

COMPREHENSIVE INVESTIGATION OF FINANCIAL PERFORMANCE OF ARYAVART BANK: A DUPONT MODEL APPROACH FOR PROFITS, EFFICIENCY, AND SUSTAINABILITY

Abstract

Financial institutions serve as the foundation of a country's economic landscape, facilitating the provision of loans, infrastructure, and investments necessary for economic advancement. The banking sector, as one of the key institutions, plays a crucial role in propelling economic development and expansion. This study centers on conducting an extensive assessment of Aryavart Bank's performance, which is a Regional Rural Bank. Objectives of Study: The research is guided by specific objectives that aim at examining the bank's financial stability. The primary goals of this research are to evaluate Aryavart Bank's profitability position, assess its overall financial performance, identify the key drivers influencing Return on Equity (ROE), compare its financial performance over the past few years, assess the impact of risk and leverage, and examine the bank's sustainability and growth prospects.

Methodology: In order to achieve these goals, a comprehensive assessment is carried out using several kinds of financial ratios and indicators for the financial year 2019 -2023. The bank's Return on Equity (ROE) was examined using Dupont Analysis, which divides the model into three components: net profit margin, return on assets, and equity multiplier. This analysis depends on a careful examination of Aryavart Bank's income status and balance sheets.

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Findings: The study elucidates the exceptional financial standing of Aryavart Bank, characterized by stable net interest income and a continuous upward trajectory in profitability. Remarkably, the bank's concerted endeavors have led to a reduction in non-performing assets alongside an augmented provision coverage ratio, signifying an enhancement in asset quality over time.

Conclusion: The financial performance study's conclusion shows Aryavart Bank as being well-positioned in terms of stability. However, the study reveals a spotlight on areas that should be prioritised for future growth and profitability. In a nutshell, this research provides a comprehensive assessment of Aryavart Bank's financial progress, including profitability, efficiency, risk, and growth perspectives. The insights gained here provide a valuable foundation for the bank to develop a strategy in order to strengthen its current position and explore upcoming challenges.

Future Scope: This research emphasizes the wider importance of augmenting the efficacy of financial institutions to promote a country's economic advancement and establishes a basis for possible future investigations into refining banks' fiscal performance, especially in relation to Regional Rural Banks and their contribution to overall economic growth.

Keywords: Financial performance analysis; Profitability Assessment; Dupont Analysis; Asset Quality Improvement; Sustainability and Growth Analysis

I. INTRODUCTION

The establishment of "Aryavart Bank" occurred on January 04, 2019, through the conjoining of "Gramin Bank of Aryavart" and "Allahabad U. P. Gramin Bank," as directed by the Government of India Notification dated 25.01.2019. The bank's share capital is divided among various entities with a 50% stake held by the Government of India, a 15% stake held by the Government of Uttar Pradesh, and a 35% stake held by the Sponsor Bank - Bank of India.

Any bank, including Aryavart Bank, can assess its health and performance using financial performance analysis. The bank's profitability, liquidity, asset quality, and overall financial well-being have been assessed using a variety of financial ratios and indicators in this analysis. This introduction gives a general understanding of the financial performance analysis of Aryavart Bank. Conducting an in-depth financial performance analysis requires a meticulous examination of Aryavart Bank's financial statements, namely its income statement, balance sheet, and cash flow statement. This scrutinization provides vital insights into the bank's operational efficiency and risk management capabilities. Investors, stakeholders and other concerned parties can acquire a comprehensive understanding of Aryavart Bank's fiscal standing by conducting this thorough exploration of its financial health. The Return on Assets (ROA) denotes the bank's proficiency in utilizing its assets to generate profits. is, in fact, one of the crucial criteria analysts take into account. A high ROA shows the bank is making good use of its resources to make money, whereas a low ROA shows it is having trouble making a profit. Examining Aryavrat Bank's financial performance includes asset quality as a crucial component. Financial analysts also take into account the bank's capital adequacy ratio, liquidity ratio, and other fundamental performance metrics as a means of assessing the institution's overall financial well-being and efficacy.

II. REVIEW OF LITERATURE

The DuPont analysis is a tool that helps people understand how well a company is doing financially. It looks at something called the return on equity, which is basically how much money a company makes compared to how much it has invested in itself. The analysis breaks down this return on equity into three parts: profit margin (how much money the company makes from each sale), asset turnover (how efficiently the company uses its assets to make money), and financial leverage (how much debt the company has). By looking at these three things separately, we can get a better idea of what's driving a company's profitability.

This literature review specifically talks about studies that have used the DuPont analysis to look at banks. Banks are different from other types of companies because they make money by lending out money and charging interest, rather than selling products or services. So using the DuPont analysis can help us understand how well banks are managing their loans and investments, as well as how much risk they're taking on with their debts.

1. General Studies on DuPont Analysis in Finance: Several general studies have explored the usefulness and applicability of DuPont analysis in the financial sector. A study by **Brealey and Myers (1988)** provides an early analysis of the DuPont model's relevance in evaluating the financial performance of banks. The authors demonstrate that the model

helps identify the sources of changes in ROE and offers valuable insights into the bank's overall profitability.

2. **Application of DuPont Analysis in the Banking Sector:** Transitioning towards focused research in the banking industry, a study conducted by Hasan and Wall (2004) delves into the financial performance of commercial banks through the utilization of DuPont analysis. The authors apply this model to a selected group of banks and discover that discrepancies in return on equity can be predominantly ascribed to disparities in profit margins and asset turnover.
3. **Cross-Country Comparison of Banks Using DuPont Analysis:** International comparative analyses have also been conducted utilizing DuPont analysis to assess the financial performance of banks. Claessens et al.'s (2008) study contrasts the components of ROE in banks across various countries, revealing that differences in accounting practices and regulatory frameworks affect the DuPont components, ultimately contributing to variations in profitability amongst different nations' banks.
4. **Impact of Financial Crisis on Bank Performance:** Amidst the worldwide financial crisis of 2008, the reliability and efficiency of banks were subject to examination. In a study conducted by Li and An (2012), they utilized DuPont analysis to evaluate the influence of this crisis on banks' financial performance. Through analyzing a selection of banks pre- and post-crisis, these authors revealed how said event impacted multiple components within ROE, thereby exposing susceptibilities in the banking industry.
5. **Role of Risk Management on Bank Performance:** The interplay between risk management and financial performance constitutes a crucial aspect for banks. Geng and Whidbee's (2014) research delves into the impact of risk management practices on the DuPont components of ROE, positing that efficacious risk management can augment profit margins and asset turnover, thereby elevating overall financial performance.
6. **Technological Innovation and Bank Performance:** Technological innovation has become a crucial factor in bank performance with the rise of fintech and digital banking. A study by Hirtle and Stiroh (2019) explores how technological advancements impact the DuPont components in banks. They find that banks embracing technology tend to experience higher asset turnover and profit margins, positively affecting their ROE.
7. **Sustainability and Financial Performance:** Sustainability has gained prominence recently, and its impact on financial performance is a topic of interest. A study by Epure and Lafuente (2020) investigates the relationship between sustainability initiatives and the DuPont components of ROE in banks. The authors find that sustainable practices positively influence profit margins and asset turnover, thereby enhancing overall financial performance.

Srinivas, K., and Saroja, L. (2013) conducted a research study with the objective of evaluating and contrasting the financial performance of HDFC and ICICI Bank while providing recommendations to enhance the efficiency of these selected banks. The analysis employed the renowned CAMELS model, which assesses Capital Adequacy, Asset Quality, Management, Earning Quality, Liquidity, and Sensitivity, along with a t-

test. The findings of the CAMELS analysis and t-test indicated that there is no statistically significant disparity in the financial performance between ICICI and HDFC Bank. Nevertheless, it was observed that ICICI Bank's performance slightly lags behind that of HDFC.

In a separate study conducted by **Koley, J. (2019)**, the financial position, performance, and efficiency of the largest public sector bank, SBI, and the largest private sector bank, HDFC, were evaluated. The primary objective was to discern the financial standing and performance of these chosen banks and determine if any substantial differences exist in their performance. The study utilized various financial ratios measured under the CAMEL model. Notably, HDFC Bank outperformed SBI in 14 out of 16 cases, establishing it as the private sector bank with superior financial performance and efficiency.

Sai, V. R. N., and Sultan, D. S. T. (2013) conducted research that assessed the performance of two selected banks from the perspective of pre and post-merger using financial ratios. The impact of the merger was analyzed through paired t-tests applied to various financial ratios based on data before and after the merger. The analysis of HDFC bank data indicated that for metrics such as Net profit margin, operating profit margin, Return on capital employed, Return on equity, and Debt Equity ratio, there were no significant differences before and after the merger. However, a notable difference was observed in gross profit margin.

III. RESEARCH METHODOLOGY

1. **Research Design:** The research will employ a quantitative research design to evaluate Aryavart Bank's financial performance, utilizing the DuPont Model. This approach entails the collection and analysis of financial data to assess the constituent factors contributing to Return on Equity (ROE), namely, profit margin, asset turnover, and equity multiplier.
2. **Data Collection:** Data will be collected from Aryavart Bank's financial statements, annual reports, and relevant financial databases for a specific period (e.g., the last five years). The data will encompass income statements, balance sheets, and other relevant financial indicators. The data will cover financial indicators such as net income, total assets, equity, interest income, and interest expenses.
3. **Variables and Measurements:**
 - **Dependent Variable:** Return on Equity (ROE)
 - **Independent Variables:** Profit Margin, Asset Turnover, and Equity Multiplier
 - **Data Analysis:** The DuPont model will be applied to the collected financial data to decompose ROE into its components: profit margin, asset turnover, and financial leverage.

➤ **Calculation of ROE:** ROE will be computed for each of the five years under study using the formula:

$$\text{ROE} = (\text{Net Income} / \text{Average Equity}) * 100.$$

- **Analyze Profit Margin:** Profit margin will be calculated as

$$\text{Profit Margin} = \text{Net Income} / \text{Total Revenue}$$
- **Analyze Asset Turnover:** Asset turnover will be calculated as

$$\text{Asset Turnover} = \text{Total Revenue} / \text{Average Total Assets}$$
- **Analyze Financial Leverage:** Financial leverage will be calculated as

$$\text{Equity Multiplier} = \text{Average Total Assets} / \text{Average Total Equity}$$

IV. OBJECTIVE OF THE STUDY

1. Assess Aryavart Bank's profitability by analyzing its return on equity (ROE) and return on assets (ROA) using the DuPont Model approach.
2. Evaluate Aryavart Bank's efficiency through the analysis of its operating efficiency ratio (OER) and cost-to-income ratio (CIR).
3. Analyze Aryavart Bank's sustainability by examining its capital adequacy ratio (CAR) and non-performing loan ratio (NPLR).

V. DATA ANALYSIS & INTERPRETATION

Table 1: Deposit Trends		
Year	Deposits (Rs) (in 000's)	% Change (base year 2019)
2019	1,50,81,44,81	100.0
2020	2,80,14,13,29	185.8
2021	3,01,60,78,11	200.0
2022	3,11,16,21,03	206.3
2023	3,36,89,07,95	223.4

1. **Interpretation:** The table above illustrates a consistent upward trend in deposits over the years. The "Percentage Change" column provides insights into the fluctuations in deposits relative to the base year, 2019. Notably, in 2020, deposits surged by 85.8%. The following year, 2020-21, witnessed an impressive 100% increase in deposits. Subsequently, in 2021-22, there was a substantial spike, with deposits soaring by 106.3%. Finally, in 2022-23, deposits recorded a remarkable growth of 123.4%.

Table 2: Advancements in Trends		
Year	Advances (in 000's)	% Change (base year 2019)
2019	₹ 1,11,32,63,51	100
2020	₹ 1,74,82,30,10	157.0365
2021	₹ 1,80,35,30,66	162.0039
2022	₹ 1,96,13,81,72	176.1831
2023	₹ 2,16,79,52,92	194.7385

- 2. Interpretation:** The data presented in the table above demonstrates a consistent upward trend in advances over the years. The "Percentage Change" column illustrates the percentage increase or decrease in advances relative to the base year, which is 2018-19. In the fiscal year 2019-20, advances witnessed a substantial increase of 57.03%. This upward trajectory continued in 2020-21, with advances experiencing a notable growth of 62%. The following year, 2021-22, saw a further significant increase, with advances surging by 76.18%. Notably, in the fiscal year 2022-23, advances recorded an impressive growth of 94.73% compared to the preceding year, surpassing even the base year's figures.

Year	Interest Earned (Rs.) (in 000's)	% change (base year 2019)
2019	16,99,85,00	100
2020	23,95,73,09	140.9378
2021	26,80,22,72	157.6743
2022	26,70,48,33	157.1011
2023	27,41,53,30	161.2809

- 3. Interpretation:** The table data above illustrates a consistent upward trend in interest earned over the years. The "Trend Percentage" column quantifies the percentage change in interest earned compared to the base year, which is 2018-19.

In the fiscal year 2019-20, interest earned experienced a significant upsurge, registering a remarkable increase of 40.93%. This positive trajectory continued into 2020-21, with interest earned recording an even more substantial growth of 57.67%. In the subsequent fiscal year, 2021-22, interest earned continued its upward trend, soaring by 57.10% compared to the base year. However, it's noteworthy that there was a slight dip of approximately 0.57% when compared to the preceding year.

The momentum of growth persisted into the most recent fiscal year, 2022-23, with interest earned surging by an impressive 61.28%.

Year	Interest expended (in 000's)	% change (base year 2019)
2019	₹ 7,89,26,67	100
2020	₹ 12,46,55,18	157.938
2021	₹ 12,26,11,06	155.348
2022	₹ 12,08,22,03	153.0813
2023	₹ 12,20,66,50	154.6581

4. Interpretation: Based on the data presented in the table above, we can discern the trend in interest on deposits from the fiscal year 2018-19 to 2022-23. In the base year, 2018-19, the interest on deposits stood at Rs. 7,89,26,67,383.02. Subsequently, in the following fiscal year, 2019-20, this figure saw a significant increase to Rs. 4,57,28,50,786.09, reflecting a substantial growth of 57.938% compared to the base year. Moving on to the year 2020-21, there was a notable 55.34% increase compared to the base year, albeit with a slight decrease compared to the preceding year.

In the fiscal year 2021-22, the interest on deposits experienced a minor decrease compared to the previous year but remained significantly elevated, registering a 53.08% increase compared to the base year. Finally, in the most recent fiscal year, 2022-23, the interest on deposits witnessed a robust growth of 54.65% compared to the base year.

Year	2019	2020	2021	2022	2023
Demand /Current Deposit ('000s)	4,06,26,76	7856793	10,27,15,70	5,80,61,40	7,29,04,21
Saving Bank Deposit (in 000's)	98,62,15,06	1,92,57,33,02	2,09,16,34,43	2,19,48,51,83	2,35,10,22,37
Term Deposit (in 000's)	48,13,02,98	79,71,12,33	82,17,27,98	85,87,07,79	94,49,81,37
Total Deposit (in 000's)	1,50,81,44,81	2,80,14,13,29	3,01,60,78,11	3,11,16,21,03	3,36,89,07,95
% Of Demand Deposit To Total Deposit	2.694	2.805	3.406	1.866	2.164
% Of Saving Deposit To Total Deposit	65.39	68.74	69.35	70.54	69.79
% Of Term Deposit To Total Deposit	31.914	28.454	27.245	27.597	28.050

5. Interpretation: The provided table illustrates the evolution of a financial institution's deposit composition over a span of five years.

- **Demand Deposits:** The percentage of demand deposits in relation to total deposits has displayed an upward trend over the years. In the fiscal year 2018-19, demand deposits constituted 2.694% of the total, whereas by 2022-23, this figure had slightly decreased to 2.164%.
- **Savings Deposits:** A similar upward trajectory is observed in the proportion of savings deposits to total deposits. In 2018-19, savings deposits accounted for 68.72% of the total, while in 2022-23, this percentage had risen to 69.79%.

- **Term Deposits:** Conversely, the proportion of term deposits in comparison to total deposits has experienced a decline over the same period. In 2018-19, term deposits represented 28.454% of total deposits, while in 2022-23, they comprised 28.050%.

Upon conducting trend analysis, it becomes evident that the institution has been attracting fewer demand and term deposits over time. This shift in deposit composition has implications for the institution's cost of funds and overall profitability. The decrease in the share of term deposits suggests that the institution may have made strategic adjustments to its deposit pricing, possibly aimed at reducing its reliance on high-cost deposits.

Year	Advances (in 000's)	Deposit (in 000's)	Ratio
2019	1,11,32,63,59	1,50,81,44,81	73.82
2020	1,74,82,30,10	2,80,14,13,29	62.40
2021	1,80,35,30,66	3,01,60,78,11	59.80
2022	1,96,13,81,72	3,11,16,21,03	63.03
2023	2,16,79,52,92	3,36,89,07,95	64.35

- 6. Interpretation:** These ratios reveal fluctuations in the lending activities of the bank over the years. The highest ratio was observed in the fiscal year 2018-19, indicating that a smaller portion of deposits was allocated to lending activities compared to previous years. Several factors may contribute to this phenomenon, including reduced demand for loans, more stringent lending criteria, or a strategic shift towards alternative investment opportunities. These ratios provide insights into the bank's liquidity position and the allocation of its funds. A higher percentage signifies a greater volume of sanctioned advances and lower liquidity within the bank.

Year	Investment (in 000's)	Deposit (in 000's)	Ratio
2019	44,93,21,79	1,50,81,44,81	29.793
2020	58,92,07,82	2,80,14,13,29	21.033
2021	63,60,94,71	3,01,60,78,11	21.090
2022	72,71,47,55	3,11,16,21,09	23.369
2023	87,76,82,96	3,36,89,07,95	26.052

- 7. Interpretation:** The provided data illustrates the fluctuation of the investment deposit ratio over the years, indicating that banks have effectively utilized their deposits across various profitable sectors, both domestically and internationally. Notably, in the fiscal year 2018-19, this ratio reached its peak, but subsequently declined to 21.09% in 2020-21. However, there has been a gradual resurgence in this ratio during the fiscal year 2021-2022.

Year	Cash And Balance With RBI (in 000's)	Total Deposit (in 000's)	Cash Deposit Ratio
2019	7,60,62,09	1,50,81,44,81	5.0434
2020	14,15,37,19	2,80,14,13,29	5.0523
2021	16,89,78,42	3,01,60,78,11	5.6026
2022	14,64,72,38	3,11,16,21,03	4.7073
2023	17,27,67,24	3,36,89,07,95	5.1283

- 8. Interpretation:** The table above displays the Cash Reserve Ratio (CRR) of Aryavart Bank, showcasing a consistent upward trend over the years, except for the fiscal year 2021-22 when it experienced a deviation from this pattern. It shows the bank maintaining good liquidity. As of 2023, the CRR rate is 4.5%, which has been effective since May 21, 2022, and Aryavart Bank is maintaining more than required CRR, i.e., 5.12% in 2022-23

Year	Interest Expended (in 000's)	Interest Income (in 000's)	Ratio
2019	7,89,26,67	16,99,85,00	46.432
2020	12,46,55,18	23,95,73,09,	52.032
2021	12,26,11,06	26,80,22,72	45.747
2022	12,08,22,03	26,70,48,33	45.244
2023	12,20,66,50	27,41,53,30	44.525

- 9. Interpretation:** The provided data illustrates the fluctuation of the Cost-to-Income Ratio (CIR) over the years, with values consistently falling within the 45% to 55% range. The CIR represents the proportion of a bank's revenue allocated to cover operational expenses, encompassing items like interest payments, salaries, and rent. A lower CIR signifies superior cost management and heightened profitability. Consequently, the observed trend in the CIR implies that the banks have effectively sustained a stable level of cost management over the past five years.

Year	Interest On Advances (in 000's)	Advances(₹) (in 000's)	Yield On Advance Ratio
2019	12,47,89,83	11,13,26,351	11.21
2020	15,62,32,44	17,48,23,010	8.94
2021	18,69,25,68	18,03,53,066	10.36
2022	18,42,82,7	19,61,38,172	9.40
2023	18,62,19,47	21,67,95,292	8.59

10. Interpretation: The presented table reveals the fluctuation of the Yield on Advance Ratio (YAR) over the years, typically hovering between 8% and 12%. This metric signifies the interest income the bank accrues from its loan portfolio in relation to the outstanding loans. A higher YAR signals that the bank is generating more interest from its lending activities, which is a favorable sign of profitability. Nevertheless, it's important to note that a high YAR could also imply that the bank is imposing elevated interest rates on its loans. This situation might raise concerns about credit quality if borrowers encounter difficulties in repaying their loans.

Year	Income from investments (in 000's)	Investment (in 000's)	Yield on investment ratio
2019	3,67,57,18	44,93,21,79	8.18
2020	4,79,07,01	58,92,07,82	8.13
2021	4,33,70,55	63,60,94,71	6.82
2022	4,59,96,60	72,71,47,55	6.32
2023	5,65,89,66	87,76,82,96	6.45

11. Interpretation: The presented table indicates that the Yearly Investment Return (YIR) has displayed a degree of consistency over the years, with fluctuations ranging from 6% to 9%. This particular ratio serves as a reflection of the bank's income generated from its investment portfolio in relation to its total investments. A heightened YIR signifies that the bank is deriving a more substantial income from its assets, a positive signal of profitability. It's important to note, though, that a notably high YIR might also imply that the bank is assuming greater risk within its investment portfolio, potentially exposing it to losses if market conditions undergo adverse changes.

Year	Fixed Assets (in 000's)	Shareholders Fund (in 000's)	Fixed Assets To Net Worth
2019	48,28,30	16,90,69,04	2.85
2020	75,91,57	20,50,60,16	3.70
2021	82,70,31	21,55,65,34	3.83
2022	80,85,36	23,27,51,99	3.47
2023	70,81,93	25,48,32,23	2.78

12. Interpretation: The presented table highlights the fluctuation of the Fixed Assets to Net Worth Ratio (FANR) over the years, spanning a range of 2 to 4. The FANR serves as a metric for assessing the extent to which fixed assets are funded through shareholders' funds, with a higher ratio signifying a heightened reliance on equity financing for fixed assets. Conversely, a lower FANR may indicate a preference for debt financing to support fixed asset investments. It is essential to recognize that the optimal FANR can differ significantly based on the industry and the unique circumstances of the bank in question.

Year	Net profit after tax and interest (Rs.) (in 000's)	Shareholder's fund (in 000's)	ROI
2019	1,21,78,17	16,90,69,04	7.20
2020	45,12,99	20,50,60,17	2.20
2021	1,05,05,18	21,55,65,34	4.87
2022	62,66,64	23,27,51,99	2.69
2023	76,55,34	25,48,32,23	3.00

13. Interpretation: Upon examining the provided table, it becomes evident that the Return on Investment (ROI) for the bank has exhibited a declining trend over the years. Beginning at 7.2% in 2019-20, it has steadily decreased to 3.0% in 2022-23. This decline signals a reduction in the bank's profitability relative to the amount of capital invested. Several factors may contribute to this downturn, including escalating expenses, sluggish revenue growth, or sub-optimal investment choices.

In light of these developments, it is imperative for the bank to proactively identify the root causes behind the diminishing ROI and implement requisite measures to enhance the profitability of its investments.

year	Total Assets (in 000's)	Total Outside Liabilities (in 000's)	Debt Ratio
2019	1,91,89,13,12	24,16,99,27	12.6
2020	3,33,28,35,06	32,63,61,60	9.79
2021	3,53,23,04,25	30,06,60,78	8.51
2022	3,67,21,50,37	32,77,77,35	8.93
2023	3,98,01,43,99	35,64,03,81	8.95

14. Interpretation: The table above offers a comprehensive overview of the solvency ratios from the fiscal years 2018-19 through 2022-23. Of particular note is the conspicuous change in the debt ratio, which experienced a notable peak in 2019 followed by a substantial decline in 2023. The debt ratio, essentially, gauges the extent to which the firm depends on external creditors to finance its total assets. The consistent decrease in this ratio is undeniably a positive signal, indicative of an improved financial position.

Year	Outsiders fund (in 000's)	Shareholder's fund (in 000's)	Debt Equity Ratio
2019	24,16,99,27	16,90,69,04	1.43
2020	32,63,61,60	20,50,60,17	1.59

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2021	30,06,60,79	21,55,65,34	1.39
2022	32,77,77,35	23,27,51,99	1.41
2023	35,64,03,81	25,48,32,23	1.40

15. Interpretation: The presented table above reveals that the debt-equity ratio for the specified years consistently exceeds 1, signaling a reliance on debt financing by the bank. A persistently high debt-equity ratio can suggest that the bank is assuming greater financial risk, potentially resulting in elevated interest expenses on its debt. This, in turn, may impact both the bank's profitability and its cash flow.

Year	Shareholder's fund (in 000's)	Total Assets (in 000's)	Proprietary Ratio
2019	16,90,69,04	1,91,89,13,12	8.81
2020	20,50,60,17	3,33,28,35,06	6.15
2021	21,55,65,34	3,53,23,04,24	6.10
2022	23,27,51,99	3,67,21,50,34	6.34
2023	25,48,32,23	3,98,01,43,98	6.40

16. Interpretation: The data provided above illustrates a notable trend in the bank's proprietary ratio, which has generally exhibited a decline from 2019 to 2023. This decline suggests that the bank has increasingly relied on debt financing during this period. Nevertheless, there is a noteworthy exception in 2022, where the ratio experienced a slight uptick. This particular increase in 2022 signifies a departure from the previous trend, suggesting that the bank has reduced its reliance on debt financing and fortified its financial position during that year.

Year	Liquid Assets (in 000's)	Demand Deposit (in 000's)	Liquid Assets to Demand Deposits (%)
2019	29,46,13,13	4,06,26,76	7.25
2020	83,66,30,70	7,85,67,93	10.65
2021	85,99,85,33	10,27,15,70	8.37
2022	78,77,56,61	5,80,61,40	13.57
2023	82,96,60,11	7,29,04,20	11.38

17. Interpretation: The table above reveals the fluctuations in the liquid asset-to-demand deposit ratio over the years, highlighting the bank's capacity to fulfill its short-term commitments. In 2019, this ratio stood at 7.25%, experiencing an increase to 10.6% in 2020. This signifies the bank's commendable ability to bolster its liquid assets concerning its demand deposits, which is indeed a favorable development. However, in subsequent years, while the demand for deposits has steadily risen, the corresponding increase in

liquid assets hasn't been proportionate. This dynamic resulted in a decline in the ratio in 2021.

Year	Current Assets (in 000's)	Current Liability (in 000's)	Current Ratio
2019	29,46,13,13	8,66,77,17	3.40
2020	83,66,30,70	14,46,82,17	5.78
2021	85,99,85,33	8,94,80,01	9.61
2022	78,77,56,61	7,87,47,28	10.00
2023	82,96,60,11	7,15,19,89	11.6

18. Interpretation: The provided table presents the current ratios for the years 2019 through 2023. Notably, all the current ratios during this period consistently surpass 1, signifying that the company possesses ample existing assets to offset its current liabilities. Furthermore, there is a consistent upward trend in the current ratio, with a notable peak observed in 2021.

The company's notably high current ratio in 2022 can likely be attributed to a substantial increase in existing assets. While this could be interpreted as a positive indicator of the company's liquidity position, it also raises the possibility that the company may need to optimize its asset utilization more effectively, as an excessively high current ratio can suggest underutilized resources.

DuPont Analysis: DuPont Analysis, a financial performance assessment tool, offers a comprehensive overview of a company's profitability and efficiency. It dissects the return on equity (ROE) into three essential components: profit margin, asset turnover, and financial leverage.

- **Profit Margin:** This metric gauges a company's ability to translate sales into profits. It's calculated by dividing net income by total revenue. A higher profit margin signals effective cost control and profit generation.
- **Asset Turnover:** This measure evaluates how efficiently a company employs its assets to generate sales. It's computed by dividing total revenue by average total assets. A higher asset turnover indicates effective asset utilization for revenue generation.
- **Financial Leverage:** This aspect assesses a company's reliance on debt to fund its operations. It's determined by dividing average total assets by average shareholders' equity. A higher financial leverage indicates a greater dependency on debt for operational funding.

Year	Return on Equity	Return on Assets	Equity Multiplier
2019	7.20%	0.63%	11.3499
2020	2.20%	0.14%	16.253
2021	4.87%	0.30%	16.3862
2022	2.69%	0.17%	15.7771
2023	3.00%	0.19%	15.6187

19. Interpretation: The table above depicts a company's financial performance from 2019 to 2023, focusing on Return on Equity (ROE), Return on Assets (ROA), and Equity Multiplier.

ROE, measuring shareholder profitability, was 7.20% in 2019, declining to 2.69% in 2022, with a slight uptick to 3.00% in 2023.

ROA, gauging asset efficiency, started at 0.63% in 2019, dropped to 0.14% in 2020, improved to 0.30% in 2021, and ended at 0.19% in 2023.

Equity Multiplier, indicating financial leverage, was 11.3499 in 2019, rising to 16.3862 in 2021, then slightly decreasing to 15.6187 in 2023.

These metrics unveil insights into the company's performance and financial health. Declining ROE and ROA suggest profit challenges and asset efficiency issues. The increasing equity multiplier shows growing reliance on debt, raising potential risks. Stakeholders, including investors, must vigilantly track these indicators to assess the company's performance. Analyzing trends and underlying factors helps in evaluating its financial standing and future potential.

Correlation Analysis: Correlation analysis is a statistical technique used to measure the strength and direction of the relationship between two variables. It is commonly used in research and data analysis to determine if there is a relationship between variables and to what extent they are related.

Correlation is measured using a correlation coefficient, which ranges from -1 to +1. A correlation coefficient of +1 indicates a perfect positive correlation, meaning that as one variable increases, the other variable also increases. A correlation coefficient of -1 indicates a perfect negative correlation, meaning that as one variable increases, the other variable decreases. A correlation coefficient of 0 indicates no correlation or a weak relationship between the variables.

	Return on equity	Return on assets	Equity multiplier
Return on equity	1		
Return on assets	0.97823658	1	
Equity multiplier	-0.8275045	0.9230423	1

20. Interpretation:

- **Return on Assets vs Return on Equity:** There exists a robust positive correlation, approximately 0.978, between Return on Equity (ROE) and Return on Assets (ROA). This correlation underscores the close relationship between the company's profitability (ROE) and its efficiency in utilizing assets (ROA).
- **Return on Equity vs Equity Multiplier:** A strong negative correlation of approximately -0.828 exists between Return on Equity (ROE) and Equity Multiplier. It indicates that as the company's leverage (equity multiplier) increases, its Return on Equity tends to decrease. Higher leverage might lead to higher financial risk, impacting ROE negatively.
- **Return on Assets vs. Equity Multiplier:** A strong negative correlation of approximately -0.923 exists between Return on Assets (ROA) and Equity Multiplier. It suggests that as the company's leverage (equity multiplier) increases, its returns on assets decrease. Higher leverage might result in higher interest expenses, which negatively affects ROA.

VI. SUSTAINABILITY AND ITS IMPACT ON FINANCIAL PERFORMANCE

In this section, we examine sustainability and growth in the context of Aryavart Bank's financial performance using the DuPont Model. This study delved into the potential impact of sustainable practices and growth strategies on the individual elements of Return on Equity (ROE) – namely, profit margin, asset turnover, and equity multiplier.

The integration of sustainable business strategies within Nigerian banks has seen positive progress, although achieving maximum impact on sustainable development requires deeper incorporation of sustainable banking practices. While banks strongly commit to sustainability, realizing the full benefits necessitates vital success factors. Aligning sustainable banking principles at the core of their values and integrating them holistically into their overall business strategy will enable banks to create products and services meeting economic, environmental, and social needs, thereby satisfying stakeholders. Enhancing professionalism in sustainability through empowered Chief Sustainability Officers and streamlined reporting structures can further drive knowledge-building, partnerships, and long-term positive impacts in sustainable banking efforts. (Deloitte Survey, 2019). Our investigation aimed to shed light on whether Aryavart Bank's commitment to sustainability has translated into tangible effects on its financial performance.

Eccles et al. (2014) discuss how corporate sustainability initiatives can improve organizational processes and financial outcomes. Our analysis aligns with their findings, as we observed that when integrated strategically, sustainable practices can affect the profit margin, asset turnover, and equity multiplier of Aryavart Bank. Such integration may lead to enhanced operational efficiency, reduced risk exposure, and increased customer satisfaction - all of which contribute to sustainable growth.

The research conducted by **Saeidi et al. (2015)** highlights the intermediary functions played by competitive advantage, reputation, and customer satisfaction in the connection between corporate social responsibility (CSR) and financial performance. In our specific scenario, Aryavart Bank's CSR endeavors may have played a part in cultivating a positive reputation for the bank, thereby positioning it favorably in the eyes of its clientele. This favorable reputation could potentially underlie the trends we observe in the DuPont Model components, thereby reinforcing our investigation into how sustainability factors impact financial performance.

VII. GROWTH STRATEGIES AND THEIR INTERPLAY WITH FINANCIAL PERFORMANCE

Raza et al. (2020) present insights into the interconnectedness of financial performance, CSR, and environmental performance. While the direct causality between sustainability and financial performance is complex, our analysis suggests that Aryavart Bank's growth strategies, aligned with sustainability goals, could facilitate an environment conducive to enhanced financial outcomes. The bank may enhance its ability to attract investments and effectively manage resources by focusing on sustainable growth.

Additionally, the Sustainability Reporting Standards of the Global Reporting Initiative (GRI) from 2016, offer a robust framework that enhances the credibility of an organization's sustainability practices. Aryavart Bank's adherence to such standards further validates its sustainability efforts, potentially positively impacting investor perceptions. This increased investor confidence might contribute to a favourable equity multiplier, reflecting a balanced capital structure.

In conclusion, using the DuPont Model, our study demonstrates the relevance of examining sustainability and growth in analyzing Aryavart Bank's financial performance. The convergence of findings from various scholarly works emphasizes the potential impact of sustainability on profit margin, asset turnover, and equity multiplier. While this study provides insights into this relationship and to deepen our understanding of the dynamics between sustainability, growth, and financial performance in the banking sector, future research could explore specific sustainability initiatives and their direct impact on financial indicators.

VIII. FINDINGS

The assessment of Aryavart Bank's overall financial performance revealed significant trends and drivers impacting its return on equity (ROE) over the years. Notably, interest earned exhibited substantial growth, increasing by 61.28% in 2022-23 compared to the previous year. The deposit mix analysis highlighted the composition of demand deposits, saving deposits, and term deposits, underscoring the bank's funding structure.

The credit-deposit ratio portrayed variations in lending activities, with the highest ratio observed in 2018-19. Concurrently, the yield on assets ratio (YAR) fluctuated within a range of 8% to 12%, indicating the bank's effective management of interest income. Notably, the solvency ratio exhibited a favorable trend, reflecting prudent debt management practices, evidenced by a decline in debt ratio from 2019 to 2023.

However, the return on equity (ROE) exhibited a gradual decline from 7.20% in 2019 to 2.69% in 2022. This decline suggests potential challenges in sustaining profitability over the analyzed period. Additionally, the equity multiplier showcased an upward trajectory until 2021, reaching 16.3862, followed by a slight decrease to 15.6187 in 2023. This pattern indicates the bank's changing leverage position.

The DuPont Model's insights demonstrate the relevance of evaluating sustainability and growth in Aryavart Bank's financial performance analysis. The negative correlation between ROE and equity multiplier implies a potential association between increased leverage and heightened financial risk.

In conclusion, the findings underscore the importance of holistic financial analysis, encompassing key performance metrics, solvency, and profitability indicators. The trends observed in interest earnings, deposit mix, and leverage illuminate the bank's strategic financial management. While the study sheds light on these dynamics, further exploration of specific sustainability initiatives and their direct impact on financial indicators is recommended for a comprehensive understanding of Aryavart Bank's performance.

IX. LIMITATIONS AND CHALLENGES

- 1. Data Availability:** Availability of accurate and complete financial data for the chosen period.
- 2. Assumptions:** The DuPont Model assumes linear relationships, which might not capture complex dynamics.
- 3. External Factors:** Economic conditions or regulatory environment changes can influence financial performance.

X. SIGNIFICANCE

This study contributes to understanding Aryavart Bank's financial performance by dissecting its ROE into its underlying components. The findings can offer insights into the bank's profitability, efficiency, and leverage, aiding informed decision-making by stakeholders.

XI. CONCLUSION

The DuPont Model was used to investigate the financial performance of Aryavart Bank in a systematic manner as outlined in the research methodology. The study aims to provide valuable insights into the bank's performance and factors influencing its Return on Equity by following these steps.

XII. IMPLICATIONS AND FUTURE SCOPE

Our study contributes to understanding how sustainability and growth strategies intertwine with banks' financial performance, particularly when analyzed by using the DuPont Model. The interplay between sustainability initiatives, growth strategies, and

profitability components highlights the multidimensional nature of financial performance in the banking sector.

The study provides valuable insights, but there are still opportunities for further investigation. Future research could focus more deeply on the specific sustainability initiatives implemented by Aryavart Bank and how they directly impact individual financial indicators. Moreover, conducting comparative studies involving other regional rural banks could offer a broader understanding of the connection between sustainability, growth, and financial performance in the sector.

In conclusion, based on our analysis, it can be inferred that Aryavart Bank's sustainability initiatives and growth strategies have the potential to affect its profit margin, asset turnover, and equity multiplier, which are key components of the DuPont Model. This study highlights the importance of taking a comprehensive approach to evaluating financial performance, acknowledging the diverse impact of sustainability and growth factors.

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RELEVANT LINKS

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