Report On

Key Financial Factors Driving Profit at Square Pharmaceuticals PLC: A Trend & Regression Study

By

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20204058

An internship report submitted to the BRAC Business School (BBS) in partial fulfillment of the requirements for the degree of
Bachelor of Business Administration (BBA)

BRAC Business School (BBS)
BRAC University
August 2025

Declaration

It is hereby declared that

1. The internship report submitted is my own original work while completing degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

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Abdur Rahman Abraar
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Supervisor's Full Name & Signature:

Ms. Noshin Anjum Chaiti

Lecturer, BRAC Business School (BBS)

BRAC University

Co-Supervisor's Full Name & Signature:

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Letter of Transmittal

Ms. Noshin Anjum Chaiti
Lecturer,
BRAC Business School
BRAC University
Kha 224 Pragati Sarani, Merul Badda, Dhaka 1212, Bangladesh

Subject: Submission of Internship Report

Dear Madam,

With due respect, I am pleased to submit my internship report titled "**Key Financial Factors Driving Profit at Square Pharmaceuticals PLC: A Trend & Regression Study"**, prepared as a partial requirement for the completion of the BBA program at BRAC Business School, BRAC University.

This report reflects the knowledge and experience I gained during my internship and has been prepared under your guidance. I have made every effort to present the information in a concise and organized manner.

Thank you for your support and supervision. I hope this report meets your expectations.

Sincerely yours,

____

Abdur Rahman Abraar
20204058
BRAC Business School
BRAC University
Date: 11th August, 2025

Non-Disclosure Agreement

This agreement is made and entered into by and between Square Pharmaceuticals PLC and the undersigned student at BRAC University named Abdur Rahman Abraar for the responsibility to prevention of information disclosure of the firm's classified data.

____

Abdur Rahman Abraar
20204058
BRAC Business School
BRAC University
11th August, 2025

Acknowledgement

I would like to express my sincere gratitude to Square Pharmaceuticals PLC for providing me with the opportunity to complete my internship as an Accounts and Finance Intern. This experience has been immensely valuable in bridging the gap between academic knowledge and real-world financial practices. The supportive work environment and hands-on exposure to various aspects of accounting and financial analysis have significantly contributed to my professional development. I am especially thankful to the Accounts & Finance Department Team, whose guidance, mentorship, and encouragement enabled me to learn and contribute meaningfully throughout the internship period. Their openness to sharing insights, clarifying concepts, and assigning me challenging yet rewarding tasks helped me build confidence in applying theoretical knowledge to practical scenarios.

I extend my heartfelt appreciation to my organizational supervisor, whose continuous support and constructive feedback played a vital role in making my internship experience a successful one. I am also grateful to all the employees across different departments of Square Pharmaceuticals PLC, who welcomed me warmly and made the overall experience both enjoyable and educational.

Lastly, I would like to express my deep gratitude to my university supervisor and co-supervisor for their invaluable guidance, support, and encouragement throughout the internship process. Their academic mentorship provided the foundation that helped me maximize this learning opportunity.

Executive Summary

This report presents the internship experience of Abdur Rahman, a BBA (Finance) student, who completed his internship at Square Pharmaceuticals PLC as an Accounts and Finance Intern from February 2025 to May 2025. The internship offered practical exposure to accounting operations, financial reporting, and real-time business practices within a structured corporate setting. Throughout this period, I had the opportunity to work closely with professionals in the Accounts & Finance Department, which significantly enhanced my understanding of corporate accounting systems and financial procedures. Square Pharmaceuticals PLC, one of the largest and most reputable pharmaceutical companies in Bangladesh, operates with a strong emphasis on financial discipline, innovation, and strategic growth. The company maintains a robust financial position, supported by effective cost management and consistent revenue generation, which has enabled it to retain a leading position in the healthcare sector both locally and internationally. As part of the academic requirement, an individual research project titled “Key Financial Factors Driving Profit at Square Pharmaceuticals PLC: A Trend & Regression Study” was conducted. The project examined the influence of financial ratios such as Debt-to-Equity, Asset Turnover, Inventory Turnover, and Interest Coverage on the Return on Assets (ROA) over the period 2015–2024. By using tools like Microsoft Excel, trend analysis, correlation assessments, and regression modeling were performed. The findings revealed that Inventory Turnover had the strongest impact on ROA. This research project allowed the author to sharpen his data analysis skills and apply academic knowledge in a real-world context.

Key word: Square Pharmaceuticals PLC, Finance Intern, Internship, ROA, Financial Analysis, Regression, Excel, Python, Debt-to-Equity, Asset Turnover, Interest Coverage, Profitability.

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Chapter 1

Overview of Internship

1.1 Student Information:

- **Name**: Abdur Rahman Abraar
- **ID**: 20204058
- **Program**: Bachelor of Business Administration (BBA)
- **Department**: BRAC Business School (BBS)
- **Major**: Finance & **Minor**: Marketing

1.2 Internship Information

1.2.1 Details of Employment:

- **Period**: 15/02/2025 – 15/05/2025
- **Company Name**: Square Pharmaceuticals PLC
- **Department**: Accounts & Finance
- **Office Address**: Square Centre, 48 Mohakhali C/A, Dhaka 1212, Bangladesh

1.2.2 Supervisors Information:

- **Internship Company Supervisor's Name**: Najmul Hasan
- **Position**: Manager, Accounts & Finance, Square Pharmaceuticals PLC

1.2.3 Job Description:

As an Accounts and Finance Intern, I was involved in a wide range of activities under the direct supervision of senior finance professionals. My responsibilities included:

- Recording and updating VAT entries while ensuring alignment with government tax regulations and compliance procedures
- Assisting in Letter of Credit (LC) documentation and verifying payment schedules for imported products. I also tracked product clearance status from customs, ensuring timely updates to the internal database.
- Supporting the team in general ledger postings, maintaining up-to-date transaction records, and organizing payment vouchers.
- Conducting bank reconciliations to ensure that company ledger balances matched actual bank transactions, identifying any mismatches or errors.

- Calculating and documenting Advance Income Tax (AIT) for transactions involving vendors and suppliers, in accordance with applicable tax rates.
- Reviewing portions of the company's financial statements and schedules to assist in internal audits and compliance verification.
- Coordinating with procurement, commercial, and logistics departments for cross-verifying supporting financial documents.
- Organizing historical financial records for the past fiscal years, categorizing them for ease of auditing and ensuring documentation accuracy.
- Assisting with year-end closing preparations, including data entry cross-checks, error identification, and summaries of financial reports for senior review.

1.3 Internship Outcomes:

1.3.1 Student's Contribution to the Company: During my internship at Square Pharmaceuticals PLC, I contributed to the Accounts & Finance Department by actively supporting key operational tasks and helping the team meet monthly reporting deadlines. I played a meaningful role in preparing and reviewing internal documents, analyzing data trends, and performing reconciliation tasks that helped maintain the department's workflow accuracy.

I provided assistance in organizing financial archives, verifying tax calculations, and conducting routine checks that reduced the burden on full-time staff, particularly during the year-end closing period. I also offered suggestions to improve spreadsheet formats and documentation systems to minimize errors and increase usability. I was not involved in a single, dedicated project during my internship, rather I had to assist colleagues who usually had heavy workload. I was also involved in short sessions with various colleagues which was organized by the company as a part of my internship. These sessions exposed me to different accounting areas the individuals regularly worked on, which upon completion I would move to a different session. This structure helped me gain a comprehensive understanding of how an Accounts & Finance department in a company operates.

1.3.2 Benefit to student: As a Finance major, this internship significantly broadened my understanding of corporate finance beyond academic theory. I gained firsthand experience in tax documentation, LC handling, reconciliations, and financial reporting workflows. It also taught me the importance of accuracy, regulatory compliance, interdepartmental collaboration, and communication. By working in a structured corporate environment, I developed better time management, documentation discipline, and problem-solving skills—key assets for a future career in corporate finance.

1.3.3 Problems/difficulties (faced during the internship period): Although the internship was extremely valuable, there were a few limitations that affected the overall learning experience. One key challenge was the limited exposure to internal SAP ERP systems due to data confidentiality. While I understand the security concerns, even observational access or structured demonstrations would have improved my learning of how daily operations like journal entries, budgeting, or forecasting are handled through software platforms. The lack of this exposure also meant I had to rely heavily on Excel for most tasks, despite the growing trend toward integrated financial systems in the corporate sector. Additionally, some of the work I was assigned leaned more towards clerical responsibilities, which limited the scope for project-based analytical learning. There was also no dedicated intern workstation; I often had to share space with employees, causing occasional disruption to their workflow. A few long working days also conflicted with my university obligations, and the absence of dedicated paid leave for academic visits made it challenging to maintain a balance at times.

1.3.4 Recommendations (To the Company on Future Internships): To make future internships more structured and impactful, I offer the following recommendations:

- SAP ERP System Familiarization: While restricting direct access to sensitive systems is understandable, interns could benefit greatly from structured training sessions or guided walkthroughs of the company's SAP ERP and financial software. This would eliminate the need for less efficient tools like Python or manual Excel work for analytical tasks.
- Dedicated Workstations: Interns should be assigned dedicated desks and resources to avoid causing inconvenience to permanent employees. A small but separate space could significantly improve both productivity and comfort.
- Rotational Exposure: Allowing interns to rotate across different financial functions—such as auditing, budgeting, accounts payable, and internal controls—could provide a more holistic learning experience.
- Flexible Leave Policy: Introducing a small allowance for paid academic leave would help interns attend mandatory university sessions or assessments without added stress.

- Intern-to-Hire Pathway: Consider implementing a formal evaluation system where high-performing interns could be fast-tracked into trainee or full-time roles, a practice already common in many leading companies. This would also motivate interns to deliver their best performance.

Chapter 2

Organization Part

2.1 Introduction

Square Pharmaceuticals PLC is the flagship company of the Square Group and the largest pharmaceutical manufacturer in Bangladesh. Established in 1958 by the visionary entrepreneur Mr. Samson H. Chowdhury and his partners in Pabna, the company has evolved into a leading global player in the pharmaceutical industry. Since 1985, Square Pharmaceuticals has maintained its number one position among all national and multinational pharmaceutical companies operating in Bangladesh. Incorporated as a public limited company in 1991, and listed on both the Dhaka Stock Exchange and Chittagong Stock Exchange in 1995, Square Pharmaceuticals has become a benchmark of operational excellence and business integrity. The company manufactures and markets pharmaceutical formulations and active pharmaceutical ingredients (APIs) for both the domestic and international markets. Currently, Square Pharmaceuticals exports its high-quality, affordable medicines to more than 45 countries across Asia, Africa, Central America, South America, the Middle East, and Europe. It holds regulatory approvals from several international health authorities, including UK MHRA, TGA Australia, GCC, Tanzania FDA, and Malawi Pharmacy Board, among others. The company is committed to maintaining Good Manufacturing Practices (cGMP) and uses cutting-edge technology and automation to ensure superior product quality. Its manufacturing plants are located in Kaliakoir, Gazipur and Pabna, which are designed to meet stringent international standards. In the fiscal year 2022–2023, Square Pharmaceuticals reported revenue of over BDT 69.6 billion, confirming its financial strength and market leadership. With over 10,000 employees, the company continues to contribute significantly to the healthcare sector of Bangladesh while expanding its global footprint.

2.2 Overview of the company

2.2.1 Vision: To view business as a means to the material and social wellbeing of the investors, employees and the society at large, leading to accretion of wealth through financial and moral gains as a part of the process of the human civilization.

2.2.2 Mission: To produce and provide quality & innovative healthcare relief for people, maintain stringently ethical standard in business operation also ensuring benefit to the shareholders, stakeholders and the society at large.

2.2.3 Company Services and Products

Square Pharmaceuticals PLC offers a broad and diversified portfolio of pharmaceutical products and related services aimed at meeting the healthcare needs of a wide spectrum of customers, both in Bangladesh and internationally.

Products

- **Pharmaceutical Formulations:** Square produces a wide range of generic medicines in various dosage forms including tablets, capsules, syrups, injections, and topical preparations. These formulations cover therapeutic areas such as cardiovascular, antibiotics, analgesics, gastroenterology, neurology, and more.
- **Active Pharmaceutical Ingredients (APIs)**: The company manufactures APIs in-house, enabling vertical integration and enhanced quality control for its finished products.
- **Herbal and Nutraceutical Products**: Square has expanded into the natural health segment by developing herbal medicines and nutritional supplements to promote wellness alongside conventional pharmaceuticals.
- **Animal Health Products**: The company also offers veterinary medicines catering to livestock and pets, supporting the agricultural and farming sectors.
- **Agrovet and Crop Care**: Square provides crop protection chemicals and agrovet products, contributing to sustainable agriculture.

Services

- **Research & Development (R&D)**: Square invests in continuous research to develop new and improved medicines, ensuring adherence to global quality standards and regulatory compliance.
- **Quality Assurance & Control**: The company operates strict quality management systems across its manufacturing sites, certified by international regulatory bodies such as WHO-GMP, US FDA, and UK MHRA.
- **Export Services**: Square actively exports its products to over 45 countries, managing regulatory approvals, international distribution, and compliance with global health authorities.
- **Customer Support & Medical Services**: The company maintains a robust medical affairs team that liaises with healthcare professionals, providing drug information, training, and patient support programs.

2.2.4 Sister Concerns of Square Pharmaceuticals Ltd.

Square Pharmaceuticals Ltd. is the flagship company of Square Group, one of Bangladesh's largest and most diversified conglomerates. Besides its pharmaceutical operations, Square Group has established a wide range of sister concerns across various industries, contributing to the group's reputation for quality and innovation. During my internship, I learned that these sister concerns operate in sectors such as textiles, consumer goods, healthcare, agro-products, and more. The major sister concerns include:

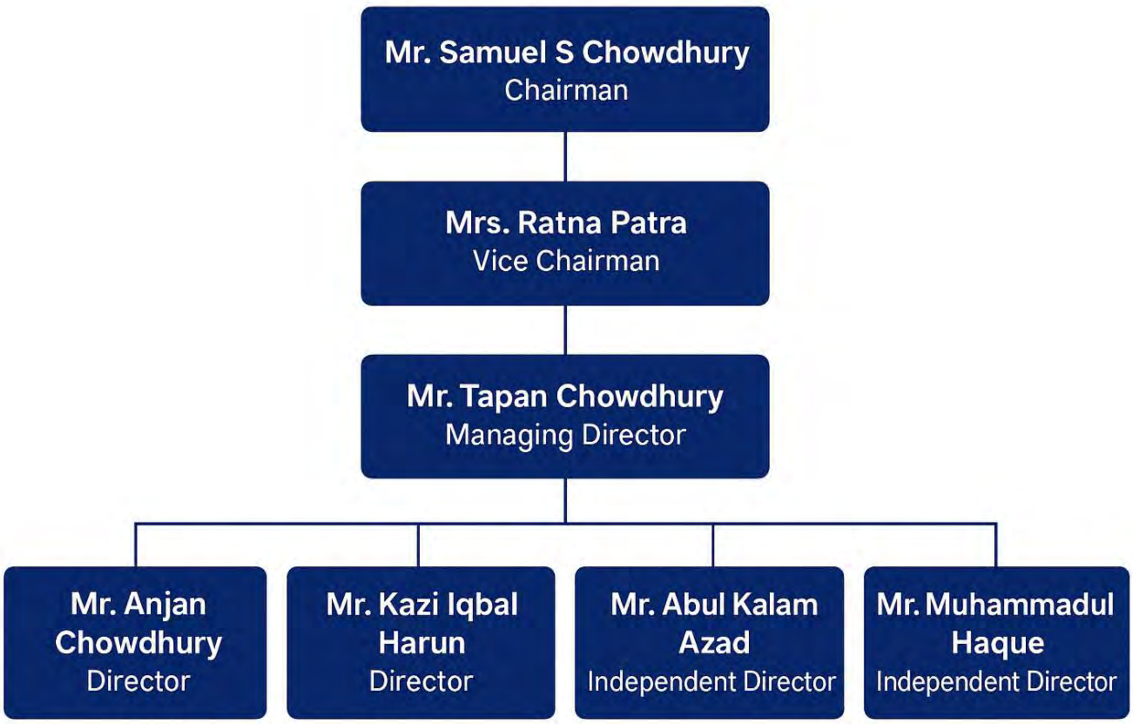
- **Square Textiles Ltd.**: Engaged in producing high-quality textiles and apparel products.
- **Square Toiletries Ltd.**: Leading manufacturer of cosmetics and personal care products with a variety of popular brands.
- **Square Food & Beverage Ltd.**: Providing quality food products and beverages to the market.
- **Square Hospitals Ltd.**: A 300-bed tertiary care hospital offering advanced healthcare services.
- **Square Agro Development & Processing Ltd.**: Specializes in agricultural biotechnology and supplies disease-free seedlings to farmers.
- **Square Lifesciences Ltd.**: Focused on manufacturing and formulating generic pharmaceutical products catering to health and wellness.

- **Pharma Packages (Pvt.) Ltd.**: Providing packaging solutions tailored for pharmaceutical products.
- **Square Air Ltd.**: Offers helicopter services, including air ambulance and executive transport.
- **Other diversified entities**: Including security services, IT solutions, printing, tea production, education, and more.

This diversified portfolio of sister concerns showcases Square Group's commitment to excellence across multiple sectors, which strengthens the overall brand and creates synergies that benefit all affiliated companies.

2.3 Management Practice

2.3.1.1 Organizational Structure: In order for pharmaceutical companies to make informed and timely decisions, especially in areas such as regulatory compliance, production, and R&D, it is essential to maintain a well-organized chain of command and a clear position hierarchy. The following hierarchy outlines the structured decision-making process within the organization



2.3.1.2 Leadership Style

The leadership style at Square Pharmaceuticals is predominantly participative with elements of democratic leadership. Senior executives and department heads often involve middle and lower-level managers in decision-making processes. Employees are encouraged to express opinions, contribute ideas, and participate in meetings and planning sessions.

Critical Analysis:

This participative approach fosters a sense of ownership and accountability among employees. It promotes innovation, encourages cross-departmental collaboration, and boosts morale. By involving employees in the decision-making process, Square ensures alignment between its organizational goals and employee objectives. This style has significantly contributed to maintaining high productivity, low turnover, and a resilient organizational culture especially important in the highly regulated and fast-evolving pharmaceutical industry.

2.3.2 Human Resource Planning Process

The HR department at Square Pharmaceuticals plays a strategic role in workforce development, aligning manpower planning with business objectives.

2.3.2.1 Recruitment and Selection Process

Square follows a structured and merit-based recruitment policy. Vacant positions are usually filled through a combination of internal promotion, employee referrals, and external hiring via job portals, career fairs, and campus recruitment drives.

- **Initial Screening**: Based on educational background and relevant experience.
- **Assessment Tests**: Include aptitude and technical tests, depending on the role.
- **Interviews**: Multiple rounds, often including HR, departmental heads, and final top-level approval.

This multi-layered selection process ensures the hiring of skilled, ethical, and culturally aligned candidates.

2.3.2.2 Compensation System

Square Pharmaceuticals offers a **competitive and performance-based compensation system**. The salary structure includes:

- Basic pay and allowances (medical, housing, conveyance)
- Yearly bonuses (e.g., festival and performance bonuses)
- Retirement benefits (PF, gratuity)
- Long-term incentives (for managerial roles)

The compensation policy is regularly benchmarked against industry standards to retain top talent.

2.3.2.3 Training and Development Initiatives

Employee development is a core focus area at Square. Training is conducted both in-house and externally to enhance technical knowledge, leadership abilities, and regulatory compliance.

- Orientation Programs for new employees
- Skill Development Workshops (on GMP, quality assurance, safety protocols)
- Managerial Training for mid- and senior-level staff
- Overseas Training for selected professionals in advanced pharmaceutical technologies

These programs are tailored to individual departments and career stages, ensuring continuous professional growth.

2.3.2.4 Performance Appraisal System

Square uses a **KPI-based performance appraisal system**, conducted annually.

- **Assessment Areas**: Work quality, goal achievement, teamwork, punctuality, and compliance.
- **Appraisal Tools**: Self-evaluation forms, supervisor reviews, and peer feedback in some cases.
- **Link to Rewards**: Promotion, bonus allocation, and training nominations are directly tied to performance ratings.

This transparent appraisal process ensures fairness and motivates employees to consistently deliver their best.

2.4 Marketing Practices

Square Pharmaceuticals Ltd. has a robust and dynamic marketing department that plays a central role in shaping the company’s market presence both domestically and internationally. With a full-fledged marketing structure comprising medical promotion, product management, digital communication, and market research teams, Square maintains a competitive edge in the highly regulated pharmaceutical industry.

2.4.1 Marketing Strategy

Square follows a differentiation marketing strategy aimed at offering high-quality, affordable medicines across a wide therapeutic range. It emphasizes scientific communication, ethical marketing, and value-driven relationships with medical professionals.

The marketing strategy is aligned with:

- Product leadership through continuous innovation.
- Customer intimacy via field representatives and CRM systems.
- Operational excellence in distribution and logistics.

By combining brand credibility with extensive physician outreach, Square maintains strong market loyalty among healthcare providers and patients.

2.4.2 Target Customers, Targeting & Positioning Strategy

Target Customers:

- Physicians and medical practitioners (primary influencers)
- Hospitals and clinics (institutional buyers)
- Retail pharmacies (point-of-sale outlets)
- Patients (as end-users, indirectly influenced)

Targeting Approach:

- Utilizes a B2B-focused approach, especially toward doctors and pharmacies.
- Targets urban hospitals and semi-urban clinics differently based on product segmentation.

Positioning Strategy:

Square positions itself as a trustworthy, science-backed, and accessible pharmaceutical brand. Its products are seen as reliable and compliant with international health standards, making them suitable for both domestic use and export markets.

2.4.3 Marketing Channels (Products and Services)

- **Product Channels**:
  - Distributed through a nationwide logistics network with 23 regional depots.

    - Delivered to over 50,000 pharmacies and health institutions.
    - International distribution via export agents and compliance-based partnerships.
- **Service Channels**:
    - Medical representatives (MRs) maintain face-to-face engagement with doctors.
    - Call centers and digital portals offer information and post-sale support.
    - Dedicated B2B customer relationship officers for hospital tenders and bulk supply.

2.4.4 New Product Development and Competitive Practices

Square has a dedicated Product Management and R&D Division that constantly monitors:

- Disease trends and epidemiological data
- Doctor feedback and sales insights
- Competitor product launches

New product development (NPD) typically involves:

- Formulation innovation (e.g., fixed-dose combinations)
- Improved drug delivery systems (e.g., sustained release, enteric-coated tablets)
- Extension of therapeutic lines (e.g., diabetic care, oncology)

Competitive Practices:

- Swift adaptation to global health challenges (e.g., COVID-19 treatment products)
- Launching products in therapeutic areas with less market saturation
- Pricing products competitively while ensuring quality compliance

2.4.5 Branding Activities

Square places strong emphasis on corporate branding rather than individual product branding. Its branding is built around:

- Reliability, Ethics, and Innovation
- Recognition through medical sponsorships and CME (Continuing Medical Education) programs
- Packaging design that reflects safety, efficacy, and trust
- Consistency in visual branding (logo, color themes, tone)

The company has also adopted branding beyond the pharmacy sponsoring health awareness programs and CSR initiatives.

2.4.6 Advertising and Promotion Strategies

Traditional Promotion:

- Medical detailing via trained Medical Representatives (MRs)
- Distribution of promotional materials (e.g., sample products, brochures, anatomical charts)
- Sponsorship of medical seminars, conferences, and journals

Digital and Social Media Marketing:

- Active on platforms like Facebook, YouTube, LinkedIn, and corporate blog portals
- Uses video explainers, disease awareness campaigns, and product highlights
- Engages with healthcare professionals via email newsletters, webinars, and virtual workshops

Mobile & Digital Tools:

- MR tools (e-detailing apps and tablets)
- Doctor feedback apps and CRM-based reporting systems

2.4.7 Critical Marketing Issues and Gaps

Despite its success, Square Pharmaceuticals faces a few marketing-related challenges:

- **Limited Direct-to-Consumer (DTC) Communication**: Due to regulatory constraints, the company relies heavily on B2B marketing, missing out on educating the end-user (patients) in many cases.
- **Underutilization of Advanced Analytics**: While digital marketing is present, Square is yet to fully implement AI-driven market segmentation or personalized targeting.
- **Global Brand Adaptation**: Although Square is expanding exports, it lacks region-specific marketing strategies for foreign markets.

2.5 Financial Performance Analysis

2.5.1 Liquidity and Solvency Analysis

- **Current Ratio** decreased from **14.5 (2020)** to **12.4 (2024)**, but still remains at a high level, signaling strong short-term financial health.
- **Quick Ratio** declined slightly from **12.6 to 10.6**, but still at a high level, indicating effective working capital management.
- **Debt-to-Equity Ratio** slightly declined from **0.064 to 0.059** , reflecting reduced reliance on external debt and enhanced financial stability.

2.5.2 Profitability Analysis

- Despite a slight dip in **Net Profit Margin** (from **28% to 26%**), overall profitability remained healthy.
- **Return on Assets (ROA)** decreased from **25% to 18%**, showing reduced asset utilization.
- **Return on Equity (ROE)** decreased from **19% to 15%**, indicating decline in shareholder returns.

Table: Profitability Ratios (2020–2024)

Year	NPM (%)	ROA (%)	ROE (%)
2020	28%	25%	19%
2021	29%	23%	18%
2022	29%	23%	18%
2023	27%	21%	16%
2024	26%	18%	15%

2.5.3 Efficiency Ratios

- **Inventory Turnover** decreased from **4.4 to 3.1**, indicating inefficiency in inventory management.
- **Asset Turnover** decreased from **0.66 to 0.55**, suggesting a decline in revenue generation per asset.

2.5.4 Horizontal and Vertical Analysis

Horizontal Analysis (Balance Sheet)

Item	2020	2024	Change (million)	% Growth
Total Assets	74,350	112,009	+37,659	50.65%
Total Liabilities	4,500	6,214	+1,714	38.09%
Shareholders' Equity	69,849	105,795	+35,946	51.46%
Inventories	5,687	10,732	+5,045	88.71%
Cash & Equivalents	32,233	52,305	+20,072	62.27%

Interpretation:

- Growth in equity and cash reflects sound profitability and reinvestment.
- Controlled liability growth indicates prudent financial management.

Vertical Analysis (Balance Sheet – 2024)

Item	Amount (million)	% of Total Assets
Total Assets	112,009	100%
Current Assets	69,735	62.26%
Fixed Assets	42,273	38%
Total Liabilities	6,214	5.55%
Shareholders’ Equity	105,795	94%

Interpretation:

- A high equity ratio reflects strong solvency.
- Balanced allocation between current and fixed assets shows efficient asset structure.

2.5.5 DuPont Analysis

Square’s ROE is driven by:

- High profit margins (efficiency)
- Stable asset turnover (operational effectiveness)
- Low financial leverage (risk management)

2.5.6 Market Value Analysis

- **EPS** has increased consistently, but fell to **BDT 17.59** in 2024 while it was **18.58** in 2023.
- **P/E Ratio** of **12x** remains attractive to investors.
- **Dividend Policy** remains stable, ensuring regular shareholder returns.

Valuation Ratios (2024)

Metric	Value
EPS (BDT)	17.59
P/E Ratio	12x
Price-to-Book (P/B)	1.5x
Market Capitalization	BDT 186.95 billion

2.5.7 Management Effectiveness

Metric	2024 Value
ROIC	28.8%
Asset Turnover	0.55
Inventory Turnover	3.1x
Interest Coverage Ratio	711730x

Interpretation:

- High ROIC and interest coverage highlight strong capital efficiency and low financial risk.
- Efficient inventory and asset turnover reflect robust operational management.

2.5.8 Dividend Policy

Square Pharmaceuticals maintains a consistent and investor-friendly dividend policy:

Year	Cash Dividend (%)	Stock Dividend (%)	Total Dividend (%)
2020	47%	5%	52%
2021	60%	0%	60%
2022	100%	0%	100%
2023	105%	0%	105%
2024	110%	0%	110%

Interpretation:

- The company's steady and increasing cash dividend reflects financial strength.
- Reduced stock dividends in recent years suggest a matured equity structure.

2.5.9 Value-Based Performance Measures

Although precise figures for Economic Value Added (EVA) and Market Value Added (MVA) were not disclosed, estimations indicate positive EVA, confirming that returns exceed the cost of capital.

2.6 Accounting Practices

2.6.1 Core Accounting Principles

Square Pharmaceuticals adheres to:

- International Financial Reporting Standards (IFRS)
- Bangladesh Accounting Standards (BAS)

This ensures transparency, comparability, and compliance with global practices.

2.6.2 Method of Accounting

The company follows the accrual basis of accounting, meaning revenues and expenses are recorded when they are earned or incurred, not when cash is exchanged. This method offers a more accurate view of financial performance.

2.6.3 Accounting Cycle

The full accounting cycle is properly followed, including:

- Journal entries
- Ledger posting
- Trial balance preparation
- Adjusting entries
- Final statements (income statement, balance sheet, cash flow)
- Audit and closing procedures

2.6.4 Depreciation Methods

Square uses the Straight-Line Depreciation Method, which spreads the cost of assets evenly across their useful life. This provides clarity and consistency in expense allocation and asset valuation.

2.6.5 Accounting Disclosures

- Annual reports include detailed notes to the financial statements, explaining:
    - Revenue recognition policy
    - Segment reporting
    - Taxation policy
    - Contingent liabilities
    - Related party transactions

- These disclosures enhance credibility and ensure informed decision-making by investors and stakeholders.

2.7 Operations Management and Information System Practices

Square Pharmaceuticals Ltd. operates one of the most advanced and efficient pharmaceutical production systems in Bangladesh. The company's operations management is strongly supported by integrated information systems, sophisticated manufacturing technologies, and adherence to international quality standards. This synergy between IT and operations ensures smooth production, regulatory compliance, and timely delivery.

2.7.1 Use of Information Systems

Square Pharmaceuticals employs advanced SAP Enterprise Resource Planning (ERP) systems to support and streamline its entire business process from procurement and manufacturing to sales and distribution.

- **Data Collection and Storage**: All key departments (production, QA/QC, HR, finance, sales) are digitally connected. Data is collected in real-time through automated systems, barcode scanning, and integrated sensors.
- **Data Processing and Decision-Making**: The SAP ERP system helps generate periodic reports, demand forecasts, inventory status, and financial analysis. This data-driven approach enables faster and more informed decision-making.
- **Internal Communication**: Intranet and internal messaging tools are used for internal updates, departmental memos, and knowledge sharing.
- **Stakeholder Communication**: Secure portals and e-mail platforms are used to share relevant reports, delivery updates, invoices, and regulatory submissions with clients, government agencies, suppliers, and distributors.

2.7.2 Database and Office Management Software

- **SAP ERP** is used to manage finance, HR, inventory, and production scheduling.
- **LIMS (Laboratory Information Management System)** is used for testing, sample tracking, and results management in QA/QC labs.
- **Document Management Systems** are in place to handle SOPs, batch records, and audit trails in compliance with GMP.

2.7.3 Quality Management Practices

Square strictly adheres to Good Manufacturing Practices (GMP) and ISO 9001 standards. Quality management is integrated into every step of the production cycle:

- **In-Process Quality Checks**: Conducted during each production stage to ensure consistency.
- **Final Quality Assurance (QA)**: Before batch release, all products undergo rigorous chemical, microbiological, and packaging checks.
- **Continuous Process Validation**: Ensures production parameters meet predefined quality standards.
- **Audit Trails**: Internal audits are conducted regularly along with compliance reviews from external regulatory authorities (DGDA, WHO, etc.).

2.7.4 Scheduling and Production Planning

Square follows a just-in-time (JIT) production model, balanced with demand forecasting to ensure timely availability of raw materials and production capacity.

- **Master Production Schedule (MPS)** is created monthly based on sales forecasts and market demand.
- **Material Requirement Planning (MRP)** systems automatically align procurement schedules with production plans.
- **Real-Time Production Dashboards** help floor managers track output, downtime, and performance metrics.

2.7.5 Resource Allocation

Efficient use of resources is a core strength of Square's operations. This includes:

- **Human Resource Allocation**: Employees are scheduled through shift-planning software that ensures adequate coverage of all departments 24/7.
- **Machine and Equipment Utilization**: Preventive maintenance schedules and capacity planning modules ensure high uptime and low operational disruptions.
- **Raw Material Management**: Automated inventory control helps minimize waste and ensures optimum use of raw materials based on batch size and expiry dates.

2.7.6 Operations Management Efficiency

Square's manufacturing and operational excellence is driven by:

- **Lean Manufacturing Principles**: Minimization of waste and non-value-added activities.

- **Six Sigma Practices**: Continuous improvement initiatives in production and QA departments.
- **Automation**: Use of PLC-controlled (programmable logic controller) equipment and auto-packing lines.

2.8 Industry and Competitive Analysis

The pharmaceutical industry in Bangladesh is one of the most rapidly growing sectors, contributing significantly to the national economy. Square Pharmaceuticals Ltd., being the market leader, operates in a highly competitive and regulated environment. To understand its strategic position and long-term sustainability, this section presents an analysis based on Porter’s Five Forces and a detailed SWOT analysis.

2.8.1 Porter’s Five Forces Analysis

Porter’s model is used to assess the competitive intensity and, therefore, the attractiveness and profitability of the pharmaceutical industry for Square Pharmaceuticals.

1. Threat of New Entrants – Moderate

- **Barriers to Entry**: High (due to capital investment, regulatory requirements like GMP, and product registration).
- **Brand Loyalty**: Strong for Square due to its decades of market presence and doctor trust.
- **Technology & Innovation**: Required for R&D and manufacturing; new entrants struggle with these.
- **Conclusion**: New entry is possible but limited to well-funded firms.

2. Bargaining Power of Suppliers – Low

- **Bulk Procurement**: Square imports APIs (Active Pharmaceutical Ingredients) in large volumes, often negotiating better terms.
- **Supplier Pool**: Wide base of international suppliers reduces dependency on any single source.
- **Vertical Integration**: Square has backward integration in some manufacturing materials.
- **Conclusion**: Supplier influence is minimal.

3. Bargaining Power of Buyers – Moderate

- **Primary Customers**: Hospitals, pharmacies, doctors, and government procurement bodies.

- **Price Sensitivity**: Generally low due to prescription-driven sales, though tender prices for public hospitals are competitive.
- **Brand Trust**: Doctors and pharmacists show loyalty to trusted brands like Square.
- **Conclusion**: Buyers have some power in institutional settings but limited in retail.

4. Threat of Substitute Products – Low to Moderate

- **Generic Competition**: High, as Bangladesh allows generic manufacturing.
- **Alternative Medicine**: Herbal and ayurvedic products exist but are not mainstream.
- **Conclusion**: Substitution risk exists but is not threatening for core chronic-care drugs.

5. Competitive Rivalry – High

- **Key Competitors**: Beximco Pharma, Renata, Incepta, ACI.
- **Price Wars**: Limited due to government price control on many essential drugs.
- **Innovation Focus**: Product differentiation, bioequivalence studies, and new formulations are key areas.
- **Conclusion**: Industry rivalry is intense, but Square maintains a dominant position through brand value and wide distribution.

2.8.2 SWOT Analysis

This SWOT analysis evaluates Square Pharmaceuticals Ltd.'s internal capabilities and external environment to determine its strategic advantage.

Strengths	**Weaknesses**
- Market leader with 18–20% share in local market	- Limited direct-to-patient branding
- Wide product portfolio across 15+ therapeutic categories	- High dependence on imports for raw materials
- International certifications (UK MHRA, TGA, etc.)	- Underutilized AI/data analytics in marketing
- Strong R&D and compliance standards	
- Export presence in 40+ countries	

Opportunities	**Threats**

Opportunities	Threats
- Expanding into highly regulated markets (EU, US)	- Regulatory tightening (local & global)
- Growing demand for biologics and specialized drugs	- Exchange rate volatility affecting import costs
- Leveraging digital health and telemedicine	- Rising cost of compliance and logistics
- Local API production & vertical integration	- Entry of global generic giants in Bangladesh

2.8.3 Competitive Advantage

Square's competitive advantage lies in its ability to combine scale, quality, and reputation. It has three layers of strength:

- **Common Strengths**: Large product base, local brand recognition, strong distribution.
- **Imitable Strengths**: Manufacturing technology, medical promotion models.
- **Distinctive Strengths**: Regulatory approval in multiple high-standard countries (UK, Australia), long-standing doctor loyalty, and a fully integrated SAP ERP-backed operational ecosystem.

These factors create barriers to imitation and sustain market leadership in both domestic and export markets.

2.9 Summary and Conclusions

This chapter has provided a comprehensive analysis of Square Pharmaceuticals Ltd., focusing on its internal structure, management practices, marketing strategies, financial and operational performance, and its positioning within the competitive pharmaceutical industry of Bangladesh and beyond. The company demonstrates a clear commitment to excellence through participative leadership, strategic human resource planning, and continuous investment in training and development. Its marketing strategy is both robust and adaptive, ensuring brand loyalty while embracing new digital platforms and global expansion opportunities.

Financially, Square has consistently maintained strong profitability, liquidity, and solvency metrics over the past five years, supported by effective accounting practices aligned with IFRS. Operationally, the use of integrated SAP ERP systems and quality management frameworks reflects an emphasis on efficiency, regulatory compliance, and innovation. The industry and competitive analysis reveals that Square's strengths lie in its brand credibility, manufacturing capabilities, global certifications, and R&D excellence. Despite intense market rivalry and regulatory pressures, the company's distinctive competencies and strategic positioning offer a sustainable competitive advantage. Overall, Square Pharmaceuticals exemplifies a well-managed, financially sound, and strategically focused organization that contributes significantly to Bangladesh's pharmaceutical landscape and holds promising prospects for international growth.

2.10 Recommendations/Implications

Based on the findings of this report, the following recommendations are proposed to enhance the organization's long-term performance and competitiveness:

1. Strengthen Digital Marketing and Consumer Engagement

While Square maintains a strong B2B focus, it can invest more in direct-to-consumer (DTC) digital branding, especially for OTC (Over-the-Counter) products. Enhanced use of social media, health apps, and patient education platforms can build a broader base of end-user trust.

2. Expand into Regulated Global Markets

To ensure sustained export growth, Square should prioritize entry into highly regulated markets (such as the US, EU, and Japan). This may require further investment in FDA/EMA-level certifications, bioequivalence studies, and pharmacovigilance systems.

3. Enhance Data Analytics and AI Integration

Square can adopt AI-driven analytics for demand forecasting, customer behavior tracking, and automated inventory optimization. This will improve decision-making and operational agility in a dynamic market.

4. Invest in Local API Manufacturing

Reducing dependency on imported raw materials by developing Active Pharmaceutical Ingredient (API) facilities locally will enhance supply chain resilience and cost efficiency.

5. Expand CSR and Health Awareness Initiatives

The company can further strengthen its public image through community healthcare campaigns, mobile medical units, and low-income access programs—enhancing brand goodwill and fulfilling its social responsibility.

6. Focus on Employee Retention and Succession Planning

With increasing competition for pharmaceutical talent, Square should continue **investing in leadership development, employee engagement programs, and career progression systems** to retain its top talent and ensure smooth succession planning.

Implication:
By adopting these recommendations, Square Pharmaceuticals Ltd. can solidify its position not just as a national leader, but also as a **global pharmaceutical player**, combining operational excellence with ethical branding and long-term strategic vision.

Chapter 3

Project Part

3.1 Introduction

The project titled "Key Financial Factors Driving Profit at Square Pharmaceuticals PLC: A Trend & Regression Study" aims to explore the financial ratios that most significantly impact the company's profitability, measured by Return on Assets (ROA), over a 10-year period from 2015 to 2024. As one of the leading pharmaceutical companies in Bangladesh, Square Pharmaceuticals PLC exhibits strong market performance, yet its ROA fluctuates year to year.

3.1.1 Background and Problem Statement

Square Pharma's Return on Assets (ROA) swings from year to year, but it isn't clear which financial indicators such as debt levels, how efficiently assets are used, how quickly inventory is turned over, or the ability to cover interest costs contribute most to these changes. By plotting trends and conducting a regression analysis on data from 2015 to 2024, this study aims to pinpoint the main internal drivers of ROA.

Research Question: Which internal financial ratios Debt-to-Equity, Total Asset Turnover, Inventory Turnover, or Interest Coverage—most significantly influence Return on Assets (ROA) at Square Pharmaceuticals PLC over the 2015–2024 period?

3.1.2 Objective

The study is guided by the following objectives:

1. To calculate the yearly values of the following financial ratios from 2015 to 2024:
   - Debt-to-Equity Ratio (D/E)
   - Asset Turnover (AT)
   - Inventory Turnover (IT)
   - Interest Coverage Ratio (ICR)
   - Return on Assets (ROA)
2. To visualize trends in each ratio and ROA through time-series line charts.

3. To assess the strength of association between ROA and each financial ratio using Pearson correlation coefficients.
4. To conduct a multiple linear regression analysis to determine how significantly each ratio contributes to changes in ROA.
5. To recommend financial strategies based on the findings for example, managing debt levels or improving operational efficiency.

3.1.3 Significance of the Study

The findings from this study will be valuable for multiple stakeholders:

- **For Management:** The study will identify which internal financial levers such as reducing debt or improving asset utilization can most effectively enhance ROA. This helps focus efforts on the most impactful areas.
- **For Investors and Analysts:** Understanding the financial ratios that best predict profitability will support better investment decisions and performance evaluations.
- **For Academic Research:** The analysis contributes to the growing body of literature on financial performance within Bangladesh's pharmaceutical industry by combining historical trend analysis with empirical modeling.

3.1.4 Scope of the Study

This research focuses exclusively on Square Pharmaceuticals PLC and covers the financial period from 2015 to 2024. The analysis is limited to four key financial ratios debt-to-equity, total asset turnover, inventory turnover, and interest coverage and their relationship with ROA.

Data has been collected solely from the company’s audited annual reports, as publicly available on its official website. The study does not include external macroeconomic variables, qualitative management decisions, or industry-wide comparisons. Analytical tools such as Microsoft Excel are used for data compilation, graphical analysis, correlation testing, and regression modeling.

3.2 Literature Review

Several studies have explored how internal financial ratios influence firm profitability, particularly Return on Assets (ROA), within the Bangladeshi pharmaceutical industry. Research shows that a higher debt-to-equity ratios decrease ROA because interest payments become more burdensome which indicates that high leverage negatively affects profitability (Sifullah et al., 2023). Research also shows that pharmaceutical firms listed on the market experience a negative impact on their Return on Assets (ROA) when they use debt financing instead of equity financing (Rabeta, Bhuiyan, & Khan, 2023).

Another study emphasized that firms with higher total asset turnover and faster inventory turnover generally reported stronger ROA, as these efficiency metrics reflect better asset utilization and inventory management (Hosen, Islam, & Rafikul, 2021). These findings also aligned with another study which had reported that Bangladeshi pharmaceutical companies achieve better profitability through efficient asset management (Mandal, 2022).

Working capital management has also been seen to be a major profitability factor. The Bangladeshi pharmaceutical sector has shown a strong positive relationship between ROA and optimal current asset and liability management (Sharif & Islam, 2018). Pharmaceutical manufacturers along with other manufacturing firms can boost their profitability with improved cash conversion cycles which will free up funds for reinvestment (Jahan, 2020).

The research directly linking interest coverage to ROA in Bangladesh is limited but global financial literature indicates that a higher interest coverage ratio often reflects a company's ability to meet its debt obligations, contributing to financial stability and sustained profitability. The pharmaceutical industry along with its high R&D cost requires a strong interest coverage to fulfill debt obligations and maintain operational stability (Mahfuj Ullah & Hossain, 2021).

Ownership structure has also been seen to affect profitability. Concentrated ownership can be seen to greatly impact the financial performance of Bangladeshi pharmaceutical companies, often leading to better oversight and resource utilization (Islam, 2023). There has also been a clear relationship between effective governance structures and firm performance in the pharmaceutical and chemical industries (Raihan, 2022).

Despite these insights, most of the existing studies analyze these factors individually rather than in a combination. This study aims to address that gap by evaluating the collective influence of debt-to-equity, asset turnover, inventory turnover, and interest coverage on ROA through trend analysis and regression modeling, using Square Pharmaceuticals PLC as a case study over a ten-year period.

3.3 Methodology

This study uses a quantitative research approach to evaluate which financial factors significantly impact Return on Assets (ROA) at Square Pharmaceuticals PLC. The research design involves analyzing numerical data collected over a ten-year period (2015–2024) using financial ratio analysis, trend plotting, correlation testing, and regression modeling. Microsoft Excel is used as the primary tool for data organization and analysis.

3.3.1 Research Design

The research follows a **descriptive and analytical design** based on secondary data. Descriptive methods are used to calculate and visualize financial ratios over time, while analytical techniques—specifically Pearson correlation and multiple linear regression are applied to determine which ratios most strongly predict changes in ROA.

3.3.2 Nature of Data

This study primarily relies on **secondary data** from annual reports covering a span of 10 years. This decade long data ensures that the sample size is adequate for the statistical analysis, also capturing various economic and business cycles. It is further informed by general theoretical insights and practical understanding of financial analysis (considered part of the broader primary knowledge context).

A. Secondary Data

The core dataset is collected from audited annual reports of Square Pharmaceuticals PLC for the financial years 2015 to 2024. These reports are publicly accessible on the company’s official website and include the necessary financial data to compute the required ratios.

From these reports, the following raw financial data are extracted:

- Net Income
- Total Assets
- Total Debt
- Shareholder’s Equity
- Net Revenue

- Cost of Goods Sold (COGS)
- Inventory
- EBIT (Earnings before Interest and Tax)
- Interest Expense

These are then used to compute the following financial ratios:

Ratio	Formula
Return on Assets (ROA)	Net Income / Total Assets
Debt-to-Equity Ratio	Total Debt / Shareholder's Equity
Asset Turnover	Revenue / Average Total Assets
Inventory Turnover	Cost of Goods Sold / Average Inventory
Interest Coverage Ratio	EBIT / Interest Expense

Explanation of Ratios:

- **Return on Assets (ROA):** It is the indication of how efficiently a business uses its total assets to generate net income. A high ROA reflects stronger profitability.
- **Debt-to-Equity Ratio (D/E):** It shows a businesses' capital structure, showing the proportion of debt to its shareholder equity. A high leverage might amplify returns but also increases the financial risk.
- **Asset Turnover (AT):** It indicates how effectively the company uses its assets to generate revenue. A high turnover suggests greater operational efficiency.
- **Inventory Turnover (IT):** It shows how quickly the inventory is sold and replaced over a period. A high turnover generally means better inventory management and lower holding costs.
- **Interest Coverage Ratio (IC):** Is indicates the ability to meet interest obligations from operating income. A high value indicates strong financial stability and low credit risk.

B. Primary Data

While no survey or interview data is collected, the **analysis and interpretation** carried out by the researcher based on the financial computations and statistical modeling are considered **primary contributions**. These include:

- Calculation of trends
- Graphical analysis using Excel

- Pearson correlation coefficients
- Multiple linear regression model outputs
- Interpretation and managerial recommendations based on the findings

3.3.3 Data Analysis Techniques

The following steps are used to analyze the collected data:

1. **Trend Analysis**: Year-wise line graphs are created for each financial ratio alongside ROA. This helps visualize movements and detect potential associations over time.
2. **Correlation Analysis**: Pearson correlation coefficients are calculated to identify the strength and direction of the linear relationship between ROA and each financial ratio.
3. **Regression Analysis**: A multiple linear regression model is applied to quantify the impact of the independent variables on ROA. The model is expressed as: $ROA=\beta 0+\beta 1(DE)+\beta 2(TAT)+\beta 3(IT)+\beta 4(IC)+\varepsilon$

   Where:
   - **ROA** = Return on Assets (dependent variable)
   - **DE** = Debt-to-Equity
   - **TAT** = Total Asset Turnover
   - **IT** = Inventory Turnover
   - **IC** = Interest Coverage
   - $\boldsymbol{\beta_0}$ = Intercept, $\boldsymbol{\beta_1}$**–**$\boldsymbol{\beta_4}$ = Coefficients, $\boldsymbol{\varepsilon}$ = Error term

All calculations and regression modeling are carried out using Microsoft Excel, enabling accurate ratio computation, chart development, and statistical output generation.

3.4 Findings and Analysis

This chapter presents the results of the financial ratio computations, trend analysis, correlation tests, and regression modeling conducted for Square Pharmaceuticals PLC over the period 2015–2024. The objective is to identify which financial ratios significantly influence Return on Assets (ROA) and to draw practical insights from the data.

3.4.1 Trend Analysis of Financial Ratios and ROA

This section outlines how key financial ratios and ROA have changed over time. Line charts are used to visualize the trends across the 10-year period. The following graphs illustrate the year-by-year movement of ROA alongside each financial ratio to help identify visual patterns and potential relationships.

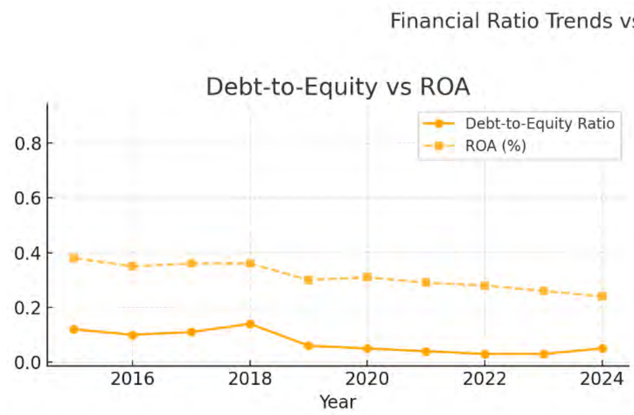


Figure 3.1: Trend of Debt-to-Equity Ratio vs ROA (2015–2024)

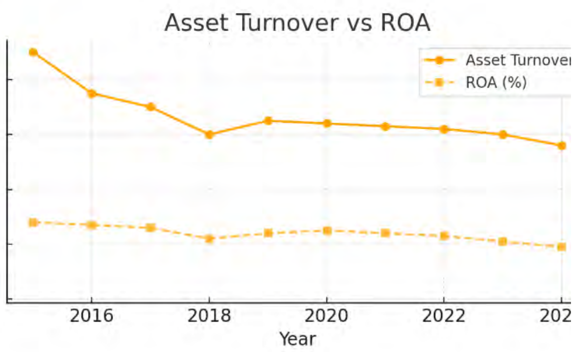


Figure 3.2: Trend of Asset Turnover vs ROA (2015–2024)

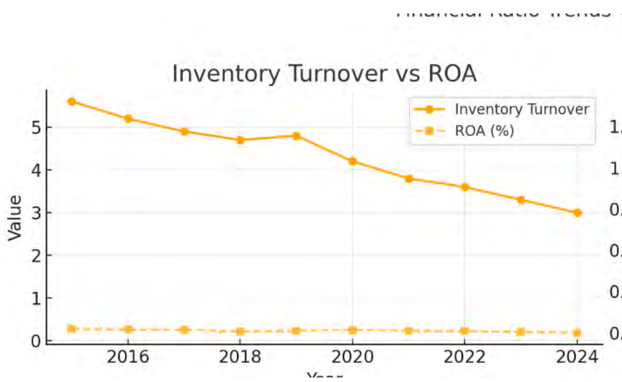


Figure 3.3: Trend of Inventory Turnover vs ROA (2015–2024)

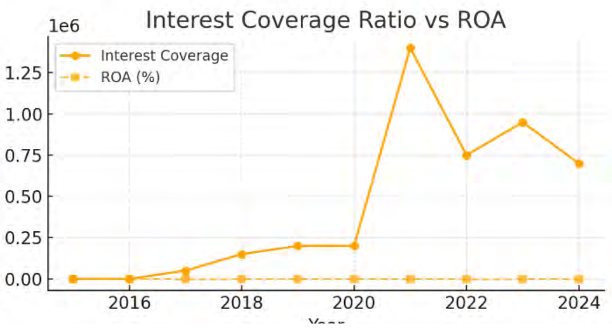
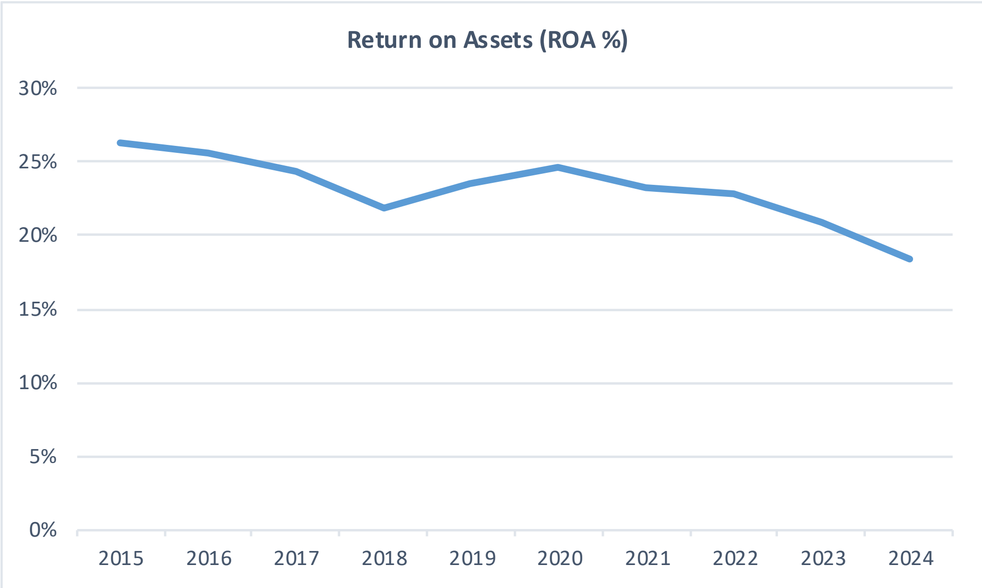


Figure 3.4: Trend of Interest Coverage Ratio vs ROA (2015–2024)

3.4.1.1 ROA Trend (2015–2024): ROA was **26% in 2015**, then gradually declined to **18% in 2024**, with peaks in **2019 (24%)** and **2020 (25%)**. This downward trend suggests a steady decline in profitability relative to total assets, potentially due to operational efficiency.



3.4.1.2 Debt-to-Equity Ratio Trend: Debt-to-Equity drops from **0.12 in 2015** to **0.06 in 2024**, temporarily peaking to **0.14 in 2018**. The downward trend does not show a strong inverse relationship with ROA, indicating that other operational factors play a significant role in profitability changes.

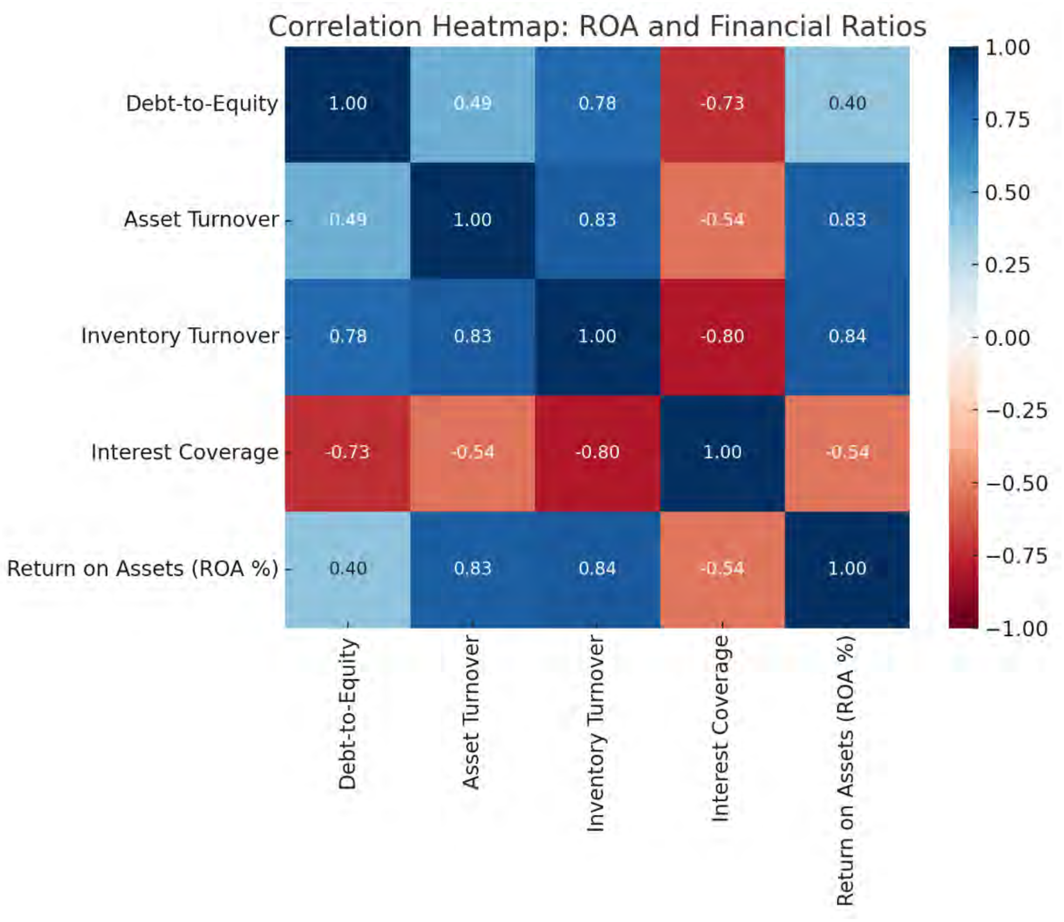
3.4.1.3 Asset Turnover Trend: Asset Turnover decreases from **0.91 in 2015** to **0.55 in 2024**, showing inefficiency of asset utilization. The drop aligns with the decline in ROA, indicating that reduced operational efficiency might be a driver of falling returns.

3.4.1.4 Inventory Turnover Trend: Inventory Turnover decreases from **5.71 in 2015** to **3.13 in 2024**, indicating slow movement of inventory over the period. The decline aligns with the ROA trend, indicating that reduced inventory efficiency might have decreased overall profitability.

3.4.1.5 Interest Coverage Ratio Trend: Interest Coverage shows high volatility, rising from **222 in 2015** to **1395220 in 2021**, before dropping to **711730 in 2024**. The change in interest coverage appears to have limited influence on ROA trends.

3.4.2 Correlation Analysis: This section presents the Pearson correlation coefficients between ROA and each financial ratio. The results are interpreted in terms of strength and direction of the relationship.

Variable	Correlation with ROA	Interpretation
Debt-to-Equity Ratio	0.40	Moderate positive correlation
Asset Turnover	0.83	Strong positive correlation
Inventory Turnover	0.84	Strong positive correlation
Interest Coverage Ratio	-0.54	Moderate negative correlation

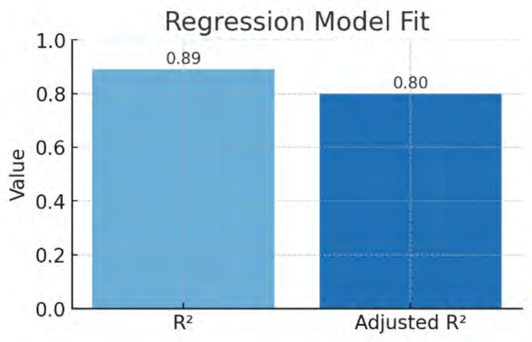


Key insight: **Inventory Turnover** shows the strongest positive correlation with ROA, followed by **Asset Turnover**. **Debt to Equity** has a weak correlation, while **Interest Coverage** has no significant relationship with **ROA**.

3.4.3 Regression Analysis: A multiple linear regression was conducted with ROA as the dependent variable and the four financial ratios as independent variables.

3.4.3.1 Regression Model Summary

Regression Output	Value
R-squared (R^2)	0.89
Adjusted R^2	0.80
F-Statistic (Significant)	0.01
Alpha (α)	0.05



The model explains approximately **80–89%** of the variance in ROA, indicating a strong overall fit.

3.4.3.2 Coefficients Table

Variable	Coefficient (β)	P-value	Significance
Intercept	0.08	0.06	Marginally insignificant
Debt-to-Equity Ratio	-0.39	0.09	Not significant ($p>0.05$)
Asset Turnover	0.01	0.91	Not significant
Inventory Turnover	0.04	0.03	Significant ($p < 0.05$)
Interest Coverage Ratio	0.00	0.47	Not significant

3.4.3.3 Interpretation of Results

- **Debt-to-Equity Ratio**: It has a negative coefficient ($\beta = -0.39$), implying that high leverage tends to reduce ROA. However, the relationship is not statistically significant ($p = 0.09$), meaning the observed effect could be due to random variation.
- **Total Asset Turnover**: It has a very small positive coefficient ($\beta = 0.01$) and is statistically insignificant ($p = 0.91$). Indicating that, the asset efficiency does not have a measurable effect on ROA despite theoretical expectations.
- **Inventory Turnover**: It has a positive and statistically significant relationship with ROA ($\beta = 0.04$, $p = 0.03$). This suggests efficient stock management, is strongly related to improved profitability.

- **Interest Coverage Ratio**: It has a positive coefficient ($\beta \approx 0.00$) but is not statistically significant ($p = 0.47$). Indicating that the ability to cover interest expenses does not have a any major impact on ROA.

3.5 Summary and Conclusion

This chapter aimed to identify the key financial factors influencing the profitability of Square Pharmaceuticals PLC, measured through Return on Assets (ROA), from 2015 to 2024. Using financial ratio analysis, correlation testing, and a multiple regression model, the study examined how four critical financial metrics Debt-to-Equity Ratio, Total Asset Turnover, Inventory Turnover, and Interest Coverage Ratio affect ROA.

The trend analysis showed that ROA experienced gradual decline over the ten-year period, with spikes in 2019 and 2020. The declining trend aligned with the decline in Asset Turnover and Inventory Turnover. Debt-to-Equity declined in a steady trend but had no inverse relationship with ROA, while Interest Coverage fluctuated extremely without any clear relation to ROA.

The correlation analysis confirmed these observations: Inventory Turnover had the strongest positive correlation with ROA (+0.84), closely followed by Asset Turnover (+0.83). Debt-to-Equity had a moderate positive correlation (-0.40), while Interest Coverage showed moderate negative correlation (-0.54).

The regression analysis showed a more detailed statistical view. Inventory Turnover emerged as the most significant positive predictor of ROA. Debt-to-Equity had a negative effect on ROA but was statistically insignificant. Asset Turnover and Interest Coverage, was shown to have a reliable relationship with ROA was statistically insignificant. The regression model demonstrated a good fit, with a R-squared value of 0.89 and an adjusted R^2 of 0.80, indicating that the selected financial ratios collectively explain 80-89% of the variation in ROA.

In conclusion, the study establishes that **efficiency particularly in inventory management** is the key financial lever that influence Square Pharmaceuticals' profitability. Whereas, leverage and other efficiency measures show weaker statistical impact. This suggests, improving inventory management has a clear and direct impact on ROA than adjusting capital structure or interest coverage.

3.6 Recommendations and Implications

Based on the findings of this study, the following recommendations and implications are offered for management, investors, and future researchers:

A. For Management of Square Pharmaceuticals PLC

1. **Prioritize Operational Efficiency**: Although Asset Turnover was not statistically significant in the regression model, management should focus on optimizing the use of assets. This includes improving production processes, supply chain efficiency, and resource allocation to enhance overall productivity.
2. **Enhance Inventory Management**: Inventory Turnover was the most statistically significant in the model, so maintaining an efficient inventory cycle can significantly boost ROA. The company should implement advanced inventory tracking systems and reduce stock obsolescence to sustain higher turnover rates.
3. **Monitor and Manage Debt Levels**: Debt-to-Equity had a negative relationship with ROA but was statistically insignificant but high leverage can indicate risk. Thus, a balanced capital structure with reduced dependence on debt financing will enhance financial stability and improve profitability.
4. **Maintain Adequate Interest Coverage**: Interest Coverage was not a significant predictor in the regression model, but it remains a key indicator of financial health. The company should continue to maintain strong operating income relative to interest expenses to preserve creditworthiness.

B. For Investors and Financial Analysts

- Investors should pay close attention to Square Pharmaceuticals' Inventory Turnover when assessing the company's profitability prospects, as it was the most reliable indicator in the analysis.
- While debt-to-equity ratio was statistically insignificant, but a sharp rise may serve as a warning signal for declining returns. Thus, careful consideration must be made in this case before making long-term investment decisions.

C. For Future Researchers

- Further research can include external factors such as market competition, inflation, or government regulations to explain the remaining variance in ROA.
- Comparative studies across multiple pharmaceutical firms could provide a broader industry-level understanding of financial performance drivers.

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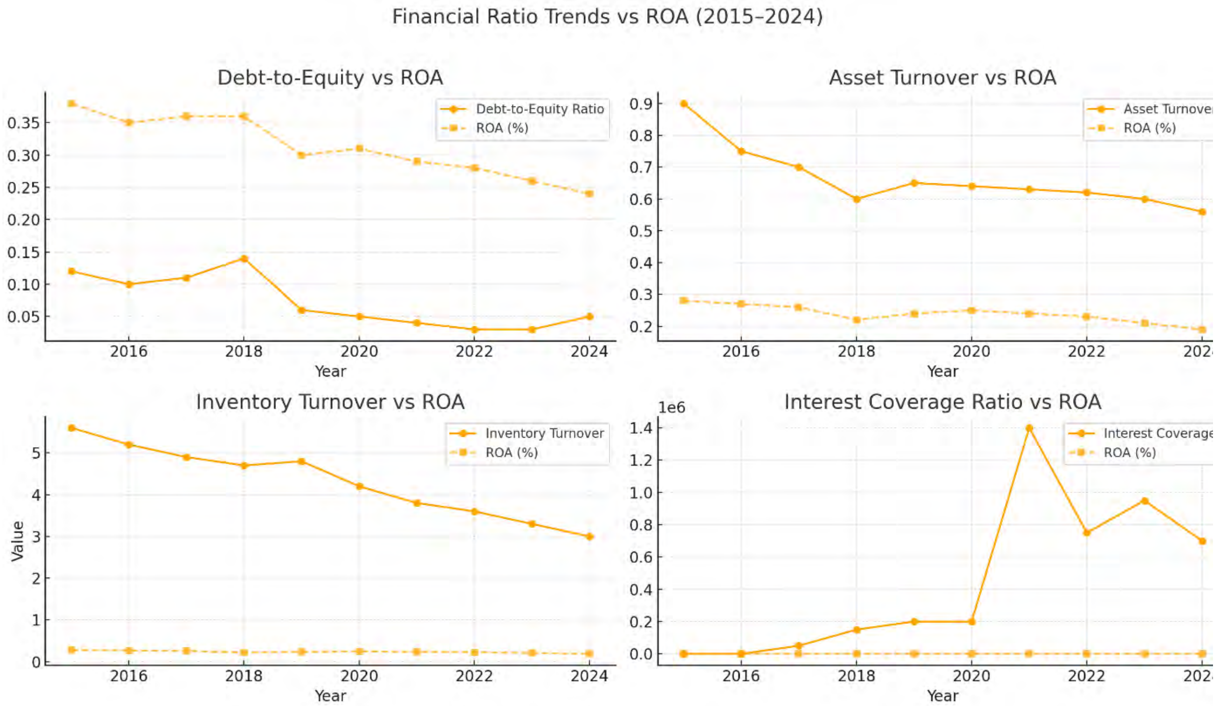
Appendix A.

Supplementary Data Table: Financial Ratios and ROA (2015–2024)

Year	Debt-to-Equity	Asset Turnover	Inventory Turnover	Interest Coverage	Return on Assets (ROA %)
2015	0.12	0.91	5.71	222	26%
2016	0.10	0.75	5.30	2042	26%
2017	0.11	0.68	4.99	69862	24%
2018	0.14	0.61	4.71	126684	22%
2019	0.07	0.65	4.79	181430	24%
2020	0.06	0.66	4.38	160477	25%
2021	0.05	0.63	3.84	1395220	23%
2022	0.05	0.63	3.63	712915	23%
2023	0.04	0.60	3.35	960445	21%
2024	0.06	0.55	3.13	711730	18%



Financial Ratio Trends vs ROA (2015–2024)

The following charts visually demonstrate the relationship between ROA and four key financial ratios for Square Pharmaceuticals PLC:

1. **Debt-to-Equity vs ROA**
2. **Asset Turnover vs ROA**
3. **Inventory Turnover vs ROA**
4. **Interest Coverage vs ROA**

Each graph helps identify whether increases or decreases in a particular ratio align with corresponding changes in ROA.