<td>Triveni Engineering &amp; Inds. Ltd.</td>
</tr>
<tr>
<td>21</td>
<td>Globus Spirits Ltd.</td>
<td>50</td>
<td>United Breweries Ltd.</td>
</tr>
<tr>
<td>22</td>
<td>Godfrey Phillips India Ltd.</td>
<td>51</td>
<td>United Spirits Ltd.</td>
</tr>
<tr>
<td>23</td>
<td>Godrej Consumer Products Ltd.</td>
<td>52</td>
<td>Usher Agro Ltd.</td>
</tr>
<tr>
<td>24</td>
<td>Gujarat Ambuja Exports Ltd.</td>
<td>53</td>
<td>V S T Industries Ltd.</td>
</tr>
<tr>
<td>25</td>
<td>Hatsun Agro Products Ltd.</td>
<td>54</td>
<td>Vadilal Industries Ltd.</td>
</tr>
<tr>
<td>26</td>
<td>Heritage Foods Ltd.</td>
<td>55</td>
<td>Venky’S (India) Ltd.</td>
</tr>
<tr>
<td>27</td>
<td>Hindustan Unilever Ltd.</td>
<td>56</td>
<td>Vimal Oil &amp; Foods Ltd.</td>
</tr>
<tr>
<td>28</td>
<td>I P B Agro Inds. Ltd.</td>
<td>57</td>
<td>Waterbase Ltd.</td>
</tr>
<tr>
<td>29</td>
<td>T T C Ltd.</td>
<td>58</td>
<td>Zydus Wellness Ltd.</td>
</tr>
</tbody>
</table>
The present research paper main objective is that the study of exploring the financial risk Management and stock market volatility in the present scenario in the Indian equity capital market and debt market. While the traditional theory explored in the present situation that high returns of stocks are associated with high risks, in the research paper shows that under certain conditions, a portfolio with low volatility stocks can yield higher returns than a high-volatility portfolio. The main agenda of this research paper is the relatively new phenomenon of 'Risk-based anomaly.' The present study mainly using a low-volatility portfolio strategy over a 5-year period (from 2010 to 2015) with rolling monthly iterations in the Indian market, the paper finds that as compared to a high-volatility portfolio, a low volatility portfolio produces not only higher absolute returns, but also higher risk-adjusted returns.

Stock price Volatility is the source of risk in an investor’s portfolio. Recent incidents in the financial markets across the world as well in India have shown that the financial market volatility have wide scale repercussion on the economy as a whole. Hence there is a necessity to understand time path and nature of volatility of stock returns. In this study, an attempt has been made to analyze the behavior of volatility in the Bombay Stock Exchange Index shares and other share capital market in India. The nature of volatility persistence, its possible relationship with foreign institutional investment and the flow of unexpected news have been examined in this study.


### Introduction

The present research paper focuses on exploring the financial risk and volatility in financial markets, with a special reference of volatility communication between different capital markets and asset categories. Further the research study indicates the effect of macroeconomic announcements on the returns, volatility and correlation of Indian stock markets as well as explored the Risk in the financial market effects on the EPS. The presently These issues are analyses taking into account the phenomenon of asymmetric volatility and incorporating the period of financial turmoil caused by the Indian Financial Crisis. The Research study focuses the attention on the emerging markets of the context of Indian capital market.

### Literature Review of the Study

<table>
<thead>
<tr>
<th>Author Name</th>
<th>Year</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rogobon</td>
<td>2003</td>
<td>Has focused on alternative measures of volatility in the equity and bond markets in the period surrounding the financial crises.</td>
</tr>
</tbody>
</table>

* Assistant Professor, Finance and Accounts Department of Business Management, Indira Gandhi National Tribal University (A Central University), Amarkantak, M.P.*
Bekaert and Harvey 2000 Analyzed equity returns in a group of Emerging markets before and after financial reforms.

Kim and Singal 1997 Study the behavior of stock prices following the opening of a stock market to foreigners or large foreign inflows.

Hamao and Mei 2001 Examined the impact of foreign and domestic trading on market volatility for Japan and find no systematic evidence that foreign trading tends to increase market volatility.

Nilsson 2002 Has explored that stock market liberalization can lead to excess volatility possibly on account of noise trading for Nordic stock markets using the Markov regime-switching model.

Doong,s-c.yang 2005 Examined that causal relationship of exchange rate and stock returns of Colombo stock exchange.

Yah,H,Y and Niehc 2006 Investigated about the relationship of the stock prices and exchange rate in Kenya.

Wu,y. 2000 In this paper he used the error correction model to analyze the impact of the stock exchange.

Chakrabarti 2001 In his paper he viewed the dynamic behavior between stock market and exchange rate of India.

Fama and MacBeth 1973 Estimated month-by-month cross-sectional regression of monthly returns on betas so as to address the problem caused by correlation of the residuals.

Keim, Donald 1983 Examines, month-by-month, the empirical relation between abnormal returns and market value of NYSE and AMEX common stocks.

**Objective of the Study**
- To explore Risk and volatility spillovers and the time-varying behavior of the correlation in the Indian stock markets.
- To study the risk return trade of situation in Indian equity market and examine Indian capital market for the existence of risk anomaly.
- To investigate volatility spillovers between equity and debt markets in Indian context.
- To study the scope and trading mechanism of capital market in India.
- To find the relationship between the equity investment pattern and Indian stock indices.

**Hypothesis of the Study**
- There is no normally disturbing between Volatility and stock Market returns.
- There is correlation between two variables of Volatility and Indian equity market.
- There is correlation between two variables of the exploring risk management and Indian capital market.

**Significance of the Study**
To determine whether the factors related to financing risk and Stock Market Volatility coin-incidence have an effect on the behavior of the individual investor in the Perspective of the Indian Stock Market.

**Scope of the Study**
In this research paper the study has covered the study of co-movement of stock market volatility and exploring the financial risk system in the Indian stock market as well as in the area of Hyderabad, Chennai, Bangalore, Mumbai and Delhi. The time frame is from 2010 to 2016 March.

**Methodology of the Study:** This part deals with how the research was designed and the methodology used to determine the factors influencing the individual investment decisions, Exploring the financial risk and Volatility index in the Indian Market on the Indian Stock Exchange. The survey research design was adopted with a population of approximately 1 million
investors from whom a sample of 245 investors was randomly selected for study. Primary data was collected using online questionnaires which were examined by the researcher personally and collected data was coded and tabulated for analysis.

- **Research Design:** The present research paper has discussed the research design was used for this study. Mugenda and Mugenda (1999) notes that a survey research attempts to collect data from members of a population and describes existing phenomena by asking individuals about their opinion, attitudes, behavior or values of the investors and consider other influence factor.

- **Target Population:** The target population of this study was all the investors drawn from NSE and BSE which are approximately 1 million Investors in all five regions share capital market in India. In this research paper the study has consider from the five region capital market investors opinions.

- **Sampling Design and Sample Size:** The study has adopted a simple random sample of five stock market and share capital was selected from which 245 individual investors from it were randomly selected targeting one questionnaire each and secondary data of five years record of NIFTY, NSE and BSE. Random numbers can be obtained using a calculator, a spreadsheet, printed tables of random numbers, or by the more traditional methods of drawing slips of paper from a hat, tossing coins or rolling dice (Neville and Sidney, 2004). The researchers study adopted the random number tables. Simple random sampling helps ensure that the sample represents the entire population, and is not biased or prejudiced toward any particular groups within the population. It also helps eliminate the tendency to select based on a basing factor (Cooper and Emory, 1995).

- **Secondary Data and Primary Data Sample:** The study uses a sample of different market indicators of Nifty 50 stocks. These indicators include Data analysis and primary data also used for this research paper through the semi structure question and majority of information has been drawn from the secondary data.
  
  + Monthly, quarterly and annual total returns of the index and securities,
  + Monthly, quarterly and annual transaction volume of the index and securities,
  + Monthly, quarterly and annual high and low values of the index
  + Monthly, quarterly and annual closing prices of Nifty 50 index options

  Along with this the daily, Monthly, Quarterly and annually risk-free rate of return of the Indian stock market and Capital markets index is also used. The data set has been taken for a period 2010-2016. Further, the study used the cross sectional and time-series data.

- **Collection of Secondary Data:** The data on Nifty 50 stocks is procured from Prowess database of Centre for Monitoring Indian Economy (CMIE). The dataset of Nifty50 options, Ministry of Finance, Ministry of Economics, Department of Statistics and Treasury-bill index is obtained from the official NSE website.

- **Data Analysis and Interpretation:** The data consist of the benchmark indexes in the 5 share markets covered and include developed and emerging markets. The share markets are represent for the study Hyderabad share market, Bangalore share market, Chennai share market, Delhi share market and Mumbai share market to sum up, there are the following groups: Nature of markets: Equity Market, Debt Market, and Share Capital. Emerging markets: Indian Stock Market. Selected Region for the study: Hyderabad, Chennai, Bangalore, Delhi and Mumbai.
According to above table the study has displayed the sample size contains five share markets in India, which will be analysed according share values wise and pair-wise. The data has been extracted from the Indian stock market and Mumbai stock market and encompasses the period 1 January 2010 to 3 March 2016 (1200 observations through online). For this Research study to take into account the Indian Financial crisis, and some selected variable has used the next following model development purpose. Many financial analysts have fixed the beginning of the Indian Financial crisis and banks of our countries responded to the collapse of the economy with unprecedented fiscal stimulus, monetary policy expansion, and institutional bailouts. The data used for this study through secondary and primary to partially overcome the potential problem of non synchronous data, which may arise because there are instants in which markets are closed in one Region and open in another. The returns are computed as log differences using day to day, weekly and monthly, the index prices to avoid any potential day of the week biases. The study begin testing for the presence of a particularly market share value in each of the series using the Augmented Dickey-Fuller (1981) test that has the share value (Unit root) process as the null hypothesis (i.e. the series as I(1) against I(0)). Dickey and Fuller (1981) use the following regression equation:

Regression Formula:

\[ \text{Regression Equation}(y) = a + bx \]
\[ \text{Slope (b)} = \frac{N\sum XY - (\sum X)(\sum Y)}{N\sum X^2 - (\sum X)^2} \]
\[ \text{Intercept (a)} = \frac{\sum Y - b(\sum X)}{N} \]

Table 1: The test for the study have selected share of particular market in the series is a test of the null hypothesis that
\[ H_0 \]
If the hypothesis cannot be rejected the series is assumed to be non-stationary.

<table>
<thead>
<tr>
<th>Share Market Region</th>
<th>Augmented Dickey-Fuller test (From January 2010 to March 2016)</th>
<th>Price series</th>
<th>Return series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyderabad</td>
<td>3.54585265(0.542323)</td>
<td>-8.231546874(0.00125)</td>
<td></td>
</tr>
<tr>
<td>Chennai</td>
<td>-11.215365012(0.540231)</td>
<td>5.021354210(0.054864)</td>
<td></td>
</tr>
<tr>
<td>Bangalore</td>
<td>2.958590609(0.859675)</td>
<td>-4.958575(0.0405849)</td>
<td></td>
</tr>
<tr>
<td>Delhi</td>
<td>1.048574984(0.00575905)</td>
<td>6.49585764(0.0398485)</td>
<td></td>
</tr>
<tr>
<td>Mumbai</td>
<td>5.069685474(0.0485738)</td>
<td>7.045958424(0.04958420)</td>
<td></td>
</tr>
</tbody>
</table>

Note: p-values displayed as (.). Critical value at 5% significance level of MacKinnon (1991) for the Augmented Dickey-Fuller test (process with intercept but without trend) is -2.86.

As it is shown in the above table distributional properties of the return series, generally appear to be non-normal. All the return series have negative skewness and are leptokurtic (the Kurtosis coefficient exceeds three). The Jarque-Bera test rejects Normality of the returns. These characteristics have been well documented by a number of other studies in the financial literature.

Table 2: Summary of the Descriptive Statistics

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Share Markets Under Indian Stock Market</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2010 to March 2016</td>
<td>Hyderabad</td>
<td>0.0203510</td>
<td>0.212354</td>
<td>-1.23546</td>
<td>4.25631</td>
<td>45.12382 (0.23516)</td>
</tr>
<tr>
<td>January 2010 to March 2016</td>
<td>Chennai</td>
<td>0.2510320</td>
<td>0.545680</td>
<td>0.121325</td>
<td>8.25635</td>
<td>18.25876 (1.02356)</td>
</tr>
<tr>
<td>January 2010 to March 2016</td>
<td>Bangalore</td>
<td>0.1021003</td>
<td>0.321562</td>
<td>0.120145</td>
<td>2.25632</td>
<td>8.021365 (0.25634)</td>
</tr>
<tr>
<td>January 2010 to March 2016</td>
<td>Delhi</td>
<td>0.0012452</td>
<td>0.154065</td>
<td>-2.025401</td>
<td>6.23152</td>
<td>7.235620 (0.25789)</td>
</tr>
<tr>
<td>January 2010 to March 2016</td>
<td>Mumbai</td>
<td>0.0010020</td>
<td>0.898502</td>
<td>-0.125412</td>
<td>0.23564</td>
<td>11.125545 (0.21548)</td>
</tr>
</tbody>
</table>

Table shows the unconditional correlation matrix. Focusing the attention on the correlation between the one market and all other rest of four markets it is observed that the highest correlations are
those with Mumbai, Hyderabad and Chennai (around 0.6). This result makes sense due to their condition of mature market and tigers, respectively. The correlation with Mumbai and Chennai, the other two tigers, is around 0.45 and the correlation with the cubs is around 0.4. Therefore, as it was expected, correlation. With the Mumbai market increases with the other four market level of development. Finally, it is remarkable the low correlation between Bangalore and Delhi share market.

<table>
<thead>
<tr>
<th>Region</th>
<th>Hyderabad</th>
<th>Chennai</th>
<th>Bangalore</th>
<th>Delhi</th>
<th>Mumbai</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyderabad</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chennai</td>
<td>0.5450</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangalore</td>
<td>0.5401</td>
<td>0.14230</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delhi</td>
<td>0.5421</td>
<td>0.12578</td>
<td>0.54620</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mumbai</td>
<td>0.9850</td>
<td>0.89054</td>
<td>0.8452</td>
<td>0.6542</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 4: Empirical Pricing in the Indian share capital market: It requires the objective density (p) and the risk neutral density (q) calculated using GJR GARCH estimates. Results of GJR GARCH:

GJR GARCH estimates Model: The GARCH effect and leverage impact on dependent series (includes log values of daily Nifty 50 returns and closing option prices in the Indian stock market and determine the financial risk and Volatility in the Stock Market)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Daily Nifty 50 returns</th>
<th>Average Monthly Nifty 50 Returns</th>
<th>Average Quarterly Nifty 50 Returns</th>
<th>Average Annually Nifty 50 Returns</th>
<th>Out of the money put options</th>
<th>In-the-money put options</th>
<th>Out-of-the-money call options</th>
<th>In-the-money call options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ω</td>
<td>0.0200**</td>
<td>2.0320*</td>
<td>2.35560</td>
<td>5.2210</td>
<td>0.2360</td>
<td>0.2100</td>
<td>0.00</td>
<td>-0.012</td>
</tr>
<tr>
<td>β</td>
<td>0.20230</td>
<td>1.0235</td>
<td>1.32560***</td>
<td>1.2350</td>
<td>0.2130</td>
<td>0.002</td>
<td>0.00*</td>
<td>0.965**</td>
</tr>
<tr>
<td>α</td>
<td>0.25600***</td>
<td>2.12533</td>
<td>5.2315**</td>
<td>0.9568**</td>
<td>0.0210</td>
<td>0.100**</td>
<td>0.142</td>
<td>0.451</td>
</tr>
<tr>
<td>γ</td>
<td>0.1254</td>
<td>1.0236**</td>
<td>2.32665</td>
<td>96325</td>
<td>0.200</td>
<td>0.001</td>
<td>0.001</td>
<td>0.286</td>
</tr>
</tbody>
</table>

* Significant at the 10% level, ** Significant at the 5% level and *** Significant at the 1% level

Table 5: Impact of pessimism in the money put and call option in the derivative market on objective financial risk premium in the Indian stock market with following of five regions

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Un Standardized Co-eff.</th>
<th>t-statistic</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.2310</td>
<td>3.02154</td>
<td>0.0546</td>
</tr>
<tr>
<td>RP-1</td>
<td>0.5420</td>
<td>-0.2684</td>
<td>0.0054</td>
</tr>
<tr>
<td>RP-2</td>
<td>0.1002</td>
<td>5.02350</td>
<td>0.2001</td>
</tr>
<tr>
<td>Pessimism</td>
<td>0.00231</td>
<td>37.0215</td>
<td>0.0048</td>
</tr>
<tr>
<td>Adjusted R square</td>
<td>0.47235</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above Table explored the values of the GJR GARCH estimates of Nifty 50 returns of the Indian capital for the period of Five Years, in and out of the money put and call options. It is seen that the leverage effect (measured by the interaction dummy variable „It-1“ in equation of the GARCH Model) in the order for all the variables and is verified by a positive γ parameter, except in out-of-the money call option where it is Positive but insignificant. The parameter γ is Negative and significant for in-the-money put option and in-the-money call options. It is insignificant for the Nifty 50 return series and the out-of-the money put option series although the sign is Negative. The GJR GARCH estimates are used to generate the objective density (p) and risk neutral density (q) for calculating empirical pricing estimation and determined the financial risk for the evaluating the EPS. The above tables Strongly Indicating that the probability distribution of objective and risk neutral density functions in the share market of India in the above selected five regions.
Conclusion

This research paper concluded is based on dynamic relationship between stock markets movement, Financial Risk of Equity Market and volatility of stock market. The present Research Paper has started from absolute value of data for checking the normality which was converted to log. Statistics was yielded the application of Descriptive Statistics test, GJR GARCH estimates Model, Augmented Dickey-Fuller test, and results have shown that stationary is at level form in both data series. Then, the Research paper observed the coefficient of correlation between these variables and taken the results that there is negative correlation.

References

DISCLOSURE PATTERN OF SIX CAPITALS’ UNDER <IR> FRAMEWORK: SELECTED SOUTH AFRICAN’S COMPANIES

Monika Soni
Dr. Shurveer S. Bhanawat

“A strong disclosure regime can help to attract capital and maintain confidence in the capital markets. By contrast, weak disclosure and non-transparent practices can contribute to unethical behavior and to a loss of market integrity at great cost, not just to the company and its shareholders but also to the economy as a whole.”


ABSTRACT

Globalization, regulation and increased stakeholder expectations have added significantly to the complexity of businesses in all major economies. Accordingly, over the last decades, the information used to manage businesses and support stakeholders’ decisions has become similarly complex. A balance sheet could provide true insight into a company’s response to a sudden collapse in demand for its products, as well as how it is using the difficult times to become more cost-efficient and build new capacity for better days, provided the management is open to this. The financials and other tangibles are easily accountable. But what are the best ways for a company to account for the use of human and natural resources, intellectual capital and its dealing with the market and competition? Integrated reporting seeks to align relevant information about an organization’s strategy, governance systems, and performance and future prospects in a way that reflects the economic, environmental and social environment within which it operates. However, a lack of clarity on what integrated reporting is really about, coupled with a limited number of best practice examples, makes it difficult for organizations to understand what needs to be in place for the journey towards integrated reporting. This paper specifically highlights about the reporting of six identified capital (Financials, Manufactured, Human, Intellectual, Social and Relations, Natural) and its integration in business for value creation. Through content analysis, top 10 recognized integrated report of South Africa (as per Ernst and Young Survey, 2015) from different sector has been studied and results shows that there is huge disparity in disclosure and reporting of capital among top 10 companies, moreover it is practically difficult to measure Intellectual, Natural, social and relation capital. Key performance indicators have been identified through analysis of integrated reporting and attempt is made to study how value of the organizations is created through these capitals.

KEYWORDS: Integrated Reporting, Capital, Key Performance Indicators, Value Creation.

Introduction

Reporting is at a crossroads. The voices questioning whether the current reporting model gives a fair reflection of an organisation are getting louder. In addition, depicting not only the financial but also the social and environmental impact of an organisation is increasingly requested by both the investor community and a variety of other stakeholders, such as NGOs, customers, suppliers and new recruits. Corporations are increasingly looked to as agents of change in a world facing mounting environmental...
and social problems, where policy-makers sometimes struggle to garner the support necessary for bold policies. As part of their strategy and in response to stakeholder pressure, more and more businesses now go beyond strict compliance with environmental and other local regulations. These businesses want to inform stakeholders, from investors to consumers, about their corporate responsibility efforts. As a result, the corporate disclosure of environmental, social and governance (ESG) aspects has developed in a variety of directions over more than two decades. At present, investors and other stakeholders can be confused by the information in ESG disclosures: it is difficult to compare ESG performance across companies; the reported information sometimes appears disconnected from the company’s business lines or products, making it difficult to assess its importance; and it can omit risks and opportunities that are material to the business and to society, despite dozens or even hundreds of pages of less relevant data. The current reporting model is not able to fulfill these demands. While in many countries corporations are required by law to include significant non-financial information in their reports, this information is often not provided in a coherent way with a clear link between economic drivers, financial information, and social and environmental impacts.

**Integrated Reporting in South Africa**

Integrated reporting moves beyond a silo approach of information gathering and reporting towards a more comprehensive assessment and presentation of a company’s value and performance. This offers various benefits, such as giving organizations a more holistic view of information relevant to their strategy, business model and ability to create and sustain value in the short, medium and long term. Five Guiding Principles support the preparation of an Integrated Report:

- Strategic focus
- Connectivity of information
- Future orientation
- Responsiveness and stakeholder inclusiveness
- Conciseness, reliability and materiality

The idea of integrated reporting is focused on making some real changes to the existing corporate reporting model, both to external as well as internal reporting. An integrated report is merely intended to be one output of integrated reporting, which should reflect and will depend upon integrated thinking within an organisation. It is about understanding the relevance of various factors – financial as well as non-financial – and their interdependencies for the company’s business model, and considering the insights formed with such a comprehensive approach in strategic and operational decisions. At the very core of the concept of Integrated Reporting (IR), is the growing recognition that a number of factors determine the value of an organisation–some of these are financial or tangible in nature and are easy to account for in financial statements. However others, like people, natural resources, intellectual capital, markets, competition, etc. are harder to measure. This is where the concept of Integrated Reporting comes in. IR enables an organisation to communicate in a clear manner on how it is utilizing its resources and relationships to create, preserve and grow value in the short, medium and long-term. And thus helping investors to manage risks and allocate resources most efficiently. The IR reporting framework covers six parameters:

- Organizational Overview of the Business Model
- Operating Context, Risks and Opportunities
- Strategic Objectives and Strategies
- Governance
- Performance
- Outlook
South Africa leads the world on integrated reporting. The listed companies in South Africa are required to prepare an integrated report or publicly explain why they are not doing so (from financial years starting on or after 1 March 2010). The IIRC framework is aligned with the reporting guidelines adopted in South Africa during 2011. The framework is expected to create a greater understanding among investors globally and make them more aware of the value of integrated reporting. The framework has also introduced the concept of reporting on the six forms of capital which impact on value creation in business. These are financial, manufactured, intellectual, human, social and relationship, and natural capital. The Integrated Reporting Framework of the International Integrated Reporting Council (IIRC) has introduced a new way of considering and categorizing the different forms of capital upon which a business depends for its success. These capitals are either increased, decreased or transformed through the activities of the business and should ultimately result in value creation. However, the roadmap to realizing such benefits is not necessarily a simple one. It requires comprehensive approach: understanding the company’s strategy drivers, identifying key stakeholders and their specific expectations, and implementing processes to obtain the information necessary for an integrated approach to managing the business.

**Reviews**

(Imoleayo, 2015), in their article titled “Should Integrated Reporting be incorporated in the Management Accounting Curriculum?” stated that management accounting curriculum should be updated with integrated reporting as it will not only raise awareness level for the concept, but also equip accountants with the competence required for preparing integrated reports, thereby preparing them early for the emerging task of integrated reporting.

(Baron, 2014), in his paper on “The Evolution of Corporate Reporting for Integrated Performance” provides the state-of-play on ESG reporting which is governed by corporate social responsibility. ESG aspects include disclosures related to: principles; guidelines; standards; methods. The study highlighted the potential benefits of ESG Reporting such as: obtaining or maintaining license to operate; improving the business enabling environment (i.e. public politics); strengthening value chains; or fuelling product and service innovation. Company-wide data on CO2 emissions and corresponding energy use helps to identify best practice and cost savings.

(Steyn, 2014), in her article on “Organizational benefits and implementation challenges of mandatory integrated reporting: Perspectives of senior executives at South African listed companies” studied the perceptions of Chief Executive Officers (CEOs), Chief Financial Officers (CFOs) and senior executives of South African listed companies on the perceived benefits and implementation challenges as a result of implementing integrated reporting (IR) requirements, as well as motives for preparing an integrated report. The study showed that the companies on the basis of draft framework are attaching the values to the IR process on the basis of their corporate reputation, investor needs and stakeholder engagement and relations which overall helps them in reconsidering their business models and encouraging sustainable product development.

(Clark, 2013), in his article on "Opinion on Integrated Reporting Financial Management" stated that the demand among investors for firms to adopt IR is irresistible because reporting today is an altogether dicer affairs as companies have come under pressure to bare their soul. If investors value a firm’s brand at billions of pounds, they’ll want to know how the management is protecting these intangibles.

(Maria, 2013), in her thesis titled "How can the global reporting initiative G4 guideline improve environmental, social and governance disclosure" provided the guidelines which aim to transform sustainability reporting and make this disclosure more meaningful to all stakeholders including
investors. The findings showed that by shifting the focus on material issues and by inculcating integrated reporting, the G4 guidelines can be made more beneficial. However the only limitation is its voluntary disclosure by the companies.

(Stubbs & Higgins, 2012), in their report on “Sustainability and Integrated Reporting: A Study of the Inhibitors and Enablers of Integrated Reporting” studied how organizations are interpreting and applying integrated reporting; drivers and motivations for applying integrated reporting; the benefits and challenges for an integrated reporting approach; and, how integrated reporting can become more widespread. The main outcome of the study stated that IR is still not understood by the managers; the reporting landscape within organizations is continually evolving and experimentation and is also underway.

(Bayron, 2011), in her article on “The Bigger Picture: The Challenges of Integrated Reporting” highlighted the challenges in the implementation of IR which includes: The report has little connection to creating long-term value. Moreover linking financial and nonfinancial elements is a difficult process. Another obstacle is the lack of a single standard for sustainability reporting, which makes comparability among companies a hard task.

(Jensen & Berg, 2011), in their article on “Determinants of Traditional Sustainability Reporting Versus Integrated Reporting. An Institutionalize Approach” analyses similarities and differences between companies with traditional sustainability reporting (TSR) and those that publish integrated reports. The analysis showed that IR companies are different from TSR companies with regard to several country-level determinants such as investor and employment protection laws, the intensity of market coordination and ownership concentration, the level of economic, environmental and social development and the degree of national corporate responsibility.

Objectives
• To study about reporting of six capitals in integrated reports of the sample units.
• To identify the key performance indicators for six identified capital in sample units/ different industrial sectors.
• To identify the value creation by sample units through six identified capital.

Research Methodology
The following research methodology was adopted for the current research article.
• Sample Size: Top ten integrated reports (2014) of organizations in South Africa are considered who have been given excellence awards by Ernst and Young (2014).

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Liberty Holdings</td>
<td>Financial Services</td>
</tr>
<tr>
<td>2</td>
<td>Anglo American</td>
<td>Basic Material</td>
</tr>
<tr>
<td>3</td>
<td>Barclays Africa</td>
<td>Financial Services</td>
</tr>
<tr>
<td>4</td>
<td>Sasol</td>
<td>Oil and Gas</td>
</tr>
<tr>
<td>5</td>
<td>MTN Group</td>
<td>Telecommunication</td>
</tr>
<tr>
<td>6</td>
<td>Redefine Properties</td>
<td>Real Estate</td>
</tr>
<tr>
<td>7</td>
<td>Standard Bank Group</td>
<td>Financial Services</td>
</tr>
<tr>
<td>8</td>
<td>Truworths International Limited</td>
<td>Consumer goods</td>
</tr>
<tr>
<td>9</td>
<td>Gold Field</td>
<td>Basic Material</td>
</tr>
<tr>
<td>10</td>
<td>Kumba Iron Ore</td>
<td>Basic Material</td>
</tr>
</tbody>
</table>

• Statistical Tools: For the purpose of study, content analysis and descriptive study of integrated reports of sample units is done

Disclosure of Capital's
Every business uses different types of capital to create value. These capitals become inputs to business activities. In the process of becoming an organization’s outputs, they can be increased,
decreased, enhanced, consumed, modified, destroyed or otherwise transformed. Different capitals apply to different organizations, depending on the level of their dependence or impacts on them in part through the IIRC Pilot Programme. Some businesses focus only on the types of capitals they use most, exploring the interdependencies between the capitals (for example, the way financial capital is underpinned by the other capitals). Others are developing targets and tools to measure the uses of capital six types of capital included in Integrated Reporting are:

- Financial Funds available for use in the production of goods or provision of services; obtained through financing, or generated through operations or investments.
- Manufactured Buildings, equipment, infrastructure.
- Human People’s competencies, capabilities, experience, and motivations to innovate.
- Intellectual Organizational, knowledge based intangibles, including: intellectual property, “organizational capital” and intangibles associated with brand and reputation.
- Social and Relationship Relationships with stakeholder groups and other networks, and the ability to share information to enhance wellbeing. It includes relationships with key external stakeholders, such as customers, suppliers, business partners, communities, legislators, regulators, and policy-makers – an organization’s social license to operate.
- Natural-All renewable and non-renewable environmental resources and processes that provide goods or services that support the prosperity of an organization

Quantitative indicators, such as key performance indicators (KPIs) and in some cases monetized metrics, can be very important in explaining an organization’s uses of and effects on various capitals. Nonetheless, it is important to point out at the outset that it is not practicable to expect organizations to attempt to quantify all capitals. It is not, therefore, an objective of <IR> to measure all the capitals or movements in them. Many uses of and effects on the capitals are best (and in some cases can only be) reported on in the form of narrative rather than through metrics.

Analysis and Discussion

In order to analyze the objectives of present research paper, Integrated Reports of top ten companies of South Africa have been taken into account. With the aim of offering a broader explanation of performance than traditional reporting, defining the business model in the context of integrated reporting means considering all the relevant capitals on which performance depends, and explaining their role in how the company seeks to create and sustain value. Capitals can be conceived as resources and relationships which are used by the organisation, affect it or are affected by it. Depending on individual circumstances, the organisation needs to categorize relevant capitals and decide on their importance. The major emphasis of the study is on the disclosure pattern of six capitals’ (financial, manufactured, intellectual, human, social and relation and natural) which includes the major form of disclosure, key performance indicators (KPI’s) and creation of organization value through these capital. The analysis and discussion is shown in below tables:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Company</th>
<th>Form of Disclosure</th>
<th>KPI</th>
<th>Value Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Liberty Holding</td>
<td>Monetary</td>
<td>Operating Earnings</td>
<td>Re-investment of self generated funds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Headline earnings per share</td>
<td>Considering various low cost funding alternatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Return on IFRS Equity</td>
<td>Strategically allocating capital</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Long-Term Insurance Index</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dividend</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Compounded Annual Growth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Financial Cost Coverage ratio</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Company</td>
<td>Sector</td>
<td>Key Performance Indicators</td>
<td>Challenges</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------</td>
<td>-----------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2.</td>
<td>Anglo American</td>
<td>Monetary</td>
<td>• Return on capital&lt;br&gt;• Earnings per share&lt;br&gt;• Dividend</td>
<td>• Portfolio Management&lt;br&gt;• Maintaining adequate capital and liquidity&lt;br&gt;• Access to financial services for under banked and small and medium enterprises&lt;br&gt;• Access to capital markets&lt;br&gt;• Setting up clear financial target&lt;br&gt;• Investing in growth initiatives</td>
</tr>
<tr>
<td>3.</td>
<td>Barclay Africa</td>
<td>Monetary</td>
<td>• Return On Equity&lt;br&gt;• Core Tier 1 Equity Ratio&lt;br&gt;• Cost to Income ratio&lt;br&gt;• Revenue share from other countries&lt;br&gt;• Payment of taxes</td>
<td>• Re-investment of self generated funds&lt;br&gt;• Considering various low cost funding alternatives&lt;br&gt;• Strategically allocating capital</td>
</tr>
<tr>
<td>4.</td>
<td>Sasol</td>
<td>Monetary</td>
<td>• Operating Profit&lt;br&gt;• Headline earnings per share&lt;br&gt;• Return on shareholder’s equity&lt;br&gt;• Net borrowings to shareholder’s equity&lt;br&gt;• Dividend</td>
<td>• Funding of license through optimum sources&lt;br&gt;• Regulatory fees and taxes payment on time&lt;br&gt;• Balancing investments against returns&lt;br&gt;• Optimizing resources &amp; cost</td>
</tr>
<tr>
<td>5.</td>
<td>MTN Group</td>
<td>Monetary</td>
<td>• Dividend&lt;br&gt;• Finance Cost&lt;br&gt;• Interest bearing Liabilities&lt;br&gt;• Market value&lt;br&gt;• EBITDA</td>
<td>• Re-investment of self generated funds&lt;br&gt;• Considering various low cost funding alternatives&lt;br&gt;• Strategically allocating capital</td>
</tr>
<tr>
<td>6.</td>
<td>Redefine Properties</td>
<td>Monetary</td>
<td>• Loan to value ratio,&lt;br&gt;• Interest Covers,&lt;br&gt;• Debt capital market Funding&lt;br&gt;• % of Debt Secured,&lt;br&gt;• % of property assets pledged as security</td>
<td>• Maintaining Liquidity&lt;br&gt;• Maintaining adequate protection against volatile interest rate movements&lt;br&gt;• Extending maturity profile for as long as possible&lt;br&gt;• Diversifying funding sources&lt;br&gt;• Maintaining strong credit and Balance sheet metrics</td>
</tr>
<tr>
<td>7.</td>
<td>Standard Bank</td>
<td>Monetary</td>
<td>• Return on equity&lt;br&gt;• Credit loss ratio&lt;br&gt;• Headline Earnings&lt;br&gt;• Dividend growth&lt;br&gt;• No. of training and development programmes&lt;br&gt;• Payment of Tax</td>
<td>• Financial Resource Prioritization&lt;br&gt;• Maintaining Optimal Capital and liquidity Level&lt;br&gt;• Pricing Appropriately for risk</td>
</tr>
<tr>
<td>8.</td>
<td>Truworths International Limited</td>
<td>Monetary</td>
<td>• Dividend,&lt;br&gt;• Cash Generation,&lt;br&gt;• Operating margins&lt;br&gt;• Headline Earning Per share&lt;br&gt;• Return on Capital&lt;br&gt;• Return on assets</td>
<td>• Effective management of cash and capital&lt;br&gt;• Grow shareholder wealth and returns&lt;br&gt;• Invest for organic growth&lt;br&gt;• Highly cash generative&lt;br&gt;• Return excess funds to shareholders through dividends and share buy-backs&lt;br&gt;• Pursue strategic acquisitions</td>
</tr>
<tr>
<td>9.</td>
<td>Gold Field Limited</td>
<td>Monetary</td>
<td>• Dividend&lt;br&gt;• Cash Generation&lt;br&gt;• Debt Ratio</td>
<td>• Provide superior returns</td>
</tr>
</tbody>
</table>

---

**Notes:**
- **Indian Journal of Accounting (IJA) Vol. XLVIII (2), December, 2016**
- The table provides a structured overview of key performance indicators and challenges faced by different companies in their respective sectors.
The above table reveals the disclosure pattern of financial capital among top ten companies of South Africa. The table shows that all companies have clearly disclosed the financial capital in form of monetary terms. Companies have clearly mentioned how financial capital helps in generating long term values for the organizations. Mostly all companies have mentioned their future targets for financial capital. Through content analysis dividend, total return on equity, return on assets, total shareholder return, earnings per share were identified as major key performance indicators identified for financial capital. Generally companies are trying to create value by acquiring funds at lower cost, developing funds for technology, setting up financial targets, pursuing strategic acquisition, reinvesting self generated funds, and marinating cash liquidity.

Table 3: Disclosure Pattern of Manufactured Capital

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Company</th>
<th>Form of Disclosure</th>
<th>KPI</th>
<th>Value Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Liberty Holding</td>
<td>Monetary</td>
<td>• Asset Valuation,</td>
<td>• Nurture and Grow strategy is adopted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Claim loss ratio,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Service Fee margin,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Cost to income ratio,</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Anglo American</td>
<td>Not disclosed</td>
<td>• Not Explained</td>
<td>• Not explained clearly</td>
</tr>
<tr>
<td>3.</td>
<td>Barclay Africa</td>
<td>Monetary and Narrative</td>
<td>• Total no of branches,</td>
<td>• Improving quality of IT infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No of data centers and support premises,</td>
<td>• Implementing modern system and technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of equipment and devices that enables service delivery,</td>
<td>• Implemented updated enterprise risk management system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Simple product and services</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Sasol</td>
<td>Monetary and Narrative</td>
<td>• Total no of assets under construction,</td>
<td>• Nurture and Grow strategy is adopted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of property, plant and equipment,</td>
<td>• Extension of mining rights</td>
</tr>
<tr>
<td>5.</td>
<td>MTN Group</td>
<td>Monetary and Narrative</td>
<td>• No of 2G, 3G and LTE based stations,</td>
<td>• Building high class network</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No of towers,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Valuation of assets</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Redefine Properties</td>
<td>Monetary</td>
<td>• Number of industrial properties, offices Retail and office tenants,</td>
<td>• Maintaining balanced Portfolio of assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Valuation of Assets</td>
<td>• Proactive asset management</td>
</tr>
<tr>
<td>7.</td>
<td>Standard Bank</td>
<td>Narrative</td>
<td>• Infrastructure Fund,</td>
<td>• Not Explained</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of assets,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Valuation of assets</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No of Branches</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of IT infrastructure</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Truworths International Limited</td>
<td>Narrative</td>
<td>• Suppliers score card,</td>
<td>• Operate best-of-breed IT systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of retail stores</td>
<td>• Modeling performed using historical data going back many yrs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Store development</td>
<td></td>
</tr>
</tbody>
</table>

Source: Own Compilation
The above table reveals the disclosure pattern of manufactured capital among top ten companies of South Africa. The table shows that all companies have chosen to disclose their manufactured capital in monetary terms, narrative terms or in both. Three companies have disclosed monetary information about manufactured capital. Four companies have disclosed both narrative and monetary information. Two companies have disclosed narrative information. It is important to note that Anglo American have not disclosed any information regarding manufactured capital separately, it has not clearly defined key performance indicators nor it has defined how value is created through manufactured capital. Through content analysis asset valuation, no of IT infrastructure, total production, infrastructure fund, no of reserves came out to be major KPI’s. Generally companies adopt strategies like restructuring, store development, optimization of assets, proactive asset management to create organisation value through manufactured capital. Among top ten, Liberty Holdings, Barclay Africa, Redefine properties limited and MTN group leads in disclosure pattern of manufactured capital.

**Table 4: Disclosure Pattern of Intellectual Capital**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Company</th>
<th>Form of Disclosure</th>
<th>KPI</th>
<th>Value Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Liberty Holding</td>
<td>Narrative</td>
<td>• No of Innovative Products</td>
<td>• Innovative Product and Design</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Stakeholder Sentiment Surveys</td>
<td>• Brand Trust</td>
</tr>
<tr>
<td>2.</td>
<td>Anglo American</td>
<td>Not disclosed</td>
<td>• Not explained</td>
<td>• Not explained</td>
</tr>
<tr>
<td>3.</td>
<td>Barclay Africa</td>
<td>Narrative</td>
<td>• Total no of new Product and services</td>
<td>• Developing new technologies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Using specialized financial skills and expertise</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Brand awareness</td>
</tr>
<tr>
<td>4.</td>
<td>Sasol</td>
<td>Narrative</td>
<td>• Nature of workforce</td>
<td>• Creating Integrated Project Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of experiments and research</td>
<td>• High Performance culture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Enhancing Research and development</td>
</tr>
<tr>
<td>5.</td>
<td>MTN Group</td>
<td>Narrative</td>
<td>• Total no of innovative products</td>
<td>• Brand awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Brand ranking</td>
<td>• MTN touch point</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Cloud services</td>
</tr>
<tr>
<td>6.</td>
<td>Redefine Properties</td>
<td>Narrative</td>
<td>• Total no of skilled workforce</td>
<td>• Recruiting talented employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Retaining skilled employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Redefining Brand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Spending on Research and Development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Pilot Wi-Fi Project)</td>
</tr>
<tr>
<td>7.</td>
<td>Standard Bank</td>
<td>Narrative</td>
<td>• No of IT professionals</td>
<td>• Not explained</td>
</tr>
<tr>
<td>8.</td>
<td>Truworths International Limited</td>
<td>Narrative</td>
<td>• Market share</td>
<td>• Exclusive brands mostly owned by the Group</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Gross margin</td>
<td>• Diversified brand portfolio</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Behavioral Scorecard</td>
<td>• Brand concepts developed internally</td>
</tr>
</tbody>
</table>
The above table reveals the disclosure pattern of intellectual capital among top ten companies of South Africa. The table shows that all companies have chosen to disclose their intellectual capital in narrative terms. It is important to note that Anglo American, Gold Field, Standard Bank have not clearly disclosed any information regarding intellectual capital separately, it has not clearly defined key performance indicators nor it has defined how value is created through manufactured capital. Through content analysis asset total no of skilled workforce, goodwill patent, trademark, brand rank, no of innovative products came out to be major KPI’s. Generally companies adopt strategies like investing in research and development area, brand awareness, installing new technologies, redefining brand etc. Among top ten, MTN group, Redefine Properties limited and Truworths International Limited leads in disclosure pattern of intellectual capital.

Table 5: Disclosure Pattern of Human Capital

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Company</th>
<th>Form of Disclosure</th>
<th>KPI</th>
<th>Value Creation</th>
</tr>
</thead>
</table>
| 1.     | Liberty Holding| Narrative and Monetary | • Total No of Staff- skilled, semi skilled, professionals and permanent  
• No of Training and development sessions  
• Variable Remuneration  
• Voluntary Staff Turnover  
• Cost of Training and Development | • Recruiting and Developing staff to fit in the role  
• Training of staff  
• Retaining and rewarding employees  
• Fair Pay  
• Opportunity for career advancement |
| 2.     | Anglo American  | Narrative | • Voluntary labor turnover  
• Gender Diversity  
• Total recordable case frequency rate  
• Work related fatal injury frequency rate  
• New cases of occupational disease | • Talent Management  
• Protecting labor rights  
• Ensuring safe work environment |
| 3.     | Barclay Africa  | Monetary and Narrative | • Sustained engagement of Colleagues Score  
• Total no of women in senior management  
• Total no of permanent employees  
• Women in senior leadership  
• Employee opinion survey | • Evaluating performance of employees  
• Promoting internal promotions  
• Develop colleague curriculum along with Barclay’s Leadership academy.  
• Training and development programmes |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Turnover rate</th>
<th>Total no of training programme</th>
<th>No of learnerships</th>
<th>Skill Development Programme</th>
<th>HIV Counseling and Testing</th>
<th>Safety Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Sasol</td>
<td>Monetary and Narrative</td>
<td>Product Transportation Incidents</td>
<td>Broad Based Black economic Empowerment</td>
<td>No of Training and Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MTN Group</td>
<td>Monetary and Narrative</td>
<td>Staff cost</td>
<td>Cost of Training</td>
<td>Net promoter score</td>
<td>Retaining talented employees</td>
<td>Providing training</td>
</tr>
<tr>
<td>6</td>
<td>Redefine Properties</td>
<td>Narrative And Monetary</td>
<td>No of Learnership programme</td>
<td>Employee engagement capital score</td>
<td>Types of rewards and recognition</td>
<td>Types of benefits</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Standard Bank</td>
<td>Narrative and Monetary</td>
<td>Employee turnover</td>
<td>Employee survey</td>
<td>% of women in top management</td>
<td>No of training and development programmes</td>
<td>Wellness Matrix</td>
</tr>
<tr>
<td>8</td>
<td>Truworths International Limited</td>
<td>Narrative</td>
<td>Employee Turnover rate</td>
<td>No of Training and Development Programmes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Gold Field Limited</td>
<td>Narrative</td>
<td>No of Training and Development,</td>
<td></td>
<td>Talent Management,</td>
<td>Employee engagement,</td>
<td>Performance Management</td>
</tr>
<tr>
<td>10</td>
<td>Kumba Iron Ore</td>
<td>Narrative</td>
<td>Total no of incidents</td>
<td>Total lost time</td>
<td>Total no of disabilities</td>
<td>High level of safety management</td>
<td>Heath awareness programme</td>
</tr>
</tbody>
</table>

Source: Own Compilation
The above table reveals the disclosure pattern of human capital among top ten companies of South Africa. The table shows that all companies have chosen to disclose their human capital in narrative terms and few have disclosed in monetary terms as well. It is important to note that all companies have clearly defined human capital, its key performance indicators and how this helps in creating value for the organisation. Through content analysis asset total no of training and development programmes, total no of learnerships, total no of incidents, total no of employee grievances, balanced scorecard, employee survey, total no of health awareness programme, employee turnover rate, attrition rate etc came out to be major KPI's. Many companies have also prepared Human Capital report. Thus companies are realizing that intangible assets valuation has increase which demands better reporting. Generally companies adopt strategies like talent management, performance management, employee engagement, safety management, E-learning programmes to enhance human capital. Among top ten, Liberty holdings, Barclay Africa, MTN group, Redefine Properties limited, Standard Bank, Truworths International Limited leads in disclosure pattern of human capital.

Table 6: Disclosure Pattern of Social and Relation Capital

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Company</th>
<th>Form of Disclosure</th>
<th>KPI</th>
<th>Value Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Liberty Holding</td>
<td>Narrative</td>
<td>• Net Customer cash Flows</td>
<td>• Responding to individual query</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Cost of education programme</td>
<td>• Awareness about the policies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Cost of Financial literacy Programme</td>
<td>• Publishing of interim and annual reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Necessary Flexibility in schemes to customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Improving access to education to empower self-fulfillment;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Ensuring the workplace is representative of the communities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Behaving as a responsible corporate citizen and, in particular, act with integrity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Providing job opportunities and products and services that genuinely assist in financial freedom; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Managing the business sustainably to ensure delivery of all promises.</td>
</tr>
<tr>
<td>2.</td>
<td>Anglo American</td>
<td>Narrative</td>
<td>• Corporate social Investment</td>
<td>• Handling Complaints</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total no of business supported</td>
<td>• Handling supply chain management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Jobs created through enterprise</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Barclay Africa</td>
<td>Narrative</td>
<td>• Total no of banking customers</td>
<td>• Direct interaction with the customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• No of complaints</td>
<td>• Management of socio environmental risk and opportunities through our lending, investing and procurement practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Total community investment</td>
<td>• Social responsibility including community investments, access to financial services and financial education</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Treating customer fairly</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• outcome score</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Conduct Index</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Sasol</td>
<td>Narrative</td>
<td>• Community investment</td>
<td>• Employee mentorship circle</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Employee turnover rate</td>
<td>• Enhancing social value</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Payment of Direct and Indirect Taxes</td>
<td>• Improving customer engagement</td>
</tr>
</tbody>
</table>
The above table reveals the disclosure pattern of human capital among top ten companies of South Africa. The table shows that all companies have chosen to disclose their social and relation capital in narrative terms and few have disclosed in monetary terms as well. It is important to note that all companies have clearly defined social and relation capital, its key performance indicators and how this helps in creating value for the organisation. Through content analysis asset total no of education programme, no of job opportunities created, total no of customers, no of suppliers, suppliers scorecard, customer surveys, net promoter score, total no of complaints etc came out to be major KPI’s. Companies have generally disclosed total community investment in integrated reports. Generally companies adopt strategies like developing social objectives, conducting education programmes, maintaining equity, treating customer fairly, handling complaints, handling customer queries, to create value through social and relation capital. Among top ten, Liberty holdings, Barclay Africa, Sasol, MTN group, Redefine Properties limited, Standard Bank, Truworths International Limited leads in disclosure pattern of human capital.
### Table 7: Disclosure Pattern of Natural Capital

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of Company</th>
<th>Form of Disclosure</th>
<th>KPI</th>
<th>Value Creation</th>
</tr>
</thead>
</table>
| 1.     | Liberty Holding           | Narrative         | • Total energy consumption  
• Total Green house gas emissions  
• Total water Consumption       | • Not explained                                                              |
| 2.     | Anglo American            | Narrative         | • Total water consumption  
• Total energy consumption  
• Total carbon footprints       | • Adopting water management strategies                                      |
| 3.     | Barclay Africa            | Narrative         | • Total energy Used  
• Volatile Organic Compounds  
• Total carbon Emissions  
• Total Water used       | • Making environment policies                                                |
| 4.     | Sasol                     | Narrative         | • Total carbon emission (Scope1, Scope2 and Scope3)  
• Carbon disclosure Leadership Index  
• Total Water Withdrawal  
• Total Cost of Energy used | • Setting target for reducing carbon emission  
• Using energy efficient system |
| 5.     | MTN Group                 | Narrative         | • Allocation of Spectrum  
• Total carbon emission       | • Sharing of infrastructure                                                  |
| 6.     | Redefine Properties       | Narrative         | • Total carbon emission (Scope1, Scope2 and Scope3)  
• Carbon disclosure Leadership Index  
• Total Water Withdrawal  
• Total Cost of Energy used | • Solar Project Implemented  
• Green Building  
• Redefining sustainability Policy  
• Developing water and waste policy  
• Compliance with environment norms  
• Climate change awareness programme  
• Conduct Detailed Audit and assessments of standard benchmarks |
| 7.     | Standard Bank             | Narrative         | • Investment in renewable projects  
• Climate performance leadership Index  
• Investment in clean development mechanism projects       | • Signed global Investor statement  
• Reduction of greenhouse gas through carbon financing  
• Using electronic statement |
| 8.     | Truworths International Limited | Narrative (Not explained clearly) | Not mentioned                                                                                                                                                                                                 | • Imported merchandise shipped to Cape Town  
• Outsourced transport service providers  
• Recycling |
| 9.     | Gold Field Limited        | Narrative         | • Total carbon emission,  
• Total Mining Waste,  
• Total Water Withdrawal       | • Reducing energy and carbon emission  
• Enhanced water management |
| 10.    | Kumba Iron Ore            | Narrative         | • Total carbon emission  
• Mining Waste  
• Water Withdrawal       | • Waste management  
• Pollution prevention  
• Awareness of environment |

Source: Own Compilation

The above table reveals the disclosure pattern of natural capital among top ten companies of South Africa. The table shows that all companies have chosen to disclose their natural capital in narrative terms. It is important to note that Liberty Holdings and Truworths International Limited have not clearly disclosed the information regarding natural capital. They have not described how natural capital helps in creating organization’s value. Through content analysis asset total carbon emission, total water withdrawal, total investment in renewable projects, etc came out to be major KPI’s. Companies have generally disclosed total community investment in integrated reports. The analysis shows that strategies
like waste management, carbon finance, pollution prevention, water management etc are adopted to create value through natural capital.

**Findings**

Integrated report concept of six capitals basically wants to make organisation realize the value of intangible assets. Financial, manufactured capitals have been part of balance sheet since from ages. Then slowly organizations realized the value of human, social and intellectual capital and started accounting for these capitals. Then came the concept of natural or environmental capital which has gained a lot of importance. Thus it is required by the organisation to show how they define such capitals and how they measure them. These capitals help in creating long term value of the organisation. Thus organisation needs to integrate these capitals into their business model and explain the stakeholder the outcome of such integration. The analysis of the integrated reports shows that out of ten companies, seven companies have clearly defined the capital in their organizational context. All companies have clearly defined their value creation through financial, manufactured capital, human, social and relation capital. Only six have clearly defined how value is created through intellectual capital and only five companies have defined how value is created through natural capital. The result is shown in below Table.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies who have clearly defined Financial capital</td>
<td>10</td>
</tr>
<tr>
<td>Companies who have clearly defined Manufactured capital</td>
<td>10</td>
</tr>
<tr>
<td>Companies who have clearly defined Intellectual capital</td>
<td>6</td>
</tr>
<tr>
<td>Companies who have clearly defined Human capital</td>
<td>10</td>
</tr>
<tr>
<td>Companies who have clearly defined Social and Relation capital</td>
<td>10</td>
</tr>
<tr>
<td>Companies who have clearly defined Natural capital</td>
<td>5</td>
</tr>
<tr>
<td>Industry which has given high degree of importance to Financial Capital</td>
<td>Basic Material</td>
</tr>
<tr>
<td>Industry which has given high degree of importance to Manufactured Capital</td>
<td>Oil and Gas</td>
</tr>
<tr>
<td>Industry which has given high degree of importance to Intellectual Capital</td>
<td>None</td>
</tr>
<tr>
<td>Industry which has given high degree of importance to Human Capital</td>
<td>Financial Services</td>
</tr>
<tr>
<td>Industry which has given high degree of importance to Social and Relation Capital</td>
<td>Financial Services</td>
</tr>
<tr>
<td>Industry which has given high degree of importance to Natural Capital</td>
<td>None</td>
</tr>
</tbody>
</table>

Source: Own Compilation

**Conclusion**

All organizations who have provided integrated report have disclosed quality information in one or other way. The concept of explicitly considering multiple capitals when reporting is relatively new. One is using the capitals concept to benchmark how much attention the six capitals get in its current reporting on performance; another has aligned its strategic objectives with the capitals, which has changed the company’s materiality analysis and helped it focus on value creation. Considering the capitals has led many companies to change the way they work across departments, use technology to integrate information, and change their reporting to strengthen the connectivity of information. The key benefit: the capitals concept has helped them establish the causal relationship between their business models, strategy and performance. Businesses use the capitals model as a benchmark for ensuring they consider all forms of capital they use or affect, and as part of the theoretical underpinning for the concept of value. Report preparers are still experimenting with how to categorize and define the capitals for their own circumstances, as well as the appropriate narrative and metrics to report. Report users are also exploring what information they will find most useful, how they would like it delivered, and in what form. While the concept of Integrated Reporting is new, it is clear that reporting on the capitals is set to evolve considerably over the coming years.
References


http://www.pwc.de/de/rechnungslegung/assets/integrated_reporting.pdf


http://www.theiirc.org/companies-and-investors/


http://examples.integratedreporting.org/organisation/144


AN EMPIRICAL ANALYSIS OF PRICE SENSITIVITY WITH RESPECT TO DECLARATION OF DIVIDEND OF INDIAN COMPANIES

Dr. Soheli Ghose∗
Mudit Gupta∗∗

ABSTRACT

Dividend Decision affects the goodwill and the price of the company’s shares and it is affected by a lot of parameters. In this paper we have selected a random sample of companies of 7 different sectors of the National Stock Exchange and analysed the effect of dividend paid on the share prices of these companies over a period of 7 years starting from 2009. The data has been collected from secondary source of authentic website of The National Stock Exchange. (www.nseindia.com). We have considered the final, interim and special dividend paid by these companies over the sample period. The objectives of the study are to analyse the traded volume volatility on the date of dividend announcement and ex-dividend date and its reasons, to analyse the Price sensitivity on declaration of dividend (both on announcement date and ex-dividend date) and to recognize the dividend policy followed by the companies. These prices have been looked up from the Price Database using the Vertical lookup (VLOOKUP) formula of Microsoft Excel. We concluded that amongst 7 sectors of the National Stock Exchange, the most stable of all has been the IT – Software sector. Compared to other sectors, IT – Software sector has paid exceptionally high dividends and has been strong in Capital appreciation. Cement sector also seemed to be stable enough but when it came to the test of the leaders of the sector, IT – sector has proved to be more stable (because of the leader Tata Consultancy Services). The study would help potential investors to get an idea about the effect of dividend decision on the volatility and price sensitivity of the sample companies and the overall sectors as a whole. Secondly the categorization of the type of dividend policy take up by the sample companies in the study period would help investors in deciding appropriate investment avenues based on their long term goals.

KEYWORDS: Bonus Share, Capital Appreciation, Dividend, Stock Split.
JEL classification: Code: G35.

Introduction

Dividend is a part of profit paid by the company to the owners i.e. shareholders. Dividend is one of the sources of income from the company (other being capital appreciation). The company is not legally obligated to pay dividend to the shareholders. A company can use its profits in two ways: (i) reinvesting the same (then called Retained Earnings) in the company to create wealth and provide proper returns to the stakeholders or (ii) paying out the profits earned to the general or equity shareholders. Dividends are usually settled on a cash basis (electronic fund transfer), as a payment from the company to the shareholder.

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∗∗ Ex. Student, Department of Commerce, St. Xavier’s College, Kolkata, W.B.
They can take other forms, such as store credits (common among retail consumers’ cooperatives) and shares in the company (either newly-created shares or existing shares bought in the market). Further, many public companies offer dividend reinvestment plans, which automatically use the cash dividend to purchase additional shares for the shareholder. On the basis of the time of payment, dividends can be categorized as - Final Dividend (Paid annually), Interim Dividend (Paid during the year), Special Dividend (Paid occasionally, comparatively high amount). The different types of dividend are Cash Dividend, Stock Dividend (Bonus Shares) and Stock Split.

**Literature Review**

In their paper Paul M. Healy and Krishna G. Palepu (1988), studied that firms that initiate dividend payments have positive earnings changes both before and after the dividend policy change, while those omitting dividend payments have negative earnings changes. Subsequent earnings changes are positively related to the dividend announcement return and stock price reactions at subsequent earnings announcements are smaller than usual, suggesting that these earnings changes are partially anticipated at the dividend announcement. The results indicate that investors interpret announcements of dividend initiations and omissions as managers’ forecasts of future earnings changes. In their paper Merton H. Miller and Kevin Rock (1985), extended the standard finance model of the firm’s dividend/investment/financing decisions by allowing the firm’s managers to know more than outside investors about the true state of the firm’s current earnings. The extension endogenizes the dividend (and financing) announcement effects amply documented in recent research. But once trading of shares is admitted to the model along with asymmetric information, the familiar Fisherian criterion for optimal investment becomes time inconsistent: the market’s belief that the firm is following the Fisher rule creates incentives to violate the rule. They showed that an informationally consistent signalling equilibrium exists under asymmetric information and the trading of shares that restores the time consistency of investment policy, but leads in general to lower levels of investment than the optimum achievable under full information and/or no trading. In their paper Harry Deangelo and Linda Deangelo (1990), studied the dividend policy adjustments of 80 NYSE firms to protracted financial distress as evidenced by multiple losses during 1980–1985. Almost all sample firms reduced dividends, and more than half apparently faced binding debt covenants in years they did so. Absent binding debt covenants, dividends are cut more often than omitted, suggesting that managerial reluctance is to the omission and not simply the reduction of dividends. Moreover, managers of firms with long dividend histories appear particularly reluctant to omit dividends. Finally, some dividend reductions seem strategically motivated, e.g., designed to enhance the firm’s bargaining position with organized labour. In his paper James A. Brickley(1983), examined common stock returns and dividend and earnings patterns surrounding specially designated dividends labeled by management as ‘extra’, ‘special’ or ‘year-end’ and compares them to those surrounding regular (unlabeled) dividend increases. The results support the notion that management uses the labeling of dividend increases to convey information to the market about the future potential of the firm. Unlabeled increases appear to contain the most positive information. Contrary to the sometimes suggested view, specially designated dividends appear to convey positive information about future dividends and earnings beyond that relating to the current period.

**Objectives**

- To analyse the traded volume volatility on the date of dividend announcement and ex-dividend date and its reasons.
- To analyse the Price sensitivity on declaration of dividend (both on announcement date and ex-dividend date)
- To recognize the dividend policy followed by the companies.
Research Methodology and Data Collection
This research has been conducted in the period of December, 2015 to April, 2016.

Sample: 32 companies of 7 different sectors of the National Stock Exchange have been selected as sample for the analysis. The sample has been chosen on a random basis.

Exhibit 1: List of Companies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Sector</th>
<th>NSE Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICICI Bank</td>
<td>BANKING</td>
<td>ICICI BANK</td>
</tr>
<tr>
<td>AXIS Bank</td>
<td></td>
<td>AXIS BANK</td>
</tr>
<tr>
<td>Kotak Mahindra Bank</td>
<td></td>
<td>KOTAK BANK</td>
</tr>
<tr>
<td>State Bank of India</td>
<td></td>
<td>SBI</td>
</tr>
<tr>
<td>Punjab National Bank</td>
<td></td>
<td>PNB</td>
</tr>
<tr>
<td>Syndicate Bank</td>
<td></td>
<td>SYNDI BANK</td>
</tr>
<tr>
<td>J K Cement</td>
<td>CEMENT</td>
<td>JK CEMENT</td>
</tr>
<tr>
<td>Deccan Cement</td>
<td></td>
<td>DECCAN CEM</td>
</tr>
<tr>
<td>Ambuja Cement</td>
<td></td>
<td>AMBUJA CEM</td>
</tr>
<tr>
<td>UltraTech Cement</td>
<td></td>
<td>ULTRA CEM</td>
</tr>
<tr>
<td>MindTree</td>
<td>IT - SOFTWARE</td>
<td>Mindtree</td>
</tr>
<tr>
<td>WIPRO</td>
<td></td>
<td>WIPRO</td>
</tr>
<tr>
<td>Tata Consultancy Services</td>
<td></td>
<td>TCS</td>
</tr>
<tr>
<td>Infosys</td>
<td></td>
<td>INFY</td>
</tr>
<tr>
<td>Oracle Fin Ser Softwares</td>
<td></td>
<td>OFSS</td>
</tr>
<tr>
<td>Bharti Airtel</td>
<td></td>
<td>BHARTI ARTL</td>
</tr>
<tr>
<td>IDEA</td>
<td>TELECOM</td>
<td>IDEA</td>
</tr>
<tr>
<td>Tata communications</td>
<td></td>
<td>TATA COMM</td>
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<tr>
<td>Reliance communications</td>
<td></td>
<td>R COM</td>
</tr>
<tr>
<td>Mahanagar Telephone Nigam</td>
<td></td>
<td>MTNL</td>
</tr>
<tr>
<td>BIOCON</td>
<td>PHARMACEUTICALS</td>
<td>BIOCON</td>
</tr>
<tr>
<td>Dr. Reddy’s Laboratories</td>
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<td>DR REDDY</td>
</tr>
<tr>
<td>CIPLA</td>
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<td>CIPLA</td>
</tr>
<tr>
<td>Sun Pharmaceutical Inds.</td>
<td></td>
<td>SUN PHARMA</td>
</tr>
<tr>
<td>SOBHA</td>
<td>REAL ESTATE</td>
<td>SOBHA</td>
</tr>
<tr>
<td>Sunteck</td>
<td></td>
<td>SUN TECK</td>
</tr>
<tr>
<td>Oberoi Realty</td>
<td></td>
<td>OBEROIRLTY</td>
</tr>
<tr>
<td>DLF</td>
<td></td>
<td>DLF</td>
</tr>
<tr>
<td>Neyveli Lignite Corpn.</td>
<td></td>
<td>NEYVELILIG</td>
</tr>
<tr>
<td>Tata Power</td>
<td>POWER</td>
<td>TATA POWER</td>
</tr>
<tr>
<td>CESC</td>
<td></td>
<td>CESC</td>
</tr>
<tr>
<td>Reliance Infrastructure</td>
<td></td>
<td>REL INFRA</td>
</tr>
</tbody>
</table>

Note: The company name in the Analysis is given in NSE codes.

Data Collection
The data has been collected from secondary source of authentic website of The National Stock Exchange. (www.nseindia.com). The data of the above mentioned sample is collected for 7 years starting
from 1st April, 2009 till 31st March, 2016 (2009-2010 to 2015-2016). The information in the data collected from the above source is Company Name, Face Value of Shares, Details, Ex-Dividend Date and Percentage of Dividend declared. The financial statements of all the companies with different ratios and profitability indexes are also collected for the analysis. The data source for the same is Value research online (www.valueresearchonline.com)

Methodology

In the analysis, prices of different companies in different dates are used as a raw data to be processed. These prices have been looked up from the Price Database using the Vertical lookup (VLOOKUP) formula of Microsoft Excel. The Price Database is a data base which has daily prices of all 32 companies of last 7 years. This database is created by downloading the data from the NSE official website. (https://www1.nseindia.com/products/content/equities/equities/eq_security.htm) The details in the above database are: 1.Company name; 2.Date; 3. Opening price; 4. High; 5. Low; 6. Closing price; 7. Traded Volume.

Analysis: Effect of Dividend on Share Price (Sensitivity Analysis)

Declaration and payment of dividend includes 4 important dates which are Announcement Date, Ex-Dividend Date, Record Date and Dividend Payment Date.

- **Announcement Date**– It is the day when the investors in the market come to know about the Ex-Dividend date, Record date and the percentage of dividend to be paid.
- **Record Date**–The shareholder is entitled to dividend only if he is present in the company’s shareholders record book on the record date.
- **Ex-Dividend Date**–The delivery of the shares takes 2 days for processing (in general parlance T+2). Ex-Dividend date is the date on and before which the shareholders have to purchase the share in order to be entitled to dividend. Technically ex-dividend date is 2 days prior to the record date.
- **Dividend Payment Date** – The day when the company pays the dividend to the shareholders present in company’s records on the record date.
- **Sub Analysis (A)- Traded Volume Analysis-** This analysis is directed towards finding the significant increase in the traded volume of shares on the announcement date and the ex-dividend date.
- **Pre-Analysis Perception-** Since the ex dividend date is the date on or before which purchasing the share will make the investor entitled to the dividend, the trades in the ex dividend date will be significantly high compared to normal trading sessions. The trade volume on the announcement date will also be high but not significant.

Process of Analysis

- Summarizing all the dividend details of all 32 companies for the last 7 years.
- Looking up for the traded volume on the trading sessions in last 3 weeks from the announcement date and post 3 weeks from the announcement date using vertical lookup function of Microsoft Excel.
- Looking up for the traded volume on the trading sessions in last 3 weeks from the ex-dividend date and post 3 weeks from the ex-dividend date using vertical lookup function of Microsoft Excel.
- Looking up for the traded volume on the announcement date and ex-dividend date.
- Computing 3 weeks (Pre and Post) average, 2 weeks (Pre and Post) average and 1 week (Pre and Post) average of the traded volume of each company.
- Dividing the volume traded on the announcement date with their respective averages calculated above. Same is done with the volume traded on the ex dividend date. By this we get the volume traded on the specific (announcement and ex dividend) date as a multiple of the normal 1, 2 and 3 weeks average. The outcome of this analysis for each Sector (average of all companies’ each year multiple) is shown below.
Exhibit 2: Traded Volume on the Announcement Date as a Multiple of the Average of Different Weeks (Sector-Wise)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Avg. of last 3 weeks</th>
<th>Avg. of last 2 weeks</th>
<th>Avg. of last 1 week</th>
<th>Avg. of post 1 week</th>
<th>Avg. of post 2 weeks</th>
<th>Avg. of post 3 weeks</th>
<th>All over average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>2.5639</td>
<td>2.5382</td>
<td>2.4998</td>
<td>2.2332</td>
<td>2.3824</td>
<td>2.3900</td>
<td>2.4346</td>
</tr>
<tr>
<td>Cement</td>
<td>3.6884</td>
<td>3.8724</td>
<td>3.4952</td>
<td>1.8330</td>
<td>1.9495</td>
<td>2.0367</td>
<td>2.8125</td>
</tr>
<tr>
<td>IT Software</td>
<td>3.1720</td>
<td>3.6948</td>
<td>4.0706</td>
<td>2.1077</td>
<td>2.2527</td>
<td>2.3852</td>
<td>3.0199</td>
</tr>
<tr>
<td>Telecom</td>
<td>1.8087</td>
<td>1.8019</td>
<td>1.6709</td>
<td>1.5899</td>
<td>1.8315</td>
<td>1.9286</td>
<td>1.7719</td>
</tr>
<tr>
<td>Pharma</td>
<td>2.0494</td>
<td>2.2226</td>
<td>2.3482</td>
<td>2.1573</td>
<td>2.1841</td>
<td>2.1318</td>
<td>2.1792</td>
</tr>
<tr>
<td>Real Estate</td>
<td>2.3612</td>
<td>2.4129</td>
<td>2.7466</td>
<td>2.1653</td>
<td>1.8890</td>
<td>1.7339</td>
<td>2.2182</td>
</tr>
<tr>
<td>Power</td>
<td>1.9845</td>
<td>1.9739</td>
<td>2.1179</td>
<td>1.8476</td>
<td>1.7182</td>
<td>1.7377</td>
<td>1.8933</td>
</tr>
</tbody>
</table>

From the above results we may conclude that traded volume on announcement date is significantly high compared to the pre and post weeks’ averages. In case of cement sector and the IT – Software sector the traded volume on the announcement date is almost thrice of the weekly averages and in case of other sectors the ratio is around 2. In case of the ex dividend date the traded volume is not significantly high compared to the weekly averages. Thus, the Pre-Analysis perception about the market sentiment has been proved to be wrong. On further analysing the volume volatility on the announcement date, we find the company wise data of volume volatility in Exhibit 4.

Exhibit 3: Traded Volume on the Ex-Dividend Date as a Multiple of the Average of Different Weeks (Sector-Wise)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Avg. of last 3 weeks</th>
<th>Avg. of last 2 weeks</th>
<th>Avg. of last 1 week</th>
<th>Avg. of post 1 week</th>
<th>Avg. of post 2 weeks</th>
<th>Avg. of post 3 weeks</th>
<th>All over average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>1.0898</td>
<td>1.0939</td>
<td>1.0899</td>
<td>1.0202</td>
<td>1.2397</td>
<td>1.1738</td>
<td>1.1650</td>
</tr>
<tr>
<td>Cement</td>
<td>1.0917</td>
<td>1.0608</td>
<td>1.1344</td>
<td>1.2236</td>
<td>1.0018</td>
<td>1.0253</td>
<td>1.0896</td>
</tr>
<tr>
<td>IT Software</td>
<td>0.9776</td>
<td>0.9115</td>
<td>1.0244</td>
<td>1.2484</td>
<td>1.2771</td>
<td>1.3077</td>
<td>1.1244</td>
</tr>
<tr>
<td>Telecom</td>
<td>1.1253</td>
<td>1.2033</td>
<td>1.1998</td>
<td>1.0175</td>
<td>0.9957</td>
<td>1.0194</td>
<td>1.0305</td>
</tr>
<tr>
<td>Pharma</td>
<td>1.2853</td>
<td>1.3050</td>
<td>1.3091</td>
<td>1.2596</td>
<td>1.1356</td>
<td>1.0627</td>
<td>1.2262</td>
</tr>
<tr>
<td>Real Estate</td>
<td>0.9729</td>
<td>0.9770</td>
<td>0.9926</td>
<td>1.1091</td>
<td>1.1041</td>
<td>0.8236</td>
<td>0.9966</td>
</tr>
<tr>
<td>Power</td>
<td>1.1125</td>
<td>1.0882</td>
<td>1.1441</td>
<td>1.1523</td>
<td>1.0711</td>
<td>1.1019</td>
<td>1.1117</td>
</tr>
</tbody>
</table>

Exhibit 4: Volume Volatility Analysis on the Announcement Date (Company Wise)

| Company      | Traded Vol. on Ann. date as multiple of the average of | Last 1 week | Post 1 week | Last 2 week | Post 2 week | Last 3 week | Post 3 week | Last 1 week | Post 1 week | Last 2 week | Post 2 week | Last 3 week | Post 3 week | Last 1 week | Post 1 week | Last 2 week | Post 2 week | Last 3 week | Post 3 week | Last 1 week | Post 1 week | Last 2 week | Post 2 week | Last 3 week | Post 3 week |
|--------------|--------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| ICICI BANK   |                                                        | 2.3676      | 1.9940      | 2.1481      | 2.1911      | 2.1597      | 2.2485      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| AXIS BANK    |                                                        | 1.8245      | 1.4329      | 1.7118      | 1.4368      | 1.7533      | 1.5197      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| KOTAK BANK   |                                                        | 2.2207      | 2.5694      | 2.5002      | 2.6366      | 2.4831      | 2.5158      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| SBI          |                                                        | 1.5822      | 1.2483      | 1.6416      | 1.1979      | 1.6376      | 1.2827      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| SYNDI BANK   |                                                        | 2.9359      | 2.6110      | 2.6494      | 2.8703      | 2.8093      | 2.7194      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| JK CEMENT    |                                                        | 5.6321      | 1.8880      | 6.9932      | 2.2987      | 7.7620      | 2.4954      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| DECCAN CEM   |                                                        | 4.4926      | 2.7164      | 4.5411      | 2.7561      | 3.3299      | 2.7739      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
We observe that Punjab National Bank in the Banking sector has the highest volatility of around 4 times the average of weeks. The history of Punjab National bank is given below.

**Exhibit 5: History of Punjab National Bank’s Volume Volatility**

<table>
<thead>
<tr>
<th>Announcement date</th>
<th>Traded volume on Ann. date</th>
<th>Ratio of Traded vol. on announcement date and averages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Last 1 week</td>
</tr>
<tr>
<td>31-01-2014</td>
<td>6674795</td>
<td>4.7420</td>
</tr>
<tr>
<td>06-05-2010</td>
<td>604690</td>
<td>2.1730</td>
</tr>
<tr>
<td>27-01-2010</td>
<td>785133</td>
<td>2.1798</td>
</tr>
<tr>
<td>20-05-2009</td>
<td>1865804</td>
<td>0.9710</td>
</tr>
</tbody>
</table>

From the dividend history in Exhibit 5, we notice that volume was most volatile on 09-05-2013 i.e. around 9 times the normal averages. On further looking at the dividends announced on and before that date, we find the following details shown in Exhibit 6.
Exhibit 6: History of Dividend details of Punjab National Bank

<table>
<thead>
<tr>
<th>Announcement Date</th>
<th>Effective Date</th>
<th>Dividend Type</th>
<th>Dividend (%)</th>
<th>Face Value</th>
<th>Dividend Amount Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>08-05-2015</td>
<td>22-05-15</td>
<td>Final</td>
<td>165</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>31-01-2014</td>
<td>11-02-14</td>
<td>Interim</td>
<td>100</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>09-05-2013</td>
<td>13-06-13</td>
<td>Final</td>
<td>270</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>09-05-2012</td>
<td>14-06-12</td>
<td>Final</td>
<td>220</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>04-05-2011</td>
<td>16-06-11</td>
<td>Final</td>
<td>220</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>06-05-2010</td>
<td>08-07-10</td>
<td>Final</td>
<td>120</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>27-01-2010</td>
<td>04-02-10</td>
<td>Interim</td>
<td>100</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>20-05-2009</td>
<td>04-06-09</td>
<td>Final</td>
<td>200</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

On analyzing the table we can observe that in the year 2011 when the dividend was increased from Rs. 12 per share (in 2010) to Rs. 22 (increase of 83.33%), the volume on that announcement date was around 5 times, which is high compared to other dividend announcement dates. In case of 2013 when the dividend was again raised from Rs. 22 to Rs. 27, the traded volume was around 9 times the normal average. From Exhibit 4 we also observe that Oracle Fin Ser Software in the IT-Software sector has the highest volatility of around 6 times the average of weeks with an 11 times volatility in case of Last 1 week average. The history of OFSS is given in Exhibit 7.

Exhibit 7: History of Oracle Fin Ser Software’s Volume Volatility

<table>
<thead>
<tr>
<th>Announcement Date</th>
<th>Traded vol. on ann. Date</th>
<th>Ratio of Traded Vol. On Announcement Dt. And Averages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Last 1 week</td>
</tr>
<tr>
<td>15-05-2015</td>
<td>10706</td>
<td>0.1386</td>
</tr>
<tr>
<td>12-09-2014</td>
<td>394619</td>
<td>22.6896</td>
</tr>
</tbody>
</table>

From the above dividend history we notice that Volume was most volatile on 12-09-2014 i.e. around 12 times the normal averages. On further looking at the dividends announced on and before that date, we find the following details shown in Exhibit 8.

Exhibit 8: History of Dividend details of Oracle Fin Ser Software

<table>
<thead>
<tr>
<th>Announcement Date</th>
<th>Effective Date</th>
<th>Dividend Type</th>
<th>Dividend (%)</th>
<th>Face Value</th>
<th>Dividend Amount Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFSS</td>
<td>15-05-2015</td>
<td>Final</td>
<td>3600</td>
<td>5</td>
<td>180</td>
</tr>
<tr>
<td>OFSS</td>
<td>12-09-2014</td>
<td>Interim</td>
<td>9700</td>
<td>5</td>
<td>485</td>
</tr>
</tbody>
</table>

On analyzing the company’s history for dividends, it was found that the company never paid dividend until 12-09-14. The percentage of dividend was 9700% which is indeed a significant amount. The dividend yield in 2014 was 14.06% (i.e. price at that time was Rs. 3449.7). From the Exhibit 4 we also observe that Sunteck in the Real Estate sector has the highest volatility of around 5 times the average of weeks. The history is given in Exhibit 9.

Exhibit 9: History of Sunteck Reality’s Volume Volatility

<table>
<thead>
<tr>
<th>Announcement Date</th>
<th>Traded vol. on ann. Date</th>
<th>Ratio of Traded Vol. On Announcement Dt. and Averages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Last 1 week</td>
</tr>
</tbody>
</table>
From the above dividend history we notice that Volume was most volatile on 30-05-2014 i.e. around 16 times the normal averages. On further looking at the dividends announced on and before that date, we find the following details shown in Exhibit 10.

**Exhibit 10: History of Dividend Details of Sunteck Reality**

<table>
<thead>
<tr>
<th>Announcement Date</th>
<th>Effective Date</th>
<th>Dividend Type</th>
<th>Dividend (%)</th>
<th>Face Value</th>
<th>Dividend Amount Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-05-2015</td>
<td>23-09-2015</td>
<td>Final</td>
<td>50</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>30-05-2014</td>
<td>18-09-2014</td>
<td>Final</td>
<td>50</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>31-05-2013</td>
<td>20-09-2013</td>
<td>Final</td>
<td>9</td>
<td>2</td>
<td>0.18</td>
</tr>
<tr>
<td>31-05-2012</td>
<td>12-09-2012</td>
<td>Final</td>
<td>6</td>
<td>2</td>
<td>0.12</td>
</tr>
<tr>
<td>15-08-2011</td>
<td>22-09-2011</td>
<td>Final</td>
<td>9</td>
<td>2</td>
<td>0.18</td>
</tr>
<tr>
<td>16-08-2011</td>
<td>25-08-2011</td>
<td>Interim</td>
<td>6</td>
<td>2</td>
<td>0.12</td>
</tr>
<tr>
<td>12-08-2010</td>
<td>16-09-2010</td>
<td>Final</td>
<td>6</td>
<td>2</td>
<td>0.12</td>
</tr>
<tr>
<td>31-03-2010</td>
<td>21-04-2010</td>
<td>Interim</td>
<td>6</td>
<td>2</td>
<td>0.12</td>
</tr>
</tbody>
</table>

High traded volume signifies the number of times the script has been bought and sold, so whether the buyers were dominant or the sellers will be known by comparing the opening and closing price of that day. If the price in the day has fallen, the sellers were dominant and if the price in the day has risen, the buyers were dominant. On observing the above table, we find that Sunteck was following a constant dividend policy since 2009-2010 but on 30-05-2014 it announced dividend which is almost 6 times that in the previous year. Thus in such high volume, the buyers are expected to be dominant.

In this case of PNB, OFSS and SUNTECK, it seems that the buyers were dominant on the dividend announcement date as the dividend announced was high compared to the previous dividends. (Reason for the same to be discussed in Sub-Analysis B). Thus, on looking further on the price details of these three stocks on the announcement date, we find the following:

**Exhibit 11: Price Details on the Announcement Date**

(Figures in Rupees Per Share)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PNB</td>
<td>09-05-13</td>
<td>27.00</td>
<td>752.70</td>
<td>793.75</td>
<td>733.20</td>
<td>783.30</td>
<td>41.05</td>
<td>(19.50)</td>
<td>30.60</td>
<td>4.07</td>
</tr>
<tr>
<td>OFSS</td>
<td>12-09-14</td>
<td>485.00</td>
<td>3,710.0</td>
<td>4,072.0</td>
<td>3,696.0</td>
<td>3,937.1</td>
<td>362.00</td>
<td>(13.80)</td>
<td>227.15</td>
<td>6.12</td>
</tr>
<tr>
<td>SUNTEC</td>
<td>30-08-14</td>
<td>1.00</td>
<td>327.10</td>
<td>374.00</td>
<td>327.00</td>
<td>347.60</td>
<td>46.90</td>
<td>(0.10)</td>
<td>20.50</td>
<td>6.27</td>
</tr>
</tbody>
</table>

Op. Price = Opening Price; Cl. Price = Closing Price

Thus, we can see that the price in all the three cases had risen which signifies that the buyers were dominant. (Reason to be discussed in Sub-Analysis B).
Conclusion of Sub Analysis (A)

The investors in the market do not purchase the shares on the ex-dividend date just to earn the dividend; this can be interpreted in two ways:

- Majority of the investors do not have very short term investment horizon or their investment decision is affected by the dividend declared.
- Investors already know that the amount of the dividend declared will automatically get adjusted in the stock price so there is no real value addition to shareholder’s wealth.

Since the traded volume is significantly high on the announcement date, this signifies that the investors have a long term investment strategy and the dividend announcement affects the investment decision, which is exactly opposite of the Pre – Analysis perception.

Sub Analysis (B)-Sensitivity Analysis

This analysis is directed towards finding the price effect of dividend and the sensitivity of price on declaration of dividend of Re. 1.

Process of Analysis

- Summarising all the dividend details (Announcement date, Record date and amount of dividend) of all 32 companies for the last 7 years.
- Looking up the closing prices of the 2 trading session before and after the announcement date.
- Looking up the closing prices of the 2 trading session before and after the ex dividend date.
- Looking up the closing prices of the announcement date and the ex dividend date.
- Finding the price change from 2 trading sessions to the announcement and ex-dividend date, and 1 trading session to the announcement and ex dividend date.

Pre-Analysis Perception

Since the ex dividend date is the date on or before which if an investor purchases the share, he will be entitled to dividend. This means that just after the ex dividend date, the investor purchasing the share will not be entitled to that same dividend. Thus, any rational investor will pay less to purchase the share on the day next to the ex-dividend date. The quantum of that less amount will be exactly the dividend amount.

Example: XYZ company trades at Rs. 330 before the ex dividend date. It has declared a dividend of Rs. 50. So the investors purchasing the shares today at Rs. 330 per share will enjoy a dividend of Rs. 50 but those share holders who will purchase the share just one day after the ex dividend date will not be able to enjoy that Rs. 50 dividend. Thus, being a rational investor, the investor will be ready to pay Rs. 280 on the next day (Rs. 330 – Rs. 50). This was about those investors having a short term investment horizon and who actually care to earn dividend. The investors having a long term perspective will trigger their investment decision on the announcement date itself and will not wait for the ex dividend date.

Exhibit 12: Changes in Share Prices–Announcement Date

(Figures in Rupees Per Share)

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Announcement Date</th>
<th>Before</th>
<th>After</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 Trading Session</td>
<td>1 Trading Session</td>
<td>2 Trading Session</td>
<td>2 Trading Session</td>
</tr>
<tr>
<td>ICICIBANK</td>
<td>27-04-2015</td>
<td>(5.95)</td>
<td>24.35</td>
<td>(9.55)</td>
<td>27.85</td>
</tr>
<tr>
<td></td>
<td>25-04-2014</td>
<td>(29.05)</td>
<td>5.00</td>
<td>(19.40)</td>
<td>7.70</td>
</tr>
<tr>
<td></td>
<td>26-04-2013</td>
<td>(32.85)</td>
<td>8.70</td>
<td>(16.80)</td>
<td>19.15</td>
</tr>
<tr>
<td></td>
<td>27-04-2012</td>
<td>19.40</td>
<td>7.90</td>
<td>22.45</td>
<td>21.50</td>
</tr>
<tr>
<td></td>
<td>28-04-2011</td>
<td>10.65</td>
<td>(3.05)</td>
<td>(3.95)</td>
<td>(19.20)</td>
</tr>
<tr>
<td></td>
<td>26-04-2010</td>
<td>(17.55)</td>
<td>(13.20)</td>
<td>16.30</td>
<td>(40.70)</td>
</tr>
<tr>
<td></td>
<td>27-04-2009</td>
<td>33.45</td>
<td>(28.35)</td>
<td>43.15</td>
<td>11.65</td>
</tr>
<tr>
<td>AXISBANK</td>
<td>29-04-2015</td>
<td>16.95</td>
<td>15.85</td>
<td>27.75</td>
<td>16.40</td>
</tr>
<tr>
<td>Date</td>
<td>Dr. Soheli Ghose &amp; Mudit Gupta : An Empirical Analysis of Price Sensitivity with respect to</td>
<td>KOTAKBANK</td>
<td>PNB</td>
<td>SYNDIBANK</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-----</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>25-04-2014</td>
<td>12.90</td>
<td>(3.15)</td>
<td>32.60</td>
<td>(4.30)</td>
<td></td>
</tr>
<tr>
<td>25-04-2013</td>
<td>58.60</td>
<td>(17.05)</td>
<td>62.25</td>
<td>(28.00)</td>
<td></td>
</tr>
<tr>
<td>27-04-2012</td>
<td>17.35</td>
<td>17.20</td>
<td>9.25</td>
<td>2.95</td>
<td></td>
</tr>
<tr>
<td>22-04-2011</td>
<td>(0.45)</td>
<td>(70.25)</td>
<td>38.20</td>
<td>(91.20)</td>
<td></td>
</tr>
<tr>
<td>20-04-2010</td>
<td>27.70</td>
<td>50.40</td>
<td>38.60</td>
<td>37.95</td>
<td></td>
</tr>
<tr>
<td>20-04-2009</td>
<td>6.60</td>
<td>(15.90)</td>
<td>37.75</td>
<td>(37.70)</td>
<td></td>
</tr>
<tr>
<td>05-05-2015</td>
<td>84.45</td>
<td>(72.05)</td>
<td>90.35</td>
<td>(115.05)</td>
<td></td>
</tr>
<tr>
<td>30-04-2014</td>
<td>(4.40)</td>
<td>0.10</td>
<td>(21.35)</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
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<td>1.05</td>
<td>4.60</td>
<td>1.05</td>
<td></td>
</tr>
</tbody>
</table>
Exhibit 12 shows (only banking sector) the changes in the prices 1 and 2 trading sessions earlier and later the announcement date for all the dividend declaration of the last 7 years. On the analysis of the above given data and that of all other companies, we find that, both in case of announcement date and ex dividend date, no pattern whatsoever is found in the change in the prices in any of the sectors. Sometimes the price has fallen and some times the price has risen. On further analysis it was found that these price changes are the result of two changes, daily fluctuations and the effect of dividend. Thus, to find the effect of dividend we have to filter the above finding and remove the daily fluctuations from the above price changes.

**Computation of Daily fluctuation**

Daily fluctuation has been computed by taking three 5-day moving average prior to the announcement and ex dividend date respectively. Taking the moving average of the prices smoothens the fluctuation. Now, the change in those moving averages is computed and the average of those changes is considered to be the daily fluctuation.

**Refining the Data**

After adjusting the daily fluctuation from the previous date, we got the price change due to dividend. On analyzing the data, still no specific pattern was found in any sector. On further analysis of data, we found that the prices were not following any pattern the reason of which can be the market expectation.

**Market Expectation**

It is the golden rule in Finance that the price of any asset is the present value of all its future cash flows. Based on this rule, the Dividend discount model was formulated. The future cash flows of a stock is the dividend it will pay. Thus on computing the present value of all the future dividends from a stock we get the intrinsic value to the stock. Intrinsic value of any asset is the price at which investor is ready to purchase any asset. Thus, we know that \( P_0 = \frac{D_1}{R_e} \) (where \( P_0 \) is the price today, \( D_1 \) is the expected dividend to be paid next year and \( R_e \) is the desired rate of return)

**Note:** The above formula is the formula of perpetuity, i.e. it is assumed that the company will pay constant dividend throughout the life. Since the \( D_1 \) is pulled by \( R_e \) (desired rate) the result \( P_0 \) should better be seen as an intrinsic value rather than the price.

**How does the Market Expectation work?**

**Example:** If TCS has announced today that their quarterly profit has grown up by 30%, what would be the effect in the share price of TCS?

Majority of non-sophisticated investors would think that the price would definitely rise. Here comes the role of the market expectation. In the above case the price of TCS may or may not rise. This depends on the market expectation. If the market was expecting 40% growth then the share price of TCS will fall and vice-versa. Reason being the current value of TCS i.e. current share price has the effect of the market expectation and as it is declared that the result is not up to mark the price of the stock is automatically adjusted as per the new information. This can be explained properly with an example of Dividend.

**Example:** Mr. X, a sophisticated investor has an expectation that ICICI Bank will pay a dividend of Rs. 30 (i.e. \( D_1 \)) and the desired rate of return of Mr. X is 8% (i.e. \( R_e \)). So from the DDM we will be able to compute the intrinsic value of ICICI Bank for Mr. X

\[ P_0 = \frac{30}{8\%}. \]

From the above equation the intrinsic value of ICICI Bank is Rs. 375. Assume that current market price of ICICI Bank is Rs. 370. (If X would think of buying more shares, he will buy as he is ready to pay Rs. 375). Now suppose ICICI Bank has paid dividend of Rs. 18, now the revised \( P_0 = \frac{18}{8\%} \). The intrinsic value comes to Rs. 225. Thus, Mr. X will sell the share as he is only willing to pay Rs. 225. This will be done by majority of the players in the market which would in turn result the price of ICICI Bank to fall to Rs. 225.
Conclusion of Sub Analysis (B)

Since no specific pattern was captured after intense data analysis we can say that the uneven fluctuations are due to the market expectation. If the company had paid dividend according to the market expectation, the price would have risen and vice versa. To prove this thing, we need to find out the market expectation and compare it with the actual dividend paid and check whether the price movement is as per the above explained logic. To find out the market expectation, we first need to find out the dividend policy followed by the company. According to the dividend policy followed by the company we will then see the history of the dividend paid and the financials of the company. After finding the market expectation we can compare it with the reality and see the price effect.

Sub Analysis C: Determination of Dividend Policy

Following is the process of the analysis:

- Summarizing the details of dividend paid in the last 7 years.
- Collecting the Earnings per share for all respective years from the financials of the company.
- Computing the standard deviation of the dividends paid over 7 years.
- Computing the mean of the dividends paid over last 7 years.
- Computing coefficient of variation by dividing S.D by Mean.
- Computing correlation between the dividend per share and the Earnings per share.

After conducting the above stated steps, the outcome is shown in Exhibit 13.

### Exhibit 13: Statistical analysis of DPS and EPS

<table>
<thead>
<tr>
<th>Company Name</th>
<th>SD</th>
<th>SD/Mean</th>
<th>Correlation</th>
</tr>
</thead>
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<td>0.966279</td>
</tr>
<tr>
<td>AXIS BANK</td>
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<td>0.982117</td>
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<tr>
<td>KOTAK BANK</td>
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<td>0.178817</td>
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<td>SBI</td>
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<tr>
<td>PNB</td>
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<td>0.576183</td>
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</tr>
<tr>
<td>SYNDI BANK</td>
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<tr>
<td>JK CEMENT</td>
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<td>0.349594</td>
<td>0.058912</td>
</tr>
<tr>
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<td>0.33877</td>
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</tr>
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<td>0.371888</td>
<td>0.420486</td>
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<tr>
<td>ULTRA CEM</td>
<td>1.807722</td>
<td>0.253715</td>
<td>0.125085</td>
</tr>
<tr>
<td>Mindtree</td>
<td>9.291653</td>
<td>0.971676</td>
<td>0.918639</td>
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<td>WIPRO</td>
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<td>0.626727</td>
<td>0.042697</td>
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<tr>
<td>IDEA</td>
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<td>0.862044</td>
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<tr>
<td>TATA COMM</td>
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<td>RCOM</td>
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<td>DR REDDY</td>
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<td>CIPLA</td>
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<td>SUN PHARMA</td>
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<td>TATA POWER</td>
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<td>REL INFRA</td>
<td>0.483292</td>
<td>0.068892</td>
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</table>
Types of Dividend Policy

- Constant Dividend. Ex - Company paying Rs. 2 for the last 5 years.
- Constant growth. Ex - Dividend paying history of the company Rs.10, Rs.12, Rs.14.4, Rs.17.28, Rs.20.74 (growth rate being 20%). In this case the company will continue to pay such dividend even if it faces a loss in any financial year.
- Dividend as per EPS. Ex - When earnings is high Dividend is high, when earning is low, dividend is low.
- Volatile policy. In this case, no such pattern is found.

Policy Determination criteria:
The following rules for determination of dividend policy are set:

- For Dividend as per EPS, The correlation between dividend and EPS should be more than 0.9
- For Constant Dividend, The coefficient of variation should be less than 0.3.
- The remaining companies who do not fall in the above two criteria, the graph of the DPS and EPS is seen and upon personal judgment the companies following the dividend growth policy is sorted.
- The companies not falling under any will have Volatile policy.

Categorization

- The companies which Passed in the 1st criteria are: ICICI Bank, Axis Bank, Mindtree, Tata Consultancy Services, Biocon and Dr. Reddy labs.
- The companies passed the 2nd criteria are: Kotak Bank, Ultra tech Cements, CIPLA, DLF, Tata power and Reliance Infra.
- On analyzing the graph of the remaining companies, the companies falling under constant growth dividend policy are: Ambuja Cement, Sobha, CESC, ICICI Bank (being in 1st category as well and Axis Bank (being in 1st category as well).
- All other companies were assumed to be having volatile policy but on further analyzing the dividend history manually we find that companies Wipro and IDEA falls under the Dividend as per EPS category (having correlation of 0.87 and 0.86 respectively). On further analysis we find that JK Cement, Deccan Cements, Bharti Airtel, Tata Communications, Reliance communications, and Oberoi reality were falling under the Constant dividend model (See Exhibit 14).

- The remaining companies SBI, PNB, Syndicate Bank, Infosys, Sun Pharma, Sunteck, and Neyvelilig were left to fall under the volatile dividend policy category.

Exhibit 14: showing the Dividend History of the Companies Falling in Constant Dividend

<table>
<thead>
<tr>
<th>Company</th>
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<td>3</td>
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</table>
Thus, we find that majority of the companies in IT – Software sector follow DPS as per EPS policy. In case of remaining sectors majority of the companies do not follow any similar dividend policy.

Note: Oracle Fin Ser Software's have been omitted from the above analysis as it has paid exceptionally high dividend of Rs. 485 and Rs. 180 which made it pass one of the criterion. MTNL did not have any dividend history in the past 7 years, thus omitted from the analysis. On further analysis of the dividend history, dividend policy followed and the earnings per share of the companies for the last 7 years, we found that Market expectation can only be computed by applying higher level of statistics and mathematics thus limiting the scope of this analysis.

**Overall Conclusion of the Analysis**

Thus, we conclude that the direct effect of dividend on stock price is impossible to find as in the price change the daily volatility of the stock is usually more than the amount of dividend paid. Hence, removing the volatility is very difficult. However, owing uneven fluctuation, we found that Market expectation is the major determinant of the effect in the stock price. However computation of the market
expectation (considering the dividend policy followed, dividend history, and company’s financials) requires high level of mathematics and statistics, thus limiting the scope of study.

Limitations

The corporate actions (i.e. Dividend, stock splits, Bonus and rights issue) in the NSE’s official website were only available from 2005. The financials of the companies were only available in Valueresearchonline.com was only for last 6 years. Many historical details like market capital of companies, and dividend yield of the companies in the past is not available. While computing the standard deviation of the dividend history we have not taken the effect of the stock split/bonus share. After the stock split the dividend per share may decreases, so the Standard Deviation calculated may differ by a few decimal places. The effect of Bonus shares is not considered as the face value of the share remains the same.

Final Conclusion

We conclude that amongst 7 sectors of the National Stock Exchange, the most stable of all has been the IT – Software sector. Compared to other sectors, IT – Software sector has paid exceptionally high dividends and has been strong in Capital appreciation. Cement sector also seemed to be stable enough but when it came to the test of the leaders of the sector, IT – sector has proved to be more stable (because of the leader Tata Consultancy Services). Our perception towards investors trading the stock near ex dividend date just to earn the dividend was proved wrong. Instead dividend had an effect on the investment decision of the potential investor and that too with a long term perspective. The direct effect of dividend on stock price is impossible to find as in the price change the daily volatility of the stock is usually more than the amount of dividend paid. Hence, removing the volatility is very difficult. However, owing uneven fluctuation, we found that Market expectation is the major determinant of the effect in the stock price. However, some of the determinants which affect the stock prices are: Quarterly results, Inflation Rate, Fundamental news and Impact on Asian markets among others.

References

- http://www.nber.org/papers/w17760
NEW ECONOMIC REFORMS AND INDIAN CAPITAL MARKET:  
AN ANALYTICAL STUDY

Dr. Anshuja Tiwari∗
Parry Firdous Ahmad∗∗

ABSTRACT

Several studies have suggested economic reforms as a turnaround in Indian economy, by analyzing various key parameters of it. The question about the impact of new reforms on Indian Capital Market, which is one of the vital components of Indian economy, is still unreciprocated. In order to study and access the impact of economic reforms on Indian Capital Market, the researchers have studied and analyzed some important components relating to the Indian Capital Market. During the study, the secondary data have been collected from various official website like SEBI, RBI, BSE, NSE and many others as well. With a view to find out the significance of economic reforms on Indian capital market, various statistical tools have been used, and for testing hypothesis, the researchers have applied Single Factor ANOVA. It has been retrieved during the study that there is significant impact of new economic reforms on Indian Capital Market.

KEYWORDS: Economic Reforms, FIIs, Foreign Exchange Reserves, BSE, NSE.

Introduction

In India the practice of economic reformation was initiated with the aim of accelerating the economic growth and eradicating the poverty. The process of economic liberalization in India can be traced back to the late 1970s. However, the reform process began in earnest only in July 1991. It was only in 1991 that the Government signaled a systemic shift to a more open economy with greater reliance upon market forces, a larger role for the private sector including foreign investment, and a streamlining of the role of Government. The vital point of the reforms was liberalization of the economy, giving more roles to the private sector and opening up of the economy to competition. New industrial policy of 1991 is the heart of the new economic reforms. The philosophy of the new economic policy was enhancing competition based upon more market orientation. During the last twenty-five years, the economic reform has produced significant impact on the economy—mostly positive. The Indian capital market has also observed major reforms in the decade of 1990s and thereafter. It is on the verge of the growth. Government of India and SEBI has taken a number of measures in order to improve the working of the Indian stock exchanges and to make it more progressive and vibrant. This research study is an effort by the researcher to analyze the impact of economic reforms on the Capital Market of India with the help of various parameters.

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∗∗ Research Scholar, Department of Commerce, Barkatullah University, Bhopal, M.P.
Review of Literature

Bhole L.M. 1 (1992) throws light on some of the drawbacks existing in the Indian stock markets. It is also observed by him that the drawbacks, instead of being reduced, are increased over the period. The working of stock markets suffers from serious drawbacks. These drawbacks are of different magnitude and have increased over the period. These drawbacks include dominance of few scrip's liquidity, speculation, volatility, lower dividend yield.

Avadhani V.A. 2 (2002) stressed on impact of liberalization on emergence of capital markets in India. The financial sector reforms also led the development of the capital market in India. Beginning with the devaluation of rupee by about 20% in July, 1991, industrial policy was totally reshaped to dispense with licensing of all industries except 18 scheduled industrial groups. Further, removals of MRTP Act, emergence of FEMA instead of FERA, were some of the other reforms. The stock exchange surveillance system and their trading control system aim at imposing margins, operate the circuit breakers, impose limits on brokers in respect of any scripts or total for all scripts and convert trade in any scrip to rolling settlement or for spot trading and cash delivery etc. are other major changes, as narrated by the researcher.

Gaba Prakash 3 (2003) endeavored to put before the importance of NSE in the Indian markets. Right from the innovative trading practices to investor awareness campaigns, NSE has put its mark in the development of the market. The arrival of NSE has its own contribution to the growth of the investors interested in capital markets. The dramatic rise of NSE is being attributed to its aggressive positioning as an exchange for the next revolution. Right from its inception, NSE has been undertaking several investor awareness campaigns to enhance the general understanding of the investors.

Objective of the Study

• To analyze the impact of new economic reforms on Indian Capital Market
• To provide suggestive measures on the basis of findings of the study.

Research Methodology

This study is micro in nature and is based on the secondary data gathered from official websites of various departments of Govt. of India and various stock exchanges especially Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). An attempt has been made to depict the position of Indian Capital Market during pre and post reforms period. For the purpose of study, various secondary sources such as journals, magazines, a newspaper, Annual Reports etc. has also been reviewed. While studying the impact of economic reforms on Indian Capital Market various aspects of Indian Capital market has been analyzed decade wise and interpreted. For the purpose of analysis, the researcher from the data available and after its compilation has used various statistical tools such as, Mean, Standard Deviation(SD), Average Annual Growth Rate(AAGR), Compound Annual Growth Rate(CAGR) and for the purpose of hypothesis testing ANOVA has been used with the help of MS. Excel (2007).

Hypothesis of the Study

\[ H_0 \] : There is no significant impact of Economic Reforms on the Indian Capital Market.
\[ H_a \] : There is significant impact of Economic Reforms on the Indian Capital Market.

Parameters of the Study

For the purpose of analysis following parameters of Indian Capital Market have been studied and analyzed:

Foreign Exchange Reserves

Table 1: Foreign Exchange Reserves during Pre-Reforms and Post-Reforms Period (Decade wise analysis) (US $ million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre-Reforms Period</th>
<th>Post-Reforms Period</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foreign Exchange Reserves</td>
<td>Growth Rate (%)</td>
<td>Foreign Exchange Reserves</td>
</tr>
<tr>
<td>1980-81</td>
<td>6823</td>
<td>-7.31</td>
<td>5834</td>
</tr>
<tr>
<td>1981-82</td>
<td>4390</td>
<td>-35.66</td>
<td>9220</td>
</tr>
<tr>
<td>1982-83</td>
<td>4896</td>
<td>11.53</td>
<td>9832</td>
</tr>
<tr>
<td>1983-84</td>
<td>5649</td>
<td>15.38</td>
<td>19254</td>
</tr>
<tr>
<td>1984-85</td>
<td>5952</td>
<td>5.36</td>
<td>25386</td>
</tr>
<tr>
<td>1986-87</td>
<td>6574</td>
<td>0.83</td>
<td>26423</td>
</tr>
<tr>
<td>1987-88</td>
<td>6223</td>
<td>-5.34</td>
<td>29367</td>
</tr>
<tr>
<td>1988-89</td>
<td>4802</td>
<td>-22.83</td>
<td>32490</td>
</tr>
<tr>
<td>1989-90</td>
<td>3962</td>
<td>-17.49</td>
<td>38036</td>
</tr>
<tr>
<td>Average</td>
<td>5579.10</td>
<td>-4.60</td>
<td>21712.90</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1004.46</td>
<td>40.60</td>
<td>10702.20</td>
</tr>
<tr>
<td>CAGR</td>
<td>-5.29</td>
<td>20.62</td>
<td>20.77</td>
</tr>
</tbody>
</table>

Source: Central Statistic Office and Various Issues of Economic Survey

Interpretation

While examining the above table dealing with foreign exchange reserves, it is determined that during pre-reforms period the AAGR is -4.60% and CAGR is -5.29%, which indicates a significant decrease in the amount of absolute figures. The SD during this period is 1004.46 million US $, signifying more deviation from the average. During first decade after reforms, a significant growth is observed as AAGR has increased up to 28.54% and CAGR up to 20.62%, but the SD deviation has also increased from what it was during last decade of pre-reforms period figuring 10702.20 million US $, indicating that data is spread more wide from average than that of previous decade.

During second decade after reforms, AAGR has decreased down to 23.96%, resulting out of a significant decline in the amount of absolute figures during 2008-09, due to which Growth Rate (GR) has
dropped down to -18.64%. The CAGR has also reduced to 20.77%, not significantly but has. The SD during this period is 95037.38 million US $, which is higher than preceding years, indicating that the data is widely spread from the average. While analyzing AAGR and CAGR during the current decade, it is observed from the data that the former is significantly decreased down to 2.92%, as is case of later depicting 1.02%, keeping the fact in view that this decade is still in progress and this information is based on first five years (2010-11 to 2014-15). The SD during this period is 11291 million US $, depicting a low range of deviation from average as compared to preceding years.

Bonds issued by PSUs during Pre-Reforms and Post-Reforms Period

Table 2: Bonds issued by PSUs during Pre-Reforms and Post-Reforms Period (Decade wise analysis)

<table>
<thead>
<tr>
<th>Year (1)</th>
<th>Total Bonds (2)</th>
<th>Growth Rate (%)</th>
<th>Year (2)</th>
<th>Total Bonds (3)</th>
<th>Growth Rate (%)</th>
<th>Year (3)</th>
<th>Total Bonds (4)</th>
<th>Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986-87</td>
<td>16.74</td>
<td>372.94</td>
<td>1986-97</td>
<td>33.94</td>
<td>48.15</td>
<td>2006-07</td>
<td>103.25</td>
<td>113.09</td>
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<tr>
<td>1988-89</td>
<td>28.68</td>
<td>22.88</td>
<td>1998-99</td>
<td>43.63</td>
<td>46.28</td>
<td>2008-09</td>
<td>205.46</td>
<td>53.28</td>
</tr>
<tr>
<td>1989-90</td>
<td>42.29</td>
<td>47.44</td>
<td>1999-00</td>
<td>86.97</td>
<td>99.34</td>
<td>2009-10</td>
<td>484.09</td>
<td>139.62</td>
</tr>
<tr>
<td>1990-91</td>
<td>56.63</td>
<td>33.91</td>
<td>2000-01</td>
<td>166.32</td>
<td>91.24</td>
<td>2010-11</td>
<td>604.33</td>
<td>24.84</td>
</tr>
<tr>
<td>1991-92</td>
<td>57.11</td>
<td>0.84</td>
<td>2001-02</td>
<td>144.36</td>
<td>-13.20</td>
<td>2011-12</td>
<td>880.65</td>
<td>45.72</td>
</tr>
<tr>
<td>1992-93</td>
<td>10.63</td>
<td>-81.39</td>
<td>2002-03</td>
<td>75.29</td>
<td>-47.84</td>
<td>2012-13</td>
<td>527.17</td>
<td>-40.14</td>
</tr>
<tr>
<td>1993-94</td>
<td>58.86</td>
<td>425.73</td>
<td>2003-04</td>
<td>54.43</td>
<td>-27.70</td>
<td>2013-14</td>
<td>508.65</td>
<td>-3.51</td>
</tr>
<tr>
<td>1995-96</td>
<td>22.91</td>
<td>-25.37</td>
<td>2005-06</td>
<td>48.46</td>
<td>-36.16</td>
<td>2015-16</td>
<td>525.05</td>
<td>40.83</td>
</tr>
<tr>
<td>Average</td>
<td>34.49</td>
<td>79.14</td>
<td></td>
<td>75.91</td>
<td>18.74</td>
<td></td>
<td>434.55</td>
<td>37.28</td>
</tr>
</tbody>
</table>

Interpretation

While analyzing the above table, it is revealed that during the period (1986-87 to 1995-96), the AAGR is 79.14%, indicating a significant increase in the amount of absolute figures. The CAGR during this period is 3.18% and SD is 17.35 billion, depicting deviation from the average. During next ten years after reforms(1996-97 to 2005-06), AAGR has significantly decreased down to 18.74%, indicating very low increase in the amount of absolute figures, however CAGR has increased up to 3.62%. While examining the bonds issued during (2006-07 to 2015-16) , it is ascertained that AAGR has increased up to 37.28%, indicating a significant increase in the amount of absolute figures, the CAGR has also increased up to
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17.66% during this period. The SD during this period is • 237.79 billion, signifying more deviation from the average. It is revealed that during last decade, there is significant increase in the amount of absolute figures of bonds issued by PSUs as depicted by AAGR (37.28 %), as compared to last decade.

**Market Capitalization-BSE during Pre-Reforms and Post-Reforms Period**

<table>
<thead>
<tr>
<th>Table 3: Market Capitalization - BSE during Pre-Reforms and Post-Reforms Period (Decade wise analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td><strong>Market Capitalization (in Billion) Growth Rate (%)</strong></td>
</tr>
<tr>
<td>1980-81</td>
</tr>
<tr>
<td>1982-83</td>
</tr>
<tr>
<td>1983-84</td>
</tr>
<tr>
<td>1984-85</td>
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<tr>
<td>1985-86</td>
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<tr>
<td>1986-87</td>
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<tr>
<td>1987-88</td>
</tr>
<tr>
<td>1988-89</td>
</tr>
<tr>
<td>1989-90</td>
</tr>
<tr>
<td><strong>Average</strong></td>
</tr>
<tr>
<td><strong>Std.Dev.</strong></td>
</tr>
<tr>
<td><strong>CAGR</strong></td>
</tr>
</tbody>
</table>

**Sources**: 1) Bombay Stock Exchange Limited (BSE). 2) Reserve Bank of India.

**Interpretation**

While examining the above table, it is ascertained that during post-reforms period, the Market Capitalization - BSE is continuously increased during (1980-81 to 1989-90), as depicted from AAGR 35% and CAGR 26.78%. The SD during this period is ₹208.44 billion, indicating the quantum of deviation from the average amount. During the first ten years after economic reforms, the absolute amount of market capitalization is significantly increased, particularly during 1991-92 amounting ₹3233.63 billion which is 256% more than what it was during 1990-91, reflecting the impact of new economic reforms. After 1991-92, this amount is dropped down to ₹1881.49 billion during (1992-93) resulting decrease in GR down to -42%. The AAGR during this period is 46%, which is 11% more than previous decade. While assessing the second decade after reforms, the AAGR is decreased down to 31%, indicating less increase in the amount of absolute figures. The CAGR and SD during this period is 26.85% and ₹19831.25 billion respectively. The AAGR during the current decade, although in progress has decreased down to 10%, the lowest among all the decades under study and CAGR has also decreased down to 7.16%, recording the lowest rate as well. The SD during third decade is ₹19799.16 billion, indicating more deviation from the average.

---

Market capitalization data are as at end-December up to 1987-88 and at end-March from 1988-89 onwards.
NA: Not Application (No data Available) P: Provisional
Table 4: Market Capitalization - NSE during Post-Reforms Period (Decade wise analysis)

<table>
<thead>
<tr>
<th>Post-Reforms Period</th>
<th>₹ in Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Market Capitalization - BSE</td>
</tr>
<tr>
<td>1994-95</td>
<td>3633.50</td>
</tr>
<tr>
<td>1995-96</td>
<td>4014.59</td>
</tr>
<tr>
<td>1996-97</td>
<td>4193.67</td>
</tr>
<tr>
<td>1997-98</td>
<td>4815.05</td>
</tr>
<tr>
<td>1998-99</td>
<td>4911.75</td>
</tr>
<tr>
<td>1999-00</td>
<td>10204.26</td>
</tr>
<tr>
<td>2000-01</td>
<td>6578.47</td>
</tr>
<tr>
<td>2001-02</td>
<td>6566.61</td>
</tr>
<tr>
<td>2002-03</td>
<td>5371.33</td>
</tr>
<tr>
<td>2003-04</td>
<td>11290.76</td>
</tr>
<tr>
<td>Average</td>
<td>6130.10</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>2601.44</td>
</tr>
<tr>
<td>CAGR</td>
<td>11.93</td>
</tr>
</tbody>
</table>

Source: National Stock Exchange of India Ltd. (NSE)

Interpretation

During the analysis of above table it is revealed that the market Capitalization-NSE is continuously but not significantly increased during the period (1994-95 to 2003-04), as depicted from AAGR and CAGR i.e. 21.54% and 11.93%. The SD during this period is • 2601.44 billion, indicating the amount of deviation from the average. The AAGR and CAGR during the period (2004-05 to 2013-04) are increased up to 27.14% and 16.46% respectively, as compared to previous decade. The SD deviation during this period is 19700.74 billion, indicating less deviation from what it was during the previous decade. During the current in progress, the AAGR and CAGR have dropped down to 15.64% and 3.05%, than what it was during preceding years. The SD during this period is • 7831.37 billion, indicating deviation from the average.

Investment by FIIs

Table 5: Net Investment by FIIs in the Indian Capital Market during Post-Reforms Period

| (Decade wise analysis) Post-Reforms Period |
| ₹ in Billion |
| Year                  | Net Investment by FIIs | Growth Rate (%) | Year                  | Net Investment by FIIs | Growth Rate (%) |
| 1990-91               | NA                     | NA              | 2000-01               | 96.82                  | -0.85 |
| 1991-92               | NA                     | NA              | 2001-02               | 82.73                  | -14.59 |
| 1992-93               | 0.04                   | NA              | 2002-03               | 26.69                  | -67.74 |
| 2010-11               | 1107.59                | NA              | 2011-12               | 499.16                 | 54.93 |
| 2012-13               | 1406.25                | 181.72          | 2013-14               | 549.51                 | 54.93 |
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<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>49.10</td>
<td>19213</td>
<td>123.60</td>
<td>1149.02</td>
<td>97.65</td>
<td>14.93</td>
<td>112.34</td>
<td>413.56</td>
<td>433.36</td>
<td>65.13</td>
<td>855.22</td>
<td>47.75</td>
<td>54.45</td>
<td>73.87</td>
<td>59.10</td>
<td>99.99</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>35.89</td>
<td>19213</td>
<td>421.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
<td>112.34</td>
</tr>
<tr>
<td>CAGR</td>
<td>165.13</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
<td>1149.02</td>
</tr>
</tbody>
</table>

Source: Reserve Bank of India.

**Interpretation**

During the analysis of above table it is revealed that during first decade after post-reforms period, the amount of net investment by FII in the Indian Capital Market has significantly increased, especially during 1993-94, where growth rate (GR) has increased up to 136025.00% form what it was during 1992-93. The AAGR during this decade is 19213.07% and CAGR is 165.13%, indicating significant increase in the amount of absolute figures. While examining the second decade after reforms, the AAGR and CAGR have reduced down to 105.49% and 28.07% respectively, indicating less increase in the amount of absolute figures. The SD during this period is ₹421.34 billion, indicating more deviation from the average. The AAGR and CAGR has further dropped down to -118.04% and -14.88% respectively during the current decade (in progress), signaling very low increase in the amount of absolute figures. However SD during this period is ₹507.91 billion, indicating less deviation from the average than what it was during previous decade.

**Findings**

- During the study of Foreign Exchange Reserve (FER), it is depicted that the amount of FER has shown a fluctuating trend during pre-reforms period as this fact is supported by AAGR, which is only 4.60%, indicating diminution in absolute figures. However, during the first decade after new economic reforms (1990-91 to 1999-2000), AAGR has tremendously increased up to 28.54% and slightly dropped down to 23.96% in second decade after new economic reforms, as during this decade, in the year 2008-09, the amount has decreased down to -18.64%, as what it was during the preceding year i.e. 2007-08. The annual growth rate during 2014-15 is 5.40%, as revealed during the analysis.

- While analyzing the issue of bonds by PSU’s, it is found that the annual growth rate during 1986-87 has remarkably increased up to 372.94% and 425.73% during 1993-94, indicating a hefty growth in absolute figures. However, while analyzing AAGR, it is ascertained that during the current decade i.e. 2006-07 to 2015-16, it has increased up to 37.28%, highest among previous decades.

- Regarding Market Capitalization-BSE, it is revealed that during the first decade after reforms, the AAGR has increased up to 46%, which was only 35% during the last decade before reforms, indicating

\[\text{Graph No. 5} \]

Net Investment by FIIs
AAGR (Decade Wise)

\[\text{Study Period}\]

1. The data relate to investment in equities only.
   From June 01, 2014, Foreign Institutional Investors (FIIs), Sub Accounts and Qualified Foreign Investors (QFIIs) have been merged into a new investor class termed as Foreign Portfolio Investors (FPIs).
a significant increase in the amount of absolute figures. However, this rate has dropped down to 31\%,
during the second decade after reforms, resulting because of 40\% decrease in absolute figures during
the year 2008-09. During the current decade, although in progress, AAGR is only 10\%.

• National Stock Exchange (NSE) was established after new reforms and the date available from its
establishment reveals that during the first decade the AAGR was 21.54\%, besides facing a major
downfall during 2008-09 it has still increased up to 27.14\% during the second decade, indicating a
significant increase in the amount of absolute figures.

• During the analysis of investment by Foreign Institutional Investors (FII), it is discovered that annual
growth rate during the year 1993-94 has increased up to 136025\%, indicating a huge increase in the
amount of absolute figures. However, it is found that the investment by FII’s during the study period is
quit fluctuating, as the AAGR during the period 2000-01 to 2009-10 is 105.49\%, which has further
dropped down to -118.04\% during the current decade, although in progress.

Hypothesis Testing

For the purpose of hypothesis testing, Market capitalization–BSE has been used as a
parameter/variable, to analyze the impact of economic reforms during last two and a half decade.

### Market Capitalization - BSE during Pre-Reforms and Post-Reforms Period

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Capitalization - BSE</th>
<th>Year</th>
<th>Market Capitalization - BSE</th>
<th>Year</th>
<th>Market Capitalization - BSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-81</td>
<td>NA</td>
<td>1990-91</td>
<td>908.36</td>
<td>2000-01</td>
<td>5715.53</td>
</tr>
<tr>
<td>1982-83</td>
<td>97.69</td>
<td>1992-93</td>
<td>1881.46</td>
<td>2002-03</td>
<td>5721.98</td>
</tr>
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<td>1983-84</td>
<td>102.19</td>
<td>1993-94</td>
<td>3680.71</td>
<td>2003-04</td>
<td>12012.07</td>
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<td>1984-85</td>
<td>203.78</td>
<td>1994-95</td>
<td>4354.81</td>
<td>2004-05</td>
<td>16984.28</td>
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<td>1985-86</td>
<td>216.36</td>
<td>1995-96</td>
<td>5264.76</td>
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<td>1986-87</td>
<td>259.37</td>
<td>1996-97</td>
<td>4639.15</td>
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<td>1987-88</td>
<td>455.19</td>
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<td>1988-89</td>
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<td>1998-99</td>
<td>5453.61</td>
<td>2008-09</td>
<td>30860.76</td>
</tr>
<tr>
<td>1989-90</td>
<td>652.06</td>
<td>1999-00</td>
<td>9128.42</td>
<td>2009-10</td>
<td>61656.20</td>
</tr>
</tbody>
</table>

Sources: 1) Bombay Stock Exchange Limited (BSE). 2) Reserve Bank of India

ANOVA: Single Factor (Summary)

<table>
<thead>
<tr>
<th>Decade Wise Analysis</th>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1980-81 to 1989-1990</td>
<td>10</td>
<td>2532.24</td>
<td>253.22</td>
<td>51603.61</td>
</tr>
<tr>
<td></td>
<td>1990-91 to 1999-2000</td>
<td>10</td>
<td>4414.16</td>
<td>441.41</td>
<td>512900.06</td>
</tr>
<tr>
<td></td>
<td>2000-01 to 2009-2010</td>
<td>10</td>
<td>256125.33</td>
<td>25612.53</td>
<td>393278419.49</td>
</tr>
</tbody>
</table>

Results and Conclusion

Form the above description of various tables, it is depicted that new economic reforms has played
an important role in the development of Indian Capital Market. Due to these reforms, the capital market
of India has developed a lot by making it possible to compete with international capital markets. SEBI,
the regulator of Indian Capital Market has brought greater transparency in the affairs of organizations.
and stock exchanges, though not to the optimum mark yet. However, all the variables used for study have shown growth with satisfactory speed. Although this growth has declined because of global meltdown in the year 2008-09, during the second decade after reforms, but after this jolt of recession, Indian Capital Market has well coped, and has again put itself on progressive track. This description is supported by hypothesis as well, as it is clear that calculated value of F is more than critical value, i.e. F = 13.93 > F crit. = 3.35, and p-value = 0.00. Hence it is worth concluding that null hypothesis (Ho) is rejected and alternate hypothesis (Ha) is accepted, revealing that there is significant impact of new economic reforms on Indian Capital Market. It is very apparent that the Capital Market encourages economic growth. The various institutions which operate in the Capital Market give quantitative and qualitative direction to the flow of funds and bring realistic allocation of resources. They do so by converting financial assets into productive physical assets. This leads to the development of commerce and industry through the private and public sector, thereby inducing economic growth.

References

FIXED ASSETS UTILIZATION IN SELECTED MANUFACTURING INDUSTRIES IN INDIA: AN EMPIRICAL STUDY

Dr. Santimoy Patra

ABSTRACT

Procurement of funds from appropriate sources and deployment of those funds to the various priorities of assets are considered to be the prima facie requirement for achieving the objective of a corporate entity. Ultimate success depends on how efficiently assets are utilized over a period of time. Thus effective utilization of assets are considered to provide the basic foundation for survival and long term growth of a corporate entity. In a backdrop of such corporate destination, the present paper makes an attempt to judge the efficiency of some selected manufacturing industries in India in utilizing fixed assets, the highest income generating assets in the business, over a period of ten years. For this purpose eight manufacturing industries in India are selected covering a sample size of 3,268 companies. Fixed assets turnover ratio and percentage of fixed assets to the total assets along with some statistical measures have been employed in the study to judge the efficiency in utilizing fixed assets. Empirical evidences showed that majority of the sample could not utilize fixed assets in the effective manner during the period under review. Some suggestions are also laid down in the study for better utilization of fixed assets in future.


Introduction

It is one of the basic tasks, often challenging one, on the part of financial management to procure funds at minimum cost and to utilize those funds for financing fixed assets and currents assets in an effective and judicious manner so as to ensure that return on assets is sufficient enough to satisfy the stakeholders. A great deal of attention must be given to the optimum investment in fixed assets and effective utilization thereof since they involve sizable outlay, longer life cycle and difficulty in replacement. Production is not possible without fixed assets. A firm can meet all sorts of commitment and fulfill all types of expectations by way of earning return which is mostly generated from the utilization of fixed assets. Thus effective utilization of assets is considered to provide the basic foundation for survival and long term growth of a corporate entity. So, all firms in general and manufacturing firms in particular require special attention for proper management of fixed assets. In fact, manufacturing industry plays a significant role in accelerating industrial growth and thus contributing towards economic development of the country. The present field of study appears to be more important for manufacturing industry as there is a scope for manufacturing industry to reduce cost and increase profit through better utilization of assets. In this perspective the present researcher finds it necessary to conduct a study for judging the efficiency in utilizing fixed assets for achieving the ultimate objective of a company.
The effective utilization of fixed assets would enable a firm to generate greater amount of sale against investment in those assets. Hence management must strive for using those assets at optimum level to achieve higher return on investment. This, in turn, will lead to all round development of the company in particular and the industry concerned and the economy in general. Keeping all these in view, if a study on effective utilization of fixed assets is made and certain meaningful inferences be drawn on the basis of empirical evidences, the same may be of use and importance for the improvement of the sample companies and industries concerned and also for the economic development of the country as a whole.

Survey of Literature

For conducting an empirical study on judging efficiency in utilizing fixed assets, a quick look through the existing literature in connection with the present study seems to be desirable. So far a considerable number of research studies has been carried out on the related areas of the present study; important among those are briefly reviewed below:

Ghosh and Maji (2003) made an empirical study on the relationship between utilization of current assets and operating profit considering twenty companies belonging to Indian Cement and Tea Industries. The study concluded that the degree of utilization of current assets was positively associated with the operating profitability for all the companies under study.

A study was conducted by Sur and Rakshit (2005) to investigate the linkage between assets management and profitability taking twenty five companies in the Indian industries for the period from 1993-94 to 2002-03. The traditional view of positive relationship between assets turnover and corporate profitability did not fully conform to this study.

Patra, Santimoy (2005) has undertaken a research study to examine the impact of liquidity on profitability considering the case of a private sector steel giant viz. Tata Steel and found that four ratios namely, current ratio, acid test ratio, current assets to total assets ratio and inventory turnover ratio showed negative correlation with profitability ratio. The remaining three ratios namely, working capital turnover ratio, receivable turnover ratio and cash turnover ratio showed positive association with the profitability ratio.


Reddy, Reddy and Reddy (2006) carried out a research study to know the financing pattern and utilization of fixed assets in large scale paper industry in Andhra Pradesh taking two large mills as representative to the industry. A wise financing pattern was found in the study but the efficiency in utilizing fixed assets was not found satisfactory.

A two tier analysis was conducted by Khatik, S. K. and Singh, P.K. (2006) on assets turnover and Profit margin considering the case of BHEL. It was observed in the study that ROI of BHEL was satisfactory, but fixed assets of the company were not utilized effectively.

Bhayani, J. Sanjoy (2006) conducted a research study to assess the combined effect of assets utilization on profitability by the use of fixed assets turnover, inventory turnover, debtor's turnover and return on capital employed. The study reported that utilization of corporate assets was the most influencing factor on profitability of Indian industry.

Research Gap

An investigation of the existing literature, as discussed above, reveals that a host of research work has been undertaken which was mainly concentrated on liquidity and working capital management and to find out their impact on profitability. So works on the allied areas of the present study occupy a place in the existing literature. But it seems that there is hardly any research work conducted earlier which has focused on the efficiency on utilization of fixed assets although work on these area deserves attention of
researcher for achieving corporate growth. The same study on a number of manufacturing industries at a
time has perhaps been kept untouched by the researchers although this type of work on manufacturing
industries demands special attention for accelerating corporate and industrial growth and thus achieving
the broader objective of economic development of the country. This very fact has inspired the present
researcher to select the field for the present study.

Objectives of the Study

The present study attempts to achieve the following objectives:

• To measure level of investment made in fixed assets as a proportion to the total assets of the
selected industries.
• To measure the efficiency of the selected industries by the use of fixed assets turnover ratio.
• To identify the industries suffering from underutilization of installed capacity during the period
of study.
• To summarize the main findings of the study and to offer some suggestions for better utilization
of fixed assets of the selected industries.

Database and Methodology

Selection of Sample

With a view to achieving the objective of the present study eight manufacturing industries
operating in Indian economy having significant contribution in the growth pattern of industrialization
during post-liberalization period have been selected. These industries include automobile industry,
cement industry, fertilizer industry, paints & varnishes industry, paper industry, real estate industry,
steel industry and textile industry.

The study has attempted to analyze the efficiency of the selected industries in the utilization of
fixed assets based on the data collected from CMIE PROWESS database package. All companies under
each of the selected industries included in PROWESS database have been taken into consideration for the
purpose of present study. Thus the present study consists of a sample size of 3,268 companies belonging
to eight selected industries. For instance, PROWESS database covers 39 companies operating under
automobile industry, 147 companies under cement industry, 64 companies under fertilizer industry, 268
companies under paper industry, 38 companies under paints & varnishes industry, 1,131 companies under
real estate industry, 370 companies under steel industry and 1211 companies under textile industry. The
relevant data of all these companies have been taken into consideration for the purpose of present study.
As the sample size under each category of industries selected for the present study are significant, these
companies may be presumed to be the proper representative of the selected industries and the results
derived from the study based on the aggregates and averages of the sample companies may deem to
reflect true picture of the selected industries.

Period of Study

A moderately lengthy period is required to reach at meaningful and purposeful inferences from
the analysis of empirical data. So a period of latest ten years starting from 2005-06 to 2014-15 has been
taken into consideration for the purpose of present study.

Tools and Techniques of Analysis

For analyzing the data simple mathematical tools like ratios, percentages etc. have been used. The
most powerful and commonly used techniques for judging the efficiency in assets utilization are the uses
and analysis of financial ratios. Hence for judging efficiency in utilizing fixed assets, fixed assets turnover
ratio has been used. Percentage of fixed assets to total assets has also been used for judging the level of
investment made in fixed assets. Due care has been taken in computing ratios and percentages which are
based on the aggregates and averages of the sample companies considered under each category of the
Dr. Santimoy Patra: Fixed Assets Utilization in Selected Manufacturing Industries in India: An ..... selected industries. Statistical techniques like measures of central tendency, measures of dispersion etc. have been used to analyze the behavior of computed ratios of the selected industries. Analysis of huge volume of data collected from the said sources has been done by using a personal computer. Microsoft Excel package has been used for computation of different ratios.

**Efficiency in Utilization of Fixed Assets**

According to Finny and Miller, “Fixed assets are the assets of a relatively permanent nature used in the operation of a business and which are not intended for sale.” Fixed assets represent both intangible and tangible assets. While intangible assets represent goodwill, patent, copyright etc. tangible assets comprise land and building, plant and machinery, furniture and fixtures etc. Efficiency of the selected industries in utilizing fixed assets can be judged with the help of fixed assets turnover ratio. Fixed assets turnover ratio is calculated as net sales divided by net fixed assets. Intangible assets are excluded from the net fixed assets in the computation of fixed assets turnover ratio. Fixed assets turnover ratio shows the speed at which net fixed assets are used to generate sales and thus measures the efficiency in the usage of fixed assets. Higher the ratio, greater is the efficiency with which net fixed assets are operated. The lower ratio, on the other hand, reflects inefficient use of fixed assets, underutilization of those assets and presence of idle capacity. According to Mahasin, M., the standard norm of fixed assets turnover ratio is five times in manufacturing industry.

Now, this section deals with measuring efficiency of selected industries in utilizing their investment in fixed assets by the use of fixed assets turnover ratio as presented in Table 1 in the next page. Industry-wise fixed assets turnover ratios of eight selected industries over the period of ten years have been presented in the Table. The average, standard deviation and co-efficient of variation relating to the fixed assets turnover ratios of ten years for each industry have been calculated and also presented in the last three columns of the table.

<table>
<thead>
<tr>
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<tbody>
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<td>1.35</td>
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<td>0.28</td>
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<td>7.95</td>
<td>7.81</td>
<td>7.15</td>
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<td>7.25</td>
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<td>1.42</td>
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<td>1.36</td>
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<td>5.15</td>
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<td>2.49</td>
<td>2.25</td>
<td>2.15</td>
<td>2.17</td>
<td>2.48</td>
<td>2.59</td>
<td>0.91</td>
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<td>Steel</td>
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<td>2.04</td>
<td>2.22</td>
<td>2.16</td>
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<td>1.85</td>
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<td>1.77</td>
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<td>0.22</td>
</tr>
<tr>
<td>Textiles</td>
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<td>1.85</td>
<td>1.78</td>
<td>1.65</td>
<td>1.83</td>
<td>2.12</td>
<td>2.16</td>
<td>2.21</td>
<td>2.35</td>
<td>2.25</td>
<td>2.01</td>
<td>0.24</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Source: Computed from Prowess Database S.D. means Standard Deviation C.V. means Co-efficient of Variation

**Results and Discussions**

It is observed from the table that the fixed assets turnover ratio of automobile industry varied between 3.85 times in 2008-09 and 5.96 times 2006-07 showing an average of 4.80 times throughout the study period of ten years. The ratio showed a minor fluctuation during first three years and reached the lowest in the fourth year and after that it gradually increased for the next three years and again showed deterioration for the last three years. However, the industry under reference was able to maintain the standard fixed assets turnover ratio of 5 times for five years. Average ratio of the industry also appears to be closer to the standard. The cement industry registered an average fixed assets turnover ratio of 1.25 times over the study period ranging from 1.18 times in 2010-11 to 1.78 times in 2007-08. The industry was far below the standard norm of 5 times throughout the entire study period of ten years. The ratio showed increasing trend during first three years, then decreasing trend during next three years and fluctuating trend during last four years of study. Fertilizer industry witnessed the highest fixed assets turnover ratio
at 5.8 times in the year 2008-09 and the lowest at 2.42 times in the year 2005-06. The average ratio came to 4.05 times throughout the entire study period of ten years. The fixed assets turnover ratio in case of paints & varnishes industry was extremely high i.e. 7.95 times in the year 2006-07 and extremely low i.e. 5.15 times in the year 2012-13 recording an average of 6.89 times over the study period. The ratios were excessive for the first seven years of study and recorded a value above seven times as against standard norm of five times. However, the ratios were nearest to the standard for the last three years of study. The paper industry experienced lowest fixed assets turnover ratio of 1.26 times in the year 2009-10 and the highest of 1.54 times in the year 2005-06 with an average of 1.41 times over the study period. The industry witnessed very poor fixed assets turnover ratios which were far below the standard norm throughout the entire study period. The fixed assets turnover ratios of real estate industry fluctuated between 2.07 times in 2005-06 and 5.15 times in 2007-08 with an average of 2.59 times. The industry could not reach the standard throughout the whole period of study except one year. Steel industry recorded an average fixed assets turnover ratio of 1.77 times throughout the period under reference showing the lowest at 1.00 in 2014-15 and the highest at 2.22 in 2007-08. The industry showed an increasing trend in maintaining the ratio for the first three years and declining trend for the last seven years of study. The fixed assets turnover ratio in case of textile industry appears to be the highest at 2.35 in the year 2013-14 and lowest at 1.65 in the year 2008-09 with an average of 2.01 times. The ratio marked declining trend for the first four years and increasing trend for the remaining six years of the study.

It reveals from the foregoing analysis based on empirical data that only one industry, viz. paints & varnishes industry could satisfy the standard norm of fixed assets turnover ratio over the study period. However, the ratios for this industry were more than the standard for a majority period of the study. Another industry i.e. automobile industry registered an average fixed assets turnover ratio nearest to the standard over the study period. Among the remaining six industries, performance in maintaining average fixed assets turnover ratio was somewhat better in case of fertilizer industry followed by real estate industry, textile industry, steel industry, cement industry and paper industry. An effort has also been made to measure the consistency of these industries in maintaining fixed assets turnover ratios over the years by considering the co-efficient of variation. The variables for which the co-efficient of variation is greater is said to be less consistent i.e. more fluctuating and vice-versa. From this angle, highest consistency was observed in case of paper industry in maintaining fixed assets turnover ratios over the study period of ten years followed by textile industry, cement industry, automobile industry, paints & varnishes industry, steel industry, fertilizer industry and real estate industry.

**Relative Share of Fixed Assets to the Total Assets**

All industries selected for the purpose of present study are manufacturing in nature. As a matter of fact manufacturing industries require heavy investment in fixed assets to operate its level of activity. But when investment in fixed assets appears to be excessive coupled with low fixed assets turnover things become unhealthy. It represents blockage of funds and may adversely affect on the earning power. Normally the upward sales trend justifies the progressive investment in fixed assets. So, it is relevant to judge the level of investment made in fixed assets as a percentage to the total assets to reach at a better conclusion from the analysis of fixed assets turnover ratio.

**Table 2: Percentage of Fixed Assets to Total Assets of Selected Industries Over Ten Years from 2005-06 to 2014-15**

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</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>28</td>
<td>25</td>
<td>25</td>
<td>27</td>
<td>26</td>
<td>25</td>
<td>27</td>
<td>27</td>
<td>28</td>
<td>28</td>
<td>26.60</td>
<td>1.26</td>
<td>0.05</td>
</tr>
<tr>
<td>Cement</td>
<td>56</td>
<td>50</td>
<td>44</td>
<td>44</td>
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<td>51</td>
<td>50</td>
<td>50</td>
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<td>51</td>
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<tr>
<td>Fertilisers</td>
<td>40</td>
<td>38</td>
<td>33</td>
<td>24</td>
<td>26</td>
<td>25</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>23</td>
<td>27.80</td>
<td>6.71</td>
<td>0.24</td>
</tr>
</tbody>
</table>
The investment made in fixed assets as a percentage of total assets by the eight selected industries has been presented in table 2 shown as above. A quick look at the table reveals that cement industry reported highest percentage of investment in fixed assets to the total assets on average throughout the study period of ten years followed by paper industry, textile industry, steel industry, fertilizer industry, automobile industry, paints & varnishes industry and real estate industry. Relatively higher proportion of investment in fixed assets to the total assets made in case of cement, paper, textile and steel industry is not justified as these industries yielded low fixed assets turnover ratios during the period of study. Rather with the moderate level of investment in fixed assets the remaining sample industries viz. paints & varnishes, automobile, fertilizer and real estate industry were able to generate better fixed assets turnover ratios during the study period.

Main Findings

Drawing reference from the empirical evidences and foregoing discussions relating to eight selected industries, it is observed that:

• Efficiency in utilizing fixed assets was highest in case of paints & varnishes industry. It indicates that fixed assets of this industry were able to generate enough sale to sustain their operating structure. This industry was very efficient in utilizing its full capacity and might be required to make additional capital investment to operate at a higher level of activity in future.

• Automobile industry, as evident from the average fixed assets turnover ratio, was lying nearest to the standard and so the sample companies belonging to this industry were also able to operate at almost full capacity level.

• The efficiency in utilizing fixed assets was very poor in case of paper industry. The efficiency was also poor in case of cement, steel, textile and real estate industries. These industries could not utilize their full capacity during the period of study. They should expand their activity level without further capital investment and strengthen their marketing functionaries to utilize their idle capacity. The management of the sample companies belonging to three industries like paper, cement and steel having alarming signal in the fixed assets turnover should devote serious attention on these aspects.

• However a moderate level of efficiency was observed in utilizing fixed assets in case of fertilizer industry as the ratio was approaching to the standard.

• All industries under study were more or less consistent except real estate and fertilizer industry which had relatively high degree of variability in maintaining the ratio.

• Excessive level of investment coupled with low fixed assets turnover was not justified in case of cement industry, paper industry, textile industry and steel industry.

Conclusion

It is may be concluded from the study that majority of the sample industries could not utilize fixed assets in effective manner as evident from their fixed assets turnover during the period of study. Good turnover rate of fixed assets for paints & varnishes industry and automobile industry indicates their efficiency in utilizing fixed assets. High level of investment in fixed assets but low turnover rate indicate underutilization and presence of idle capacity in case of cement, paper, textile and steel industries.
Two industries i.e. paints & varnishes industry and automobile industry showed commendable efficiency in utilization of fixed assets. These industries are utilizing to the full capacity level and hence the sample companies under these industries are advised to make additional capital investments for expanding capacity level to operate at a larger volume of activity. But the situation was challenging for paper, steel and cement industries as these industries have the symbol of under utilization and idle capacity of fixed assets. Moderate level of efficiency was found in case of fertilizer industry and real estate industry.

The industries having low fixed assets turnover rate, as identified by observation, suffer from underutilization of capacity. It may be due to several reasons like shortage of working capital, shortage of raw material and other inputs, labour problem, power cuts, deterioration in technical capacity of assets, product obsolescence, failure in marketing function, defective pricing policy and so on. The management of the concerned companies belonging to these industries is advised to detect the reasons, on case-to-case basis, for such unhealthy situation and make possible effort to solve those as far as practicable. The companies under reference should expand their activity levels without further capital investment to take the full benefit of existing capacity of past investments.

Acknowledgement

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References

IMPACT OF PROFITABILITY ON THE SHARE PRICE:
A STUDY ON COMPUTER SOFTWARE TRAINING COMPANIES IN INDIA

Dr. Bhaskar Biswas

ABSTRACT

The Computer software training companies provide a blend of traditional and digitized content to the schools, colleges and retail industries. The companies operate also curriculum based E-learning portal. In this paper an attempt has been made to analyze the profitability of the five selected computer software training companies in India and to show the impact of profitability on the share price movement for a period of nine years. It is observed that profitability and share price move in the same direction. Share price is a mirror image of the financial performance of the companies.


Introduction

Computer training refers to resources, companies and services dedicated to helping educate users on computer related topics. Computer training professionals instruct and help users acquire proficiency in a wide array of areas including software, hardware, database management, programming, networking and more. Many Computer training services are designed to help students acquire certification in specific areas in order to attain job placement or advancement. Computer software training companies offer computer education and also sale the computer education related equipment. The Company provides a blend of traditional and digitized content to the schools, colleges and retail industries. The companies operates also curriculum based E-learning portal. The software training companies address education needs of the government, institutional and corporate customers. The Company conducts commercial training, coaching, tutorial classes and activities incidental and ancillary thereon. These companies give education support and coaching services provider for students in the secondary and higher secondary school and for students pursuing graduation degree in commerce, preparing for various competitive examinations and undertaking chartered accountancy examinations.

Objective of the Study

The objective of the paper is to check the trend of the net sales, total income, total expenses, operating profit, reported net profit, earning per share of the selected five computer software training companies for the period from March, 2007 to March, 2015 and the impact of these parameters on the average price of the share of the selected five computer software training companies for the period from March, 2007 to March, 2015.

* Assistant Professor, Department of Commerce, Raja Rammohan Roy Mahavidyalaya, Radhanagar, P.O.: Nangulpara, Hooghly, West Bengal.
Limitations of the Study
The study has some limitations, they are:
• The study is based on the secondary data only.
• The study is based on only five companies due to the availability of the data.
• The study is limited to period of nine years due to the availability of the data.

Research Methodology
There is eleven computer software training companies listed in national stock exchange (NSE) and there is also eleven companies listed in Bombay stock exchange (BSE). Out of which I have taken five companies viz, NIIT LTD, APTECH LTD., EDUCOMP SOLUTION, EVERONN EDUCATION, CORE EDUCATION for my study due to availability of the nine years data. My study is based on secondary data and data is collected from the websites moneycontrol.com, www.nseindia.com and www.bseindia.com.

Analysis

Table 1: Showing the Net Sales (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

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<thead>
<tr>
<th>Name of Co.'s</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<td>625.17</td>
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<td>343.76</td>
<td>343.76</td>
</tr>
</tbody>
</table>

Source: moneycontrol.com

The net sales of the NIIT LTD., EDUCOMP SOLUTION, EVERONN EDUCATION has increased from year 2007 to 2012 then it started to reduce. The net sales of the APTECH LTD. have increased from year 2007 to 2013 then it started to reduce. The net sales of the CORE EDUCATION have increased from year 2007 to 2014 then it started to reduce.

Table 2: Showing the Total Income (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

<table>
<thead>
<tr>
<th>Name of Co.'s</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIIT</td>
<td>399.38</td>
<td>500.05</td>
<td>584.38</td>
<td>650.87</td>
<td>694.55</td>
<td>867.67</td>
<td>705.72</td>
<td>579.91</td>
<td>298.69</td>
</tr>
<tr>
<td>APTECH</td>
<td>84.26</td>
<td>100.35</td>
<td>107.49</td>
<td>216.43</td>
<td>99.02</td>
<td>103.20</td>
<td>120.27</td>
<td>115.94</td>
<td>105.22</td>
</tr>
<tr>
<td>EDUCOMP SOLUTION</td>
<td>111.64</td>
<td>276.90</td>
<td>517.53</td>
<td>863.55</td>
<td>1086.79</td>
<td>1133.04</td>
<td>812.18</td>
<td>237.21</td>
<td>633.6</td>
</tr>
<tr>
<td>EVERONN EDUCATION</td>
<td>43.33</td>
<td>93.43</td>
<td>126.94</td>
<td>211.70</td>
<td>306.79</td>
<td>303.82</td>
<td>115.01</td>
<td>43.23</td>
<td>28.33</td>
</tr>
<tr>
<td>CORE EDUCATION</td>
<td>70.12</td>
<td>198.29</td>
<td>346.63</td>
<td>417.95</td>
<td>515.59</td>
<td>878.39</td>
<td>1122.84</td>
<td>627.53</td>
<td>343.76</td>
</tr>
</tbody>
</table>

Source: moneycontrol.com

The total income of the selected five computer software training companies showing the same trend as the net sales of the companies. The total income of the NIIT LTD., EDUCOMP SOLUTION, EVERONN EDUCATION has increased from year 2007 to 2012 then it started to reduce. The total income of the APTECH LTD. has increased from year 2007 to 2013 then it started to reduce. The total income of the CORE EDUCATION has increased from year 2007 to 2014 then it started to reduce.

Table 3: Showing the Total Expenses (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

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</tr>
</thead>
<tbody>
<tr>
<td>NIIT</td>
<td>319.93</td>
<td>400.28</td>
<td>458.61</td>
<td>520.21</td>
<td>554.61</td>
<td>663.13</td>
<td>602.74</td>
<td>496.37</td>
<td>355.24</td>
</tr>
<tr>
<td>APTECH</td>
<td>75.97</td>
<td>143.56</td>
<td>244.44</td>
<td>267.85</td>
<td>311.19</td>
<td>485.61</td>
<td>780.81</td>
<td>395.64</td>
<td>341.11</td>
</tr>
</tbody>
</table>

Source: moneycontrol.com
Dr. Bhaskar Biswas : Impact of Profitability on the Share Price: A Study on Computer Software ..... 135

The total expense of the selected eight computer software training companies are showing the same trend as the total income and net sales of the companies. The total expense of the NIIT LTD., EDUCOMP SOLUTION, EVERONN EDUCATION has increased from year 2007 to 2012 then it started to reduce. The total expense of the APTECH LTD. has increased from year 2007 to 2013 then it started to reduce. The total expense of the CORE EDUCATION has increased from year 2007 to 2014 then it started to reduce.

Table 4: Showing the Operating Profit (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>NIIT</td>
<td>73.49</td>
<td>66.25</td>
<td>85.13</td>
<td>105.85</td>
<td>96.91</td>
<td>72.63</td>
<td>36.18</td>
<td>19.83</td>
<td>-8.71</td>
</tr>
<tr>
<td>APTECH</td>
<td>5.24</td>
<td>15.18</td>
<td>2.26</td>
<td>23.17</td>
<td>14.81</td>
<td>13.27</td>
<td>17.30</td>
<td>25.66</td>
<td>21.24</td>
</tr>
<tr>
<td>EDUCOMP SOLUTION</td>
<td>51.29</td>
<td>126.33</td>
<td>275.12</td>
<td>470.03</td>
<td>501.98</td>
<td>363.34</td>
<td>57.62</td>
<td>-104.04</td>
<td>-54.75</td>
</tr>
<tr>
<td>EVERONN EDUCATION</td>
<td>18.09</td>
<td>33.24</td>
<td>53.30</td>
<td>95.99</td>
<td>153.04</td>
<td>68.56</td>
<td>-59.98</td>
<td>5.08</td>
<td>-4.72</td>
</tr>
<tr>
<td>CORE EDUCATION</td>
<td>16.33</td>
<td>56.07</td>
<td>116.99</td>
<td>163.93</td>
<td>215.18</td>
<td>357.81</td>
<td>418.33</td>
<td>179.89</td>
<td>-26.09</td>
</tr>
</tbody>
</table>

Source: moneycontrol.com

The operating profits of the NIIT LTD. and APTECH have shown a mixed trend during the period of study. But the operating profit of the other two companies i.e EDUCOMP SOLUTION and EVERONN EDUCATION have increased from year 2007 to year 2011 then started to decreased and become negative in 2015. The operating profit of the CORE EDUCATION has increased from year 2007 to year 2013 then started to decreased and become negative in 2015.

Table 5: Showing the Reported Net Profit (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

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</thead>
<tbody>
<tr>
<td>NIIT</td>
<td>32.93</td>
<td>32.77</td>
<td>47.21</td>
<td>31.17</td>
<td>49.74</td>
<td>96.25</td>
<td>1.16</td>
<td>-7.78</td>
<td>-116.10</td>
</tr>
<tr>
<td>APTECH</td>
<td>-6.74</td>
<td>2.46</td>
<td>4.79</td>
<td>86.43</td>
<td>7.89</td>
<td>18.20</td>
<td>25.27</td>
<td>23.39</td>
<td>16.49</td>
</tr>
<tr>
<td>EDUCOMP SOLUTION</td>
<td>28.65</td>
<td>70.06</td>
<td>131.59</td>
<td>221.87</td>
<td>388.87</td>
<td>188.90</td>
<td>40.72</td>
<td>-312.23</td>
<td>-1165.44</td>
</tr>
<tr>
<td>EVERONN EDUCATION</td>
<td>4.08</td>
<td>13.79</td>
<td>23.84</td>
<td>43.40</td>
<td>72.97</td>
<td>-16.51</td>
<td>-255.42</td>
<td>-120.82</td>
<td>-84.39</td>
</tr>
<tr>
<td>CORE EDUCATION</td>
<td>11.53</td>
<td>44.30</td>
<td>80.88</td>
<td>111.84</td>
<td>123.70</td>
<td>188.07</td>
<td>158.60</td>
<td>-502.13</td>
<td>-1074.67</td>
</tr>
</tbody>
</table>

Source: moneycontrol.com

The reported net profit of the NIIT LTD. and APTECH have shown a mixed trend during the period of study. But the reported net profit of the other two companies i.e EDUCOMP SOLUTION and EVERONN EDUCATION has increased from year 2007 to year 2011 then started to decreased and become negative in 2012. The reported net profit of the CORE EDUCATION has increased from year 2007 to year 2012 then started to decreased and become negative in 2014. In 2015 the EDUCOMP SOLUTION and CORE EDUCATION are shown huge losses.

Table 6: Showing the Earning Per Share (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

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</thead>
<tbody>
<tr>
<td>NIIT</td>
<td>16.67</td>
<td>1.99</td>
<td>2.86</td>
<td>1.89</td>
<td>3.01</td>
<td>5.83</td>
<td>0.07</td>
<td>-0.47</td>
<td>-7.03</td>
</tr>
<tr>
<td>APTECH</td>
<td>-1.78</td>
<td>0.56</td>
<td>1.02</td>
<td>18.57</td>
<td>1.62</td>
<td>3.73</td>
<td>5.18</td>
<td>5.86</td>
<td>4.13</td>
</tr>
<tr>
<td>EDUCOMP SOLUTION</td>
<td>17.92</td>
<td>40.62</td>
<td>76.12</td>
<td>23.35</td>
<td>40.70</td>
<td>19.66</td>
<td>-3.33</td>
<td>-25.50</td>
<td>-95.16</td>
</tr>
<tr>
<td>EVERONN EDUCATION</td>
<td>3.97</td>
<td>9.95</td>
<td>15.77</td>
<td>28.70</td>
<td>38.34</td>
<td>-7.55</td>
<td>-116.79</td>
<td>-52.62</td>
<td>-35.09</td>
</tr>
</tbody>
</table>

Source: moneycontrol.com

The earnings per share of the NIIT (EPS adjusted for stock split and bonus issue), EDUCOMP SOLUTION, EVERONN EDUCATION and CORE EDUCATION has shown an uptrend till the year 2011 and stated to decline to negatives. APTECH has shown a mixed trend during the period of study.
Table 7: Showing the Average Share Price (Rs. in crores) of the Selected Computer Software Training Companies in India from Financial Year, 2007 to Financial Year, 2015

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</thead>
<tbody>
<tr>
<td>NIIT</td>
<td>690.00</td>
<td>89.20</td>
<td>46.00</td>
<td>64.85</td>
<td>47.53</td>
<td>42.30</td>
<td>23.60</td>
<td>44.43</td>
<td>71.10</td>
</tr>
<tr>
<td>APTECH</td>
<td>302.35</td>
<td>240.00</td>
<td>180.13</td>
<td>160.93</td>
<td>106.33</td>
<td>83.55</td>
<td>62.13</td>
<td>88.48</td>
<td>63.45</td>
</tr>
<tr>
<td>EDUCOMP SOLUTION</td>
<td>2884.50</td>
<td>3599</td>
<td>2894.50</td>
<td>621.03</td>
<td>195.43</td>
<td>85.85</td>
<td>32.68</td>
<td>20.08</td>
<td></td>
</tr>
<tr>
<td>EVERONN EDUCATION</td>
<td>678.98</td>
<td>680.25</td>
<td>284.06</td>
<td>475.50</td>
<td>302.00</td>
<td>81.53</td>
<td>47.95</td>
<td>30.95</td>
<td></td>
</tr>
<tr>
<td>CORE EDUCATION</td>
<td>361.775</td>
<td>247.00</td>
<td>129.15</td>
<td>298.43</td>
<td>297.50</td>
<td>167.55</td>
<td>18.38</td>
<td>8.28</td>
<td></td>
</tr>
</tbody>
</table>

Source: nseindia.com and bseindia.com

In the above table the average share price was calculated by averaging the 52 week high and low price of the share of a company during the year. The average share price of the NIIT (share price adjusted for stock split and bonus issue), EDUCOMP SOLUTION has increased till the year 2010 and then started to decrease. The share price of the other three companies showed a mixed trend. But the share price of the EDUCOMP SOLUTION, EVERONN EDUACTION and CORE EDUCATION has fallen very sharply and touched the ground level.

Conclusion

It can be said from the above analysis that net sales, total income and total expenses of the NIIT LTD., EDUCOMP SOLUTION, EVERONN EDUCATION has increased from year 2007 to 2012 then it started to decrease, the operating profit and the reported net profit and earnings per share of the other two companies i.e. EDUCOMP SOLUTION, EVERONN EDUCATION have increased from year 2007 to year 2011 then started to decreased and become negative in 2015 and the effect of the financial result of the companies can be seen in their share prices as the of the NIIT (share price adjusted for stock split and bonus issue), EDUCOMP SOLUTION, EVERONN EDUACTION has increased till the year 2010 and fell very sharply and touched the ground level. The net sales, total income, total expenses, operating profit and reported net profit and earnings per share shown a mixed trend and the share price of the CORE EDUCATION and APTECH also shown a mixed trend.

References

- Chakraborty, I. „Capital structure in an emerging stock market: The case of India”.
Presidential Address
Delivered by Prof. D Prabhakara Rao of Andhra University
XXXIX All India Accounting Conference & International Seminar
December 16-17, 2016
Bangalore University, Bangalore

Ladies and Gentlemen!

First, let me take this opportunity to wish you all a Happy New Year 2017.

I congratulate the Conference Secretary and his team for making this event a grand success. This is for the second time, we are visiting Bangalore University. We are thankful to the Honourable Vice-Chancellor of Bangalore University for supporting this event.

Today, IAA is one of the top influential associations in the world of Accounting and Finance globally, because of the dedicated efforts of our Past Presidents, EC members, office bearers, Branch Chairpersons as well as Secretaries and members at large. I know the value of your contribution as General Secretary during the last two decades. Inaugurated on February 14, 1970 (four and half decades ago) our Association crossed several milestones like building a sizeable amount of corpus under the dynamic leadership of Prof Pratapsinh Chauhan, with a wide network of branches in every nuke and corner of the country, besides major metropolitan cities. Our strength is our research-resourceful membership of around 5000 which may cross 10,000 by 2020 when we celebrate fifty years.

In this context, I place hereunder a press release of 20th August 1969, for your information:

Varanasi August 20: A meeting of the executive committee of the newly founded Indian Accounting Association, was held on Saturday at the Faculty of Commerce, Banaras Hindu University. Dr. S.K. R.Bhandari, Vice President of the Association Presided. Other members present were Sri A. Chatterjee, Sri U. Ramachandra Rao, Prof. V. N. Gautham and Prof H.S. Kulshreshtha. The committee decided to have its inaugural function and a seminar on Development of Accounting Principles in India, towards the end of October 1969. Indian Accounting Association had been recently organised at the initiative of some members of the faculty of commerce, Banaras Hindu University, with Shri Raghunath Rai, an Ex-president of Indian Institute of Chartered Accountants, as its President. Other office bearers include, two vice presidents – Dr. S.K.R. Bhandari and Principal G.D.Roy and shri H. S. Kulshreshtha as Secretary and Treasurer. The association aims at promoting research in and disseminating the knowledge of accounting and related subjects for industrial, commercial and overall progress of the people of India.

Dear friends, let me also refer to the letter dated 28th Aug. 1985, from STEPHEN A ZEFF, American Accounting Association President in 1985-86, wherein he conveyed the approval of AAA Executive Committee, recognising Indian Accounting Association along with seven other prominent Accounting Associations around the world. Later we also joined International Association for Accounting Education and Research (IAAER).

IAA is an excellent family of devoted members from academic organisations, professional bodies as well as Government departments, with enthusiasm and initiative to effect sustainable policy in the financial frontiers of nation building. The academic institutions are providing the much needed teaching and research support while the professional bodies are accredited with applied knowledge in the ever changing legal and behavioural framework for better governance. Our association strives to reduce the
gap between theory and practice while focusing on the emerging developments and financial markets around the globe, thus fostering confidence of various stakeholders by disseminating high quality of research findings in different All India Conferences and International Seminars.

My colleagues from Udaipur are doing a nice job of organizing the Accounting Talent Test at national level, which needs our attention for further promotion among the aspirants of accounting career. The Test may become a barometer of measuring knowledge in the field, similar to that of NET or SLET etc. We need to give constitutional status to this activity.

Another great achievement of our Indian Accounting Association is relating to the formation of IAA Research Foundation to promoting research in accounting and allied with special focus on Research.

In the Meeting of the Executive Committee of the Indian Accounting Association held in the Institute of Cost and Works Accounts of India, Calcutta, on the 25th January, 1987 at 2.00P.M which was Presided by Prof. Dool Singh, the then President of the Association, the following was resolved:

The members desired that efforts be made to implement the proposal of the IAA General Body to set up the Indian Accounting Association Research Foundation at an early date so that the research activities of the Association could be stepped up further.

Resolved that Sri Sukumar Battacharya, the immediate past President of IAA, be requested to draft the Constitution of the proposed Research Foundation in consultation with Prof. S.K.R. Bhandari, Prof. K.S. Mathur, Prof. Dool Singh and other Past Presidents of the Association and the draft he sent to the Executive Committee members for their consideration and comments, so that the final draft covered be placed before the meeting of the general Body for its approved.

Later in the Executive Committee meeting of the Indian Accounting Association held in the guest House of Angar Mahpalika on 2nd April ‘88 at 5.45. pm under the President ship of Prof. Dool Singh, the following development took place:

Prof. Sukumar Bhattacharya traced the developments that had take place and reported the formation of the Indian Accounting Association Research Foundation. He also placed before the members, the Constitution of the Research Foundation by taking into consideration the suggestions of the distinguished members Prof. S.K.R. Bhandari, Prof. K.S. Mathur, Prof. Dool Singh and other Past Presidents of the Association. The members of the Executive Committee thanked Prof. Sukumar Bhattacharya for giving a concrete shape to the Research Foundation of the Indian Accounting Association. Thanks were also expressed to other members who extended their valued help and cooperation to Prof. Bhattacharya in finalising the Constitution.

Resolved that the Constitution of the Indian Accounting Association research Foundation be approved and put up before the General Body of the Association for its final approval.

Thus, the Executive Committee and the General Body of the Indian Accounting Association at their meetings endorsed the proposal to set up a Research Foundation to promote Accounting Education and Research in India and abroad. Accordingly the IAA Research Foundation was registered on 16th January, 1990 with office at Calcutta and was inaugurated on January 23, 1991.

After the departure of the great man Prof. Sukumar Bhattacharya, the IAA Research Foundation, at present, is being managed under the leadership of one of our valued past Presidents. As the present President of IAA, I place on record for his valuable services in the management of the IAA Research Foundation so far.

It is time for IAA members to re-examine both constitutions to establish coherence and also to take care of the future of the Research Foundation. I request the Chairman, Prof. Nageswar Rao and members of the Constitution amendments’ committee to look into the provisions of both constitutions and ensure steps for continuity and succession of the IAA Research Foundation. If necessary, IAA Research Foundation should be supported in all respects including financially by the Indian Accounting Association.
Dr. Bhaskar Biswas : Impact of Profitability on the Share Price: A Study on Computer Software ......

Simultaneously, some of our past Presidents like Prof. Sugan C Jain and Prof. S. S. Modi floated organisations like Research Development Association (RDA), Inspira Research Association (IRA) and making a lot of academic and research contribution to the academic world. I congratulate them for their successful endeavours in this regard. These associations also have their own problems and prospects. But these are not floated by Indian Accounting Association with resolutions like IAA Research Foundation. Therefore, I am silent about their continuity or succession issues, although I wish them a grand success.

The academic plan of this 39th Conference includes three technical sessions viz., (1) Goods and Services Tax; (2) IFRS; (3) Ethical Issues in Accounting and (4) an International Seminar on Accounting Education and Research.

The President of India, Pranab Mukherjee has approved the Constitution Amendment Bill for Goods and Services Tax (GST), post its passage in the Parliament (Rajya Sabha on 3 August 2016 and Lok Sabha on 8 August 2016) and ratification by more than 50 percent of state legislatures. The Government of India is committed to replace all the indirect taxes levied on goods and services by the Centre and States and implement GST by April, 2017. Goods and Services Tax is the one of the biggest indirect tax reforms since India’s independence. Present structures of VAT across states lack uniformity. The differences are there with respect to definition of goods, capital goods, threshold limits, classification, exemptions, and procedures. This leads to increased complexities for entities having operations in multiple States. As the powers of Central and State Governments to levy and collect taxes are complementary, there is a chance of tax evasion. There is lack of cross verification of returns filed under various State as well as Central Taxation Rules and there are differences in the returns filed by the assessed by paying Central and State taxes simultaneously. GST is a proposed system of indirect taxation in India subsuming most of the existing indirect taxes into single system of taxation. GST is a value-added tax levied at all points in the supply chain with credit allowed for any tax paid on inputs acquired for use in making the supply/providing the services. GST is basically an indirect tax that brings most of the taxes imposed on most goods and services, on manufacture, sale and consumption of goods and services, under a single domain at the national level. GST in India proposes to remove the geographical barriers for trading, and transform the entire nation to ‘One Common Market Place’. GST is “one indirect tax” for the whole nation, which will make India one unified common market. It is a single unified tax system aims at unifying India’s complex taxation structure to a ‘One Nation- One Tax’ regime. Prime Minister Narendra Modi’s announcement of 8th November 2016, to scrap 500 rupee and 1,000 rupee banknotes has attracted the attention of the whole world. May be the Honourable Prime Minister is aiming to create a cashless economy while launching a new tax regime of GST. Prof KV Achalapathi committee on GST will enlighten the delegates with its report. I congratulate Prof KV Achalapathi and CA K Ch CVS Murthy for accepting this challenging assignment.

International Financial Reporting Standards (IFRS), is gaining prominence around the world in the context of producing financial data uniformly across different nations. The professional accounting bodies are busy in establishing convergence of the accounting standards. While USA is not having any such plan, as there is a little amount of convergence required to restate their financial statements in line with the IFRS, several other countries implemented IFRS and reporting favourable effects in their financial reporting practices. In such nations, research studies reported positive results of the capital market decisions at different levels. In some of the India Rs. 500 cr. turnover companies implemented IFRS in 2016, while it is mandatory for all the companies by 2017. A number of important decisions on mergers and acquisitions, off-shore mutual funds etc., are supposed to be more efficient once the IFRS regime starts functioning on a large scale. Indian Accounting Association did a lot of concrete work in the area of Accounting Standards. Prof. N.M. Khandelwal committee will enlighten the delegates with its report on Accounting Standards. I thank Prof. NM Khandelwal and other members of the committee for their devotion in producing the report.

The role of accounting professionals is not complete without referring to what the profession owes to the society. While maintaining high standards they have a role to play in helping organizations to act ethically. Protection of public interest is the notion that accountants need to deliver value to the public. Accountants
will lose their legitimacy as protectors of public interest if there is no public trust. The accountancy profession has a wide reach in global capital markets. In the most basic way, confidence in the financial data produced by professionals in businesses forms the core of public trust and public value.

Accountants often face conflicts between upholding values central to their profession and the demands of the business world. Balancing these competing demands forms the very heart of being a professional in contrast to simply having a job or performing a function. Professionals are expected to exercise professional judgment in performing their roles so that when times get challenging, they do not undertake actions that will result in the profession losing the public trust as protectors of public interest. Ethical codes for professional accountants globally compels professional accountants, regardless of the roles that they perform, to uphold values of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. Objectivity and independence are important ethical values in the accounting profession. Accountants must remain free from conflicts of interest and other questionable business relationships when conducting accounting services. There are a number of cases where CFOs are questioned of their ethics. Objectivity and independence are also important ethical values for auditors.

On behalf of all of us, I Congratulate our Past Presidents--Prof. Nageshwar Rao, Prof. Pratapsinh Chauhan, Prof. Bhirav S Raj Purohit for occupying the coveted position of Vice-Chancellor. Prof. Nageswar Rao is Vice-Chancellor for three universities in a row, which is a pride for every member of the Indian Accounting Association.

I acknowledge the strong support of our General Secretary, Treasurer and Chief Editor. I fall short of words to admire Prof. Sanjay Bhayani for the excellent work of IAA Website—www.indianaccounting.org. I am thankful to all the Past Presidents, Branch Chairpersons/Secretaries, EC members and the Resource Persons associated with this grand Conference event. All the delegates deserve a lot of appreciation for attending in large numbers, in spite of cash crunch due to the demonetisation decision of our Honourable Prime Minister Narendra Modi and the challenging International scenario due to the newly elected US President Donald Trump effect. Let us wish all things will work positively in the long run for a prudent and sustainable growth of the Indian Economy.

Thank you ladies and gentlemen!

Aum Poornadha Poornaamdham! Poornapatn mudatyaththee  
Poornasya Poornamaadaya! Poornamee vaa vasishyaththee!  
Aum Santhi! Santhi! Santhihi!

16th December, 2016

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