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## EVALUATION OF THE FINANCIAL PERFORMANCE OF COGNIZANT TECHNOLOGY SOLUTIONS (CTS) AND TATA CONSULTANCY SERVICES (TCS)

*A Comparative Analysis*

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**Abstract:** The information technology sector has become a cornerstone of global development, driving transformative changes across industries, economies, and daily life. Its evolution has paved the way for innovations that have reshaped the way we communicate, work, and access information. As the sector continues to evolve, its impact is likely to grow, making it essential for stakeholders, governments, businesses, and individuals to address its challenges while harnessing its potential for positive change. The present study is conducted on Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS). CTS and TCS are very popular among the youngsters of India. TCS was established before CTS. Both CTS and TCS are Information Technology (IT) companies. According to some people, CTS has higher rates for culture than TCS. Nowadays, there is a frequent loss of jobs among the people working in Multinational Companies (MNCs). So, people working in MNCs are in constant search of good job security and high-paying jobs. TCS provides higher job security and advancement than CTS. The salary earned by a fresher in TCS is comparatively less than those working in CTS. TCS encourages and empowers its employees to make positive contributions to the world whereas CTS enables its employees to learn and grow. Both companies are successful in the world of business. Both companies are operational around the world. The study will analyze the profitability and growth of these two companies. Hence, CTS and TCS have been chosen for study to evaluate their financial performances.

**Index Terms – Financial performance, Financial ratios, SWOT Analysis.**

### I. INTRODUCTION

Whenever we come across the word 'Finance', we think about management, creation, and study of money and investment. Money makes the world go round and finance is the fuel that keeps it moving. From personal budgets to global economies, finances are an essential part of our daily lives. Everyone needs to have a money management strategy, even if they don't own a business. Without one, they may struggle to make an informed decision, resulting in losing money in the long run. There is a well-known saying by Daymond John, "Make sure you have financial intelligence... I don't care if you have money or you don't have money... you need to go and study finance no matter what". In business, finance is critical for smooth operations. The financial health of a company is a key factor in determining its future success. Through an effective financial management system, a company can make informed decisions, reduce risks, and improve profitability. Financial performance refers to a company's ability to generate revenue using its assets. It's a broad measure of a company's financial health over a specific period. Tenney (2022) says that the financial performance of a company can be affected by employee engagement as it is connected with employee performance, productivity, absenteeism, retention, and customer satisfaction. He states that companies having a high employee experience score in the top 25% have twice the return on sales as compared to organizations in the lowest quartile. Furthermore, 82% of employees at companies performing well financially are highly or moderately engaged, in contrast to only 68% at under-performing companies. We can also compare the financial performance of different companies within the same industry or across different industries. Financial performance analysis involves assessing the financial and operational characteristics of a company by examining its accounting and financial statements. The goal of this analysis is to determine how efficient and effective the company's management is, as reflected in its financial records and reports."

### 1.1 Need for Financial Analysis

Financial analysis is needed for a variety of purposes and plays a crucial role in any organization.

It serves to:

#### 1. Measure Profitability and Earning Potential

Financial analysis helps assess whether the profits earned meet expectations. By examining financial statements, one can determine profit trends and evaluate the company's earning potential.

#### 2. Assess Financial Strength

It aids in understanding the financial stability of a business and evaluating its position in the market.

#### 3. Conduct Comparative Studies

Financial analysis allows for the comparison of two firms in the market or the growth of a single firm. There are two types of comparisons:

- a. **Intra-Firm:** This involves comparing profits from the current year with those from the previous year, also known as trend analysis.
- b. **Inter-Firm:** Also referred to as cross-sectional analysis, this compares one company with another in the market.

#### 4. Evaluate Management Efficiency

By analyzing the trends in profits and losses, one can determine whether the business is being managed effectively, indicating how efficiently its resources are utilized.

#### 5. Inform Management Decisions

Gaining insights into the business enables management to make critical decisions.

#### 6. Analyze Solvency

Financial analysis helps determine whether a business can meet its short-term and long term obligations.

#### 7. Identify Reasons for Variations

It assists in pinpointing the reasons behind changes in a firm's profitability or financial position.

### 1.2 Types of Financial Analysis

Financial analysis can be categorized into four types:

#### 1. External Analysis

External analysis is conducted by investors, stakeholders, researchers, and others who rely on publicly available reports, including the Statement of Profit and Loss and the Balance Sheet, since they do not have access to confidential internal information.

#### 2. Internal Analysis

Performed by internal management, who have access to confidential business data, allowing for a more detailed and accurate analysis.

#### 3. Horizontal Analysis

This type involves comparing financial statements across several years to understand a business's profitability and growth, also known as dynamic analysis or time-series analysis.

#### 4. Vertical Analysis

This analysis examines the financial statement of a single year, studying the relationships between various items in the Statement of Profit and Loss and the Balance Sheet, making it known as static analysis or cross-sectional analysis.

### 1.3 Limitations of Financial Analysis

Financial analysis has several limitations:

1. Current fluctuations in economic prices are not reflected in financial statement analysis.
2. Since the analysis is performed by humans, it is susceptible to personal bias, which can lead to differing interpretations of the data among experts.
3. Financial analysis is primarily quantitative and can only assess aspects related to money; it does not address non-monetary factors.
4. Different firms may adopt varying accounting policies, making it challenging to compare them directly through financial analysis.

## II. COGNIZANT TECHNOLOGY SOLUTIONS (CTS)

### 2.1 Overview of the Organization

Cognizant is an American Multinational Company (MNC). The company offers Information Technology (IT) services and consulting solutions tailored for businesses. Its headquarters is in Teaneck, New Jersey, United States (US). The company was founded on January 26th, 1994 in Chennai, India as a joint venture between India-based Satyam Computer Services and United States (U.S.) based firm, Dun & Bradstreet (D&B). The venture was called Dun & Bradstreet Satyam Software (DBSS) with Satyam holding a 24% stake and Dun & Bradstreet holding the rest. In 1996, several subsidiaries of Dun & Bradstreet, including Erisco, IMS International, Nielsen Media Research, Pilot Software, Strategic Technologies, and DBSS were spun off to create a new company called Cognizant Corporation, headquartered in Chennai, India. In January 1997, three months later, DBSS changed its name to Cognizant Technology Solutions (CTS). In July 1997, D&B bought Satyam's 24% stake in DBSS for \$3.4 million, making the Indian subsidiary wholly owned by the Cognizant Group (Express Computer Online, 2001). The company moved its headquarters to the United States in March 1998. Kumar Mahadeva became the Founder, first Chairman, and first Chief Executive Officer (CEO), and Lakshmi Narayan was appointed as the first President and first Chief Operating Officer (COO) (The Economic Times, 2003).

There is a history behind Cognizant's existence. As per the business news by Quartz (2015), Satyam Computer was co-founded by B. Ramalinga Raju and B. Ramu Raju on 24th June 1987 in Hyderabad, India. Ramalinga was the chairman of the company and Ramu was the Chief Executive Officer (CEO) of the company (Encyclopedia.com, n.d.). In 1991, the company was listed on the Bombay Stock Exchange (BSE) where its initial public offering was oversubscribed by as much as 17 times. Then in the year 1993, the company signs a deal with US-based Dun & Bradstreet to set up Dun & Bradstreet Satyam Software. Satyam held a 24% stake and Dun & Bradstreet held the rest. In January 1997, the venture was named Cognizant Technology Solutions (CTS). In July 1997, Satyam sold its stake to Dun & Bradstreet, as the company underwent a major restructuring. Dun & Bradstreet reported that there was an intention to acquire Satyam's stake at a later date, which formed a component of the agreement established between the partners of the joint venture (Chattopadhyay, 1997). Thus, the Indian subsidiary was completely owned by the Cognizant Group. Today, the Indian headquarters of CTS is in Chennai, Tamil Nadu, under the legal name Cognizant Technology Solutions India Private Limited. The company has additional centers in Bangalore, Bhubaneswar, Coimbatore, Gurgaon, Hyderabad, Kochi, Kolkata, Mangalore, Mumbai, Noida, Pune, and Indore. Cognizant operates local, regional, and global delivery centers across the Americas, Europe, Asia Pacific, and the Middle East. In the Americas, the company has offices in Argentina, Brazil, Canada, Costa Rica, El Salvador, Mexico, and the United States. In Europe, its offices are located in Belgium, Denmark, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the Netherlands, and the United Kingdom and Ireland. In the Asia Pacific region, Cognizant operates offices in Australia, China, Hong Kong SAR, India, Japan, Malaysia, New Zealand, the Philippines, Singapore, and Thailand.

As of December 2023, the company has over 347,700 employees worldwide, with approximately 254,000 of them located in India across 11 cities, mainly in Chennai.

## 2.2 Company Profile

### 2.2.1 Purpose, Vision, and Values

#### a. Purpose

Cognizant's purpose is to design contemporary businesses to enhance daily life (Cognizant, n.d.).

#### b. Vision

Every decision Cognizant make is aligned with their vision which is to become the leading partner in technology services for the world's foremost companies (Cognizant, n.d.).

#### c. Values

As per Cognizant (n.d.), Cognizant's values are the foundation of its culture and guide how it collaborates to support its stakeholders.

- Begin with a perspective. The employees of Cognizant implement their expertise to gain confidence and usher their clients forward.
- Acquire data and construct knowledge. The employees of Cognizant use facts to guide their actions and decisions.
- Strive for greatness and never accept mediocrity. The employees of Cognizant operate with agility and creativity and are committed to staying ahead of the game.
- Work together as a team. The employees of Cognizant deliver impactful ideas that leverage the complete power and scale of Cognizant.
- Establish an environment where everyone can thrive. The employees of Cognizant are committed to including, empowering, and investing in everyone around them.
- Choose to act with integrity and in the best possible way. The employees of Cognizant consistently choose to do the right thing in the right manner and consistently make ethical decisions.

### 2.3 Corporate Social Responsibility (CSR)

The employees at Cognizant Technology Solutions (CTS) participate in the charitable works conducted for the financial and administrative support of the Cognizant Foundation. It is popularly termed as Cognizant Outreach. In March 2005, CTS was registered as a "Charitable Company" under the Indian Companies Act where the Cognizant Foundation aims to help the "underprivileged members of the society to gain access to quality education and healthcare by providing financial and technical support, designing and implementing educational and healthcare improvement programs and partnering with Non-Governmental Organizations (NGOs), educational institutions, healthcare institutions, government agencies, and corporations" ("Cognizant", 2024).

### 2.4 Acquisitions

Cognizant Technology Solutions (CTS) has acquired many organizations from June 2002 to date. The first acquisition was UnitedHealthcare Ireland Limited, an Ireland-based healthcare service and a subsidiary of UnitedHealthcare Group. In September 2014, it acquired TriZetto Corp, a USA-based firm, which is a healthcare IT service provider. In August 2018, it acquired SaasFocus, an India-based firm, which is a privately held consulting firm focused on digital transformation using the Salesforce Platform (Cognizant News, 2018). In December 2018, it acquired Mustache, a USA-based firm, which is a digital agency and in January 2019, it acquired OySamlink, a Finland-based firm, which is a technology provider. Later, in January 2022, Cognizant sold OySamlink and Mustache to Kyndryl and DJE Holdings respectively. Recently, on January 2023, Cognizant acquired Mobica, a UK-based firm, that is into an Internet of Things (IoT business) ("Cognizant", 2024). In December 2023, the company completed its acquisition of Thirdera, a USA-based firm that was an Elite ServiceNow Partner specializing in advisory, implementation, and optimization solutions related to the ServiceNow platform. The acquisition was effective from January 22, 2024 (Cognizant News, 2023). Recently, on August 27, 2024, the company announced its acquisition of Belcan. This USA-based firm is a leading global supplier of Engineering Research & Development (ER&D) services for the commercial aerospace, defense, space, marine, and industrial verticals. As per Cognizant News(2024), the acquisition was finalized for around \$1.3 billion in a combination of cash and stock.

## 2.5 Listings and shareholding

The equity share of Cognizant Technology Solutions (CTS) is listed on the NASDAQ (National Association of Securities Dealers Automated Quotations) Stock Market. The company is part of the NASDAQ-100 and trades under CTS.

## 2.6 Sponsorships

Throughout 2021, Cognizant established sponsorship agreements with various sports, sailing, and racing teams. In January, the rebranded Aston Martin Formula One team announced Cognizant as their title sponsor for the 2021 Formula One World Championship and beyond. In February, Cognizant signed a sponsorship deal to become a Global Partner of the PGA TOUR and LPGA Tour, which included being the title partner of the LPGA Tour's Founders Cup. Later, in April, Cognizant became SailGP's digital transformation partner. In June, they also served as the Presenting Partner of THE JOHN SHIPPEN Shoot-Out Inaugural Golf Event. As of 2024, Cognizant continues its sponsorship role as the title sponsor of Major League Cricket.

## III. TATA CONSULTANCY SERVICES (TCS)

### 3.1 Overview of the Organization

Tata Consultancy Services (TCS) is an Indian Multinational Company (MNC). It provides Information Technology (IT) services and consulting to businesses. Its headquarters is located in Mumbai, India. It is a part of Tata Group and was established as a division of Tata Sons Limited (TCS Share Prices, Performance Trends, and Dividend Payment Details, n.d.). The company was founded on April 1st, 1968 by a division of Tata Sons Limited. Tata Consultancy Services originally commenced its operations as Tata Computer Center. Tata Computer Center was established in 1966 at Nirmal Building, Nariman Point, as a communal utility facility to meet the computing requirements of affiliated companies. But as it went under-utilized, the leadership at Bombay House decided to remodel it as Tata Consultancy Services (TCS) (Pandey, 2021). Faqir Chand Kohli or FC Kohli became the first CEO and Managing Director (MD) and also served as its Deputy Chairman. He is recognized as the "Father of Indian IT Industry". He helped set up the company at the request of Jehangir Ratanji Dadabhoy Tata or JRD Tata (Gautam, 2023). FC Kohli and JRD Tata are the co-founders of TCS.

As of December 2023, the company employs over 603,305 people globally, of which women make up 35.7% of its workforce (Tata Consultancy Services, 2024).

As of September 2023, Tata Consultancy Services (TCS) had a total of 51 subsidiary companies across 55 countries. By 2024, TCS operates in over 50 countries with more than 500 offices globally. In India, TCS operates several delivery centers located in prominent cities such as Mumbai, Bangalore, Chennai, and Hyderabad. The company also has significant operations in key markets such as France, Germany, Japan, Mainland China, the Middle East and Africa, Netherlands, New Zealand, North America, the United Kingdom, Canada, Australia, Singapore, and Sweden.

### 3.2 Company Profile

#### 3.2.1 Vision and Mission

##### a. Vision

TCS's vision is to decouple business growth and ecological footprint from its operations to address the environment's bottom line. The environmentally conscious strategy is integrated into their internal operations and service provisions. Ranging from eco-friendly buildings to sustainable IT practices and an environmentally responsible supply chain, their guiding principle is to promote sustainable development while assisting their clients in attaining sustainable growth through their eco-friendly solutions and services. (Comparably, n.d.).

##### b. Mission

TCS aims to assist clients in reaching their business goals by delivering innovative, top-tier consulting, IT solutions, and services. It also has a mission to make it a joy for all stakeholders to work with us (Comparably, n.d.).

### 3.3 Corporate Social Responsibility (CSR)

The company participates in CSR by volunteering focusing on education, skilling, employment, and entrepreneurship. It prepares all students with the skills, confidence, and mindset to pursue the career of tomorrow. It has engaged 100 thousand students. The company helped the inmates of Kathua Prison in Jammu and Kashmir and Bhaderwah Jail, situated in the historical fort of Bhaderwah at QillaMohalla in Jammu and Kashmir get trained under the TCS' Adult Literacy Program (Build a Sustainable Tomorrow with TCS' Corporate Social Responsibility, n.d.).

### 3.4 Acquisitions

Tata Consultancy Services (TCS) has acquired many organizations from October 2001 to date. The first acquisition was CMC Limited, an India-based IT services, consulting, and software company owned by the Government of India. In February 2006, it acquired Tata Infotech, an India-based IT Services organization. In November 2006, it acquired Tata Management, an Australia-based IT Services organization. In the year 2020, it acquired two organizations. Postbank Systems, a Germany-based IT Services organization was acquired in the month of November and Pramerica Systems Ireland, an Ireland-based IT Services organization was acquired in the month of December.

### 3.5 Listings and shareholding

According to TCS Share Prices, Performance Trends, and Dividend Payment Details (n.d.), Tata Consultancy Services (TCS) was corporatized into a separate company with effect from 1st April 2004 after which it had a hugely successful IPO in July 2004. The equity share of Tata Consultancy Services (TCS) was listed on the NSE (National Stock Exchange) and BSE (Bombay Stock Exchange) Stock Market on August 25, 2004.

### 3.6 Sponsorships

TCS is the title sponsor of several major marathons, including the Toronto Waterfront Marathon, London Marathon, Amsterdam Marathon, Mumbai Marathon, Lidingöloppet, and New York City Marathon. Additionally, TCS sponsors events such as City2Surf, the Australian Running Festival, the Berlin Marathon, the Chicago Marathon, and the Boston Marathon. In India, TCS is the title sponsor of the World 10K, held annually in Bangalore. Since 2009, TCS has sponsored the Indian Premier League team Rajasthan Royals, providing the team with technology for player performance analysis, simulation, and RFID tags to track players' fitness levels and ensure security at stadiums. TCS organizes an annual IT quiz for high school students known as TCS IT Wiz. Furthermore, TCS sponsors Jaguar Racing in Formula E and Nakajima Racing in Super Formula.

## IV. LITERATURE REVIEW

Some of the financial analyses performed by some notable authors are given below.

Muruganantham and Atchaya (2021) did a study on the financial performance of Cognizant Technology Solutions from 2015 to 2020, where they suggested the company increase the current assets and current liabilities to make positive working capital. It also suggested increasing the Return on Equity (ROE), using its fund to invest in other opportunities to gain profit, and taking action on the situation where it was found that the debt was increasing slightly while comparing with shareholder's equity. The study was based on the secondary data from the annual report of the company where the authors calculated the current ratio, liquidity ratio, operating expenses ratio, operating ratio, and expenses ratio.

Salini (2022) conducted a study on the financial analysis of Infosys Ltd from 2012-2021 where she concluded that the company has been performing well. The author suggested that the company can retain their profitability position by making efficient employment of its available resources, strengthening its liquidity position by reducing the current liabilities, and making proper decisions to maintain its liquid ratio.

Jayantibhai (2023) conducted a study on the financial analysis of Tata Consultancy Services (TCS) during five years from 2017-2018 to 2021-2022 where he concluded that the company has a solid liquidity and solvency situation. The study was based on secondary data from the annual report of the company where the author calculated the current ratio, liquidity ratio, and return on assets (ROA).

Dave and Shah (2018) conducted an analysis on the performance of five Indian Information Technology companies: Tata Consultancy Services Ltd, Infosys Ltd, Wipro Ltd, HCL Technologies Ltd, and Tech Mahindra Ltd. The study was conducted on the basis of secondary data from the company's annual report where the authors examined the sales, profit after tax, long-term debt to equity, interest coverage, working capital, turnover, and cash holdings of the companies over a period of 10 years from 2008-2017. The authors concluded that all these companies have performed well when measured in terms of sales and profit after tax. Furthermore, all of the companies are equity-driven and do not have any difficulty in fulfilling their interest obligations. They not only have a very satisfactory working capital but also have a very comfortable cash holding. Except for Tech Mahindra, all of the organizations perform consistently across numerous parameters. Tech Mahindra has succeeded to be on the surface but with significant inconsistency.

Maldar (2018) did a comparative study of the financial statements of India-based Reliance Industries Ltd., Saudi Arabia-based Sahara Petrochemicals Ltd., and China-based China Petroleum and Chemical Corporation (Sinopec Corp.). The study was based on secondary data from the annual report of the company where the author calculated the current ratio, net profit ratio, stock-to-working capital ratio, operating profit ratio, proprietary ratio, debt-equity ratio, operating ratio, return on capital employed, return on investment and return on proprietor's fund between 2015 and 2017. The study showed the profitability of each company and the competitiveness among them. Additionally, the research also revealed whether the company's financial position has improved or deteriorated overtime.

## V. RESEARCH OBJECTIVES AND METHODOLOGY

### 5.1 The Rationale of the Study

In the modern world, youngsters have a dream to work for an Information Technology (IT) firm. They take it as a pride to work in that firm. They think that working in those firms gives them a higher status in society. Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS) are IT companies whose work provides Business Process Outsource (BPO) services. By doing so, the companies generate more revenue, which in turn leads to better financial performance and benefits for its employees. They are IT service companies and their main goal is to win the hearts of their customers. The study of the financial performance of CTS and TCS is required to give a clear picture of the overall performance of the companies, identify the potential risks and vulnerabilities in the companies, evaluate the profitability of the companies, and identify the strengths and weaknesses of the companies. Hence, there is a need to study the financial performance of CTS and TCS.

### 5.2 Problem Statement

The information technology industry has made an outstanding contribution to the growth of the corporate sector in terms of employment generation, revenue, entrepreneurial skills, the standard of living, and thereby overall economic development. Its magnificent performance resulted in a high rate of return to investors and it in turn attracted investors from within and abroad. The Indian IT sector contributes 7.5% to the whole of national GDP. India is a popular destination for choosing the right software developer for projects for foreign clients. This attracted foreign IT company services like Accenture, Capgemini, Cognizant, Synoptek, etc. to build their offices in India and recruit talented software engineers. Even, India is also in the race to build its own IT company services and serve both India and abroad. Indian-based companies like Mphasis, Tata Consultancy Services (TCS), Tech Mahindra, Wipro, etc. are recruiting talented software engineers around the world.

The study will evaluate the Financial Performance of Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS).

### 5.3 Scope of the Study

- This study covers the financial performance of the companies and the activities carried out to imagine, build, and implement technologies to keep their clients constantly aware and responsive.
- Financial performance covers aspects like the activity and profitability of Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS).
- This study further compares the financial statements to know the relative financial position of the companies.
- Finally, a ratio analysis is also carried out to evaluate the trends in the financial statements of the companies.

### 5.4 Objectives of the Study

The objectives of the study of the financial performance of Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS) are:

- To study the financial performance of CTS and TCS for the past 5 years (2018-2019 to 2023-2024).
- To analyze the profitability position and efficiencies of CTS and TCS through financial ratios.
- To conduct a comprehensive Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis of CTS and TCS.
- To identify the factors affecting the financial stability of CTS and TCS.

### 5.5 Research Methodology

The research provides a framework for making decisions. It is important to note that research and common sense are not interchangeable. It is characterized by systematic, objective, reproducible, relevance, and control. The term 'Methodology' is frequently used in research projects, and it gives a complete overview of the rationality of the research. A research methodology outlines the research purpose, approach, progress measurement, and success criteria for achieving research objectives. It refers to how scientific research is carried out. It involves rationally adopting several methods to tackle research challenges systematically.

#### 5.5.1 Descriptive Research

This is a methodological approach that aims to describe an occurrence or subject under investigation, answering what, when, where, and how questions but not why questions. Studies regarding with unique predictions, with narration of records and traits regarding individual, organization or scenario are all examples of descriptive research studies. The present study will use the financial statements of Cognizant Technology Solutions (CTS) and TCS for the years 2018-2019 to 2023-2024.

#### 5.5.2 Nature of Data

In research methodology, there is a necessity for data collection. For the collection of data, the study will use secondary data. The secondary data are those which has previously been collected by an external source and processed. The secondary sources of data that will be used for the study will be collected from annual reports, brochures, newsletters, and websites. The annual reports will be gathered from the respective company websites. The annual reports offer a precise and thorough summary of the business's financial operations for the entire year. It is an effective tool for informing stakeholders, including shareholders and possible investors about the company's accomplishments, difficulties, and opportunities.

#### 5.5.3 Tools and Techniques of Analysis

No study can be completed without proper tools and techniques. To enhance the quality of the presentation and provide accurate explanations, various statistical tools will be utilized. The basic tools which will be used for the project are as follows.

##### a. Charts

Charts aid in comprehending large data quantities and their relationships, often being faster to read than raw data. Charts serve as valuable tools in the analysis of investment opportunities, facilitating peer evaluations, assessing sales performance across various regions, and breaking down the elements of a comprehensive whole.

##### b. Trends

Trend analysis of financial statements helps users identify percentage changes over time, such as a firm's net profit, and detect fluctuations over the years. Trend analysis holds significant importance as it enables businesses and various organizations to forecast future patterns and behaviors by examining historical data. This analytical approach equips them to make more informed strategic decisions, thereby allowing them to maintain a competitive edge in their respective markets.

##### c. Tables

A table is a crucial tool in any document, aiding readers in comprehending complex concepts in illustrating the interconnectedness of various parts of the report. Tables serve as one of the most prevalent and effective means of displaying financial information in a clear and succinct manner. They facilitate the communication of essential figures, trends, comparisons, and insights to various stakeholders, including investors, clients, managers, and regulators.

##### d. Ratio Analysis

Ratio analysis serves as a crucial instrument in the examination of financial statements. A ratio represents the relationship between two or more elements. Within the realm of financial statements, when two or more items are articulated as a ratio, it is referred to as a financial ratio. To evaluate a company's performance, particularly regarding its profits, a meaningful assessment can only be made when these profits are compared to either the investments made or the sales figures.

## VI. EXPECTED CONTRIBUTION OF STUDY

The present study will be helpful to shareholders as well as the organization as under:

**A. Shareholders:** This study will be conducted to know the profits and financial soundness of the company. Various ratios such as debt-equity ratio, Earnings Per Share (EPS), debt condition, profits, and sales will be compared thoroughly. So, it will be beneficial for the shareholders as it will help them decide their next step, whether they want to retain their shares or sell them.

**B. Company:** This study will help the company to identify their strengths and weaknesses and to work on their weaknesses. It will help the company to find out the profitability of their business, check the level of debt, and identify potential risks of becoming insolvent. The company can easily determine the profitable products and the products that are causing loss. The company will be able to analyze its Earnings Per Share (EPS) and will be able to take steps to improve the EPS. The company will form policies to attract the public to buy shares and investors to invest in it.

## VII. CONCEPTUAL DISCUSSION

The financial information relating to any business firm is included in the three fundamental financial statements namely the Balance Sheet, Income Statement or Profit and Loss Account, and Cash Flow Statement.

- **Balance Sheet:** The Balance Sheet provides an overview of a business's resources, or assets, and its obligations, or liabilities. It serves as a statement of what the firm 'owns' and what it 'owes', as of a specific date. Essentially, the Balance Sheet offers a 'snapshot' of company's assets and liabilities at that particular moment in time.

- **Income Statement:** The Income Statement summarizes the revenue earned, the expenses incurred to earn those revenues, and finally, the profits generated or losses incurred during an accounting year. The profit signifies the surplus of income beyond the costs that have been incurred. It illustrates the profitability position of a firm during an accounting period.

- **Cash Flow Statement:** The Cash Flow Statement reflects the sources and uses of cash or the flow of cash during an accounting period. It is alternatively referred to as the statement of changes in financial position.

These financial statements summarize the transactions carried out by a business enterprise over an accounting period in financial terms. These financial statements need to be analyzed to gain better insights into the strengths and weaknesses of the firm. Such an analysis is conducted by establishing relationships among balance sheet, income statement, and cash flow statement. In addition to the management, various stakeholders who may have an interest in this analysis include shareholders, potential investors, creditors, customers, suppliers, lenders, and government entities. Shareholders and prospective investors want to know whether the money they have invested or intend to invest will grow in value over a period of time. Creditors who have lent funds want to know if the money they have lent to the firm is safe or not. Even employees who work for the firm want to know if the company is profitable or not so that they receive compensation and other benefits regularly. The government also wants to know if the firm would be able to pay taxes or not. Again, different stakeholders in a business firm want to evaluate the financial performance of firms from their perspective. Shareholders or owners seek to assess the profitability and financial stability of the business enterprise. They are interested in determining whether their invested capital has appreciated over time or if it has diminished in value. Short-term creditors and suppliers of raw materials are concerned about the company's ability to repay the short-term credit they have extended. Therefore, they want to assess the firm's short-term liquidity position. In contrast, lenders of long-term finance are more interested in the firm's long-term solvency and profitability. Management is interested in the firm's overall performance. Thus, each stakeholder wants to examine and evaluate the financial statements from their perspective. Therefore, financial ratios are categorized into the following categories:

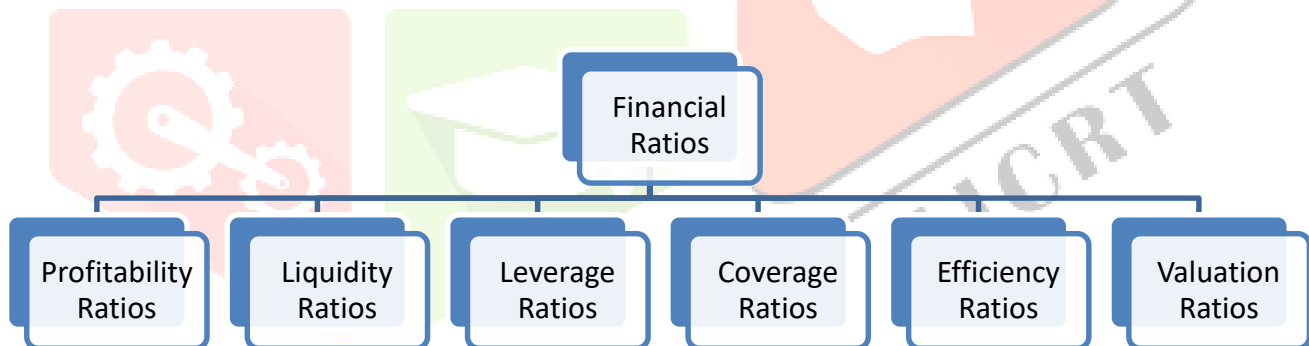


Fig.1 Types of Financial Ratios

### 7.1 Profitability Ratios

The profitability ratios evaluate a company's ability to generate profit. The various profitability ratios are given below:

#### 7.1.1 Gross Profit Margin

Gross Profit Margin is the ratio of gross profit earned during a year to the sales of the firm during the same period. This ratio indicates the gross profit earned by the firm on every rupee of sales and hence is indicative of the efficiency with which the firm produces each unit of output. Gross profit is the difference between the sales revenue (net of taxes, GST, and sales return) and the Cost of Goods Sold (COGS).

$$\text{Gross Profit Margin} = \frac{\text{Sales} - \text{Cost of Goods Sold} (= \text{Gross Profit})}{\text{Sales Revenue}}$$

Gross profit margin assesses the efficiency with which the firm produces its products. A higher gross profit margin implies that the firm is able to generate better price for its output, produce goods at relatively lower costs, or both. In contrast, a lower gross profit margin indicates that the firm makes its product inefficiently. The management would need to investigate its sales policy and marketing efforts, purchasing policy, or making goods more efficiently.

### 7.1.2 Net Profit Margin or Net Margin

Net Profit Margin relates net profits to the sales of the firm. Net profit or Profit After Taxes is calculated after deducting operating expenses, Interest on capital, and taxes paid to the government from the Gross Profit. It describes the relationship between profit after taxes and sales revenue.

$$\text{NetProfitMargin} = \frac{\text{ProfitAfterTaxes (or NetProfit)}}{\text{SalesRevenue}}$$

The net profit margin indicates the overall efficiency of the management from producing the goods to selling them. Both the gross profit margin and net profit margin need to be evaluated in combination with each other to understand how efficiently companies are containing the costs and obligations not directly related to production.

Net Profit Margin is also calculated by the formula:

$$\text{NetProfitMargin} = \frac{\text{Net Income}}{\text{Revenue}}$$

### 7.1.3 Net Operating Profit After Tax (NOPAT) Margin

NOPAT Margin relates the operating profits to the firm's sales. The net profit margin is derived by dividing the profit after taxes by the sales revenue. In calculating the profit after taxes, interest on long-term debt is deducted, hence two firms, although similar in their operations differ in their capital structure, and their net profit margin would not be comparable. Therefore, a better measure of profit that omits the effect of financial leverage is the Net Operating Profit After Taxes (NOPAT) computed as  $\text{EBIT} * (1 - \text{tax rate})$ . So, the NOPAT margin is calculated by relating NOPAT with sales.

$$\text{NetOperatingProfitMargin} = \frac{\text{NOPAT (or EBIT * (1 - taxrate))}}{\text{SalesRevenue}}$$

### 7.1.4 Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) Margin

EBITDA Margin measures the relationship between Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) and a firm's sales. EBITDA is a broader measure of profits. It is usually considered a proxy estimate of the Cash profits from the operations as it excludes Interests, Taxes, and even depreciation and other non-cash items. EBITDA measures the firm's operating profits. As EBITDA excludes interests, taxes, and Depreciation, it is not affected by differences in capital structure, depreciation policy, and impact of taxes due to these differences, which makes the comparison more effective.

$$\text{EBITDAMargin} = \frac{\text{EBITDA}}{\text{SalesRevenue}}$$

### 7.1.5 Return on Assets (ROA)

Return on Assets (ROA) defines the connection between NOPAT and the total assets. NOPAT is  $\text{EBIT} * (1 - \text{tax rate})$  while the total assets are the aggregate of current and non-current assets.

$$\text{ReturnonAssets(ROA)} = \frac{\text{NOPAT (or EBIT * (1 - taxrate))}}{\text{TotalAssets}}$$

Total Assets EBITDA is a broader measure of profits and is often used as an estimated proxy for cash profits from operations, as it excludes Interests, Taxes, depreciation, and other non-cash items.

Return on Assets (ROA) is typically calculated by dividing a company's net income by its total assets.

$$\text{ReturnonAssets(ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

### 7.1.6 Return on Capital Employed (ROCE)

Return on Capital Employed (ROCE) relates NOPAT with the amount of funds both debt and equity.

$$\text{ReturnonCapitalEmployed(ROCE)} = \frac{\text{NOPAT (or EBIT * (1 - taxrate))}}{\text{TotalDebt + Shareholders' Funds}}$$

ROCE may also be calculated on a pre-tax basis, that is, by dividing Earnings Before Interest and Taxes (EBIT) with the summation of Total Debt and Shareholder's Funds as follows:

$$\text{ReturnonCapitalEmployed(ROCE)} = \frac{\text{EBIT}}{\text{TotalDebt + Shareholders' Funds}}$$

### 7.1.7 Return on Equity (ROE)

Return On Equity (ROE) compares the profit after taxes to the funds contributed by shareholders.

$$\text{ReturnonEquity (ROE)} = \frac{\text{ProfitafterTaxes(PAT)}}{\text{Shareholders' Funds}}$$

Profits may also be compared with the investment made by the different suppliers of funds namely equity shareholders and debt holders. The shareholder's funds or net worth consists of paid-up equity capital and reserves and surplus (net of accumulated losses, if any). Paid-up equity capital is the funds invested by the equity shareholders, while reserves and surpluses are the retained earnings that belong to the equity shareholders. Equity shareholders are entitled to profits after paying all other stakeholders, that is, profit after taxes – the residual profits. Hence, PAT is related to the funds brought in, or that belong to the

equity shareholders. ROE shows how effectively a firm utilizes shareholder resources and is a crucial financial ratio used by equity analysts.

Return On Equity (ROE) is also calculated by the following method.

$$\text{ReturnOnEquity (ROE)} = \frac{\text{Net Income}}{\text{Shareholders' Funds}}$$

### 7.1.8 Earnings Per Share (EPS)

Earnings Per Share (EPS) indicates the Earnings of the firm on a per-share basis. The calculation is performed by taking the Profit After Taxes and dividing it by the number of equity shares outstanding.

$$\text{EarningsperShare (EPS)} = \frac{\text{ProfitafterTaxes}}{\text{No.ofEquitySharesoutstanding}}$$

EPS indicates how much a company earns on each share in a year. Nevertheless, the shareholders do not obtain the full amount of the earnings. They receive only a part of the earnings, called the dividends.

### 7.1.9 Dividends Per Share (DPS)

Dividends Per Share (DPS) indicate the dividends of the firm on a per-share basis. It is calculated by dividing total dividends paid by the number of equity shares outstanding.

$$\text{DividendsperShare (DPS)} = \frac{\text{TotalDividends}}{\text{No.ofEquitySharesoutstanding}}$$

### 7.1.10 Dividend Pay-out Ratio (DPR)

The Dividend Pay-out Ratio (DPR) reflects the proportion of earnings distributed to shareholders in the form of dividends. Hence it is calculated by dividing dividends per share by the earnings per share, or the total dividends by profit after taxes.

$$\text{DividendPay - outRatio} = \frac{\text{DividendsperShare}}{\text{EarningsperShare}}$$

Or

$$\text{DividendPay - outRatio} = \frac{\text{TotalDividends}}{\text{ProfitafterTaxes}}$$

### 7.1.11 Dividend Yield

Dividends are the returns that an investor receives when he buys shares of the firm. From the perspective of an investor or a prospective investor, it is essential to assess how the returns, specifically dividends, compare with the investment, that is, the market price paid for the shares of the firm. Dividend Yield measures the relationship between dividends per share and the market price of the shares.

$$\text{DividendYield} = \frac{\text{DividendperShare}}{\text{Marketpricepershare}}$$

It indicates the amount of dividends that the investor would receive per rupee of investment.

### 7.1.12 Earnings Yield

Earnings may also be related to the market price to arrive at the Earnings Yield. Earnings Yields is a valuation metric that divides earnings per share by the market price per share.

$$\text{EarningsYield} = \frac{\text{EarningsperShare}}{\text{Marketpricepershare}}$$

## 7.2 Liquidity Ratios

The liquidity ratio evaluates a company's ability to fulfill its short-term liabilities.

### 7.2.1 Current Ratio

The current Ratio is the most commonly used measure of liquidity which compares the firm's current assets to its current liabilities.

$$\text{CurrentRatio} = \frac{\text{CurrentAssets}}{\text{CurrentLiabilities}}$$

Current assets generally consist of cash, bank balance, and assets that can be converted into cash within one year. These would consist of inventories of finished goods, work-in-progress and raw materials, debtors or receivables, and prepaid expenses. Similarly, current liabilities are those obligations of the firm that need to be paid within a year, including trade creditors or payables, accrued expenses, short-term loans, and tax liabilities. Current liabilities also include that portion of the long-term loans, which are falling due in the current year.

As the current ratio compares the current assets with the current liabilities, the ratio indicates the quantum of current assets that the firm holds for every rupee of current liabilities. Hence, a higher current ratio is indicative of a better liquidity position.

### 7.2.2 Quick Ratio

A more stringent assessment of a company's liquidity status is represented by the Quick ratio, also known as the Acid-test ratio. This ratio focuses solely on liquid current assets, meaning, it excludes those current assets which cannot be easily converted into cash in a short period of time. As inventory is relatively difficult to convert into cash, it is excluded from current assets for the purpose of estimating the Quick ratio.

$$\text{QuickRatio} = \frac{\text{CurrentAssets} - \text{Inventory}}{\text{CurrentLiabilities}}$$

Conventionally, a quick ratio of 1:1 is considered adequate, although it may still not be adequate if the debtors' assets are not liquid enough. Hence it also needs to be viewed cautiously.

### 7.2.3 Net Working Capital Ratio

Net Working Capital (NWC) refers to the difference between current assets and current liabilities. The net working capital or Net Current Assets (NCA) is compared with the net assets.

$$\text{NetWorkingCapitalRatio} = \frac{\text{NetWorkingCapital}}{\text{NetAssets}}$$

## 7.3 Leverage Ratios

Leverage ratios assess the relationship between debt and equity in a company's capital structure.

### 7.3.1 Debt-Equity (D/E) Ratio

The Debt-Equity ratio is among the most frequently utilized leverage ratios. It assesses the relationship between the total amount of debt incurred by a company and the total equity provided by its owners. Debt consists of interest-bearing long-term borrowings. Sometimes, both long-term and short-term borrowings are considered as debt. Shareholders' funds consist of Share capital and free reserves, that is, the funds provided by equity shareholders or available for distribution to them.

$$\text{Debt - EquityRatio} = \frac{\text{Long - termInterestbearingDebt}}{\text{Shareholders'Fund(Equity)}}$$

The Debt-Equity Ratio may also be determined using the following method.

$$\text{Debt - EquityRatio} = \frac{\text{Total Debt}}{\text{Shareholders'Fund(Equity)}}$$

The Debt-Equity ratio indicates the amount of borrowed funds employed for each rupee of shareholders' funds. The higher the ratio, the higher the amount of debt for a given amount of shareholders' funds, which would mean a higher use of financial leverage. In most cases, the use of higher leverage would mean that the firm is riskier.

### 7.3.2 Debt Ratio

A variant of the Debt-Equity ratio is the Debt ratio which compares the Debt to the total assets of the firms. This ratio measures the extent to which the assets have been financed by debt or borrowings. This ratio is commonly known as the Debt-to-Capital employed ratio.

$$\text{DebtRatio} = \frac{\text{Long - termInterestbearingDebt}}{\text{Long - termInterestbearingDebt} + \text{Shareholders'Fund(Equity)}}$$

The Debt Ratio may also be determined using the following method.

$$\text{DebtRatio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

## 7.4 Coverage Ratios

The coverage ratios assess the adequacy or otherwise of the profits to pay the interest obligations.

### 7.4.1 Interest Coverage Ratio

Interest Coverage Ratio shows the number of times the funds cover the interest obligations out of which they are to be paid. Hence, a higher interest coverage ratio would indicate a better liquidity position for the firm.

$$\text{InterestCoverageRatio} = \frac{\text{EBIT}}{\text{Interest}}$$

A variation of this ratio is the EBITDA to Interest ratio. EBITDA serves as a proxy indicator of cash flow availability. A higher ratio reflects a stronger position for the company in terms of its ability to meet interest payments.

## 7.5 Efficiency Ratios

Efficiency ratios or activity ratios are used to evaluate the efficiency with which a firm uses its assets. These ratios are also referred to as Turnover ratios as they relate the various components of assets namely Inventory, Debtors, or Fixed assets with the Sales or Turnover of the firm. Efficiency ratios typically encompass the Inventory Turnover ratio, Debtor Turnover ratio, Creditors Turnover ratio, and Assets Turnover ratio.

### 7.5.1 Assets Turnover Ratio

The asset turnover ratio assesses the efficiency with which a company utilizes its assets to produce sales. Since assets play a crucial role in driving sales, it is important for a firm to manage its assets efficiently in order to maximize revenue. The Net Assets Turnover ratio can be calculated as follows:

$$\text{NetAssetsTurnoverRatio} = \frac{\text{Sales}}{\text{NetAssets}}$$

Net assets consist of long-term (or non-current) assets and net current assets, which are calculated as current assets minus current liabilities. A high net asset turnover ratio indicates that a firm can generate significant sales from its net assets, suggesting effective asset utilization. Since net assets also reflect the amount of capital employed by the firm, this ratio is sometimes referred to as the capital employed turnover ratio. Additionally, we can assess the efficiency of fixed and current asset usage in generating sales by calculating the fixed assets turnover ratio and current assets turnover ratio, respectively.

### 7.6 Valuation Ratios

Valuation ratios serve to assess the worth of the investments made by shareholders. These ratios are also known as Investment ratios. Presented below is a list of the primary valuation ratios.

#### 7.6.1 Price-to-Earnings Ratio (P/E Ratio)

The price-to-earnings ratio relates the current market company's equity shares with the Earnings per Share.

$$\text{Price - to - EarningsRatio} = \frac{\text{MarketPriceofEquityShare}}{\text{EarningsperShare}}$$

It indicates what the market expects to pay for each rupee of earnings. Financial analysts extensively use this ratio to value a firm by multiplying the earnings per share with the P/E ratio of comparable firms or a pre-decided P/E ratio.

#### 7.6.2 Market-to-Book Value Ratio

Market-to-Book ratio relates the market price to the book value per share.

$$\text{Market - to - BookRatio} = \frac{\text{Market Value per Equity Share}}{\text{Book Value per of Equity Share}}$$

Book value is calculated by taking the net worth of the company and dividing it by the total number of equity shares that are currently outstanding. This value represents the total amount of capital invested by the equity shareholders. This ratio, therefore, indicates how much more (or less) the shareholders' money is worth. If the Market-to-Book ratio is greater than 1, it indicates that the shareholders' funds are worth more than their investment, while a Market-to-Book ratio less than 1 signifies erosion of shareholders' investment in the firm.

#### 7.6.3 Enterprise Value to EBITDA

The Enterprise Value to EBITDA ratio connects the Enterprise Value (EV) with the Earnings before Interest, Taxes, Depreciation, and Amortization (EBITDA).

$$\text{EV to EBITDA Ratio} = \frac{\text{Enterprise Value}}{\text{EBITDA}}$$

Enterprise value is the value of the entire firm (whether financed by debt or equity), with less non-operational (excess) cash and short-term investments. EBITDA is the Earnings before Interest, Taxes, and Depreciation & Amortizations. While the P/E ratio considers only the market value of equity with the profit after taxes, the EV to EBITDA ratio compares the value of the entire firm to the earnings. It is considered a better indicator than the P/E ratio as it is not influenced by the financing decision (capital structure), taxes, or depreciation methods adopted by firms.

## VIII. ANALYSIS OF OBJECTIVE 1 AND OBJECTIVE 2: DATA REPRESENTATION AND ANALYSIS

The data for calculating the financial ratios are obtained from the annual reports of Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS).

### 8.1 Profitability Ratios

#### 8.1.1 Gross Profit Margin

The Gross Margin will be calculated by using the following formula.

$$\text{Gross Profit Margin} = \frac{\text{GrossProfit}}{\text{SalesRevenue}}$$

The gross profit of Cognizant Technology Solutions (CTS) is calculated by the following method.

$$\text{Gross Profit} = \text{Revenues} - \text{Cost of revenues}$$

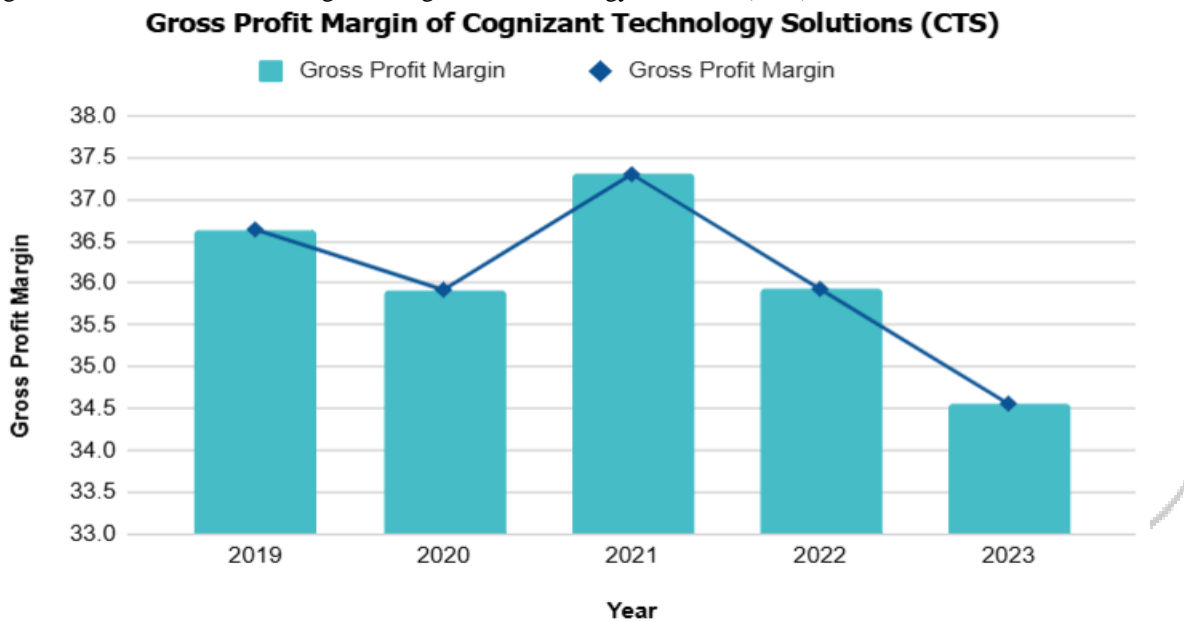
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.1.1: Gross Profit Margin of Cognizant Technology Solutions (CTS)

Year	Gross Profit (\$ millions)	Sales Revenue (\$ millions)	Gross Profit Margin (%)
2019	6,149	16,783	36.64
2020	5,981	16,652	35.92
2021	6,903	18,507	37.30
2022	6,980	19,428	35.93
2023	6,689	19,353	34.56

The graphical interpretation of Table 8.1.1.1 is given below in the form of a chart and trend.

Figure 8.1.1.1: Gross Profit Margin of Cognizant Technology Solutions (CTS)



The gross profit for Tata Consultancy Services (TCS) is calculated by the following method.

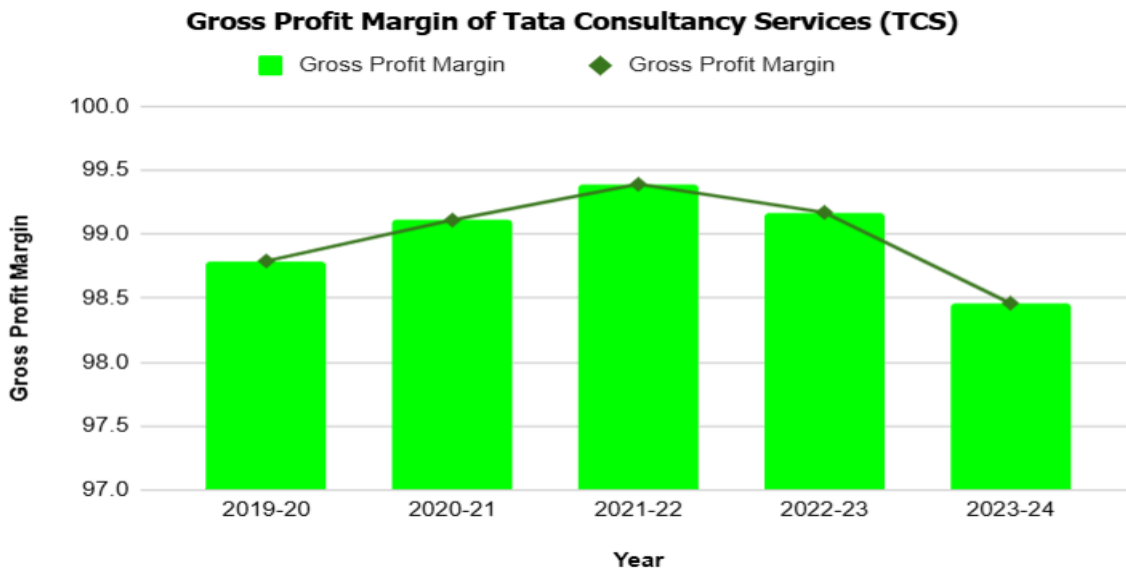
*Gross Profit = Revenues from operations – Cost of equipment and software licenses*  
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.1.2: Gross Profit Margin of Tata Consultancy Services (TCS)

Year	Gross Profit (₹ crore)	Sales Revenue (₹ crore)	Gross Profit Margin (%)
2019-20	155044	156,949	98.79
2020-21	162715	164,177	99.11
2021-22	190591	191,754	99.39
2022-23	223577	2,25,458	99.17
2023-24	237191	2,40,893	98.46

The graphical interpretation of Table 8.1.1.2 is given below in the form of a chart and trend.

Figure 8.1.1.2: Gross Profit Margin of Tata Consultancy Services (TCS)



### Interpretation

A greater gross profit margin indicates a more favorable financial position. A higher gross profit margin indicates the company did it well in managing its cost of sales. From the Table 8.1.1.1, it can be interpreted that during the year 2021, Cognizant Technology Solutions (CTS) had the highest gross profit margin and the gross profit margin started falling. During the year 2019, the gross profit margin of CTS was 0.66% lower than the gross profit margin of the year 2021. However in the year 2020, the gross profit margin fell and rose in the year 2021. From the Table 8.1.1.2, it can be interpreted that during the year 2021-22, Tata Consultancy Services (TCS) had the highest gross profit margin and the gross profit margin started falling. An average good gross profit margin is between 30% and 35% but varies widely by industry (CFO Hub, n.d.). As of 2023, computer services industry should attain an average of 27.24% to be recognized of having a good gross profit margin (Polymer Search, 2023). Both Table 8.1.1.1 and Table 8.1.1.2 show that CTS and TCS respectively are having good gross profit margin.

### 8.1.2 Net Profit Margin

The Net Profit Margin for Cognizant Technology Solutions (CTS) will be calculated by using the following formula.

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Revenue}}$$

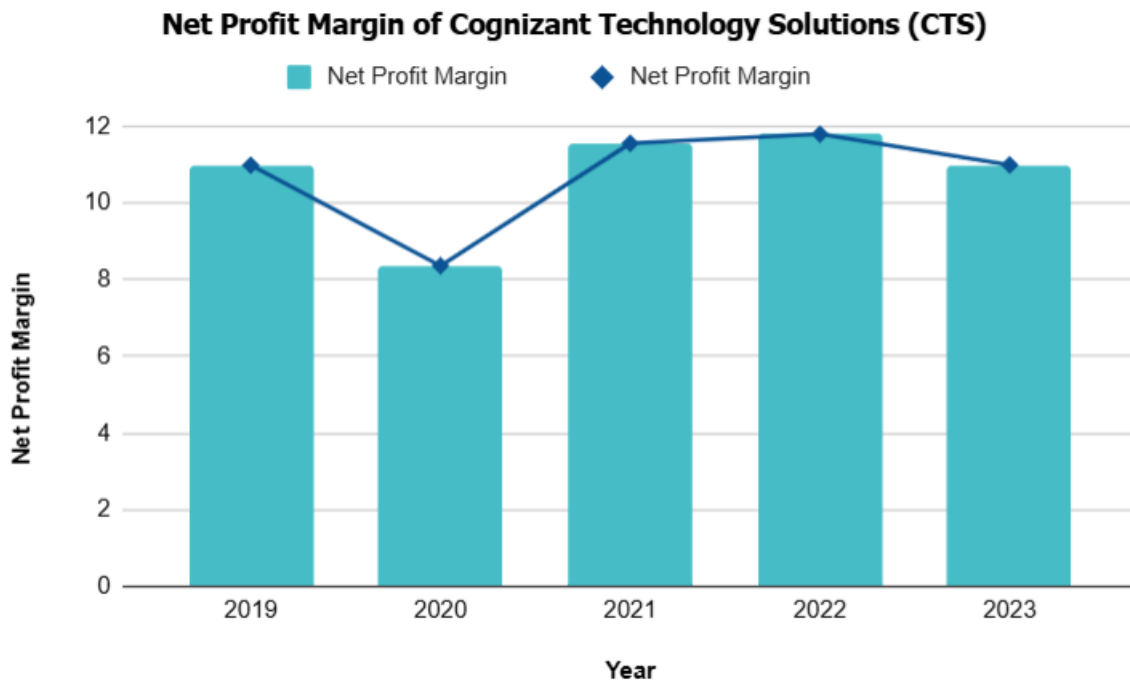
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.2.1: Net Profit Margin of Cognizant Technology Solutions (CTS)

Year	Net Income (\$ millions)	Revenue (\$ millions)	Net Profit Margin (%)
2019	1,842	16,783	10.98
2020	1,392	16,652	8.36
2021	2,137	18,507	11.55
2022	2,290	19,428	11.79
2023	2,126	19,353	10.99

The graphical interpretation of Table 8.1.2.1 is given below in the form of a chart and trend.

Figure 8.1.2.1: Net Profit Margin of Cognizant Technology Solutions (CTS)



Net Profit Margin for Tata Consultancy Services (TCS) will be calculated by using the following formula.

$$\text{Net Profit Margin} = \frac{\text{Profit After Taxes (or Net Profit)}}{\text{Sales Revenue}}$$

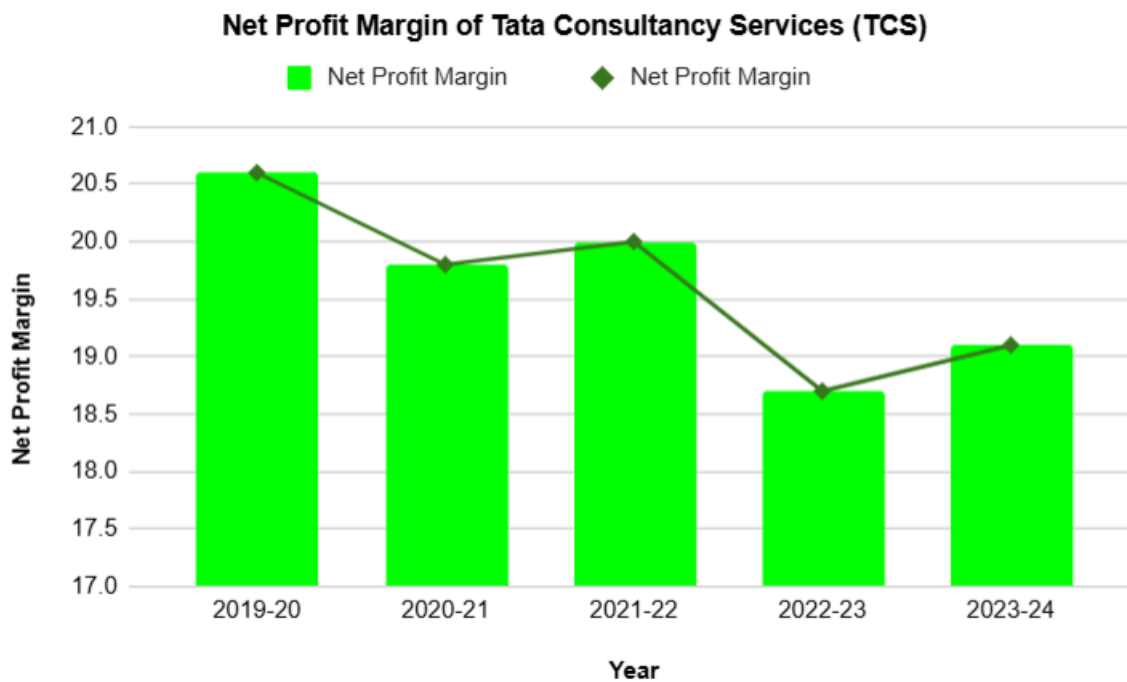
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.2.2: Net Profit Margin of Tata Consultancy Services (TCS)

Year	Profit After Taxes (₹ crore)	Sales Revenue (₹ crore)	Net Profit Margin (%)
2019-20	32,340	156,949	20.6
2020-21	32,430	164,177	19.8
2021-22	38,327	191,754	20.0
2022-23	42,147	225,458	18.7
2023-24	45,908	240,893	19.1

The graphical interpretation of Table 8.1.2.2 is given below in the form of a chart and trend.

Figure 8.1.2.2: Net Profit Margin of Tata Consultancy Services (TCS)



### Interpretation

Net Profit Margin calculates the overall profitability of the company considering all direct as well as indirect costs. A high margin indicates a favorable return for the company and reflects its overall performance. From Table 8.1.2.1, it can be interpreted that in the year 2022, CTS had the highest net profit margin and then it fell in the year 2023. The company had the lowest net profit margin in the year 2020 and rose by the year 2021. From Table 8.1.2.2, it can be interpreted that in the financial year of March 31, 2020, TCS had the highest net profit margin. After that, the margin decreased by March 31, 2021, again increased by March 31, 2022, fell by March 31, 2023, and at last increased by March 31, 2024. It can be seen that TCS had the lowest net profit margin by March 31, 2023. A net profit margin of 10% is good and above 20% is regarded as healthy. But a net profit of 5% is very low and indicates financial risk. As of 2023, computer services industry should attain an average of 3.42% to be recognized of having a good net profit margin (Polymer Search, 2023). Both Table 8.1.2.1 and Table 8.1.2.2 show that CTS and TCS respectively are having good net profit margin.

### 8.1.3 Net Operating Profit After Tax (NOPAT) Margin

Net Operating Profit After Tax (NOPAT) Margin will be calculated by using the following formula.

$$\text{Net Operating Profit Margin} = \frac{\text{NOPAT (or EBIT} * (1 - \text{taxrate}))}{\text{Sales Revenue}}$$

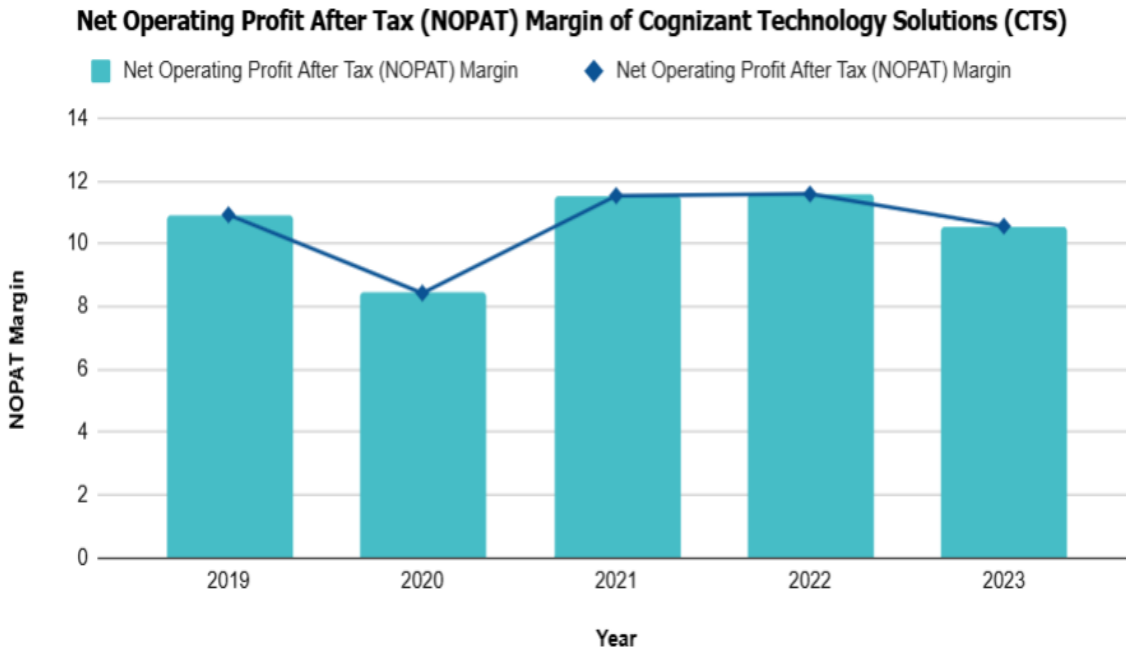
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.3.1: Net Operating Profit After Tax (NOPAT) Margin of Cognizant Technology Solutions (CTS)

Year	NOPAT (\$ millions)	Sales Revenue (\$ millions)	Net Operating Profit After Tax (NOPAT) Margin (%)
2019	1832.6363	16,783	10.92
2020	1403.9074	16,652	8.43
2021	2133.3474	18,507	11.53
2022	2249.7440	19,428	11.58
2023	2044.4467	19,353	10.56

The graphical interpretation of Table 8.1.3.1 is given below in the form of a chart and trend.

Figure 8.1.3.1: Net Operating Profit After Tax (NOPAT) Margin of Cognizant Technology Solutions (CTS)



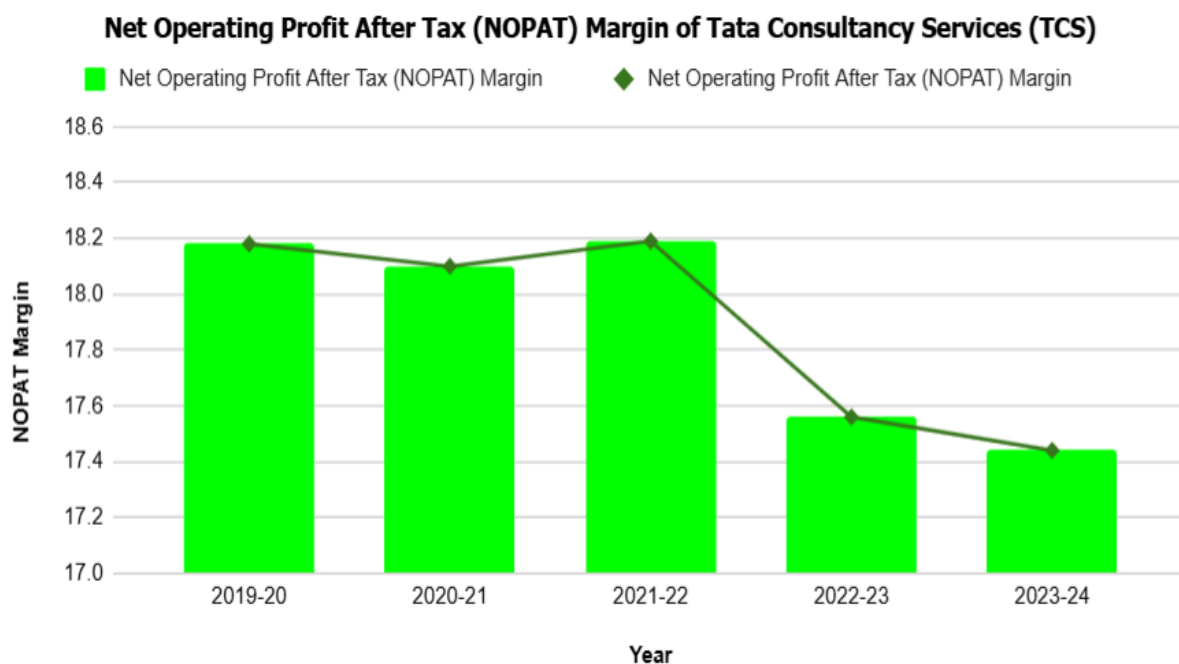
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.3.2: Net Operating Profit After Tax (NOPAT) Margin of Tata Consultancy Services (TCS)

Year	NOPAT (₹ crore)	Sales Revenue (₹ crore)	Net Operating Profit After Tax (NOPAT) Margin (%)
2019-20	28538.50	156,949	18.18
2020-21	29709.36	164,177	18.10
2021-22	34886.16	191,754	18.19
2022-23	39593.01	225,458	17.56
2023-24	42014.16	240,893	17.44

The graphical interpretation of Table 8.1.3.2 is given below in the form of a chart and trend.

Figure 8.1.3.2: Net Operating Profit After Tax (NOPAT) Margin of Tata Consultancy Services (TCS)



### Interpretation

NOPAT represents a company's theoretical income from operations if it has no debt. From the Table 8.1.3.1, it can be interpreted that CTS had the lowest NOPAT Margin in the year 2020 and then it gradually increased till the year 2022. In the year 2023, the NOPAT Margin decreased. From the Table 8.1.3.2, it can be interpreted that TCS had the highest NOPAT Margin in the year 2021-22 and then it decreased till the year 2023-24.

#### 8.1.4 Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) Margin

Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) will be calculated by using the following formula.

$$\text{EBITDAMargin} = \frac{\text{EBITDA}}{\text{SalesRevenue}}$$

$$\text{EBITDA} = \text{EBIT} + \text{Depreciation and Amortization}$$

For Cognizant Technology Solutions (CTS), EBIT = Income from operations.

The data of Depreciation and Amortization is taken from the cash flows statement.

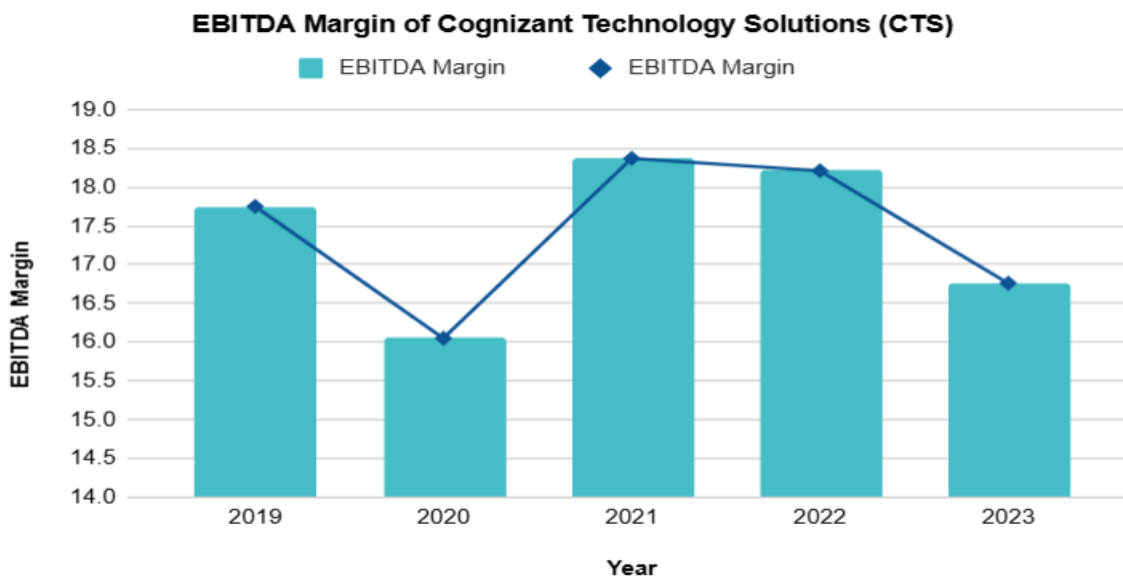
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.4.1: Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) Margin of Cognizant Technology Solutions (CTS)

Year	EBITDA (\$ millions)	Sales Revenue (\$ millions)	EBITDA Margin (%)
2019	2979	16,783	17.75
2020	2673	16,652	16.05
2021	3400	18,507	18.37
2022	3537	19,428	18.21
2023	3244	19,353	16.76

The graphical interpretation of Table 8.1.4.1 is given below in the form of a chart and trend.

Figure 8.1.4.1: Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) Margin of Cognizant Technology Solutions (CTS)



For Tata Consultancy Services (TCS), the data of EBIT is taken from Tata Consultancy Services (TCS) Performance Trend-10 years.

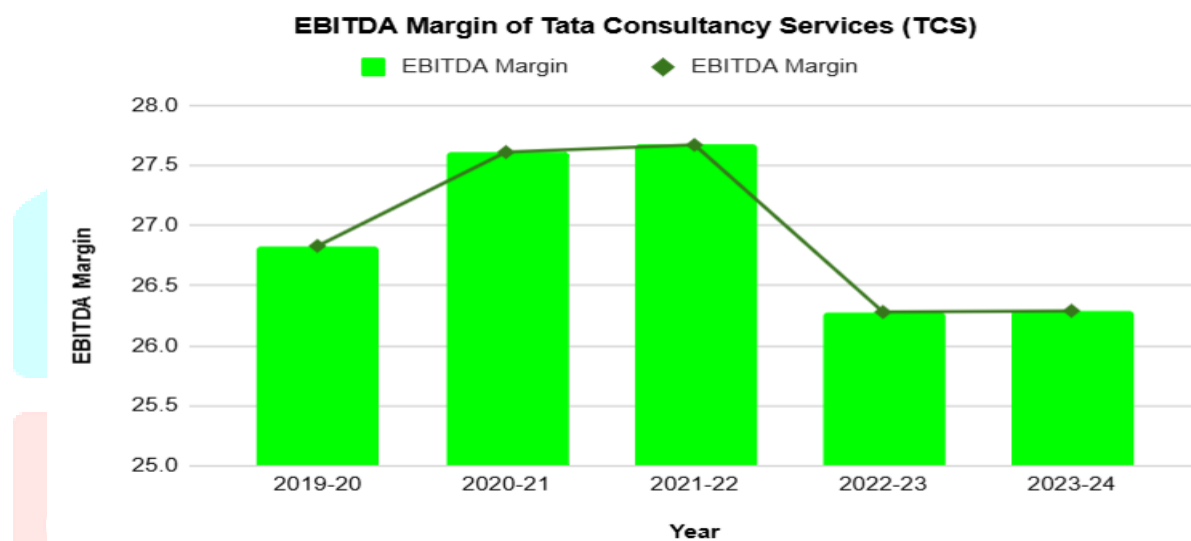
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.4.2: Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) Margin of Tata Consultancy Services (TCS)

Year	EBITDA (₹ crore)	Sales Revenue (₹ crore)	EBITDA Margin (%)
2019-20	42109	156,949	26.83
2020-21	45328	164,177	27.61
2021-22	53057	191,754	27.67
2022-23	59259	225,458	26.28
2023-24	63338	240,893	26.29

The graphical interpretation of Table 8.1.4.2 is given below in the form of a chart and trend.

Figure 8.1.4.2: Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) Margin of Tata Consultancy Services (TCS)



### Interpretation

A strong EBITDA is typically considered to be at least twice the company's interest expense. In some industries, an EBITDA margin higher than 15% is seen as favorable. However, what constitutes a good EBITDA varies based on industry, company size, industry norms, growth stage, and capital structure. According to Simon Thomas, Managing Director and Founder of accountancy firm Ridgefield Consulting, a good EBITDA margin generally falls between 15% and 25%. In general, a higher EBITDA margin indicates greater profitability and efficiency for a company. Table 8.1.4.1 and Table 8.1.4.2 show that both CTS and TCS have good EBITDA margins. CTS had the highest EBITDA Margin in 2021 and the lowest in 2020 whereas, CTS had the highest EBITDA Margin in 2021-22 and the lowest in 2022-23.

### 8.1.5 Return On Assets (ROA)

Return On Assets (ROA) will be calculated by using the following formula.

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

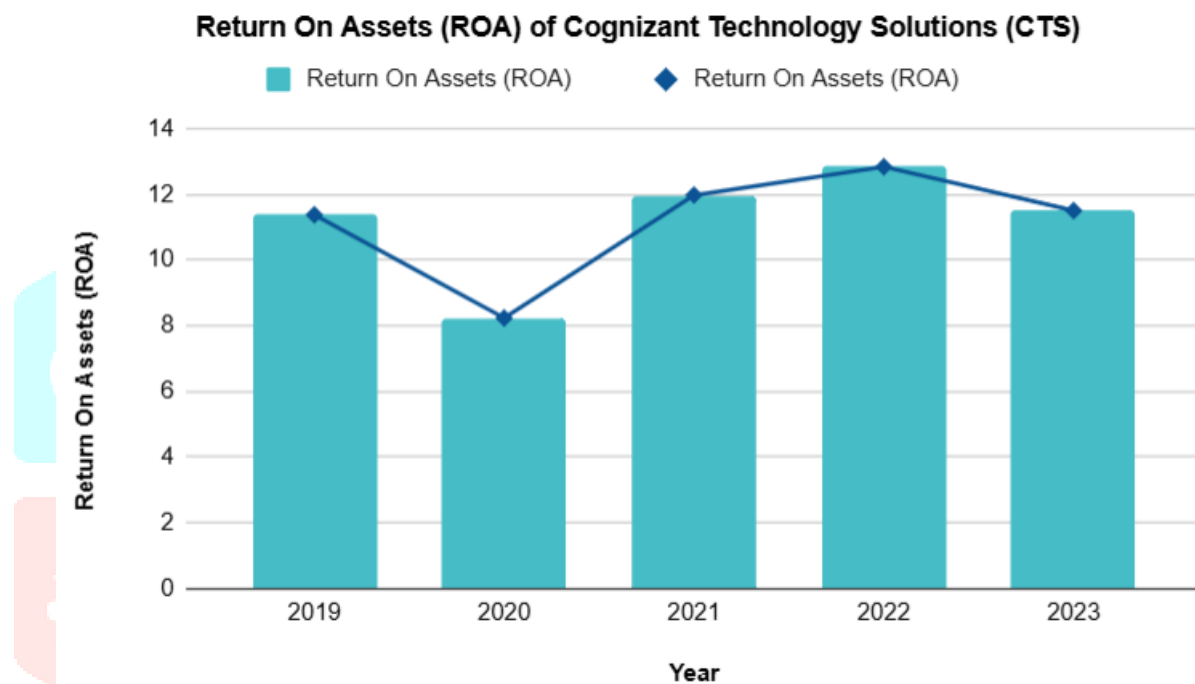
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.5.1: Return On Assets (ROA) of Cognizant Technology Solutions (CTS)

Year	Net Income (\$ millions)	Total Assets (\$ millions)	Return On Assets (ROA) (%)
2019	1,842	16,204	11.37
2020	1,392	16,923	8.23
2021	2,137	17,852	11.97
2022	2,290	17,852	12.83
2023	2,126	18,483	11.50

The graphical interpretation of Table 8.1.5.1 is given below in the form of a chart and trend.

Figure 8.1.5.1: Return On Assets (ROA) of Cognizant Technology Solutions (CTS)



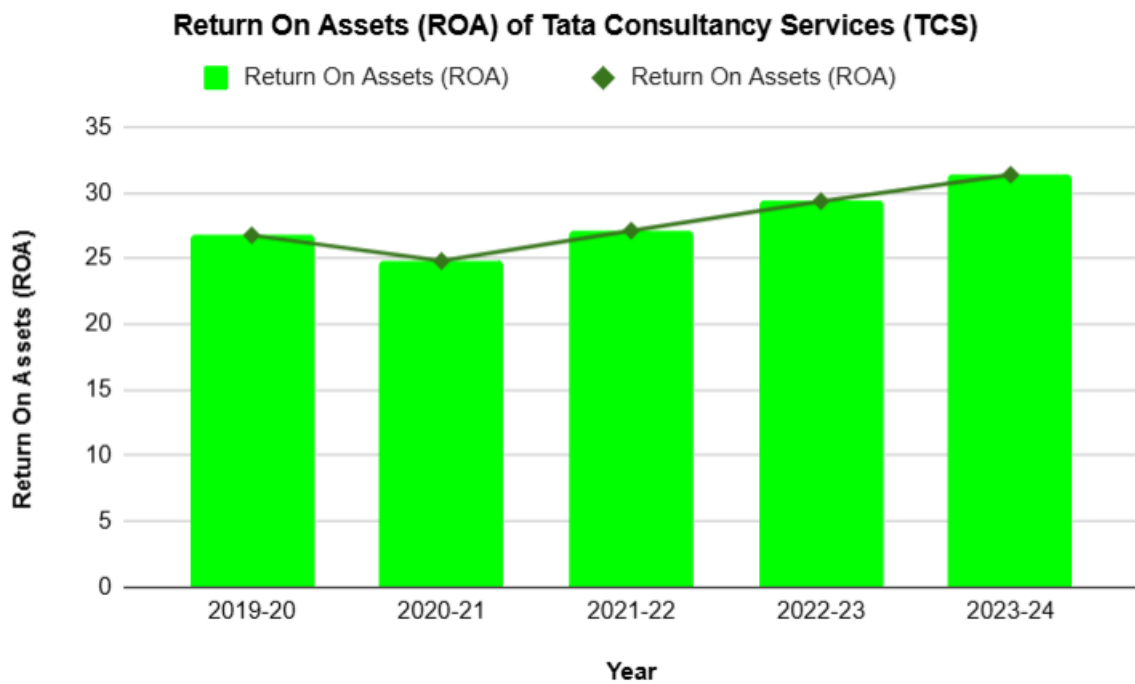
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.5.2: Return On Assets (ROA) of Tata Consultancy Services (TCS)

Year	Net Income (₹ crore)	Total Assets (₹ crore)	Return On Assets (ROA) (%)
2019-20	32,340	1,20,899	26.75
2020-21	32,430	1,30,759	24.80
2021-22	38,327	1,41,514	27.10
2022-23	42,147	1,43,651	29.34
2023-24	45,908	1,46,449	31.35

The graphical interpretation of Table 8.1.5.2 is given below in the form of a chart and trend.

Figure 8.1.5.2: Return On Assets (ROA) of Tata Consultancy Services (TCS)



### Interpretation

A Return On Assets (ROA) of over 5% is generally considered satisfactory and exceeding 20% is excellent. Table 8.1.5.1 shows that Cognizant Technology Solutions (CTS) is having a satisfactory ROA whereas, Table 8.1.5.2 shows that Tata Consultancy Services (TCS) is having an excellent ROA. The ROA of CTS increased after 2020 but dropped in 2023 by 1.33% in comparison to the ROA of 2022. In contrast, TCS is increasing year by year after 2020-21.

### 8.1.6 Return on Capital Employed (ROCE)

Return on Capital Employed (ROCE) will be calculated by using the following formula.

$$\text{Return on Capital Employed (ROCE)} = \frac{\text{EBIT}}{\text{Total Debt} + \text{Shareholders' Funds}}$$

EBIT is also known as Operating Income or Income from operations (Vipond, n.d.). The EBIT for Cognizant Technology Solutions (CTS) is the Income from operations.

For calculating Total Debt of Cognizant Technology Solutions (CTS), the following method will be used.

$$\text{Total Debt} = \text{Short-term debt} + \text{Long-term debt}$$

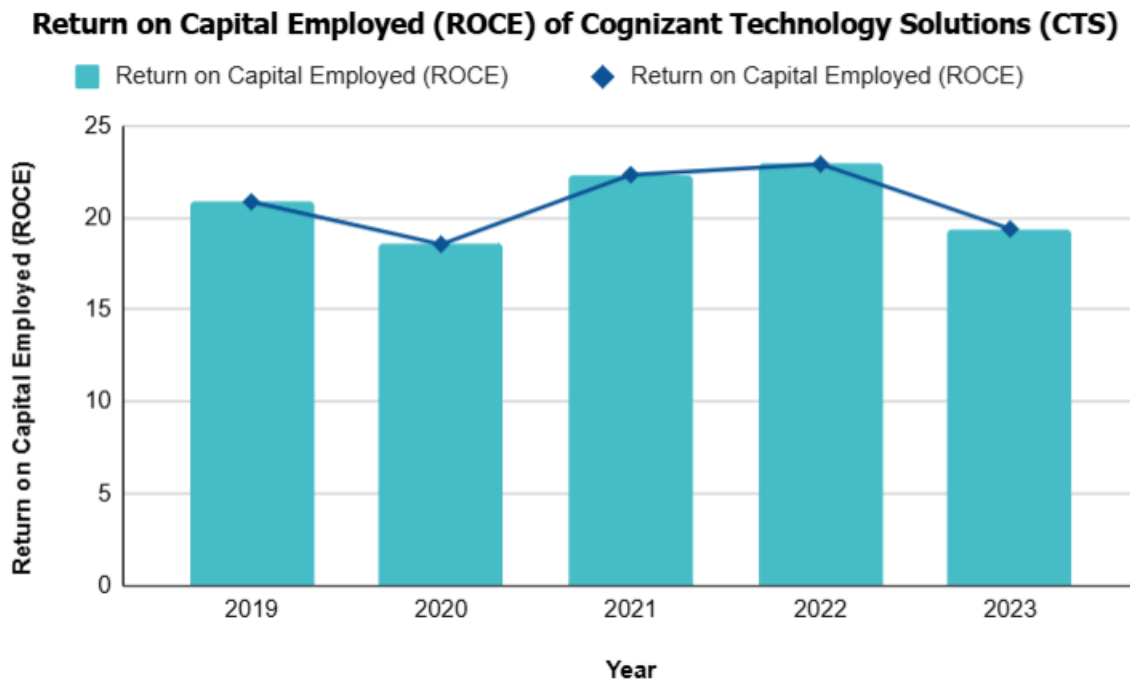
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.6.1: Return on Capital Employed (ROCE) of Cognizant Technology Solutions (CTS)

Year	EBIT (\$ millions)	Total Debt (\$ millions)	Shareholder's Funds (\$ millions)	Return on Capital Employed (ROCE) (%)
2019	2,453	738	11,022	20.86
2020	2,114	701	10,689	18.56
2021	2,826	664	11,991	22.33
2022	2,968	646	12,309	22.91
2023	2,689	639	13,227	19.39

The graphical interpretation of Table 8.1.6.1 is given below in the form of a chart and trend.

Figure 8.1.6.1: Return on Capital Employed (ROCE) of Cognizant Technology Solutions (CTS)



The data of EBIT for Tata Consultancy Services (TCS) is taken from Tata Consultancy Services (TCS) Performance Trend-10 years.

For calculating Total Debt of Tata Consultancy Services (TCS), the following method will be used.

$$\text{Total Debt} = \text{Lease liabilities of non-current liabilities} + \text{Lease liabilities of current liabilities}$$

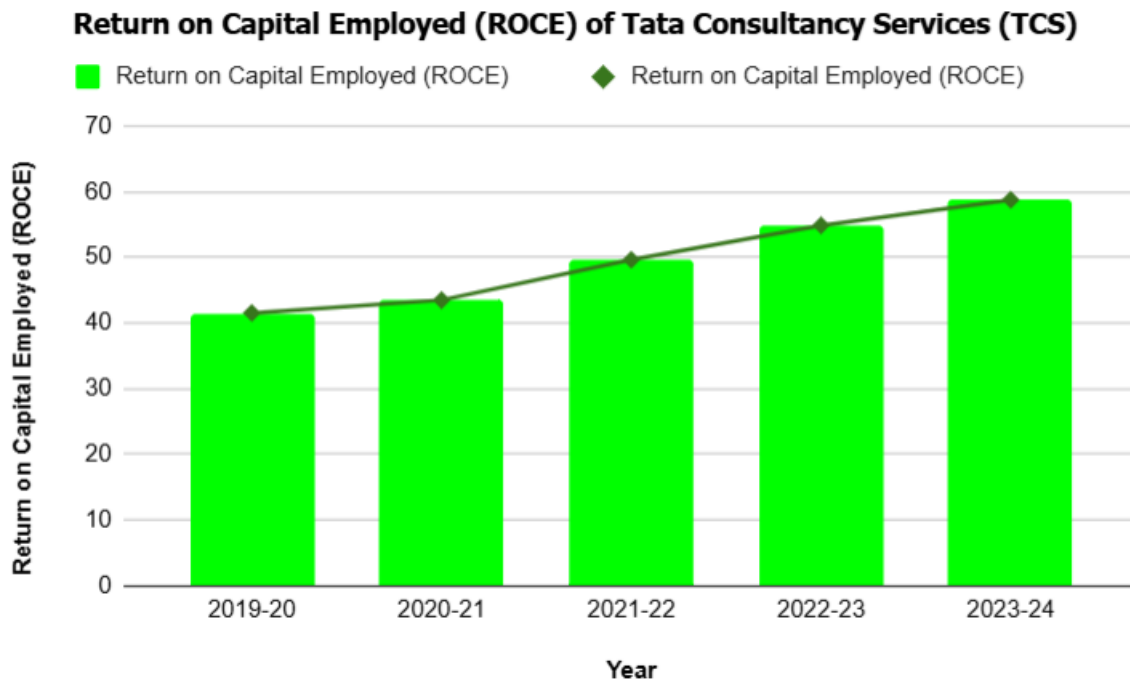
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.6.2: Return on Capital Employed (ROCE) of Tata Consultancy Services (TCS)

Year	EBIT (₹ crore)	Total Debt (₹ crore)	Shareholder's Fund (₹ crore)	Return on Capital Employed (ROCE) (%)
2019-20	38,580	8174	84749	41.52
2020-21	41,263	7795	87108	43.48
2021-22	48,453	7818	89846	49.61
2022-23	54,237	7688	91206	54.84
2023-24	58,353	8021	91319	58.74

The graphical interpretation of Table 8.1.6.2 is given below in the form of a chart and trend.

Figure 8.1.6.2: Return on Capital Employed (ROCE) of Tata Consultancy Services (TCS)



### Interpretation

The higher the Return on Capital Employed (ROCE), the more profits the company generates from capital employed. From Table 8.1.6.1, it can be concluded that CTS had the lowest return on capital employed in the year 2020 and it gradually increased till the year 2022. The ROCE again fell in the year 2023. From Table 8.1.6.2, it can be concluded that TCS had the lowest return on capital employed in the year 2019-20 and it gradually increased till the year 2023-24.

### 8.1.7 Return on Equity (ROE)

Return on Equity (ROE) for Cognizant Technology Solutions (CTS) will be calculated by using the following formula.

$$\text{Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Shareholders' Funds}}$$

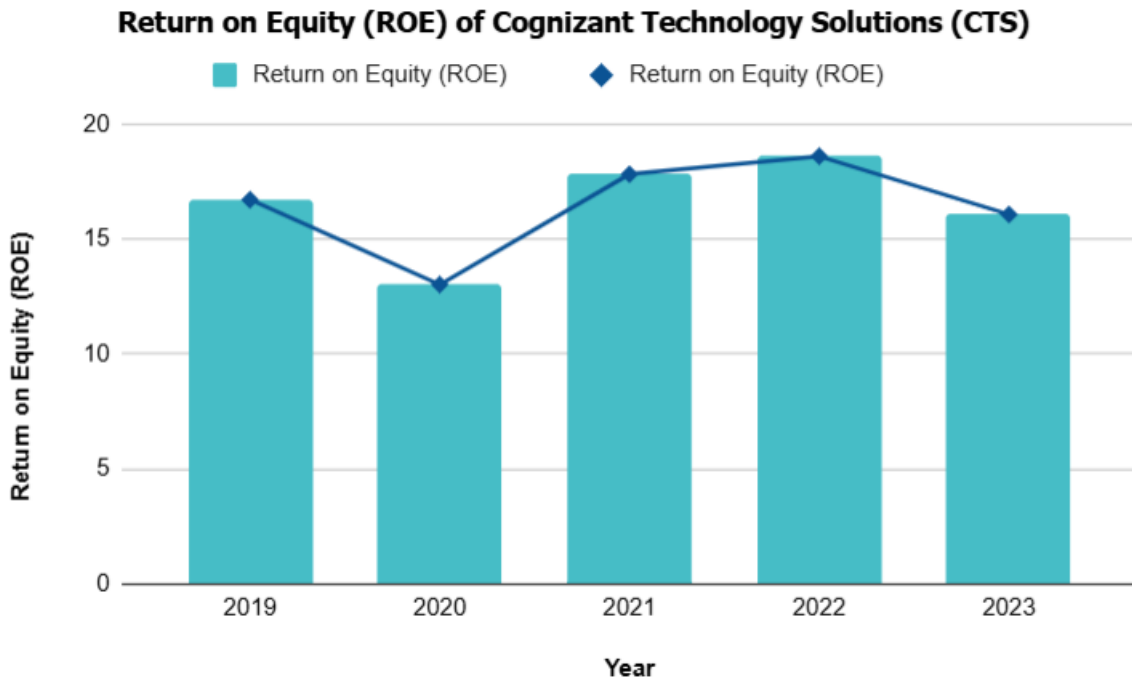
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.7.1: Return on Equity (ROE) of Cognizant Technology Solutions (CTS)

Year	Net Income (\$ millions)	Shareholder's Funds (\$ millions)	Return on Equity (ROE) (%)
2019	1,842	11,022	16.71
2020	1,392	10,689	13.02
2021	2,137	11,991	17.82
2022	2,290	12,309	18.60
2023	2,126	13,227	16.07

The graphical interpretation of Table 8.1.7.1 is given below in the form of a chart and trend.

Figure 8.1.7.1: Return on Equity (ROE) of Cognizant Technology Solutions (CTS)



Return on Equity (ROE) for Tata Consultancy Services (TCS) will be calculated by using the following formula.

$$Return\ on\ Equity\ (ROE) = \frac{Profit\ after\ Taxes\ (PAT)}{Shareholders'\ Funds}$$

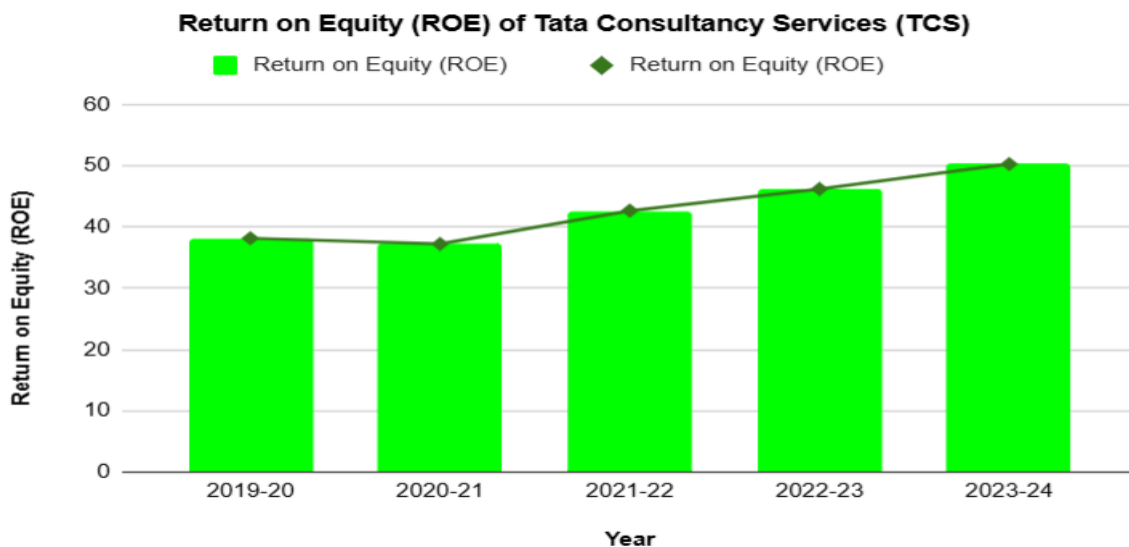
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.7.2: Return on Equity (ROE) of Tata Consultancy Services (TCS)

Year	Profit After Taxes (₹ crore)	Shareholder's Fund (₹ crore)	Return on Equity (ROE) (%)
2019-20	32,340	84749	38.16
2020-21	32,430	87108	37.23
2021-22	38,327	89846	42.66
2022-23	42,147	91206	46.21
2023-24	45,908	91319	50.27

The graphical interpretation of Table 8.1.7.2 is given below in the form of a chart and trend.

Figure 8.1.7.2: Return on Equity (ROE) of Tata Consultancy Services (TCS)



**Interpretation**

Return on Equity (ROE) ratios vary significantly from one industry group or sector to another. A common shortcut for investors is to consider anything less than 10% indicates a poor return on equity and a return on equity ratio of 15% to 20% is usually considered good. An ROE greater than 25% in some industries is considered good. Overall, an ROE equal to and more than 15% is good. From Table 8.1.7.1 and Table 8.1.7.2, it can be concluded that both CTS and TCS have good ROE. The higher the ROE, the more efficient a company’s management is at generating income and growth from its equity financing. On interpreting Table 8.1.7.1, it can be seen that CTS had the highest ROE in the year 2022 and the lowest in the year 2020. On interpreting Table 8.1.7.2, it can be seen that TCS had the highest ROE in the year 2023-24 and the lowest ROE in the year 2020-21.

**8.1.8 Earnings Per Share (EPS)**

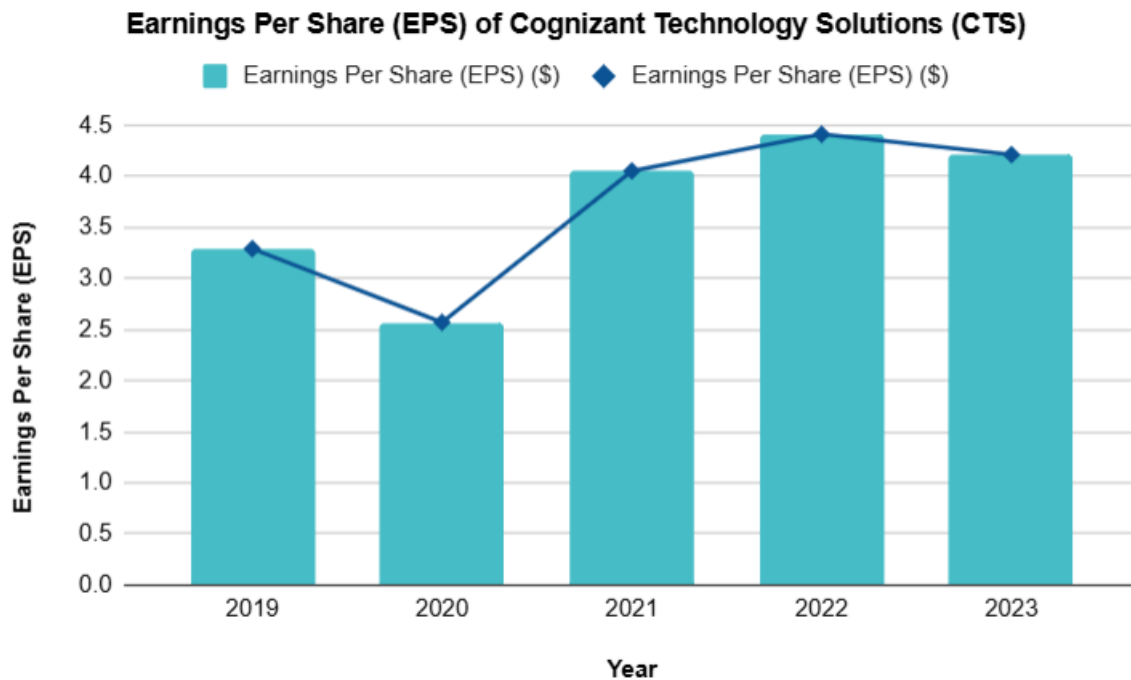
The data on Earnings Per Share (EPS) Cognizant Technology Solutions (CTS) is taken from Macrotrends (n.d.). Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.8.1: Earnings Per Share (EPS) of Cognizant Technology Solutions (CTS)

Year	Earnings Per Share (EPS) (\$)
2019	3.29
2020	2.57
2021	4.05
2022	4.41
2023	4.21

The graphical interpretation of Table 8.1.8.1 is given below in the form of a chart and trend.

Figure 8.1.8.1: Earnings Per Share (EPS) of Cognizant Technology Solutions (CTS)



The data on Earnings Per Share (EPS) for Tata Consultancy Services (TCS) is taken from Tata Consultancy Services (TCS) Performance Trend-10 years.

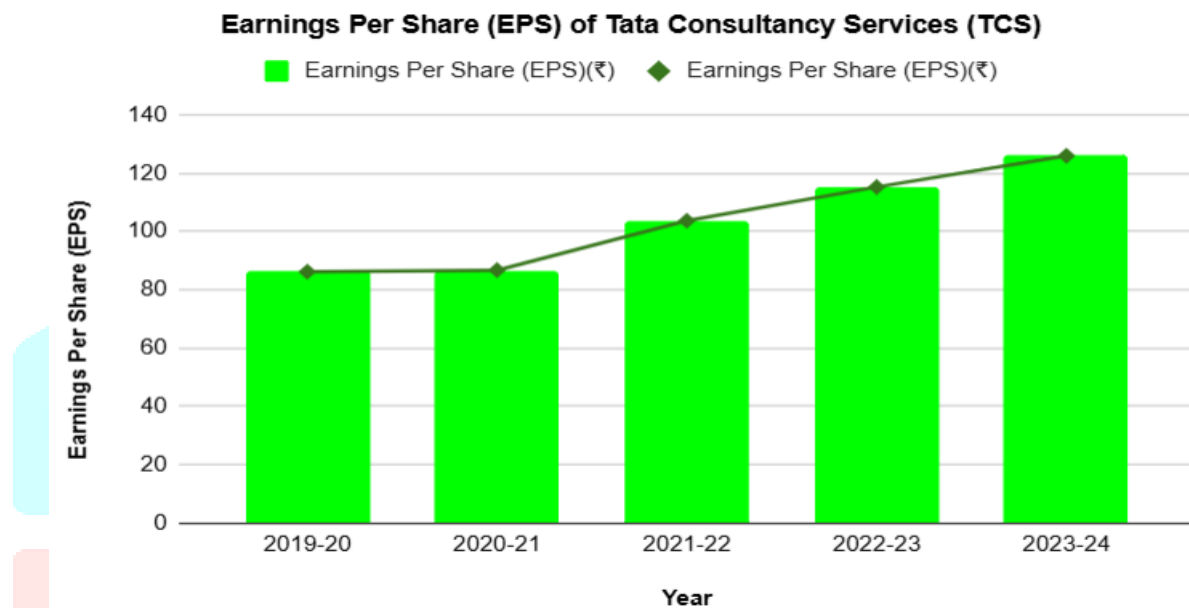
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.8.2: Earnings Per Share (EPS) of Tata Consultancy Services (TCS)

Year	Earnings Per Share (EPS)(₹)
2019-20	86.19
2020-21	86.71
2021-22	103.62
2022-23	115.19
2023-24	125.88

The graphical interpretation of Table 8.1.8.2 is given below in the form of a chart and trend.

Figure 8.1.8.2: Earnings Per Share (EPS) of Tata Consultancy Services (TCS)



### Interpretation

The higher a company's EPS is the better. High EPS suggests good profit-making potential and efficient use of investor funds. From Table 8.1.8.1, it can be seen that CTS had the highest EPS in the year 2022 and the lowest in the year 2020 whereas, from Table 8.1.8.2, it can be concluded that TCS is efficiently using the investor's funds and it can be seen by the gradual increase of EPS in every year.

### 8.1.9 Dividends Per Share (DPS)

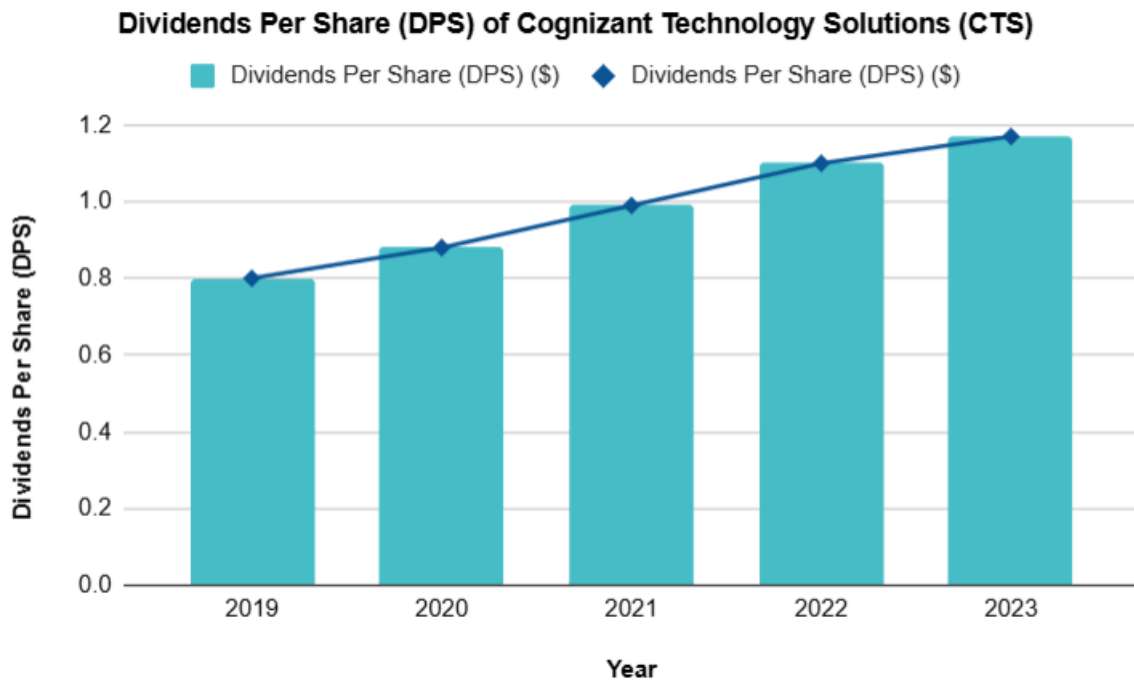
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.9.1: Dividends Per Share (DPS) of Cognizant Technology Solutions (CTS)

Year	Dividends Per Share (DPS) (\$)
2019	0.80
2020	0.88
2021	0.99
2022	1.10
2023	1.17

The graphical interpretation of Table 8.1.9.1 is given below in the form of a chart and trend.

Figure 8.1.9.1: Dividends Per Share (DPS) of Cognizant Technology Solutions (CTS)



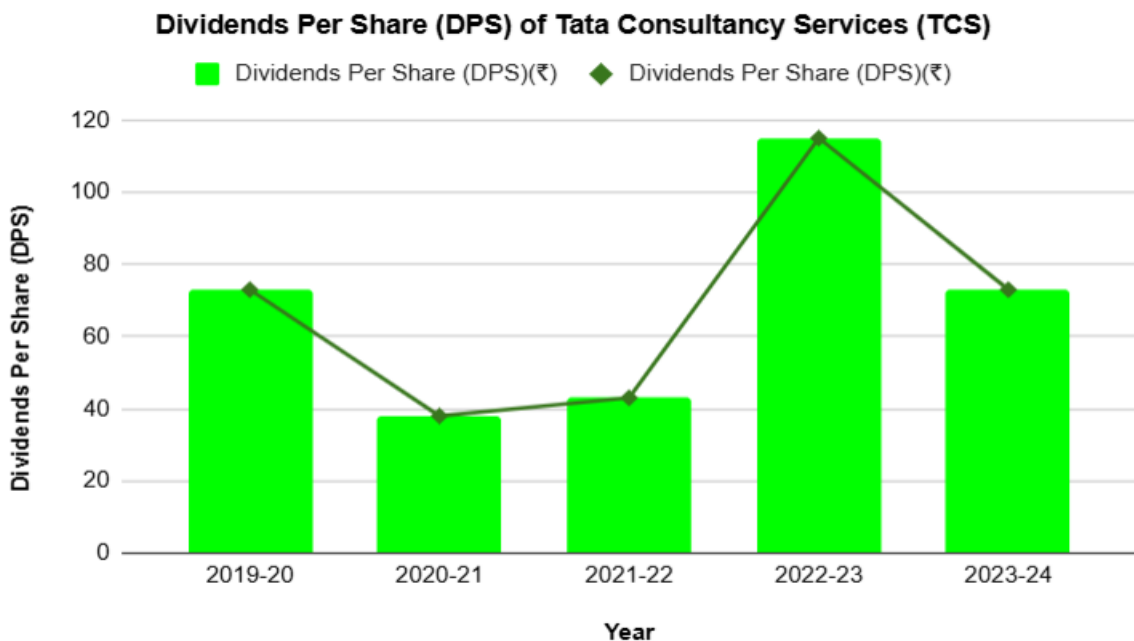
The data on Dividends Per Share (DPS) is taken from Tata Consultancy Services (TCS) Ratio Analysis-10 years. Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.9.2: Dividends Per Share (DPS) of Tata Consultancy Services (TCS)

Year	Dividends Per Share (DPS)(₹)
2019-20	73.00
2020-21	38.00
2021-22	43.00
2022-23	115.00
2023-24	73.00

The graphical interpretation of Table 8.1.9.2 is given below in the form of a chart and trend.

Figure 8.1.9.2: Dividends Per Share (DPS) of Tata Consultancy Services (TCS)



## Interpretation

A rising Dividends Per Share (DPS) is a positive indicator for a company as it reflects sustained long-term earnings and the company's confidence in sharing profits with its shareholders. In contrary, a company may decrease its DPS in order to reduce its debt. From Table 8.1.9.1, it can be concluded that CTS is has experienced a rising DPS. In contrast, Table 8.1.9.2 interprets that TCS had the highest DPS in the year 2022-23 and the lowest DPS in the year 2020-21.

### 8.1.10 Dividend Pay-out Ratio (DPR)

The Dividend Pay-out Ratio (DPR) will be calculated by using the following formula.

$$\text{Dividend Pay-out Ratio} = \frac{\text{Dividends per Share}}{\text{Earnings per Share}}$$

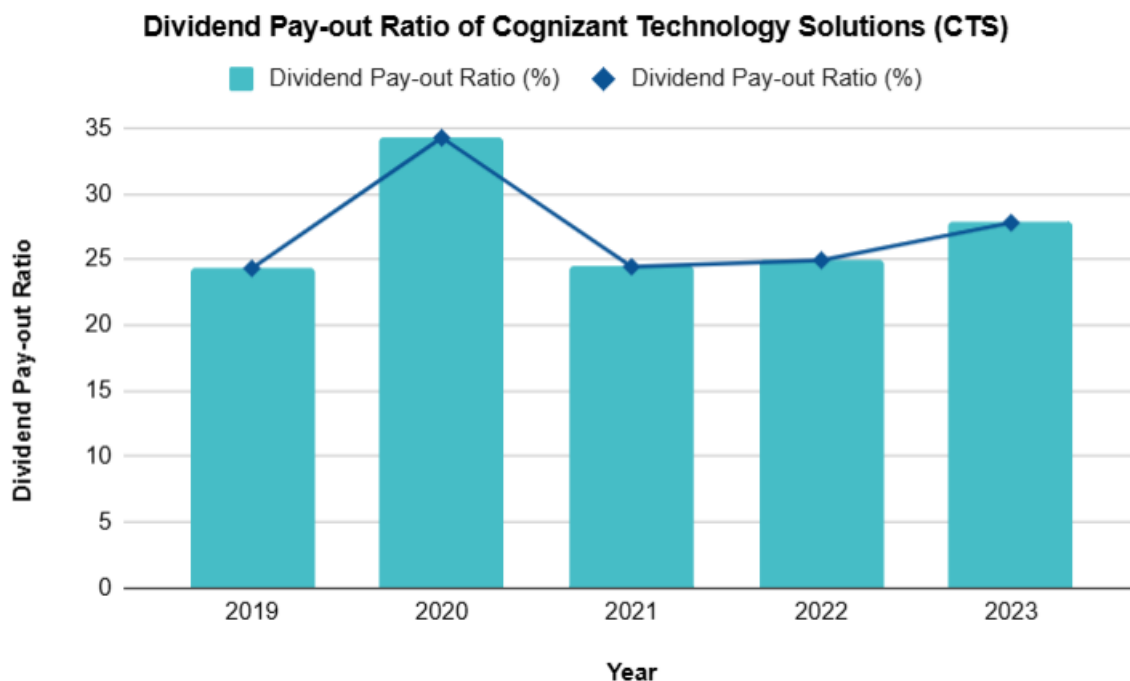
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.10.1: Dividend Pay-out Ratio (DPR) of Cognizant Technology Solutions (CTS)

Year	Dividends Per Share (DPS)(\$)	Earnings Per Share (EPS) (\$)	Dividend Pay-out Ratio (%)
2019	0.80	3.29	24.32
2020	0.88	2.57	34.24
2021	0.99	4.05	24.44
2022	1.10	4.41	24.94
2023	1.17	4.21	27.79

The graphical interpretation of Table 8.1.10.1 is given below in the form of a chart and trend.

Figure 8.1.10.1: Dividend Pay-out Ratio (DPR) of Cognizant Technology Solutions (CTS)



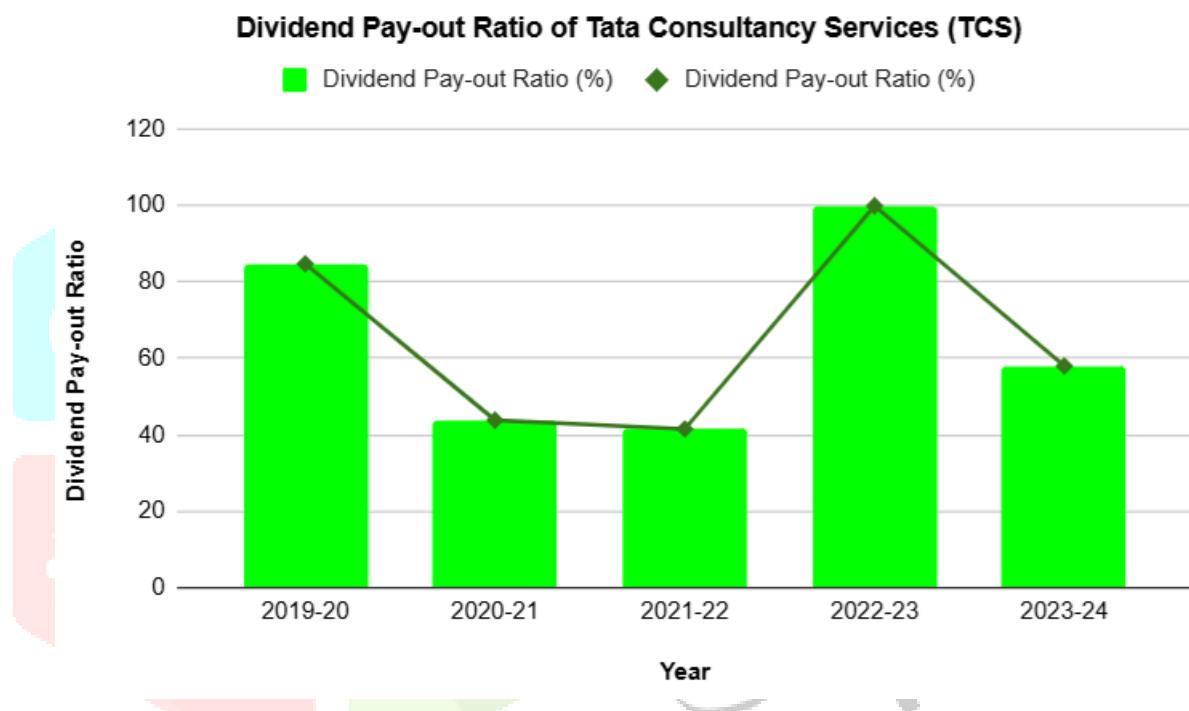
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.10.2: Dividend Pay-out Ratio (DPR) of Tata Consultancy Services (TCS)

Year	Dividends Per Share (DPS)(₹)	Earnings Per Share (EPS) (₹)	Dividend Pay-out Ratio (%)
2019-20	73.00	86.19	84.70
2020-21	38.00	86.71	43.82
2021-22	43.00	103.62	41.50
2022-23	115.00	115.19	99.84
2023-24	73.00	125.88	57.99

The graphical interpretation of Table 8.1.10.2 is given below in the form of a chart and trend.

Figure 8.1.10.2: Dividend Pay-out Ratio (DPR) of Tata Consultancy Services (TCS)



#### Interpretation

A low Dividend Pay-out Ratio (DPR) is ranged between 0% - 35%, a good Dividend Pay-out Ratio (DPR) is ranged between 35%-55%, a high Dividend Pay-out Ratio (DPR) is ranged between 55%-75%, and a very high Dividend Pay-out Ratio (DPR) is ranged between 75% - 95%. A DPR ranged between 95% - 150% is considered unsustainable. A company with low DPR indicates that it is reinvesting its profits to grow its business. In contrary, a company with high DPR indicates that the company is paying out comparatively more of its earnings as dividends while reinvesting less money back into the business. From Table 8.1.10.1, it can be interpreted that CTS is having low DPR whereas from Table 8.1.10.2, it can be interpreted that TCS maintains a good to high DPR. But in the year 2022-23, it had an unsustainable DPR.

#### 8.1.11 Dividend Yield

Dividend Yield will be calculated by using the following formula.

$$\text{DividendYield} = \frac{\text{DividendperShare}}{\text{Marketpricepershare}}$$

For Cognizant Technology Solutions (CTS), the data for Market Price Per Share is taken from NASDAQ (n.d.).

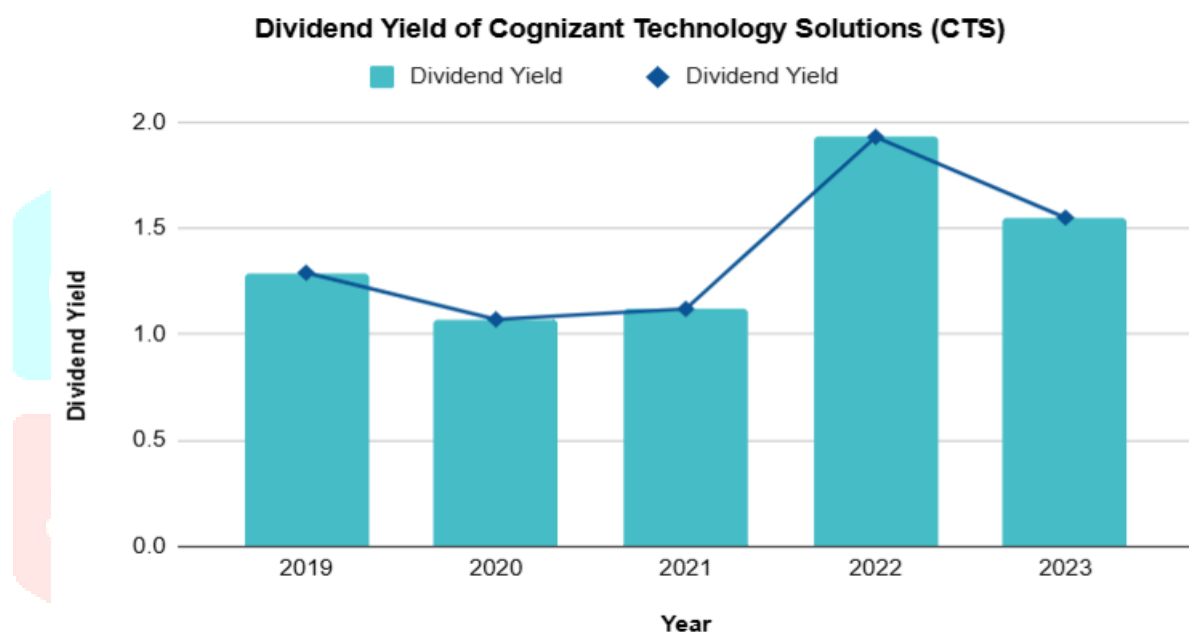
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.11.1: Dividend Yield of Cognizant Technology Solutions (CTS)

Year	Dividend Per Share (DPS) (\$)	Market Price Per Share (\$)	Dividend Yield (%)
2019	0.80	62.02	1.29
2020	0.88	81.95	1.07
2021	0.99	88.72	1.12
2022	1.10	57.13	1.93
2023	1.17	75.53	1.55

The graphical interpretation of Table 8.1.11.1 is given below in the form of a chart and trend.

Figure 8.1.11.1: Dividend Yield of Cognizant Technology Solutions (CTS)



For Tata Consultancy Services (TCS), the data for Market Price Per Share is taken from Equity Pandit (n.d.).

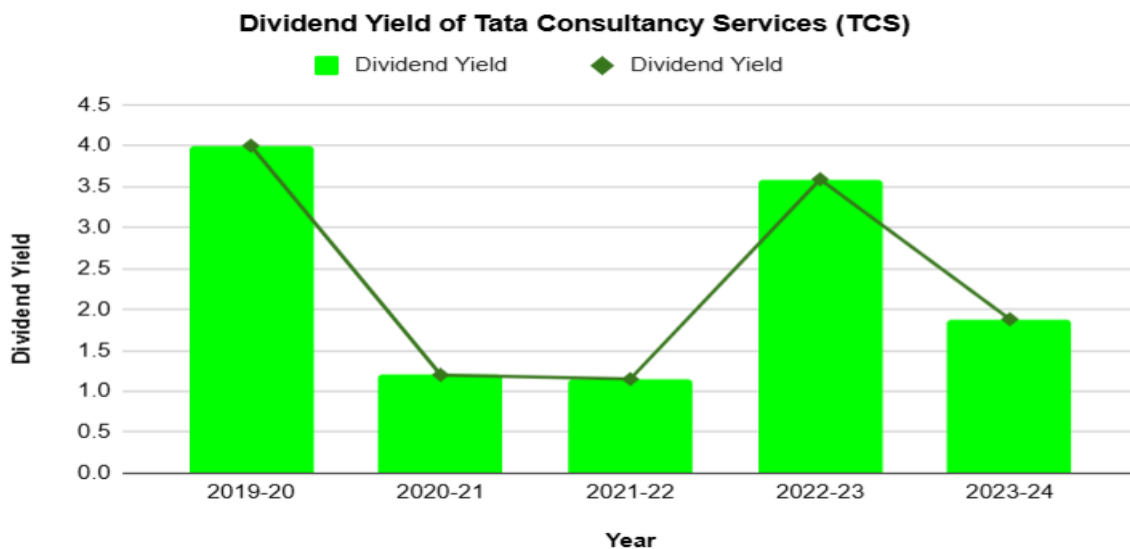
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.11.2: Dividend Yield of Tata Consultancy Services (TCS)

Year	Dividend Per Share (DPS) (₹)	Market Price Per Share (₹)	Dividend Yield (%)
2019-20	73.00	1826.10	4.00
2020-21	38.00	3177.85	1.20
2021-22	43.00	3739.95	1.15
2022-23	115.00	3205.90	3.59
2023-24	73.00	3876.30	1.88

The graphical interpretation of Table 8.1.11.2 is given below in the form of a chart and trend.

Figure 8.1.11.2: Dividend Yield of Tata Consultancy Services (TCS)



### Interpretation

A company with a high dividend yield indicates that it is returning a substantial portion of its earnings to shareholders as dividends. A high yield is appealing to investors as it suggests strong income potential. However, it may also be a sign that the stock price has decreased, possibly due to specific issues within the company. Conversely, a low dividend yield signifies that a company is keeping a larger portion of its earnings to reinvest in the business for future growth. Table 8.1.11.1 interprets that CTS had the highest dividend yield in the year 2022 and the lowest dividend yield in the 2020. Similarly, Table 8.1.11.2 interprets that TCS had the highest dividend yield in the year 2019-20 and the lowest dividend yield in the 2021-22.

### 8.1.12 Earnings Yield

Earnings Yield will be calculated by using the following formula.

$$\text{EarningsYield} = \frac{\text{EarningsperShare}}{\text{Marketpricepershare}}$$

For Cognizant Technology Solutions (CTS), the data for Market Price Per Share is taken from NASDAQ (n.d.).

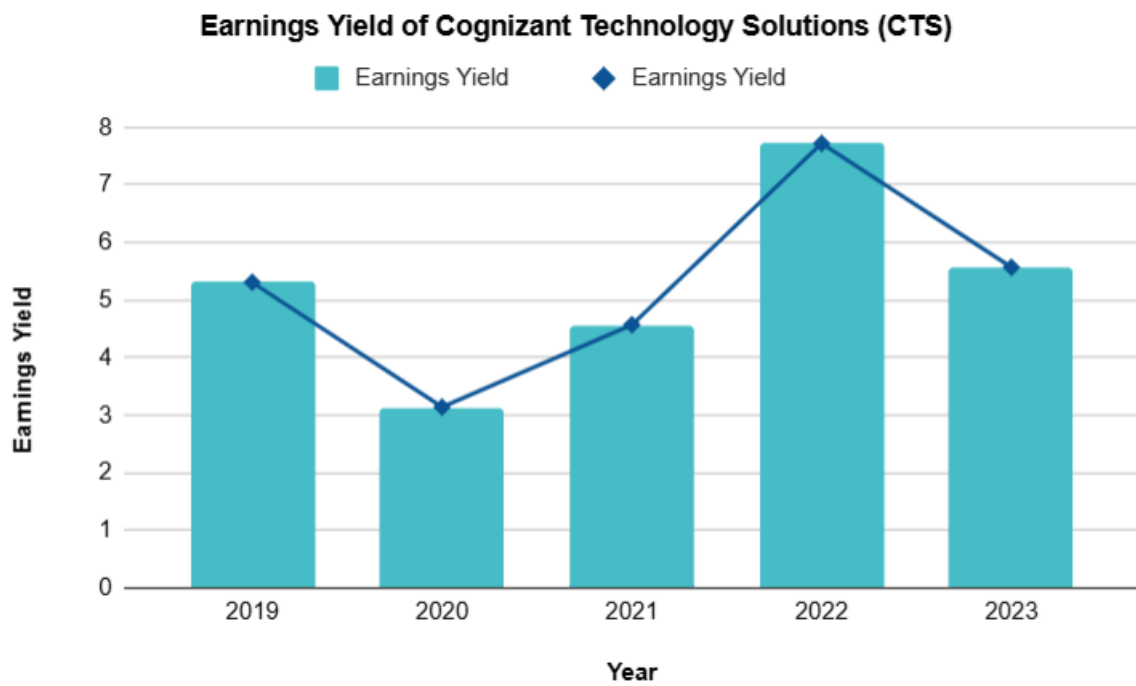
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.1.12.1: Earnings Yield of Cognizant Technology Solutions (CTS)

Year	Earnings Per Share (EPS) (\$)	Market Price Per Share (\$)	Earnings Yield (%)
2019	3.29	62.02	5.31
2020	2.57	81.95	3.14
2021	4.05	88.72	4.57
2022	4.41	57.13	7.72
2023	4.21	75.53	5.57

The graphical interpretation of Table 8.1.12.1 is given below in the form of a chart and trend.

Figure 8.1.12.1: Earnings Yield of Cognizant Technology Solutions (CTS)



For Tata Consultancy Services (TCS), the data for Market Price Per Share is taken from Equity Pandit (n.d.).

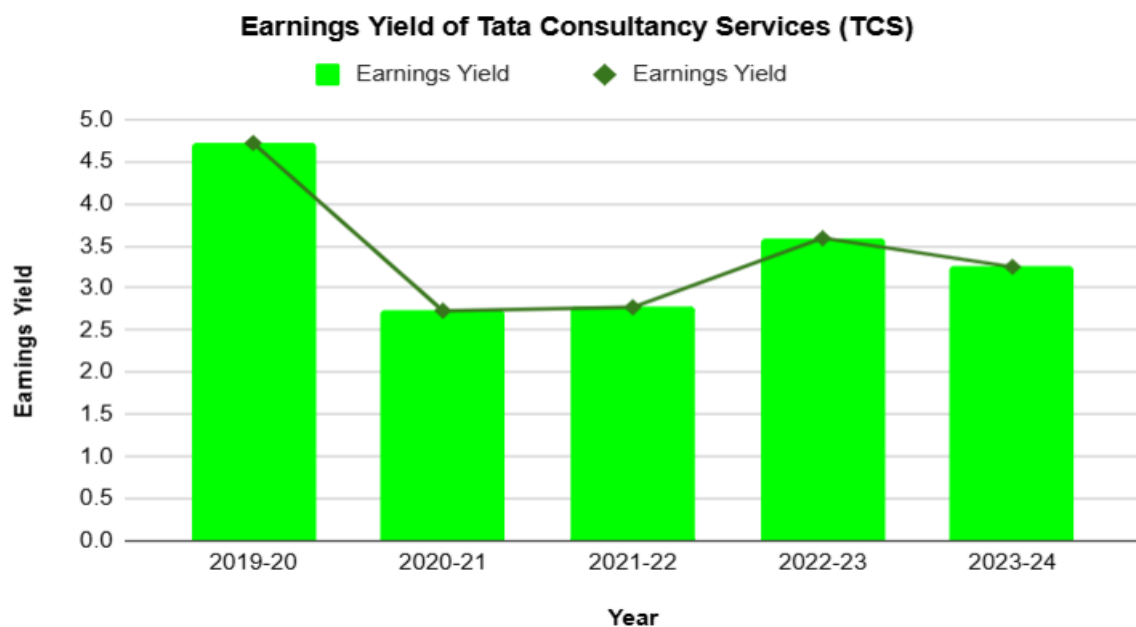
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.1.12.2: Earnings Yield of Tata Consultancy Services (TCS)

Year	Earnings Per Share (EPS) (₹)	Market Price Per Share (₹)	Earnings Yield (%)
2019-20	86.19	1826.10	4.72
2020-21	86.71	3177.85	2.73
2021-22	103.62	3739.95	2.77
2022-23	115.19	3205.90	3.59
2023-24	125.88	3876.30	3.25

The graphical interpretation of Table 8.1.12.2 is given below in the form of a chart and trend.

Figure 8.1.12.2: Earnings Yield of Tata Consultancy Services (TCS)



**Interpretation**

A high earnings yield suggests that the stock may be undervalued, offering investors an opportunity for potential growth while a low earnings yield may signal overvaluation, prompting caution among investors. Table 8.1.12.1 indicates that CTS had highest earnings yield ratio in the year 2022 and the lowest earnings yield ratio in the year 2020. Table 8.1.12.2 indicates that TCS had highest earnings yield ratio in the year 2019-20 and the lowest earnings yield ratio in the year 2020-21.

**8.2 Liquidity Ratios**

**8.2.1 Current Ratio**

The current Ratio will be calculated by using the following formula.

$$CurrentRatio = \frac{CurrentAssets}{CurrentLiabilities}$$

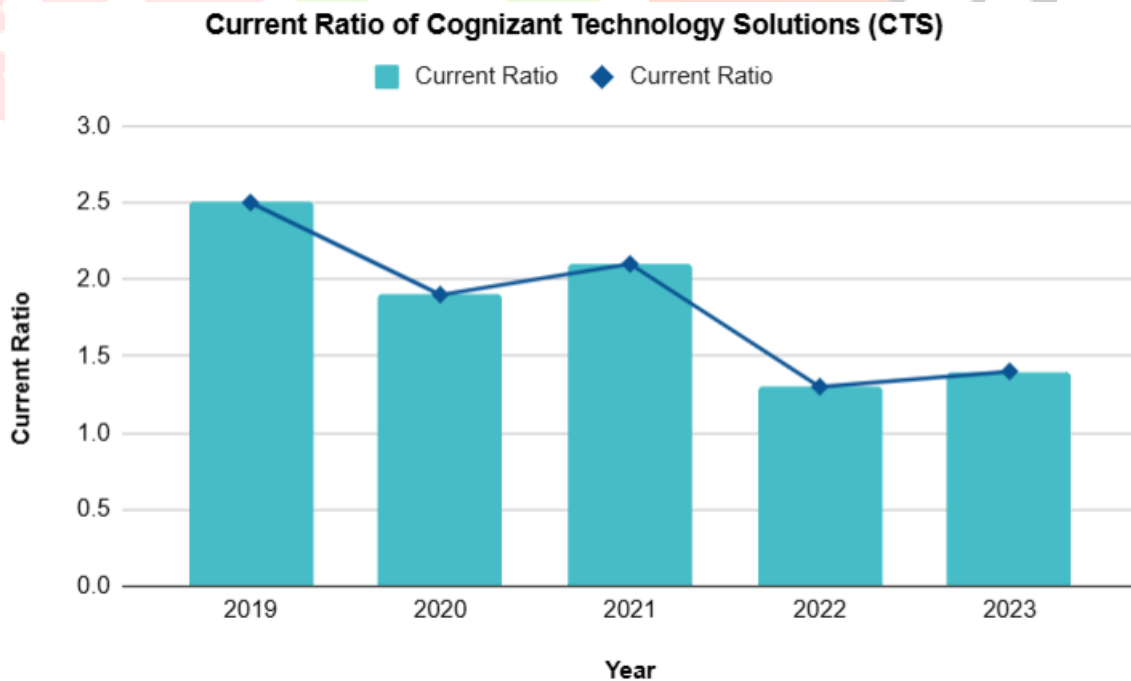
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.2.1.1: Current Ratio of Cognizant Technology Solutions (CTS)

Year	Current Assets (\$ millions)	Current Liabilities (\$ millions)	Current Ratio
2019	7,611	2,983	2.5
2020	6,851	3,540	1.9
2021	7,342	3,529	2.1
2022	7,266	5,543	1.3
2023	7,506	5,256	1.4

The graphical interpretation of Table 8.2.1.1 is given below in the form of a chart and trend.

Figure 8.2.1.1: Current Ratio of Cognizant Technology Solutions (CTS)



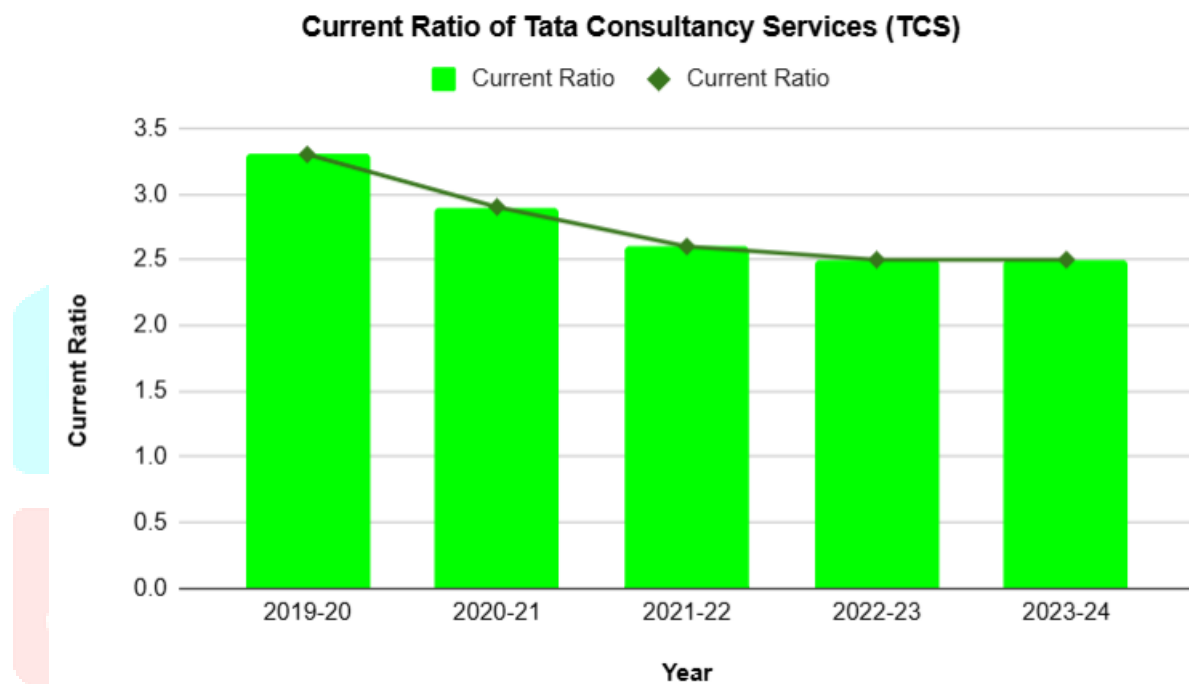
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.2.1.2: Current Ratio of Tata Consultancy Services (TCS)

Year	Current Assets (₹ crore)	Current Liabilities (₹ crore)	Current Ratio
2019-20	90,237	27,060	3.3
2020-21	99,280	34,155	2.9
2021-22	1,08,310	42,351	2.6
2022-23	1,10,270	43,558	2.5
2023-24	1,12,984	46,104	2.5

The graphical interpretation of Table 8.2.1.2 is given below in the form of a chart and trend.

Figure 8.2.1.2: Current Ratio of Tata Consultancy Services (TCS)



### Interpretation

A current ratio between 1.0 and 3.0 is generally a positive indicator for a business. This range suggests that the business has sufficient cash to meet its debts, while also not having too much capital tied up in current assets that could be reinvested or distributed to shareholders. A higher current ratio indicates greater capability to pay off debts. Conversely, a low current ratio of less than 1.0 may indicate the business struggles to meet its debt obligations. In such cases, the business might need to seek additional financing or negotiate extended payment terms with creditors. From Table 8.2.1.1 and Table 8.2.1.2, it can be interpreted that both CTS and TCS respectively have a good current ratio. In the year 2019, CTS had the highest current ratio and in the year 2022, CTS had the lowest current ratio. In the year 2019-20, TCS had the highest current ratio and in the year 2022-23 and 2023-24, TCS had the lowest current ratio.

### 8.2.2 Quick Ratio

The Quick Ratio will be calculated by using the following formula.

$$\text{QuickRatio} = \frac{\text{CurrentAssets} - \text{Inventory}}{\text{CurrentLiabilities}}$$

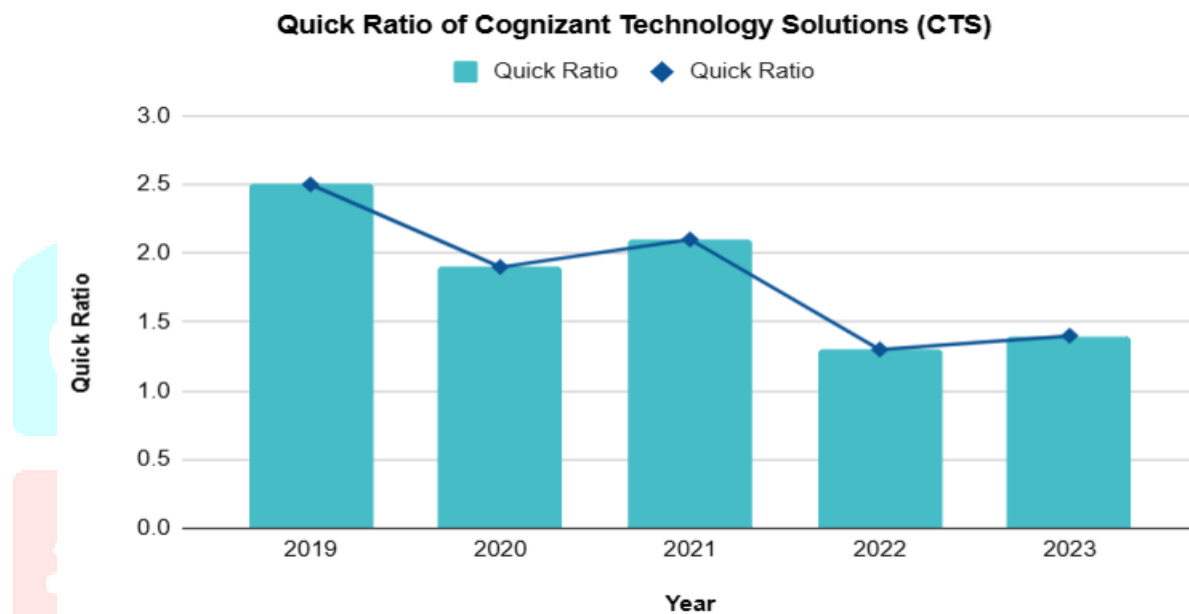
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.2.2.1: Quick Ratio of Cognizant Technology Solutions (CTS)

Year	Current Assets (\$ millions)	Inventory	Current Liabilities (\$ millions)	Quick Ratio
2019	7,611	0	2,983	2.5
2020	6,851	0	3,540	1.9
2021	7,342	0	3,529	2.1
2022	7,266	0	5,543	1.3
2023	7,506	0	5,256	1.4

The graphical interpretation of Table 8.2.2.1 is given below in the form of a chart and trend.

Figure 8.2.2.1: Quick Ratio of Cognizant Technology Solutions (CTS)



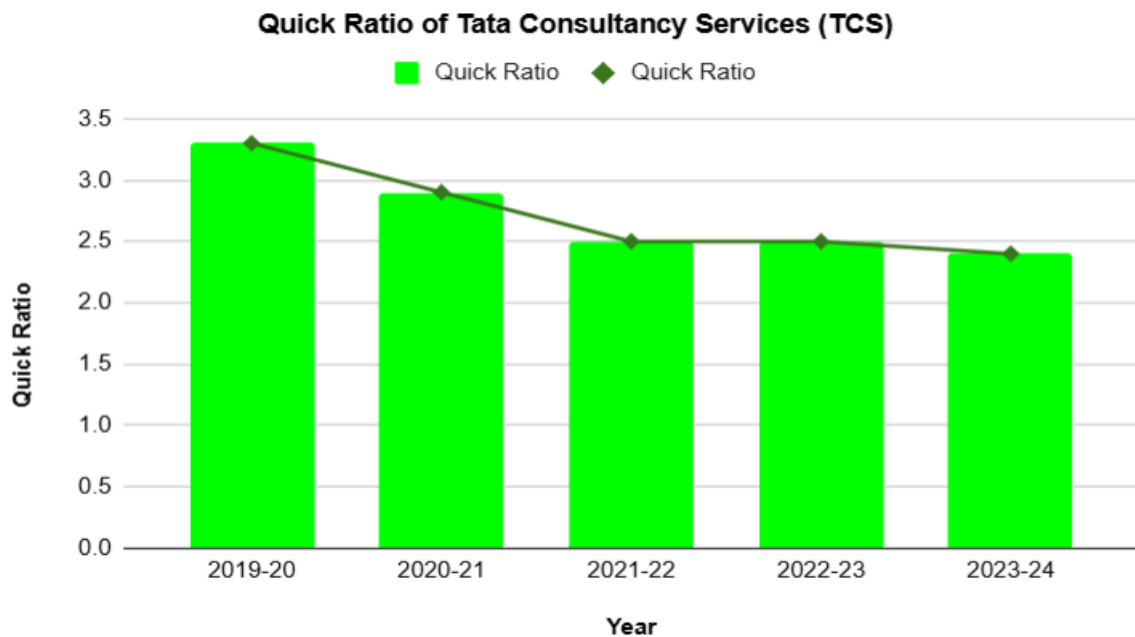
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.2.2.2: Quick Ratio of Tata Consultancy Services (TCS)

Year	Current Assets (₹ crore)	Inventory	Current Liabilities (₹ crore)	Quick Ratio
2019-20	90,237	5	27,060	3.3
2020-21	99,280	8	34,155	2.9
2021-22	1,08,310	20	42,351	2.5
2022-23	1,10,270	28	43,558	2.5
2023-24	1,12,984	28	46,104	2.4

The graphical interpretation of Table 8.2.2.2 is given below in the form of a chart and trend.

Figure 8.2.2.2: Quick Ratio of Tata Consultancy Services (TCS)



### Interpretation

A good quick ratio is anything above 1. A quick ratio of 1 indicates that the company has an equal amount of liquid assets and current liabilities. A higher ratio suggests that the company could pay off its current liabilities multiple times over. However, a very high ratio may indicate that the company is holding onto a large surplus of cash, which could be better utilized in other areas. From Table 8.2.2.1 and Table 8.2.2.2, it can be interpreted that both CTS and TCS respectively are experiencing good quick ratio. In the year 2019, CTS had the highest quick ratio and in the year 2022, CTS had the lowest quick ratio. In the year 2019-20, TCS had the highest quick ratio and in the year 2023-24, TCS had the lowest quick ratio.

### 8.2.3 Net Working Capital Ratio

The Net Working Capital (NWC) Ratio will be calculated by using the following formula.

$$\text{NetWorkingCapitalRatio} = \frac{\text{NetWorkingCapital}}{\text{NetAssets}}$$

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Net Assets} = \text{Total Assets} - \text{Total Liabilities}$$

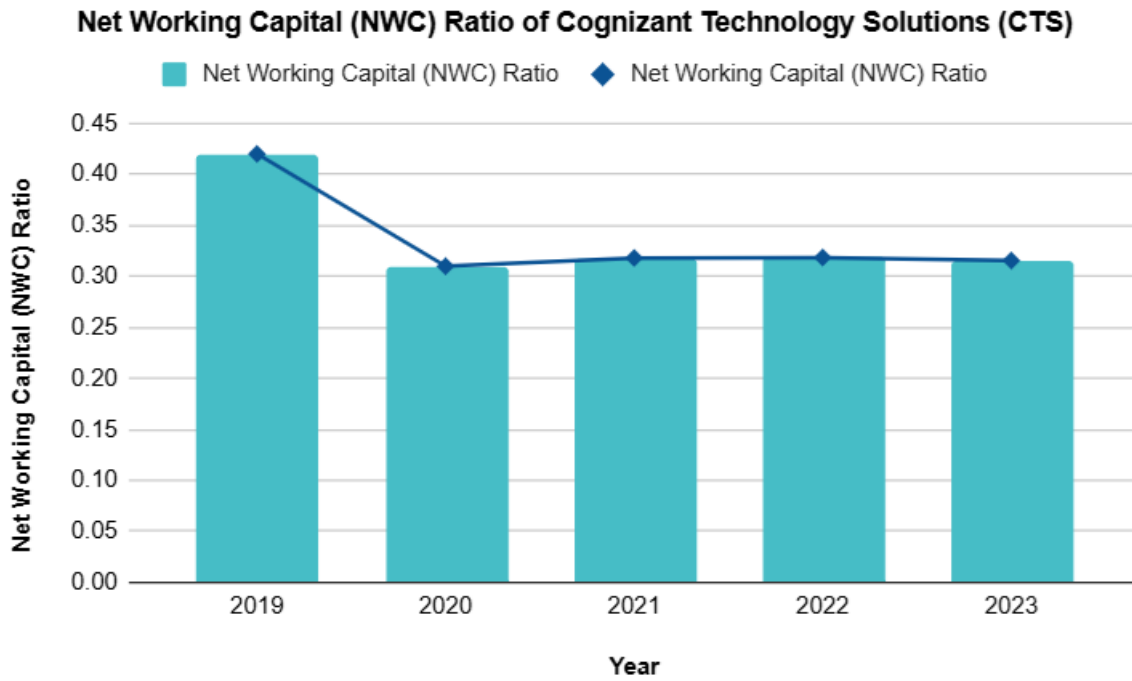
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.2.3.1: Net Working Capital Ratio of Cognizant Technology Solutions (CTS)

Year	Current Assets (\$ millions)	Current Liabilities (\$ millions)	Net Assets (\$ millions)	Net Working Capital (NWC) Ratio
2019	7611	2983	11022	0.4199
2020	6851	3540	10689	0.3098
2021	7342	3529	11991	0.3180
2022	7266	3347	12309	0.3184
2023	7506	3333	13227	0.3155

The graphical interpretation of Table 8.2.3.1 is given below in the form of a chart and trend.

Figure 8.2.3.1: Net Working Capital Ratio of Cognizant Technology Solutions (CTS)



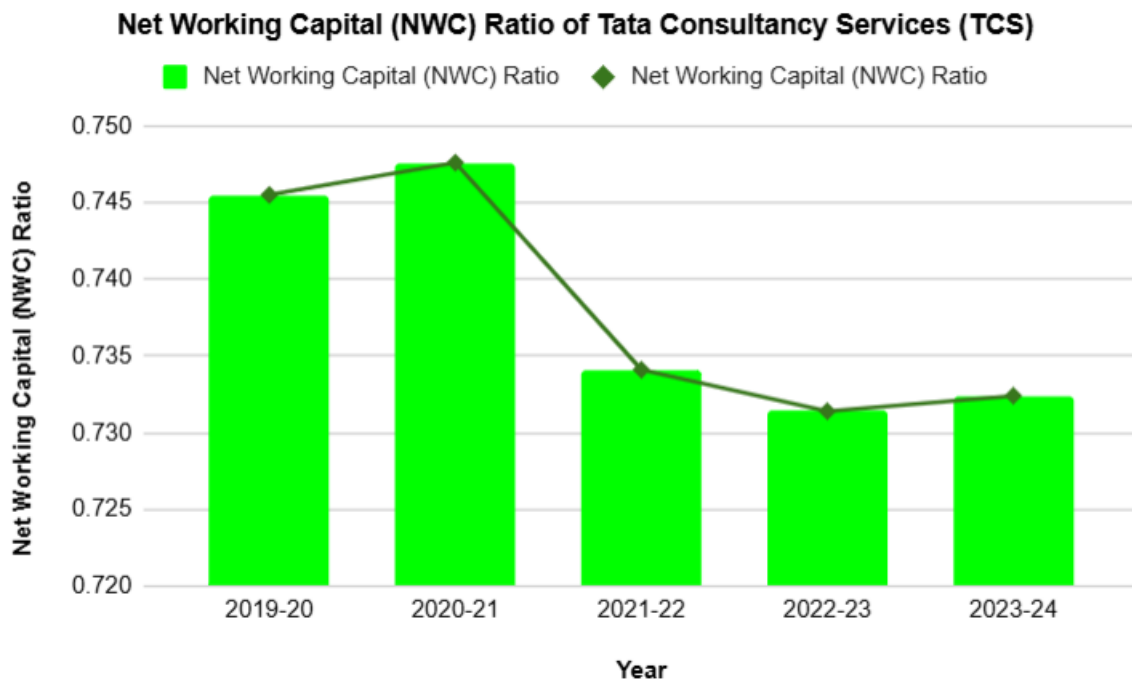
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.2.3.2: Net Working Capital Ratio of Tata Consultancy Services (TCS)

Year	Current Assets (₹ crore)	Current Liabilities (₹ crore)	Net Assets (₹ crore)	Net Working Capital (NWC) Ratio
2019-20	90237	27060	84749	0.7455
2020-21	99280	34155	87108	0.7476
2021-22	108310	42351	89846	0.7341
2022-23	110270	43558	91206	0.7314
2023-24	112984	46104	91319	0.7324

The graphical interpretation of Table 8.2.3.2 is given below in the form of a chart and trend.

Figure 8.2.3.2: Net Working Capital Ratio of Tata Consultancy Services (TCS)



## Interpretation

An optimal Net Working Capital (NWC) Ratio is between 1.5 and 2.0, but that can depend on the business's industry. The higher the Net Working Capital (NWC) is, the more solvent or liquid the business is. A working capital ratio of less than 1.0 is generally taken as indicative of potential future liquidity problems. A substantially higher ratio can indicate that a company isn't doing a good job of employing its assets to generate the maximum possible revenue (Maverick, 2024). From Table 8.2.3.1 and Table 8.2.3.2, it can be interpreted that both CTS and TCS respectively have Net Working Capital (NWC) Ratio less than 1.

## 8.3 Leverage Ratios

### 8.3.1 Debt-Equity (D/E) Ratio

The Debt-Equity Ratio will be calculated by using the following formula.

$$\text{Debt - Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Fund (Equity)}}$$

For calculating Total Debt of Cognizant, the following method will be used.

$$\text{Total Debt} = \text{Short - term debt} + \text{Long - term debt}$$

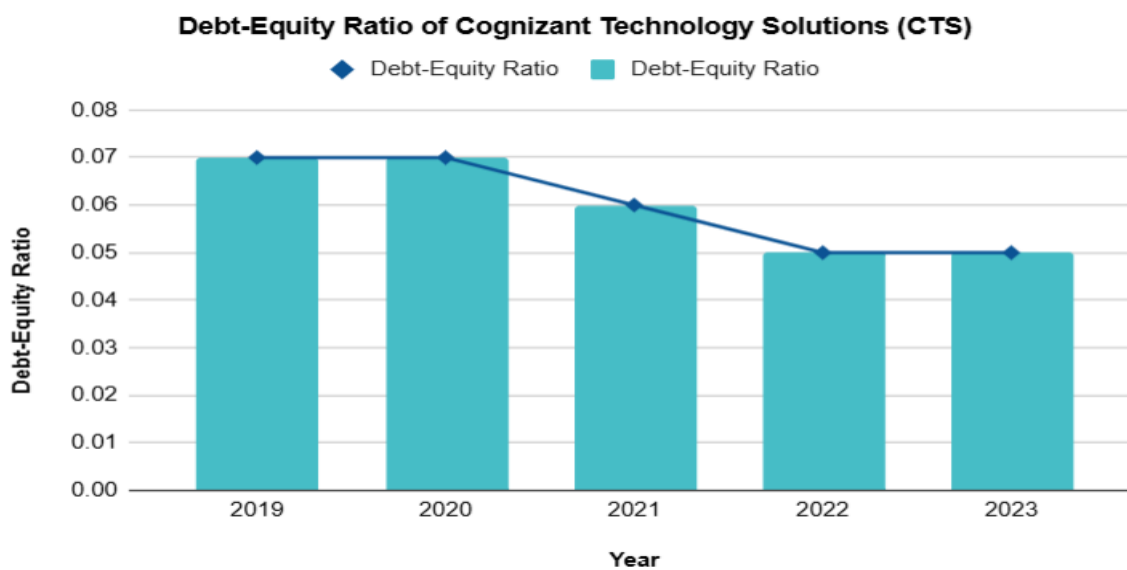
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.3.1.1: Debt-Equity Ratio of Cognizant Technology Solutions (CTS)

Year	Short-term Debt (\$ millions)	Long-term Debt (\$ millions)	Total Debt (\$ millions)	Shareholder's Equity (\$ millions)	Debt-Equity Ratio
2019	38	700	738	11022	0.07
2020	38	663	701	10689	0.07
2021	38	626	664	11991	0.06
2022	8	638	646	12309	0.05
2023	33	606	639	13227	0.05

The graphical interpretation of Table 8.3.1.1 is given below in the form of a chart and trend.

Figure 8.3.1.1: Debt-Equity Ratio of Cognizant Technology Solutions (CTS)



For calculating Total Debt of Tata Consultancy Services (TCS), the following method will be used.

$$\text{Total Debt} = \text{Total Lease Liabilities} + \text{Total Borrowings}$$

As there are no borrowings so only Total Lease Liabilities, which is the summation of lease liabilities of non-current liabilities and Lease liabilities of current liabilities, is taken into account for calculation of the Debt-Equity Ratio.

$$\text{Total Debt} = \text{Lease liabilities of non - current liabilities} + \text{Lease liabilities of current liabilities}$$

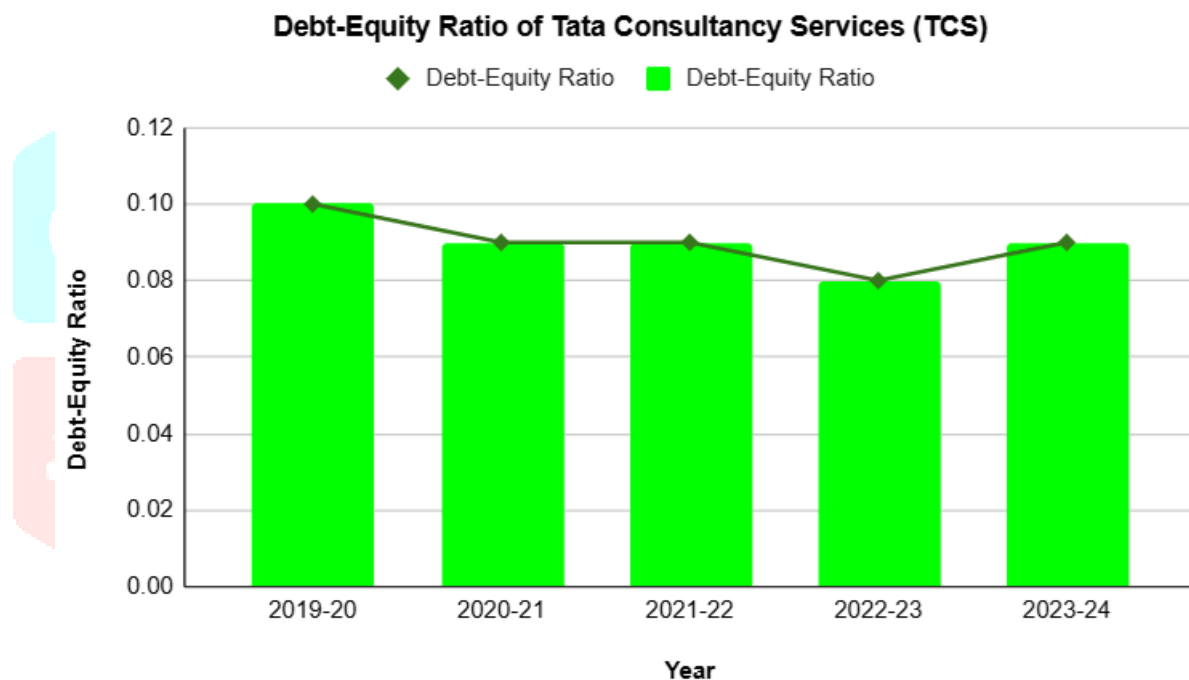
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.3.1.2: Debt-Equity Ratio of Tata Consultancy Services (TCS)

Year	Lease Liabilities (Non-current Liabilities) (₹ crore)	Lease Liabilities (Current Liabilities) (₹ crore)	Total Lease Liabilities (₹ crore)	Shareholder's Equity (₹ crore)	Debt-Equity Ratio
2019-20	6906	1268	8174	84749	0.10
2020-21	6503	1292	7795	87108	0.09
2021-22	6368	1450	7818	89846	0.09
2022-23	6203	1485	7688	91206	0.08
2023-24	6516	1505	8021	91319	0.09

The graphical interpretation of Table 8.3.1.2 is given below in the form of a chart and trend.

Figure 8.3.1.2: Debt-Equity Ratio of Tata Consultancy Services (TCS)



### Interpretation

A low amount of debt indicates that the company is getting finance by borrowing more money from the shareholders. If debt levels are too high, it subjects the company to potential risks. A Debt-Equity (D/E) Ratio of 0.5 or below is considered good (Tomasetti, 2024). From Table 8.3.1.1 and Table 8.3.1.2, it can be interpreted that both CTS and TCS have good debt-to-equity ratio.

### 8.3.2 Debt Ratio

The Debt Ratio will be calculated by using the following formula.

$$\text{DebtRatio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

For calculating Total Debt of Cognizant Technology Solutions (CTS), the following method will be used.

$$\text{Total Debt} = \text{Short-term debt} + \text{Long-term debt}$$

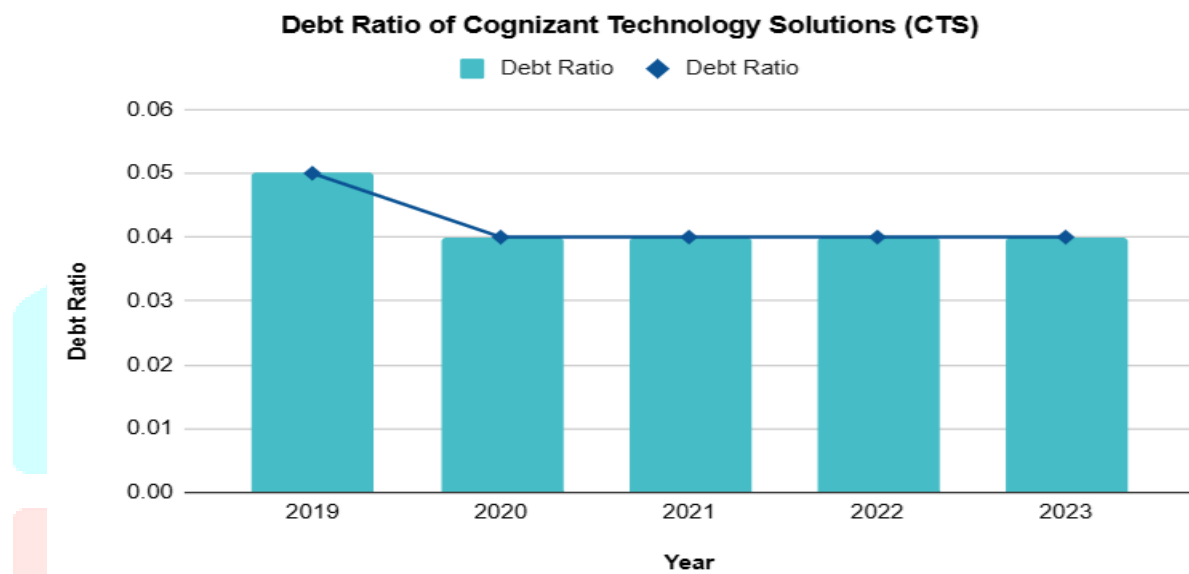
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.3.2.1: Debt Ratio of Cognizant Technology Solutions (CTS)

Year	Total Debt (\$ millions)	Total Assets (\$ millions)	Debt Ratio
2019	738	16,204	0.05
2020	701	16,923	0.04
2021	664	17,852	0.04
2022	646	17,852	0.04
2023	639	18,483	0.04

The graphical interpretation of Table 8.3.2.1 is given below in the form of a chart and trend.

Figure 8.3.2.1: Debt Ratio of Cognizant Technology Solutions (CTS)



For calculating Total Debt of Tata Consultancy Services (TCS), the following method will be used.

$$\text{Total Debt} = \text{Lease liabilities of non-current liabilities} + \text{Lease liabilities of current liabilities}$$

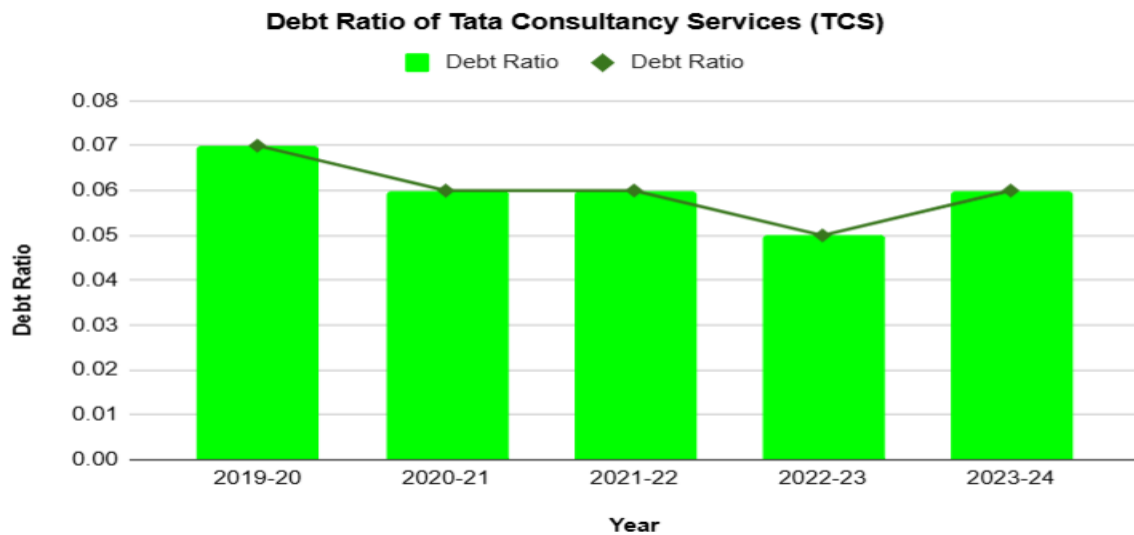
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.3.2.2: Debt Ratio of Tata Consultancy Services (TCS)

Year	Lease Liabilities (Non-current Liabilities) ₹ crore)	Lease Liabilities (Current Liabilities) ₹ crore)	Total Debt (₹ crore)	Total Assets (₹ crore)	Debt Ratio
2019-20	6906	1268	8174	1,20,899	0.07
2020-21	6503	1292	7795	1,30,759	0.06
2021-22	6368	1450	7818	1,41,514	0.06
2022-23	6203	1485	7688	1,43,651	0.05
2023-24	6516	1505	8021	1,46,449	0.06

The graphical interpretation of Table 8.3.2.2 is given below in the form of a chart and trend.

Figure 8.3.2.2: Debt Ratio of Tata Consultancy Services (TCS)



### Interpretation

Debt ratios must be compared within industries to determine whether a company has a good or bad one. A debt ratio of 0.4 or below is considered better than a debt ratio of 0.6 or higher (Ross, 2024). From Table 8.3.2.1 and Table 8.3.2.2, it can be interpreted that both CTS and TCS respectively have good debt ratio. The debt ratio of CTS remained in the same place from the year 2020. On the contrary, the debt ratio of TCS decreased from the year 2019-20.

## 8.4 Coverage Ratio

### 8.4.1 Interest Coverage Ratio

The Interest Coverage Ratio will be calculated by using the following formula.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

For Cognizant Technology Solutions (CTS), EBIT = Income from operations.

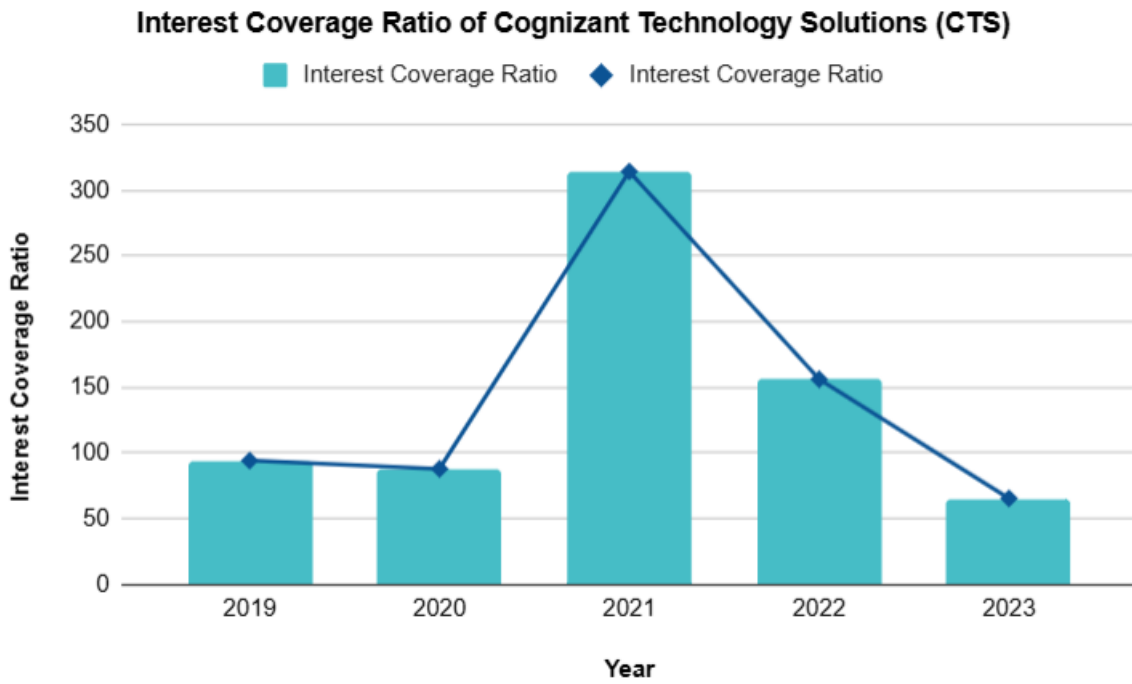
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.4.1.1: Interest Coverage Ratio of Cognizant Technology Solutions (CTS)

Year	EBIT (\$ millions)	Interest (\$ millions)	Interest Coverage Ratio
2019	2,453	26	94.35
2020	2,114	24	88.08
2021	2,826	9	314
2022	2,968	19	156.21
2023	2,689	41	65.59

The graphical interpretation of Table 8.4.1.1 is given below in the form of a chart and trend.

Figure 8.4.1.1: Interest Coverage Ratio of Cognizant Technology Solutions (CTS)



The data of EBIT for Tata Consultancy Services (TCS) is taken from Tata Consultancy Services (TCS) Performance Trend-10 years

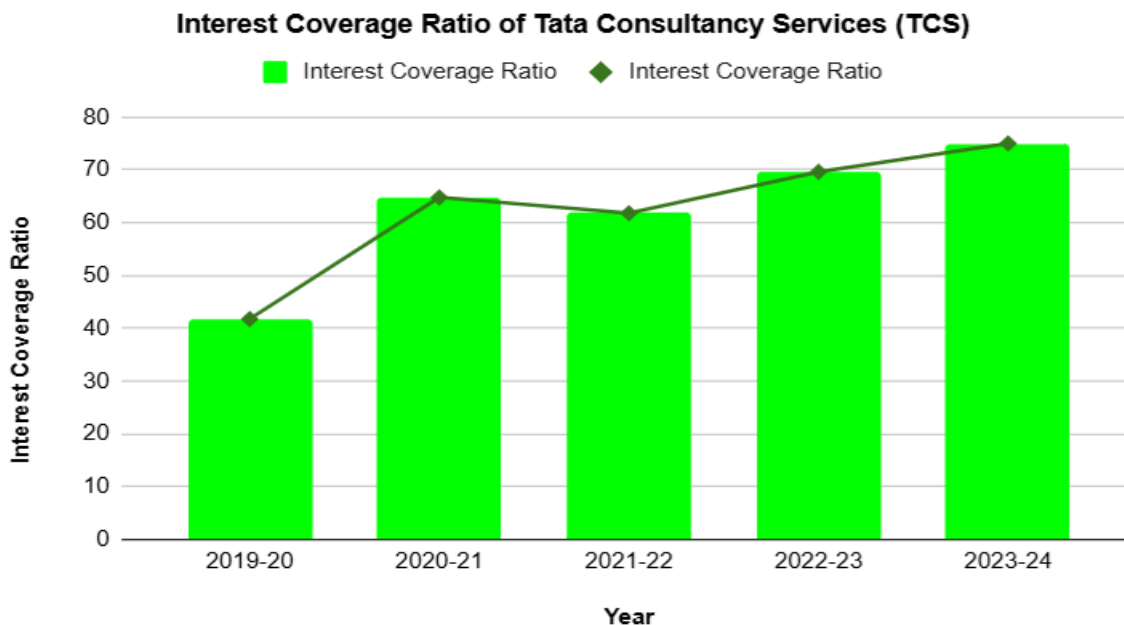
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.4.1.2: Interest Coverage Ratio of Tata Consultancy Services (TCS)

Year	EBIT (₹ crore)	Interest (₹ crore)	Interest Coverage Ratio
2019-20	38,580	924	41.75
2020-21	41,263	637	64.78
2021-22	48,453	784	61.80
2022-23	54,237	779	69.62
2023-24	58,353	778	75.00

The graphical interpretation of Table 8.4.1.2 is given below in the form of a chart and trend.

Figure 8.4.1.2: Interest Coverage Ratio of Tata Consultancy Services (TCS)



## Interpretation

The acceptable interest coverage ratio can vary by industry. Generally, an interest coverage ratio of at least 2.0 is considered the minimum acceptable level. Most investors and analysts typically look for ratios of at least 3.0, which suggest that the business's revenues are stable and reliable. Conversely, a poor interest coverage ratio is any figure less than 1.0, which indicates that the company does not generate enough earnings to meet its debt obligations. While some businesses may still operate despite challenges in servicing their debt, a low or negative interest coverage ratio is often a significant warning sign for investors. It frequently suggests that the company may be at risk of bankruptcy in the future. From Table 8.4.1.1 and Table 8.4.1.2, it can be interpreted that both CTS and TCS have good interest coverage ratio as they have interest coverage ratio more than 3.0.

## 8.5 Efficiency Ratio

### 8.5.1 Net Assets Turnover Ratio

The net assets turnover ratio will be calculated by using the following formula.

$$\text{NetAssetsTurnoverRatio} = \frac{\text{Sales}}{\text{NetAssets}}$$

$$\text{Net Assets} = \text{Total Assets} - \text{Total Liabilities}$$

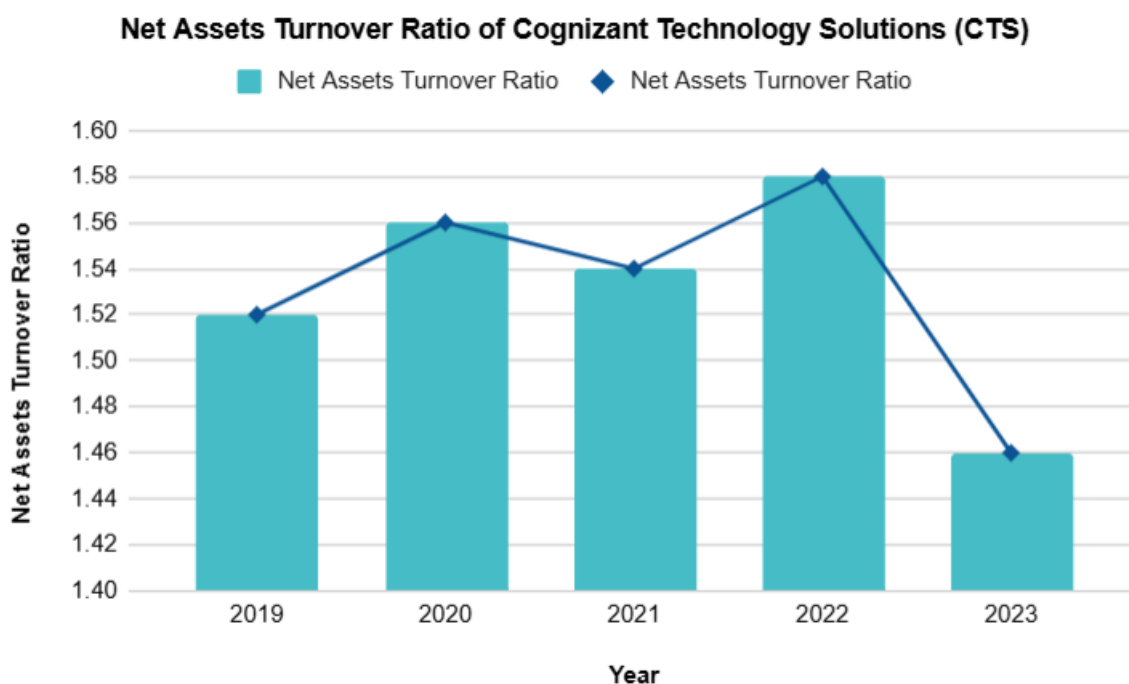
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.5.1.1: Net Assets Turnover Ratio of Cognizant Technology Solutions (CTS)

Year	Sales (\$ millions)	Net Assets (\$ millions)	Net Assets Turnover Ratio
2019	16,783	11022	1.52
2020	16,652	10689	1.56
2021	18,507	11991	1.54
2022	19,428	12309	1.58
2023	19,353	13227	1.46

The graphical interpretation of Table 8.5.1.1 is given below in the form of a chart and trend.

Figure 8.5.1.1: Net Assets Turnover Ratio of Cognizant Technology Solutions (CTS)



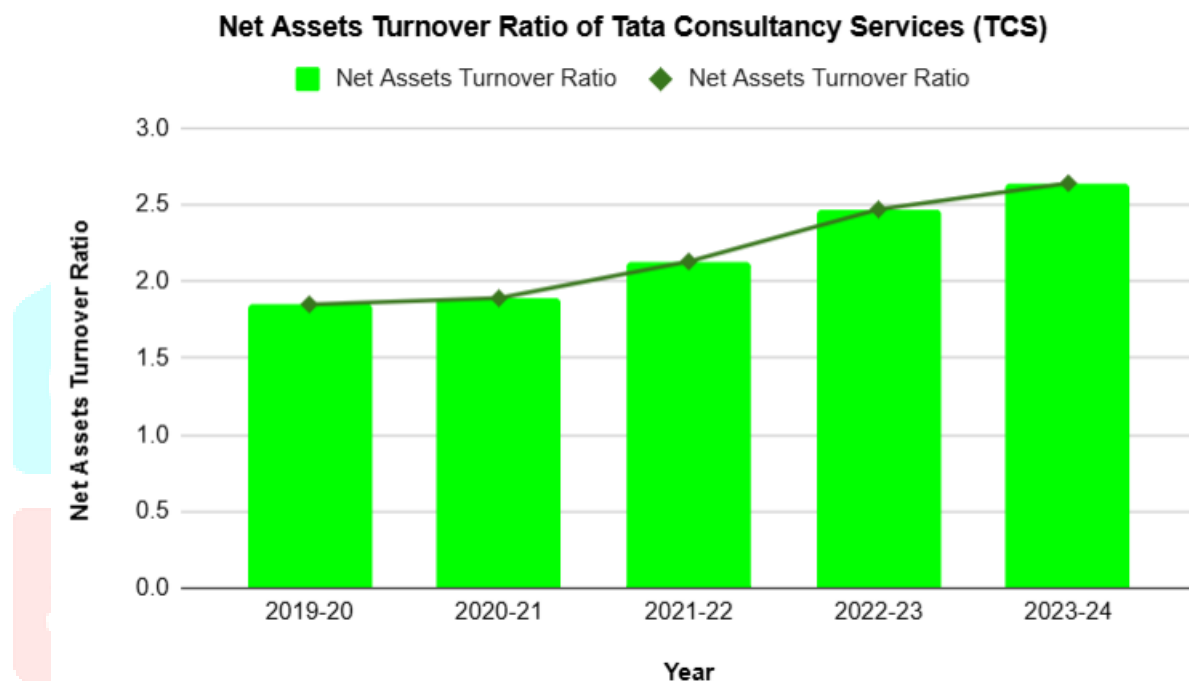
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.5.1.2: Net Assets Turnover Ratio of Tata Consultancy Services (TCS)

Year	Sales (₹ crore)	Net Assets (₹ crore)	Net Assets Turnover Ratio
2019-20	156,949	84749	1.85
2020-21	164,177	87108	1.89
2021-22	191,754	89846	2.13
2022-23	225,458	91206	2.47
2023-24	240,893	91319	2.64

The graphical interpretation of Table 8.5.1.2 is given below in the form of a chart and trend.

Figure 8.5.1.2: Net Assets Turnover Ratio of Tata Consultancy Services (TCS)



### Interpretation

A good net asset turnover ratio is considered to be above 1, as it indicates that the company is effectively utilizing its owned resources to generate sales revenue. A higher ratio is preferable, as it signifies that the company is earning more revenue by making the best use of its resources. From Table 8.5.1.1 and Table 8.5.1.2, it can be interpreted that both CTS and TCS respectively have good net asset turnover ratio.

## 8.6 Valuation Ratios

### 8.6.1 Price-to-Earnings Ratio (P/E Ratio)

Price-to-Earnings Ratio (P/E Ratio) will be calculated by using the following formula.

$$\text{Price - to - Earnings Ratio} = \frac{\text{Market Price of Equity Share}}{\text{Earnings per Share}}$$

For Cognizant Technology Solutions (CTS), the data for Market Price Per Share is taken from NASDAQ (n.d.).

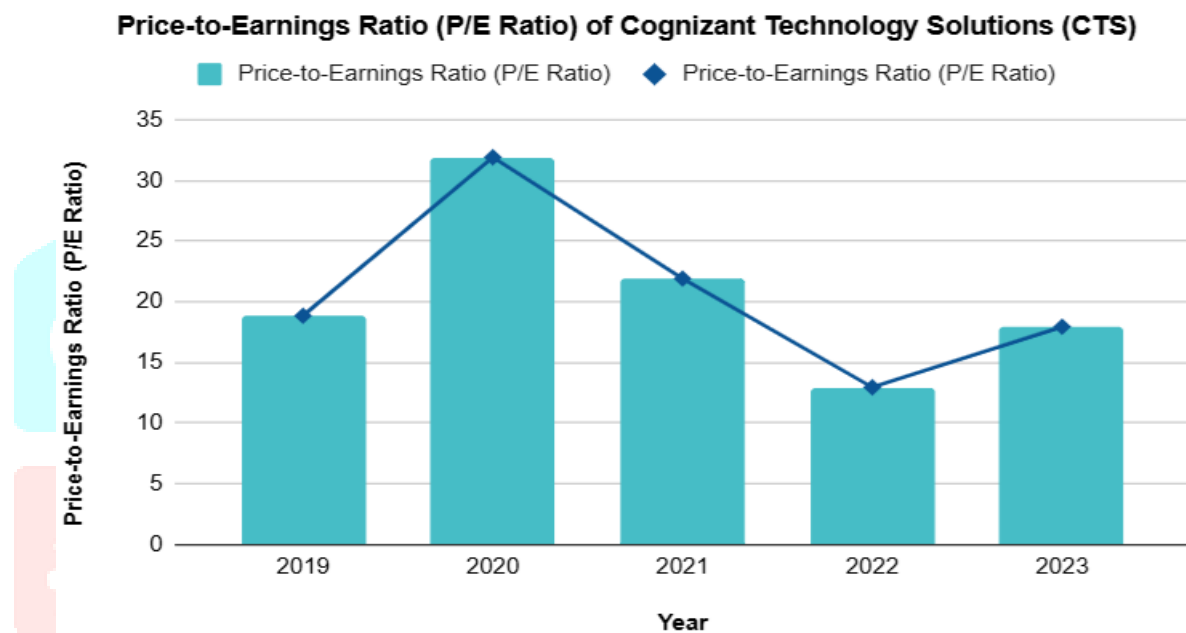
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.6.1.1: Price-to-Earnings Ratio (P/E Ratio) of Cognizant Technology Solutions (CTS)

Year	Market Price Per Share (\$)	Earnings Per Share (EPS) (\$)	Price-to-Earnings Ratio (P/E Ratio)
2019	62.02	3.29	18.85
2020	81.95	2.57	31.89
2021	88.72	4.05	21.91
2022	57.13	4.41	12.96
2023	75.53	4.21	17.94

The graphical interpretation of Table 8.6.1.1 is given below in the form of a chart and trend.

Figure 8.6.1.1: Price-to-Earnings Ratio (P/E Ratio) of Cognizant Technology Solutions (CTS)



For Tata Consultancy Services (TCS), the data for Market Price Per Share is taken from Equity Pandit.(n.d.).

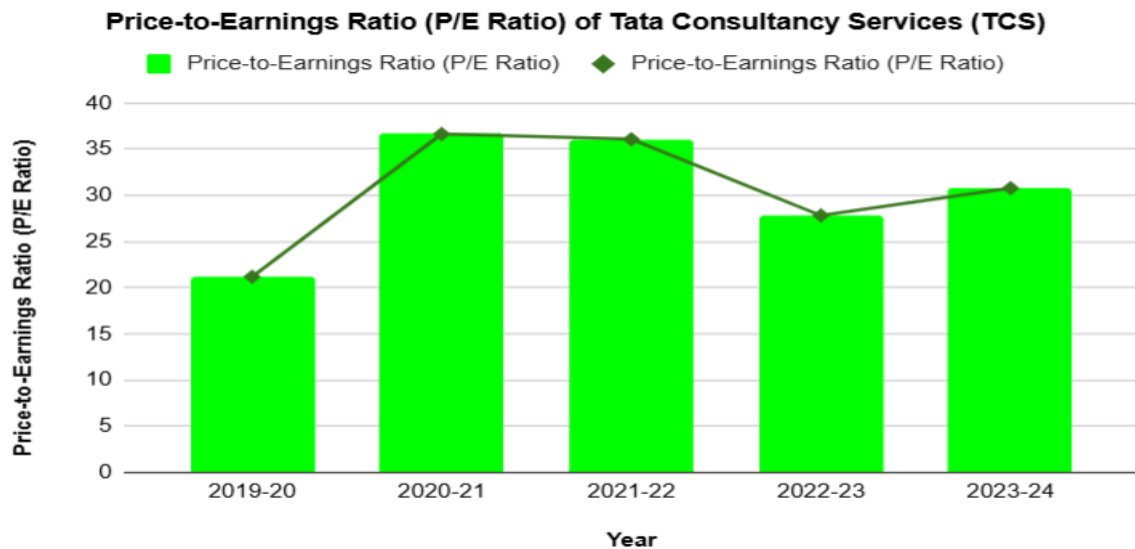
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.6.1.2: Price-to-Earnings Ratio (P/E Ratio) of Tata Consultancy Services (TCS)

Year	Market Price Per Share (₹)	Earnings Per Share (EPS) (₹)	Price-to-Earnings Ratio (P/E Ratio)
2019-20	1,826.10	86.19	21.19
2020-21	3,177.85	86.71	36.65
2021-22	3,739.95	103.62	36.09
2022-23	3,205.90	115.19	27.83
2023-24	3,876.30	125.88	30.79

The graphical interpretation of Table 8.6.1.2 is given below in the form of a chart and trend.

Figure 8.6.1.2: Price-to-Earnings Ratio (P/E Ratio) of Tata Consultancy Services (TCS)



### Interpretation

The average Price-to-Earnings Ratio (P/E Ratio) typically ranges from 20 to 25. A P/E Ratio below this range is considered favorable, while a ratio above it is viewed as less favorable. Different industries have can have varying P/E Ratio. According to S&P 500 Information Technology Sector, average P/E Ratio was between 24.78 and 31.37 in the last 5 years. From Table 8.6.1.1, it can be interpreted that P/E Ratio of CTS is below the range of 24.78 and 31.37 in the year 2019, 2021, 2022 and 2023. From Table 8.6.1.1, it can be interpreted that P/E ratio of TCS can be found above the range of 24.78 and 31.37 in the year 2020-21 and 2021-22. If we look into the typical average range of P/E Ratio, from Table 8.6.1.1, it can be interpreted that P/E Ratio of CTS worsened in the year 2020. In the year 2023, the company had a good P/E Ratio, and from Table 8.6.1.2, it can be interpreted that P/E ratio of TCS worsened in the year 2020-21. But still, the company is having bad P/E Ratio till the year 2023-24.

### 8.6.2 Market-to-Book Value Ratio

Market-to-Book ratio will be calculated by using the following formula.

$$\text{Market-to-Book Ratio} = \frac{\text{Market Value per Equity Share}}{\text{Book Value per of Equity Share}}$$

For Cognizant Technology Solutions (CTS), Book Value per of Equity Share is solved by the following formula.

*Book Value of Equity*

$$= \text{Common Stock} + \text{Additional paid-in capital} + \text{Retained Earnings} + \text{Accumulated Other Comprehensive Income}$$

$$\text{Book Value Per Share} = \frac{\text{Book Value of Equity}}{\text{Weighted Average of Total Diluted Shares Outstanding}}$$

For Cognizant Technology Solutions (CTS), the data for Market Price Per Share is taken from NASDAQ (n.d.).

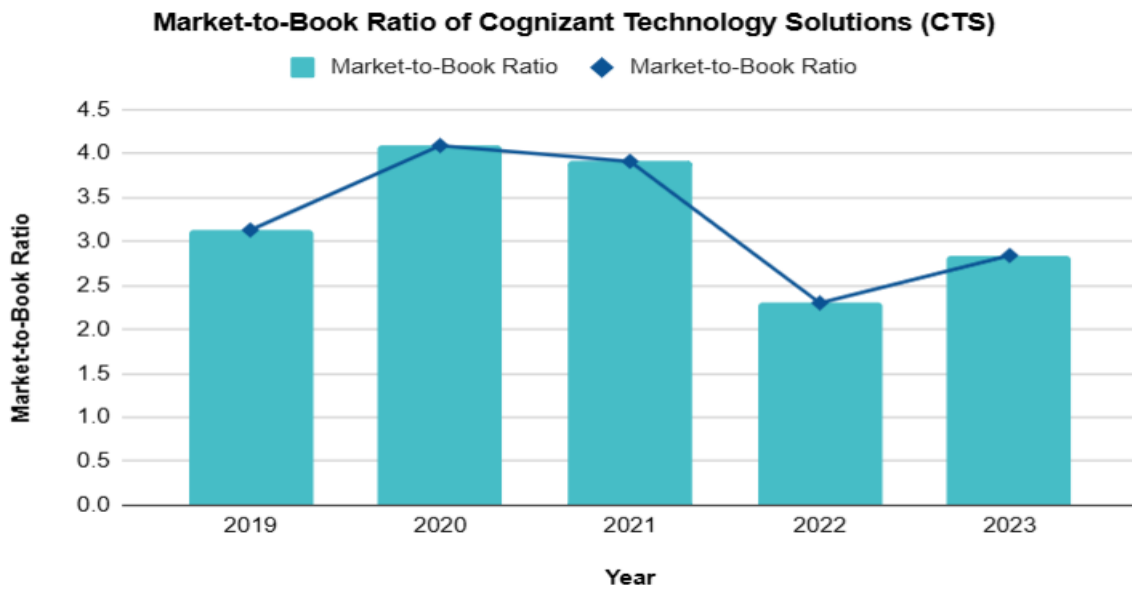
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.6.2.1: Market-to-Book Value Ratio of Cognizant Technology Solutions (CTS)

Year	Market Value Per Equity Share (\$)	Book Value Per of Equity Share (\$ millions)	Market-to-Book Ratio
2019	62.02	19.82	3.13
2020	81.95	20.03	4.09
2021	88.72	22.71	3.91
2022	57.13	24.89	2.30
2023	75.53	26.56	2.84

The graphical interpretation of Table 8.6.2.1 is given below in the form of a chart and trend.

Figure 8.6.2.1: Market-to-Book Value Ratio of Cognizant Technology Solutions (CTS)



For Tata Consultancy Services (TCS), Book Value per of Equity Share is solved by the following formula.

$$Book\ Value\ Per\ Share = \frac{(Total\ Assets - Total\ Liabilities)}{Total\ Outstanding\ Shares}$$

For Tata Consultancy Services (TCS), the data for Market Price Per Share is taken from Equity Pandit (n.d.).

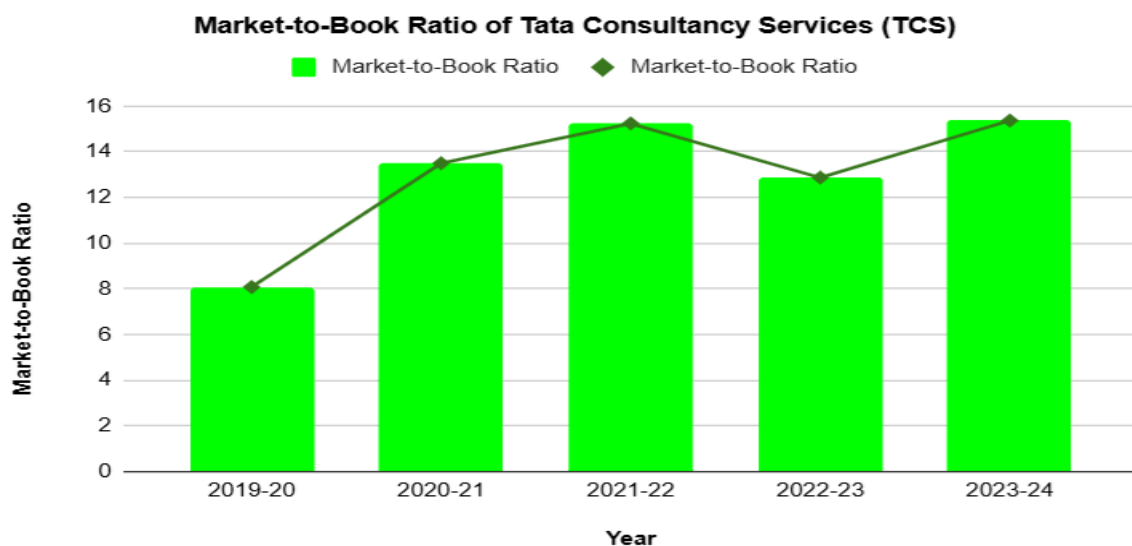
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.6.2.2: Market-to-Book Value Ratio of Tata Consultancy Services (TCS)

Year	Market Value Per Equity Share (₹)	Book Value Per of Equity Share (₹ crore)	Market-to-Book Ratio
2019-20	1,826.10	226.00	8.08
2020-21	3,177.85	235.43	13.50
2021-22	3,739.95	245.48	15.24
2022-23	3,205.90	249.20	12.87
2023-24	3,876.30	252.26	15.37

The graphical interpretation of Table 8.6.2.2 is given below in the form of a chart and trend.

Figure 8.6.2.2: Market-to-Book Value Ratio of Tata Consultancy Services (TCS)



## Interpretation

Value investors generally view investments with Market-to-Book ratios below 1.0 as sound. Value investors prefer values below 1.0, which suggests that an undervalued stock may have been found. Nonetheless, some value investors sometimes use equities with a lower Market-to-Book ratio less than 3.0 as a benchmark. However, the company and its sector determine whether the Market-to-Book ratio is appropriate. An overvalued stock or one that is expected to perform well in the near future are indicated by higher Market-to-Book ratio. On the other hand, a lower Market-to-Book ratio could indicate that investors believe the company will produce less value than its competitors or that the stock is cheap. From Table 8.6.2.1 and Table 8.6.2.2, it can be interpreted that both CTS and TCS have Market-to-Book ratio more than 1.0. It can be seen that CTS sometimes have overvalued stock and TCS always has an overvalued stock. In the year 2022, CTS had lowest Market-to-Book ratio of 2.30 and had highest Market-to-Book ratio of 4.09 in the year 2020. In the year 2019-20, TCS had lowest Market-to-Book ratio of 8.08 and had highest Market-to-Book ratio of 15.37 in the year 2023-24.

### 8.6.3 Enterprise Value to EBITDA Ratio

Enterprise Value to EBITDA Ratio will be calculated by using the following formula.

$$EV \text{ to EBITDA Ratio} = \frac{\text{Enterprise Value}}{\text{EBITDA}}$$

The data on Enterprise Value for Cognizant Technology Solutions (CTS) is taken from Stock Analysis (n.d.).

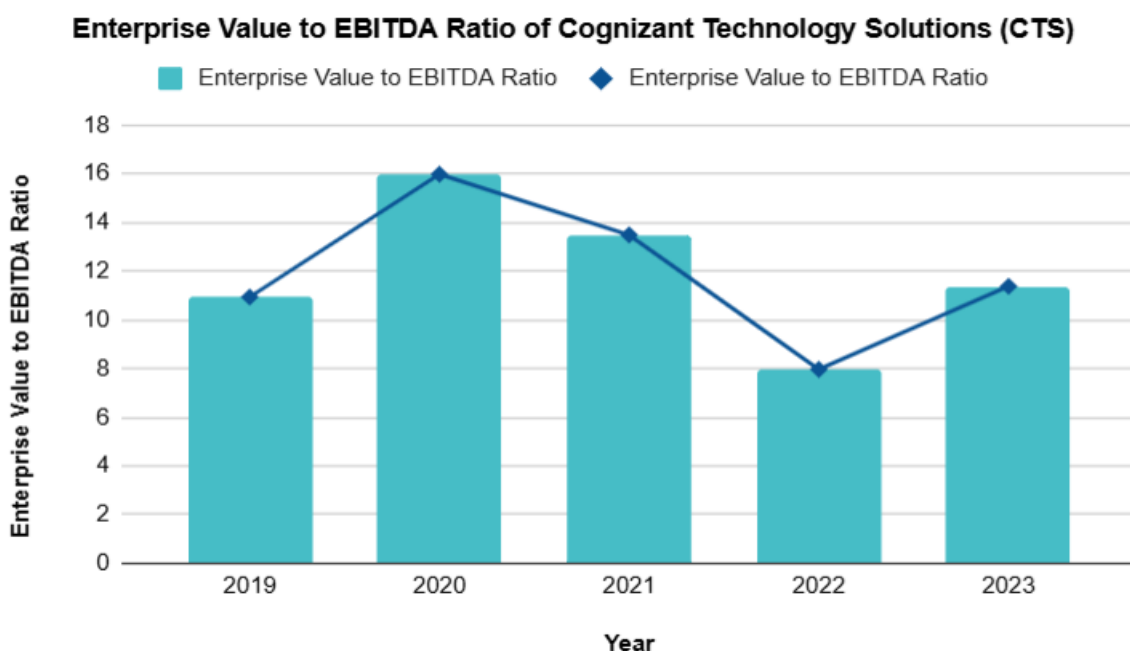
Cognizant Technology Solutions (CTS) as of December 31 of the respective year.

Table 8.6.3.1: Enterprise Value to EBITDA Ratio of Cognizant Technology Solutions (CTS)

Year	Enterprise Value (\$ millions)	EBITDA (\$ millions)	Enterprise Value to EBITDA Ratio
2019	32,583	2,979	10.94
2020	42,722	2,673	15.98
2021	45,865	3,400	13.49
2022	28,180	3,537	7.97
2023	36,949	3,244	11.38

The graphical interpretation of Table 8.6.3.1 is given below in the form of a chart and trend.

Figure 8.6.3.1: Enterprise Value to EBITDA Ratio of Cognizant Technology Solutions (CTS)



The Enterprise Value for Tata Consultancy Services (TCS) is taken from TradingView (n.d.).

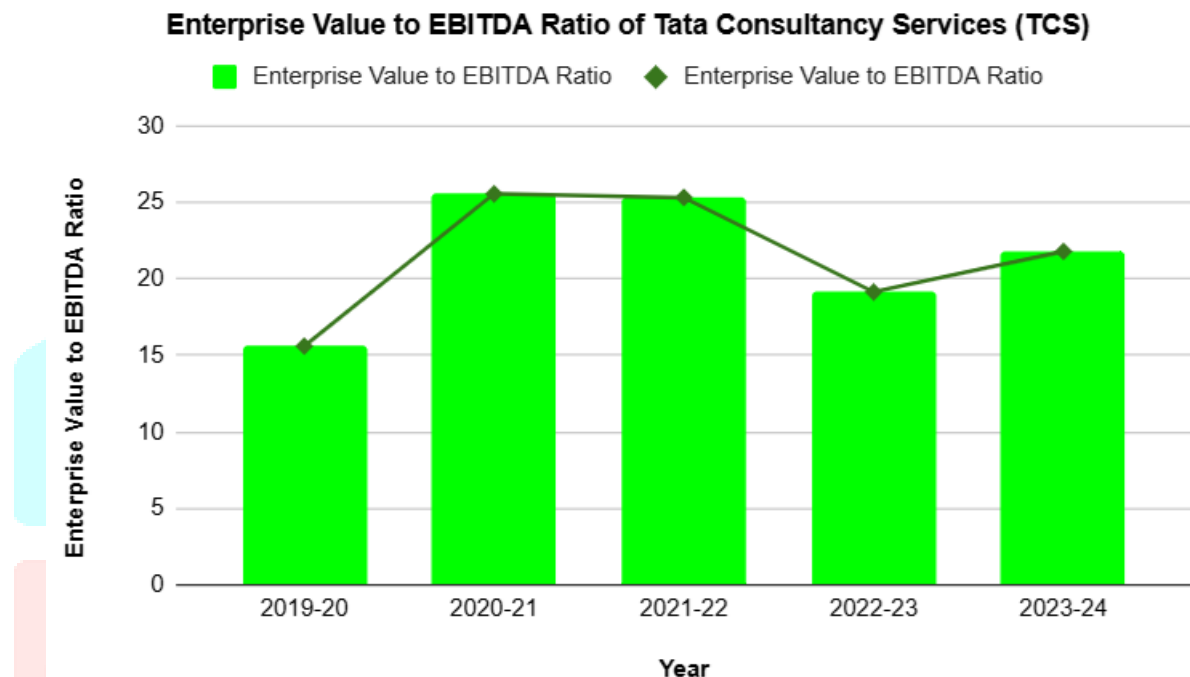
Tata Consultancy Services (TCS) as of March 31 of the respective year.

Table 8.6.3.2: Enterprise Value to EBITDA Ratio of Tata Consultancy Services (TCS)

Year	Enterprise Value (₹ crore)	EBITDA (₹ crore)	Enterprise Value to EBITDA Ratio
2019-20	6,57,000	42,109	15.60
2020-21	11,58,000	45,328	25.55
2021-22	13,43,000	53,057	25.31
2022-23	11,34,000	59,259	19.14
2023-24	13,80,000	63,338	21.79

The graphical interpretation of Table 8.6.3.2 is given below in the form of a chart and trend.

Figure 8.6.3.2: Enterprise Value to EBITDA Ratio of Tata Consultancy Services (TCS)



### Interpretation

The Enterprise Value to EBITDA Ratio values below 10 are generally considered healthy. It is most effective to use this ratio when comparing companies within the same industry or sector. A higher EV to EBITDA Ratio may suggest that the market is overvaluing a company. From the Table 8.6.3.1 and Table 8.6.3.2, it can be interpreted that both CTS and TCS are not having healthy EV to EBITDA Ratio which implies that they are having potential overvaluation by the market. Only during the year 2022, CTS had healthy EV to EBITDA Ratio.

## IX. ANALYSIS OF OBJECTIVE 3: STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT) ANALYSIS

### 9.1 Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

SWOT analysis is a strategic assessment method that involves evaluating the internal and external environments of an organization. In this framework, S stands for Strengths and W denotes Weaknesses, which are both internal factors affecting the organization. Conversely, O signifies Opportunities present in the market, while T indicates potential Threats that may arise, representing external factors influencing the organization.

#### 9.1.1 Strengths

Strength denotes the fundamental competencies or abilities of an organization that enable it to secure strategic advantages over its rivals. Even in instances where the organization does not attain such advantages, it still highlights the organization's capacities that possess positive attributes.

#### 9.1.2 Weaknesses

Weaknesses refer to the elements that hinder the achievement of successful outcomes within organizations. They stand in stark contrast to Strengths. While Strengths signify competitive advantages, weaknesses highlight the competitive disadvantages faced by an organization.

### 9.1.3 Opportunities

Opportunities refer to advantageous conditions that exist within the external environment, which organizations should seize to bolster their strengths and achieve a competitive edge. It is essential for an organizational strategist to remain vigilant regarding emerging market opportunities, enabling the organization to capitalize on them promptly and thereby increase revenues and profits.

### 9.1.4 Threats

The concept of 'threat' denotes the exposure of vulnerabilities to factors that may result in negative consequences. In an external context, any abrupt or even incremental changes that are detrimental to the organization signify potential threats to its stability.

## 9.2 Advantages of SWOT Analysis

- a. SWOT assists in recognizing fundamental information necessary for project planning and management.
- b. SWOT evaluates the project's strengths and weaknesses, optimizes opportunities, and addresses potential threats.
- c. SWOT aids in determining the core competencies of the project team and establishing project objectives.
- d. SWOT supplies information that facilitates the alignment of the project's resources and capabilities with the competitive landscape in which it functions.

## 9.3 Disadvantages of SWOT Analysis

- a. The categorization of elements as strengths, weaknesses, opportunities, and threats can often be subjective.
- b. While it emphasizes the importance of SWOT components, it does not provide guidance on how an organization can effectively identify these elements for itself.
- c. Issues related to government legislation and the economic environment may arise. This approach may lead organizations to create lists rather than focus on what is truly essential for achieving their objectives.
- d. It presents lists without critical analysis or clear prioritization, which may result in weak opportunities appearing to counterbalance strong threats.
- e. Typically, it offers a straightforward list that lacks critical evaluation.

## 9.4 Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis of Cognizant Technology Solutions (CTS)

### 9.4.1. Strengths

#### a. Extensive Digital Services and Solutions.

Cognizant's extensive range of digital services and solutions, encompassing artificial intelligence, cloud computing, data modernization, and the Internet of Things, places the company at the leading edge of technological advancement. The organization's capability to incorporate these services into the existing legacy systems of its clients provides a significant competitive edge, facilitating smooth transitions to contemporary and user-friendly operations. The emphasis Cognizant places on digital transformation is reflected in its strategic investments and the up-skilling of its technical workforce, ensuring that the company continues to meet the changing demands of its clients.

#### b. Strategic Acquisitions and International Reach.

Cognizant's strategic acquisitions have significantly broadened its expertise in essential digital domains, thereby improving its service portfolio and extending its market presence. The organization employs a global delivery model, supported by a substantial workforce in pivotal regions, including the United States, which allows it to offer a combination of onshore and offshore services. This international presence not only enhances the diversity of Cognizant's client base but also reduces risks linked to geopolitical and market-specific uncertainties.

#### c. Effective implementation of the NextGen program.

The NextGen program has resulted in enhanced operational efficiencies and cost reductions. For the nine months ending September 30, 2024, restructuring charges related to this initiative amounted to \$85 million, a decrease from \$189 million in the previous year. This reduction underscores the program's success in lowering expenses.

### 9.4.2. Weaknesses

#### a. Workforce Management and Employee Turnover Rates.

Although there has been a decline in voluntary attrition rates in 2023, Cognizant still encounters difficulties in managing its workforce. The fierce competition for qualified IT professionals requires persistent initiatives to engage, retain, and invest in talent. The organization has consistently been reducing its workforce under the pretext of downsizing office space in an effort to rejuvenate itself amid significant competition. Additionally, the company is exerting pressure on its employees to resign without providing any justification. Elevated attrition rates can adversely affect project continuity and client satisfaction, underscoring the necessity for Cognizant to enhance its employee value proposition and retention strategies.

#### b. Bulk Recruitment.

Cognizant consistently engages in bulk hiring practices. This approach allows the company to maintain a reservoir of candidates, enabling them to deploy these individuals as needed. The organization invests in training these employees and retains them in a standby capacity until a project becomes available. However, in an effort to enhance profitability, the company often resorts to layoffs. This strategy ultimately leads to financial losses for the organization. The funds allocated for training these employees could have been better utilized by assigning them to projects, thereby mitigating potential losses.

#### c. Visa Dependency and Adherence to Regulatory Standards.

Cognizant's dependence on visas for a segment of its workforce, especially in the United States, subjects the company to regulatory risks and possible cost escalations. Modifications in immigration legislation and visa regulations may impact Cognizant's capacity to allocate personnel to projects and maintain competitive advantage, highlighting the necessity for a more equitable distribution of its global workforce and the promotion of local hiring strategies.

### 9.4.3. Opportunities

#### a. The Demand for Digital Transformation in the Market.

The post-pandemic landscape has intensified the necessity for businesses to update their operations, thereby generating substantial opportunities for Cognizant's digital offerings. The firm's proficiency in mobile workplace solutions, e-commerce, automation, artificial intelligence, and cybersecurity enables it to leverage this increasing demand and enhance its market presence.

#### b. Environmental, Social, and Governance (ESG) and Sustainability Efforts.

As stakeholders place greater emphasis on Environmental, Social, and Governance (ESG) factors, Cognizant's dedication to responsible practices and transparency within its ESG initiatives resonates with the expectations of both clients and employees. This commitment to sustainability has the potential to bolster Cognizant's brand reputation and create avenues for new business collaborations with partners and clients who share similar values.

### 9.4.4. Threats

#### a. Geopolitical and Economic Instabilities.

Cognizant functions within a worldwide market that is vulnerable to economic and geopolitical changes. The company's substantial presence in India, along with its client base concentrated in regions experiencing increased geopolitical tensions, may affect its operational continuity and financial results. It is essential to implement market diversification and risk management strategies to effectively address these uncertainties.

#### b. Accelerated Technological Advancements and Competitive Pressures.

The information technology services sector is marked by swift technological progress and fierce competition. Cognizant encounters the necessity of consistently updating its service portfolio to align with technological developments and sustain its competitive advantage over major industry players and specialized boutique firms. To remain pertinent in this ever-changing landscape, innovation and strategic alliances are essential.

#### c. Legal and regulatory compliance.

Cognizant is confronted with legal and regulatory challenges stemming from modifications in tax legislation and anti-outsourcing policies. The organization is presently engaged in disputes with the Indian Tax Department (ITD) concerning previous share repurchase activities, which may result in potential liabilities of up to \$394 million. Furthermore, the introduction of the OECD's global minimum tax, effective from January 1, 2024, may impose further financial obligations, however, management currently assesses the impact as manageable.

## 9.5 Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis of Tata Consultancy Services (TCS)

### 9.5.1 Strengths

#### a. Robust International Footprint.

TCS has successfully positioned itself in numerous countries worldwide, encompassing both offices and delivery centers. This extensive reach enables the company to cater to diverse markets, attracting clients from various industries across the globe. An analysis of TCS's strengths, weaknesses, opportunities, and threats indicates that this expansive network enhances its market presence and facilitates the exploration of new opportunities, thereby reinforcing its status as a leading IT service provider.

#### b. Comprehensive Range of Services.

TCS offers a diverse array of services, including IT services and business solutions, business process services, IT consulting, and IT infrastructure, which constitutes a significant advantage for the company. This adaptability is further highlighted in the SWOT analysis of TCS, indicating its capability to address a wide range of business needs, industries, and technologies. The company's offerings encompass cloud computing, cybersecurity, and an artificial intelligence division, ensuring its relevance in response to evolving market trends.

#### c. Strong Research and Development (R&D).

Project management plays a vital role at TCS, as the organization depends on it to develop innovative concepts and entirely original solutions. This emphasis on research enables the company to respond effectively to the dynamic IT market, delivering high-quality services and products. Furthermore, this commitment to innovation attracts clients seeking cutting-edge technologies and enhances the company's reputation as a leading provider of advanced digital services.

#### d. Expertly Trained Workforce.

TCS takes pride in possessing one of the largest and most skilled workforces in the industry. The company has assembled a diverse group of talented individuals across various fields, enabling it to provide exceptional services to clients worldwide. Its training and development initiatives ensure that employees remain proficient in the latest technological advancements, highlighting the company's commitment to this aspect.

### 9.5.2 Weaknesses

#### a. Excessive Reliance on Major Markets.

The company's revenue streams are derived from diverse markets, including North America and Europe, indicating that TCS possesses a distinct risk profile influenced by the economic and political climates of these regions. Consequently, certain firms have become excessively reliant on exports, which can pose significant risks during periods of economic downturns, the imposition of trade barriers, or changes in policy.

#### b. Fierce Competition.

The information technology services sector is highly competitive, with prominent companies such as Infosys, Wipro, Accenture, and IBM among the key participants. This intense competition may result in pricing pressures, which could adversely impact the profit margins of TCS. Within the context of TCS's SWOT analysis, the competitive threat is identified as a significant weakness, necessitating the development of strategies to maintain the esteemed reputation of TCS. At times, this may require the company to acquiesce to customer demands by reducing prices in order to retain its clientele.

### c. Narrow Range of Products in Rapidly Expanding Sectors.

TCS undoubtedly offers a wide range of services, however, it has a limited selection of specialized products in emerging areas such as cloud services, cutting-edge cybersecurity, and tailored sector-specific intelligent AI solutions. In the current fast-paced and technologically advanced environment, clients are increasingly seeking new technologies and anticipate that companies will allocate resources towards these innovative concepts.

### d. Employee Turnover Rate and Retention of Talent.

High turnover rates are common in the IT sector, and regrettably, TCS is not immune to this phenomenon. Retaining skilled employees is challenging, as competing organizations frequently provide more attractive employment conditions and enhanced opportunities for advancement. Elevated attrition rates necessitate significant financial investment from the employer in recruiting and training new personnel, which can ultimately undermine the capacity to deliver high-quality and consistent services.

## 9.5.3 Opportunities

### a. Growth in Developing Markets.

TCS has recognized promising growth prospects in emerging markets across the Asia-Pacific, Latin America, and Africa. These areas are marked by increasing economic development and a rising demand for information technology, indicating a significant need for IT services to facilitate digital transformation. By establishing its operations in these regions, TCS can capitalize on the opportunity to generate new revenue streams, diversify its client portfolio, and reduce reliance on more mature markets.

### b. Increase in Digital and Cloud Services.

Significant opportunities for TCS are emerging in the realms of digitalization and the demand for cloud computing services, which have garnered increased attention compared to previous years. Organizations are investing their resources in technologies such as cloud solutions, artificial intelligence, machine learning, and data analytics to improve their operations and enhance customer satisfaction. TCS is strategically positioned to take advantage of this expanding market, owing to its extensive expertise in digital and cloud services.

### c. Tactical Acquisitions and Collaborations.

TCS has recognized that strategic acquisitions and collaborations represent effective means for enhancing its capabilities and identifying recommended growth sectors. By pursuing these avenues, TCS can gain seamless access to complementary enterprises through acquisitions or, by forming alliances with technology providers, tap into new technologies, expertise, and market niches. The SWOT analysis of TCS highlights the necessity for the company to expedite growth by broadening its acquisitions and partnerships, thereby unlocking new service opportunities.

## 9.5.4 Threats

### a. Economic Volatility.

Global warming and fluctuations in global markets present significant risks to TCS's revenue and profit margins. As an IT services provider, TCS is susceptible to economic conditions in various regions worldwide. Variations in the global economy can adversely affect local markets, potentially leading to reduced IT spending by clients, delays in project timelines, and an overall decline in demand for IT services.

### b. Swift Technological Advancements.

Technological advancement represents a significant challenge for TCS, as it is perpetually evolving and necessitates ongoing investment in new technologies and the acquisition of new skills. Staying abreast of innovations in areas such as artificial intelligence, machine learning, and cloud computing is essential. A failure to respond promptly to these developments or an inability to invest in superior technologies could result in TCS forfeiting its competitive edge.

### c. Geopolitical Uncertainties.

Political risks, including trade disputes and other elements that alter the regulatory environment, can significantly impact TCS in its international operations. Aspects such as visa requirements, import tariffs, and changes in diverse regulatory frameworks impede the company's mobility and its ability to function across various nations. Additionally, there exists a potential for geopolitical risks concerning TCS's global delivery model, which may lead to increased expenses and heightened operational difficulties.

### d. Cybersecurity Vulnerabilities.

Cyber threats are increasingly prevalent and sophisticated, posing significant risks to TCS's applications and those of its clients. The repercussions of such threats can lead to a tarnished business reputation, particularly when customer data is compromised, either through theft, leakage, or ransomware attacks. It is crucial to implement robust security systems and protocols, as well as the capability to mitigate and respond to potential threats. This is essential not only for safeguarding TCS's assets but also for maintaining the trust of its clients.

## X. ANALYSIS OF OBJECTIVE 4: FACTORS AFFECTING THE FINANCIAL STABILITY OF COGNIZANT TECHNOLOGY SOLUTIONS (CTS) AND TATA CONSULTANCY SERVICES (TCS)

### 10.1 Financial Stability

According to Bank Of Korea (n.d.), Financial stability can be characterized as a state in which the financial system exhibits resilience and is free from instability. This concept encompasses the stability of three key components of the financial system namely, financial institutions, financial markets, and financial infrastructure.

#### 10.1.1 Stability of Financial Institutions

The term 'stability of financial institutions' denotes a situation where individual financial entities are sufficiently robust to perform their financial intermediation roles effectively without reliance on external support, including governmental assistance.

#### 10.1.2 Stability of Financial Markets

The term 'stability of financial markets' refers to a scenario where market transactions precede without significant interruptions, and financial asset prices remain closely aligned with economic fundamentals. This stability allows economic participants to confidently raise and manage funds.

### 10.1.3 Stability of Financial Infrastructure

The term 'stability of financial infrastructure' indicates a well-organized financial system that promotes the effective functioning of market discipline, ensuring that both the financial safety net and the payment and settlement systems operate efficiently.

In a broader context, financial stability can be described as a condition in which the financial system supports real economic activities seamlessly and is equipped to address financial imbalances that may arise from external shocks.

The primary elements influencing financial stability encompass the oversight of risks and the regulation of integrated financial services, the governance structures of financial institutions, the transmission and dissemination of financial risks, international capital movements, a vulnerable credit system, and the overall security of financial systems (Chao et al., 2022).

## 10.2 Factors Affecting the Financial Stability of Cognizant Technology Solutions (CTS)

Cognizant Technology Solutions is a prominent global IT services company which is facing various factors that are affecting its financial stability. These factors are classified into various categories as outlined below.

### 10.2.1 Market Demand and Dynamics

#### a. Demand for Digital Services

The increasing demand for digital transformation, cloud computing, and IT consulting services drives revenue. The economic factors influencing client budgets are affecting demand fluctuations which are significantly affecting the financial stability of the organization.

#### b. Competition

Cognizant operates in a highly competitive market with numerous established players, including Tata Consultancy Services (TCS), Infosys, and smaller niche companies, which is impacting pricing and market share.

### 10.2.2 Economic Conditions

#### a. Global Economic Environment

The economic downturns or growth in key markets is significantly impacting client spending on IT services and hence affecting the financial stability of the organization.

#### b. Currency Exchange Rates

As a global company, fluctuations in foreign exchange rates can impact revenue and profitability, given that a significant portion of earnings comes in currencies other than the U.S. dollar. For instance, the operating margin and Adjusted Operating Margin for the year ending December 31, 2023, were recorded at 13.9% and 15.1%, respectively. In comparison, the operating margin and Adjusted Operating Margin for the year ending December 31, 2022, stood at 15.3%. The GAAP and Adjusted Operating Margins for 2023 experienced a decline due to heightened compensation expenses, primarily stemming from one of the two merit increase cycles implemented for most employees since October 2022. This decline was somewhat mitigated by the depreciation of the Indian rupee against the U.S. dollar. This way, fluctuations of foreign currency rates can have an impact in the financial stability of CTS.

### 10.2.3 Regulatory Environment

#### a. Compliance Costs

Changes in regulations regarding data protection like GDPR, labor laws, and tax policies is affecting operational costs and overall business strategy.

#### b. Geopolitical Risks

Trade tensions and geopolitical instability is disrupting operations and client relationships, as they are affecting the key markets.

### 10.2.4 Technological Change

#### a. Rapid Technological Advancements

The company is keeping pace with emerging technologies and trends such as Artificial Intelligence (AI), machine learning, and automation, which is requiring ongoing investment in R&D. The investment in Research and Development (R&D) and training of employees in these fields are one of the major factors affecting the financial stability of CTS.

### 10.2.5 Client Concentration and Relationship Management

#### a. Dependence on Key Clients

A considerable share of revenue is deriving from a limited number of substantial clients. The loss of a key contract or client as a result of layoffs is leading to significant financial consequences.

#### b. Customer Retention

Maintaining strong relationships and delivering consistent value to clients is crucial for recurring revenue and business stability. The company is experiencing delays in project submissions to clients as a result of layoffs. This situation is causing frustration among clients and is negatively impacting the client relationship.

### 10.2.6 Talent Acquisition and Retention

#### a. Workforce Management

The consistent reduction of the workforce under the pretext of downsizing office space in an effort to rejuvenate itself amid significant competition and exerting pressure on its employees to resign without providing any justification is adversely affecting project continuity and client satisfaction, leading to a decrease in clientele, and subsequently impacting financial stability.

#### b. Wage Inflation

Rising salaries and talent acquisition costs in a competitive labor market is affecting the profit margins and operational costs of the organization.

### 10.2.7 Operational Efficiency

#### a. Cost Control and Management

Managing operational costs effectively is critical for maintaining profitability, especially in a service-oriented industry. The company is making significant efforts to control its operational expenses. However, this approach is resulting in considerable dissatisfaction among its clients which is affecting the financial stability of the organization.

#### b. Project Execution Risks

The successful completion of a project is essential, as any delays, budget overruns, or quality concerns can negatively impact client satisfaction and overall financial performance. The matter of layoffs has caused a postponement in project submissions, resulting in client dissatisfaction, which is ultimately affecting the client base and, consequently, the financial stability of the organization.

### 10.2.8 Mergers and Acquisitions

#### a. Strategic Growth Initiatives

Cognizant's ability to identify and integrate suitable acquisitions is providing new capabilities and market access but is also introducing financial risks and integration challenges which are the main causes of affecting the financial stability of the company.

### 10.2.9 Global Events and Crises

#### a. Pandemic Impacts

The events like the COVID-19 pandemic have an impact in altering client spending patterns and employee work arrangements. This is presenting both challenges and opportunities for growth in certain service areas and significantly affecting the financial stability of the organization.

In conclusion, Cognizant's financial stability is influenced by a blend of internal operational factors and external environmental dynamics. To ensure continued success, the company must proactively manage these variables, adapt its strategies, and evolve in a rapidly changing technology landscape.

## 10.3 Factors Affecting the Financial Stability of Tata Consultancy Services (TCS)

Tata Consultancy Services (TCS) is one of the largest IT services companies in the world which is facing a variety of factors that are influencing its financial stability. These factors can be categorized into several key areas as follows.

### 10.3.1 Market Dynamics

#### a. Demand for IT Services

Fluctuations in the demand for IT services globally are significantly impacting TCS's revenue. Economic conditions, technological advancements, and shifts towards digital transformation influence market demand.

#### b. Competition

The Information Technology (IT) services industry is characterized by intense competition, with a multitude of companies competing for market dominance. Such competitive dynamics is influencing pricing strategies and impacting profit margins.

### 10.3.2 Economic Environment

#### a. Global Economic Conditions

Economic downturns or slowdowns in key markets are affecting clients' budgets for IT services which is impacting TCS's revenues.

#### b. Exchange Rate Fluctuations

As a global player, TCS generates a significant portion of its revenues in foreign currencies. Currency fluctuations are impacting its profitability.

### 10.3.3 Technological Changes

#### a. Innovation and R&D

Continuous investment in innovation and research is essential due to the swift pace of technological advancement. To sustain a competitive edge, it is vital to remain aligned with emerging technologies such as artificial intelligence, machine learning, and cloud computing.

#### b. Cybersecurity Risks

As dependence on technology increases, the likelihood of cyberattacks also escalates. TCS must invest in robust cybersecurity measures to protect its assets and clients. Cybersecurity risks are one of the major factors for affecting the financial stability of the company.

### 10.3.4 Client Concentration and Diversification

#### a. Client Dependence

A significant portion of TCS's revenue is coming from a few large clients. Losing a major client or experiencing a reduction in their spending is having a detrimental impact on financial stability.

#### b. Sector Diversification

The company's involvement in particular sectors, such as banking and healthcare is resulting in vulnerabilities that are influenced by the unique economic conditions of those sectors.

### 10.3.5 Regulatory Environment

#### a. Compliance and Regulatory Changes

Changes in regulations related to data privacy, labor laws, and taxation is impacting operations and financial performance. The evolving regulation is also leading the increase of compliance cost of the company.

### 10.3.6 Talent Management

#### a. Talent Acquisition and Retention

The IT services industry relies heavily on skilled professionals. Challenges in hiring, retaining, or reskilling talent can affect project execution and service delivery. Retaining skilled employees is challenging, as competing organizations frequently provide more attractive employment conditions and enhanced opportunities for advancement. Elevated attrition rates necessitate significant financial investment from the employer in recruiting and training new personnel, which can ultimately undermine the capacity to deliver high-quality and consistent services. The challenge of employee retention may result in client frustration, potentially leading to a decline in client satisfaction and ultimately impacting financial stability.

#### b. Wage Inflation

The competitive pressures for talent is leading to increasing wage costs which is impacting profit margins and eventually affecting the financial stability.

### 10.3.7 Geopolitical Factors

#### a. Political Instability

Geopolitical tensions, trade wars, and protectionist policies can disrupt business operations and client spending. The period of 2022-23 experienced significant geopolitical and economic instability. The persistent conflict between Russia and Ukraine, along with rising geopolitical tensions, has hindered the efficient operation of global supply chains. Inflation rates have escalated, particularly in developed markets. Despite these challenges, TCS has demonstrated remarkable resilience amid the prevailing geopolitical and economic turbulence.

#### b. Pandemics and Global Health Crises

The events such as the COVID-19 pandemic are altering business operations and the demand for services is eventually impacting on the financial stability of the organization.

### 10.3.8 Operational Efficiency

#### a. Cost Management

The effective management of operational costs, including outsourcing and automation, is enhancing profit margins and overall financial stability.

#### b. Project Execution

Delays or failures in project delivery can lead to financial losses and damage to client relationships. Hence, TCS maintains a timely execution of project which is leading to good client relationship and eventually affecting its financial stability.

### 10.3.9 Investment Strategies

#### a. Mergers and Acquisitions

A strategic investment in sponsorships is strengthening TCS's market position and capabilities, contributing positively to financial stability.

#### b. Capital Expenditures (CapEx) and Operating Expenses (OpEx) Management

Effective management of capital and operational expenditures is crucial for maintaining healthy cash flows. TCS is having a good CapEx and OpEx Management which are affecting the company's financial stability.

In summary, TCS's financial stability is influenced by a combination of internal factors like operational efficiency and talent management and external factors such as market dynamics and economic conditions. Monitoring and effectively managing these factors is crucial for TCS to sustain its growth and profitability in a competitive landscape.

## XI. RESULTS AND DISCUSSIONS

### 11.1 Major Findings

The major findings from the study of financial ratios of Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS) are mentioned below.

1. Both CTS and TCS have gross profit margins exceeding the average of 27.24% and net profit margins above 10%. However, TCS's margins are notably higher, indicating better efficiency.
2. CTS falls within a good EBITDA range (15%-25%), while TCS surpasses this range, highlighting its greater profitability.
3. TCS outperforms CTS in Return on Assets (ROA) and Return on Capital Employed (ROCE), with TCS achieving over 20% ROCE and showing continuous growth.
4. TCS's ROE is consistently improving, signifying effective income generation from equity, whereas CTS's ROE is less impressive.
5. TCS has a steadily rising EPS, whereas CTS experienced a decline in 2023 after previous growth.
6. CTS is increasing its Dividend Per Share (DPS) while maintaining a low payout ratio, favoring reinvestment. TCS shows a robust payout but a decrease in DPS for 2023-24.
7. Both companies have strong current ratios, quick ratios, and low debt-to-equity ratios (below 0.5), indicating solid financial stability and less reliance on debt.
8. CTS has a favorable Price-to-Earnings (P/E) ratio and is seen as an affordable stock, while TCS might be overvalued with a high P/E ratio.

The major findings from the SWOT Analysis of Cognizant Technology Solutions (CTS) are mentioned below.

#### 1. Strengths

a. Cognizant offers a wide range of digital solutions, such as artificial intelligence and cloud computing, giving it a competitive edge. The company effectively integrates these technologies with clients' existing systems.

b. The company has expanded its expertise through strategic acquisitions and has a global delivery model, allowing it to serve a diverse client base effectively.

c. Implementation of the NextGen program has led to improved operational efficiencies and reduced costs, marking a significant step in the company's restructuring efforts.

#### 2. Weaknesses

a. Cognizant faces challenges with employee turnover and attrition, making it crucial to improve talent retention strategies amidst high competition.

b. The company's bulk hiring strategy sometimes leads to financial losses due to layoffs and inefficient use of training investments.

c. Reliance on visas for staff in the U. S. poses regulatory risks that could hinder project staffing and competitive advantage.

#### 3. Opportunities

a. The push for digital upgrades in the post-pandemic era creates substantial market opportunities for Cognizant's services.

b. Growing emphasis on Environmental, Social, and Governance (ESG) factors offers Cognizant a chance to enhance its brand and collaborate with like-minded partners.

#### 4. Threats

a. Economic and political instabilities, especially in India, may negatively impact operations and financial performance.

b. Rapid advancement in technology and stiff competition mandates continual innovation and strategic partnerships.

c. Ongoing legal issues, especially with tax regulations, present financial liabilities that the company may manage carefully.

The major findings from the SWOT Analysis of Tata Consultancy Services (TCS) are mentioned below.

#### 1. Strengths

a. TCS has established a strong global presence with offices and delivery centers in multiple countries, allowing it to serve diverse markets and enhance its brand visibility.

b. TCS provides a wide variety of IT services, from consulting to infrastructure management. This versatility helps the company meet the evolving needs of clients across various industries, including emerging areas like cloud computing and cybersecurity.

c. The company's focus on innovation through research enables it to stay competitive and deliver high-quality solutions, attracting clients who want cutting-edge technologies.

d. TCS boasts a large and skilled workforce, ensuring that its employees are up-to-date with the latest technological advancements, which enhances service quality.

#### 2. Weaknesses

a. TCS relies heavily on revenue from North America and Europe, making it vulnerable to economic fluctuations in these regions.

b. The IT sector is competitive, with rivals like Infosys and Accenture posing threats that could pressure TCS to lower prices, potentially affecting its profit margins.

c. While TCS offers various services, it has fewer specialized products in fast-growing areas such as cloud services and tailored AI solutions.

d. High turnover rates in the IT industry challenge TCS's ability to retain talent, requiring significant investment in recruitment and training.

#### 3. Opportunities

a. Emerging markets in Asia-Pacific, Latin America, and Africa represent growth opportunities as demand for IT services increases.

b. The rising trend in digitalization and cloud computing presents TCS with a chance to expand its service offerings.

c. Acquisitions and partnerships may enhance TCS's capabilities and access to new technologies.

#### 4. Threats

a. Global economic changes may impact TCS's revenue and client spending on IT services.

b. TCS may continuously invest in new technologies to stay competitive as failure to do so may lead to losing its market edge.

c. Political changes and trade disputes may disrupt TCS's international operations and increase costs.

d. As cyber threats grow, TCS may fortify its security measures to protect client data and its reputation.

The major findings from the factors that are affecting the financial stability of Cognizant Technology Solutions (CTS) are mentioned below.

#### 1. Market Demand and Dynamics

a. There is a growing need for digital transformation, but economic factors can cause fluctuations in client budgets, impacting revenue.

b. CTS compete with several major players in the market, affecting pricing and market share.

#### 2. Economic Conditions

a. Economic changes in key regions can influence spending on IT services.

b. Fluctuating foreign exchange rates impact earnings, with notable declines in operating margins due to increased compensation costs.

#### 3. Regulatory Environment

a. New regulations increase operational costs.

b. Trade tensions and instability disrupt operations.

#### 4. Technological Change

a. Keeping up with technologies like AI requires continuous investment in research and development.

#### 5. Client Concentration and Relationship Management

a. Relying heavily on a few clients poses risks if contracts are lost.

b. Project delays are straining client relationships, impacting revenue.

#### 6. Talent Acquisition and Retention

- a. Recent layoffs have led to project disruptions, affecting client satisfaction and impacting revenue.
- b. Rising salaries are increasing operational costs.

#### 7. Operational Efficiency

- a. Efforts to manage costs can lead to client dissatisfaction.
- b. Delays and quality issues can harm client trust.

#### 8. Mergers and Acquisitions

- a. Acquisitions can enhance capabilities but may introduce financial risks.

#### 9. Global Events and Crises

- a. Situations like the COVID-19 pandemic alter client spending and work arrangements.

The major findings from the factors that are affecting the financial stability of Tata Consultancy Services (TCS) are mentioned below.

#### 1. Market Dynamics

a. Changes in global demand for IT services, influenced by economic conditions and digital transformation, significantly affect TCS's revenue.

b. Intense competition in the IT sector pressures pricing and profit margins.

#### 2. Economic Environment

a. Economic slowdowns in key markets lead to reduced budgets for IT services, affecting TCS's income.

b. As TCS operates globally, currency fluctuations can impact profitability.

#### 3. Technological Changes

a. Continuous investment in new technologies is crucial for maintaining a competitive edge.

b. Increased reliance on technology raises the importance of robust cybersecurity measures.

#### 4. Client Concentration and Diversification

a. Reliance on a few large clients makes TCS vulnerable to revenue loss.

b. Operating in specific industries may expose TCS to unique economic challenges.

#### 5. Regulatory Environment

a. Changes in data privacy and labor regulations increase compliance costs and operational challenges.

#### 6. Talent Management

a. Difficulty in retaining skilled employees can lead to project delays and increase costs.

b. Rising wages add pressure on profit margins.

#### 7. Geopolitical Factors

a. Political instability and global tensions can disrupt operations and client spending.

b. Events like pandemics also influence service demand and financial performance.

#### 8. Operational Efficiency

a. Effective cost management and timely project execution improve financial health.

#### 9. Investment Strategies

a. Strategic investments, including mergers and acquisitions, enhance TCS's capabilities and market position.

### 11.2 Discussions and Suggestions

A company with a Return On Assets (ROA) of 15% or higher indicates that the company is doing very well. Cognizant Technology Solutions (CTS) maintains its ROA between 11% and 13%, except the year 2020 when it dropped to 8.23%, which indicates that it has a satisfactory ROA but also indicates that it may need to focus on increasing net income by reducing costs and debt, boosting revenue, and optimizing asset allocation. A Return on Capital Employed (ROCE) of at least 20% indicates that the company is in a good financial position (Hayes, 2024). CTS had a good financial position in the years 2021 and 2022 and by 2023 its financial position dropped. The company may need to focus on reducing costs or start increasing its sales. Tata Consultancy Services (TCS) may need to increase its net profits in order to reduce its debt and also increase its Dividend Per Share (DPS). CTS and TCS have net working capital ratios less than 1.0 which indicates that these companies might face potential future liquidity problems. Companies may increase their net working capital ratio by boosting working capital and shortening their operating cycle. This involves converting production and sales funds into cash, achieved by asking for deposits, reducing credit terms, and focusing on sales forecasting. Financing fixed assets through working capital may be avoided due to high costs, with long-term loans or leases used instead. Conducting credit checks on customers, understanding the market, and obtaining trade credit insurance may also help in managing credit risk and securing working capital financing. Accessing risk data may further aid businesses in improving their net working capital. The Enterprise Value to EBITDA Ratio of both CTS and TCS are not healthy which signifies that they are having potential overvaluation by the market. This shows that investors are prepared to offer a higher price for the anticipated future earnings or growth potential of the company.

Cognizant stands strong in digital services and possesses growth prospects in an evolving market. However, to thrive, it may address workforce management, regulatory challenges, and competitive pressures effectively. TCS's balanced positioning, driven by its strengths, presents several growth opportunities. However, it may navigate significant weaknesses and external threats to maintain its competitive status and continue delivering high-quality IT services.

Furthermore, both CTS and TCS are facing a combination of internal and external factors that significantly influence their financial stability. Proactive management of these factors is essential for their continued success in a rapidly evolving technology landscape.

## XII. SUMMARY AND CONCLUSION

### 12.1 Summary

Both Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS) have excellent gross profit margins, net profit margins, and EBITDA margins above industry averages, with TCS being more efficient and profitable than CTS. TCS also demonstrates superior performance in terms of ROA and ROCE, indicating good financial health. While both companies have good ROE ratios, TCS shows more consistent growth and profit potential. EPS of TCS is increasing while CTS fluctuates. DPS of both companies is on the rise, with TCS having a higher DPR, indicating more dividend payouts. Both companies have good current and quick ratios, indicating strong liquidity and debt repayment abilities. Additionally, their low D/E ratios and debt ratios suggest financial stability and a secure shareholder position. Both companies have excellent interest coverage ratios and net asset turnover ratios, showing effective resource utilization for sales generation. CTS maintain a good P/E ratio while TCS has room for improvement. TCS has a high Market-to-Book ratio, suggesting an overvalued stock with investors expecting strong future performance. Performing a SWOT analysis is crucial for organizations to navigate their internal and external environments effectively. By recognizing strengths, addressing weaknesses, seizing opportunities, and mitigating threats, companies like Cognizant and TCS may strategize better, enhance their market position, and secure their competitive advantages. Understanding the intricacies of SWOT ensures that organizations remain agile and responsive in a constantly changing landscape. The financial stability of both Cognizant and TCS is influenced by various internal and external factors. CTS may need to actively manage these challenges and adapt its strategies to thrive in a fast-changing technology landscape. To ensure sustained growth and profitability, TCS may carefully monitor and manage these diverse influences in a competitive environment.

### 12.2 Conclusion

The information technology (IT) sector stands out as one of the healthiest industries globally, surpassing all other sectors. In this competitive environment, every business faces a significant challenge to remain viable. A company's growth can be assessed by the extent of its customer base. Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS) are leading companies in the information and technology industry. Both companies have an important role to play for the economy and investors. With reference to the analyses for the past 5 years (2018-2019 to 2023-2024), the financial position of TCS can be said better than that of CTS. As seen in the analyses, in almost on every parameter the performance of TCS suppressed CTS. Although it is not an alarming situation for CTS in comparison to TCS, it may improve its management efficiency in utilizing the shareholders' fund and it may work on its marketing skills. In conclusion, while both Cognizant and TCS demonstrate strong financial health, TCS generally outperforms CTS in key areas like profit margins, returns, and dividend growth. Investors looking for growth might favor TCS, while CTS may offer better value for stock price appreciation. Every organization possesses unique strengths, weaknesses, opportunities, and threats. These elements frequently influence the financial stability of a company. The project serves as a valuable tool for organizations to evaluate their internal capabilities and external environment, enabling them to make informed decisions that promote long-term sustainability and stability.

## XIII. RECOMMENDATIONS

1. Cognizant Technology Solutions (CTS) may need to focus on increasing net income by reducing costs and debt, boosting revenue, and optimizing asset allocation.
2. Cognizant Technology Solutions (CTS) may need to focus on reducing costs or start increasing its sales.
3. Tata Consultancy Services (TCS) may need to increase its net profits in order to reduce its debt and also increase its Dividend Per Share (DPS).
4. Cognizant Technology Solutions (CTS) and Tata Consultancy Services (TCS) companies may increase their working capital and shorten their operating cycle, which involves converting money tied up in production and sales into cash.
5. Cognizant Technology Solutions (CTS) may navigate regulatory changes, such as data protection laws and tax policies, which increase operational costs.
6. TCS may address challenges in hiring and retaining skilled professionals, manage costs effectively, and execute projects in a timely manner to maintain financial stability.

## XIV. LIMITATIONS OF THE STUDY AND FUTURE RESEARCH

### 14.1 Limitations of the Study

The limitations of the study are as follows:

1. The accuracy of financial information is dependent on the accuracy of financial statements. Incorrect preparation can lead to wrong analysis and misinformed decisions.
2. Financial statements based on historical data may not be effective for corporate planning if the previous situation is no longer available.
3. The financial statements only provide quantitative information about its financial affairs. However, these statements fall short of providing qualitative information such as management-labor relations, customer satisfaction, management skills, and other crucial expectations which are equally important for making informed decisions.
4. The performance evaluation process by a company is not disclosed in public. So, it becomes difficult to obtain them for a smooth study.
5. Changes in accounting methods or procedures may cause the data to become incomparable, causing the conclusions to be incorrect.
6. Different accounting practices may exist in the company, resulting in unreliable results.
7. Different companies have different financial year endings. So, it may result in unreliable results.
8. Both companies are from different regions. So, there may be differences due to the conversion of currency.
9. Time constraint.

## 14.2 Future Research

This research paper has examined the performance of two companies within the Information Technology (IT) sector that operate globally, utilizing a limited set of parameters over the past five years. However, conducting a study with a broader range of parameters and a greater number of companies could yield different results. A comparative analysis between companies in developed and developing nations may enhance the conclusions drawn. Additionally, a cross-industry and cross-country study would be beneficial before generalizing the findings. Moreover, conducting surveys across various IT sectors could provide deeper insights into the strengths, weaknesses, opportunities, and threats faced by these companies. Furthermore, a survey-based study could also be undertaken to identify the factors influencing the financial stability of these organizations.

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