



A Study on performance analysis of computer hardware companies on the base of profitability

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Abstract:

Information technology is the major industry and plays vital role in the Indian economy. There are three major components of information technology industry, and they are 1 Software industries, 2, Hardware industries and 3. ITES. Though all the parts of the information technology are so important, here the researcher only study on the hardware companies. This study tries to find out the profitability position of the computer hardware companies. For the purpose of the analysis the computer hardware companies are selected on the base of highest profitability and actively traded on the stock market. Using ratio analysis and statistical tool Anova test, this study tries to analyse the profitability position of computer hardware companies.

Keywords: *Information technology, Hardware industries, Profitability*

1. Rationale of the study

Hardware sector is especially important sector of the information technology industry. Hardware sector plays a very crucial role for the major contribution in the economies of the country. Hardware sector plays an important role in employment growth, demand growth and industry growth. Various industries like automobile, medical, electronic and information technology uses hardware components. There are existing hardware companies which contribute in the economy of the country. India becomes the next hardware destination because of the growth of the hardware companies in India. So, the study of the financial position of the top traded hardware companies is necessary. This paper focuses on the analysis of the computer hardware companies on the base of the profitability. Profitability is a class of financial metrics used to assess an entity's ability to generate revenue in relation to revenue, operating costs, balance sheet assets, or equity shareholders over time, using data from a specific location over time. Profit rates can be compared to efficiency measures, which consider how well a company uses its internal assets to generate revenue. Profit rates assess a company's ability to make a profit by selling or operating its assets, equity sheet assets, or equity shareholders. Profit rates reflect how a company makes a profit and value to shareholders. Higher ratio results are generally favorable, but these estimates provide more information compared to similar company results, company history performance, or industry rating. Therefore, here in this study paper ten computer hardware companies are comparing, and analysis make on the base of profitability.

2. Objectives

The research study is undertaken with the following objectives:

- 1.To compare the profitability position of the ten computers hardware companies with the help of profitability ratios of the companies.
- 2.To put forward suggestions in order to make profitability performance better and the best of the profitability Analysis of the companies.

3. Hypotheses

In the present study, there are hypotheses - Null hypothesis (H₀) and Alternative hypothesis (H₁) and they have been tested with the help of F test.

3.1 Between Years

H₀: The variance arose in the proportion of activities of the profitability ratio between the year does not differ significantly.

H₁: The variance arose in the proportion of activities of the profitability ratio between the year differs significantly.

3.2 Between Companies

H₀: The variance arose in the proportion of activities of the profitability ratio between the Companies does not differ significantly.

H₁: The variance arose in the proportion of activities of the profitability ratio between the Companies differs significantly.

4. Data Collection and Period of the Study:

The present research study is mainly based on secondary data, as for the present research study published annual reports and accounts are required. The necessary data and information for the present research study have been obtained from annual reports, relevant books, magazines, newspapers, official papers, websites, and financial statements. The comparative analysis study has been undertaken for a period of ten years from 2010–11 to 2019–20.

5. Gross margin ratio

The Gross profit margin is used by metrics analysts to assess a company's financial viability by calculating the amount of money remaining in a product after deducting the cost of goods sold (COGS). Sometimes called gross margin ratio, the total profit margin is usually expressed as a percentage of sales. The following ratio was calculated below formula.

$$\text{Gross margin ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

Table 1 show the Gross margin ratio of Selected Computer hardware Companies During the 2010-11 to 2019-20

Table 1: The Gross margin ratio of Selected Computer hardware Companies

Year	Cerebra Integrated Technologies Ltd	Compu age Infocom Ltd	D-Link India Ltd	HCL Infosystems Ltd	MRO-TEK Realty Ltd	Redington India Ltd	Spel Semiconductor Ltd	TVS Electronics Ltd
2010-11	2.08	1.07	4.61	0.67	-37.53	2.48	18.10	3.88
2011-12	4.92	1.09	5.24	0.57	-31.68	2.49	12.73	4.01
2012-13	2.61	0.79	5.62	0.74	-20.06	2.89	7.59	0.65
2013-14	0.16	0.91	4.52	1.62	-12.34	2.36	17.59	0.70
2014-15	-0.27	1.04	5.45	0.70	-16.14	2.40	20.42	0.58
Year	Cerebra Integrated Technologies	Compu age Infocom	D-Link India	HCL Infosystems	MRO-TEK Realty	Redington India	Spel Semiconductor	TVS Electronics

	es Ltd	m Ltd	Ltd	Ltd	Ltd	Ltd	Ltd	Ltd
2015-16	1.00	0.96	4.95	2.20	-82.61	2.06	-49.88	2.35
2016-17	2.69	0.88	3.56	2.25	16.81	1.92	-70.79	3.72
2017-18	11.58	0.87	2.69	1.66	22.64	1.41	-4.87	2.54
2018-19	5.86	0.87	5.48	2.83	-33.47	3.50	-22.25	0.49
2019-20	9.01	1.05	7.19	3.13	-8.89	2.18	17.32	2.96
MAX	11.58	1.09	7.19	3.13	22.64	3.50	20.42	4.01
MIN	-0.27	0.79	2.69	0.57	-82.61	1.41	-70.79	0.49
AVER AGE	3.96	0.95	4.93	1.64	-20.33	2.37	-5.41	2.19

(Source: Selected Computer hardware Companies During the 2010-11 to 2019-20)

As above table so that:

- In Cerebra Integrated Technologies Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 11.58% in 2017-18 and lowest at -0.27 % in 2014-15. It was the average at 3.96 % during the study period 2010-11 to 2019-20.
- In Compuage Infocom Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 1.09 % in 2011-12 and lowest at 0.79 % in 2012-13. It was the average at 0.95 % during the study period 2010-11 to 2019-20.
- In D-Link India Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 7.19 % in 2019-20 and lowest at 2.69 % in 2017-18. It was the average at 4.93 % during the study period 2010-11 to 2019-20.
- In HCL Infosystems Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 3.13 % in 2019-20 and lowest at 0.57 % in 2011-12. It was the average at 1.64 % during the study period 2010-11 to 2019-20.
- In MRO-TEK Realty Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 22.64 % in 2017-18 and lowest at -82.61 % in 2015-16. It was the average at -20.33 % during the study period 2010-11 to 2019-20.
- In Redington India Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 3.50 % in 2018-19 and lowest at 1.41 % in 2017-18. It was the average at 2.37 % during the study period 2010-11 to 2019-20.
- In Spel Semiconductor Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 20.42 % in 2014-15 and lowest at -70.79 % in 2016-17. It was the average at -5.41 % during the study period 2010-11 to 2019-20.
- In TVS Electronics Ltd, the Gross margin ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 4.01 % in 2011-12 and lowest at 0.49 % in 2018-19. It was the average at 2.19 % during the study period 2010-11 to 2019-20.

6. Testing Hypothesis

6.1 Between Years

H₀: The variance that arose in the proportion of activities of the Gross margin ratio between the years does not differ significantly.

H₁: The variance that arose in the proportion of activities of the Gross margin ratio between the years differs significantly.

6.2 Between Companies

H₀: The variance that arose in the proportion of activities of the Gross margin ratio between the Companies does not differ significantly.

H₁: The variance that arose in the proportion of activities of the Gross margin ratio between the Companies differs significantly.

Source of Variation	SS	df	MS	F	P-value	F crit
Years	2397.51	9.00	266.39	1.12	0.36	2.03
Companies	4846.71	7.00	692.39	2.91	0.01	2.16
Error	14996.31	63.00	238.04			
Total	22240.53	79.00				

6.2.1 Between Years

Calculation Value (1.12) < Table Value (2.03)

The difference between the year the calculation value was lower than the table value. So H₀ accepted. The variance that arose in the proportion of activities of the Gross margin ratio between the years differs significantly

6.2.2 Between Companies

Calculation Value (2.91) > Table Value (2.16)

The difference between the companies the calculation value was higher than the table value. So H₁ accepted. The variance that arose in the proportion of activities of the Gross margin ratio between the Companies does not differ significantly.

7. Return on assets ratio

Return on assets ratio is often used by analysts to measure performance. This performance measure compares residual sales (income statement) with fixed assets (balance) and measures the company's ability to generate residual sales by investing in its fixed assets, real estate, plant, and equipment (PP&E). The fixed asset balance is used as the amount of accumulated depreciation. The high rate of fixed asset exchange indicates that the company has successfully invested in fixed assets to make sales. The following ratio was calculated below formula.

$$\text{Return on assets ratio} = \frac{\text{Net income}}{\text{Total assets}}$$

Table 2 show the Return on assets ratio of Selected Computer hardware Companies During the 2010-11 to 2019-20.

Table 2: The Return on assets ratio of Selected Computer hardware Companies

Year	Cerebra Integrated Technologies Ltd	Compuage Infocom Ltd	D-Link India Ltd	HCL Infosystems Ltd	MRO-TEK Realty Ltd	Redingt on India Ltd	Spel Semicon ductor Ltd	TVS Electro nics Ltd
2010-11	1.99	5.28	4.65	-1.36	-10.42	10.20	3.53	1.30
2011-12	-24.89	11.76	62.33	0.00	-7.10	10.13	18.73	38.44
2012-13	-19.96	13.44	65.33	0.00	-12.71	11.58	16.58	54.68
2013-14	-19.97	16.24	65.64	0.00	-17.04	10.52	17.40	49.86
2014-15	-12.27	19.30	62.80	0.00	-21.67	9.31	17.37	31.54
2015-16	-11.47	16.94	64.73	0.00	-27.20	8.95	0.00	7.75
2016-17	-9.44	19.67	63.99	0.00	-20.53	7.38	37.54	2.12
2017-18	-0.95	19.00	69.97	0.00	-14.84	6.10	34.14	-0.34
2018-19	-0.46	18.44	73.14	0.00	-14.30	16.15	28.97	-0.70
2019-20	2.32	21.85	74.22	0.00	-15.05	12.38	28.68	6.43
MAX	2.32	21.85	74.22	0.00	-7.10	16.15	37.54	54.68
MIN	-24.89	5.28	4.65	-1.36	-27.20	6.10	0.00	-0.70
AVERA GE	-9.51	16.19	60.68	-0.14	-16.09	10.27	20.29	19.11

(Source: Selected Computer hardware Companies During the 2010-11 to 2019-20)

As above table so that:

- In Cerebra Integrated Technologies Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 2.32 % in 2019-20 and lowest at -24.89 % in 2011-12. It was the average at -9.51 % during the study period 2010-11 to 2019-20.
- In Compuage Infocom Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 21.85 % in 2019-20 and lowest at 5.28 % in 2010-11. It was the average at 16.19 % during the study period 2010-11 to 2019-20.
- In D-Link India Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 74.22 % in 2019-20 and lowest at 4.65 % in 2010-11. It was the average at 60.68 % during the study period 2010-11 to 2019-20.
- In HCL Infosystems Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 0.00 % in 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 and lowest at -1.36 % in 2019-20. It was the average at -0.14 % during the study period 2010-11 to 2019-20.
- In MRO-TEK Realty Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at -7.10 % in 2011-12 and lowest at -27.20 % in 2015-16. It was the average at -16.09 % during the study period 2010-11 to 2019-20.
- In Redington India Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 16.15 % in 2018-19 and lowest at 6.10 % in 2017-18. It was the average at 10.27 % during the study period 2010-11 to 2019-20.

- In Spel Semiconductor Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 37.54 % in 2016-17 and lowest at 0.00 % in 2015-16. It was the average at 20.29 % during the study period 2010-11 to 2019-20.
- In TVS Electronics Ltd, the Return on assets ratio indicated a mixed trend during the study period 2010-11 to 2019-20. It was highest at 54.68 % in 2012-13 and lowest at -0.70 % in 2018-19. It was the average at 19.11 % during the study period 2010-11 to 2019-20.

7. Testing Hypothesis

7.1 Between Years

H₀: The variance that arose in the proportion of activities of the Return on assets ratio between the years does not differ significantly.

H₁: The variance that arose in the proportion of activities of the Return on assets ratio between the years differs significantly.

7.2 Between Companies

H₀: The variance that arose in the proportion of activities of the Return on assets ratio between the Companies does not differ significantly.

H₁: The variance that arose in the proportion of activities of the Return on assets ratio between the Companies differs significantly.

Source of Variation	SS	df	MS	F	P-value	F crit
Years	1483.31	9.00	164.81	1.10	0.37	2.03
Companies	39055.14	7.00	5579.31	37.35	0.00	2.16
Error	9411.76	63.00	149.39			
Total	49950.21	79.00				

7.3 Between Years

Calculation Value (1.10) < Table Value (2.03)

The difference between the year the calculation value was lower than the table value. So H₀ accepted. The variance that arose in the proportion of activities of the Return on assets ratio between the year does not differ significantly.

7.4 Between Companies

Calculation Value (37.35) > Table Value (2.16)

The difference between the companies the calculation value was higher than the table value. So H₁ accepted. The variance that arose in the proportion of activities of the Return on assets ratio between the Companies differs significantly.

8. Conclusion

The researcher found that the gross margin ratio indicated a mix trend in all hardware companies during the study period 2010-11 to 2019-20. The gross margin ratio of cerebra integrated technologies limited was higher and good and of MRO-Tek realty limited was poor. The difference between the year the calculation was lower than the table value, so H₀ accepted. The variance that arose in the proportion of activities of the Gross margin ratio between the years does not differ significantly. The difference between the companies the calculation was higher than the table value, so H₁ accepted. The variance that arose in the proportion of activities of the Gross margin ratio between the Companies differs significantly. The return on asset ratio of D-link India limited was in very good position while

of MRO-Tek realty limited was not satisfactory. The researcher suggested to MRO-Tek realty limited to take proper steps to improve its profitability.

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