ANALYSIS OF OPERATING EFFICIENCY OF TWO AND THREE WHEELER SECTOR OF INDIAN AUTOMOBILE INDUSTRY

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ABSTRACT

The operating efficiency of a corporate enterprise has been measured in terms of production, sales, market share and export performance. The growth of the industrial sector promises to spur employment opportunities, increases per capita income, improve the standard of living and increases GDP and tax revenue of the government. Hence, it is necessary to study the operating efficiency of companies so as to determine the overall success of an industry. In this paper, an attempt has been made to analyze the production, domestic sales, market share and export performance of selected companies under two and three wheeler sectors of Indian Automobile Industry. The results of the study revealed fluctuating trend in all the period. The projections obtained through linear time trend model revealed that majority of the selected companies showed increasing trend of production, sales, market share and export performance in the years to come.

Keywords: Production, Domestic Sales, Market Share, Export, Two and Three Wheeler sector and Automobile Industry.

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Introduction

Corporate must have a multiplicity of objectives instead of a single objective, profit, which has been traditionally over emphasized. India's development strategy places a heavy emphasis on the creation of a well-diversified industrial base to realize the dream of industry-led development. Liberalization has been a key ingredient of recent economic policies in India and elsewhere, based upon the notion that removing restrictions on domestic economic activity as well as on the trade relations with other countries has a beneficial impact on the economy. These changes have provided great opportunities for the Indian corporate sector. The reforms are helpful by increasing access to foreign technology and making imports of capital and intermediate goods cheaper. Improvements in infrastructure and more flexible labour laws will facilitate the future growth of India's manufacturing sector. The ever increasing importance and role of the corporate sector in the economic growth of a country, particularly, in a developing country like India, have attracted several academicians, professional institutions, researchers and administrators to conduct diversified studies in this area. It has also been the primary concern of business practitioners (managers and entrepreneurs) in all types of organizations since corporate performance has implications for organization's health and ultimately its survival. High performance reflects the management's effectiveness and efficiency in making use of the company's resources and this in turn contributes to the country's economy at large. The growth of the industrial sector promises to spur employment opportunities, increase per capita income, improve the standard of living, build infrastructure, and create a balanced economy which ultimately increases Gross Domestic Product and tax revenue of the government. Hence, there is a need to study the operating l efficiency of companies so as to determine the overall success of an industry.

Statement of the Problem

Production is the main function of any manufacturing industry. Customer satisfaction is made possible only through effective production. Production function is considered as the effective tool to operate in an economical and efficient manner. The study of the production performance is important to know the operating level of the business and financial efficiency of the business enterprise. Survival of the business in the present competitive world depends on the quality of production and the technological development in the business. Therefore, the present

study attempts to study the production trend of the two and three wheelers sector of Indian automobile industry after liberalization. Sales is another important component for the development of the business. Sales can be enhanced only by following good sales policy. Due to the pricing policy of the government, the companies have to face some fluctuations in the sales. These fluctuations may lead to increase or decrease of financial risk of the companies. In order to study the sales trends (both domestic and foreign) of the two and three wheelers sector of Indian automobile industry, the present study is carried out. Further, an attempt has also been made to analyze the domestic market share of each of the selected companies.

Objectives of the Study

The primary purpose of the present study is to obtain a true insight into the operating performance of the selected companies of two and three wheelers sector of Indian automobile industry with respect to its production, domestic sales, market share and export performance.

Hypothesis

In this study the following hypothesis have been framed and tested:

(i) There is no significant difference between the actual production and trend values of production among different years in the selected companies of two and three wheelers sector of Indian automobile industry.

(ii) There is no significant difference between the actual sales and trend values of sales among different years in the selected companies of two and three wheelers sector of Indian automobile industry.

(iii) There is no significant difference between the actual market share and trend values of market share among different years in the selected companies of two and three wheelers sector of Indian automobile industry.

(iv) There is no significant difference between the actual exports and trend values of exports among different years in the selected companies of two and three wheelers sector of Indian automobile industry.

Selection of Sample

Keeping in view the scope of the study, it is decided to include all companies under two and three wheelers sector of Indian automobile industry working before or from the year 1996-97. But owing to several constraints such as non-availability of financial statements or non-

working of a company in a particular year etc., it is compelled to restrict the number of sample companies to nine.. There are thirteen companies operating in the two and three wheelers sector of Indian automobile industry. Out of thirteen companies of the selected sector, thirteen years data is available for nine companies only. Therefore, all the nine companies are included in the sample. The list of companies selected in the present study along with their year of incorporation, ownership and its market share is presented in Table 1. It is evident from Table 1 that the sample companies represent 99.81 percentage of market share in two and three wheelers sector. Thus, the findings based on the occurrence of such representative sample may be presumed to be true representative of two and three wheelers sector of automobile industry in the country.

Period of the Study

The analysis of operating efficiency of two and three wheelers sector of Indian automobile industry is made for a period of thirteen years from the accounting year 1996-97 to 2008-09. This thirteen years period is chosen in order to have a fairly long, cyclically well balanced, for which reasonably homogenous, reliable and up to- date financial data would be available.

Sources of Data

The study is mainly based on secondary data. The major source of data analyzed and interpreted in this study related to all those companies selected is collected from "PROWESS" database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy (CMIE). The database provides financial statements, ratio analysis, funds flow, cash flow, product profiles, returns and risks on the stock market etc. Besides prowess database, relevant secondary data have also been collected from BSE Stock Exchange Official Directory, CMIE Publications, Annual Survey of Industry, Business Newspapers, Reports on Currency and Finance, Libraries of various Research Institutions, through Internet etc.

Tools of the study

An attempt has also been made to estimate time trend co-efficient for production, domestic sales, market share and export performance of two and three wheelers sector companies in India during the study period by fitting a linear regression model. The linear model fitted is as follows:

$$P = \alpha + \beta t + e$$

Where,

P – measures the firm's rate of production

t – is the time factor

α and β – are intercept and co-efficient respectively

e – stands for error term

Production Performance

The production is a process by which inputs or factors of production (land, labour, capital etc.) are converted or transformed into an output. Production process helps a business unit to be alive. However, production process does not necessarily involve physical conversion of raw materials into tangible goods, an input may also be intangible and an output may be intangible too. Moreover, transporting a commodity from one place to another where it can be used in production of a commodity can also be called production. A coal seller does virtually nothing more than transporting coal from coal mines to the market place. Similarly, a fisherman only catches and transports fish to the market place. Their activities too are productive activities. Whatsoever, production may be considered as the back bone of manufacturing business enterprises. The production data of a company gives an idea about the company's performance in the year under review as compared to the past or how the company has performed as compared to the other companies of the same industry. Production performance of the industry as a whole can be compared with different years; also the comparison can be done between the competitive industries. For appraising the production performance of individual companies, production in different years can be compared and inter-company comparison between companies under study may be more meaningful for this purpose. The analysis of capacity utilization can also significantly prove the production performance of a company or of the industry as a whole. All these techniques have been adopted to appraise the production performance of the selected two and three wheelers sector companies of Indian automobile industry in the present chapter.

The company - wise dispersion in production over the study period of 13 years is done through the estimation of mean, co-efficient of variation and compound annual growth rate. Further, estimates of time trend co-efficient for production has been computed and presented in Table 2 to Table 4. The annual production of selected two and three wheelers sector companies for the period of the study has been shown in Table 2. Hero Honda Motors Ltd was leading with the highest mean value of production of Rs. 4555.89 crores and was followed by TVS Motor Company Ltd with Rs.2266.68 crores as their sales turnover was increasing throughout the study period. The least mean value of production was Rs. 58.89 crores found under Bajaj Auto Ltd. The CV value indicates that the production was highly fluctuating during the study period. Hero Honda Motors Ltd registered the highest compound annual growth rate of 22.60 per cent whereas, LML Ltd, Maharashtra Scooters Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd registered negative compound annual growth rate of production during the study period.

The results of estimates of trend co-efficient for production of two and three wheelers sector companies are presented in Table 3 which shows that the yearly increase in production was the highest in Hero Honda Motors Ltd as its β value was the highest. The negative β values in the case of LML Ltd, Maharashtra Scooters Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd implies that their production declined over the study period. Further, it is clear from the table that the calculated value of chi-square of Bajaj Auto Ltd and Scooters India Ltd were less than table value of chi-square hence; the null hypothesis was accepted and it is concluded that there is no significant difference between the actual and trend values of production. In the case of the remaining companies selected for the study the calculated value of chi-square were greater than the table value and thus the null hypothesis was rejected and it is concluded that there is significant difference between the actual and trend values of production. The projections obtained for production of two and three wheelers sector of Indian automobile industry are depicted in Table 7. The table clearly explains that Bajaj Auto Ltd, TVS Motor Company Ltd, Kinetic Motor Company Ltd, Hero Honda Motor Ltd and Scooters India Ltd showed an increasing trend of production, whereas LML Ltd, Maharashtra Scooters Ltd, Kinetic Engineering Ltd, and Majestic Auto Ltd registered decreasing trend of production.

Domestic Sales Performance

Sales are the main source of fund to any business enterprises, to which finance is the life blood. Sales gear all other activities of business concerns. Moreover, good sales volume of a

business indicates efficient management, efficient utilization of assets, higher profitability etc. Sales and profitability graph move in the same direction, other things being constant and vice versa. Table 5 to Table 7 indicate the trend analysis of domestic sales of two and three wheelers sector companies which helps to understand the growth of the companies under review. The sales performance of an enterprise can be ascertained by comparing the sales with different years and by comparing between the competitive companies. The analysis of market share can also significantly prove the sales performance of a company.

The annual domestic sales of two and three wheelers sector companies for the study period has been shown in Table 5. The table clearly explains that the domestic sales of Hero Honda Motors Ltd was leading with the mean value of Rs. 6129.07 crores, followed by TVS Motor Company Ltd with Rs. 2511.15 crores and the least mean value was Rs. 58.66 crores of Bajaj Auto Ltd. The analysis of CV value indicates that the sales of two and three wheelers sector were highly fluctuating during the study period. The compound annual growth rate was positive in Bajaj Auto Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd and Scooters India Ltd whereas negative compound annual growth rate was found in LML Ltd, Maharashtra Scooters Ltd, Kinetic Motor Company Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd during the study period. The estimates of time trend co-efficient of domestic sales of two and three wheelers sector companies are shown in Table 6. The positive β values of Bajaj Auto Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd and Scooters India Ltd imply an increasing sales trend, on the other hand negative β values of LML Ltd, Maharashtra Scooters Ltd, Kinetic Motor Company Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd showed declining trend of domestic sales during the study period. The calculated value of chi-square was less than the table value of chi-square only in the case of Bajaj Auto Ltd. Thus the null hypothesis was accepted and it is concluded that there is no significant difference between actual sales and trend values of sales. In the case of all the remaining companies the calculated value of chi-square was greater than the table value of chi-square hence, the null hypothesis was rejected and it is concluded that there is significant difference between the actual sales and trend value of sales.

The projections obtained for sales of two and three wheelers sector by linear growth models are spelled out in Table 7. The table depicts that Bajaj Auto Ltd, TVS Motors Company Ltd, Hero Honda Motors Ltd and Scooters India Ltd are moving towards an increasing trend. On

the other hand LML Ltd, Maharashtra Scooters Ltd, Kinetic Motor Company Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd registered a negative trend of domestic sales.

Market Share Performance

Market share commonly means how much a company occupies its market or the contribution or participation of a company in its market. Sales performance and market share are directly proportionate to each other. The target share of the market and the expected volume of sales are the most important consideration in pricing the products. A good market share is a better indication of the progress of the company. No doubt market share can be increased besides attracting new users.

The market share of two and three wheelers sector companies of Indian automobile industry from the year 1996-97 to 2008-09 are presented in Table 8. The dispersion of market share over the study period is achieved through the estimation of mean, co-efficient of variation and compound annual growth rate. The table shows that the Majestic Auto Ltd is ahead with its leading mean value of 5.34 per cent and it is followed by Kinetic Motor Company Ltd (5.27 per cent), Maharashtra Scooters Ltd and Kinetic Engineering Ltd (4.55 per cent), LML Ltd (2.48 per cent), Scooters India Ltd (2.61 per cent), Bajaj Auto Ltd (0.35 per cent), Hero Honda Motors Ltd (0.07 per cent) and TVS Motor Company Ltd (0.03 per cent). The mean rates of market share vary greatly in all the selected companies under study. It is also observed from the table that the compound annual growth rate of market share was positive only in the case of LML Ltd, TVS Motor Company Ltd, Hero Honda Motor Ltd and Majestic Auto Ltd. The remaining companies registered a negative compound annual growth rate during the study period From Table 9 it can be seen that the calculated value of chi-square of all the selected two and three wheelers sector companies are less than the table value of chi-square at five per cent level of significance. Therefore, the null hypothesis was accepted and the results were as per expectations while the alternative hypothesis was rejected. It can be concluded that the linear model of time trend of market share has proved to be 'good fit' in the selected two and three wheelers sector. This is revealed from the values of R^2 which varied from 0.01 for Scooters India Ltd to 0.65 for LML Ltd. Thus it is concluded that the present market share of two and three wheelers sector companies of Indian automobile industry in India is at a satisfactory level. Yet there is further scope to increase the level of growth rate regularly.

The projections obtained for market share of selected two and three wheelers sector companies by linear growth model have been presented in Table 10. It is found from the table that except Maharashtra Scooters Ltd, Kinetic Motor Company Ltd and Kinetic Engineering Ltd, all the other six companies viz. Bajaj Auto Ltd, LML Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd, Majestic Auto Ltd and Scooters India Ltd have grown marginally and have fast emerging growing market in the years to come.

Export Performance

Exports enable the country to pay for critical imports-machinery, metals, petroleum, fertilizers and technological inputs and step up the pace of economic development. Exports build up the image of a company along with its profit which helps in the economic development of a nation in many ways. An attempt has also been made to estimate trend co-efficient for exports of two and three wheelers sector in India during the study period by fitting a linear regression model. The export performance of the selected two and three wheelers sector companies over the study period from 1996-97 to 2008-09 are presented in Table 11. The value for Maharashtra Scooters Ltd was nil as it did not engage in exports. It is evident from the table that Bajaj Auto Ltd has scored the highest mean of Rs.875.19 crores followed by Hero Honda Motors Ltd with Rs.129.15 crores, TVS Motor Company Ltd with Rs.118.18 crores. Scooters India Ltd scored the least mean of Rs.1.41 crores as its sales were comparatively high. Bajaj Auto Ltd and TVS Motor Company Ltd suffered high fluctuations in their exports as their co-efficient of variation were 1.08 and 1.29 respectively. The compound annual growth rate of exports of Kinetic Motor Company Ltd, Majestic Auto Ltd and Scooters India Ltd were negative while in the case of the remaining companies it was positive over the study period. The results of estimates of trend co-efficient for exports of selected two and three wheelers sector companies are presented in Table 12. The negative value of β in the case of Kinetic Motor Company Ltd, Majestic Auto Ltd and Scooters India Ltd implies that exports declined over the study period. It is clearly explained in the table that the null hypothesis was accepted and the alternative hypothesis was rejected in the case of Scooters India Ltd as the calculated values of chi-square were less than the table value of chi-square. But the reverse was the case in all the remaining companies i.e., the null hypothesis was rejected while the alternative hypothesis was accepted as the calculated value of chi-square was more than the table value of chi-square.

Table 13 shows the projections for exports of two and three wheelers sector by linear growth models. The table describes that the exports of Bajaj Auto Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd and Scooters India Ltd were found to be increasing and the exports of LML Ltd, Maharashtra Scooters Ltd, Kinetic Motor Company Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd showed a decreasing trend during the years of estimation.

Conclusion

The production of all the selected two and three wheelers sector companies of the Indian automobile industry marked fluctuating trend throughout the study period. The projections obtained for production clearly shows that all the selected companies except LML Ltd, Maharashtra Scooters Ltd, Kinetic Engineering Ltd and Majestic Auto Ltd showed an increasing trend of production. The sales trend of Bajaj Auto Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd, and Scooters India Ltd increased during the study period. The projection of sales of the selected two and three wheelers sector companies in India revealed that Bajaj Auto Ltd and Scooters India Ltd grew marginally whereas Hero Honda Motors Ltd is likely to grow fast in the market in the years to come. The analysis of company wise dispersion in market shares of two and three wheelers sector companies of Indian automobile industry revealed that the mean rates of market share vary greatly in the case of all the selected companies. It is observed that Kinetic Motor Company Ltd had the highest market share during the study period. The chi-square test revealed that there is no significant difference between the actual and trend values of market share of all the selected companies under study. The projections of market share revealed that TVS Motor Company Ltd, Bajaj Auto Ltd, LML Ltd, Majestic Auto Ltd and Scooters India Ltd are likely to grow marginally in the forthcoming years. The mean value of exports of all the selected two and three wheelers sector companies were highly fluctuating. The mean export was the highest in Bajaj Auto Ltd and had a positive annual growth rate. Maharashtra Scooters Ltd did not engage in exports during the study period. The estimates of trend co-efficient for exports revealed that the exports of Bajaj Auto Ltd, LML Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd and Kinetic Engineering Ltd, increased over the study period. The projections of exports revealed that exports of Scooters India Ltd are likely to be decreasing in the near future.

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Table 1

List of sample companies included in the present study

S. No.	Companies	Year of Incor-poration	Ownership	Market Share (%)	Total Market Share
1.	Bajaj Auto Ltd	1945	Bajaj Group	18.80	
2.	LML Ltd	1972	LML Group	11.58	
3.	Maharashtra Scooters Ltd	1975	Bajaj Group	7.80	
4.	TVS Motor Company Ltd	1982	TVS Group	12.93	
5.	Kinetic Motor Company Ltd	1984	Firodia Group	11.75	
6.	Hero Honda Motors Ltd	1984	Hero (Munsals) Group	10.54	
7.	Kinetic Engineering Ltd	1970	Firodia Group	9.72	
8.	Majestic Auto Ltd	1986	Hero Group	9.04	
9.	Scooters India Ltd	1972	Central Govt. Commercial Enterprise	7.65	99.81

Table 2

Annual Production of Selected Two and Three Wheelers Sector Companies

Companies	Range (Rs. in Crores)	Mean (Rs. in Crores)	CV	CAGR
Bajaj Auto Ltd	14.38 – 129.61	58.89	0.78	18.55
LML Ltd	186.03 – 1022.90	602.37	0.44	-6.18
Maharashtra Scooters Ltd	4.70 – 248.41	103.53	0.97	-27.83
TVS Motor Company Ltd	818.65 – 3590.93	2266.68	0.41	12.76
Kinetic Motors Company Ltd	183.11 – 400.98	308.19	0.17	3.02
Hero Honda Motors Ltd	767.10 – 8846.15	4555.89	0.58	22.60
Kinetic Engineering Ltd	142.22 – 317.45	231.06	0.24	-2.50
Majestic Auto Ltd	101.48 – 266.69	171.09	0.27	-5.59
Scooter India Ltd	104.37 – 199.48	139.50	0.24	4.45

Source : Computed from the annual reports of the selected companies

Table 3

Estimates of Trend Co-efficient for Production of Two and Three Wheelers Sector Companies (1996-97 to 2008-09)

Companies	$P = \alpha + \beta t + e$			Calculated value of Chi-square	Hypothesis
	α	β	R^2		
Bajaj Auto Ltd	-14.15	10.43	0.78	3.57	Accepted
LML Ltd	799.48	-28.16	0.17	1208.51	Rejected
Maharashtra Scooters Ltd	272.33	-24.11	0.87	40.70	Rejected
TVS Motor Company Ltd	641.69	232.14	0.94	250.46	Rejected
Kinetic Motor Company Ltd	271.71	5.21	0.14	94.72	Rejected
Hero Honda Motors Ltd	-83.98	662.84	0.97	592.38	Rejected
Kinetic Engineering Ltd	273.70	-6.09	0.19	123.61	Rejected
Majestic Auto Ltd	245.02	-10.56	0.81	24.78	Rejected
Scooters India Ltd	85.79	7.67	0.81	17.75	Accepted

Table value of chi-square (0.05) = 21.0 with df = 12

Source: Computed

Table 4

Projections for Production of Two and Three Wheelers in India (Rs. in Crores)

Companies	2012–13	2013–14	2014–15	2015–16
Bajaj Auto Ltd	163.16	173.59	184.02	194.45
LML Ltd	320.76	292.60	264.44	236.28
Maharashtra Scooters Ltd	-137.54	-161.65	-185.76	-209.87
TVS Motor Company Ltd	4588.07	4820.21	5052.35	5284.49
Kinetic Motor Company Ltd	360.28	365.49	370.70	375.91
Hero Honda Motors Ltd	11184.30	11847.14	12509.98	13172.82
Kinetic Engineering Ltd	170.17	164.08	157.99	151.90
Majestic Auto Ltd	65.50	54.94	44.38	33.82
Scooters India Ltd	216.18	223.85	231.52	239.19

Source: Computed

Table 5

Annual Domestic Sales of Selected Two and Three Wheelers Sector Companies

Companies	Range (Rs. in Crores)	Mean (Rs. in Crores)	CV	CAGR
Bajaj Auto Ltd	12.76 – 129.02	58.66	0.78	20.32
LML Ltd	66.44 – 1000.90	548.98	0.54	-1.35

Maharashtra Scooters Ltd	2.50	–	249.92	104.34	0.95	-31.10
TVS Motor Company Ltd	812.95	–	4472.01	2511.15	0.48	13.39
Kinetic Motor Company Ltd	139.32	–	350.87	254.84	0.25	-4.08
Hero Honda Motors Ltd	765.86	–	12518.83	6129.07	0.73	26.04
Kinetic Engineering Ltd	64.31	–	308.32	208.05	0.35	-8.86
Majestic Auto Ltd	66.66	–	270.60	167.80	0.31	-4.37
Scooter India Ltd	96.42	–	192.45	130.49	0.21	2.51

Source: Computed from the annual reports of the selected companies

Table 6

Estimates of Trend Co-efficient for Sales of Two and Three Wheelers Sector Companies

(1996-97 to 2008-09)

Companies	$P = \alpha + \beta t + e$			Calculated value of Chi-square	Hypothesis
	α	β	R^2		
Bajaj Auto Ltd	-14.55	10.46	0.79	1.93	Accepted
LML Ltd	836.12	-41.02	0.28	1458.46	Rejected
Maharashtra Scooters Ltd	269.97	-23.66	0.85	55.37	Rejected
TVS Motor Company Ltd	437.79	296.19	0.92	405.73	Rejected
Kinetic Motor Company Ltd	335.78	-11.56	0.51	91.76	Rejected
Hero Honda Motors Ltd	685.12	118.51	0.96	1444.15	Rejected
Kinetic Engineering Ltd	292.19	-12.02	0.42	181.74	Rejected
Majestic Auto Ltd	243.26	-10.78	0.64	72.77	Rejected
Scooters India Ltd	94.60	5.13	0.54	28.16	Rejected

Table value of chi-square (0.05) = 21.0 with df = 12

Source: Computed

Table 7

Projections for Sales of Two and Three Wheelers Sector Companies

(Rs. in Crores)

Companies	2012-13	2013-14	2014-15	2015-16
Bajaj Auto Ltd	163.27	173.73	184.19	194.65
LML Ltd	138.78	97.76	56.74	15.72
Maharashtra Scooters Ltd	-132.25	-155.91	-179.57	-203.20
TVS Motor Company Ltd	5472.98	5769.16	6065.34	6361.52
Kinetic Motor Company Ltd	139.26	127.70	116.14	104.58

Hero Honda Motors Ltd	17329.55	18448.06	19566.57	20685.08
Kinetic Engineering Ltd	87.85	75.83	63.81	51.79
Majestic Auto Ltd	60.00	49.22	38.44	27.66
Scooters India Ltd	181.81	186.94	192.07	197.20

Source: Computed

Table 8

Annual Market Share of Selected Two and Three Wheelers Sector Companies

Companies	Range (in percentage)	Mean (in percentage)	CV	CAGR
Bajaj Auto Ltd	0.06 – 1.47	0.35	1.51	-1.11
LML Ltd	0.01 – 9.10	2.48	1.43	66.53
Maharashtra Scooters Ltd	1.80 – 9.66	4.55	0.53	-9.28
TVS Motor Company Ltd	0.02 – 0.05	0.03	0.33	3.44
Kinetic Motor Company Ltd	1.29 – 8.48	5.27	0.54	-13.72
Hero Honda Motors Ltd	0.02 – 0.10	0.07	0.43	14.35
Kinetic Engineering Ltd	1.30 – 7.06	4.55	0.44	-0.80
Majestic Auto Ltd	1.23 – 9.33	5.34	0.47	4.06
Scooter India Ltd	1.06 – 8.88	2.61	0.77	-8.02

Source : Computed from the annual reports of the selected companies

Table 9

Estimates of Trend Co-efficient for Market Share of Two and Three Wheelers Sector Companies (1996-97 to 2008-09)

Companies	$P = \alpha + \beta t + e$			Calculated value of Chi-square	Hypothesis
	α	β	R^2		
Bajaj Auto Ltd	0.05	0.05	0.18	5.34	Accepted
LML Ltd	-2.66	0.73	0.65	11.02	Accepted
Maharashtra Scooters Ltd	6.75	-0.31	0.25	12.51	Accepted
TVS Motor Company Ltd	0.03	0.01	0.01	0.66	Accepted
Kinetic Motor Company Ltd	8.46	-0.46	0.39	18.19	Accepted
Hero Honda Motors Ltd	0.03	0.00	0.62	0.05	Accepted
Kinetic Engineering Ltd	6.57	0.29	0.32	8.75	Accepted
Majestic Auto Ltd	4.08	0.18	0.08	12.62	Accepted
Scooters India Ltd	2.39	0.03	0.01	17.68	Accepted

Table value of chi-square (0.05) = 21.0 with df = 12

Source: Computed

Table 10

Projections for Market Share of Two and Three Wheelers Sector Companies

(in Percentage)

Companies	2012-13	2013-14	2014-15	2015-16
Bajaj Auto Ltd	0.96	1.02	1.08	1.14
LML Ltd	9.75	10.48	11.21	11.94
Maharashtra Scooters Ltd	1.48	1.17	0.86	0.55
TVS Motor Company Ltd	0.20	0.21	0.22	0.23
Kinetic Motor Company Ltd	0.64	0.18	-0.28	-0.74
Hero Honda Motors Ltd	0.11	0.12	0.12	0.13
Kinetic Engineering Ltd	1.64	1.35	1.06	0.77
Majestic Auto Ltd	7.14	7.32	7.50	7.68
Scooters India Ltd	2.90	2.93	2.96	2.99

Source: Computed

Table 11

Annual Exports of Selected Two and Three Wheelers Sector Companies

Companies	Range (Rs. in Crores)	Mean (Rs. in Crores)	CV	CAGR
Bajaj Auto Ltd	139.09 – 2640.40	875.19	1.08	26.18
LML Ltd	10.99 – 55.24	40.70	0.52	14.40
Maharashtra Scooters Ltd	–	-	-	-
TVS Motor Company Ltd	10.72 – 499.03	118.18	1.29	36.97
Kinetic Motor Company Ltd	0.49 – 30.90	15.11	0.76	-5.14
Hero Honda Motors Ltd	32.21 – 262.56	129.15	0.73	14.16
Kinetic Engineering Ltd	7.06 – 29.50	16.46	0.57	2.62
Majestic Auto Ltd	0.04 – 51.47	23.20	0.73	-44.07
Scooter India Ltd	0.18 – 3.85	1.41	0.84	-4.13

Source : Computed from the annual reports of the selected companies

Table 12

Estimates of Trend Co-efficient for Exports of Two and Three Wheelers Sector Companies (1996-97 to 2008-09)

Companies	$P = \alpha + \beta t + e$			Calculated value of Chi-square	Hypothesis
	α	β	R^2		
Bajaj Auto Ltd	-634.82	215.72	0.79	2174.78	Rejected
LML Ltd	13.14	3.94	0.52	63.98	Rejected
Maharashtra Scooters Ltd	-	-	-	-	-
TVS Motor Company Ltd	-115.93	33.44	0.73	93.41	Rejected
Kinetic Motor Company Ltd	27.77	-1.81	0.38	92.27	Rejected
Hero Honda Motors Ltd	-23.53	21.81	0.82	1378.07	Accepted
Kinetic Engineering Ltd	7.35	1.30	0.29	43.49	Rejected
Majestic Auto Ltd	49.70	-3.79	0.75	38.80	Rejected
Scooters India Ltd	2.00	-0.08	0.08	11.25	Accepted

Table value of chi-square (0.05) = 21.0 with df = 12

Source: Computed

Table 13

Projections for Exports of Two and Three Wheelers Sector Companies(Rs. in Crores)

Companies	2012-13	2013-14	2014-15	2015-16
Bajaj Auto Ltd	3032.42	3248.14	3463.86	3679.58
LML Ltd	80.12	84.06	88.00	91.90
Maharashtra Scooters Ltd	-	-	-	-
TVS Motor Company Ltd	452.55	485.99	519.43	552.87
Kinetic Motor Company Ltd	-3.00	-4.81	-6.62	-8.42
Hero Honda Motors Ltd	347.24	369.05	390.86	412.67
Kinetic Engineering Ltd	29.45	30.75	32.05	33.35
Majestic Auto Ltd	-14.73	-18.52	-22.31	-26.10
Scooters India Ltd	0.64	0.56	0.48	0.40

Source: Computed