

**CAUSALITY EXAMINATION OF JOSEPH PIOTROSKI-F SCORE
FRAMEWORK ON THE STOCK PRICE PERFORMANCE OF
SELECTED IT SECTOR STOCKS**

Unicap Financial Services Pvt. Ltd.

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Affiliated to
Visvesvaraya Technological University, Belagavi**



In partial fulfillment of the requirements for the award of the degree of

MASTER OF BUSINESS ADMINISTRATION

Under the guidance of

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MAY 2023

STUDENT'S DECLARATION

I, ANUSHA A SHETTY, USN: 1GA21BA009 hereby declare that the Project report entitled as "Causality Examination Of Joseph Piotroski-F Score Framework On The Stock Price Performance Of Selected It Sector Stocks" under Mayur Sharma at "Unicap Financial Services Limited" is the original work carried out by me under the guidance of, Prof. N. Venkatesh Kumar, Professor, Department of MBA, Global Academy of Technology, Bengaluru.

I also declare that this project work is towards the partial fulfilment of the requirements for the university regulations for the award of the degree of Master of Business Administration by Visvesvaraya Technological University, Belagavi. I have undergone a project work for a period of eight weeks, I further declare that this project report is based on the original study undertaken by me and has not been given for the award of any degree/diploma from any other university/institution.

Anusha A. Shetty
Signature

DATE:01/06/2023

PLACE: Bengaluru



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CERTIFICATE

This is to certify that **Ms. ANUSHA A SHETTY** bearing **USN: 1GA21BA009** is a bonafide student of Master of Business Administration program of this Institute (**Batch 2021-2023**), affiliated to Visvesvaraya Technological University, Belagavi. The Project Work (**21MBASP41**) titled as "Causality Examination of Joseph Piotroski-F Score framework on the Stock Price Performance of selected IT Sector Stocks" is a original work prepared by her under the guidance of **Dr. N Venkatesh Kumar**, Professor & HOD, Department of Management Studies and Research Centre, in partial fulfillment of the requirements for the award of the Degree of Master of Business Administration of Visvesvaraya Technological University, Belagavi, Karnataka.


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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Anusha A Shetty, A student in 2nd Year (4th Sem) pursuing a Master of Business Administrator, at the Global Academy of Technology, Bangalore (Usn no: 1GA21BA009) has completed her internship on "Causality examination of Joseph Piotroski - F Score framework on the stock price performance of selected IT sector stocks" with UNICAP FINANCIAL SERVICES from March 20th, 2022 to May 13th, 2023.

During the internship, she was exposed to different business processes in the company. She demonstrated good organizational and analytical skills in the tasks assigned to her. her conduct during the training was good.

We wish her every success in her life and career.

For UNICAP FINANCIAL SERVICES


Partner

Mayur Sharma
(Co-Founder, Unicap Financial Services)



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I would like to take the opportunity to thank and express my sense of gratitude to my guide **Prof. N. Venkatesh Kumar** for providing the valuable guidance at all stages of the study, her advice constructive, suggestions, positive and supportive attitude, and continuous encouragement, without which it would not have been possible to complete this project.

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EXECUTIVE SUMMARY

This report investigates the causal relationship between the Joseph Piotroski-F Score framework and stock price performance in selected IT sector stocks, including Tech Mahindra, Wipro, TCS, HCL Technologies, and Infosys. The analysis reveals limited significance of the Piotroski-F Score variables in explaining stock returns, showing the influence of other unaccounted factors. Tech Mahindra proves strong financials, while Wipro shows consistent profitability but declining efficiency. TCS maintains high profitability despite declines in efficiency and liquidity. HCL Technologies exhibits consistent profitability, with leverage and liquidity significantly affecting stock returns. Infosys highlights strong profitability but lacks major influence of variables on stock returns. A comprehensive evaluation, incorporating other factors and ongoing research, is recommended for informed investment decisions in the IT sector. Investors should consider a comprehensive approach that goes beyond the Piotroski-F Score framework when analysing stock performance in the IT sector.

Key Words: - Piotroski F-score, Stock Performance, IT Industry, Profitability, Leverage

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CHAPTER – 1

INTRODUCTION

1.1. INTRODUCTION

Fundamental analysis is a method of evaluating the intrinsic value of a company by analysing various financial and economic factors. It is a popular approach for investors to find undervalued companies and make investment decisions based on the company's long-term growth prospects. In the case of the IT sector, fundamental analysis involves evaluating the financial performance of companies running in the sector, as well as analysing industry trends and technological advancements that may affect the sector's growth prospects.

IT sector is one of the key sectors of the Indian stock market and has been a major contributor to the country's economic growth. In recent years, the IT sector has been performing well in the Indian stock market, and it is one of the top-performing sectors in terms of market capitalization. However, as with any sector, there are risks and challenges that investors should consider, such as changes in global economic conditions, increasing competition, and regulatory changes. It is important for investors to conduct a comprehensive analysis of individual companies in the sector before making investment decisions.

The IT (Information Technology) sector is a major player in the Indian stock market, and it has been one of the fastest-growing sectors in the country's economy in recent years. The IT sector in India forms companies involved in software development, IT services, business process outsourcing, and e-commerce.

Some of the prominent IT companies in India that are listed on the stock market include Tata Consultancy Services (TCS), Infosys, Wipro, HCL Technologies, and Tech Mahindra. These companies have a significant impact on the performance of the Indian stock market, with their performance being closely watched by investors and analysts.

Investing in the IT sector in India can provide investors with access to a diverse range of companies that run in various sub-sectors of the IT industry. India has a highly skilled workforce in the IT sector, and many Indian IT companies are globally recognized for their technical ability, innovation, and cost-effectiveness.

The IT sector in India has proven resilience and growth potential in recent years, and it is expected to continue to grow in the future, driven by factors such as increasing demand for technology services, the emergence of modern technologies, and the growth of the digital economy. However, like any investment, investing in the IT sector in India comes with risks,

such as changes in government policies, fluctuations in currency exchange rates, and global economic uncertainties. It is important for investors to conduct thorough research and analysis before making any investment decisions.

The IT (Information Technology) sector is a dynamic and rapidly evolving industry that includes companies involved in the development, design, and distribution of computer hardware, software, and related services. It is a critical industry that underpins the modern economy, enabling communication, data management, and business processes across various sectors.

Investing in the IT sector can provide investors with the opportunity to take part in the growth potential of technology companies. The IT industry has produced some of the most successful and innovative companies in the world, including Microsoft, Apple, Google, and Amazon.

IT companies run in a highly competitive environment, and investors must evaluate several factors when considering investing in IT stocks. These factors include financial performance, growth prospects, product development, and market trends. It is also important to understand the risks associated with investing in the IT sector, such as rapid technological change, shifting market conditions, and intense competition.

Investors can gain exposure to the IT sector through various investment vehicles such as individual stocks, exchange-traded funds (ETFs), or mutual funds that focus on IT companies. With its high growth potential, the IT sector can be an attractive choice for investors seeking long-term growth opportunities. However, investors should conduct thorough research and analysis before investing in any IT company to make informed investment decisions.

1.2 INVESTMENT PROSPECTS IN INFORMATION TECHNOLOGY AND ENABLED SERVICES INDUSTRY

Growth potential: The IT sector is known for its rapid growth potential due to the continuous advancement of technology and the increasing demand for technology-related products and services.

Innovation: The IT sector is characterized by innovation, and companies in this sector are known for developing modern technologies and products that can revolutionize industries and improve efficiency.

Resilience: The IT sector has proven to be resilient in times of economic uncertainty, as technology is essential to most businesses and industries, making the IT sector less susceptible to economic downturns.

Diversification: Investing in the IT sector can supply diversification for investors who want to spread their investments across different industries and sectors.

High potential returns: IT companies can offer high potential returns, particularly for those that are in their first stages and have a disruptive business model.

Causality is the relationship between an event (the cause) and a second event (the effect), where the second event is a consequence of the first. In the case of the Joseph Piotroski-F score framework, the causality can be examined between a company's financial health (as measured by its Piotroski-F score) and its stock price performance.

When examining causality, it's important to note that the F-Score is not a causal factor in and of itself. Rather, it is a tool used to evaluate the financial health of a company based on certain accounting-based signals. While a high F-Score may suggest that a company is financially healthy, it is not necessarily the cause of that financial health. Other factors, such as macroeconomic conditions, industry trends, and company-specific events, can also affect a company's financial performance.

Piotroski F-score is a widely used tool for fundamental analysis of companies, and it can be particularly useful when evaluating companies in the IT sector. This method evaluates a company's financial strength based on nine different criteria, and each criterion is assigned a score of 0 or 1. The scores are then added up to create a total F-score for the company, with a higher score showing stronger financials.

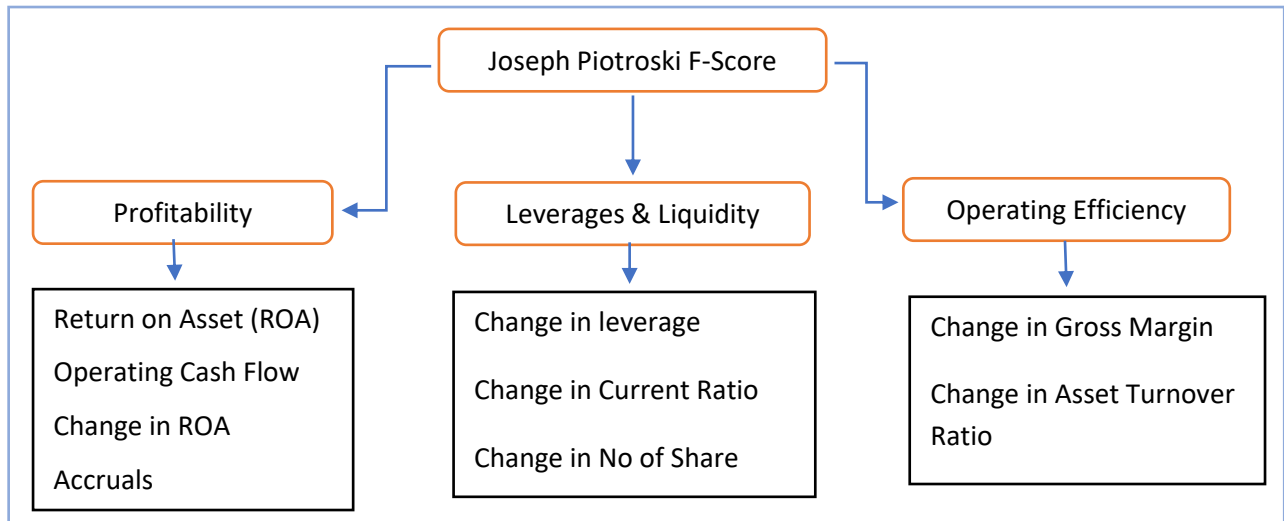
When applying the Piotroski F-score to the IT sector, it is important to consider the unique characteristics of the industry. The IT sector is characterized by rapid innovation, high competition, and changing technological trends. Therefore, it is important to evaluate companies based on their ability to stay ahead of the curve and keep sustainable earnings growth.

By using the Piotroski F-score, investors can find companies with strong financials that may be better positioned to weather the challenges of the IT industry. Conversely, companies with weak financials may be at a higher risk of struggling to compete and generate sustainable

earnings. It is important to note that the Piotroski F-score is just one tool in a comprehensive fundamental analysis, and investors should consider other factors such as industry trends, company management, and valuation metrics before making investment decisions.

Piotroski F- Score is a number between 0 to 9 which is used to assess strength of financial position. Calculated based on 9 criteria divided into 3 group.

Diagram No. 1.1: Table showing core elements of Piotroski F-Score framework



Sources: Author's Own Diagram

The Piotroski F-score model evaluates companies based on nine financial criteria that are associated with financial strength and improving operating performance. These criteria include profitability, leverage, liquidity, efficiency, and operating efficiency. Each criterion receives a score of either 0 or 1, and the total score ranges from 0 to 9, with a higher score showing stronger financial performance.

In the context of the IT industry, the causal examination of the Piotroski F-score framework on the stock price performance of selected IT sector stocks would involve analysing the relationship between a company's Piotroski F-score and its stock price performance. This would involve examining whether companies with higher Piotroski F-scores tend to outperform companies with lower scores.

This analysis could be conducted using various statistical methods, such as regression analysis, to find any significant relationships between a company's Piotroski F-score and its stock price performance. The results of this analysis could provide investors with insights

into the effectiveness of the Piotroski F-score model in finding high-quality IT companies with strong financial performance that are likely to generate positive stock price performance.

1.3. STATEMENT OF THE PROBLEM

Major problem in the IT sector of the stock market is the potential for rapid changes in technology and innovation to disrupt the industry. As modern technologies and trends appear, IT companies may be forced to quickly adapt to remain competitive. This can lead to uncertainty and volatility in the stock prices of IT companies, as investors may struggle to predict which companies will succeed and which will falter in the face of disruptive technological change.

The Piotroski F-score relies heavily on financial data, which may not always supply a complete picture of an organization's performance. Other factors, such as strategic initiatives and market trends, may also be important to consider. The Piotroski F-score gives more weight to short-term financial metrics, such as changes in profitability and debt levels, which may not be indicative of a company's long-term prospects.

1.4. OBJECTIVES OF THE RESEARCH

- To analyse the stock performance of selected IT sector stocks.
- To examine the financial soundness of selected IT sector organisation using Joseph Piotroski-F Score framework.
- To study the causality between Joseph Piotroski-F Score framework and stock performance in selected IT stocks.

CHAPTER – 2

INDUSTRY PROFILE &

COMPANY PROFILE

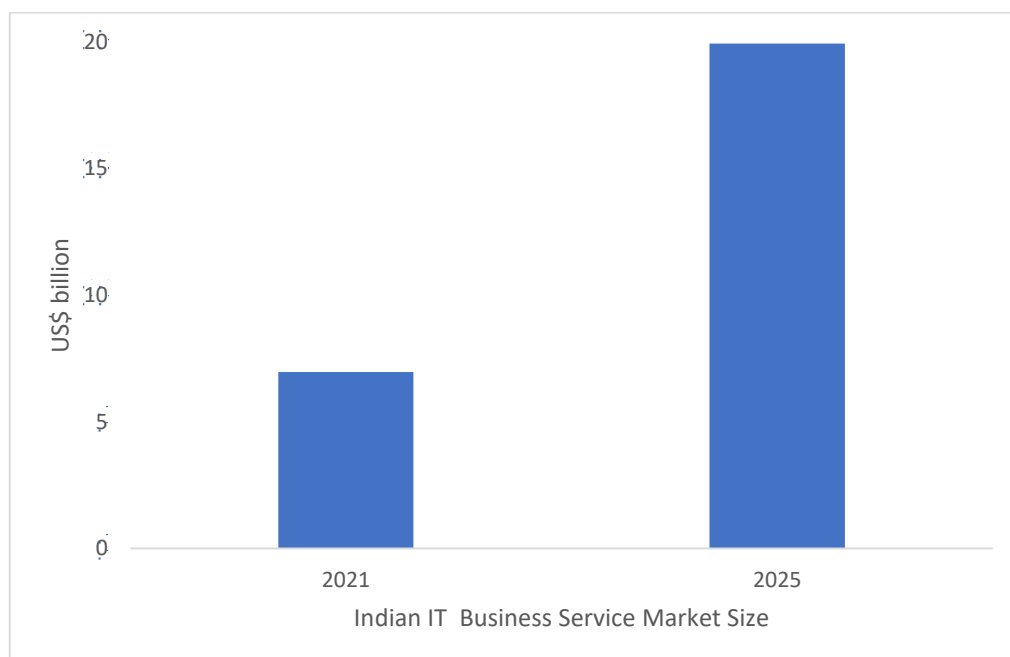
2.1 INDUSTRY PROFILE

The Indian IT industry has been experiencing significant growth in recent years, with revenues reaching USD 227 billion in FY22, a 15.5% YoY growth. This growth is expected to continue, with IT spending in India projected to increase to USD 101.8 billion in 2022. The software product industry in India is also expected to reach USD 100 billion by 2025, as Indian companies focus on investing internationally to expand their global footprint.

The data annotation market in India has also been growing, with the market expected to reach USD 7 billion by 2030 due to accelerated domestic demand for AI. The export of IT services has been the major contributor to the IT industry, accounting for more than 51% of total IT export, followed by BPM and engineering and R&D. The ER&D market is also expected to grow to USD 42 billion by 2022.

This growth in the IT industry has resulted in significant employment opportunities, with the industry adding 4.45 lakh new employees in FY22, bringing the total employment in the sector to 50 lakh employees. The growth of the IT industry in India has positioned the country as a major player in the global technology industry, with companies focusing on innovation and expansion to meet the growing demand for technology products and services.

Diagram No. 2.1: Graph Showing Market Size of IT sector



Source: <https://www.ibef.org/industry/information-technology-india>

2.2 COMPANY PROFILE

UNICAP FINANCIAL SERVICES PVT. LTD.

2.2.1 About the Company

An innovative fintech start-up, Unicap Financial Services offers innovative access to market data and a top-notch news feed that covers the Indian Financial Markets. It was founded by a group of finance professionals with ten years of combined ability.

2.2.2 Vision

We strive to offer the Best Financial App Service in India.

2.2.3 Mission & Goals

Indian investors must profit the most from their investments by buying the best chances that the Indian equity market has to offer to inform investors about the opportunities that India's developing growth story presents. We are dedicated to updating our investors on new levels in this.

To inform investors about the prospects that India's emerging growth story gives, Indian investors must make the most money from their investments by buying the finest chances that the Indian equity market has to offer. We make it a priority to inform our investors about new developments in this.

2.2.4 Experience

For the past three years, we have offered newcomers 100% Profitable Results, Excellent Research, and Complete Transparency on Brokerages. The entire item is FREE.

2.2.5 What they Offer

1. TURBO PROFITS

2. SMART-I

The success of our products, Turbo Profits and Smart-I (in partnership with "Kotak Securities"), is being used for the benefit of all our subscribers through information, curated news, and basket research. These services aid in educating and directing investors about the opportunities that India's emerging growth story presents and in helping them find profitable market stories using our app, social media, and online brokerage platforms. For three years ago, we have offered high-quality research and 100% profitable results.

2.2.6 Services

Subscription Information Service for the Turbo Profits Club

Accurate equity news and market data are accessible through the Turbo Profits Club app and website, which are expertly curated. The platform offers brokerage reports, breaking news, company news, financial news, and reports on the financial markets, among other things. An app for all the most recent financial information is called Turbo Profits Club.

2.2.7 Accurate Data to Make Well-Informed Decisions

For quick access to financial news and curated news, we are offering a mobile news app and website; content is given to you at the press of a button.

By using collective knowledge in the financial sector, Turbo Profits is using its success for all its subscribers. We offer information and access that can be used to find profitable market stories through our smartphone application and online platforms when access is given to market data and a top-notch feed of information that covers the Indian Financial Markets.

2.1.8 Subscription Information Service for the Turbo Profits Club

You can stay one step ahead of the markets with the aid of Turbo profits. You may get a bird's eye view of all news headlines on the mobile app, and it also offers selected material and breaking news.

Get 10 years of luck by downloading for free from the Google Play Store. By visiting www.turboprofits.club, Apple users can register and use the same capabilities using their Safari browser. (Registration is free).

2.2.9 Self-Managed Smart Market Asset for Retail Traders (Investment)

- Margin Investment Facilities management (According to the Terms and Conditions of Stockbrokers).
- Lowest rate of funding interest.
- There is no intraday brokerage.
- holdings with minimal fees, Call loan rate, House visits.
- Utilize exclusive information on the website or app for Turbo Profits Club.

CHAPTER – 3

REVIEW OF

LITERATURE

3.1 LITERATURE REVIEW

Das (2022) have proposed Financial Analysis of select Information Technology Companies in India. This article illustrates an empirical investigation of the financial accounts of a leading information technology company in India from several perspectives using statistical techniques, graphs, and tables. The research claims that Wipro Ltd. has kept its superior financial performance while dominating the information technology industry for the last six years.

Moilanen (2022) conducted a study on Combining value investing with gross profitability: Empirical evidence from the Finnish stock market. The goal of the paper is to assess the performance of standalone value and quality portfolios as well as combination portfolios with a wide range of risk-adjusted performance indicators to obtain a comprehensive picture of the overall performance of portfolios. A strategy that combines EV/EBIT and gross profitability resulted in the best-performing portfolio. Overall, the findings imply that accounting for both value and quality may be helpful for equity investors.

Priyadharshini *et al.* (2021) have examined an Analysis on Stock Prices of IT companies in the year 2020. The study examined the performance of the stocks of these five businesses as well as the variables affecting the swings. It appears that the COVID-19 pandemic epidemic is the main contributing factor. As a result, it was discovered that the companies' stock prices fell. When analyzing the analysis' findings, it was also discovered that a significant decline in stock prices took place between March and May 2020.

Dang & Singhal (2021) conducted a case study on Fundamental Analysis: A Study of IT Sector in India the approach which has been adopted is Top Down (Economic, Industry and Company Analysis) approach. In this paper, we assess the Indian IT industry, compute the intrinsic worth of significant IT businesses, and evaluate the results against market value. As a result of the analysis, we discovered that all IT companies had relatively low debt-to-equity ratios. This means that there is less fixed payment requirement, which increases profitability and lowers risk for shareholders.

Rahman, Li Sa & Masud (2021) conducted a study on Predicting Firms' Financial Distress: An Empirical Analysis Using the F-Score Model. The F-Score and the likelihood of enterprises experiencing financial difficulties have a significant association, according to this study. This study also found that businesses at risk of default typically have negative cash

flow from operations (CFO) and show a higher fall in return on assets (ROA) in the year before. By bolstering a model that has yet to be employed in the field of financial crisis forecasts, this work adds to the body of existing literature.

Rangapriya & Meenakumari (2021) conducted a study on Using Piotroski F-Score for Assessing Financial Health: Evidence from Leading Indian Private Banks. Each of these ratios has been examined in this study to learn valuable information about the banks (at the company level). Analysis of Variance (ANOVA) of various ratios decides the degree of the link between banks (at the industry level). This can aid in controlling portfolio exposure to the economic climate. This study aims to establish Piotroski F-score as a crucial value indicator for assessing Indian banking equities. F-score can be used for preliminary screening, and regular monitoring can supply optimized returns at risk-adjusted levels.

Agrawal, Sehgal & Agrawal (2020) conducted a study on Disruptive Innovations, Fundamental Strength and Stock Winners: Implications for Stock Index Revisions. The data show that the disruptor's portfolio—the Next 50 equities—outperforms the incumbent's portfolio—the Nifty 50 members—with a return of 1.61 percent compared to 0.47 percent. For the Next 50 and Nifty Midcap 100, the disruptor's portfolio outperformed the incumbent's portfolio (return of 2.59% vs. 0.44%), corroborating the earlier observation. The study has significant implications for governments, investors, companies, and academia. The study is a ground-breaking examination of index revisions from a futuristic viewpoint, considering both the impact of disruptive innovation and the fundamental financial causes. For a growing market like India, the research increases the body of knowledge on financial innovation and firm valuation.

Kordsachia (2020) conducted a study on A risk management perspective on CSR and the marginal cost of debt: empirical evidence from Europe. This study also looks at the relationship between CSR assurance and credit costs and offers proof that lenders encourage non-financial insurance by lowering the required rate of return. Finally, by simulating the relationship between various board features and credit costs, we make a significant contribution to the literature on corporate governance. Findings should be seen in the context of many restrictions. While we employ a variety of different, fine-grained approaches to

operationalizing CSR, this study primarily relies on CSR ratings provided by Thomson Reuter.

Balasubramanian *et al.* (2019) conducted a study on Modelling corporate financial distress using financial and non-financial variables The case of Indian listed companies. The findings suggest that models with financial variables had a prediction accuracy of 85.19 and 86.11 percent, while models with a combination of financial and non-financial variables predict with a comparably superior accuracy of 89.81 and 91.67 percent. The most important financial and non-financial indicators of the financial crisis include net asset value, long-term debt-to-equity ratio, return on investment, retention ratio, age, promoters' pledged holdings, and institutional holdings.

Murthy (2019) conducted a study on Liquidity, Leverage, Profitability and Operating Efficiency of Energy Sector through 'F' Score – A Special focus on Andhra Pradesh Southern power Distribution Company Limited. Each business must thoroughly assess its financial condition, liquidity, profitability, and operational efficiency. It's important to assess the company's financial soundness considering its potential. The study has been done in this way to supply insightful information on the probable future of APSPDCL, Tirupati. To boost liquidity performance, the corporation should aim to borrow money from financial institutions less often. According to the analysis of APSPDCL's F-Score, the business's financial performance is below average.

Supranoto & Juliarto (2019) proposed a study on Analysis on fundamental Berdasarkan Metode PIOTROSKI F-SCORE Gun Penilaian Investasi. This study proved a substantial correlation between the value of the company's F-Score and the stock return of companies listed on the Indonesian Stock Exchange's LQ45 Index. This study proves that the annual report's financial performance of the company can serve as a foundation for investment decisions.

Jarno & Janne (2018) proposed a study on “does the F-Score improve the performance of different value investment strategies in Europe”. The outcomes of the research offer strong proof that the performance of all examined investment strategies is greatly improved by the F-Score screening procedure. The conclusion that high F-score portfolios perform better than average is supported by a variety of investing strategies, performance metrics, and risk-adjustment techniques.

Bhargava & Pramod (2017) have conducted a case study on financial analysis of information and technology industry of India (a case study of Wipro Ltd and Infosys Ltd). The financial analysis supplies a document to make it easier for investors and management to evaluate a company's financial situation from the owner's perspective. This article will examine the administration of proprietor's funds in Indian IT companies, particularly Wipro Ltd. & Infosys Ltd, to pinpoint financial management efficiency.

Hussain, Dash & Aparna (2017) analyse a case study on Perceptual Analysis of Induction Processes in Major Indian IT Firms. For inductees to be more satisfied with the induction process, IT businesses should concentrate on upgrading the infrastructure and the calibre of the speakers. Further, there are noticeable differences in how satisfied new hires are with the induction procedures at various IT firms, with Wipro new hires reporting the highest overall level of satisfaction with the induction procedure, followed by Infosys, IBM, and TCS, and Oracle new hires reporting the lowest overall satisfaction with the induction procedure.

Tripathy & Pani (2017) have proposed a study on Effect of F Score on Stock Performance: Evidence from Indian Equity Market. According to the analysis, high book-to-market companies with high F Scores have the potential to skew the distribution of recent and upcoming stock performance in India's market in favour of investors. When this knowledge is applied to future stock valuation measurements rather than future stock return assessments of stock performance, its statistical significance is greater. Value investors running in the Indian market, such as individual investors, mutual fund managers, and value investing strategists, will surely profit from the study's findings.

Kourtis & Curtis (2017) conducted a study on Fundamental Analysis, Stock Returns and High B/M Companies. The EMH's semi-strong form, which holds that all publicly available relevant information is already reflected in stock prices and prevents investors from outperforming the market in terms of returns, is contested by the F score model. The concept challenges the idea that there is no way to "beat" the markets because all investors have access to the same information and financial statement data is already widely known. If appropriately used, the F-score method is a lucrative investment strategy for practitioners. It also helps the economy distribute resources more effectively by focusing resources on businesses that prove stronger foundations.

Oyebode (2016) conducted study application of the altman Z-EM-Score and Piotroski F-score to the Johannesburg securities Exchange as short selling instrument. Using the Piotroski F-Score as a short-selling strategy, the study fund had an average market-adjusted annual return of 6.56 percent between 2005 and 2014. The Altman Z-EM-Score underperformed the market on average each year during the study period, although the difference was not statistically significant.

Bansal (2015) have conducted a study on Comparative Analysis of the Financial Performances of Selected Indian IT Companies During 2010-2014. Tata Consultancy Services (TCS), Wipro, Infosys, and Tech Mahindra's financial and income statements were collected from databases including CMIE Prowess, Money Control, and Yahoo Finance. When the data from these financial statements were condensed and used to calculate financial ratios over five years, it was found that Infosys was the firm investors were most interested in.

Krauss, Kruger & Beerstecher (2015) proposed a study on The Piotroski F-Score: A Fundamental Value Strategy Revisited from an Investor's Perspective. our findings re-confirm the high returns of this fundamental value strategy. Specifically, the monthly (weekly) long-only strategy generates raw returns of 30.93 (65.41) percent p.a. These returns outperform relevant benchmark indices and can only partially be explained by common systematic risk factors. However, consideration of liquidity constraints and an estimate of trading costs in this low liquidity stock universe make both strategies virtually unprofitable. Nevertheless, there may be potential for further research aiming at implementing such a strategy on more liquid investment universes.

Raman & Chadee (2011) have examined a comparative assessment of the information services sector in India and China. The results suggest the IT services businesses in the two countries are separate, have developed in diverse ways, and are complementary to one another. In China, the hardware market is well-developed, and the domestic market is the focus of the country's IT services sector. The main markets for India's IT services industry, which is mostly export-oriented, are the US and Western European markets.

Dhanabhakym & Pongiannan (2011) have proposed a case study on Comparative Study on Financial Performance of its Company. period and then drops. When running income growth rates for the two firms are compared, Infosys Technologies' operating income has

increased more than Wipro's. Therefore, Wipro Technologies should prioritize operational income while reducing operating costs. Infosys outperformed Wipro in terms of the rise in total asset growth percentage. Therefore, Wipro should invest in a variety of assets to raise the level of total assets. Because of its superior marketing, Infosys continues to command greater prices. Finally, the aggregate results from the data prove that Infosys is more cost-focused than Wipro.

Nevo & Wade (2010) have examined The Formation and Value of IT-Enabled Resources: Antecedents and Consequences of Synergistic Relationships. Despite efforts to examine them using various approaches and theoretical frameworks, IT-related organizational advantages have proven challenging to prove. To create a coherent conceptual model connecting IT assets with company-level benefits, this article integrates systems theory and the resource-based view of the organization. The model leads to several hypotheses and examines their consequences for IS research and practice.

Bharati (2005) conducted a study on India's IT services industry: a comparative analysis. India's IT services sector has become a significant player in this international market. India's IT services business saw revenue growth of 22% between 2000 and 2003, while worldwide IT services revenue climbed by less than 2% over the same period. This growth rate is equivalent to the expansion of Hong Kong's electronics industry in the 1970s.

Mohanram (2005) proposed a study on Separating Winners from Losers among Low Book-to-Market Stocks using Financial Statement Analysis, Returns are positive in most years, and enterprises with lower risks get better returns, which contradicts a risk-based explanation for the findings. Finally, a contextual approach to fundamental research is the ideal strategy, with traditional analysis good for high BM equities and growth-oriented fundamental analysis proper for low BM stocks. According to the findings, the fundamental growth strategy can effectively distinguish between potential winners and losers in the future. Size-adjusted returns for high GSCORE versus low GSCORE enterprises are much higher.

Piotroski (2005) conducted a study on Discussion of “Separating Winners from Losers among Low Book-to-Market Stocks using Financial Statement Analysis”. The strategy's implementation is hampered by frictions and expenses involved with capitalizing on long-term price drops as well as (1) the relative costs of buying data that has been adjusted for the industry. In addition, the predicted benefits gaining to conventional financial statement

analysis-based investment strategies must be weighed against the relative advantages of contextual analysis. The results of the article by firm size and analyst coverage imply that the observed long-run performance is not being driven by a systematic market under reaction to the news.

3.2 RESEARCH GAP

A research gap exists about the causal relationship between the Joseph Piotroski F-Score framework and the stock price performance of selected IT sector stocks. While the F-Score has been extensively studied for assessing financial health and predicting future earnings, limited research has analysed its direct impact on IT sector stock prices. Understanding this relationship is crucial for investors and analysts to decide the F-Score's effectiveness as an IT sector investment strategy. Additionally, investigating the relationship can reveal industry-specific limitations and challenges due to rapid technological advancements and market dynamics. Empirical research focusing on the causal relationship between the F-Score and IT sector stock prices can bridge the gap between academic research and practical investment strategies in this industry.

CHAPTER – 4
RESEARCH
METHODOLOGY

4.1 RESEARCH METHODOLOGY

The research design for this study will be a causal study, where the researcher sees and measures the relationship between Piotroski-F score and stock price performance of IT sector stocks. The study will focus on a specific period, and the data will be collected for that period.

Data are gathered from places including the internet, the websites of chosen companies, annual reports, news money control, and company balance sheets. For the selected five organizations, data analysis is carried out with the use of fundamental tools.

The companies are selected with respect to their market capitalization, revenue, sales and performance. The period of study is 5 years from April 2018 to March 2022.

List of selected organisations and Variables

Table No. 4.1: Describes Market Capitalization of selected stocks as on 13.04.2023

Sl No.	ISIN	Name of the Script	Market Capitalization as on 13/04/23 (₹ in Cr.)
1	INE669C01036	Tech Mahindra Limited	10,577,293.97
2	INE075A01022	Wipro Limited	20,154,606.22
3	INE467B01029	TCS Limited	116,796,919.83
4	INE860A01027	HCL Technologies Limited	29,104,058.15
5	INE009A01021	Infosys Limited	57,391,179.65

Sources: www.bseindia.com , www.nseindia.com , retrieved on 13/04/23 at 3:45pm

Variables:

Independent Variable: - Stock Return

Dependent Variable: - Profitability, Leverage & Liquidity, Operating Efficiency equivalent

4.2 Model Framework: Joseph Piotroski F-Score Model, Linear Regression

Table No. 4.2: Describes Piotroski F Score

PIOTROSKI F- SCORE
I. Profitability
1. Return on Assets > 0
2. Operating cash flow > 0
3. Δ ROA > 0
4. Accruals [Cr] > 0
II. Leverages & Liquidity Ratios:
1. Δ Leverage < 0
2. Δ Current Ratio > 0
3. Δ No of shares > 0
III. Operating Efficiency Ratios:
1. Δ Gross Margin > 0
2. Δ ATR > 0

4.3 Multi-Regression Model to Measure the Exposure

$$\widehat{R}_i = \alpha_i + \beta_1 P_i + \beta_2 LL_i + \beta_3 OE_i + \varepsilon_i$$

$\beta_1, \beta_2, \beta_3$ = Sensitivity Co-efficiency Related to Profitability, Leverage & Liquidity, Operating Efficiency Respectively

ε_i = Residual to the fitted model

α_i = Exposure free term

P_i = Profitability

LL_i = Leverage & Liquidity

OE_i = Operating Efficiency

4.4 HYPOTHESIS TESTING

HYPOTHESIS 1

$H_{0(1)}$ = There is no significant relationship between the Stock return and the Profitability ($\beta_1 = 0$)

$H_{1(1)}$ = There is significant relationship between the Stock return and the Profitability ($\beta_1 \neq 0$)

HYPOTHESIS 2

$H_{0(1)}$ = There is no significant relationship between the Stock return and the Leverage & Liquidity ($\beta_1 = 0$)

$H_{1(1)}$ = There is significant relationship between the Stock return and the Leverage & Liquidity ($\beta_1 \neq 0$)

HYPOTHESIS 3

$H_{0(1)}$ = There is no significant relationship between the Stock return and the Operating Efficiency ($\beta_1 = 0$)

$H_{1(1)}$ = There is significant relationship between the Stock return and the Operating Efficiency ($\beta_1 \neq 0$)

4.5 LIST OF RATIOS USED TO DETERMINE JOSEPH PIOTROSKI F-SCORE

4.5.1 NET PROFIT PER SHARE:

Earnings per share also referred to as EPS, is a crucial financial metric that shows a company's profitability. It is computed by dividing the company's earnings by the variety of outstanding shares. It is a method that market participants often use to evaluate a company's profitability before buying its shares.

$$\text{NET PROFIT PER SHARE} = \frac{\text{NET INCOME}}{\text{AVERAGE OUTSTANDING SHARES}}$$

4.5.2 RETURN ON ASSETS [ROA]:

The return on assets (ROA) metric shows how lucrative a company is about its total assets. An example of how economic management uses its assets to generate income is provided by ROA.

$$\text{RETURN ON ASSETS} = \frac{\text{EBIT}}{\text{AVERAGE TOTAL ASSETS}}$$

4.5.3 CURRENT RATIO OR WORKING CAPITAL RATIO

This ratio assesses whether a company's assets, financing, and liabilities are sustainably balanced by contrasting its current assets with its current liabilities. Since it displays a company's ability to settle short-term debts, the current ratio is often regarded as a broad indicator of financial health.

$$\text{CURRENT RATIO} = \frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}}$$

4.5.4 ASSET TURNOVER RATIO(ATR)

The asset turnover ratio has a ratio of productivity that assesses and aids in the analysis of a company's ability to produce sales from its inventory of assets by contrasting net sales with typical total assets. Simply expressed, this ratio illustrates how well a business can create sales using its assets.

$$\text{ASSET TURNOVER RATIO} = \frac{\text{NET SALES}}{\text{AVERAGE TOTAL ASSETS}}$$

4.5.5 GROSS PROFIT MARGIN RATIO:

A financial ratio known as the cost of goods sold (COGS) or the gross margin ratio compares the gross revenues from sales of a good or service with the cost of producing or delivering that good.

$$\text{GROSS PROFIT MARGIN RATIO} = \frac{[\text{TOTAL REVENUE} - \text{TOTAL EXPENSE}]}{\text{TOTAL REVENUE}}$$

4.5.6 LEVERAGES

Decide a company's level of financial stability and use this statistic to contrast it with other businesses in the same sector. A corporation may be more likely to experience loan default if its debt-to-asset ratio is high.

$$\text{LEVERAGES} = \frac{\text{TOTAL DEBT}}{\text{TOTAL ASSETS}}$$

4.5.7 ACCRUALS:

The Accrual Ratio can be used to pinpoint businesses whereby Non-Cash / Accrual-Derived Earnings account for a sizable share of Total Earnings. It is calculated by Net Income split by Total Assets after deducting Free Cash Flow. Earnings are normalized and diluted, and the value is calculated on a Time basis.

$$\text{ACCRUALS} = \frac{\text{NET INCOME} - \text{OPERATING CASH FLOW}}{\text{TOTAL ASSETS}}$$

4.6 LIMITATION OF THE STUDY

- Financial statements may be subject to manipulation or errors, which could affect the accuracy of the score and affect the study's results.
- Stock prices are highly volatile and subject to sudden fluctuations, which could affect the study's findings.
- The Piotroski F score does not consider factors such as industry trends, macroeconomic conditions, and competitive landscape, which could affect a company's growth prospects.
- A small sample size may not be representative of the entire IT sector and may not supply conclusive results

CHAPTER – 5
DATA ANALYSIS &
INTERPRETATION

5.1 DATA ANALYSIS

Name of the Company: Tech Mahindra Limited

Table No. 5.1: Description of Piotroski F-score for 5 Years

Joseph Piotroski Ratios	Reference Years (2017-18 to 2020-21)				Average value of Reference Years	Values of Current FY 2021-22	J P F Score
	2017-18	2018-19	2019-20	2020-21			
I. Profitability Ratios:							
1. Return on Assets (%)	12.48	12.84	10.79	11.15	11.82	12.4	1
2. Operating cash flow	3,554	4,432	4,358	8,093.8	5,109	5,285	1
3. Δ ROA (%)	1.69	0.36	-2.05	0.36	0.09	1.25	1
4. Accruals [Cr.]	3,785.88	4,353.86	3,901.88	4,350.79	4,098.10	5,626.88	1
II. Leverage & Liquidity Ratios:							
1. Leverage (%)	32.3	34.2	37.2	33.2	34.225	36.2	0
2. Δ Leverage (%)	1.90	1.90	3	-4.00	0.7	3.0	
3. Current Ratio	2.29	2.09	2.12	2.24	2.24	1.96	0
4. Δ Current Ratio	-0.26	-0.2	0.03	0.34	-0.02	-0.5	
5. No of shares	979,318,628	983,362,470	965,852,364	968,195,035	974,182,124	971,833,479	1
6. Δ No of shares (%)	0.59	0.41	-1.78	0.24	-0.13	0.38	
III. Operating Efficiency Ratios:							
1. Gross Margin	19.9	19.77	18.17	20.03	19.4675	20.45	1
2. Δ Gross Margin	-2.88	-0.13	-1.6	1.86	-0.6875	0.42	
3. Asset Turnover Ratio	101.1	103.87	98.69	0.84	76.125	0.93	1
4. Δ ATR	-10.69	2.77	-5.18	-97.85	-27.7375	0.09	

Source: Author's Own Calculations

The table no. 5.1 provides financial information for Tech Mahindra Ltd for the fiscal years 2017-18 to 2020-21, along with the 4-year average and the most recent year 2021-2022.

Profitability:

Return on assets (ROA) has been consistently above 10% over the past four years, with an average of 11.815%. In the most recent year, ROA increased to 12.4%, showing that the company is effectively using its assets to generate profits. Operating cash flow has increased steadily over the past four years, with a significant jump in 2020-21. In the most recent year, operating cash flow remained strong at 5,285.3 crore rupees. The change in ROA has been relatively stable over the past four years, with a small decrease in 2019-20 followed by a slight increase in 2020-21. Accruals have been consistent over the past four years, with an average of 4,098.10 crore rupees. In the most recent year, accruals increased to 5,626.88 crore rupees.

Leverage, Liquidity, and Source of Funds:

Leverage, as measured by the debt-to-equity ratio, has remained relatively stable over the past four years, with an average of 0.34225. In the most recent year, leverage decreased slightly to 0.362, showing a lower level of debt compared to equity. The current ratio has fluctuated over the past four years but remained strong, with an average of 2.24. In the most recent year, the current ratio decreased to 1.96, showing a slightly weaker liquidity position. The number of shares outstanding has remained relatively stable over the past four years, with a small decrease in 2018-19 followed by a slight increase in 2020-21.

Operating Efficiency:

Gross margin has fluctuated over the past four years, with an average of 19.4675%. In the most recent year, gross margin increased to 20.45%. Asset turnover ratio has fluctuated significantly over the past four years, with an average of 76.125%. In 2020-21, the asset turnover ratio decreased significantly to 0.84%, showing a lower level of efficiency in using assets to generate revenue. However, in the most recent year, the asset turnover ratio improved to 0.93%.

Overall, the company's financial performance has been relatively stable over the past four years, with strong profitability and liquidity positions. The F Score of 7 suggests that the company's financial health is relatively stable.

Name of the Company: Wipro Limited

Table No. 5.2: Description of Piotroski F-score for 5 Years

Joseph Piotroski Ratios	Reference Years (2017-18 to 2020-21)				Average value of Reference Years	Values of Current FY	J P F Score
	2017-18	2018-19	2019-20	2020-21		2021-22	
I. Profitability Ratios:							
1. Return on Assets (%)	10.57	10.85	11.96	13.04	11.605	11.37	1
2. OCF	8423	11,631	10,064	14,755	11218.25	11,079	1
3. Δ ROA (%)	-0.18	0.28	1.11	1.08	0.5725	-1.67	0
4. Accruals (Cr.)	8001.88	9,021.85	9,767.87	10,854.82	9411.605	12,236.89	1
II. Leverage & Liquidity Ratios:							
1. Leverage (%)	36.30	31.6	31.7	33.4	33.25	39.1	0
2. Δ Leverage (%)	-2.1	-4.7	0.1	1.7	-1.25	5.7	
3. Current Ratio	2.37	2.67	2.4	2.27	2.4275	2.01	0
4. Δ Current Ratio (%)	0.85	12.66	-10.11	-5.42	-0.50	-11.45	
5. No of shares	4,523,784,491	6,033,935,388	5,713,357,390	5,479,138,555	5,437,553,956	5,482,070,115	1
6. Δ No of shares (%)	86.10	33.38	-5.31	-4.10	27.52	0.05	
III. Operating Efficiency Ratios:							
1. Gross Margin	23.74	24.11	24.64	27.7	25.0475	23.63	0
2. Δ Gross Margin	-1.4	0.37	0.53	3.06	0.64	-4.07	
3. Asset Turnover Ratio	71.98	71.17	75.21	0.68	54.76	0.73	1
4. Δ ATR	1.78	-0.81	4.04	-74.53	-17.38	0.05	

Source: Author's Own Calculations

The table no 5.2 supplies financial information for Wipro LTD over a five-year period from 2017-2018 to 2020-2021. The last column shows the F Score, which is a metric that measures the financial strength of a company.

Profitability:

Return on assets (ROA) has consistently increased from 10.57% in 2017-18 to 13.04% in 2020-21, with an average of 11.605%. This shows that the company has been generating more profits relative to its assets. Operating cash flow has fluctuated but overall increased from 8423 crores in 2017-18 to 14755 crores in 2020-21, with an average of 11218.25 crores. This suggests that the company's operations are generating a healthy amount of cash flow. The change in ROA has been positive for the most part, except for a decline in 2017-18. The average change in ROA is 0.5725%, showing a generally positive trend. Accruals have also increased steadily from 8001.88 crores in 2017-18 to 10854.82 crores in 2020-21, with an average of 9411.605 crores. This means that the company has been earning profits that are not yet reflected in its cash flows.

Leverage, liquidity, and source of funds:

The leverage ratio has been relatively stable, with an average of 0.3325. This shows that the company has been financing its operations primarily through equity rather than debt. The current ratio has fluctuated but remained above 2, with an average of 2.4275. This suggests that the company has sufficient current assets to cover its current liabilities. The number of shares outstanding has fluctuated but remained relatively stable, with a slight increase of 27.52% on average.

Operating efficiency:

Gross margin has fluctuated but remained above 23%, with an average of 25.0475%. This shows that the company has been generating a healthy amount of profit relative to its revenue. The asset turnover ratio has fluctuated significantly and declined sharply in 2020-21 to 0.68. This suggests that the company has been less efficient in generating revenue from its assets.

Overall, the F Score for Wipro LTD is 5, which suggests that the company is financially stable.

Name of the Company: TCS Limited

Table No. 5.3: Description of Piotroski F-score for 5 Years

Joseph Piotroski Ratios	Reference Years (2017-18 to 2020-21)				Average value of Reference Years	Values of Current FY 2021-22	J P F Score
	2017-18	2018-19	2019-20	2020-21			
I. Profitability Ratios:							
1. Return on Assets (%)	27.72	30.21	31.68	28.3	29.4775	31.49	1
2. OCF	25,067.00	28,593.00	32,369.00	38,802.00	31207.75	39,949.00	1
3. Δ ROA (%)	1.37	2.49	1.47	-3.38	0.4875	3.19	1
4. Accruals (%)	0.76	2.58	0.06	-4.77	-0.34	-1.06	0
II. Leverage & Liquidity Ratios:							
1. Leverage (%)	19.54	20.71	29.16	31.62	25.25	36.36	0
2. Δ Leverage (%)	3.39	1.17	8.45	2.46	3.87	4.74	
3. Current Ratio	4.85	4.18	3.3	2.92	3.8125	2.49	
4. Δ Current Ratio (%)	-24.22	-13.81	-21.05	-11.52	-17.65	-14.73	0
5. No of shares	1,914,287,591	3,752,384,706	3,752,384,706	3,699,051,373	3279527094	3,659,051,373	
6. Δ No of shares (%)	-2.85	96.02	0.00	-1.42	2.29	-1.08	0
III. Operating Efficiency Ratios:							
1. Gross Margin	27.73	28.51	27.5	27.78	27.88	27.36	
2. Δ Gross Margin	-1.55	0.78	-1.01	0.28	-0.375	-0.42	0
3. Asset Turnover Ratio	106.91	123.78	125.08	1.27	89.26	1.39	
4. Δ ATR	3.65	16.87	1.3	-123.81	-25.4975	0.12	1

Source: Author's Own Calculations

The table no 5.3 presents financial data for Tata Consultancy Services (TCS) for the fiscal years 2017-2018 to 2020-2021, along with the four-year average and the F-score for 2021-2022.

Profitability:

TCS has kept an elevated level of ROA over the past four years, with an average of 29.48%. In 2020-2021, the ROA was 28.3%, which is slightly lower than the four-year average. TCS has consistently generated strong Operating Cash Flow, with an average of INR 31,207.75 crore over the past four years. In 2020-2021, the Operating Cash Flow was INR 38,802 crore, which is higher than the four-year average. The Change in Return on Assets has been volatile over the past four years, with an average of 0.49%. In 2020-2021, the Change in ROA was negative at -3.38%. TCS has kept a low level of accruals over the past four years, with an average of -0.34%. In 2020-2021, the accruals were -4.77%, showing a decrease in earnings quality.

Leverage, Liquidity and Source of Funds:

TCS has kept a moderate level of leverage over the past four years, with an average of 25.25%. In 2020-2021, the leverage was 31.62%, showing an increase in debt usage. TCS has seen a declining trend in its Current Ratio over the past four years, with an average of 3.81. In 2020-2021, the Current Ratio was 2.92, showing a decline in liquidity. TCS has seen a decrease in the number of shares over the past four years, with an average of -0.23%. In 2020-2021, the number of shares decreased by -1.42%.

Operating Efficiency:

TCS has kept a stable Gross Margin over the past four years, with an average of 27.88%. In 2020-2021, the Gross Margin was 27.78%. TCS has seen a volatile Asset Turnover Ratio over the past four years, with an average of 89.26%. In 2020-2021, the Asset Turnover Ratio was 1.27%, showing a decrease in efficiency.

TCS has a high F-score of 4, showing good financial health based on the various financial ratios considered in the calculation. However, there are some areas of concern, such as the decline in liquidity and efficiency in the latest fiscal year, and the increase in leverage. Overall, TCS has kept strong profitability and operating cash flow over the past four years and has a strong financial position with a high F-score.

Name of the Company: HCL Technologies Limited

Table No. 5.4: Description of Piotroski F-score for 5 Years

Joseph Piotroski Ratios	Reference Years (2017-18 to 2020-21)				Average value of Reference Years	Values of Current FY	J P F Score
	2017-18	2018-19	2019-20	2020-21		2021-22	
I. Profitability Ratios:							
1. Return on Assets (%)	22.43	21.85	16.75	15.76	19.1975	20.35	1
2. OCF	8,328.00	8,971.00	13,359.00	19,618.00	12569	16,900.00	1
3. Δ ROA (%)	1.2	-0.58	-5.1	-0.99	-1.3675	4.59	1
4. Accruals (%)	8.49	3.35	2.47	-6.06	2.06	5.01	1
II. Leverage & Liquidity Ratios:							
1. Leverage (%)	24.23	29.20	37.98	30.29	30.43	31.46	0
2. Δ Leverage (%)	-3.39	4.97	8.77	-7.68	0.67	1.17	
3. Current Ratio	3.29	2.93	1.69	2.77	2.67	2.97	1
4. Δ Current Ratio (%)	7.52	-10.94	-42.32	63.91	45.3	7.22	
5. No of shares	1,392,246,384	1,356,278,868	2,713,665,096	2,713,665,096	2043963861	2,713,665,096	0
6. Δ No of shares (%)	-2.42	-2.58	100.08	0.00	23.76	0.00	
III. Operating Efficiency Ratios:							
1. Gross Margin	41.44	38.24	35	35.28	37.49	32.91	0
2. Δ Gross Margin	-1.68	-3.2	-3.24	0.28	-1.96	-2.37	
3. Asset Turnover Ratio	67.25	69.44	60.92	64.43	65.51	0.75	0
4. Δ ATR	7.58	2.19	-8.52	3.51	1.19	-63.68	

Source: Author's Own Calculations

The table no 5.4 provides has financial data for a company over a span of several years, along with the average values for the reference years (2017-2018 to 2020-2021) and the values for the current fiscal year (2021-2022).

Profitability:

The company's average ROA for the reference years was 19.1975%, and the value for the current fiscal year is 20.35%. A higher ROA shows better profitability. The average OCF for the reference years was 12,569, and the value for the current fiscal year is 16,900. Higher OCF is generally considered positive for a company's financial health. The average change in ROA for the reference years was -1.3675%, but for the current fiscal year, it improved to 4.59%. A positive change shows an improvement in profitability. The company's average accruals for the reference years were 2.06%, and the value for the current fiscal year is 5.01%. Accruals are non-cash adjustments to net income. Higher accruals may show a decrease in cash flow quality.

Leverage & Liquidity Ratios:

The average change in leverage for the reference years was 0.67%. However, the current fiscal year shows an increase of 1.17% in leverage. Positive changes in leverage can be a cause for concern. The company's average current ratio for the reference years was 2.67, showing good short-term liquidity. The current fiscal year's value is 2.97, further strengthening liquidity. Change in Current Ratio (Δ Current Ratio): The average change in the current ratio for the reference years was 0.045396492%. However, in the current fiscal year, there was a substantial increase of 7.22%. A higher current ratio shows improved liquidity. The number of shares remained unchanged in the current fiscal year as well, showing a 0.237694021% change. No significant change occurred.

Operating Efficiency Ratios:

The average change in gross margin for the reference years was -1.96%. In the current fiscal year, it further declined by 2.37%. A negative change suggests a decrease in profitability. The average change in ATR for the reference years was 1.19%. Surprisingly, in the current fiscal year, the ATR decreased significantly by 63.68%. This suggests a considerable drop in efficiency.

Name of the Company: Infosys Limited

Table No. 5.5: Description of Piotroski F-score for 5 Years

Joseph Piotroski Ratios	Reference Years (2017-18 to 2020-21)				Average value of Reference Years	Values of Current FY 2021-22	J P F Score
	2017-18	2018-19	2019-20	2020-21			
I. Profitability Ratios:							
1. Return on Assets (%)	21.29	18.62	19.17	19.21	19.5725	21.36	1
2. OCF	12,475.00	13,989.00	15,572.00	19,902.00	15484.5	22,096.00	1
3. Δ ROA (%)	4	-2.67	0.55	0.04	0.48	2.15	1
4. Accruals (%)	4.85	0.90	-0.04	-1.97	0.94	-0.87	0
II. Leverage & Liquidity Ratios:							
1. Leverage (%)	18.73	225.82	29.02	29.16	75.68	35.75	0
2. Δ Leverage (%)	1.49	207.09	-196.80	0.14	2.98	6.60	
3. Current Ratio	3.78	3	2.88	2.74	3.1	2.1	0
4. Δ Current Ratio (%)	-6.67	-20.63	-4.00	-4.86	- 9.04	-23.36	
5. No of shares	2,184,114,257	4,356,279,444	4,258,992,566	4,260,660,846	3765011778	4,206,738,641	0
6. Δ No of shares (%)	-4.91	99.45	-2.23	0.04	0.23	-1.27	
III. Operating Efficiency Ratios:							
1. Gross Margin	28.84	25.45	24.42	26.69	26.35	24.91	0
2. Δ Gross Margin	-0.33	-3.39	-1.03	2.27	-0.62	-1.78	
3. Asset Turnover Ratio	81.63	92.62	97.53	91.45	90.8075	1.08	0
4. Δ ATR	7.42	10.99	4.91	-6.08	4.31	-90.37	

Source: Author's Own Calculations

The table 5.5 provides has financial data for a company over a span of several years, along with the average values for the reference years (2017-2018 to 2020-2021) and the values for the current fiscal year (2021-2022). The table also includes the calculated Joseph Piotroski F-Score for each category.

Profitability Ratios:

The company's average ROA for the reference years was 19.5725%, and the value for the current fiscal year is 21.36%. A higher ROA shows better profitability. The average OCF for the reference years was 15,484.5, and the value for the current fiscal year is 22,096. Higher OCF is generally considered positive for a company's financial health. The average change in ROA for the reference years was 0.48%, but for the current fiscal year, it improved to 2.15%. A positive change shows an improvement in profitability. The company's average accruals for the reference years were 0.94%, and the value for the current fiscal year is -0.87%. Accruals are non-cash adjustments to net income. Negative accruals suggest an improvement in cash flow quality.

Leverage & Liquidity Ratios:

The average change in leverage for the reference years was 2.98%. However, in the current fiscal year, there was an increase of 6.60% in leverage. Positive changes in leverage can be a cause for concern. The average change in the current ratio for the reference years was -90.40%. In the current fiscal year, there was a substantial decrease of 23.36%. A lower current ratio shows decreased liquidity. The number of shares remained relatively unchanged in the current fiscal year, with a slight decrease of 1.27%. No significant change occurred.

Operating Efficiency Ratios:

The average change in gross margin for the reference years was -0.62%. In the current fiscal year, it further declined by -1.78%. A negative change suggests a decrease in profitability. The average change in ATR for the reference years was 4.31%. In the current fiscal year, there was a substantial decrease of -90.37%. This suggests a significant drop in efficiency.

These ratios and their corresponding changes help evaluate the financial performance of the company. The Joseph Piotroski F-Score, given as 0 or 1 for each category, is a composite score used to assess a company's financial strength and profitability.

5.2 MODEL FITNESS TEST

Tech Mahindra Limited

Table No. 5.2.1: Describes the outcomes of model fitness Examination and Significance of Explanatory Variables.

Sl. No.	Parameters definition	Value	Remarks
1	R^2 (Coefficient of determination)	0.572	Moderate Explanatory Power
2	Model Fitness Statistics (Fisher's Test)	F = 0.446 (p=0.769)	Insignificant
3	α_i (Exposure free term)	0.139 (t = 0.576, p = 0.668)	Insignificant
4	β_1 (P-Profitability)	-0.389 (t = -0.681, p = 0.619)	Insignificant
5	β_2 (LL-Leverage & Liquidity)	2.105(t = -1.101, p = 0.469)	Insignificant
6	β_3 (OE-Operating Efficiency)	-0.018 (t = -0.227, p = 0.858)	Insignificant

$$\widehat{R}_i = \alpha_i + \beta_1 P_i + \beta_2 LL_i + \beta_3 OE_i + \varepsilon_i$$

$$\widehat{R}_i = 0.139 - 0.389P_i + 2.105LL_i - 0.018OE_i + \varepsilon_i$$

Source: Author's own calculations
Level of Significance ***0.01, **0.05, *0.1

Table No. 5.2.2: Table Describing the Stock Return, Profitability, Leverage & Liquidity & Operating Efficiency

TECH MAHINDRA LIMITED					
Year	Stock return	Profitability	Leverage & liquidity	Operating efficiency	\widehat{R}_t
2018	0.34	0.4	0.05	3.06	0.03357
2019	0.19	-0.78	-0.17	-4.31	0.16215
2020	-0.32	0.35	0.03	1.56	0.03792
2021	0.66	0.24	0.23	1.54	0.50207
2022	0.41	-0.29	0.23	-4.23	0.8121

The table no. 5.2.1 and 5.2.2 supplies regression analysis conducted on Tech Mahindra's stock return and several factors revealed that the selected variables, including profitability, leverage and liquidity, and operating efficiency, do not have a significant impact on stock returns. The R² value of 0.572 shows a moderate level of explanatory power, with approximately 57.2% of the variation in stock returns explained by the model. However, the overall model fitness is statistically insignificant, suggesting that there may be other unaccounted factors influencing stock returns. The coefficients for all variables, including the exposure free term, profitability, leverage and liquidity, and operating efficiency, were found to be statistically insignificant, implying their limited influence on stock returns.

Wipro Limited

Table No. 5.2.3: Describes the outcomes of model fitness Examination and Significance of Explanatory Variables.

Sl. No.	Parameters definition	Value	Remarks
1	R ² (Coefficient of determination)	0.474	High Explanatory Power
2	Model Fitness Statistics (Fisher's Test)	F = 301 (p=0.834)	Insignificant
3	α_i (Exposure free term)	0.455 (t = 0.786, p = 0.576)	Insignificant
4	β_1 (P-Profitability)	-0.169 (t = -0.332, p = 0.796)	Insignificant
5	β_2 (LL-Leverage & Liquidity)	-0.774(t = -0.893, p = 0.536)	Insignificant
6	β_3 (OE-Operating Efficiency)	0.243 (t = -0.876, p = 0.542)	Insignificant

$$\widehat{R}_i = \alpha_i + \beta_1 P_i + \beta_2 LL_i + \beta_3 OE_i + \varepsilon_i$$

$$\widehat{R}_i = 0.455 - 0.169P_i - 0.774LL_i + 0.243OE_i + \varepsilon_i$$

Source: Author's own calculations
Level of Significance ***0.01, **0.05, *0.1

Table No. 5.2.4: Table Describing the Stock Return, Profitability, Leverage & Liquidity & Operating Efficiency

WIPRO LIMITED					
Year	Stock return	Profitability	Leverage & liquidity	Operating efficiency	\widehat{R}_t
2018	-0.58	-0.59	0.87	0.35	0.12433
2019	-0.12	0.22	0.86	-1.05	-0.00482
2020	-0.28	1.75	-0.32	-1.77	0.64993
2021	0.78	0.13	0.64	2.33	0.18067
2022	0.35	0.03	-0.79	-3.51	1.30439

The table no. 5.2.3 and 5.2.4 supplies the analysis conducted on Wipro's stock return and the explanatory variables shows that the selected variables, including profitability, leverage and liquidity, and operating efficiency, do not have a significant impact on stock returns. The R2 value of 0.474 suggests an elevated level of explanatory power, with approximately 47.4% of the variation in stock returns explained by the model. However, the overall model fitness is statistically insignificant, showing that there may be other factors influencing stock returns that are not included in the model. The coefficients for all variables, including the exposure free term, profitability, leverage and liquidity, and operating efficiency, were found to be statistically insignificant, suggesting their limited influence on stock return.

TCS Limited

Table No. 5.2.5: Describes the outcomes of model fitness Examination and Significance of Explanatory Variables.

S. No.	Parameters definition	Value	Remarks
1	R^2 (Coefficient of determination)	0.987	High Explanatory Power
2	Model Fitness Statistics (Fisher's Test)	F = 25.9 (p=0.143)	Insignificant
3	α_i (Exposure free term)	-0.045(t = -0.814, p = 0.565)	Insignificant
4	β_1 (P-Profitability)	-0.009 (t = -0.328, p = 0.798)	Insignificant
5	β_2 (LL-Leverage & Liquidity)	-0.492(t = -8.447*, p = 0.075)	Significant
6	β_3 (OE-Operating Efficiency)	-0.160 (t = -4.602, p = 0.136)	Insignificant

$$\widehat{R}_i = \alpha_i + \beta_1 P_i + \beta_2 LL_i + \beta_3 OE_i + \varepsilon_i$$

$$\widehat{R}_i = -0.045 - 0.009P_i - 0.492LL_i - 0.160OE_i + \varepsilon_i$$

Source: Author's own calculations
Level of Significance ***0.01, **0.05, *0.1

Table No. 5.2.6: Table Describing the Stock Return, Profitability, Leverage & Liquidity & Operating Efficiency

TCS LIMITED					
Year	Stock return	Profitability	Leverage & liquidity	Operating efficiency	\widehat{R}_t
2018	0.16	-3.68	-0.85	1.66	0.14072
2019	-0.37	0.38	0.85	-0.29	-0.42022
2020	-0.32	-1.01	0.79	-1.15	-0.24059
2021	0.66	1.3	-2.02	1.63	0.67634
2022	0.41	-0.35	0.2	-3.26	0.38135

The table no. 5.2.5 and 5.2.6 supplies the analysis conducted on Tata Consulting Services' stock return and the explanatory variables reveals that the selected variables, including profitability, leverage and liquidity, and operating efficiency, do not have a significant impact on stock returns. The R2 value of 0.987 shows an elevated level of explanatory power, with approximately 98.7% of the variation in stock returns explained by the model. However, the overall model fitness is statistically insignificant, as showed by the F-statistic and p-value. This suggests that there may be other factors not included in the model that have a more significant influence on stock returns. The coefficients for all variables, including the exposure free term, profitability, and operating efficiency, were found to be statistically insignificant, leverage and liquidity, we found to be Statistically Significant, implying their limited effect on stock returns.

HCL Technologies Limited

Table No. 5.2.7: Describes the outcomes of model fitness Examination and Significance of Explanatory Variables.

x	Parameters definition	Value	Remarks
1	R^2 (Coefficient of determination)	0.99	High Explanatory Power
2	Model Fitness Statistics (Fisher's Test)	$F = 596^{**}$ ($p=0.030$)	Significant
3	α_i (Exposure free term)	0.285 ($t = 18.57^{**}$, $p = 0.034$)	Significant
4	β_1 (P-Profitability)	-0.329 ($t = -4.36$, $p = 0.144$)	Insignificant
5	β_2 (LL-Leverage & Liquidity)	-0.497($t = -31.00^{**}$, $p = 0.021$)	Significant
6	β_3 (OE-Operating Efficiency)	-0.406 ($t = -26.95^{**}$, $p = 0.024$)	Significant

$$\hat{R}_i = \alpha_i + \beta_1 P_i + \beta_2 LL_i + \beta_3 OE_i + \varepsilon_i$$

$$\hat{R}_i = 0.285 - 0.329P_i - 0.497LL_i - 0.406OE_i + \varepsilon_i$$

Source: Author's own calculations
Level of Significance ***0.01, **0.05, *0.1

Table No. 5.2.8: Table Describing the Stock Return, Profitability, Leverage & Liquidity & Operating Efficiency

HCL TECHNOLOGIES LIMITED					
Year	Stock return	Profitability	Leverage & liquidity	Operating efficiency	\widehat{R}_t
2018	0.11382	0.15	-0.45	0.85	0.1142
2019	0.104952	-0.14	0.27	0.29	0.07913
2020	-0.93217	0.04	1.85	0.68	-0.92369
2021	0.867498	0.11	0.09	-1.66	0.87804
2022	0.148707	-0.67	-1.35	2.51	0.15732

The table no. 5.12 and 5.13 provides the analysis of HCL Technologies' stock return and the explanatory variables reveals a highly significant model with an R² value of 0.99, showing that the model explains approximately 99% of the stock return variation. The model's fitness statistics, with a significant F-statistic at the 0.05 level, further support its validity. Among the explanatory variables, leverage and liquidity (β_2) and operating efficiency (β_3) have a significant impact on stock returns, while profitability (β_1) is found to be insignificant. The estimated equation suggests that stock returns are influenced by these variables. Examining the specific data, HCL Technologies experienced varying stock returns and fluctuations in profitability, leverage, liquidity, and operating efficiency. Overall, the model highlights the importance of leverage, liquidity, and operating efficiency in understanding HCL Technologies' stock returns.

Infosys Limited

Table No. 5.2.9: Describes the outcomes of model fitness Examination and Significance of Explanatory Variables.

S. No.	Parameters definition	Value	Remarks
1	R^2 (Coefficient of determination)	0.789	High Explanatory Power
2	Model Fitness Statistics (Fisher's Test)	F = 1.25 (p=0.564)	Insignificant
3	α_i (Exposure free term)	0.072 (t = 0.239, p = 0.851)	Insignificant
4	β_1 (P-Profitability)	0.145 (t = 0.865, p = 0.546)	Insignificant
5	β_2 (LL-Leverage & Liquidity)	-0.161(t = -1.644, p = 0.348)	Insignificant
6	β_3 (OE-Operating Efficiency)	0.276 (t = -0.856, p = 0.549)	Insignificant

$$\hat{R}_i = \alpha_i + \beta_1 P_i + \beta_2 LL_i + \beta_3 OE_i + \varepsilon_i$$

$$\hat{R}_i = 0.072 + 0.145P_i - 0.161LL_i - 0.276OE_i + \varepsilon_i$$

Source: Author's own calculations
Level of Significance ***0.01, **0.05, *0.1

Table No. 5.2.10: Table Describing the Stock Return, Profitability, Leverage & Liquidity & Operating Efficiency

INFOSYS LIMITED					
Year	Stock return	Profitability	Leverage & liquidity	Operating efficiency	\widehat{R}_t
2018	0.11	-2.63	-0.64	0.54	-0.35535
2019	-0.42	-0.53	3.56	1.61	-1.02237
2020	-0.16	-1.16	-1.82	-0.99	0.47006
2021	0.81	0.4	-3.7	0.5	0.5877
2022	0.31	-0.84	2.97	1.22	-0.86469

The table no. 5.2.9 and 5.2.10 provides the analysis of Infosys' stock return and the corresponding model shows a moderate explanatory power with an R² value of 0.789, suggesting that the model explains approximately 78.9% of the stock return variation. However, the model fitness statistics, represented by the F-statistic of 1.25 and its associated p-value of 0.564, are insignificant, showing that the overall model may not be statistically significant. Examining the individual explanatory variables, including profitability (β_1), leverage and liquidity (β_2), and operating efficiency (β_3), none of them show a significant impact on stock returns. The estimated equation implies that these variables have limited explanatory power for the observed stock returns. Assessing the specific data of Infosys, the company experienced varying stock returns, profitability, leverage, liquidity, and operating efficiency. Overall, the model suggests that the examined variables may not be strongly related to the stock returns of Infosys.

CHAPTER – 6

FINDINGS, CONCLUSION
& SUGGESTIONS

6.1 FINDINGS

1. Tech Mahindra Limited shows strong profitability, steady leverage and liquidity ratios, and effective asset use, with a notable increase in operating cash flow.
2. Wipro Limited has shown consistent improvement in profitability, with increasing ROA and operating cash flow, while keeping stable leverage and liquidity ratios. However, the company experienced a decline in asset turnover ratio, showing a decrease in efficiency in generating revenue from its assets.
3. TCS Limited has kept an elevated level of profitability with consistently strong ROA and operating cash flow but experienced a decline in efficiency and liquidity in the latest fiscal year, along with an increase in leverage. Overall, TCS has a good financial health based on the F-score of 4.
4. HCL Technologies Limited has shown consistent profitability with positive ROA and OCF but experienced a decline in ROA and efficiency in the current fiscal year. The company also showed a positive change in leverage and improved liquidity. Overall, HCL Technologies has a moderate financial health with an F-score of 5.
5. Infosys Limited has proven strong profitability with positive ROA and OCF, showing improved financial health. However, the company experienced a decline in efficiency and liquidity, along with negative changes in accruals and gross margin. Overall, Infosys Limited has a moderate financial health with an F-score of 3.
6. The analysis shows that factors such as profitability, leverage and liquidity, and operating efficiency have limited influence on Tech Mahindra's stock returns, and the overall model fitness is statistically insignificant, suggesting the presence of other unaccounted factors
7. The analysis reveals that the selected variables, including profitability, leverage and liquidity, and operating efficiency, have limited significance in explaining Wipro's stock returns, with the overall model fitness being statistically insignificant, showing the presence of other unaccounted factors.
8. The analysis shows that the variables of profitability, leverage and liquidity, and operating efficiency have limited significance in explaining Tata Consulting Services' stock returns, as showed by the statistically insignificant coefficients and overall model fitness.
9. The analysis shows that in the case of HCL Technologies, the model shows high explanatory power, with leverage and liquidity, as well as running efficiency,

significantly affecting stock returns, while profitability does not show significant influence.

10. The analysis shows that in the case of Infosys, the model shows moderate explanatory power, but the overall model fitness is statistically insignificant. None of the examined variables, including profitability, leverage and liquidity, and operating efficiency, have a significant impact on stock returns.

6.2 CONCLUSION

In conclusion, the analysis of Tech Mahindra Limited reveals strong profitability, steady leverage and liquidity ratios, and effective asset use. The notable increase in operating cash flow further strengthens the company's financial position. However, the analysis suggests that these factors have limited influence on the company's stock returns, showing the presence of other unaccounted factors.

Wipro Limited proves consistent improvement in profitability, with increasing return on assets (ROA) and operating cash flow. The company keeps stable leverage and liquidity ratios, which contribute to its overall financial stability. However, the decline in the asset turnover ratio raises concerns about the efficiency of generating revenue from its assets. The analysis also shows that the selected variables have limited significance in explaining Wipro's stock returns, suggesting the presence of other unaccounted factors.

TCS Limited has kept an elevated level of profitability with consistently strong ROA and operating cash flow. However, the company experienced a decline in efficiency and liquidity in the latest fiscal year, accompanied by an increase in leverage. Despite these challenges, TCS's financial health stays good overall, as showed by the F-score of 4.

HCL Technologies Limited proves consistent profitability with positive ROA and operating cash flow. Although the company experienced a decline in ROA and efficiency in the current fiscal year, it showed a positive change in leverage and improved liquidity. Overall, HCL Technologies has a moderate financial health with an F-score of 1. The analysis shows that leverage, liquidity, and operating efficiency significantly affect the company's stock returns, while profitability does not show a significant influence.

Infosys Limited showcases strong profitability with positive ROA and operating cash flow, showing improved financial health. However, the company experienced a decline in efficiency and liquidity, along with negative changes in accruals and gross margin. The analysis suggests that none of the examined variables, including profitability, leverage and liquidity, and operating efficiency, have a significant impact on Infosys' stock returns. The overall model fitness is statistically insignificant, showing the presence of other unaccounted factors.

In summary, while profitability, leverage and liquidity, and operating efficiency are crucial factors in assessing the financial health of these technology companies, the analysis suggests that other unaccounted factors may have a more significant influence on their stock returns. Investors should consider a comprehensive evaluation of these companies, incorporating added factors beyond the variables examined in the analysis, to make informed investment decisions.

Based on the Piotroski analysis, one stock that may be worth considering for investors is TCS Limited. The analysis shows that TCS has kept an elevated level of profitability with consistently strong return on assets (ROA) and operating cash flow. Additionally, the company shows a good financial health based on the F-score of 4, which suggests that it meets several fundamental criteria for investment.

Piotroski analysis evaluates a company's financial health based on nine fundamental factors, including profitability, leverage, liquidity, and operating efficiency. TCS Limited proves strength in these areas, showing its potential as an investment opportunity. However, it is important for investors to conduct further research and analysis to fully understand the company's financial performance and consider other factors such as market conditions and individual investment goals before making any investment decisions.

6.3 SUGGESTIONS

Overall, the analysis suggests that factors such as profitability, leverage and liquidity, and operating efficiency have limited significance in explaining stock returns for these companies. The model fitness tests show statistical insignificance, showing the presence of other unaccounted factors influencing stock returns. It is crucial to consider a comprehensive range of factors, including industry-specific dynamics, market conditions, and qualitative aspects, when evaluating the financial health and stock performance of these companies.

Investors and stakeholders should adopt an integrated approach that incorporates multiple financial metrics, market analysis, and qualitative factors to make informed investment decisions in the dynamic technology sector. Ongoing monitoring and adjustment of investment strategies based on evolving market conditions and company-specific developments are essential. Further research is necessary to find the added factors influencing stock returns and to develop more correct prediction models. Overall, these findings highlight the complexity of stock returns and the need for a comprehensive and adaptable investment approach in the technology industry.

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ANNEXURE



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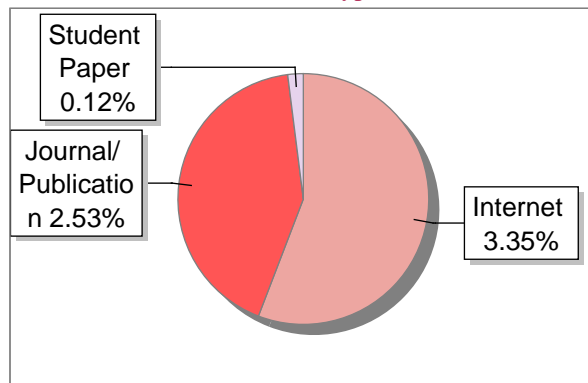
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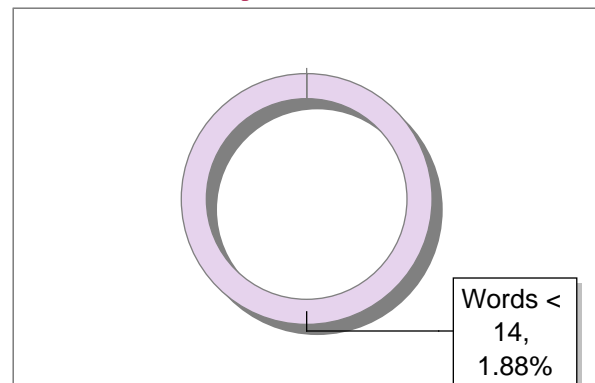
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11	bmcproc.biomedcentral.com	<1	Internet Data
12	docplayer.net	<1	Internet Data
13	Thesis Submitted to Shodhganga, shodhganga.inflibnet.ac.in	<1	Publication
14	ijireeice.com	<1	Publication

15	pub.epsilon.slu.se	<1	Publication
16	scholarworks.waldenu.edu	<1	Publication
17	The Correlation between Serum Selenium and Blood Selenium in Cattle by Maas-1992	<1	Publication
18	A STUDY ON SYSTEMATIC RISK WITH REF TO BSE SENSEX BY 16N81E0060 - 2019, JNTUH	<1	Student Paper

Print/Copy to Excel : Capital Structure

This data can be easily copy pasted into a Microsoft Excel sheet

Tech Mahindra**Capital Structure**

Period		Instrument	--- CAPITAL (Rs. cr) ---		- P A I D U P -		
From	To		Authorised	Issued	Shares (nos)	Face Value	Capital
2021	2022	Equity Share	833.65	485.92	971833479	5	485.92
2020	2021	Equity Share	833.65	484.1	968195035	5	484.1
2019	2020	Equity Share	833.65	482.93	965852364	5	482.93
2018	2019	Equity Share	793.15	491.68	983362470	5	491.68
2017	2018	Equity Share	793.1	489.66	979318628	5	489.66
2016	2017	Equity Share	793.1	486.77	973539300	5	486.77
2015	2016	Equity Share	793.1	483.91	967810069	5	483.91
2014	2015	Equity Share	634.1	480.39	960788912	5	480.39
2013	2014	Equity Share	619.1	233.47	233472886	10	233.47
2012	2013	Equity Share	175	128.12	128119023	10	128.12
2011	2012	Equity Share	175	127.49	127486541	10	127.49
2010	2011	Equity Share	175	125.96	125955481	10	125.96
2009	2010	Equity Share	175	122.32	122320114	10	122.32
2008	2009	Equity Share	175	121.73	121733634	10	121.73
2007	2008	Equity Share	175	121.36	121362869	10	121.36
2006	2007	Equity Share	175	121.22	121216701	10	121.22
2005	2006	Equity Share	30	22.49	102508885	2	20.5
2004	2005	Equity Share	25	20.35	101726575	2	20.35
2003	2004	Equity Share	25	20.27	101364055	2	20.27
2000	2002	Equity Share	25	20.21	101052735	2	20.21
1999	2000	Equity Share	20	19.2	19200020	10	19.2
1998	1999	Equity Share	20	19.2	19200020	10	19.2
1995	1998	Equity Share	10	4.8	4800005	10	4.8
1994	1995	Equity Share	10	6.4	7	10	0
1990	1994	Equity Share	10	4	7	10	0
1989	1990	Equity Share	10	0	7	10	0

Source : Asian CERC

This data can be easily copy pasted into a Microsoft Excel sheet

PRINT**Infosys**[Previous Years »](#)

Consolidated Balance Sheet	----- in Rs. Cr. -----				
	Mar 23	Mar 22	Mar 21	Mar 20	Mar 19
	12 mths	12 mths	12 mths	12 mths	12 mths
EQUITIES AND LIABILITIES					
SHAREHOLDER'S FUNDS					
Equity Share Capital	2,069.00	2,098.00	2,124.00	2,122.00	2,170.00
Total Share Capital	2,069.00	2,098.00	2,124.00	2,122.00	2,170.00
Reserves and Surplus	73,338.00	72,646.00	73,855.00	63,031.00	62,551.00
Total Reserves and Surplus	73,338.00	72,646.00	73,855.00	63,031.00	62,551.00
Employees Stock Options	0.00	606.00	372.00	297.00	227.00
Total Shareholders Funds	75,407.00	75,350.00	76,351.00	65,450.00	64,948.00
Minority Interest	388.00	386.00	431.00	394.00	58.00
NON-CURRENT LIABILITIES					
Deferred Tax Liabilities [Net]	1,220.00	1,156.00	875.00	968.00	672.00
Other Long Term Liabilities	9,615.00	7,390.00	6,864.00	5,100.00	422.00
Total Non-Current Liabilities	10,835.00	8,546.00	7,739.00	6,068.00	1,094.00
CURRENT LIABILITIES					
Trade Payables	3,865.00	4,134.00	2,645.00	2,852.00	1,655.00
Other Current Liabilities	34,014.00	28,494.00	20,507.00	17,432.00	16,407.00
Short Term Provisions	1,307.00	975.00	713.00	572.00	576.00
Total Current Liabilities	39,186.00	33,603.00	23,865.00	20,856.00	18,638.00
Total Capital And Liabilities	125,816.00	117,885.00	108,386.00	92,768.00	84,738.00
ASSETS					
NON-CURRENT ASSETS					
Tangible Assets	22,265.00	17,898.00	17,354.00	16,603.00	11,479.00
Intangible Assets	0.00	1,707.00	2,072.00	1,900.00	691.00
Capital Work-In-Progress	0.00	416.00	922.00	954.00	1,388.00
Fixed Assets	22,265.00	20,021.00	20,348.00	19,457.00	13,558.00
Non-Current Investments	12,569.00	13,651.00	11,863.00	4,137.00	4,634.00
Deferred Tax Assets [Net]	1,245.00	1,212.00	1,098.00	1,744.00	1,372.00
Long Term Loans And Advances	39.00	34.00	32.00	21.00	19.00
Other Non-Current Assets	11,569.00	9,587.00	8,233.00	7,547.00	8,737.00
Total Non-Current Assets	54,935.00	50,700.00	47,653.00	38,192.00	31,860.00
CURRENT ASSETS					
Current Investments	6,909.00	6,673.00	2,342.00	4,655.00	6,627.00
Trade Receivables	25,424.00	22,698.00	19,294.00	18,487.00	14,827.00
Cash And Cash Equivalents	12,173.00	17,472.00	24,714.00	18,649.00	19,568.00
Short Term Loans And Advances	289.00	248.00	159.00	239.00	241.00
OtherCurrentAssets	26,086.00	20,094.00	14,224.00	12,546.00	11,615.00
Total Current Assets	70,881.00	67,185.00	60,733.00	54,576.00	52,878.00
Total Assets	125,816.00	117,885.00	108,386.00	92,768.00	84,738.00
OTHER ADDITIONAL INFORMATION					
CONTINGENT LIABILITIES, COMMITMENTS					
Contingent Liabilities	0.00	5,914.00	4,836.00	5,009.00	4,891.00

BONUS DETAILS

Bonus Equity Share Capital	0.00	2,017.09	2,117.09	2,117.09	2,165.82
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NON-CURRENT INVESTMENTS

Non-Current Investments Quoted Market Value	0.00	13,612.00	11,997.00	4,268.00	4,711.00
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Non-Current Investments Unquoted Book Value	0.00	5,818.00	259.00	165.00	0.00
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CURRENT INVESTMENTS

Current Investments Quoted Market Value	0.00	1,247.00	843.00	1,425.00	1,862.00
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Current Investments Unquoted Book Value	0.00	2,012.00	1,500.00	3,230.00	4,902.00
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Source : Dion Global Solutions Limited

This data can be easily copy pasted into a Microsoft Excel sheet

PRINT**Tech Mahindra**[Previous Years »](#)**Consolidated Balance Sheet**

----- in Rs. Cr. -----

	Mar 23	Mar 22	Mar 21	Mar 20	Mar 19
	12 mths	12 mths	12 mths	12 mths	12 mths
EQUITIES AND LIABILITIES					
SHAREHOLDER'S FUNDS					
Equity Share Capital	440.00	438.80	437.00	435.80	443.70
Total Share Capital	440.00	438.80	437.00	435.80	443.70
Reserves and Surplus	27,484.50	26,445.80	24,422.80	20,950.80	19,432.40
Total Reserves and Surplus	27,484.50	26,445.80	24,422.80	20,950.80	19,432.40
Employees Stock Options	0.00	0.00	0.00	425.70	406.30
Total Shareholders Funds	27,924.50	26,884.60	24,859.80	21,812.30	20,282.40
Equity Share Application Money	0.00	1.10	5.20	0.70	2.00
Share Capital Suspense	0.00	1,230.40	1,230.40	1,230.40	1,230.40
Minority Interest	470.20	495.40	379.50	393.30	477.70
NON-CURRENT LIABILITIES					
Long Term Borrowings	128.80	142.00	165.80	178.70	208.60
Deferred Tax Liabilities [Net]	326.10	455.20	76.10	35.60	1.10
Other Long Term Liabilities	1,823.50	2,276.10	1,902.70	2,107.60	333.40
Long Term Provisions	928.80	881.10	781.00	669.10	580.10
Total Non-Current Liabilities	3,207.20	3,754.40	2,925.60	2,991.00	1,123.20
CURRENT LIABILITIES					
Short Term Borrowings	1,449.40	1,439.70	1,496.00	2,249.50	1,196.10
Trade Payables	4,384.60	4,094.70	2,785.00	3,256.60	2,489.30
Other Current Liabilities	8,086.10	6,298.80	5,465.40	4,983.30	6,250.60
Short Term Provisions	631.30	671.60	531.10	436.40	395.20
Total Current Liabilities	14,551.40	12,504.80	10,277.50	10,925.80	10,331.20
Total Capital And Liabilities	46,153.30	44,870.70	39,678.00	37,353.50	33,446.90
ASSETS					
NON-CURRENT ASSETS					
Tangible Assets	6,288.30	3,699.20	3,559.50	3,978.30	2,793.70
Intangible Assets	0.00	3,658.60	1,450.80	1,506.00	1,451.20
Capital Work-In-Progress	0.00	165.10	118.30	50.10	276.30
Fixed Assets	6,288.30	7,522.90	5,128.60	5,534.40	4,521.20
Non-Current Investments	604.90	447.90	575.70	236.00	752.00
Deferred Tax Assets [Net]	1,296.50	819.10	913.30	844.30	609.10
Long Term Loans And Advances	4.90	13.60	4.70	4.50	4.30
Other Non-Current Assets	5,860.30	4,185.70	3,792.20	4,174.30	3,178.20
Total Non-Current Assets	21,720.60	20,415.00	14,422.70	14,181.20	11,881.10
CURRENT ASSETS					
Current Investments	2,783.20	4,435.90	9,661.90	5,612.30	6,589.90
Inventories	23.60	40.50	24.20	35.80	75.20
Trade Receivables	12,881.60	11,933.40	6,472.80	7,577.20	6,958.60
Cash And Cash Equivalents	4,254.70	3,974.50	2,835.20	3,148.30	2,358.70
OtherCurrentAssets	4,489.60	4,071.40	6,261.20	6,798.70	5,583.40

Total Current Assets	24,432.70	24,455.70	25,255.30	23,172.30	21,565.80
Total Assets	46,153.30	44,870.70	39,678.00	37,353.50	33,446.90
OTHER ADDITIONAL INFORMATION					
CONTINGENT LIABILITIES, COMMITMENTS					
Contingent Liabilities	0.00	10,942.60	7,013.00	6,867.90	6,221.80
BONUS DETAILS					
Bonus Equity Share Capital	0.00	345.50	345.50	345.50	345.51
NON-CURRENT INVESTMENTS					
Non-Current Investments Quoted Market Value	0.00	2.10	301.10	3.30	698.90
Non-Current Investments Unquoted Book Value	0.00	445.80	274.60	232.60	61.60
CURRENT INVESTMENTS					
Current Investments Quoted Market Value	0.00	774.60	174.80	1,009.70	1,430.50
Current Investments Unquoted Book Value	0.00	3,661.30	9,487.10	4,602.60	5,159.40
Source : Dion Global Solutions Limited					