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# A STUDY ON ASSET LIABILITY MANAGEMENT WITH REFERENCE TO HDFC

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## ABSTRACT

ALM is a strategic financial management technique that comprises managing a company's assets and commitments in order to minimize risk and maximize performance. ALM is critical in financial organizations such as banks, insurance companies, and investment firms because it allows them to manage their exposure to various risks such as interest rate risk, credit risk, liquidity risk, and market risk more efficiently. This abstract provides an overview of the core concepts and goals of ALM. It begins by explaining core asset and liability management principles such as asset and liability identification and measurement, as well as asset and liability characteristics such as duration, cash flow patterns, and market volatility susceptibility. The abstract then digs into the key goals of ALM, which include generating profitability, ensuring solvency and liquidity, and maintaining a strong risk management framework this abstract also discusses basic ALM approaches and procedures such as duration matching, cash flow matching, and vaccination. It highlights the need of scenario research and stress testing in assessing the financial impact of expected market volatility. The abstract also looks into how regulatory requirements and standards like Basel III affect ALM operations and financial stability.

**Keywords:** Liability, Cash flow, Liquidity, Bank, Insurance, Asset

## INTRODUCTION:

The bottom line is improved after implementing ALM because of this. Maximizing the net interest margin offers the optimum risk-return profile. Finances must be managed in order to take care of assets and obligations. In the absence of growth, money retains its value, adapts swiftly, and reverts to its original state. ALM's focus is on equating asset values with debt obligations. The expansion of the national market necessitated a shift in business strategy. Government-controlled markets have given way to free markets. The cooperative's profits have dropped, forcing it to expand into high-risk new markets. Management is understandably concerned about the value of the company's assets given that most of the company's funding originates from outside sources. They would prefer a reduction in these dangers. The price tag for cooperative reserves is usually quite hefty. This fixed asset was a different kind of savings vehicle than bank accounts. The problem could be addressed through asset and liability management.

## ASSET LIABILITY MANAGEMENT (ALM) SYSTEM

Asset-liability management, or ALM, seeks to maximize profits while maintaining an asset value that is greater than total debt. The term "surplus management" is used to describe the process of balancing incoming and outgoing cash flows as well as interest rates. ALM's significance has grown during the past decade. It has a wide variety of potential applications

Although banks were among the first to implement ALM, today the technology is widely employed across industries. Asset liability management is defined by the Society of Actuaries Task Force on ALM Principles in Canada as the process of continuously planning, implementing, monitoring, and adjusting asset-liability strategies to achieve financial goals within a framework of risk tolerance and restrictions. The Society of Actuaries' official website is the source for this word.

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## REVIEW OF LITERATURE

- **Abinaya, A., & Selvakumar, S. (2022)** analysed that asset-liability management in bank operating in India by determining the liquidity position of banks in India through maturity profiling. The results of the study suggest that, over all public sector banks had a better short-term liquidity position than the private sector banks and foreign banks
- **Kumar, S., & Arora, S. (2022)** analysed that asset-liability management (ALM) is one of the important tools of risk management in commercial banks of India. The banking industry of India is exposed to number of risk prevailed in the market. The research paper discusses about issues in asset liability management.
- **Gnana Sugirtham, S., & Gowri, M. (2021)** attempted that to analyze the impact of measures and strategies banks undertook to manage the composition of asset-liability and its impact on their performance in general and profitability in particular. maturity profiling is used to determining the liquidity position and duration analysis to measure interest rates risk.
- **Van Greuning, H., & Bratanovic, S. B. (2020)** analysed that assets and liability management (ALM) is a systematic and dynamic process of planning organizing, coordinating and controlling the assets and liabilities or in the sense management of balance sheet structure in such a way the net earning from interest are maximised with in the overall risk preference of the banks.
- **Srividhya, G. (2019)** in India is analysed that asset liability of the banks balance sheet of commercial banks posed serious challenging as the banks, which have direct impact on their operations, profitability and efficiency to compete with. RBI of the country focused and advised banks for taking concrete steps in minimizing the mismatch in the asset-liability

### NEED FOR THE STUDY:

- Money, liquidity, and interest rate fluctuations can all be managed with the help of ALM. Banks can avoid losses and maintain their financial stability through risk management.
- By optimizing the allocation of assets and liabilities, ALM can help a financial institution maximize profits while minimizing losses. Understanding and effectively managing the risks and rewards associated with your products and services is essential.

- Banks must abide by regulations governing capital, liquidity, and risk management. The monetary bureaucracy has imposed this duty. Legal issues and the associated expenditures can be avoided by financial organizations thanks to ALM.

### SCOPE OF THE STUDY:

- One way to lessen the impact of fluctuations in interest rates on a bank is to protect its assets and liabilities. In order to avoid financial losses and maintain economic stability, banks must effectively manage this risk.
- Liquidity risk management safeguards a bank's capacity to fulfill its obligations. Financial institutions can mitigate this risk by maintaining a healthy cash reserve and accepting deposits from a diverse set of customers.
- A bank's capital adequacy is monitored to guarantee that the institution has sufficient reserves to weather unexpected losses. Banks are expected to mitigate this threat by maintaining large reserves of cash and carefully selecting their asset holdings.

### OBJECTIVES OF THE STUDY:

- To examine the comparative assets and liabilities in HDFC.
- To know the return on assets of HDFC.
- To identify the return on common equity of HDFC bank.
- To study the asset and liability management in HDFC bank.
- To compare the overall annual assets and annual liabilities

### RESEARCH METHODOLOGY:

The study of ALM Management is based on two factors.

1. Primary data collection.
2. Secondary data collection

#### PRIMARY DATA COLLECTION:

The system manager, the senior manager of finance and accounting, and the chief manager of the ALM cell all contributed to this report as primary sources. Several other CEOs and managers were consulted.

#### SECONDARY DATA COLLECTION:

The Asset Liability Management (ALM) regulations published by the Reserve Bank of

India, the annual reports published by HDFC BANK, and other renowned financial publications and management literature were used to compile the data used in this study.

**LIMITATIONS OF THE STUDY:**

➤ A In order to comply with LM, financial institutions must compile accurate and timely data regarding their assets, liabilities, and risks. Data availability and quality may present difficulties, especially for smaller universities.

➤ To maximize profits, ALM is in charge of risk management and employing quantitative models. Calibration mistakes, inaccurate data, and faulty assumptions can all wreck havoc on these models.

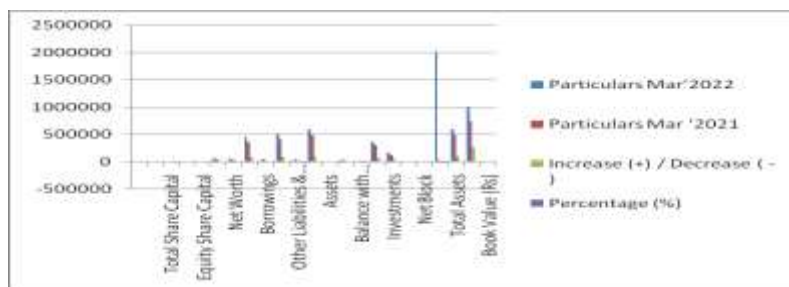
➤ ALM is notoriously tough to implement due to its complex problems. As a result, financial institutions, especially those without the necessary resources or experience, often struggle to design and implement effective ALM frameworks

**DATA ANALYSIS AND INTERPRETATION**

**COMPARATIVE ASSET LIABILITY SHEET AS ON 31<sup>ST</sup> MARCH 2022-2021 - TABLE :1**

Particulars	Mar'2022	Mar '2021	Increase (+) / Decrease (-) (in Rs)	Percentage (%)
<b>Capital and Liabilities:</b>				
Total Share Capital	548.33	544.66	25.16	4.47885621
Equity Share Capital	501.30	479.81	21.49	4.47885621
Reserves	61,308.12	42,998.82	18,509.3	43.046063
Net Worth	62,009.42	43,478.63	18,530.79	42.6204552
Deposits	450,795.64	367,337.48	83,458.16	22.720217508
Borrowings	45,213.56	39,438.99	5,774.57	14.6417796
Total Debt	496,009.20	406,776.47	89,232.73	21.9365515
Other Liabilities & Provisions	32,484.46	41,344.40	-8,859.94	-21.429601
Total Liabilities	590,503.08	491,599.50	98,903.58	20.1187308
<b>Assets</b>				
Cash & Balances with RBI	27,510.45	25,345.63	2,164.82	8.5412021625
Balance with Banks, Money at Call	8,821.00	14,238.01	-5,417.01	-38.046117
Advances	365,495.03	303,000.27	62,494.76	20.625315
Investments	166,459.95	120,951.07	45,508.88	37.6258598
Gross Block	3,121.73	2,939.92	181.81	6.18418188
Net Block	3,121.73	2,939.92	181.81	6.18418188
Other Assets	2021,094.91	25,124.60	-6029.69	-23.999148
Total Assets	590,503.07	491,599.50	98,903.57	20.1187288
Contingent Liabilities	997,538.88	744,097.98	253,440.9	34.0601516
Book Value (Rs)	247.39	181.23	66.16	36.5060972

**GRAPH 1.A**



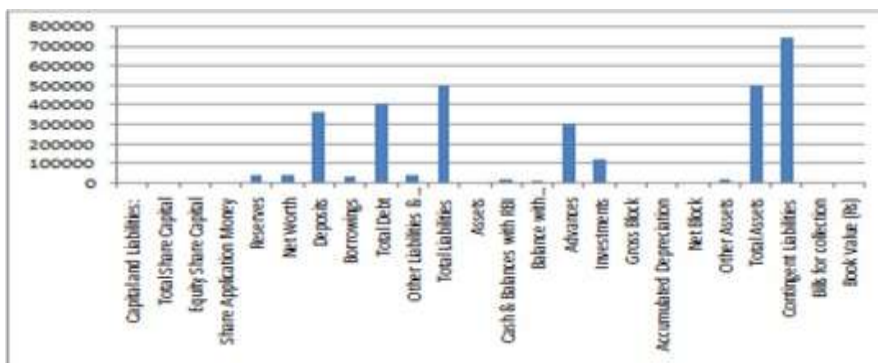
**INTERPRETATION:**

The whole current liabilities are Rs. 590503.08, while the total current assets are Rs. 590503.08 in 2021–2022. The assets therefore outnumber the loans. Consequently, there is a surplus of Rs. 45508, or 37.62%. The results from the above is that current liabilities and current assets or equal in 2021 to 2022. from the graph it is noticed that values are decreased.

**COMPARATIVE ASSET LIABILITY SHEET AS ON 31<sup>ST</sup> MARCH 2021-20 TABLE:2**

Particulars	Mar'21	Mar'20	Increase (+) / Decrease (-) (in Rs)	Percentage (%)
<b>Capital and Liabilities:</b>				
Total Share Capital	479.81	475.88	3.93	0.82583845
Equity Share Capital	479.81	475.88	3.93	0.82583845
Share Application Money	0.00	0.00		
Reserves	42,998.82	33,738.26	7,260.56	20.3139303
Net Worth	43,478.63	36,214.14	7,264.49	20.0398164
Deposits	367,337.48	296,246.98	71,090.5	23.9970379
Borrowings	39,438.99	33,006.60	6,432.39	20.214882021
Total Debt	406,776.47	329,253.58	77,522.89	23.5450409
Other Liabilities & Provisions	41,344.40	34,864.17	6,480.23	18.3870766
Total Liabilities	491,599.50	400,331.89	91,267.61	22.7979864
<b>Assets</b>				
Cash & Balances with RBI	25,345.63	14,627.40	10,718.23	73.2750181
Balance with Banks, Money at Call	14,238.01	12,652.77	1,585.24	12.528798
Advances	303,000.27	239,720.64	63,279.63	26.3972389
Investments	120,951.07	111,613.60	9,337.47	8.3659891
Gross Block	2,929.92	2,703.08	226.84	8.76185684
Accumulated Depreciation	0.00	0.00		
Net Block	2,929.92	2,703.08	226.84	8.76185684
Other Assets	23,124.60	2021,014.4	6110,2021	32.1543232
Total Assets	491,599.50	400,331.90	91,267.6	22.7979834
Contingent Liabilities	744,097.98	746,226.39	-2,128.41	-0.28522309
Book Value (Rs)	181.23	132.20	29.03	2021.0735874

GRAPH.2B



INTERPRETATION:

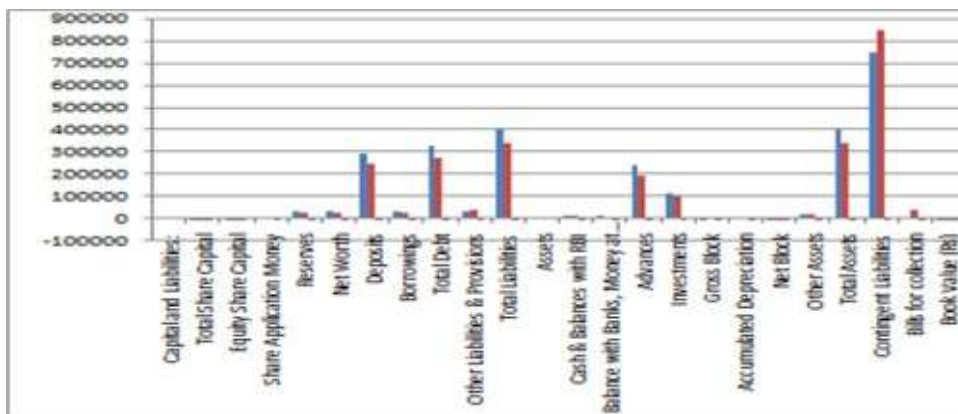
Total annual current liabilities in 2021 are less than total annual current assets, by Rs491599.50. This means that assets are more than debts. As a result, there is a surplus of Rs 236.84, or 8.76%.

The results from the above is that total annual current liabilities in 2021 or less than the total annual current assets. From the graph is it noticed that the values are increased.

Particulars	Mar '20	Mar '19	Increase (+) / Decrease (-) (in Rs)	Percentage (%)
<b>Capital and Liabilities:</b>				
Total Share Capital	475.88	469.34	6.54	1.393446116
Equity Share Capital	475.88	469.34	6.54	1.393446116
Share Application Money	0.00	0.30	-0.30	-100
Reserves	33,738.26	29,455.04	6,283.22	21.33156159
Net Worth	36,214.14	29,924.68	6,289.46	21.01763494
Deposits	296,246.98	246,706.45	49,540.53	20.08075995
Borrowings	33,006.60	23,846.51	9,160.09	38.41270693
Total Debt	329,253.58	270,552.96	58,700.62	21.69653586
Other Liabilities & Provisions	34,864.17	37,431.87	-2,567.70	-6.859662635
Total Liabilities	400,331.89	337,909.51	62,422.38	18.47310542
<b>Assets</b>				
Cash & Balances with RBI	14,627.40	14,991.09	-363.69	-2.426041068
Balance with Banks, Money at Call	12,652.77	5,946.63	6,706.14	112.7721079
Advances	239,720.64	20215,420.03	44,300.61	22.66943158
Investments	111,613.60	97,482.91	14,130.69	14.4955562
Gross Block	2,703.08	5,930.24	-3,227.16	-54.41870818
Accumulated Depreciation	0.00	3,583.05	-3,583.05	-100
Net Block	2,703.08	2,347.2021	355.89	15.16238566
Other Assets	2021,014.41	21,721.64	-2,707.23	-12.46328546
Total Assets	400,331.90	337,909.49	62,422.41	18.47311539
Contingent Liabilities	746,226.39	844,374.61	-98,148.22	-11.6237768
Bills for collection	0.00	39,610.71	-39,610.71	-100
Book Value (Rs)	132.20	127.52	24.68	2021.353826

COMPARATIVE ASSET LIABILITY SHEET AS ON 31<sup>ST</sup> MARCH 2020-19  
TABLE:3

GRAPH .3C



INTERPRETATION:

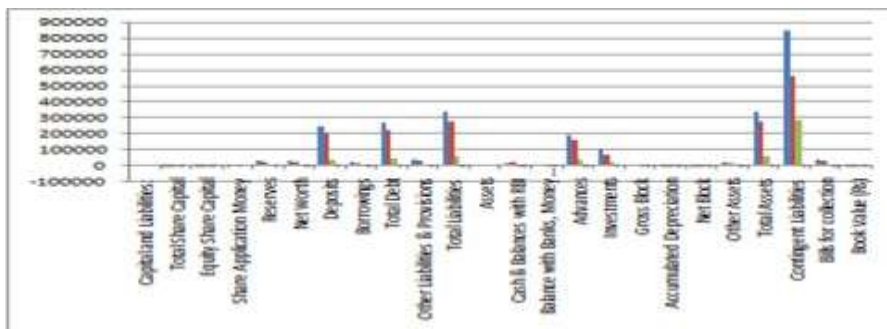
The overall current assets in 2020 are fewer than the whole current liabilities by Rs.400331.89. As a result, the assets outweigh the debts. A difference of Rs.355.89, or 15.16 percent, is therefore visible. The results from the above is that overall current assets in 2020 is greater than overall current liabilities. From the graph it is noticed that the values are decreased.

COMPARATIVE ASSET LIABILITY SHEET AS ON 31<sup>ST</sup> MARCH 2019-18

TABLE:4

Particulars	Mar 19	Mar '18	Increase (+)Decrease (-) (In Rs)	Percentage (%)
<b>Capital and Liabilities:</b>				
Total Share Capital	469.34	463.23	4.11	0.88343
Equity Share Capital	469.34	463.23	4.11	0.88343
Share Application Money	0.30	0.00	0.3	
Reserves	29,435.04	24,914.04	4541	18.2267
Net Worth	29,924.68	25,378.27	4546.41	17.9099
Deposits	346,766.35	268,586.11	8120	18.3754
Borrowings	23,846.51	14,394.08	9452.43	65.6691
Total Debt	270,352.96	222,980.47	47372.5	21.3348
Other Liabilities & Provisions	37,431.87	28,992.86	8439.01	29.1072
Total Liabilities	337,909.51	277,352.60	60556.9	21.8339
<b>Assets</b>				
Cash & Balances with RBI	14,991.09	25,100.82	-10110	-40.2765
Balance with Banks, Money at Call	5,946.63	4,368.02	1378.61	30.1796
Advances	20215,420.03	159,982.67	35437.4	22.1507
Investments	97,482.91	70,929.37	26553.5	37.4366
Gross Block	5,930.24	5,244.21	686.03	13.0817
Accumulated Depreciation	3,583.05	3,073.56	509.49	16.5763
Net Block	2,347.2021	2,170.65	176.54	8.13505
Other Assets	21,721.64	14,601.08	7120.56	48.7674
Total Assets	337,909.49	277,352.61	60556.9	21.8338
Contingent Liabilities	34,374.61	35,681.87	394693	50.8669
Bills for collection	39,610.71	38,869.10	10741.6	37.308
Book Value (Rs)	127.32	543.33	-418.01	-76.6246

GRAPH .4D



INTERPRETATION:

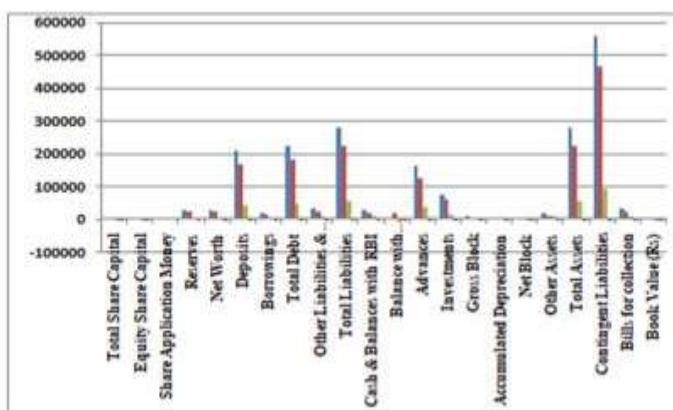
The entire current assets in 2019 were less than the total current liabilities by Rs. 3,37,909.51. This means that assets are more than debts. As a result, there is a surplus of Rs 176.36, or 8.13%. The results from the is that total current assets in 2019 is less than the total current liabilities. From the graph it

is noticed that the values are decreased.

**COMPARATIVE ASSET LIABILITY SHEET AS ON 31<sup>ST</sup> MARCH 2018-17  
TABLE:5**

Particulars	Mar '18	Mar '17	Increase (+) / Decrease (-) (in Rs)	Percentage (%)
Total Share Capital	465.23	457.74	7.49	1.63630008
Equity Share Capital	465.23	457.74	7.49	1.63630008
Reserves	24,914.04	21,064.75	3849.29	18.2736088
Net Worth	25,379.27	21,522.49	3856.78	17.920217667
Deposits	208,386.41	167,404.44	41182	24.6002854
Borrowings	14,394.06	12,915.69	1478.37	11.4463107
Total Debt	222,980.47	180,320.13	42660.3	23.6581129
Other Liabilities & Provisions	28,992.86	20,615.94	8376.92	40.6332188
Total Liabilities	277,352.60	222,458.56	54894	24.6760745
Cash & Balances with RBI	25,100.82	15,483.28	9617.54	62.1156499
Balance with Banks, Money at Call	4,568.02	14,459.11	-9891.1	-68.4073224
Advances	159,982.67	125,830.59	34152.1	27.1413175
Investments	70,929.37	58,607.62	12321.8	21.0241433
Gross Block	5,244.21	4,707.97	536.24	11.3900471
Accumulated Depreciation	3,073.56	2,585.16	488.4	18.8924477
Net Block	2,170.65	2,122.81	47.84	2.25361667
Other Assets	14,601.08	5,935.13	8645.93	145.184084
Total Assets	277,352.61	222,458.56	54894.1	24.676079
Contingent Liabilities	359,681.87	466,236.24	93445.6	20.0425497
Bills for collection	28,869.10	20,940.13	7928.97	37.8649512
Book Value (Rs)	545.53	470.2021	75.34	16.0233097

**GRAPH .5E**



**INTERPRETATION:**

Compared to overall annual assets of Rs 14601.08, annual current obligations come to Rs 277352.60. This means that assets are more than debts. As a result, there is a surplus of Rs.536.24, or 11.39 percent. The results from the above is that overall annual assets in 2018 is greater than the annualcurrent liabilities. From the graph it is noticed that the values are decreased.

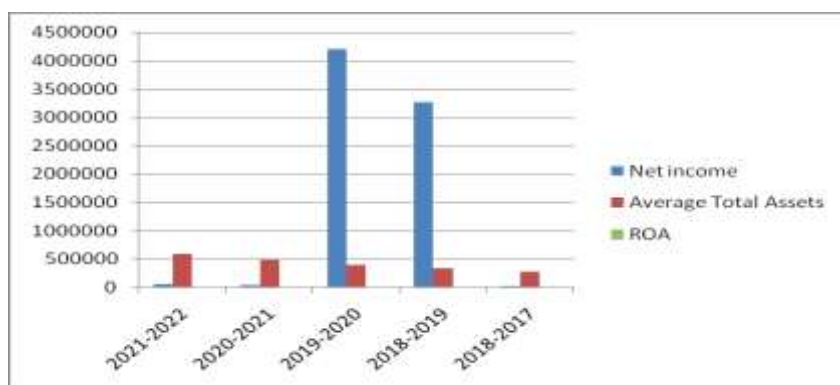
**RETRUN ON ASSETS**

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

**TABLE:6**

Year	Net income	Average Total Assets	ROA
2021-2022	57466.25	590503.08	9.73174
2020-2021	49055.17	491599.5	9.97868
2019-2020	4202117.49	400331.9	10.47068
2018-2019	3262021.76	337909.49	9.653402
2017-2018	24361.72	277352.61	8.783664

GRAPH .6F



INTERPRETATION:

Total Average Assets were on the rise while net income was on the decline, as measured by ROA. The results from the above is that net income and average total assets from the year of 2017 to 2022. From the graph it is noticed that the net income is decreased and average total assets are increased based on ROA.

RETURN ON ASSETS (ROA)

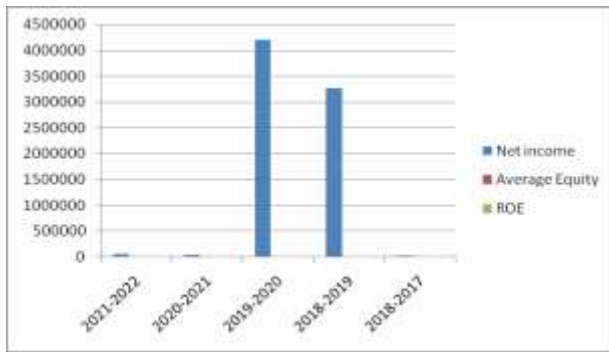
$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Average Total Assets}}$$

TABLE:7

Year	Net income	Average Equity	ROE
2021-2022	57466.25	501.3	114.634457
2020-2021	49055.17	479.81	102.233874
2019-2020	4202117.49	475.88	88.0841598
2018-2019	3262021.76	469.34	69.5013423
2017-2018	24361.72	465.23	52.3648948

GRAPH .7G





**INTERPRETATION:**

The company's net income and, by extension, the investors' share value, have both been on the rise. The results from the above is that net income and average equity from 2017 to 2022. From the graph it is noticed that net income decreases and average equity increases based on ROA.

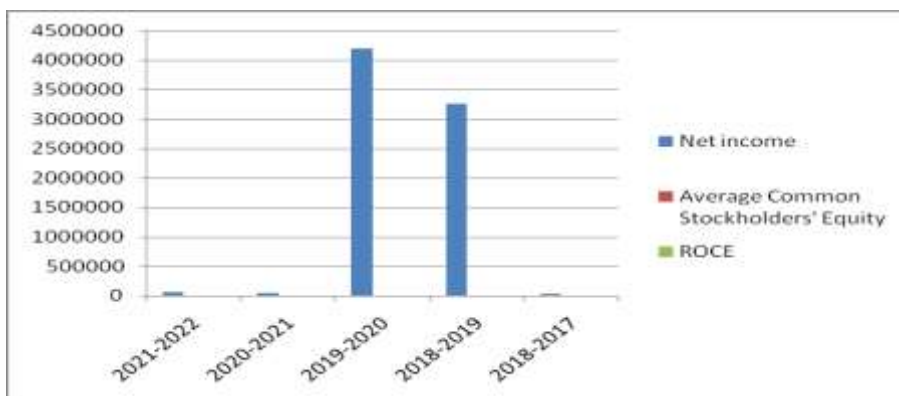
**RETURN ON COMMON EQUITY(ROCE):**

$$\text{Return on Common Equity} = \frac{\text{Net Income}}{\text{Average Common Stockholders' Equity}}$$

**TABLE:8**

Year	Net income	Average Common Stockholders' Equity	ROCE
2021-2022	57466.25	501.3	114.634457
2020-2021	49055.17	479.81	102.233874
2019-2020	4202117.49	475.88	88.0841598
2018-2019	3262021.76	469.34	69.5013423
2017-2018	24361.72	465.23	52.3648948

**GRAPH .8H**



**INTERPRETATION:**

When compared to prior years, both the company's net income and its shareholders' equity have been rising.

The results from the above is that net income and average common stockholders equity from 2017 to 2022. From the graph it is noticed that the net income is decreased and average common stockholders equity is increased based on ROCE.

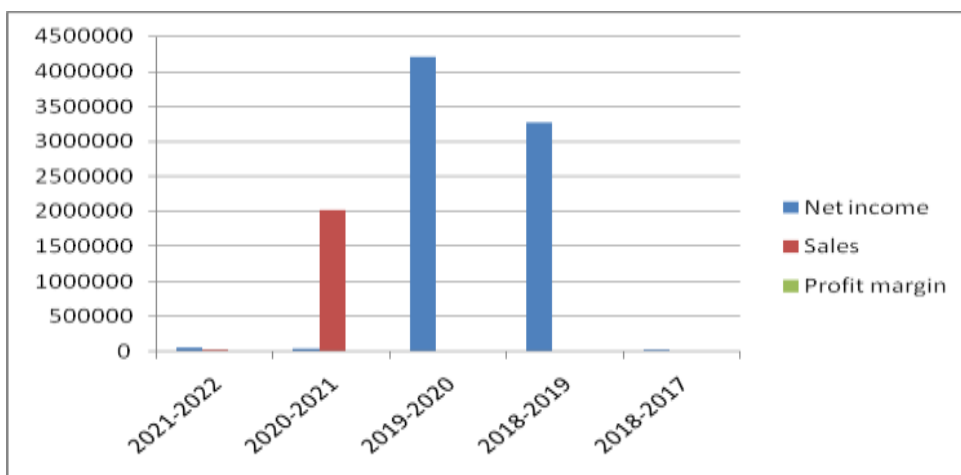
**PROFIT MARGIN**

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

**TABLE:9**

Year	Net income	Sales	Profit margin
2021-2022	57466.23	24870.07	2.3106389
2020-2021	49033.17	2021610.56	2.50149706
2019-2020	4202117.49	15125.93	2.7712339
2018-2019	3262021.76	11339.21	2.87672245
2017-2018	24361.72	8456.54	2.88081414

**GRAPH .9I**



**INTERPRETATION:**

As a result of RBI's regulations, HDFC's profit margin has entered a period of decline.

The results from the above is that net income and sales from 2017 to 2022. From the graph it is noticed that the net income and sales are decreased based on profit margin.

**FINDINGS**

- In 2021-2022, the difference between total current obligations of Rs.590503.08 and total current assets is Rs.590503.08. As a result, the assets outweigh the debts. Therefore, a surplus of Rs.45508.88, or 37.62%, exists.
- In 2021, the difference between entire current obligations of Rs.491599.50 and total current assets is Rs.491599.50. As a result, the assets outweigh the debts. The difference is thus Rs.236.84, or 8.76%.
- The overall current assets in 2020 are fewer than the whole current liabilities by Rs.400331.89. As a result, the assets outweigh the debts. A difference of Rs.355.89, or 15.16 percent, is therefore visible.
- In 2019, the total current assets are Rs.3,37,909.51, while the total current liabilities are Rs.3,37,909.51. As a result, the assets outweigh the debts. The difference is Rs.176.36, or 8.13%.

- Current year obligations totaling Rs.277352.60 are smaller than current year assets totaling Rs.14601.08. As a result, the assets outweigh the debts. As a result, there is a surplus of Rs 536.24, or 11.39 percent.
- The Return on Average Assets (ROA) shows that the value of the company's net income has been on the rise, while the value of its equity held by its shareholders has been on the rise in recent years.
- A rising net income and rising equity value for shareholders both indicate that a company is doing well.
- As a result of RBI's regulations, HDFC's profit margin has entered a declining phase.

### SUGGESTIONS

- For precise accounting of liquidity and interest rate risks, the company should beef up its management information system (MIS) and computer processing capacities.
- Upgrading old systems and Application software to achieve better and improved levels is essential to maximizing short-term NIM, which in turn maximizes economic value.
- The company should strengthen its management information system (MIS) and computer processing capabilities for accurate measurement of liquidity and interest rate risks in their books.
- In the short term the net interest income or net interest margins (NIM) creates economic value of the which involves up gradation of existing system & improvised levels.
- It is essential that remain alert to the events that effects its operating environment & react accordingly in order to avoid any undesirable risks.
- The company should focus on its effective management of cash and bank balance as they are fluctuating over the years.
- That should always be on the lookout for changes in its working environment and ready to take appropriate action to counteract them.
- To successfully integrate the risk management process with efficient business strategies, HDFC needs a strong human and technological foundation.

### CONCLUSIONS

- The goal of ALM is not always the eradication or even reduction of risk. The risk involved varies according to the desired rate of return and the goals of the company.
- The company's financial goals and risk tolerance are typically established by top

management and revisited at regular intervals. All potential threats to assets and liabilities have been cataloged.

- Each risk is dissected into its constituent parts, and the root causes of each are evaluated. Risks are categorized and their interrelationships with one another and with external sources are determined.
- Exposure to risk can be measured in a number of ways, including the maximum predicted loss for a given confidence interval in a given set of scenarios, the distribution of outcomes for a given set of simulated scenarios for the component piece over time, and in relation to changes in the component parts themselves.
- Exposure to risk must be measured and monitored on a regular basis. The entity's risk tolerances and financial goals may evolve in a dynamic operating environment, rendering obsolete the previously implemented ALM solutions.
- As a result, it's important to evaluate and adjust these plans on a regular basis. This is a crucial stage where a structured, recorded communication approach is essential.

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