Forensic Accounting - An Investigative Analysis on Selected Indian Companies Using Benford's Law

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Abstract: Forensic accounting is the investigation of fraud or financial manipulation by performing extremely detailed research and analysis of financial information. Forensic accounting information is the output of the investigative arm of accounting aimed at producing information that helps to resolve complaint, statement of claim, rumour, and inquiry or to reduce the financial element of legal debate. This is a precious tool for finding out the fraud committed. All the necessary details are summarized in the financial statement, and the analysis of these statements can help a forensic accountant to figure out the scam. As mentioned, the presence of fraudulent activity is just one of the possible explanations. For an auditor, rejecting the hypothesis means that additional work needs to be completed in order to determine whether fraud is present or not. It serves as red flag to auditors. It is concluded that Benford's analysis, when used correctly, is a useful tool for identifying suspect financial statement for further analysis.

Keywords: Forensic accounting, Investigative, Financial Statements, Fraudulent activity

1. Introduction

In any industry, whether manufacturing or service, we have multiple departments, which function day in day out to achieve organizational goals. The functioning of these departments may or may not be interdependent, but at the end of day they are linked together by one common thread – Accounting & Finance department. The accounting & financial aspects of each and every department are recorded and are reported to various stakeholders. There are two different types of reporting – Financial reporting for various stakeholders & Management Reporting for internal Management of an organization. Both these reporting are important and are integral part of Accounting & reporting system of an organization. But considering the number of stakeholders involved and statutory & other regulatory requirements, Financial Reporting is very important and critical task of an organization. A financial statement is an organized collection of data according to logical and consistent accounting procedures. Its purpose is to convey the financial position of a business firm. It may show a position at a moment of time as in the case of balance sheet, or may reveal a series of activities over a given period of time, as in the case of an income statement.

1.1 What is Forensic Accounting

Forensic accounting is the investigation of fraud or financial manipulation by performing extremely detailed research and analysis of financial information. Forensic accountants are often hired to prepare for litigation related to insurance claims, insolvency, divorces, embezzlement, fraud, Skimming, and any type of financial theft.

1.2 Objective of Forensic Accounting

Financial auditing: The auditor’s objective in a financial audit is to render an opinion on whether the information appearing in a set of financial statements is presented fairly in conformity with generally accepted accounting principles (GAAP). These engagements are conducted after the transactions have occurred, and are performed in accordance with generally accepted auditing standards (GAAS). The financial audit is an attest function and the auditor is responsible to the client and any third parties that may rely on the financial statements issued.

Fraud auditing: The objective of a fraud audit is for the auditor to assess the likelihood that fraud will be detected or prevented in a corporate or regulatory environment. Typically this assessment is made by reviewing existing controls to prevent and detect fraudulent transactions. Recommendations to implement procedures to detect or prevent fraud may also be made. Fraud audits are usually conducted on a proactive basis, and should not be confused with fraud investigations which are conducted after the fact, and possibly by forensic accountants. The fraud auditor is obligated to its employer or client.

Forensic accounting: The objective of a forensic accounting engagement is related specifically to the issue defined by the party engaging the accountant. The client defines a specific goal, such as calculate the loss, calculate the royalty, calculate the value of the pension plan, etc. The accountant may use certain examination techniques similar to those used in financial audits but the objective of these procedures is quite different. The forensic accountant, for example, may examine a trail of paperwork to corroborate the calculations needed to meet the specific goal of the engagement. The forensic accountant is not performing an attest function and is responsible only to his client. Ultimately the objective for hiring the forensic accountant is to use the accountant’s conclusions to facilitate a settlement, claim, or jury award by reducing the financial component as an area of continuing debate.

1.3 User of Forensic Accounting

Forensic accounting information is the output of the investigative arm of accounting aimed at producing information that helps to resolve complaint, statement of claim, rumour, and inquiry or to reduce the financial element of legal debate.
1.4 Tool and Techniques of Forensic Accounting

1) Reviewing Public Documents and Doing Background Checks
The documents made available to the public are scrutinized as they are the easiest to obtain. Also, thorough background checks of a particular company are done to see the past dealings of the business. Public Documents would include any information in the public database, the corporate records and any information which is legally available on the internet. Of course, information isn’t always in digital format and forensic accounting has to use document reviewing strategies to spot fraud. Reviewing physical documents can be tricky for the forensic team because they need to ensure they follow the right legal procedures in accessing, storing and managing these files.

For example, they can’t illegally obtain business documents and then use them to accuse the business of fraud – everything has to follow the correct and legal route.

Generally, when the forensic team receives an invitation to perform the investigation, a legal contract is formed that issues the forensic accounting team with the rights and responsibilities regarding the documents.

In certain instances, the contract also has to deal with the proceedings for digital documents and any documents that might be accessed on employee premises.

Interestingly, a big part of the document review is identifying the carbon copy of these documents. This means checking whether the documents have been modified after the date they are meant to have formed or simply added in later.

Let’s say an employee would try to tamper with sales numbers, he or she might re-print the invoices with different figures.

The review of other documents uses similar techniques to above in finding trends and patterns.

Reviewing will be more laborious if it has to be done manually but forensic accounting teams often scan and create digital data files of the documents to allow data mining.

2) Conducting Interviews
Conducting an interview is an essential technique which can transform an unwilling person into a source of valuable information. It helps in fully understanding all the facts. An interview should be conducted by accurately assessing the gravity of the situation and preparing the questions according to it. Discussions should take every little detail into account and look at happen in your business.

For example, by interviewing the organization and the supplier, different stories of the invoicing procedure might come up and point to the system being fraudulent. Indeed, sometimes the fear of the investigation can make people talk and admit fraud – helping the forensic team to find the answers to the questions they might have.

Again, it’s crucial to ensure the interviews are conducted professionally and within the legal boundaries of the country.

The process must be coordinated with the legal teams and generally, there has to be some kind of record of the interview (this can be used in the court as evidence, rather than have a situation of ‘he said, she said’). The purpose of the interview is to identify the following things, which could point out a possibility of fraud:
- Knowledge of the information being examined.
- Opportunities to change, swap or manipulate data.
- Understanding of the procedures being used in the organization.

The forensic accounting team has to be good at communicating with people and use a logical approach to getting to the bottom of things.

It’s important to realize that you might not receive a pure admission of guilt – the person’s unusual behavior might be a sign there is something suspicious going on that needs to be investigated.

3) Gathering Information from Trustworthy Sources
Information provided by a confidential and trustworthy source can be precious to any case. When a piece of information is gained from a confidential source or a confidential informant, all the necessary precautions should be taken to hide the identity of the so-called cause. A forensic accountant should try to have as many confidential sources possible because such sources can virtually guarantee a correct result.

4) Analysing Evidence
Proper analysis of the obtained evidence can point to the guilty party and can also assist to understand the extent of the fraud committed in the business. This analysis would also help in understanding how secure the company is against financial scams and installing various austerity measures to prevent any such future situation.

5) Surveillance
This can be done physically or electronically and is one of the conventional measures conducted to uncover any fraud. It can be done by monitoring and tracking all the official emails and messages.

6) Going Undercover
This is an extreme measure and should be used only as a last resort. It is best left to the professionals as they have the proper knowledge of how and where to conduct the investigations. Even a small mistake while being undercover can signal the offender that something is wrong and the person might vanish.

7) Analysing the Financial Statements
This is a precious tool for finding out the fraud committed. All the necessary details are summarized in the financial statement, and the analysis of these statements can help a forensic accountant to figure out the scam. Nowadays the economic conditions are getting stricter, and each country’s government is now implementing tighter laws in terms of...
the governance of the businesses. As the companies are increasing the level of sophistication, so is fraud. This has led to a higher sensitivity to fraud which can be interpreted as a massive demand for the services of forensic accountants by all the businesses.

2. Literature Review

SUPRIYA (2019) Forensic accounting is upcoming trend in Indian accounting field, forensic accountant is differ from other accountant, while other accountant look at the number but forensic accounting look beyond the number, it involves integration of investigation, auditing, accounting skills to proceed in legal matter. Forensic accounting should not become the subject of a selected few's specialization and expertise. At the undergraduate as well as at the postgraduate level across the country, it should be made part of the curriculum.

Chaudhuri (2018) With the growing complexities of business and commercial operations, the financial irregularities also increase because of the mindless obsession with profit maximization at any cost when carried to any extreme can lead to failures like ENRON, WORLDCOM, SATYAM has extreme negative impact on the survival and growth of any economic entity. But there are no appropriate conventional accounting and auditing procedures that can provide absolute assurance in preventing and detecting all fraudulent financial reporting. Organizations are facing a number of challenges in the current economic scenario. They constantly deal with pressure of uncertain markets, escalating input costs, high labour turnover and advent of technology. Such pressures may provide opportunity and incentives for fraudsters to commit frauds.

MEGHA (2019) the aim behind this paper is to acquire a knowledge about the meaning of forensic accounting. The study examines the scope and role of a forensic accounting investigator in fraud detection. In India, forensic accounting has come into limelight due to increase in scams or white collar crimes. The data was collected to understand the objectives of forensic accounting and challenges faced by forensic investigators while examining various cases. The specific objective of this research paper was to create an awareness of forensic accounting in India and to inform about the increasing scope of forensic accounting in investigation during merger, amalgamation, acquisition, economic crime investigation, and all kinds of civil litigation supports including terrorist investigations.

SHAIR (2017) the fundamental objective of GAAP states that the financial statements must depict ‘true and fair’ view of the financial state of affairs. The ambiguity of ‘true and fair’ view created a loophole towards the rise of financial frauds, thereby weakening the trust of the users of financial information on the reported statements. Unbridled increase in the financial reporting irregularities, corporate frauds, and the ‘white-collar’ crimes has popularized the concept of forensic accounting in India. The detection and prevention of corporate irregularity or non-compliance was the inherent function and responsibility of accounting and auditing disciplines until the onslaught of stream of corporate frauds, misconduct, and white-collar crimes, particularly the Satyam scam in 2009. The Ernst and Young’s 14th Global Fraud survey 2016 ranked India at 17th place (of total 57 countries surveyed) with 58 percent of respondents claiming the existence of bribery and corrupt practices in their businesses.

SWALIH (2019) the world over economic crimes has increased in scale and size. The average annual cost of financial fraud is estimated to be around five per cent of the revenue of any company, with the overall figure amounting to trillions. This pervasiveness of economic crimes has highlighted the need for Forensic Accounting. Forensic accounting requires the combination of the discipline of Accounting, Finance Law, etc. Its duty is to use various techniques to investigate and unearth fraudulent dealings and embezzlements of public money through the analysis of financial information.

IBRAMHIM (2019) the need for forensic accounting service has been widely recognized in most developed countries. However, in developing countries, forensic accounting service is still receiving the attention of regulators and professional accounting bodies. The prevalent increases in financial fraud have affected many corporate organizations in the world. This stirred the need for forensic accounting investigation to uncover fraud and any other corporate financial irregularities.

3. Research Methodology

Objective of the study
1) To understand concept of the forensic accounting
2) To know like hood of manipulation in financial statement

Research design
Stud is explorative where more secondary data was used to study the relations. Many parameters were studied and information from different sources was collected to justify the objectives of the study.

Source of data
For the purpose of study data is collected from secondary source i.e. Annual report–standalone Forensic Accounting of selected companies.

Period of the study
Period of the study is from 2014-15 to 2018-19.

Research tools
To meet the objective of the study Percentage, Ratios, and Benford’s law applied with the help of MS Excel.

Significance of the study
• This study gives better understanding to auditor’s opinion.
• This study helpful to investors and other stakeholder’s to take investment decision.

Limitations of the study
• This study mainly based on secondary data derived from the annual reports of selected companies so the reliability and finding contingent upon the data published in annual report.
• The study is limited to five years only.

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4. Data Analysis

4.1 Companies Profile

4.1.1 Tata Motors Limited

About
Tata Motors Group (Tata Motors) is a $45 billion organisation. It is a leading global automobile manufacturing company. Its diverse portfolio includes an extensive range of cars, sports utility vehicles, trucks, buses and defence vehicles. Tata Motors is one of India's largest OEMs offering an extensive range of integrated, smart and e-mobility solutions. Part of the USD100 billion Tata group founded by Jamsedji Tata in 1868, Tata Motors is among the world’s leading manufacturers of automobiles. We believe in ‘Connecting aspirations’, by offering innovative mobility solutions that are in line with customers’ aspirations. We are India's largest automobile manufacturer, and we continue to take the lead in shaping the Indian commercial vehicle landscape, with the introduction of leading-edge power trains and electric solutions packaged for power performances and user comfort at the lowest life-cycle costs. Our new passenger cars and utility vehicles are based on Impact Design and offer a superior blend of performance, driveability and connectivity.

Our focus on connecting aspirations and our pipeline of tech-enabled products keeps us at the forefront of the market. We have identified six key mobility drivers that will lead us into the future – modular architecture, complexity reduction in manufacturing, connected & autonomous vehicles, clean drivelines, shared mobility, and low total cost of ownership. Our sub-brand TAMO is an incubating centre of innovation that will spark new mobility solutions through new technologies, business models and partnerships.

Our mission - across our globally dispersed organisation – is to be passionate in anticipating and providing the best vehicles and experiences that excite our global customers.

4.1.2 Tata Steel Limited

About
Tata Steel is one of the world’s most geographically diversified steel producers, with operations in 26 countries and commercial offices in over 35 countries. Europe we are one of the largest steel producers. But it’s not just our size that sets us apart. What makes us different is our approach to business. We believe our strength is how we build collaborative relationships that create new success for our customers.

Through serving many demanding markets worldwide, including construction and infrastructure, automotive, packaging and engineering, we understand that customer needs are different in each market.

The Tata group was founded on the principle that its activities should always benefit society. Today Tata Steel is guided by the same long-term vision. We operate in a way that is safe for our people and respectful to the environment. We behave responsibly and with care towards the communities surrounding and impacted by our operations.

Sustainability is at the very heart of what we do and we are dedicated to managing our operations responsibly and to continuous improve our performance.

4.1.3 Tata Power Limited

About
Its international presence includes strategic investments in Indonesia through a 30% stake in the leading coal company PT Kaltim Prima Coal (KPC), 26% stake in mines at PT Baramulti Suksesarana Tbk (“BSSR”); in Singapore through Trust Energy Resources to securitize coal supply and the shipping of coal for its thermal power generation operations; in South Africa through a joint venture called to develop projects in sub-Saharan Africa; in Zambia through 50:50 joint venture with ZESCO for 120 MW Hydro which
has become operational in 2016; in Georgia through AGL which is a joint venture with Clean Energy, Norway & IFC for development of 185 MW hydro project which is scheduled to be commissioned in 2016; in Australia through investments in enhanced geothermal and clean coal technologies and in Bhutan through a hydro project in partnership with The Royal Government of Bhutan. With its track record of technology leadership, project execution excellence, world class safety processes, customer care and driving green initiatives, Tata Power is poised for a multi-fold growth and committed to 'lighting up lives' for generations to come”.

4.1.4 Tata Chemical Limited

About
The story of the company is about harnessing the fruits of science for goals that go beyond business. We operate through two verticals - Basic Chemistry and Specialty Chemistry. The company’s Basic Chemistry product range provides key ingredients to many of the world’s leading brands for glass, detergents, pharma, biscuit manufacturing, bakeries and other industries. We have the largest saltworks in Asia, and are the 3rd largest soda ash manufacturer and the 6th largest sodium bicarbonate manufacturer in the world.

Our innovations in Specialty Chemistry have led to establishing Tata NQ -- India’s first and only nutritional science business. We have pioneered the production of Fossence and Gossence, a range of healthy prebiotic products which is marketed to B2B customers across India, North America, Europe, Middle East and Asia. The company has a strong position in the crop protection business through its subsidiary company Rallis India Ltd.

Our green patented technology for manufacturing Highly Dispersible Silica is focused on delivering value addition to a number of industries, including high performance tyres, oral care, paints and additives, etc. In Energy Sciences, we are creating a platform to provide cutting-edge solutions around Lithium Ion cell technology.

Our strength lies in science and our Innovation Centre at Pune is home to world-class R&D capabilities in nanotechnology and biotechnology. Our other innovation centres are located at Mithapur and Bengaluru.

Sustainability as a practice is at the core of all of Tata Chemicals’ activities, including our corporate social responsibility initiatives, and is intricately woven into all our business functions. In 2018, we set up the Centre of Excellence for Coastal and Marine Conservation, and the Centre for Sustainable Agriculture and Farm Excellence. Our vision is to be a leading sustainable chemicals solutions company serving customers through innovation and science.

4.1.5 Tata Investment Corporation Limited

About
Tata Investment Corporation Limited (TICL) is a non-banking financial company. Earlier named The Investment Corporation of India, the company is primarily involved in investing in long-term investments such as equity shares and equity-related securities.

Tata Investment Corporation Limited was promoted by Tata Sons Ltd., in 1937, under the name The Investment Corporation of India Limited. The Company remained a closely held company till 1959, when it became one of the few publicly held investment companies listed on the Stock Exchange, Mumbai. During the 1960s and 1970s the Company’s activities underwent a gradual transformation from assisting in the establishment of new ventures, to acting as an investment company with a diversified portfolio of investments.

The original inspiration for launching Tata Investment Corporation Limited was to help set up and nurture small and medium-sized entrepreneurs and their companies. For many years after its inception, the Company played a role of a catalyst in promoting long term investments in the country and was instrumental in the promotion of projects with new Indian entrepreneurs and foreign collaborators whilst simultaneously taking minority equity stakes in such new projects. This promotional role of TICL resulted in the formation of many companies which were well known a few decades ago such as, Associated Bearing Co Ltd. (now SKF Bearings (India) Ltd.), Ceat Tyres Ltd. (now Ceat Ltd), National Rayon Corporation, companies promoted by the Ghia family and others, some of which are even today listed on the stock exchange.

5. Company Wise Application of Benford’s Law

5.1 Tata Motors Limited
The theoretical frequencies of the Benford’s law are compared with the observed frequencies. The first column shows the frequency distribution as suggested by the Benford’s law while the second column shows the observed frequencies. The results of the case study analysis indicate that if data is fabricated, then the data does not confirm the expected theoretical frequencies. The Chart is showing five years first digit frequency distribution. And the first digit frequency distribution digit 1 probability 0.3010 and actual is 0.3231. First digit frequency distribution digit 1 shows a little high chances of fraud.

5.2 Tata Steel Limited

The theoretical frequencies of the Benford’s law are compared with the observed frequencies. The first column shows the frequency distribution as suggested by the Benford’s law while the second column shows the observed frequencies. The results of the case study analysis indicate that if data is fabricated, then the data does not confirm the expected theoretical frequencies.

5.3 Tata Power Limited
First Digit Frequency Distribution

Analysis

The theoretical frequencies of the Benford’s law are compared with the observed frequencies. The first column shows the frequency distribution as suggested by the Benford’s law while the second column shows the observed frequencies. The results of the case study analysis indicate that if data is fabricated, then the data does not confirm the expected theoretical frequencies.

5.4 Tata Chemicals Limited

The Chart is showing five years first digit frequency distribution. And the first digit frequency distribution digit 4 probability 0.076 and actual 0.096. First digit frequency distribution digit 4 shows Low chances of fraud as Probability is more than that of Actual.
Analysis

The theoretical frequencies of the Benford’s law are compared with the observed frequencies. The first column shows the frequency distribution as suggested by the Benford’s law while the second column shows the observed frequencies. The results of the case study analysis indicate that if data is fabricated, then the data does not confirm the expected theoretical frequencies.

![First Digit Frequency Distribution](image)

### 6. Findings, Suggestions and Conclusion

**6.1 Findings**

The aim of this research was to investigate and evaluate the effectiveness of Benford’s Law as a tool for forensic accountants. The first objective of the study was to examine the background and mathematical foundation of the phenomenon of Benford’s Law. The fundamental principles of Benford’s Law were discussed, amongst other things.

The detection of fraud in financial statements is a difficult task, which requires more than just using standard auditing procedures. Therefore, auditors need new tools and techniques to simplify auditing tasks and help them in detecting such fraudulent financial statements. As demonstrated above, Benford’s Law can be used as an effective tool to target potential areas of concern in accounting data. The proposed approach should not be used as the only tool for accounting audit; instead it must be used as a complementary tool.

**6.2 Conclusion**

The detection of fraud in financial statements is a difficult task, which requires more than just using standard auditing procedures. Therefore, auditors need new tools and techniques to simplify auditing tasks and help them in detecting such fraudulent financial statements. Benford’s Law should not be used as the only tool for accounting audit; instead it must be used as a complementary tool. From the viewpoint of Statistic, when using the Benford’s methodology, an auditor would essentially be testing the following statistical hypothesis: digits in a data set are distributed according to Benford’s Law. Rejecting this hypothesis could mean that one of the following three scenarios might have occurred:

As mentioned, the presence of fraudulent activity is just one of the possible explanations. For an auditor, rejecting the hypothesis means that additional work needs to be performed.
completed in order to determine whether fraud is present or not. It serves as red flag to auditors. It is concluded that Benford’s analysis, when used correctly, is a useful tool for identifying suspect financial statement for further analysis.

6.3 Future Scope Of Study

Forensic accounting is a new branch of accounting as far as academic work is concerned and their adoptions particularly in developing economies. Therefore more researches need to be conducted. Moreover, the present study is also not without some limitations.

Hence, the following suggestions are made to take the present work further. First, further studies could adopt a cross-country or different sectors to improve the generalisability of the research findings and possibly compare the results across different countries.

Second, samples for further studies could be enlarged. This could provide further insight into the practice of forensic accounting.

Third, the Benford model so developed in this study could be further tested by using second digit analysis, first two digit analysis and last two digit analysis.

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