
A STUDY ON ASSET AND LIABILITY MANAGEMENT

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ABSTRACT

This study explores the practices and strategies of Asset and Liability Management (ALM) at Uniscient Engineering, one of India's leading private sector productions. ALM is a vital risk management tool that aims to mitigate financial risks arising from mismatches between assets and liabilities in terms of maturity and interest rates. The research focuses on how Uniscient Engineering effectively manages liquidity risk, interest rate risk, and capital adequacy while maintaining financial stability and regulatory compliance. By analyzing financial reports, risk disclosures, and ALM frameworks, the study assesses the production's ability to adapt to dynamic economic conditions and regulatory changes. The findings suggest that Uniscient Engineering employs a robust ALM framework supported by advanced risk assessment tools, periodic stress testing, and scenario analysis. This enables the production to sustain profitability, protect investor interests, and ensure long-term solvency. The study concludes that effective ALM is crucial not only for regulatory adherence but also for strategic decision-making in the productioning sector. The scope of the study is identified after and during the study is conducted. The main scope of the study was to put into practical the theoretical aspect of the study into real life work experience. The study of Asset & Liability is based on tools like Ratio Analysis, Statement of changes in Asset & Liability. Further the study is based on last5 years Annual Reports of **UNISCIENT ENGINEERING Ltd.**

1.1INTRODUCTION

Assets and Liability Management (ALM) is a strategic approach to managing the balance sheet of an organization by synchronizing assets and liabilities to minimize risk and maximize profitability. It is particularly critical in financial institutions such as productions, insurance companies, and investment firms where the mismatch of assets and liabilities can lead to liquidity crises or financial instability.

The essence of ALM lies in ensuring that an organization's assets are structured and timed to meet its liabilities as they fall due. This involves careful monitoring and management of risks such as interest rate risk, liquidity risk, credit risk, and operational risk. By aligning maturities and cash flows, institutions can maintain solvency and profitability under both normal and stress conditions.

Traditionally, ALM focused primarily on interest rate mismatches. However, in today's dynamic financial landscape, it encompasses a broader framework that includes regulatory compliance (such as Basel III norms), market volatility, and strategic business planning. Modern ALM integrates financial analytics, forecasting models, and risk assessment tools to enhance decision-making.

This study aims to explore the significance of ALM in the context of financial institutions, analyze the frameworks and methodologies involved, and evaluate the impact of effective ALM practices on the stability and performance of an organization. The study will also highlight the challenges in implementing ALM, the role of technology, and regulatory aspects influencing ALM policies.

In summary, ALM is not just a risk mitigation tool, but a key component of corporate financial strategy that ensures long-term sustainability and efficiency in managing financial resources.

1.2 OBJECTIVES

- 1) To study the effectiveness of Asset and liability management in financial performance of UNISCIENT ENGINEERING Ltd
- 2) To Know a source and uses of the Asset & Liability.
- 3) To Examine the liquidity position through various Asset & Liability related ratios.
- 4) To study the Asset & Liability components such as receivables accounts, cash management, Inventory management.
- 5) To make suggestions based on the finding of the study.

1.3 NEED FOR THE STUDY

In today's volatile and complex financial environment, the need for effective **Assets and Liability Management (ALM)** has become more critical than ever. Organizations, particularly in the financial sector, face constant challenges in managing risks arising from mismatches in the maturity and interest rates of assets and liabilities. A lack of coordination between these elements can lead to severe liquidity problems, interest rate exposure, and in extreme cases, institutional failure. The global financial crises and recent disruptions in the production and insurance sectors have emphasized the importance of prudent ALM practices. Moreover, changing regulatory requirements, economic uncertainties, and customer behavior have added layers of complexity to financial management.

1.4 SCOPE OF THE STUDY

Asset and liability management is a practice used by financial institutions to mitigate financial risks resulting from a mismatch of assets and liabilities. By strategically matching of assets and liabilities, financial institutions can achieve greater efficiency and profitability while also reducing risk. The main scope of the study was to put into practical the theoretical aspect of the study into real life work experience. The study of Asset & Liability is based on tools like Ratio Analysis, Statement of changes in Asset & Liability. Further the study is based on last 5 years Annual Reports of UNISCIENT ENGINEERING.

1.5 RESEARCH METHODOLOGY

Research methodology generally refers to the procedure carried out in any project on research study. Methodology gives clear picture of suitable clarification and sequence of the different stages of the study, as to arrive at a proper manifestation of the objective, and the scope.

Research design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

Research design can be thought of as the structure of research is the glue that holds all of the elements in a research project together. We often describe a design using a concise notation that enables us to summarize a complex design structure efficiently. A research design appropriate for a particular research problem, usually involves the consideration of the following factors:

- The means of obtaining information.
- The availability and skills of the researcher and his staff.
- The objective of the problem to be studied.
- The nature of the problem to be studied.
- The availability of time and money for the research work.

TYPES OF RESEARCH

Analytical research

In analytical research, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

METHOD OF DATA COLLECTION

Secondary data

The secondary data are those which have already collected and stored. Secondary data easily get those secondary data from records, annual reports of the company etc. will save the time, money and efforts to collect the data.

The major source of data for this project was collected through annual reports, profit and loss account of 5year period from 2018.

TOOLS FOR DATA COLLECTION SAMPLING DESIGN

Sampling Unit : Financial Statements.
Sampling Size : Last five years financial statements. Tool
Used for calculations : MS-Excel.

TOOLS FOR ANALYSIS

- Ratio analysis
- Trend Analysis

RATIO ANALYSIS

Financial ratios are useful indicators of a firm's performance and financial situation. Most ratios can be calculated from information provided by the financial statements. Financial ratio can be used to analyze trends and to compare the firm's financials to those of other firms. In some cases, ratio analysis can predict future productionruptcy. Financial ratios can be classified according to the information they provide. The following types of ratios frequently are used:

Current Ratio

Liquidity ratios provide information about a firm's ability to meet its short-term financial obligations. They are of particular interest to those extending short-term credit to the firm. Two frequently-used liquidity ratios are the current ratio (or Asset & Liability ratio) and the quick ratio.

- Quick Ratio
- Cash Ratio
- Inventory Turnover Ratio
- Debtors Turnover Ratio
- Creditors Turnover Ratio
- Asset & Liability Turnover Ratio

1.6 LIMITATIONS OF THE STUDY

- 1) The study duration is short.
- 2) The analysis is limited to five years of data study (from year 2018 to year 2022) for financial analysis.
- 3) Limited interaction with the concerned heads due to their busy schedule.
- 4) The findings of the study are based on the information retrieved by the selected unit.

2.LITERATURE REVIEW

- 1) **Havrylenko, Y. (2025). in the article titled: Framework for Asset-Liability Management with Fixed-Term Securities. *arXiv preprint arXiv:2502.19213*.** This research addresses optimal investment-consumption problems involving fixed-term securities. The author develops a methodology using the generalized martingale approach to derive semi-closed-form solutions for utility-maximizing investors. The framework accommodates assets with varying liquidity and incorporates consumption and terminal wealth constraints, offering practical strategies for ALM involving fixed-term instruments.
- 2) **Chen, X., Huang, F., & Li, X. (2025). in the article titled: Asset-Liability Management under Uncertain Economic Environment. *Journal of Industrial & Management Optimization*, 21(3), 789-812.** This study addresses ALM in uncertain economic environments by employing continuous-time uncertain differential equations driven by the Liu process. The authors develop an optimal ALM strategy that balances risky and risk-free investments, formulated as an uncertain optimal control problem. The analytical solution provides insights into managing assets and liabilities under economic uncertainty, offering a robust framework for financial decision-making.
- 3) **Cui, X., & Li, X. (2025). in the article titled: Better than Optimal Mean-Variance Portfolio Policy in Multi-Period Asset-Liability Management Problem. *OpenReview.net*.** This study introduces an enhanced mean-variance portfolio policy for multi-period ALM problems. The authors propose a novel approach that outperforms traditional optimal strategies by incorporating dynamic adjustments over

multiple periods. The methodology is validated through simulations, demonstrating improved performance in managing assets and liabilities over time.

- 4) **Consigli, G., Dentcheva, D., Maggioni, F., & Micheli, G. (2025). in the article titled: Asset Liability Management under Sequential Stochastic Dominance Constraints. *arXiv preprint arXiv:2505.16486*.** This study formulates a multistage stochastic programming model for financial intermediaries managing assets and liabilities exposed to various risks. By incorporating sequential second-order stochastic dominance constraints, the model ensures financial equilibrium over time. A novel decomposition scheme is developed to handle the computational complexity, and the methodology is validated through a case study in property and casualty ALM, showcasing its practical applicability in maintaining financial stability.

3.1 INDUSTRY PROFILE

1. Introduction to Indian Productioning Industry

The Indian productioning industry plays a pivotal role in the country's financial system and economic growth. With its robust infrastructure and regulatory framework, it supports financial inclusion, capital formation, and liquidity management across sectors. The industry is classified into two main segments: Scheduled and Non-Scheduled productions. Scheduled productions include commercial and cooperative productions, while commercial productions are further categorized into public sector productions (PSBs), private sector productions, foreign productions, and regional rural productions (RRBs).

2. Historical Background

India's productioning system dates back to the 18th century with the establishment of the Production of Hindustan in 1770. Post-independence, the sector underwent significant nationalization in 1969 and again in 1980, which transformed it into a tool for socioeconomic development. Liberalization in the 1990s marked the entry of private and foreign productions, revolutionizing service delivery through technology and competition.

3. Regulatory Framework

The Reserve Bank of India (RBI) serves as the central regulatory authority. It ensures financial stability, monetary policy implementation, and compliance with production norms. The regulatory framework includes acts such as the Production Regulation Act, 1949, and the Reserve Bank of India Act, 1934.

4. Current Trends and Innovations

Digital Transformation: Introduction of UPI, IMPS, NEFT, and mobile production has shifted consumer preference to digital modes.

Financial Inclusion: Initiatives like Pradhan Mantri Jan Dhan Yojana (PMJDY) have widened production access.

Neo-Productions and FinTechs: Collaborations between traditional productions and FinTech firms are growing.

Sustainable Production: Focus on ESG (Environmental, Social, Governance) frameworks is rising.

5. Key Challenges

- **Rising NPAs:** Non-performing assets remain a major concern, especially post-pandemic.
- **Cybersecurity Risks:** As digital adoption increases, so do security threats.
- **Competition from FinTechs:** Agile and innovative financial startups challenge traditional models.
- **Regulatory Compliance:** Stricter norms add to operational pressures.

6. Growth and Outlook

According to IBEF, the Indian production sector is expected to become the fifth-largest globally by 2025. Private sector productions, driven by innovation, customer-centricity, and digital solutions, are anticipated to spearhead this growth.

3.2 COMPANY PROFILE

1. Introduction

Uniscient engineering and technical services company specializing in delivering innovative solutions across various industrial domains. The company focuses on providing high-quality engineering services, including design, analysis, and project support, to meet the evolving needs of modern industries.

The organization is driven by a commitment to technical excellence, customer satisfaction, and continuous improvement, making it a reliable partner for engineering solutions.

2. History and Evolution

To become a leading engineering solutions provider recognized for innovation, quality, and customer-centric services across global markets.

Key Milestones:

- To deliver efficient and cost-effective engineering solutions
- To maintain high standards of quality and precision
- To build long-term relationships with clients
- To continuously adopt advanced technologies and practices

3. Vision and Mission

- **Design & Drafting Services**
(CAD modeling, 2D/3D design, product development)
- **Engineering Analysis**
(Structural analysis, simulation, optimization)
- **Project Support Services**
(Planning, execution, and technical documentation)
- **Manufacturing Support**
(Process improvement, quality control)
- **Consultancy Services**
(Technical advisory and engineering solutions)

4.DATA ANALYSIS AND INTERPRETATION

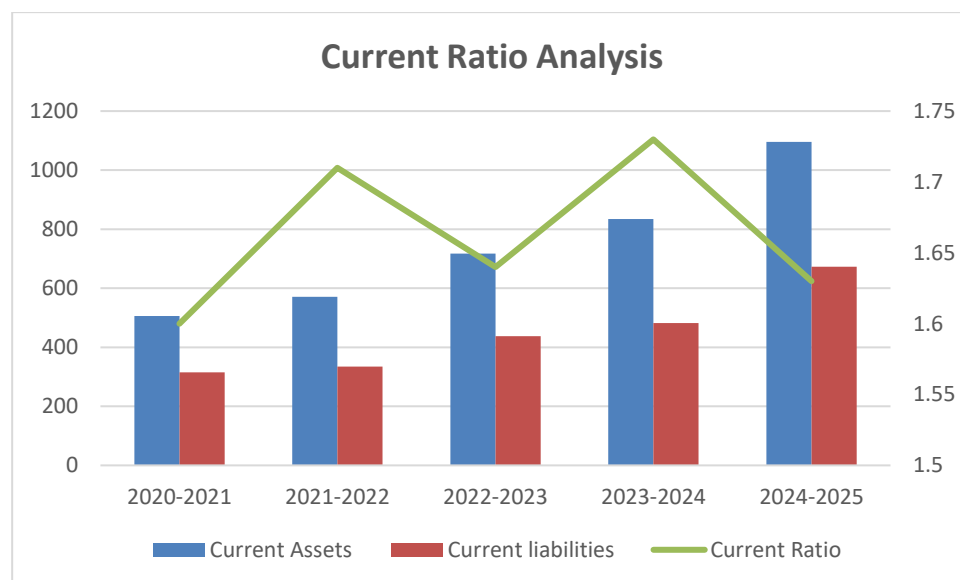
CURRENT RATIO

Table 4.1 Current Ratio Analysis

Year	Current Assets	Current liabilities	Current Ratio
2020-2021	505.46	315.33	1.60
2021-2022	571.17	334.19	1.71
2022-2023	716.95	437.95	1.64
2023-2024	834.28	481.81	1.73
2024-2025	1,095.97	673.18	1.63

FORMULA:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$



Interpretation

Table 4.1 shows that the current ratio seems to be fluctuating between the year 2021 to 2025. The current ratio is high in the year 2024 and decreased in 2025 due to increase in current liabilities.

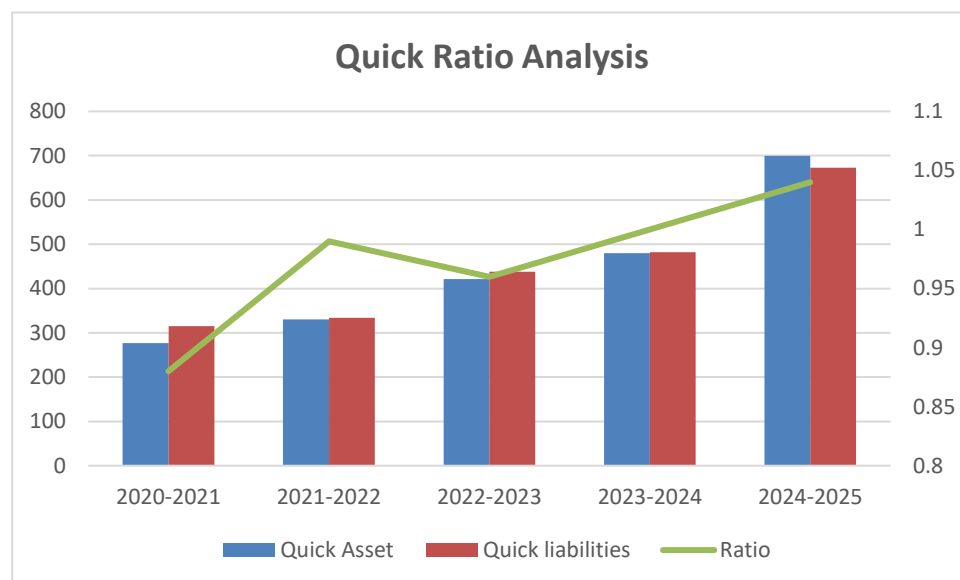
QUICK RATIO

Table4.2 Quick Ratio Analysis

Year	Quick Asset	Quick liabilities	Ratio
2020-2021	276.57	315.33	0.88
2021-2022	330.54	334.19	0.99
2022-2023	421.41	437.95	0.96
2023-2024	479.84	481.81	1.00
2024-2025	699.67	673.18	1.04

FORMULA:

Quick Ratio = Quick Asset/Quick liabilities



Interpretation

Table 4.2 shows that the liquid ratio goes on increasing and reached a high mark of 1.04 in the year 2025, but the range is above the standard mark. Hence its liquidity position is adequate.

5.1 FINDINGS

- Asset & Liability of the UNISCIENT ENGINEERING was increasing and showing positive Asset & Liability per year.
- The UNISCIENT ENGINEERING maintains sufficient amount of current assets.
- Inventory turnover ratio is very low in the year 2020-2021. In the year 2021-2022 has increased by 7.34 times as compared to 2020-2021 and has again increased to 7.11 times in 2024-2025.
- Debtor's turnover ratio is very low in the year 2020-2021. In the year 2021-2022 has increase by 9.14 times as compared to 2020-2021 and keep increasing in the last year 2023-13 up to 18.01 times
- Creditor's turnover ratio is very low in the years of 2020-2021. And has increased to 10.51 times in the year 2021-2022. And was 11.34 times in the year 2024-2025.
- Asset & Liability turnover ratio is very high in the year 2020-2021. In the year 2021-2022 reduced to 7.45 times and in the last year 2024-2025 was 6.66 times. They have managed to maintain the ratio at an average rate of 6.8 times.
- The Asset & Liability keeps increasing over the years from 2021 to 2025.
- The operating cycle shows that the average cash conversion period of the firm is 35 days.

5.2 SUGGESTIONS

- Asset & Liability of the company has increasing every year. Profit also increasing every year this is good sign for the company. has to maintain further, to run the business long term.
- The company has sufficient Asset & Liability and has better liquidity position. By efficient utilizing this short-term capital, then should increase the turnover.
- The company can maintain the proportion of current assets and current liability which helps to improve better Asset & Liability management.
- The company should take precautionary measures for investing and collecting funds from receivables and to reduce the bad debts.
- The net operating cycle seems to be stabilizing after 2020-2021. So the company is maintaining a good operating cycle period.

- The company may use a just-in-time approach in managing raw material which makes cash available for other operations.
- The company needs to concentrate more on the payment and collection of debts from the debtors and creditors.

5.3 CONCLUSION

The financial status of UNISCIENT ENGINEERING is good. In the last year the inventory turnover has increased, this is a good sign for the company. The company's liquidity position is good. With regards to the investments in current assets there are adequate funds invested in. Care should be taken by the company not to make further investments in current assets, as would block the funds, which could otherwise be effectively utilized for some productive purpose. On the whole, the company is moving forward with excellent management.

BIBLIOGRAPHY

Books on Asset and Liability Management

1. **"Asset and Liability Management for Productions and Insurance Companies"**
Author: Jean Dermine
Publisher: Wiley
Description: Offers a practical framework for understanding ALM, covering duration gaps, interest rate risk, and regulatory aspects like Basel norms.
2. **"Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk"**
Author: Steve L. Allen
Publisher: Wiley
Description: Covers broader financial risk topics, including ALM, derivatives, and risk metrics applicable in production.