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FINANCIAL PERFORMANCE ANALYSIS OF HDFC USING DUPONT ANALYSIS

Mrs. Srilakshmi Ramu*
Prof. S.V. Satyanarayana**

ABSTRACT

Housing Finance Companies" (HFC's) form a major component of the mortgage lending institutions in India and are specialized institutions set up for lending in housing. Housing Development Finance Corporation (HDFC) is the first and country's largest private sector housing finance company set up in 1977. This paper attempts to analyze the financial performance of HDFC for the period 2009 to 2018 by using the DuPont system of financial analysis which is based on analysis of return on equity. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. For analyzing the performance, mean, compound annual growth rate and coefficient of variation and correlation of ROE with NP Margin, Assets Turnover ratio, Equity multiplier is calculated. It was found that the financial performance of HDFC is relatively steady and reflects minimal volatility in the return on equity. Net profit margin has considerably been in the increasing trend for the decade while total assets turnover as well as equity multiplier have declined for the decade 2008-09 to 2017-18 indicating that HDFC had less financial leverage in the recent years, which means the HDFC is relying less on debt to finance its assets.

***KEYWORDS**: DuPont, Return on Equity, Net Profit Margin, Equity Multiplier, Asset Utilization.*

Introduction

Housing finance industry grew phenomenally, registering significant exponential growth and sustained growth at 20% CAGR over the last 10 years driven by supportive fiscal, monetary and legal policies. Banks and Housing Finance Companies (HFCs), are the major players in the housing finance market in India. HFCs are non-banking financial organizations registered with the National Housing Bank (NHB) established in 1988, under the NHB Act, 1987. HFCs accounted for almost more than 40% of the total housing finance industry as of March, 2017, the total housing loan portfolio which stood at a minimal of Rs 30,000 crores in 1997-98 and grew to over Rs.14.4 lakh Crores by 2017. Keeping in view of the transformation and liberalization of the housing finance sector in India, and its increasing role in the financial inclusion of recent times, it is imperative that the performance of the HFC's have to be studied, in respect to profit earning capacity. There are 96 registered housing finance companies as on 31.03.2018, and only 20 HFC's have been granted certificates of registration to accept public deposits while the remaining do not have the permission to accept the public deposits. Presently the Indian housing finance market is oligopolistic in nature, witnessing a clash between major players. In fact industry analysts claim that the top five HFCs account for to 85-90 per cent share of the retail home loans, consisting of HDFC, LIC Housing Finance, DHFL, India Bulls housing and PNB Housing Finance with 38% the largest share garnered by HDFC (ICRA reports).The success of HDFC has actually motivated and changed perceptions' of many new companies to venture into the housing finance business, making it a very competitive and challenging field.

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* Research Scholar, Osmania University, Assistant Professor, St. Mary's College, Yousufguda, Hyderabad, India.
** Professor of Commerce, Osmania University, Hyderabad, India.

Review of Literature

Brigham and Houston, (2001) the modified model was a powerful tool to illustrate the interconnectedness of a firm's income statement and its balance sheet and to develop straight-forward strategies for improving the firm's ROE.

Hawawini and Viallet (1999) offered yet another modification to the DuPont model. This modification resulted in five different ratios that combine to form ROE. In their modification they acknowledge that the financial statements firms prepare for their annual reports (which are of most importance to creditors and tax collectors) are not always useful to managers making operating and financial decisions order to more effectively evaluate operational managers.

Nissim & Penman (2001) suggest using a modified version of the traditional DuPont model in order to eliminate the effects of financial leverage and other factors not under the control of those managers. Using operating income to sales and asset turnover based on operating assets limits the performance measure of management to those factors over which management has the most control. The modified DuPont model has become widely recognized in the financial analysis literature .For example, Pratt & Hirst (2008), Palepu & Healy (2008), and Soliman (2008). In addition, Soliman (2004) found that industry-specific DuPont multiplicative components provide more useful valuation than do economy-wide components, suggesting that industry-specific ratios have increased validity.

As with Little, et al (2009), the modified DuPont model of financial ratio analysis is used to identify the drivers of financial success under alternative business strategies. Firms in the retail industry are categorized according to their high/low relative net operating income to sales and operating asset turnover ratios. Firms with high relative net operating income to sales and low relative operating asset turnover are assumed to be pursuing a differentiation strategy and those with high relative operating asset turnover and low relative net operating income to sales are assumed to be pursuing a cost leadership strategy.

Housing Development Finance Corporation-HDFC

Housing Development Finance Corporation (HDFC) was set up as an Indian NBFC, in October 1977 by Mr. Hasmukhbhai Parekh at the age of 60. Under the chairmanship of Deepak Parekh who took over as the chairman in 1993, HDFC grew in stature and in strength. HDFC was promoted with an initial share capital of Rs. 100 million, which included subscriptions from the Aga Khan and also the International Finance Corporation (IFC) Washington. Today almost 90% of initial share holding is in the hands of domestic institutions and retail investors while 75% shares are held by foreign investors. HDFC has a wide distribution network of 331 offices catering to over 2,400 towns & cities spread across the country and includes 81 offices of HDFC's wholly owned distribution company (HDFC Sales Private Limited).It has also 7 international offices being at Qatar, Kuwait, Saudi Arabia, U.A.E, Dubai, London and Singapore to provide housing loans and property advisory services to Non-Resident Indians (NRIs) and Persons of Indian Origin (PIOs).

HDFC's key associates and subsidiary companies have strong synergies with HDFC and include,

- HDFC Bank- HDFC holds 23.8%
- HDFC Standard Life Insurance Company - HDFC holds 80.09%
- HDFC Asset Management Company - HDFC holds 50.10%
- HDFC Bank - HDFC holds 21.85% and others

DuPont Model

DuPont analysis or DuPont Model, or DuPont equation was created by F. Donaldson Brown, when he was assigned to clean up the finances in General Motors and has ever since been an important model for financial analysis. According to *CFO Magazine*, a finance executive at E.I. du Pont de Nemours and Co., of Wilmington, Delaware, created the DuPont system of financial analysis in 1919. The name comes from the DuPont Corporation that started using this formula in the 1920's. The elegance of ROA being affected by profitability measure and an efficiency measure led to the DuPont method becoming a widely-used tool of financial analysis. In the 1970's, emphasis in financial analysis shifted from ROA to return on equity (ROE), and the DuPont model was modified to include the ratio of total assets to equity. Regarding this fact the researcher has taken the challenge to use this model for HDFC which is having the largest market share in Housing Finance companies in India.

Objectives of the Study

The present study is based upon the micro approach to analyze performance of HFDC. Specifically the objectives of the study are:

- To analyze the financial performance of HDFC in India.
- To determine the ROE and also to study the correlation of various performance indicators which are the determinants of HDFC

Scope of the Study

The study of the financial performance of HDFC has been restricted for a period of 10 years from 2008-2009 to 2017-2018. The data used for the analysis is compiled from the secondary data collected and collated from the annual reports of HDFC and also information from NHB, and data base of Centre for Monitoring of Indian Economy.

Research Methodology

Ratio analysis is a technique used for evaluating the financial performance of an organization. This study is designed for performance appraisal of HDFC with the help of ratio analysis .There are number of ratios for measuring the performance of HFC but in the present study the most popular ratios have been used. The researcher has computed with the help of all secondary data NP Margin, Assets Turnover, Equity Multiplier and Return on Equity. These computed ratios were further analyzed by computing averages (Mean) compound annual growth (CAGR) and coefficient of Variation (CV) and correlation.

Return on Equity (ROE)

One of the most important profitability metrics for the performance evaluation of HFC's is return on equity (ROE). Return on equity reveals how much profit a company earned in comparison to the total amount of shareholder equity found on the balance sheet. (ROE) is one of the most important widely accepted performance measures of a firm's profitability and potential growth.. So the study from here is on analyzing ROE initially and then deconstructing ROE by analyzing each component of the model.

Return on Equity = (Net Profit Margin) x (Total Asset Turnover) x (Equity Multiplier)

$$\text{ROE} = \frac{\text{Net Income After Tax/ PAT}}{\text{Total Income}} \times \frac{\text{Total Income}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Share Holders Equity}}$$

OR

$$= \text{ROA (Net Profit/ Total Assets)} \times \text{Equity Multiplier}$$

OR

$$= \frac{\text{PAT}}{\text{Share Holders Equity}}$$

- **Net Profit Margin (NPM)**

"Net Profit margin is a measure of overall profitability and measures the business's profitability on revenue. Net Profit margin is the return generated by the company's assets and represents the difference between total revenues and total expenditure."

Formula: Net profit margin is a ratio of profitability calculated as after-tax net income and is displayed as a percentage.

$$\textit{Net Profit Margin} = \frac{\textit{Net Profit}}{\textit{Total Income}} \quad \textit{or} \quad \frac{\textit{Profit After Tax}}{\textit{Total Income}}$$

- **Assets Turnover Ratio**

The second component in DUPONT analysis is Net profit margin ratio which is basically an indication of how effective a company is at cost control. This ratio is a measure of how effectively a company converts its assets into sales and thus indicates a company's efficiency in using its assets effectively. In short the asset utilization ratio calculates the total revenue earned for every rupee of assets a company owns.

Formula: The formula for calculating assets turnover ratio is

Asset Turnover =Total Income ÷ Total Assets

- **Equity Multiplier**

The final component of the three-step DuPont Model is the equity multiplier. The equity multiplier is also referred as leverage ratio, and is a method of evaluating a company's ability on how an organization uses its debt for financing its assets in determining a company's financial leverage.

Formula: The equity multiplier is calculated by dividing total assets by the common stockholder's equity.

The common formula used for calculating equity multiplier is:

$$\textit{Equity Multiplier} = \frac{\textit{Total Assets}}{\textit{Stockholder's Equity}}$$

A higher equity multiplier indicates higher financial leverage, which means the company is relying more on debt to finance its assets.

Results of DUPONT Analysis of HDFC

The following table 1 clearly presents the summary of the results of ROE or Return on share holders' equity or Return on Net worth of HDFC for the period 2008-09 to 2017-18, which has been calculated from the secondary data collected and compiled from all the annual reports of all the financial parameters required for the formulae.

Table 1: Summary of DUPONT Analysis of HDFC for the Period FY 2008-09 to FY 2017-18

Year	NP Margin	Assets Turnover	Equity Multiplier	ROE	Growth Rate %
	(A)	(B)	(C)	D=A*B*C	
	%	(Times)	%	%	
2008-09	20.72	10.84	7.74	17.38	--
2009-10	24.88	9.74	7.67	18.59	6.96
2010-11	28.74	8.82	8.06	20.43	9.90
2011-12	22.59	10.89	6.92	17.02	-16.69
2012-13	21.97	11.29	6.10	15.13	-11.10
2013-14	21.21	11.38	6.00	14.48	-4.30
2014-15	20.55	11.48	5.63	13.28	-8.29
2015-16	22.91	10.72	8.46	20.78	56.48
2016-17	22.45	9.86	8.48	18.77	-9.67
2017-18	34.52	8.77	6.54	19.80	5.49
Mean	**24.05**	**10.37**	**7.16**	**17.56**	**3.19**
CAGR%	5.24%	-2.10%	-1.67%	1.31%	
SD	4.4	1.02	1.06	2.59	
CV	5.47	10.19	6.76	6.79	

Source: Calculated and Compiled from the data collected from all the annual reports

- **Interpretation**

The table 1 exemplifies that from 2008-09, the ROE of HDFC which was 17.38 % in 2008-09 had increased to 19.80 % for the decade with CAGR of 1.31 %. The average for the decade was 17.56% with the lowest of 13.28 % in 2014-15 and highest in the year 2015-16 at 20.78%. It can be observed that ROE was at the lowest, when equity multiplier was at the lowest of 5.63. The average of equity multiplier for the decade was 7.16 and was highest in the year 2016-17 to 8.48. The CAGR of the equity multiplier is found to be as -1.67% which indicates that leverage or depending on borrowings has been decreasing for the decade.

The assets turnover ratio which was 10.84 times initially has gradually increased to 11.48 times the highest in 2014-15 and gradually fell to 8.77 times during the end of the study period. This indicates that when assets turnover was the highest and the leverage was at the lowest, Return on equity of HDFC was the low. On the contrary, when the assets turnover decreased to 10.72 times in 2015-16 and the leverage has increased to 8.46, the ROE remained at the highest of 20.78 %. From 2008 until 2011, the financial performance of HDFC is relatively steady and the return on equity has been increasing from 17.38% in 2008-09 to 20.78 % and started slowly declining when equity multiplier is increasing and assets turnover is decreasing. This is indicating that in case of HDFC, ROE was the best with high financial leverage and low assets turnover.Net profit margin had a relative increase from 20.72 % in FY 2008-09 to 28.74 % in 2010-11, when the interest rates started to increase in the economy, and was the highest value in the decade. For the period the mean being 24.05 %, the CV of net profit margin being 5.47, it shows the precision of the value and leas dispersion from the mean. The asset turnover ratio tends to be generally inversely related to the net profit margin; i.e., the higher the net profit margin, the lower the asset turnover and vice versa. But from 2007-08 due to the impact of financial crisis, and rising interest rates in the economy, the equity multiplier of HDFC starting declining ,assets turnover is increasing and net profit margins started falling. Indicating the company went in for less debt or less financial leverage in the later years due to the rising interest rates in the economy , as a result of which ROE ratio declined from 20.43 % in FY 2010-11 to 13.28 % in 2014-15. However the Net profit margin reflects minimal volatility for the period. On the whole the financial performance of HDFC is steady with ROE relatively stable during the period.

- **Correlation Analysis of the Determinants of ROE OF HDFC**

The following table presents the correlation analysis of ROE with its three determinants. From the table of 2 it can also be observed that while NP margin and equity multiplier are positively correlated with ROE, assets turnover is inversely correlated with ROE .Also the highest correlation is between equity multiplier and ROE at 82% which says that leverage is the most contributing factor for the performance of HDFC.

Table 2: Correlation Analysis of the Determinants of ROE OF HDFC

ROE	NP Margin	Assets Turnover	Equity Multiplier
Correlation	0.61	-0.79	0.82

The following charts display the above analysis in 1, 2, 3 and 4 respectively given below

Chart 1: Exhibit of Trend of Financial Components of DUPONT Analysis of HDFC

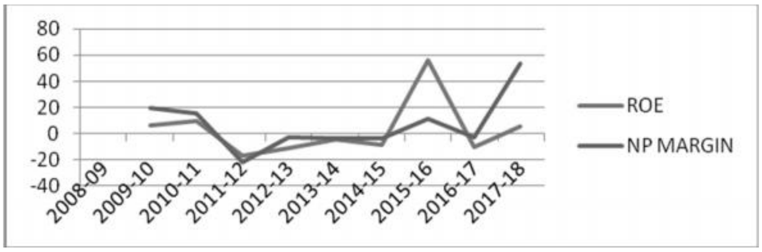


Chart 2: Exhibit of Trend of Financial Components of DUPONT Analysis of HDFC

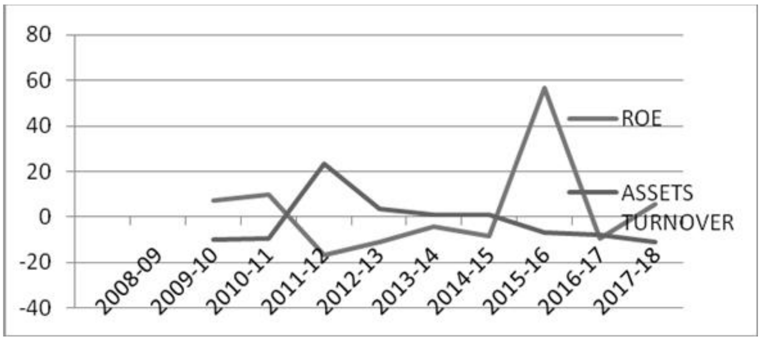


Chart 3: Exhibit of Trend of Financial Components of DUPONT Analysis of HDFC

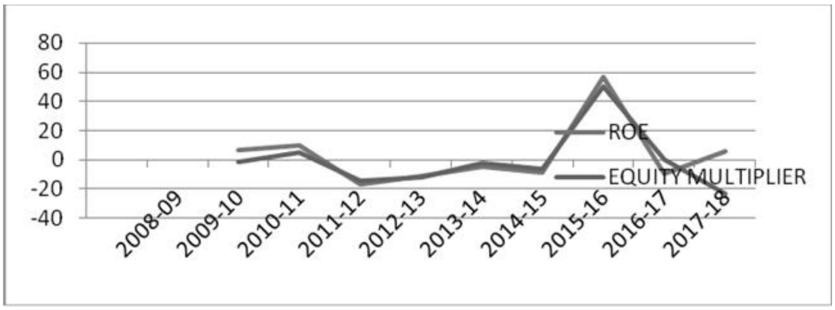
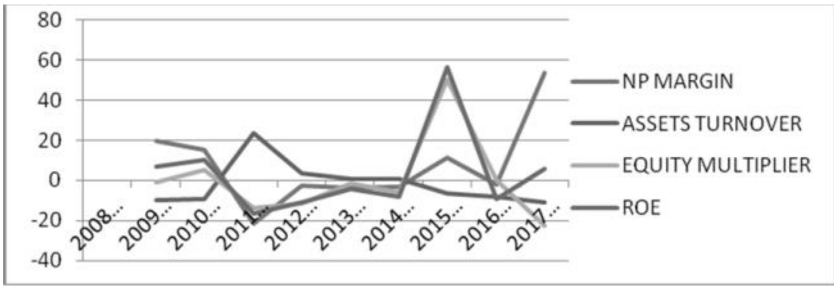


Chart 4: Exhibit of Trend of ROEDUPONT Analysis of HDFC



Conclusion

Housing finance is a high-volume low-margin business. The reason for highest asset turnover in 2014-15 is that the housing sector performed best in the economy with more business of housing loans due to lowest interest rates. It was found that the financial performance of HDFC is relatively steady and reflects minimal volatility in the return on equity. Net profit margin exhibited relative stability for the period 2008-09 to 2017-18. It can be concluded this was possible since HDFC observed cost strategy with higher assets turnover and lower equity multiplier when the interest rates were in the rising trend in the earlier years, differentiation strategy with high equity multiplier and lower assets turnover ratio, when the interest rates were in the declining trend in the later years leading to higher ROE.

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