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A Study on Financial Performance of Selected Leading Aerospace and Defenses Companies in India

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ABSTRACT

The aerospace and defence (A&D) sector is essential to a country's strategic autonomy, technical growth, and national security. Driven by government programs aiming at self-reliance, modernisation of the armed forces, and growing military requirements, the aerospace and defence industry has become an important part of industrial growth in India. India needs a strong and cutting-edge indigenous defence manufacturing ecosystem since it has one of the biggest armed forces in the world. In the past, India's defence and aerospace needs were mostly met by imports. However, this reliance made the nation vulnerable to supply-chain instability, foreign exchange outflows, and strategic weaknesses. To boost domestic manufacturing capabilities and promote private sector involvement, the Indian government implemented policy reforms including Make in India, Atmanirbhar Bharat, and the Defence Production and Export Promotion Policy. Defence Public Sector Undertakings recently corporatised ordnance manufacturers, private sector businesses, and up-and-coming start-ups make up the Indian. Missile systems, military electronics, and aircraft manufacture are all dominated by major public sector companies including Hindustan Aeronautics Limited, Bharat Electronics Limited, and Bharat Dynamics Limited. Concurrently, private firms like as Larsen & Toubro, Tata Group, and Adani military and Aerospace have achieved substantial advancements in modern military technology, unmanned aerial vehicles, naval systems, and aerospace structures. With a growing focus on R&D, the indigenisation of essential components, and cooperation with international original equipment manufacturers, the industry has experienced significant technical advancement. India's capabilities in cutting-edge fields like artificial intelligence, space systems, cyber security, and autonomous platforms have also been reinforced by the expansion of military start-ups and innovation hubs. All things considered, India's aerospace and military sector is going through a structural change from an import-dependent framework to one that is independent and focused on exports. In addition to improving national security, this change helps India become a competitive player in the global military industry and promotes economic growth and job creation.

Keywords: *financial performance, Basic EPS ratio, Net Profit Margin ratio, Return on Capital Employed, Return on Assets, Dividend Payout Ratio*

Founded in 1940, Hindustan Aeronautics Limited is the leading public sector aerospace and military company in India. The Indian government's Ministry of Defence oversees its operations. For the Indian Armed Forces, HAL principally designs, develops,

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manufactures, overhauls, and maintains aircraft, helicopters, aero-engines, and avionics equipment. The development of India's domestic aerospace capability is greatly aided by HAL. The Light Combat Aircraft (Tejas), Sukhoi-30 MKI, Advanced Light Helicopter (Dhruv), Light Combat Helicopter (Prachand), and HTT-40 basic trainer aircraft are some of the company's major projects. HAL serves foreign markets and civil aviation in addition to defence manufacture. HAL makes a substantial contribution to India's objective of aerospace manufacturing self-reliance through ongoing research and development.

About Bharat Electronics Limited (BEL): One of the Ministry of Défense's top defence electronics public sector companies is Bharat Electronics Limited (BEL), which was founded in 1954. BEL specialises in the creation and production of cutting-edge electronic systems and products for use in commercial, military, and aerospace applications. Radar systems, communication devices, electronic warfare systems, weapon control systems, surveillance systems, and naval electronics are among the products offered by the firm. BEL plays a crucial role in national security by providing essential electronic systems to the Indian Army, Navy, and Air Force. BEL has recently branched out into cutting-edge fields including homeland security solutions, artificial intelligence, cyber security, and space electronics. India's defence modernisation and export goals are supported by BEL's emphasis on innovation and indigenisation.

About Mahindra & Mahindra (Defence & Aerospace): Through its Mahindra Defence Systems business, Mahindra & Mahindra is a major private sector participant in India's aerospace and defence industries. The firm manufactures aeronautical structures, naval systems, armoured vehicles, and military transport solutions. Under the Make in India campaign, Mahindra has collaborated with international military producers to promote domestic manufacturing. India's self-reliance and modernisation of military capabilities are greatly aided by its emphasis on innovation, mobility solutions, and defence manufacturing.

About Data Patterns (India) Limited: One of the top domestic defence and aerospace electronics firms, Data Patterns (India) Limited specialises in the design and development of electronic systems. Radar subsystems, avionics, electronic warfare systems, satellite payloads, and communication equipment are among the solutions offered by the firm. By providing mission-critical electrical components to defence and space organisations, Data Patterns plays a significant role in high-tech defence programs. India's superior defence and space programs are supported by its considerable emphasis on research and development.

About Paras Defence and Space Technologies Limited: Paras Defence and Space Technologies Limited is a private defence firm based in India that specialises in heavy engineering solutions, optics, opto-electronics, and defence electronics. The firm provides space optics, missile components, surveillance equipment, and electro-optical systems to space and defence organisations. Recognised for its specialised technological skills, Paras Defence enhances domestic manufacturing of high-precision equipment to support key defence initiatives.

FINANCIAL ANALYSIS:

Financial analysis is used to identify projects or companies to invest in, set financial policies, evaluate economic trends, and develop long-term corporate objectives. To do this, financial data and numbers are combined. A financial analyst will thoroughly review a company's cash flow statement, balance sheet, and income statement. Financial analysis is useful in both

business and investment finance environments. One of the most common ways to analyse financial data is to compute ratios from the data in the financial statements to compare to those of other companies or to the company's own prior performance. The main areas of financial ratio analysis include profitability, efficiency, liquidity, and solvency.

REVIEW OF LITERATURE:

Horzela, I., Nowakowska-Krystman, A., and Antczak, J. (2021). This study establishes a connection between financial liquidity metrics and competitiveness, which is crucial for comprehending the short-term financial well-being and strategic success of defence companies.

Accounting and Public Policy Journal, 1999. This classic research, which is pertinent to comparative literature reviews, uses data envelopment analysis and conventional ratios to assess financial performance across military categories.

CRISIL Ratings (2024). ANI By providing industry-wide estimates of revenue growth, margins, and expenditure patterns—helpful to place business financial performance in a sector context—this publication enhances scholarly literature.

CRISIL (2024). This industry research, which highlights macro financial trends and operational margin gains driven by government policies and expanded order books, anticipates robust revenue growth for Indian private defence companies.

Deloitte (2024). An analysis of top aerospace and defence companies' workforces, operational difficulties, and industry strategy.

K. Jain (2022). Aerospace and defence: COVID-19's financial effects on the Rolls-Royce supply chain. investigates how COVID-19's effects on supply chains have affected aerospace companies' finances.

KFinWorld (2025) .Key financial metrics (sales growth, profit margins, and ROE) for HAL are provided in this study, highlighting elements that support the company's impressive success in the Indian military industry.

Shaw, C., and P. Kruglov (2024) This study's methodology, which links R&D intensity to financial results, can help assess financial performance in military and aerospace companies worldwide, despite its concentration on U.S. enterprises.

Kumar, A. (2025). This study conducts a detailed financial statement and ratio analysis (profitability, liquidity, solvency, and efficiency) of Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL), highlighting firm-specific performance within the Indian defence sector.

Cutler, S., Gao, N., and Mohd Yusuf, S. (2019). Despite being technical, this evaluation focusses on manufacturing breakthroughs that are important to competitive military and aerospace companies.

Times of India (2025). This article shows export-driven revenue expansion by placing the development in military exports within the larger financial performance of Indian defence industry. Strong order backlogs and indigenisation initiatives are credited by analysts with driving up sales and improving profit margins for India's military manufacturing industry.

RESEARCH METHODOLOGY: TOOLS & TECHNIQUE

1. Time duration for the study: 2020-2021 to 2024-2025 – 5 years
2. Data collection: based on secondary method of selected company's annual report
3. Hypothesis will be tested at 5% level of significance by F-test (single factor ANOVAs test)
4. Basis of sample –the companies is selected, those are working as leading aerospace and defence companies in India, the analysis will do through above mention ratio analysis and interpretation
5. Objective: to find the profitability in financial performance of selected aerospace and defence companies in India
6. Variable: 1] EPS ratio, 2] Net Profit Margin ratio 3] Return on Capital Employed 4] Return on Assets 5] Dividend Payout Ratio
7. Research gap: time duration, variable and selected companies

Objectives

1. To study EPS ratio of the selected aerospace and defence companies
2. To study Net Profit Margin ratio of the selected aerospace and defence companies
3. To study Return on Capital Employed of the selected aerospace and defence companies
4. To study Return on Assets of the selected aerospace and defence companies
5. To study Dividend Payout Ratio of the selected aerospace and defence companies

Hypothesis

$H0_1$: There is no significant mean difference of EPS ratio between the selected aerospace and defence companies

$H0_2$: There is no significant mean difference of Net Profit Margin ratio between the selected aerospace and defence companies

$H0_3$: There is no significant mean difference of Return on Capital Employed between the selected aerospace and defence companies

$H0_4$: There is no significant mean difference of Return on Assets between the selected aerospace and defence companies

$H0_5$: There is no significant mean difference of Dividend Payout Ratio between the selected aerospace and defence companies

DATA ANALYSIS:

TABLE 1: EPS (Rs.)

	Mar 25	Mar 24	Mar 23	Mar 22	Mar 21	MEAN	MAX	MINI
Hin aero ltd	124.36	113.57	173.79	152.11	96.68	132.102	173.79	96.68
Bharat ele	7.23	5.50	4.11	9.64	8.48	6.992	9.64	4.11
Mahindra &	98.80	89.42	54.70	41.28	2.25	57.29	98.8	2.25
Data paterns	39.62	32.45	23.80	19.48	327.00	88.47	327	19.48
Paras defence	16.42	8.77	9.21	7.73	5.30	9.486	16.42	5.3

Descriptive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Mar 25	5	57.2860	51.74470	23.14093	-6.9635	121.5355	7.23	124.36
Mar 24	5	49.9420	48.94699	21.88976	-10.8337	110.7177	5.50	113.57
Mar 23	5	53.1220	70.27353	31.42728	-34.1341	140.3781	4.11	173.79
Mar 22	5	46.0480	60.76914	27.17678	-29.4068	121.5028	7.73	152.11
Mar 22	5	87.9420	139.38446	62.33462	-85.1267	261.0107	2.25	327.00
Total	25	58.8680	75.87123	15.17425	27.5499	90.1861	2.25	327.00

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5624.213	4	1406.053	.212	.929
Within Groups	132530.420	20	6626.521		
Total	138154.633	24			

The p-value 0.929 > 0.05. Therefore, the null hypothesis is accepted & there is no significant mean difference of EPS ratio between the selected aerospace and defence companies.

TABLE 2: Net Profit Margin (%)

	Mar 25	Mar 24	Mar 23	Mar 22	Mar 21	MEAN	MAX	MINI
Hin aero ltd	26.84	24.99	21.58	20.65	14.20	21.652	26.84	14.2
Bharat ele	22.35	19.93	17.03	15.33	14.68	17.864	22.35	14.68
Mahindra &	10.17	10.85	7.70	8.59	0.59	7.58	10.85	0.59
Data paterns	31.31	34.95	27.34	30.23	24.80	29.726	34.95	24.8
Paras defence	19.49	14.72	16.76	14.94	11.35	15.452	19.49	11.35

Descriptive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Mar 25	5	22.0320	8.00731	3.58098	12.0896	31.9744	10.17	31.31
Mar 24	5	21.0880	9.40864	4.20767	9.4056	32.7704	10.85	34.95
Mar 23	5	18.0820	7.22127	3.22945	9.1156	27.0484	7.70	27.34
Mar 22	5	17.9480	8.08737	3.61678	7.9062	27.9898	8.59	30.23
Mar 22	5	13.1240	8.66251	3.87399	2.3681	23.8799	.59	24.80
Total	25	18.4548	8.22506	1.64501	15.0597	21.8499	.59	34.95

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	242.717	4	60.679	.879	.494
Within Groups	1380.923	20	69.046		
Total	1623.640	24			

p-value 0.494 > 0.05. Therefore, the null hypothesis is accepted and there is significant mean difference of Net Profit Margin ratio between the selected aerospace and defence companies

TABLE 3: Return on Capital Employed (%)

	Mar 25	Mar 24	Mar 23	Mar 22	Mar 21	MEAN	MAX	MINI
Hin aero ltd	17.45	24.55	18.05	15.88	17.17	18.62	24.55	15.88
Bharat ele	34.26	31.11	27.49	22.72	23.93	27.902	34.26	22.72
Mahindra &	23.53	23.55	19.76	13.80	12.35	18.598	23.55	12.35
Data paterns	19.67	18.74	13.18	22.93	34.65	21.834	34.65	13.18
Paras defence	13.84	10.28	12.13	11.03	13.37	12.13	13.84	10.28

Descriptive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Mar 25	5	21.7500	7.82708	3.50038	12.0314	31.4686	13.84	34.26
Mar 24	5	21.6460	7.73396	3.45873	12.0430	31.2490	10.28	31.11
Mar 23	5	18.1220	6.13953	2.74568	10.4988	25.7452	12.13	27.49
Mar 22	5	17.2720	5.35371	2.39425	10.6245	23.9195	11.03	22.93
Mar 22	5	20.2940	9.22122	4.12385	8.8443	31.7437	12.35	34.65
Total	25	19.8168	6.99152	1.39830	16.9308	22.7028	10.28	34.65

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	83.297	4	20.824	.382	.819
Within Groups	1089.857	20	54.493		
Total	1173.153	24			

The ANOVA results show p-value of 0.819 > 0.05. the null hypothesis is accepted & there is no significant mean difference of Return on Capital Employed between the selected aerospace and defence companies

TABLE 4: Return on Assets (%)

	Mar 25	Mar 24	Mar 23	Mar 22	Mar 21	MEAN	MAX	MINI
Hin aero ltd	7.83	9.73	8.65	8.72	6.23	8.232	9.73	6.23
Bharat ele	13.08	10.26	8.57	7.02	7.10	9.206	13.08	7.02
Mahindra &	11.89	12.78	8.64	7.35	0.45	8.222	12.78	0.45
Data paterns	12.06	10.73	8.64	13.29	16.90	12.324	16.9	8.64
Paras defence	7.83	5.63	7.14	5.92	4.17	6.138	7.83	4.17

Descriptive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Mar 25	5	10.5380	2.51360	1.12411	7.4170	13.6590	7.83	13.08
Mar 24	5	9.8260	2.61473	1.16934	6.5794	13.0726	5.63	12.78
Mar 23	5	8.3280	.66488	.29734	7.5024	9.1536	7.14	8.65
Mar 22	5	8.4600	2.87897	1.28751	4.8853	12.0347	5.92	13.29
Mar 22	5	6.9700	6.11391	2.73423	-.6214	14.5614	.45	16.90
Total	25	8.8244	3.39024	.67805	7.4250	10.2238	.45	16.90

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.788	4	9.697	.818	.529
Within Groups	237.062	20	11.853		
Total	275.850	24			

p-value 0.529 > 0.05; so, the null hypothesis is accepted and there is no significant mean difference of Return on Assets between the selected aerospace and defence companies

TABLE 5: Dividend Payout Ratio (%)

	Mar 25	Mar 24	Mar 23	Mar 22	Mar 21	MEAN	MAX	MINI
Hin aero ltd	30.55	25.97	28.77	26.29	31.02	28.52	31.02	25.97
Bharat ele	31.79	36.36	41.33	43.56	49.54	40.516	49.54	31.79
Mahindra &	22.13	18.85	21.92	22.04	108.74	38.736	108.74	18.85
Data paterns	16.40	13.86	14.64	11.81	0.61	11.464	16.4	0.61
Paras defence	0.00	0.00	0.00	0.00	0.00	0	0	0

Descriptive	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Mar 25	5	20.1740	12.91948	5.77777	4.1323	36.2157	.00	31.79
Mar 24	5	19.0080	13.57748	6.07204	2.1493	35.8667	.00	36.36
Mar 23	5	21.3320	15.45499	6.91168	2.1421	40.5219	.00	41.33
Mar 22	5	20.7400	16.30289	7.29088	.4973	40.9827	.00	43.56
Mar 22	5	37.9820	44.79969	20.03503	-17.6442	93.6082	.00	108.74
Total	25	23.8472	23.01727	4.60345	14.3461	33.3483	.00	108.74

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1263.419	4	315.855	.552	.700
Within Groups	11451.659	20	572.583		
Total	12715.077	24			

p-0.700 > 0.05; therefore, the null hypothesis is accepted, there is no significant mean difference of Dividend Payout Ratio between the selected aerospace and defence companies.

FINDING & CONCLUSION:

Variables - ratios	P-value	Decision on H_0	Decision on H_1
EPS ratio	0.929	accepted	Rejected
Net Profit Margin ratio	0.494	accepted	Rejected
Return on Capital Employed	0.819	accepted	Rejected
Return on Equity	0.529	accepted	Rejected
Dividend Payout Ratio	0.700	accepted	Rejected

The results of hypothesis testing for certain financial ratios of aerospace and military firms are compiled in the table. The null hypothesis, which states that there is no statistically significant difference between the companies in terms of EPS ratio, Net Profit Margin, Return on Capital Employed, Return on Equity, and Dividend Payout Ratio during the study period, is accepted in every instance since the p-values for all ratios are greater than 0.05. As a result, the alternative hypothesis (H_1) is rejected, indicating that differences in these financial ratios across the chosen enterprises are not statistically significant.

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Conflict of Interest
The author declared no conflict of interest.

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