

Chapter 5

Analysis of Hypotheses

- 5.1 Introduction**
- 5.2 Testing of Hypotheses**
- 5.3 Profiles**
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5.1 Introduction

In this chapter, the hypotheses and objectives set up in Chapter two will be respectively tested and analyzed. Also, for better understanding about automobile industries function researcher has presented two profiles.

1. A profile about some ratios of the Indian automobile industry in Pune city.
2. A profile of Indian automobile exports trends (No of vehicles)

5.2 Testing of hypotheses

The testing of hypotheses is as under:

5.2.1 Hypothesis No.1

All Indian automobile industries have used the same financial strategy, and accounting system for recording transactions.

The Sub-hypothesis No.1.1

All Indian automobile industries have used the same financial strategy.

The steps of testing of sub-hypothesis No.1.1

- 1) The null and alternative hypothesis is as under.

H_0 = All Indian automobile industries have used the same financial

Strategy (Homo 1st = Homo 2nd = = Homo13th)

H_1 = All Indian Automobile industries have not used the same

Financial strategy (Homo 1st \neq Homo 2nd \neq Homo13th)

- 2) The degree of Financial Leverage (DLF) is calculated for 13 companies from 2000-01 to 2009-10. It is as under:

Table 5.1- Degree of financial leverage in automobile industry in Pune city

Name of the company	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tata motors¹	0.01	2.93	1.6	1.17	1.14	1.17	1.17	1.18	1.68	1.39
ASAL Ltd²	0.15	23	1.24	1.3	1.6	2.2	1.28	2	0.52	3.01
Bajaj auto³	1.01	1.005	1.001	1	1.01	1	1.003	1.004	1.02	1.002
Lumax auto⁴	2.9	1.7	1.7	1.3	1.16	1.2	1.13	1.3	6.4	1.15
Kinetic Engineering⁵	1.55	2.3	15.8	0.68	0.65	0.58	0.56	0.16	0.01	3.8
Autoline Industries⁶	4.09	4.09	3.38	3.63	1.9	1.17	1.12	1.15	2.13	1.64
Maharashtra scooters⁷	1.13	1.02	1	1	1	1	1	1	1	1
Kalyani Forge⁸	1.8	1.6	1.17	1.02	1.02	1.06	1.11	1.24	3.46	1.9
Bharat Forge⁹	2.87	2.45	1.41	1.2	1.15	1.18	1.23	1.27	1.65	1.57
Simmonds-Marshall¹⁰	1.2	0.06	3.5	1.8	1.4	1.4	1.3	1.4	1.8	1.3
Gabriel India¹¹	1.8	1.9	1.5	1.32	1.26	1.57	1.3	1.6	3.89	1.45
ZF Steering Gear(India)¹²	1.03	1.03	1.04	1.02	1.01	1.02	1.01	1.01	1.03	1.01
Force motors¹³	0.49	1.22	1.2	1.07	0.88	1.26	0.43	0.57	1.19	1

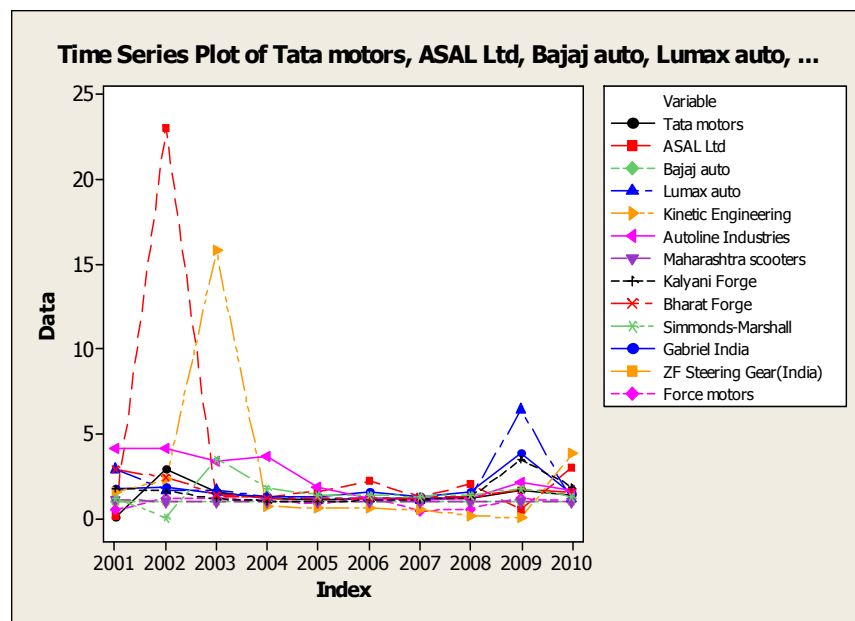
Degree of Financial Leverage (DLF) is calculated for 13 companies from their financial statements. (2000-01 to 2009-10)

3) For testing hypothesis, Homogeneity test is done. The result is as under: Two-way ANOVA: DFL Versus T,C :

Source	d.f.	Sum of Square(SS)	Sum mean of Square (MS)	F	Significance F (P-Value)
T(time)	9	71.045	7.89371	1.37	0.209
C(Company)	12	73.687	6.14059	1.07	0.394
Error	108	620.719	5.74740		
Total	129	765.451			

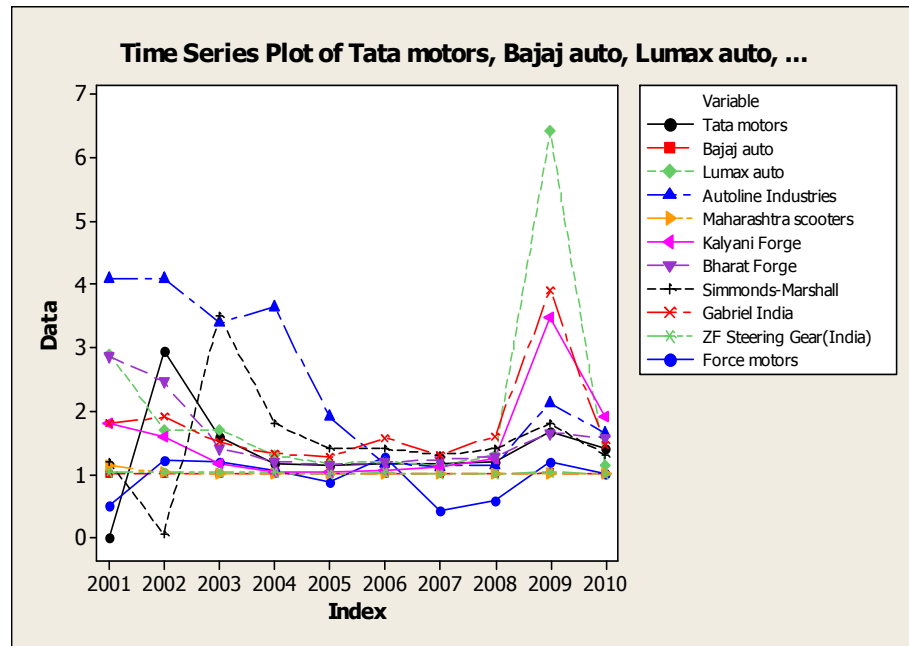
The P-value in this case is more than 5%. Therefore, Null hypothesis is accepted. So, all Indian automobile Industries have used the same financial strategy. Also, for EFL in above plot researcher found ASAL and Kinetic Engineering Limited have high DFL. It is as under:

The Exhibit 5.1 – Time series Plot of Sample companies



For DFL in above plot we found ASAL Ltd and Kinetic Industries have high DFL. So we removed them and then we found DFL varied highly from 2001 to 2003 and from 2008 to 2010. We can see these changes in below diagram.

The Exhibit 5.2: Time series Plot of Sample companies (except ASAL & kinetic Eng.)



The sub-Hypothesis No.1.2:

All Indian Automobile Industries have used the same accounting system for recording transactions.

For this hypothesis the total 110 copies of the questionnaires with 10 questions (Q.No.3-12 in Questionnaire Part A) is distributed to population. The total 105 copies received.

The collected questionnaires resulted in a total 103 usable responses is as under: (It is necessary to mention that all tables showing details of every question would be presented in the end of this chapter Tables No 5.16&5.17)

Table 5.2: Classified questionnaires on the basis of their groups

Particular	Number	Percentage
Expert	74	71.84
Advisor	8	7.77
Executive Management team	6	5.83
Auditor inspector	15	14.56
Total	103	100.00

The steps of testing of hypothesis:

1. The null and alternative hypotheses is as follows:
H₀: All Indian automobile industry have not used the same accounting system for recording transactions ($P_1 \neq P_2$).
H₁: All India automobile industry have used the same accounting system for recording transactions. ($P_1 = P_2$).
2. The observed frequencies of questions No.3-12 is as under:

Table 5.3 the questions and observed frequencies of questions.

	The questions and observed frequencies of questions.	Yes	No
3	Does the accounting system maintain, at a minimum, a general journal and a general ledger?	103	-
4	Does the accounting system have a chart of accounts?	101	2
5	Is the annual budget incorporated in to the accounting system?	82	21
6	Are transactions posted to the general journal on a daily basis?	85	18
7	Do the accounting system staffs produce monthly financial reports?	91	12

8	Are the financial reports comprehensive in reporting in revenue, expenditure, fund balances, assets and liabilities?	96	7
9	Is the basis of accounting identified by the accounting system?	101	2
10	Does the accounting system comply with Generally Accepted Accounting Principles for government units?	102	1
11	Do the accounting system officials uphold their responsibilities in ensuring the adequate accounting system is maintained?	101	2
12	Are subsidiary ledger maintain for accounting?	94	9

Table 5.4: The frequencies of questions

Number of Questions	Yes	No
3	103	-
4	101	2
5	82	21
6	85	18
7	91	12
8	96	7
9	101	2
10	102	1
11	101	2
12	94	9
Total	956	74

3. The hypothesis tester function (Z) is calculated through Population proportion test for deference between proportions. It is as follows:

Compute the standard error (SE) = $\text{Sqrt}\{[P \times (1-P)] / \{(1/n_1) + (1/n_2)\}$

=> SE = $\text{Sqrt}\{(0.868 \times 0.132) / \{[1/956] + (1/74)\}\}$ =>

SE = $\text{Sqrt}(0.0016681)$ => SE = 0.041

Z-Score (Z) = $(P_1 - P_2) / \text{SE} = (0.93 - 0.07) / 0.041$

=> Z = 20.97

4. According to alternative hypothesis (H_1), the critical region with 5 percent level of significance is calculated. It was equal $Z \leq -1.96$ and $Z \geq 1.96$ (See Page No. 39)

So, tester function ($Z = 20.97$) is more than 1.96 (critical region), therefore the null hypothesis is rejected. As such all Indian automobile industry have used the same accounting system for recording transactions.

5.2.2 Hypothesis No.2

The Annual Accounts of the Companies have been prepared on a going concern basis.

The basic question of this hypothesis is, whether company's accounting reports prepared based on going concern assumption or not?

For answering to this question researcher has to competitive analysis of the information content or traditional liquidity ratios (accrual based) and financial ratios derived from Cash flow statement (specially capital expenditure ratios). So whether both type of ratios indicate complete informational contain or not?

And also whether these ratios can substitute one another or not? Because the major part of factors that affect the uncertainty about going concern emphasize on liquidity problems of the companies by understanding the relation between ratios started above, so the sub-hypotheses are as under:

- 2.1 There is not a significant relationship between capital acquisition ratio (CAR) and Current Ratio (CR).
- 2.2 There is not a significant relationship between capital acquisition ratio (CAR) and Quick Ratio. (QR).
- 2.3 There is not a significant relationship between investment to financial ratio (I/FR) and Current Ratio (CR).
- 2.4 There is not a significant relationship between investment to financial ratio (I/FR) and Quick Ratio(QR).

5.2.2.1 Sub-Hypothesis No.2.1

For this hypotheses CAR and CR is calculated for 13 companies form 2006-2010.

1. The null and alternative hypothesis is as under:
 H_0 : There is not a significant relationship between CAR and CR [$H_0 : R(\text{CAR} \ \& \ \text{CR}) = 0$]
 H_1 : There is a significant relationship between CAR and CR [$H_1 : R(\text{CAR} \ \& \ \text{CR}) \neq 0$]
2. The amount of CAR and CR for 13 companies from 2005-06 to 2009-10 is indicated at Table 5.5 and Table 5.6.

Table 5.5: Capital Acquisition Ratio (CAR)

Name of Company	2006	2007	2008	2009	2010
1 Tata Motors	65.4381	66.7738	124.785	16.1978	267.816
2 ASAL Ltd	239.29	117.923	45.06092	129.822	589.18
3 Bajaj Auto	371.449	79.3281	46.2493	39.2495	2073.94
4.Lumax Auto	43.8123	72.78195	193.05	19.0083	300.994
5. Kinetic Engineering	164.57	427.599	457.629	87.3885	1147.23
6. Autoline Industries	28.2889	25.4545	23.6788	37.0898	80.103
7.MaharashtraScooters	5962.5	1161.9	3857.14	10336.8	12542.9
8.Kalyani Forge	91.8033	28.4217	48.5425	132.858	318.359
9.Bharat Forge	41.4022	76.1764	46.9386	28.4486	435.55
10.SimmondsMarshall	40.5405	338.462	46.3235	51.3661	498.684
11.Gabriel India	74.673	245.634	188.053	38.0514	160.293
12.ZF Steering Gear	125.989	205.285	333.632	748.954	121.96
13.Force Motors	2.6522	22.0098	158.975	156.953	339.246

The amount of Capital Acquisition Ratios for 13 companies resulted from their Cash Flow statements (2005-06 to 2009-10) are indicated at above Table.

Table 5.6 : Current Ratio in Automobile Industry - Pune (CR)

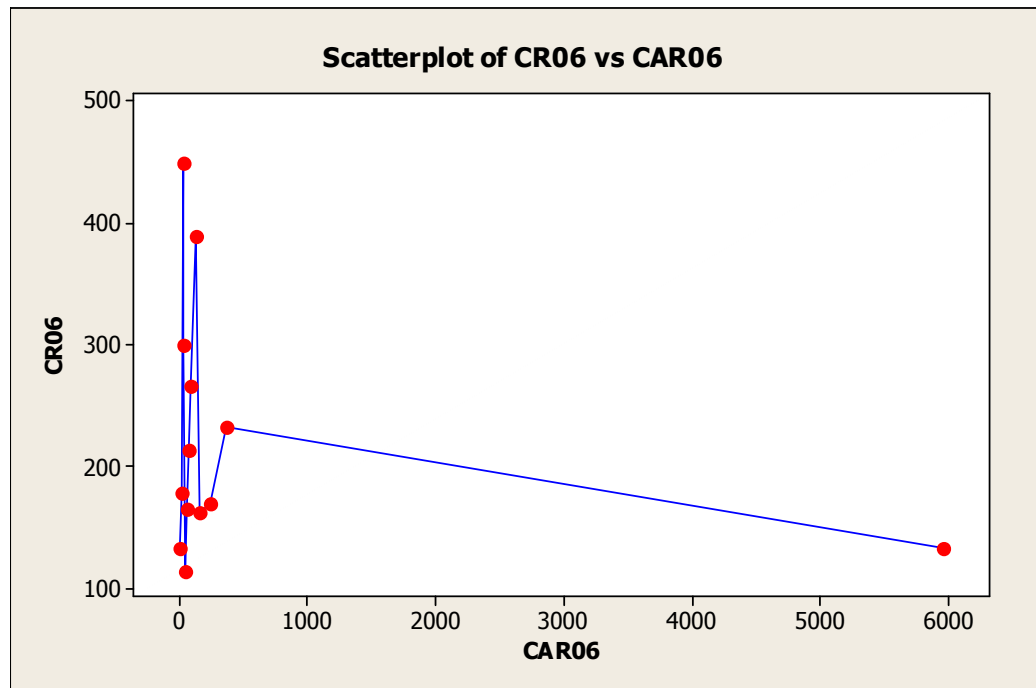
Name of Company	2006	2007	2008	2009	2010
1 Tata Motors	165.6733	169.2151	119.8594	108.1873	78.9777
2 ASAL Ltd	169.5305	152.113	124.5501	124.3166	118.6715
3 Bajaj Auto	232.4143	254.7503	158.1318	191.631	148.1036
4.Lumax Auto	113.6872	107.8049	135.55	190.666	151.1382
5. Kinetic Engineering	161.7749	200.8526	342.3358	244.5342	178.7294
6. Autoline Industries	178.7167	325.7192	295.549	177.0958	162.7808
7.MaharashtraScooters	132.6817	65.3061	60.6418	73.2764	107.1475
8.Kalyani Forge	266.5198	293.8995	254.2684	187.9064	226.1242
9.Bharat Forge	300.1466	321.1815	256.3335	439.076	257.631
10.SimmondsMarshall	450.1873	424.2967	441.4953	569.7987	424.6053
11.Gabriel India	212.9213	274.35	258.0258	199.0822	195.9062
12.ZF Steering Gear	389.9595	459.2095	469.0104	675.7717	236.6259
13.Force Motors	132.5741	123.2516	126.2559	116.1878	138.984

The amount of Current Ratios for 13 companies resulted from their Balance sheets (2005-06 to 2009-10) are indicated at above Table.

- For testing this hypothesis first the relationship between CAR and CR tested for every year separately then Five years together. It is as under:

2006:

Exhibit 5.3: Scatter plot of CR vs CAR 2006



In this case, the regression equation is :

$$CR2006 = 233 - 0.0169 \text{ CAR } 2006$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	233.00	30.58	7.62	0.00
CAR 2006	-0.01686	0.01842	-0.92	0.38

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	9030	9030	0.84	0.380
Residual Error	11	118699	10784		
Total	12	127659			

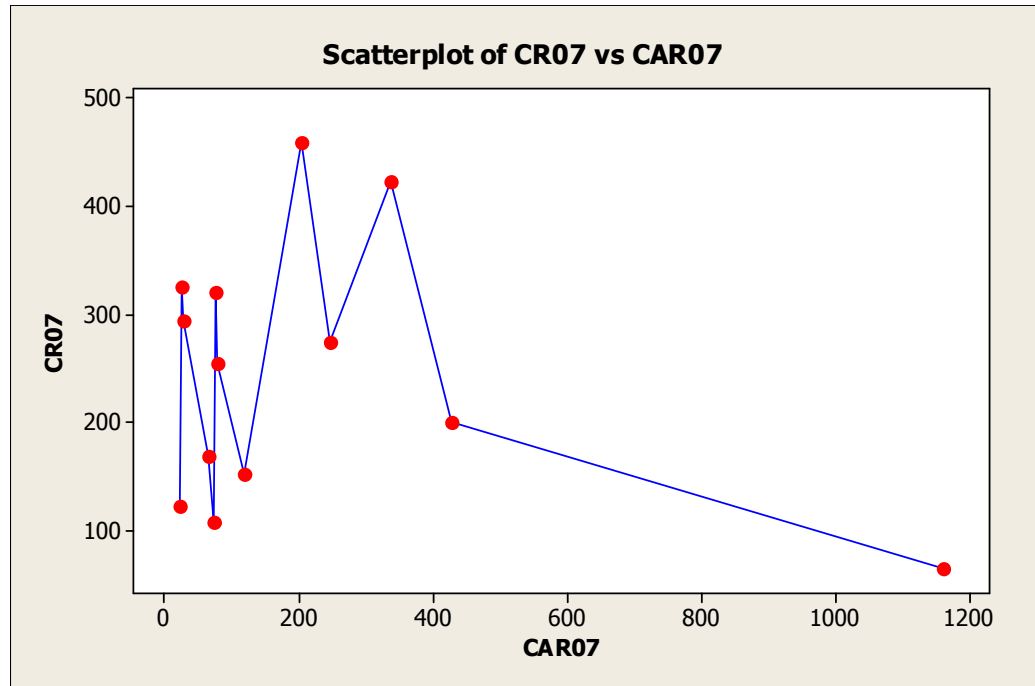
Coefficient of correlation is $R(\text{CAR} \ \& \ \text{CR}) = 0.26$. It shows poor negative correlation.

Coefficient of determination ($R\text{-}S_q = 7.1\%$) shows that 7.1% of change in CR is due to change in CAR. Adjust R square is equal 0.0%

The P-value in this case is 0.38 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2006, there is not a significant relationship between CAR and CR.

2007:

Exhibit 5.4: Scatter plot of CR vs CAR 2007



In this case, the regression equation is :

$$CR2007 = 269 - 0.114 \text{ CAR } 2007$$

Predictor	Coefficient	Standard Error	T-Vale	P-Value
		Coefficient (SE coef)		
Constant	269.13	41.74	6.45	0.000
CAR 2007	-0.1139	0.1126	-1.01	0.333

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	14989	14989	1.02	0.333
Residual Error	11	160953	14632		
Total	12	175942			

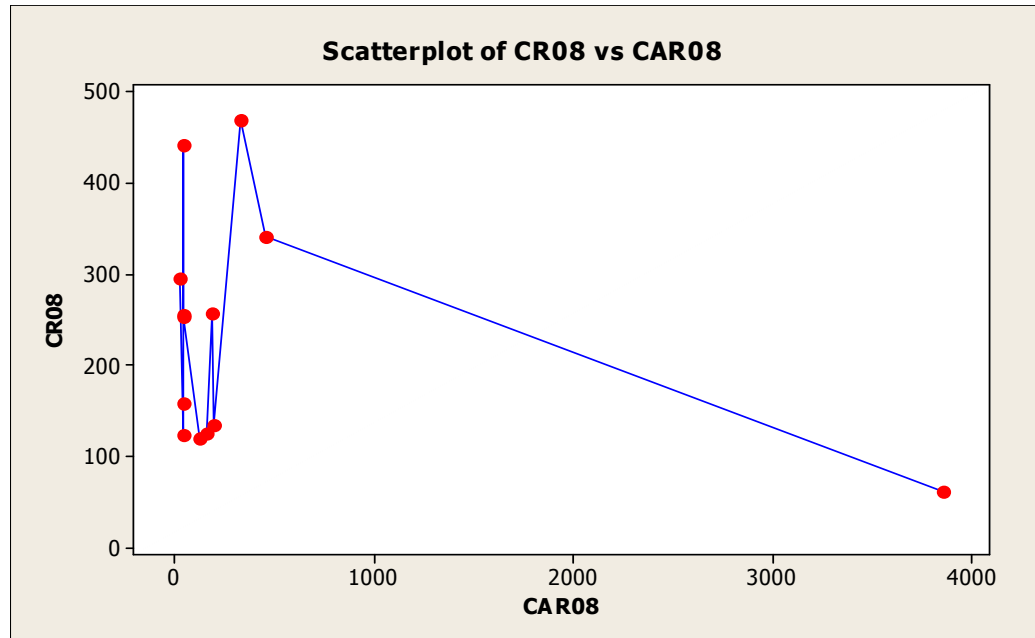
Coefficient of correlation is $R(\text{CAR} \& \text{CR}) = 0.29$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 8.5\%$) shows that 8.5% of change in CR is due to change in CAR. Adjust R square is equal 0.2%

The P-value in this case is 0.33 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2007, there is not a significant relationship between CAR and CR.

2008:

Exhibit 5.5: Scatter plot of CR vs CAR 2008



In this case, the regression equation is :

$$CR2008 = 253 - 0.045 \text{ CAR } 2008$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	253.28	37.66	6.73	0.00
CAR 2008	-0.04499	0.03469	-1.30	0.221

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	26179	26179	1.68	0.221
Residual Error	11	171234	15567		
Total	12	197414			

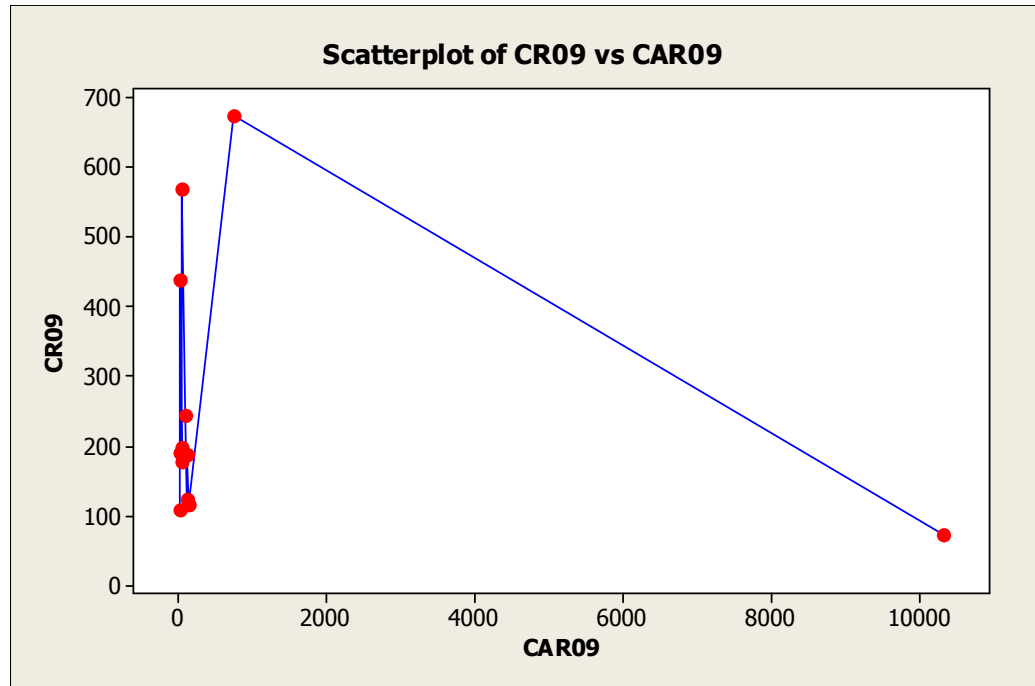
Coefficient of correlation is $R(\text{CAR} \& \text{CR}) = 0.36$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 13.3\%$) shows that 13.3% of change in CR is due to change in CAR. Adjust R square is equal 5.4%

The P-value in this case is 0.22 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2008, there is not a significant relationship between CAR and CR.

2009:

Exhibit 5.6: Scatter plot of CR vs CAR 2009



In this case, the regression equation is :

$$CR2009 = 269 - 0.0164 \text{ CAR } 2009$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	268.56	55.53	4.84	0.001
CAR 2009	-0.01639	0.01931	-0.85	0.414

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	25993	25993	0.72	0.414
Residual Error	11	366900	36082		
Total	12	422893			

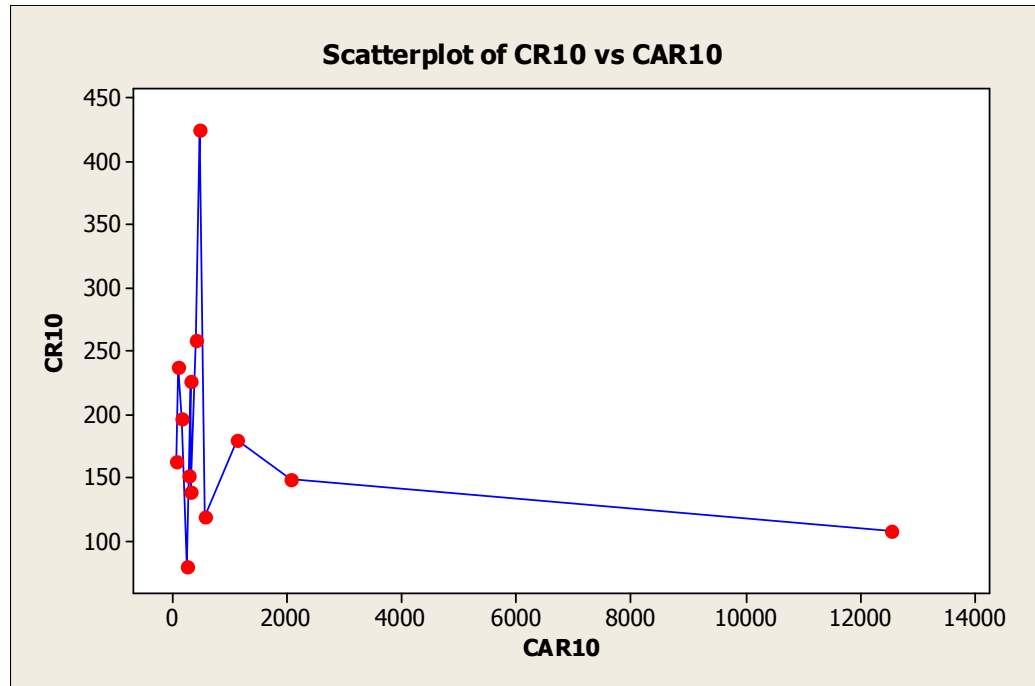
Coefficient of correlation is $R(\text{CAR} \ \& \ \text{CR}) = 0.25$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 6.1\%$) shows that 6.1% of change in CR is due to change in CAR. Adjust R square is equal 0.0%

The P-value in this case is 0.41 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2009, there is not a significant relationship between CAR and CR.

2010:

Exhibit 5.7: Scatter plot of CR vs CAR 2010



In this case, the regression equation is :

$$CR2010 = 197 - 0.00741 \text{ CAR } 2010$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	197.32	26.95	7.32	0.00
CAR 2010	-0.007406	0.007583	-0.98	0.35

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	7499	7499	0.95	0.350
Residual Error	11	86490	7863		
Total	12	93989			

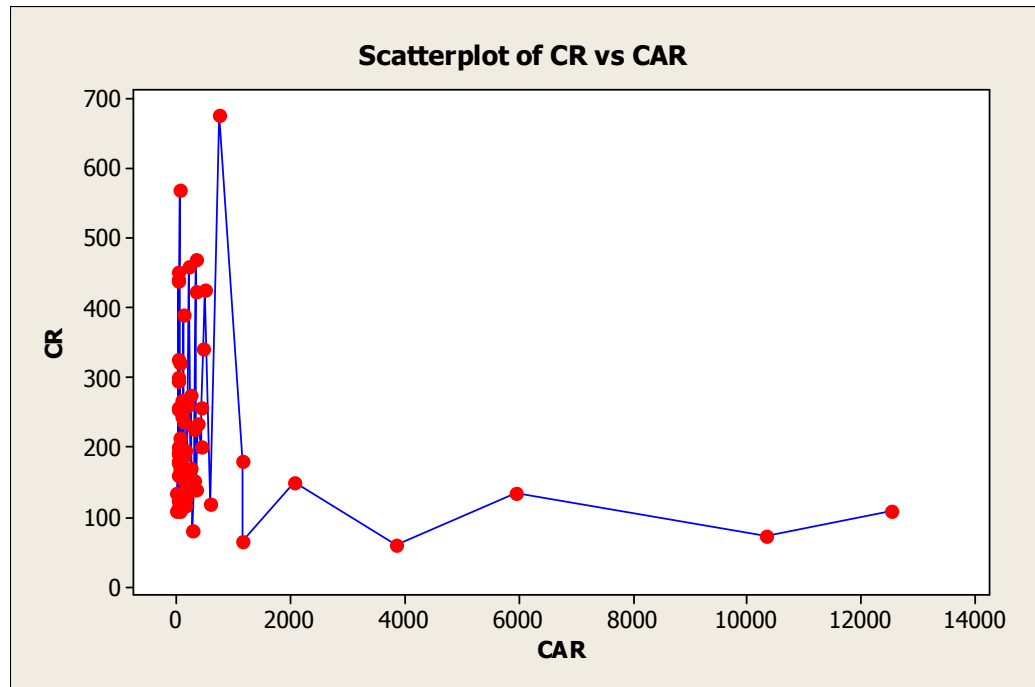
Coefficient of correlation is $R(\text{CAR} \& \text{CR}) = 0.28$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 8\%$) shows that 8% of change in CR is due to change in CAR. Adjust R square is equal 0.0%

The P-value in this case is 0.35 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2010, there is not a significant relationship between CAR and CR.

Five years together (From 2006 – 2010):

Exhibit 5.8: Scatter plot of CR vs CAR Five years together (From 2006 – 2010):



In this case, the regression equation is :

$$CR = 239 - 0.0147 CAR$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	238.88	16.40	14.56	0.00
CAR	-0.014739	0.007341	-2.01	0.049

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	63314	63314	4.03	0.049
Residual Error	63	989491	15706		
Total	64	1052804			

Coefficient of correlation is $R(\text{CAR} \& \text{CR}) = 0.24$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 6.0\%$) shows that 6.0% of change in CR is due to change in CAR. Adjust R square is equal 4.5%

The P-value in this case is 0.049 which is less than 5%. Therefore, Null hypothesis is rejected. As such in five years together (from 2006-2010), there is a significant relationship between CAR and CR. If CAR changes to one unit then CR changes to 0.0147 unit with P-Value = 0.049.

5.2.2.2 Sub-hypothesis No.2.2

For this hypothesis CAR and QR is calculated for 13 companies from 2006-2010.

The steps of hypothesis testing

1. The null and alternative hypothesis is as under.

H_0 : There is not a significant relationship between CAR and QR [$H_0 : R(\text{CAR} \& \text{QR}) = 0$]

H₁ : There is a significant relationship between CAR and QR

[H₁ : R(CAR & QR)≠0]

2. The amount of CAR and QR for 13 companies from 2005-06 to 2009-10 is indicated at Tables 5.5 and 5.7.

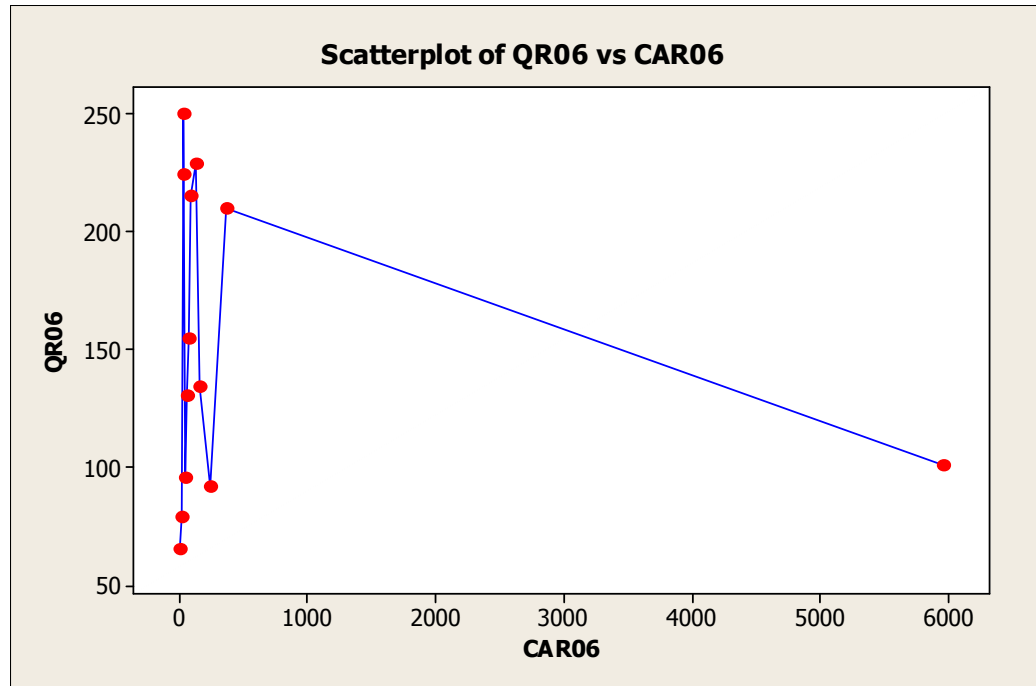
Table 5.7 : Quick Ratio in Automobile Industry - Pune (QR)					
Name of Company	2006	2007	2008	2009	2010
1 Tata Motors	130.379	127.487	91.8408	83.2962	58.8835
2 ASAL Ltd	91.6642	79.1017	67.9319	79.4781	76.4452
3 Bajaj Auto	210.2045	234.0894	124.6202	163.7064	126.0822
4.Lumax Auto	95.6238	97.9946	120.6608	172.8424	134.9921
5. Kinetic Engineering	134.3827	160.8591	307.0316	214.028	147.496
6. Autoline Industries	79.2645	167.8832	224.4807	126.6539	120.669
7.MaharashtraScooters	100.5514	60.2332	57.6948	68.2863	103.2131
8.Kalyani Forge	215.0881	233.0443	184.136	135.6524	169.0023
9.Bharat Forge	250.436	268.5855	203.03	346.0009	201.4861
10.SimmondsMarshall	224.7191	223.0179	254.0187	297.3154	265.00
11.Gabriel India	154.691	216.5273	202.7496	137.9953	128.9661
12.ZF Steering Gear	228.9069	289.2617	279.6875	376.333	144.6241
13.Force Motors	65.4871	65.6536	64.1587	59.1244	77.0082

The amount of Quick Ratios for 13 companies resulted from their Balance sheets (2005-06 to 2009-10) are indicated at above Table.

3. For testing of this hypothesis first the relationship between CAR and QR tested for every year separately (from 2006 to 2010) then five years together. It is as under:

2006:

Exhibit 5.9: Scatter plot of QR vs CAR 2006



In this case, the regression equation is :

$$QR_{2006} = 157 - 0.0091 \text{ CAR}_{2006}$$

Predictor	Coefficient	Standard Error	T-Vale	P-Value
		Coefficient (SE coef)		
Constant	157.49	19.59	8.04	0.00
CAR 2006	-0.0091	0.0118	-0.77	0.457

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	2628	2628	0.59	0.457
Residual Error	11	48655	4423		
Total	12	51284			

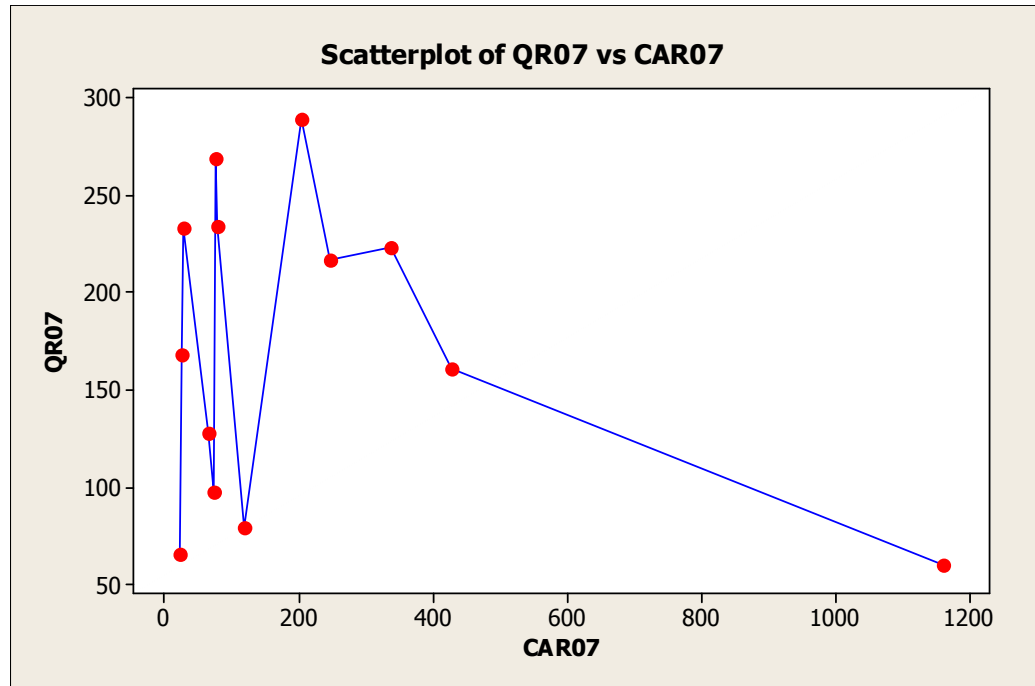
Coefficient of correlation is $R(\text{CAR} \& \text{QR}) = 0.23$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 5.1\%$) shows that 5.1% of change in QR is due to change in CAR. Adjust R square is equal 0.0%

The P-value in this case is 0.46 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2006, there is not a significant relationship between CAR and QR.

2007:

Exhibit 5.10: Scatter plot of QR vs CAR 2007



In this case, the regression equation is :

$$QR2007 = 188 - 0.0757 \text{ CAR } 2007$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	187.25	27.26	6.89	0.00
CAR 2007	-0.07566	0.07351	-1.03	0.325

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	6611	6611	1.06	0.325
Residual Error	11	68654	6241		
Total	12	75265			

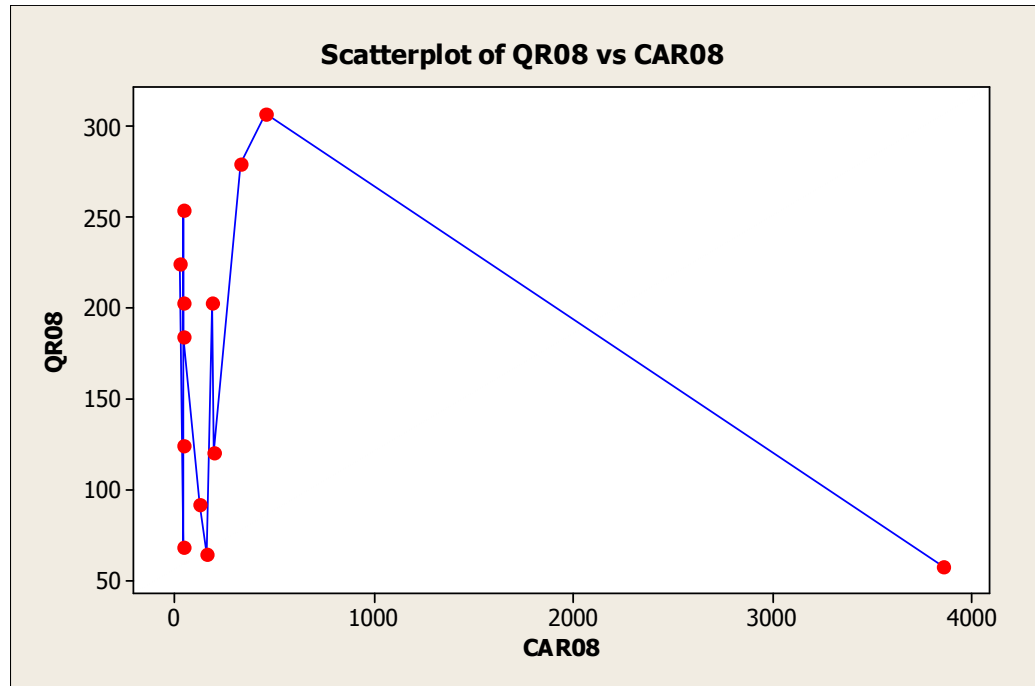
Coefficient of correlation is $R(\text{CAR} \& \text{QR}) = 0.30$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 8.8\%$) shows that 8.8% of change in QR is due to change in CAR. Adjust R square is equal 0.5%

The P-value in this case is 0.325 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2007, there is not a significant relationship between CAR and QR.

2008:

Exhibit 5.11: Scatter plot of QR vs CAR 2008



In this case, the regression equation is :

$$QR2008 = 179 - 0.0271 \text{ CAR } 2008$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	179.48	25.49	7.04	0.00
CAR 2008	-0.02715	0.02348	-1.16	0.272

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	9533	9533	1.34	0.272
Residual Error	11	78442	7131		
Total	12	87975			

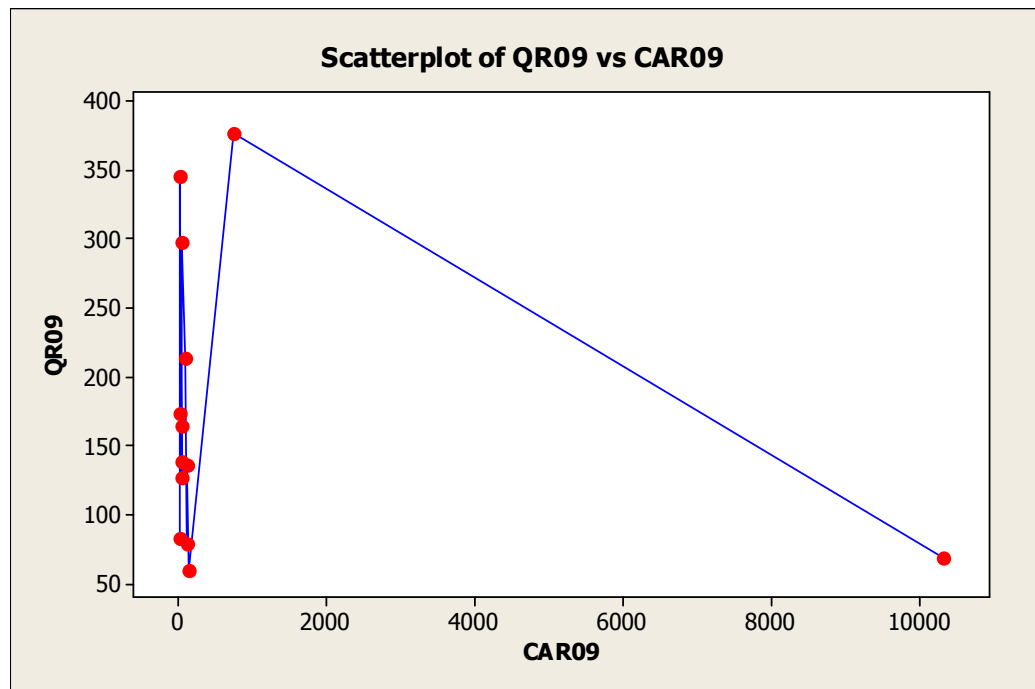
Coefficient of correlation is $R(\text{CAR} \ \& \ \text{QR}) = 0.33$. It shows poor negative correlation.

Coefficient of determination ($R\text{-}S_q = 10.8\%$) shows that 10.8% of change in QR is due to change in CAR. Adjust R square is equal 2.7%

The P-value in this case is 0.27 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2008, there is not a significant relationship between CAR and QR.

2009:

Exhibit 5.12: Scatter plot of QR vs CAR 2009



In this case, the regression equation is :

$$QR_{2009} = 183 - 0.01 \text{ CAR } 2009$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	182.98	31.08	5.89	0.00
CAR 2009	-0.00998	0.01081	-0.92	0.376

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	9641	9641	0.85	0.376
Residual Error	11	124340	11304		
Total	12	133981			

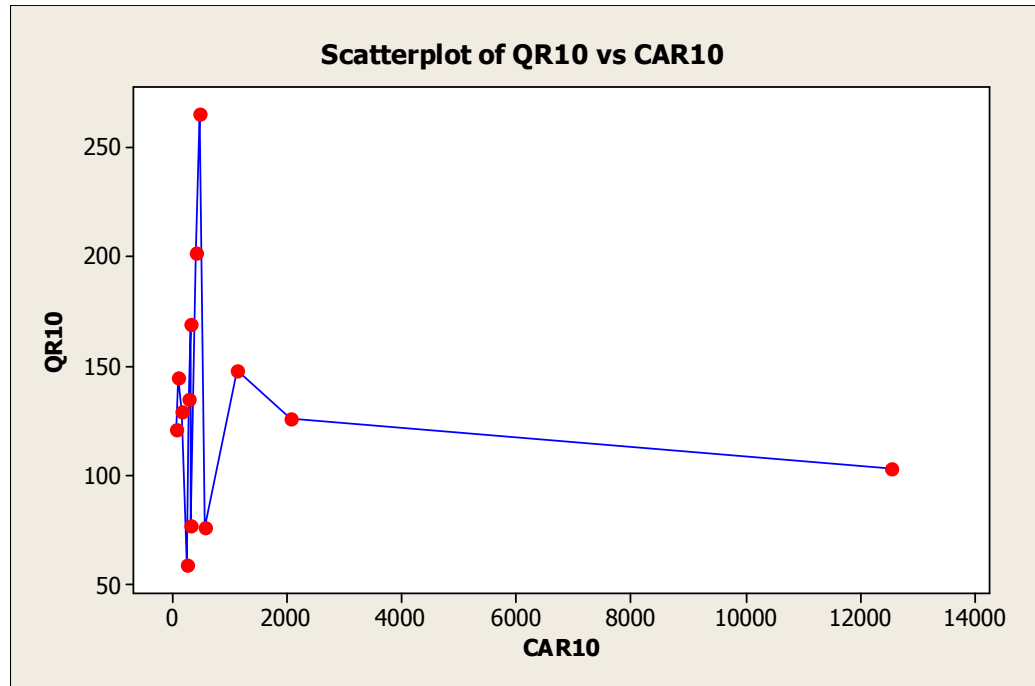
Coefficient of correlation is $R (CAR \& QR) = 0.27$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 7.2\%$) shows that 7.2% of change in QR is due to change in CAR. Adjust R square is equal 0.0%

The P-value in this case is 0.38 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2009, there is not a significant relationship between CAR and QR.

2010:

Exhibit 5.13: Scatter plot of QR vs CAR 2010



In this case, the regression equation is :

$$QR_{2010} = 139 - 0.00272 \text{ CAR}_{2010}$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	138.86	17.29	8.03	0.00
CAR 2010	-0.002721	0.004867	-0.56	0.587

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	1013	1013	0.31	0.587
Residual Error	11	35630	3239		
Total	12	36642			

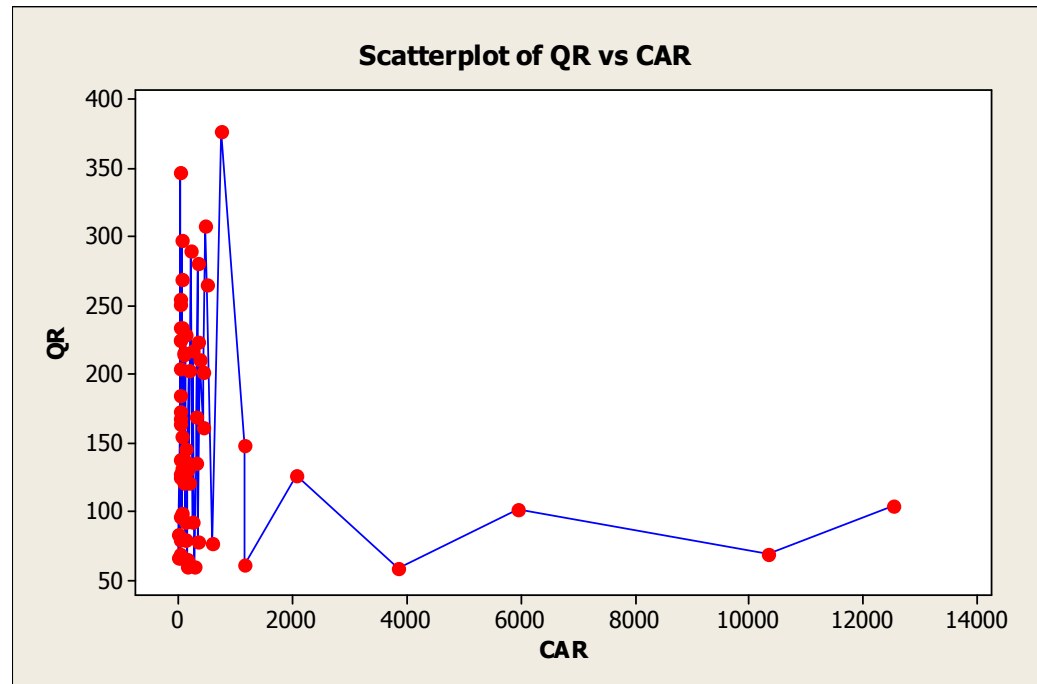
Coefficient of correlation is $R (CAR \& QR) = 0.17$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 2.8\%$) shows that 2.8% of change in QR is due to change in CAR. Adjust R square is equal 0.0%

The P-value in this case is 0.59 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2010, there is not a significant relationship between CAR and QR.

Five years consolidated together (From 2006-2010):

Exhibit 5.14: Scatter plot of QR vs CAR Five years consolidated together (From 2006-2010)



In this case, the regression equation is :

$$QR = 166 - 0.00808 \text{ CAR}$$

Predictor	Coefficient	Standard Error	T-Vale	P-Value
		Coefficient (SE coef)		
Constant	165.79	10.16	16.31	0.00
CAR	-0.008081	0.004549	-1.78	0.080

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	19035	19035	3.16	0.08
Residual Error	63	379944	6031		
Total	64	398979			

Coefficient of correlation is $R(\text{CAR} \& \text{QR}) = 0.22$. It shows poor negative correlation.

Coefficient of determination ($R^2 = 4.8\%$) shows that 4.8% of change in QR is due to change in CAR. Adjust R square is equal 3.3%

The P-value in this case is 0.08 which is more than 5%. Therefore, Null hypothesis is accepted. As such in five years together (from 2006-2010), there is not a significant relationship between CAR and QR.

5.2.2.3 Sub-Hypothesis No.2.3

For this hypothesis CR and I/FR is calculated for 13 companies from 2006-2010.

The Steps of hypothesis testing:

1. The null and alternative hypothesis is as under:

H_0 : There is not a significant relationship between CR and I/FR

$[H_0 : R(\text{CR} \& \text{I/FR}) = 0]$

H_1 : There is a significant relationship between CR and I/FR [H_1
: $R(\text{CR \& I/FR}) \neq 0$]

4. The amount of CR and I/FR for 13 companies from 2006-2010 is indicated at Table 5.6 and Table 5.8

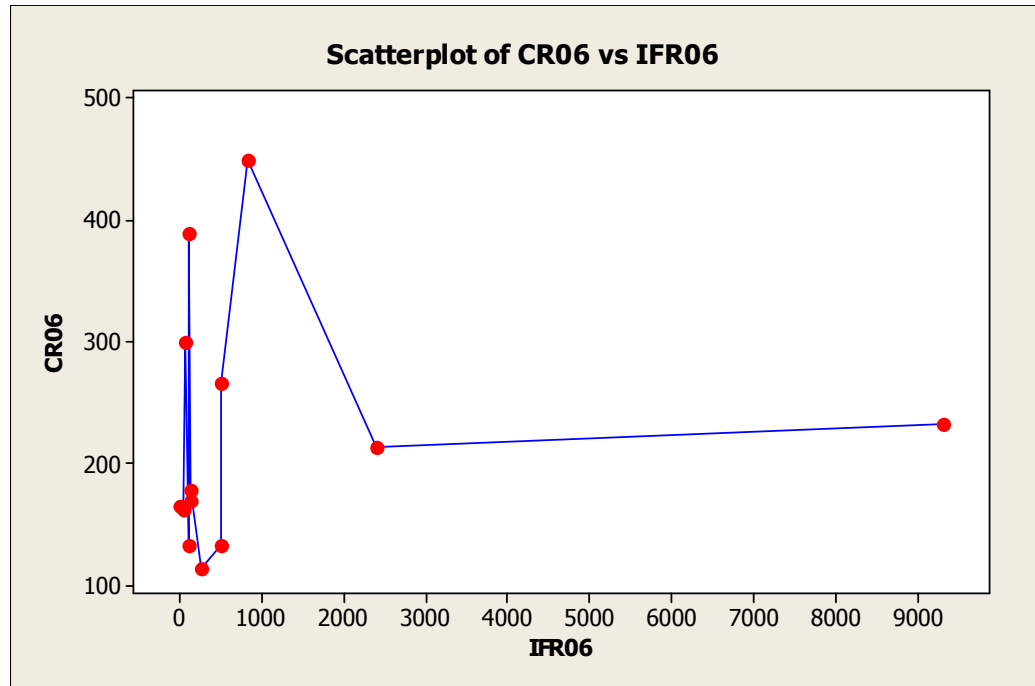
Name of Company	2006	2007	2008	2009	2010
1 Tata Motors	0.1239	924.007	506.481	131.339	221.526
2 ASAL Ltd	130.4795	82.7249	196.661	528.6219	20.22267
3 Bajaj Auto	9311.13	171.7555	813.326	169.6659	355.3034
4.Lumax Auto	264.4737	57.774	434.595	80.75802	1.02529
5. Kinetic Engineering	41.98153	91.5221	10.6377	28.6087	1325.12
6. Autoline Industries	144.803	69.3723	136.93	144.707	279.077
7.MaharashtraScooters	499.64	115.14	359.75	261.724	175.795
8.Kalyani Forge	507.662	161.93	73.6471	103.2258	56.11247
9.Bharat Forge	67.5001	134.3669	207.5158	79.4342	1338.72
10.SimmondsMarshall	833.33	150.00	106.818	3950	31.52941
11.Gabriel India	2412	218.914	118.863	368.144	73.99598
12.ZF Steering Gear	115.6915	313.1673	230.8966	106.5359	983.6299
13.Force Motors	105.271	479.72	62.1885	113.833	65.72675

The amount of Investment to Finance Ratios for 13 companies resulted from their Cash Flow statements (2005-06 to 2009-10) are indicated at above Table.

3. For Testing of this hypothesis first the relationship between CR and I/FR tested for every year separately then five years together. It is as under:

2006:

Exhibit 5.15: Scatter plot of CR vs I/FR 2006



In this case, the regression equation is :

$$CR2006 = 221 + 0.0025 \text{ I/FR } 2006$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	220.87	32.75	6.74	0.00
I/FR 2006	0.00246	0.01219	0.2	0.844

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	469	469	0.04	0.844
Residual Error	11	127190	11563		
Total	12	127659			

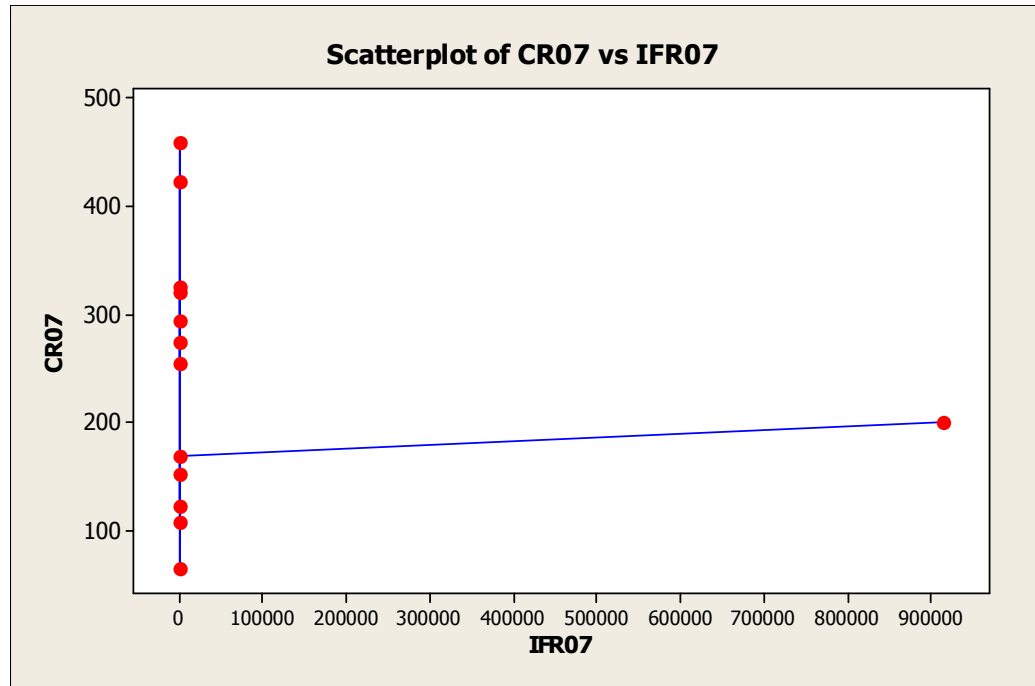
Coefficient of correlation is $R(I/FR \& CR) = 0.06$ It shows poor negative correlation.

Coefficient of determination ($R-S_q = 0.4\%$) shows that 0.4% of change in CR is due to change in I/FR. Adjust R square is equal 0.0%

The P-value in this case is 0.84 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2006, there is not a significant relationship between I/FR and CR.

2007:

Exhibit 5.16: Scatter plot of CR vs I/FR 2007



In this case, the regression equation is :

$$CR2007 = 248 - 0.000051 \text{ I/FR 2007}$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	247.61	36.31	6.82	0.00
I/FR 2007	-0.0000511	0.000143	-0.36	0.727

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	2021	2021	0.13	0.727
Residual Error	11	173921	15811		
Total	12	175942			

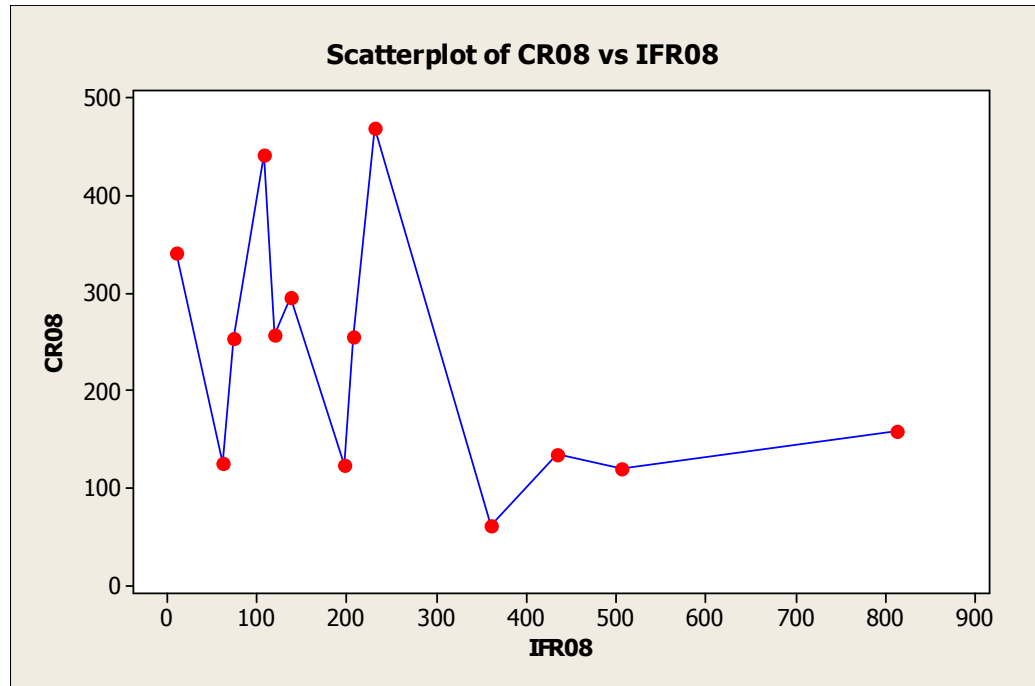
Coefficient of correlation is $R(I/FR \& CR) = 0.10$ It shows poor negative correlation.

Coefficient of determination ($R-S_q = 1.1\%$) shows that 1.1% of change in CR is due to change in I/FR. Adjust R square is equal 0.0%

The P-value in this case is 0.73 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2007, there is not a significant relationship between I/FR and CR.

2008:

Exhibit 5.17: Scatter plot of CR vs I/FR 2008



In this case, the regression equation is :

$$CR2008 = 299 + 0.26 I/FR 2008$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	299.05	50.62	5.91	0.000
I/FR 2008	-0.2595	0.1529	-1.7	0.118

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	40982	40982	2.88	0.118
Residual Error	11	156432	14221		
Total	12	197414			

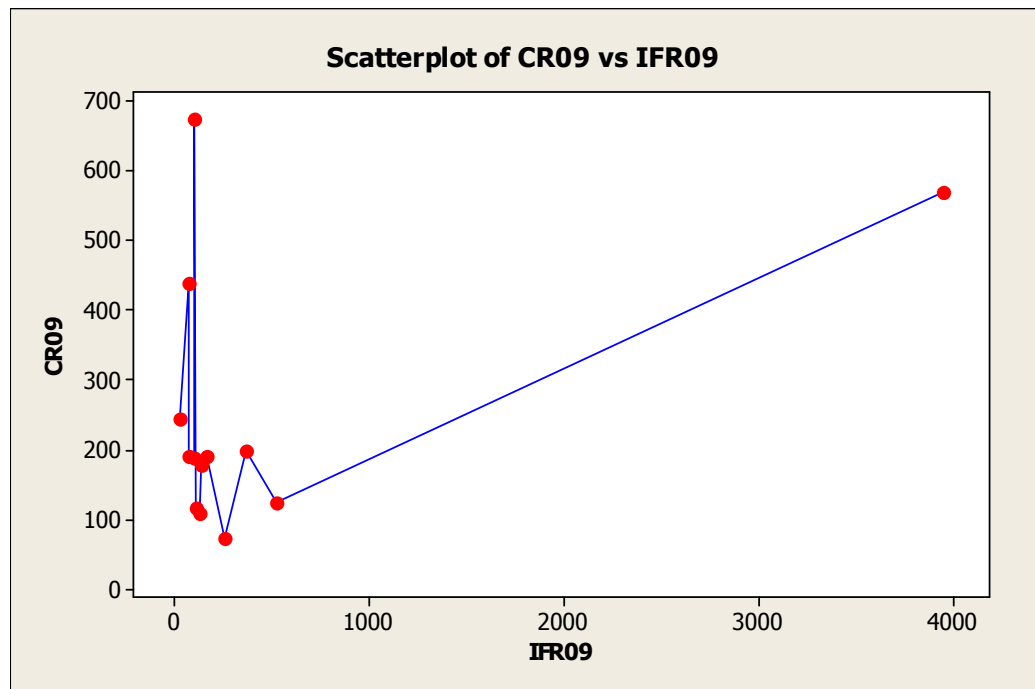
Coefficient of correlation is $R(I/FR \& CR) = 0.45$ It shows average negative correlation.

Coefficient of determination ($R-S_q = 20.8\%$) shows that 20.8% of change in CR is due to change in I/FR. Adjust R square is equal 13.6%

The P-value in this case is 0.12 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2008, there is not a significant relationship between I/FR and CR.

2009:

Exhibit 5.18: Scatter plot of CR vs I/FR 2009



In this case, the regression equation is :

$$CR2009 = 215 + 0.0826 \text{ I/FR } 2009$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	215.11	53.02	4.06	0.002
I/FR 2009	0.08259	0.04749	1.74	0.11

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	91206	91206	3.02	0.11
Residual Error	11	331687	30153		
Total	12	422893			

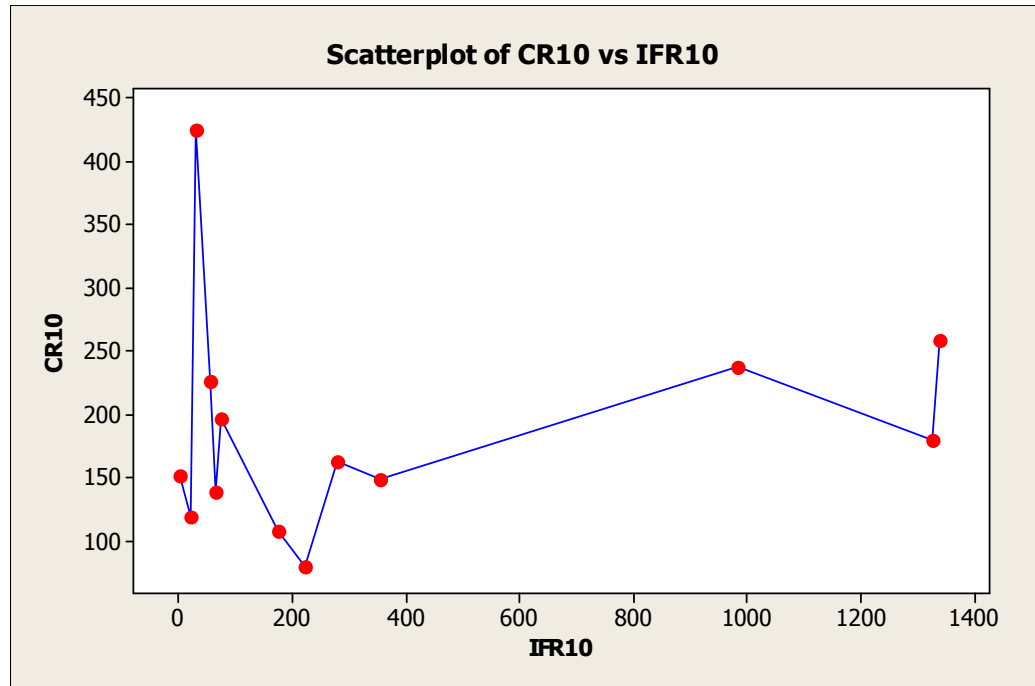
Coefficient of correlation is $R(I/FR \& CR) = 0.46$ It shows average positive correlation.

Coefficient of determination ($R^2 = 21.6\%$) shows that 21.6% of change in CR is due to change in I/FR. Adjust R square is equal 14.4%

The P-value in this case is 0.11 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2009, there is not a significant relationship between I/FR and CR.

2010:

Exhibit 5.19: Scatter plot of CR vs I/FR 2010



In this case, the regression equation is :

$$CR2010 = 176 + 0.0277 \text{ I/FR 2010}$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	176.05	32.37	5.44	0.00
I/FR 2010	0.02775	0.0532	0.52	0.612

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	2268	2268	0.27	0.612
Residual Error	11	91721	8338		
Total	12	93989			

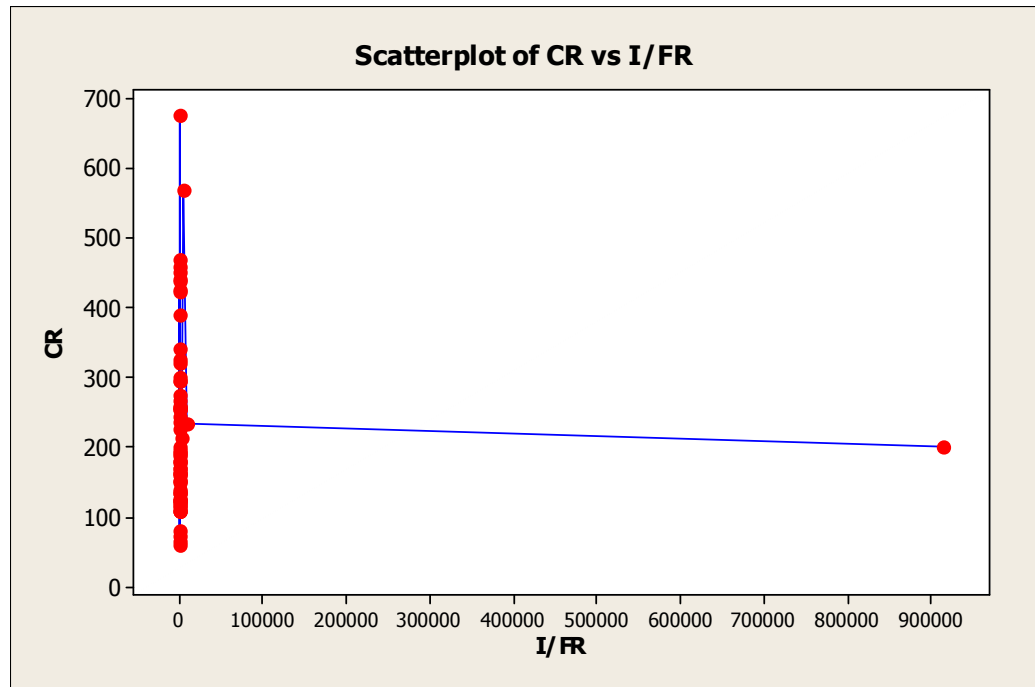
Coefficient of correlation is $R(I/FR \& CR) = 0.15$ It shows poor positive correlation.

Coefficient of determination ($R-S_q = 2.4\%$) shows that 2.4% of change in CR is due to change in I/FR. Adjust R square is equal 0.00%

The P-value in this case is 0.61 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2010, there is not a significant relationship between I/FR and CR.

Five years consolidated together (From 2006-2010):

Exhibit 5.20: Scatter plot of CR vs I/FR Five years consolidated together (From 2006-2010)



In this case, the regression equation is :

$$CR = 229 - 0.000029 I/FR$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	228.79	16.16	14.16	0.00
I/FR	-0.0000292	0.0001424	-0.21	0.838

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	702	702	0.04	0.838
Residual Error	63	1052102	16700		
Total	64	1052804			

Coefficient of correlation is $R(I/FR \& CR) = 0.03$ It shows poor negative correlation.

Coefficient of determination ($R-S_q = 0.1\%$) shows that 0.1% of change in CR is due to change in I/FR. Adjust R square is equal 0.0%

The P-value in this case is 0.84 which is more than 5%. Therefore, Null hypothesis is accepted. As such in five years together (from 2006-2010), there is not a significant relationship between I/FR and CR.

5.2.2.4 Sub-Hypothesis No.2.4

For this hypothesis QR and I/FR is calculated for 13 companies from 2006-2010.

The Steps of hypothesis testing:

1. The null and alternative hypothesis is as under:

$$H_0 : \text{There is not a significant relationship between QR and I/FR}$$

$$[H_0 : R(QR \& I/FR) = 0]$$

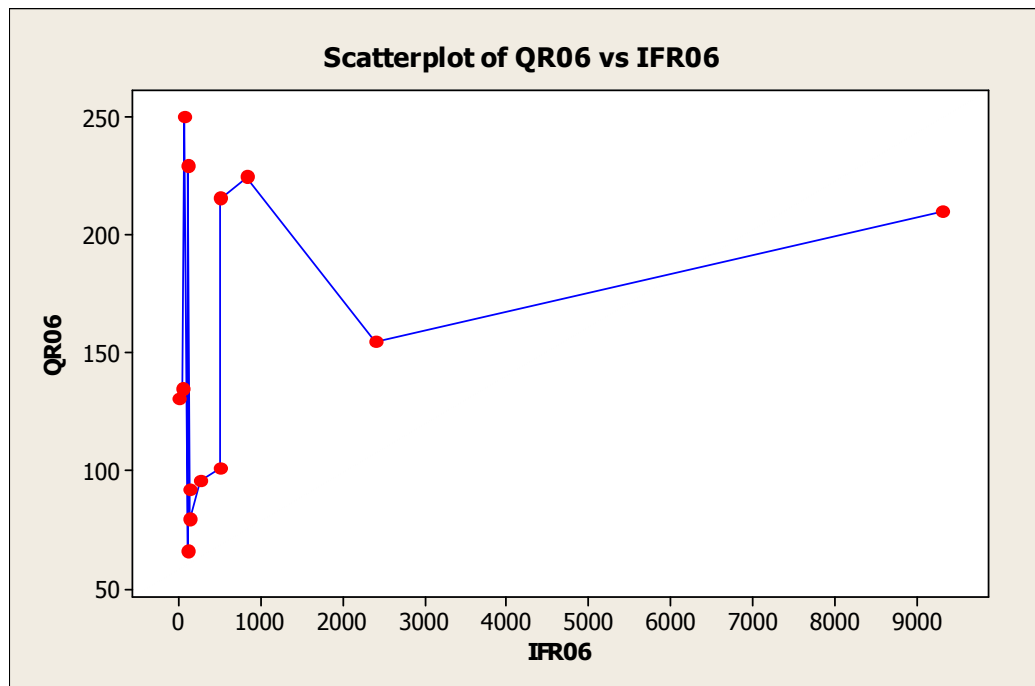
H_1 : There is a significant relationship between QR and I/FR

$[H_1 : R(QR \& I/FR) \neq 0]$

2. The amount of QR and I/FR is indicated at tables 5.17 and 5.18.
3. For testing of this hypothesis first the relationship between QR and I/FR tested for every year separately then five years together. It is as under:

2006:

Exhibit 5.21: Scatter plot of QR vs I/FR 2006



In this case, the regression equation is :

$$QR\ 2006 = 144 + 0.00747\ I/FR\ 2006$$

Predictor	Coefficient	Standard Error	T-Vale	P-Value
		Coefficient (SE coeF)		
Constant	144.12	19.89	7.24	0.00
I/FR 2006	0.007475	0.0074	1.01	0.334

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	4348	4348	1.02	0.334
Residual Error	11	46935	4267		
Total	12	51284			

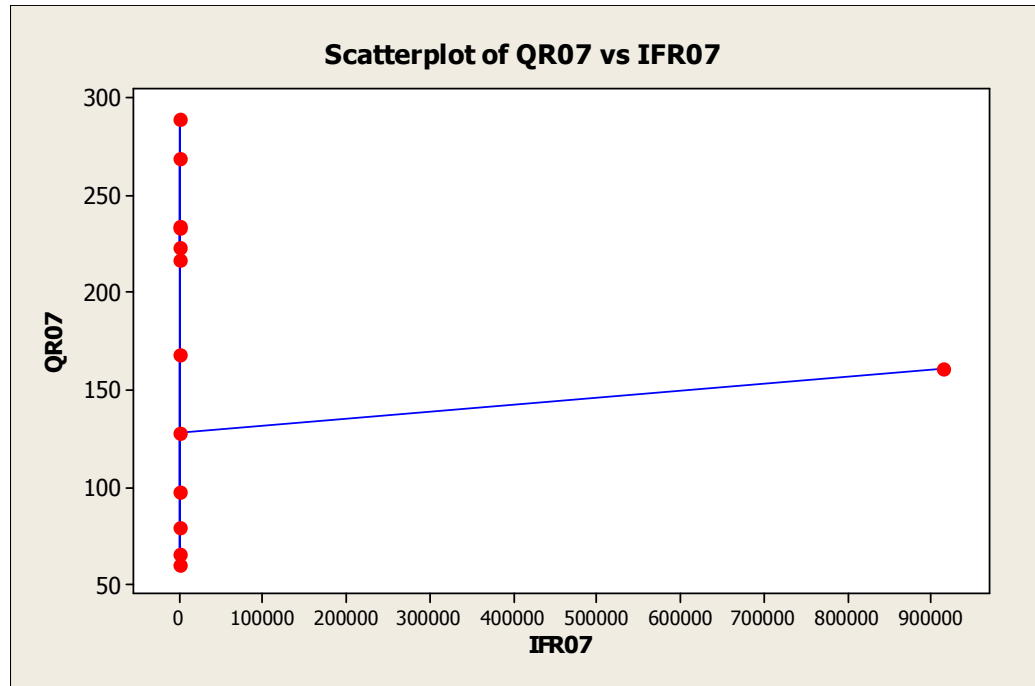
Coefficient of correlation is $R(I/FR \& QR) = 0.29$. It shows poor positive correlation.

Coefficient of determination ($R-S_q = 8.5\%$) shows that 8.5% of change in QR is due to change in I/FR. Adjust R square is equal 0.2%

The P-value in this case is 0.33 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2006 there is not a significant relationship between I/FR and QR.

2007:

Exhibit 5.22: Scatter plot of QR vs I/FR 2007



In this case, the regression equation is :

$$\text{QR 2007} = 172 - 0.000012 \text{ I/FR 2007}$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	171.91	23.87	7.2	0.00
I/FR 2007	-0.0001211	0.00009402	-0.13	0.9

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	113	113	0.02	0.9
Residual Error	11	75152	6832		
Total	12	75265			

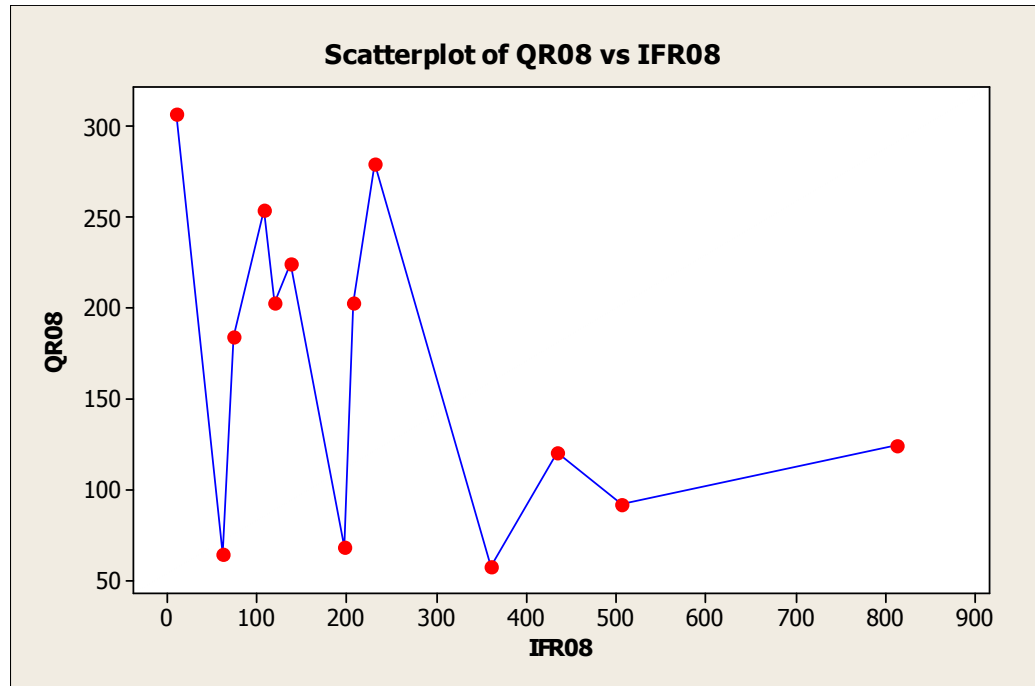
Coefficient of correlation is $R(I/FR \& QR) = 0.044$. It shows poor negative correlation.

Coefficient of determination ($R-S_q = 0.2\%$) shows that 0.2% of change in QR is due to change in I/FR. Adjust R square is equal 0.0%

The P-value in this case is 0.09 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2007 there is not a significant relationship between I/FR and QR.

2008:

Exhibit 5.23: Scatter plot of QR vs I/FR 2008



In this case, the regression equation is:

$$QR\ 2008 = 210 - 0.169\ I/FR\ 2008$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	210.27	33.99	6.19	0.00
I/FR 2008	-0.1693	0.1027	-1.65	0.127

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	17431	17431	2.72	0.127
Residual Error	11	70544	6413		
Total	12	87975			

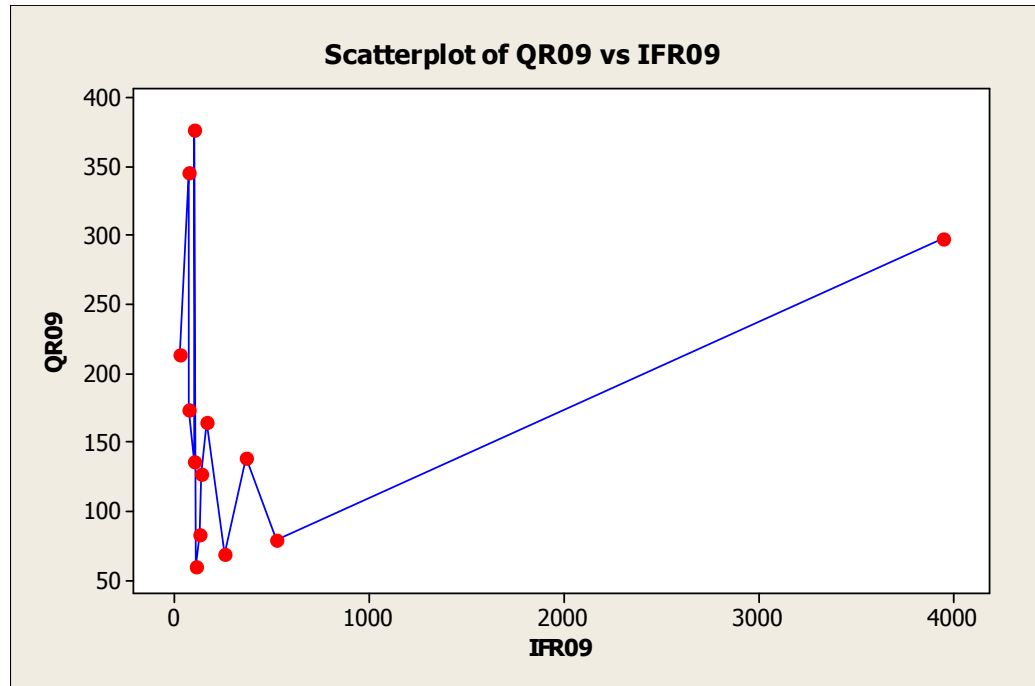
Coefficient of correlation is $R(I/FR \& QR) = 0.44$. It shows average negative correlation.

Coefficient of determination ($R-S_q = 19.8\%$) shows that 19.8% of change in QR is due to change in I/FR. Adjust R square is equal 12.5%

The P-value in this case is 0.13 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2008, there is not a significant relationship between I/FR and QR.

2009:

Exhibit 5.24: Scatter plot of QR vs I/FR 2009



In this case, the regression equation is:

$$QR\ 2009 = 160 + 0.0296\ I/FR\ 2009$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	160.1	32.19	4.97	0.00
I/FR 2009	0.02958	0.02883	1.03	0.327

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	11701	11701	1.05	0.327
Residual Error	11	122280	11116		
Total	12	133981			

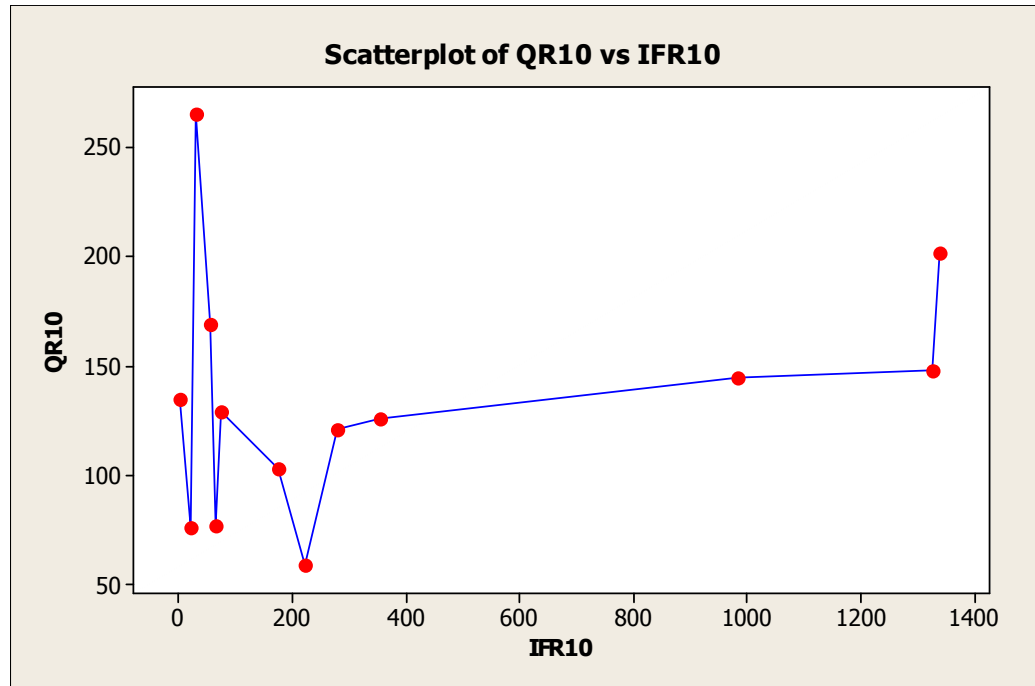
Coefficient of correlation is $R(I/FR \& QR) = 0.29$. It shows poor positive correlation.

Coefficient of determination ($R-S_q = 8.7\%$) shows that 8.7% of change in QR is due to change in I/FR. Adjust R square is equal 0.4%

The P-value in this case is 0.33 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2009 there is not a significant relationship between I/FR and QR.

2010:

Exhibit 5.25: Scatter plot of QR vs I/FR 2010



In this case, the regression equation is:

$$QR\ 2010 = 124 + 0.0293\ I/FR\ 2010$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	123.8	19.74	6.27	0.00
I/FR 2010	0.02933	0..03244	0.9	0.385

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	2534	2534	0.82	0.385
Residual Error	11	34108	3101		
Total	12	36642			

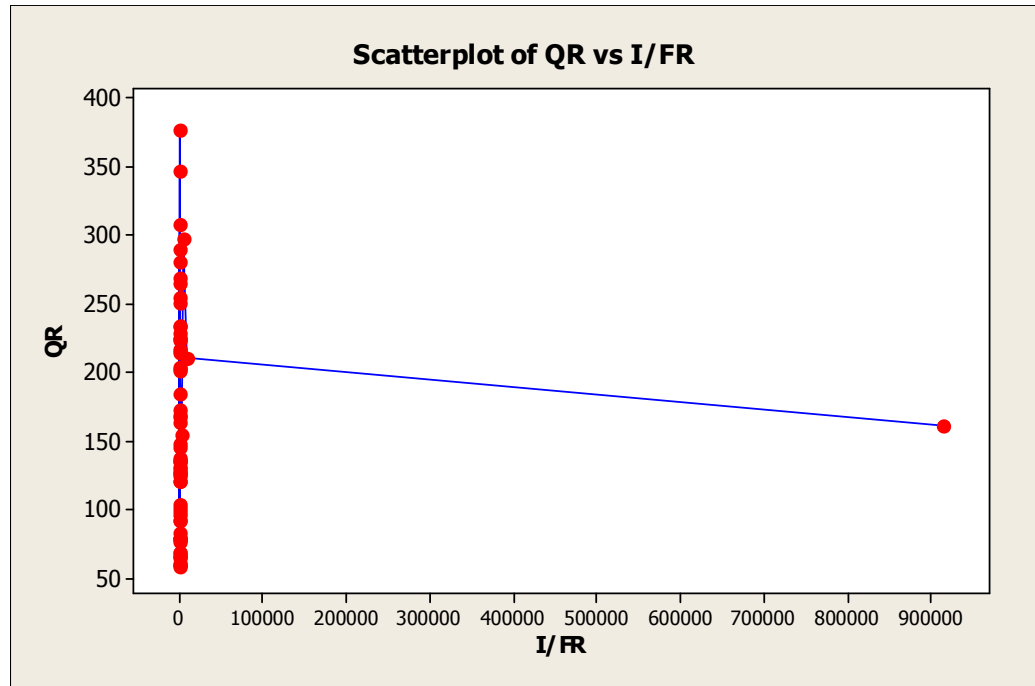
Coefficient of correlation is $R(I/FR \& QR) = 0.26$. It shows poor positive correlation.

Coefficient of determination ($R^2 = 6.9\%$) shows that 6.9% of change in QR is due to change in I/FR. Adjust R square is equal 0.0%

The P-value in this case is 0.38 which is more than 5%. Therefore, Null hypothesis is accepted. As such in 2010 there is not a significant relationship between I/FR and QR.

Five years together from (2006-2010):

Exhibit 5.26: Scatter plot of QR vs I/FR Five years together from (2006-2010)



In this case, the regression equation is:

$$QR = 160 + 0.000002 \text{ I/FR}$$

Predictor	Coefficient	Standard Error Coefficient (SE coef)	T-Vale	P-Value
Constant	159.999	9.953	16.08	0.00
I/FR 2010	0.00000195	0.00008767	0.02	0.982

Analysis of variance:

Analysis on Variance (ANOVA)	Degree of Freedom (d.f.)	Sum of Square(SS)	Sum mean of square (MS)	F	Significance F (P-Value)
Regression	1	3	3	0.00	0.982
Residual Error	63	398976	6333		
Total	64	398979			

Coefficient of correlation is $R(I/FR \& QR) = 0.0\%$. It shows poor positive correlation.

Coefficient of determination ($R-S_q = 0.0\%$) shows that 0.0% of change in QR is due to change in I/FR. Adjust R square is equal 0.0%

The P-value in this case is 0.98 which is more than 5%. Therefore, Null hypothesis is accepted. As such in five years together (From 2006-2010) there is not a significant relationship between I/FR and QR.

So, the hypothesis No.2 approved. As such, the annual accounts of the companies have been prepared on a going concern basis.

5.2.3 Hypothesis No.3

Indian accounting standards are used for accounts in Indian Automobile Industry.

For the hypothesis the total 110 copies of the questionnaires with 15 questions (Q.No.13-27) in Questionnaire – Part B is distributed to population. The total 105 copies is received (See the Collected questionnaires resulted in a total of 103 useable responses is presented at table 5.2) (Also see classified questionnaires on the basis of their groups, in the end of this chapter. Table No.5.17).

The Steps of hypothesis testing

1. The null and alternative hypothesis is as under:

H_0 : Indian accounting standards are not use for accounts in Indian automobile Industries [$P_1 \neq P_2$]

H_1 : Indian accounting standards are used for accounts in Indian automobile Industry. [$P_1 = P_2$]

3. The frequencies of questions No.13 -27 is as under:

Table 5.9: the questions and observed Frequencies of Questions

S.N.	The Questions & Observed Frequencies of Questions	Yes	No
13	Is going concern concept follow by this industry?	100	3
14	Is consistency in accounting policies followed by this industry?	61	42
15	Is physical verification of Inventory taken at year end?	99	4
16	Is the inventory appropriate classified in financial statements?	98	5
17	Are contingent assets/liabilities disclosed in accounts by way of notes as to its amount, Nature and uncertainties which may affect the future outcome?	90	13
18	Depending upon the principal activity of the enterprise, is the classification of items in the cash flow appropriate made into operating, financing and investment activities?	88	15
19	Have the fixed assets revaluated?	10	93
20	Is revenue recognized on accrual basis?	98	5
21	In the case of capitalization of fixed asset whether purchase price including import duty and other non-refundable taxes or levies is included in cost?	99	4
22	Are current investments carried at a lower of cost and fair value on individual basis or category of investment?	91	12
23	Is the company required to prepared and present interim financial report?	95	8
24	At the reporting date, balance sheet date, are all monetary assets/liabilities recorded at closing rate?	2	101
25	At the reporting date, balance sheet date, are all non-	91	12

	monetary assets/liabilities recorded at rates prevailing on transaction date?		
26	Has the company during the year or after year end but before approval of account by the Board of directors issued bonus shares?	23	80
27	Has the company during the year or after year end but before approval of account by the Board of directors made share split?	16	87

Table 5.10 the frequencies of questions

Number of Questions	Yes	No
13	100	3
14	61	42
15	99	4
16	98	5
17	90	13
18	88	15
19	10	93
20	98	5
21	99	4
22	91	12
23	95	8
24	2	101
25	91	12
26	23	80
27	16	87
Total	1061	484

3. The hypothesis tester function (z) is calculated through population proportion test for deference between proportions. It is same sub-hypothesis 1.2. It is as follows:

Compute the standard error (SE) = $\text{Sqrt}\{ 0.570 \times 0.430 \times (1/1061 + 1/484)$

=> SE = 0.027

$Z = (0.69 - 0.31) / 0.027 = 14.07$

4. According to the tester function ($Z = 14.07$) is more than 1.96 (critical region), so the null hypothesis is rejected. As such Indian accounting standards are used for accounts in Indian automobile industry.

5.3. Profiles

For more understanding of automobile industry function two profiles are presented.

Profile No. 1

Comparing of financial ratios includes Return on Equity (ROE) ratio, Gross Profit ratio, Debt to Equity ratio and Return on Working Capital from 2000-2001 to 2009-2010. They are as under:

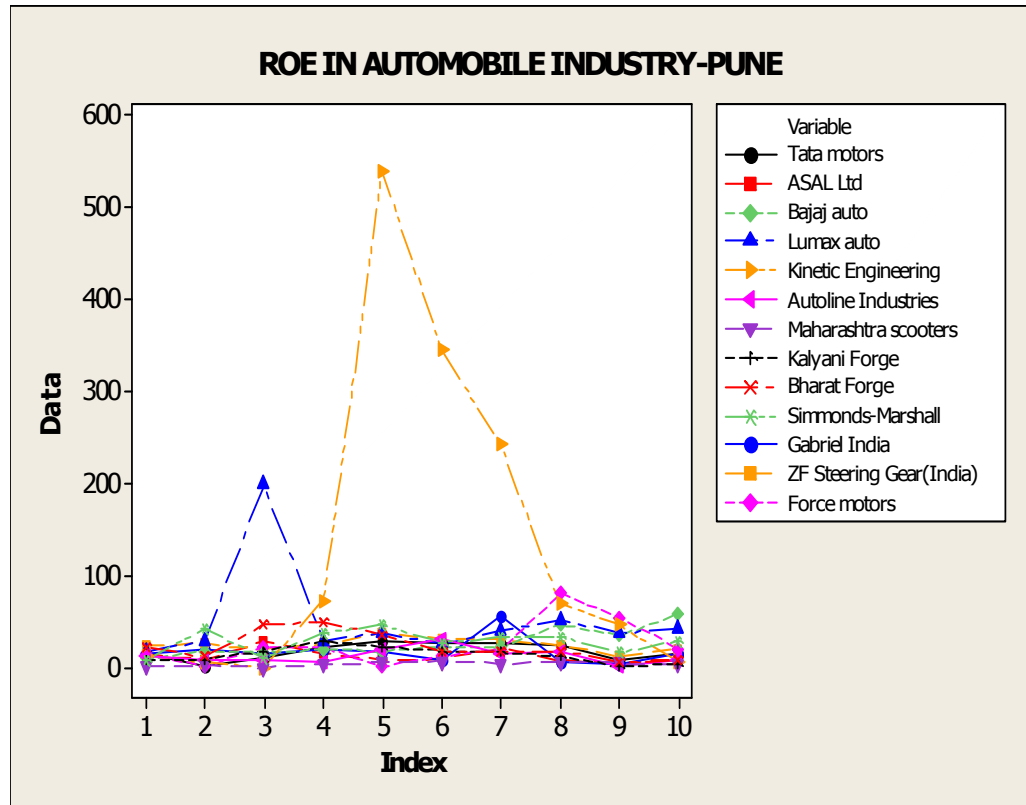
Profile No 2: Indian Automobile Exports Terends

5.3.1. Return on equity ratio (ROE)

Table 5.11- Return on equity ratio (ROE) in automobile industry in Pune city

Name of the company	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tata motors	15.3772	2.5715	11.5665	22.5495	30.0857	27.6117	27.8534	25.8807	8.1868	14.9683
ASALd	15.0459	8.7542	29.1607	16.7123	8.9732	10	21.2353	8.2852	5.084	10.3521
Bajaj auto	9.9584	18.18315	16.6149	19.8046	18.5473	23.0914	22.3688	47.6162	35.1115	58.1773
Lumax auto	18.42105	29.2	199.4286	29.7222	38.4	26.2745	40.7185	52.2286	38.2332	43.25
KineticEngineerig	13.4727	6.0537	0.3448	73.65645	541.2112	346.3	242.6415	70.0678	46.5084	5.70185
AutolineIndustries	13.3333	9.4907	8.2677	7.07953	19.8257	32.4977	14.929	17.3078	2.8367	7.7603
Maharashtra scooters	1.4717	3.1987	0.2039	3.5515	6.0971	7.6455	5.1405	6.1099	5.4494	4.1935
Kalyani Forge	9.2474	9.6347	18.3109	28.8895	22.8972	18.9915	17.1504	13.1619	1.3134	4.5126
Bharat Forge	21.92075	12.4879	47.2635	49.7154	36.5216	17.7789	18.1602	18.5701	6.9465	8.3124
Simmonds-Marshall	9.2199	42.2078	11.3475	37.7778	46.4286	27.8396	33.279	34.3602	17.0061	29.4156
Gabriel India	15.6202	21.114	15.774	19.9549	18.57425	8.8862	55.8898	5.76706	4.2381	16.105
ZF Steering Gear(India)	25.5123	26.1375	20.1975	26.6253	37.7324	32.0749	30.6392	25.5224	12.3351	20.8247
Force motors	15.5146	1.4106	23.2829	23.1163	1.4023	13.4449	20.09	81.2451	54.7468	21.3257

Exhibit5.27: Return on equity ratios in automobile industry-Pune city



This ratio indicates that from every single Rs of investment by investors, how much percent profit gained?

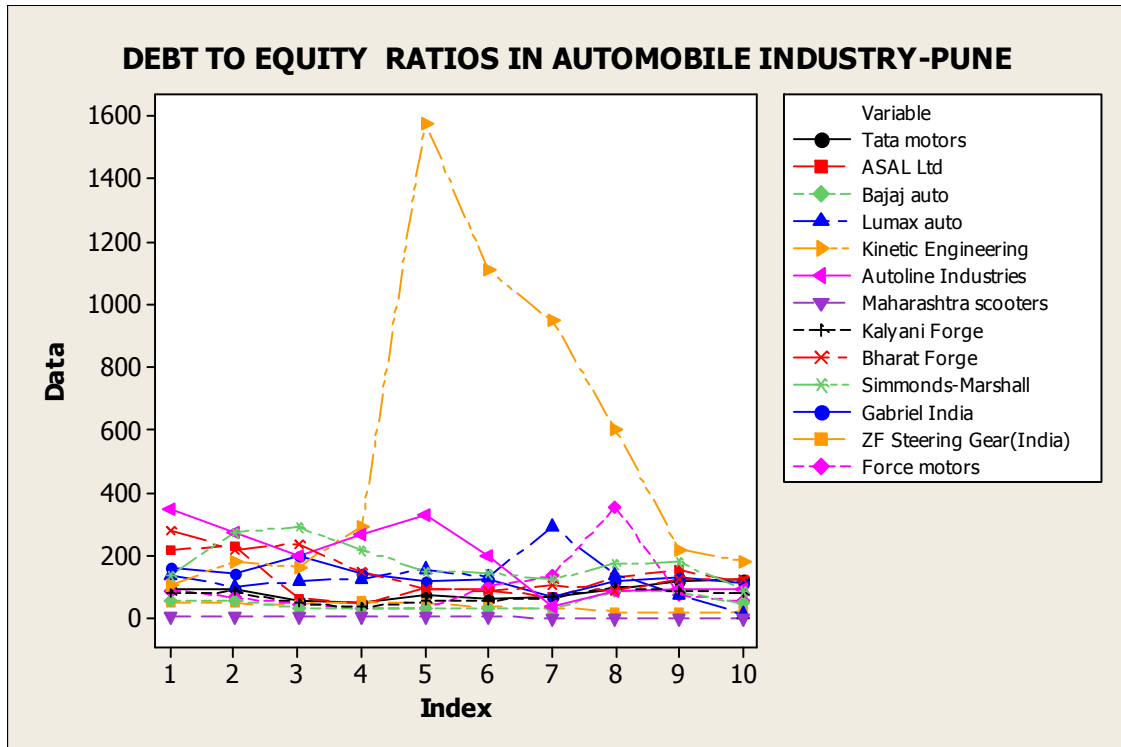
There are 13 Indian automobile industries in Pune city. In above table and exhibit Lumax auto industry and Kinetic motors Ltd have highest ratios that means have gotten most benefits .

5.3.2. Debt to equity ratios

Table 5.12- debt to equity ratios in automobile industry pune city

Name of the company	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tata motors	92.166	93.6172	56.1502	49.3633	74.4444	64.2827	69.8129	92.56	116.0696	121.1759
ASAL Ltd	217.4312	229.6296	63.0695	45.2055	95.3125	89.1164	67.0588	126.7823	153.9916	115.8954
Bajaj auto	55.9198	57.7441	31.2484	30.5539	33.0618	32.5889	30.7102	84.7398	84.1948	45.7689
Lumax auto	135.7895	100	117.1429	123.6111	156.4	130.1961	290.5389	138.6857	74.8763	13.1818
Kinetic Engineering	106.8985	179.2457	162.9207	291.4469	1572.674	1108.2	945.5094	601.3559	217.4579	180.5767
Autoline Industries	345.9649	269.6759	199.5276	266.9492	326.0349	196.6404	38.5215	83.7974	89.7765	92.9593
Maharashtra scooters	4.7504	6.2954	5.7402	4.9662	5.2057	5.2057	0.5203	0.51044	0.50133	0.49863
Kalyani Forge	79.7038	83.4247	46.9482	33.5682	51.9359	55.7232	65.9631	98.1696	86.0189	80
Bharat Forge	277.3002	216.9722	236.2884	147.5102	94.4211	85.2534	105.6384	87.3894	121.5841	121.1297
Simmonds-Marshall	136.5248	274.026	289.3617	216.4444	150.5495	144.098	122.3491	173.5782	176.7821	89.02597
Gabriel India	160.4452	142.3575	197.5528	143.4969	117.246	123.4017	64.36325	118.0475	126.5392	109.1311
ZF Steering Gear(India)	49.77	46.596	43.2974	52.283	45.7942	33.8206	32.3291	20.0055	19.5931	20.9501
Force motors	88.6166	65.1768	44.44525	30.6719	29.752	100.4864	133.6048	355.3904	74.6835	52.1777

Exhibit5.28: Debt to equity ratios in automobile industry-Pune city



How much this ratio be greater the ensure of creditors will be less for collecting their credits.

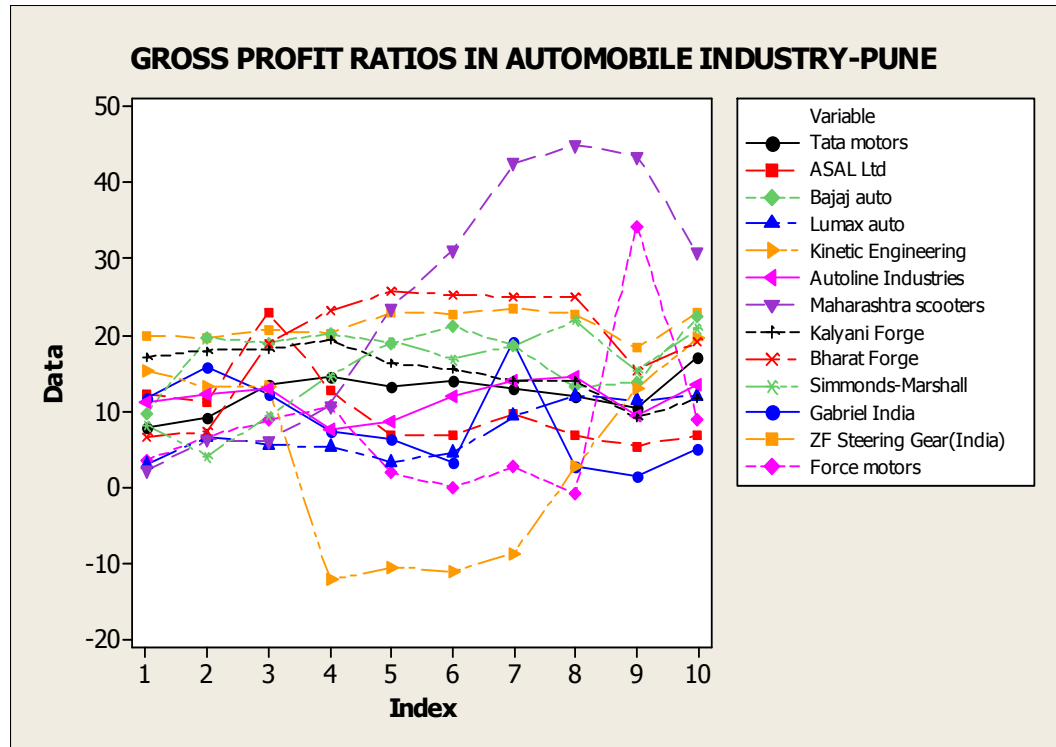
In above table and exhibit Kinetic engineering Ltd has highest debt to equity ratio and after that respectively Autoline industries and ASAL Ltd and the lowest debt to equity ratio is related to Maharashtra Scooters Ltd among Indian automobile industry in Pune city.

5.3.3. Gross profit ratios

Table 5.13- Gross profit ratios in automobile industry in Pune city

Name of the company	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tata motors	7.7695	9.08526	13.4593	14.6114	13.2906	13.8706	12.9249	11.8818	10.4377	16.9464
ASAL Ltd	12.1185	11.1801	23.0227	12.8118	6.8113	6.828	9.5913	6.8106	5.3382	6.8055
Bajaj auto	9.5693	19.5768	18.9614	20.1974	18.9508	21.1629	18.5967	13.0981	13.7869	22.3542
Lumax auto	2.8715	6.639	5.5831	5.1406	3.3333	4.4645	9.245	12.0218	11.3698	12.0221
Kinetic Engineering	15.2888	13.1539	13.1817	-12.2983	-10.522	-11.102	-8.762	2.57225	13.0587	19.5504
Autoline Industries	11.2488	12.2823	13.035	7.4524	8.5858	11.9648	13.9261	14.5557	9.3263	13.5837
Maharashtra scooters	2.1727	6.163	6.1254	10.5788	23.554	31.068	42.6217	45.0087	43.5567	30.7756
Kalyani Forge	17.1165	17.9386	18.0913	19.3043	16.2697	15.4672	13.9977	13.9327	9.0664	11.6136
Bharat Forge	6.5842	7.3034	18.9684	23.1337	25.7425	25.3143	25.019	25.0122	15.3783	19.0108
Simmonds-Marshall	8.1481	4.0973	9.3366	14.5673	19.1128	16.9061	18.5822	21.8708	15.2081	20.9936
Gabriel India	11.76	15.689	12.1949	7.1818	6.3599	3.151	19.012	2.6439	1.3897	5.0502
ZF Steering Gear(India)	19.8354	19.6976	20.6227	20.2006	22.9509	22.776	23.4845	22.7851	18.259	22.8345
Force motors	3.4591	6.63425	8.8022	10.5524	1.8635	-0.0214	2.5745	-0.7888	34.3297	8.8784

Exhibit5.29: Gross profit ratios in automobile industry-Pune city



This ratio indicates that from every single Rs of sale how much percent gross profit has been made?

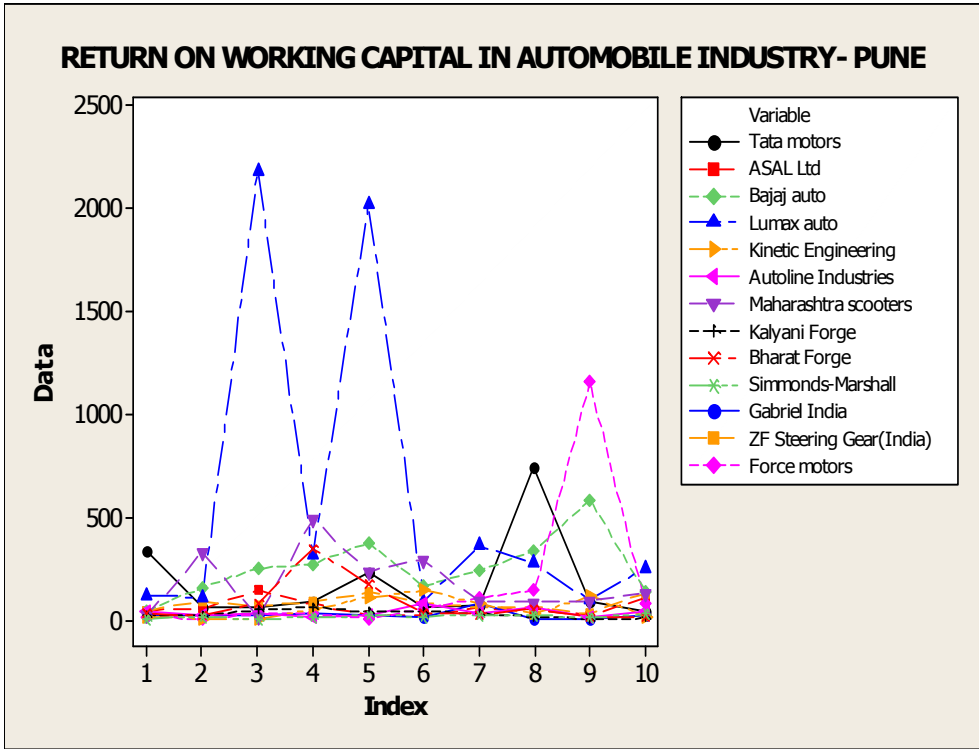
In above exhibit and table Autoline industries and ASAL Ltd have highest gross profit Indian automobile industries in Pune city.

5.3.4. Return on working capital

Table 5.14- Return on working capital in automobile industry in Pune city

Name of the company	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Tata motors	333.56	60.6487	55.7701	84.4773	226.8135	60.05145	68.7294	743.6027	87.5365	38.393
ASAL Ltd	44.8087	53.0612	143.0588	73.9654	18.3655	19.4408	56.1093	47.8402	23.2839	105
Bajaj auto	44.706	155.42	251.083	267.93	375.464	159.960	240.787	332.169	584.629	133.721
Lumax auto	118.96	105.03	2181.25	314.705	2021.05	90.8475	360.638	272.835	93.0352	251.121
Kinetic Engineering	14.819	4.567	0.28796	50.39	108.595	141.81	77.6945	28.0842	111.245	16.1032
Autoline Industries	37.255	24.405	31.4371	9.1878	24.3315	81.8319	32.7203	57.9872	15.2181	41.7068
Maharashtra scooters	20.466	326.99	8.5	487.903	232.969	290.103	87.7442	82.4948	91.2678	126.087
Kalyani Forge	18.174	20.974	45.0851	59.0438	35.5563	40.9199	27.9605	14.0262	2.39814	7.3474
Bharat Forge	30.035	21.978	77.1771	347.427	169.069	31.263	25.01	50.633	10.0689	14.9099
Simmonds-Marshall	3.8922	11.344	2.9144	11.955	18.5307	15.2439	19.1549	19.8903	10.2643	25.9599
Gabriel India	19.436	24.491	17.9532	26.1845	24.2383	10.578	76.1932	6.6131	5.7883	23.495
ZF Steering Gear(India)	43.884	87.314	65.8537	84.025	134.075	78.147	59.4735	62.0267	28.8624	129.14
Force motors	12.947	1.5643	25.996	30.9572	2.381	54.2	102.32	146.216	1156.55	77.5908

Exhibit5.30: Return on working capital ratios in automobile industry-Pune city



Whereas this ratio high , it indicator that the company is faced with working capital shortage.

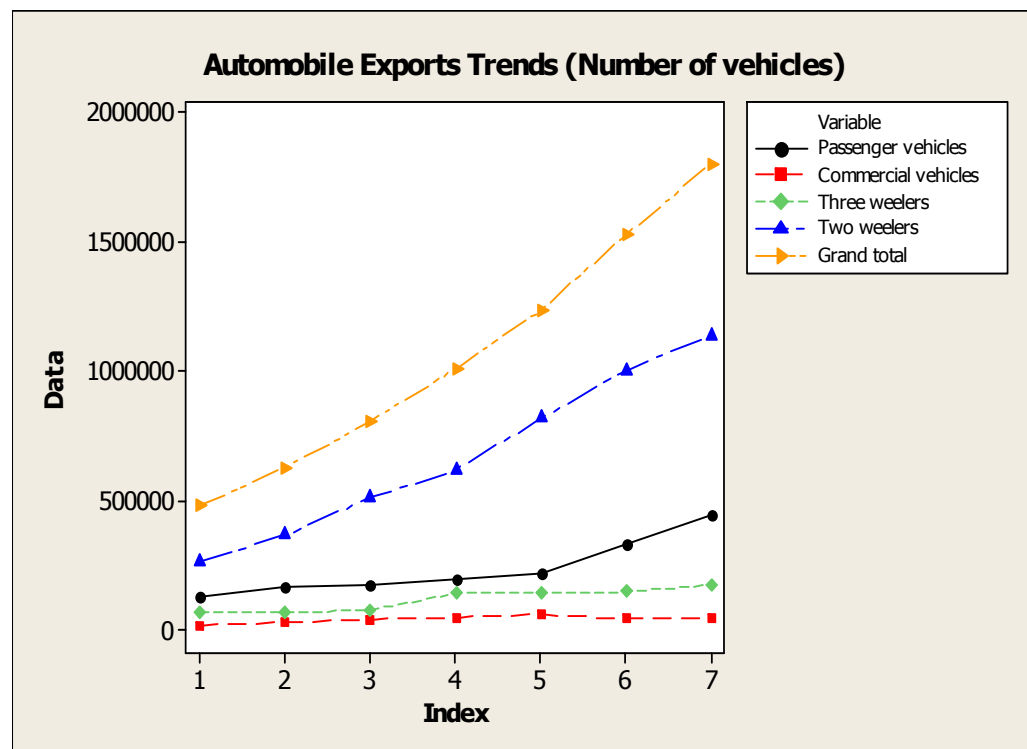
The above table and exhibit indicate that Lumax auto Ltd has highest working capital ratio.

Profile No 2: Indian Automobile Exports Trends

Table.5.15. Indian Automobile Exports Trends (Number of Vehicles)

Category	2003-4	2004-5	2005-6	2006-7	2007-8	2008-9	2009-10
Passenger Vehicles	129,291	166,402	175,572	198,452	218,401	335,729	446,146
Commercial Vehicles	17,432	29,940	40,600	49,537	58,994	42,625	45,007
Three Wheelers	68,144	66,795	76,881	143,896	141,225	148,066	173,282
Two Wheelers	265,052	366,407	513,169	619,644	819,713	1,004,174	1,140,184
Grand Total	479,919	629,544	806,222	1,011,529	1,238,333	1,530,594	1,804,619

Exhibit 5.31 : Indian Automobile Exports Trends(Number of Vehicles)



The above table and exhibit indicate that highest number of vehicles have been exported is related to Two wheelers , specially in 2009-2010 . After that respectively passenger vehicle, three wheelers and the lowest trend is related to commercial vehicles.

5.4-Analysis of objectives

In the section 5.2 of this chapter, the pre-determined hypothesis through statistical tools tested and the results for every hypothesis reported.

The next step is related to the objectives of the study to see that, whether such study supports and covers the pre-determined objectives. Therefore, here researcher describes the objectives of the study as a results of such description, demonstrates the success of researcher to achieve this target.

5.4.1 The First objective of Research

The first objective is to study the accounting system and history of Automobile industry.

To support development of automobile in the world and India in the first chapter and accounting records and system in 3rd chapter to continue this target (in 5th chapter) sub-hypothesis no.1.2 described.

5.4.2 The Second objective of Research

The second objective is to analyze and examine the financial position of automobile industry in India.

To support this objective in Chapters No.5, 4 and 3 analyze and examine the financial position of automobile industry described. It is described in sub-hypotheses no.1.1. Finally in profile no.1 some ratios of automobile industry's financial statement described from 2000-2001 to 2009-2010 in chapter 5.

5.4.3 The Third objective of Research

The third objective is to understand the account recording system of the automobile industry in India.

To achieve this objective, in chapter no.3 by giving the background of accounting system the account recording system of the automobile industry is explained in sub-hypothesis no.1.2 through questionnaire.

5.4.4 The Fourth objective of Research

The fourth objective is to study the accounting methods used for recording transaction.

To support this objective in chapter no.3 the accounting methods are described in chapter no.5. It is described in sub-hypothesis no.1.2 through questionnaire and also in hypothesis no.2.

5.4.5 The Fifth objective of Research

The fifth objective is to analyze the demand and supply for automotives (light and heavy) in Indian Market.

To achieve this objective in chapter no.5, profile no.2 and 1 the analyze of demand and supply for automotives is explained.

5.4.6 The Sixth objective of Research

The sixth objective is to find complete figures of automotive imports in the country by brand, quality and type.

To support this target in chapter no.4 and chapter no.1 the complete figures of automotive imports are described.

5.4.7 The Seventh objective of Research

The seventh objective is to understand challenges to the automotive industry of India.

To support this objective it is explained in chapter no.4 and also in chapter no.1.

5.4.8 The Eighth objective of Research

The eighth objective is to study the proper accounting standard used for account writing.

To achieve this target it is described in chapter no.3 the Indian accounting standards and in chapter no.5, it is described in hypothesis no.3 through questionnaire.

5.5 Analyses of questionnaires

As described in this chapter (The Section No.5.2.1 and 5.2.3) here the tables details of every question is presented. It is as under:

Table 5.16 details of every question (3-12) mentioned in questionnaire

Question no.	Options	Experts		Advisor		Executive management team		Auditor/ Inspector	
		Yes	No	Yes	No	Yes	No	Yes	No
No. 3	Observed No.	74	0	8	0	6	0	15	0
	Percent %	100	0	100	0	100	0	100	0
No. 4	Observed No.	73	1	8	0	5	1	15	0
	Percent	98.65	1.35	100	0	83.33	16.67	100	0

Cont. Table 5.16

No. 5	Observed No.	61	13	6	2	2	4	13	2
	Percent	82.43	17.57	75	25	33.33	66.67	86.67	13.33
No.6	Observed No.	65	9	5	3	5	1	10	5
	Percent	87.84	12.16	62.5	37.5	83	17	66.67	33.33
No.7	Observed No.	67	7	6	2	5	1	13	2
	Percent	90.54	9.46	75	25	83.33	16.67	86.67	13.33
No. 8	Observed No.	71	3	7	1	5	1	13	2
	Percent	95.94	4.06	87.5	12.5	83.33	16.67	86.67	13.33
No. 9	Observed No.	72	2	8	0	6	0	15	0
	Percent	97.3	2.7	100	0	100	0	100	0
No. 10	Observed No.	73	1	8	0	6	0	15	0
	Percent	98.65	1.35	100	0	100	0	100	0
No. 11	Observed No.	73	1	7	1	6	0	15	0
	Percent	98.65	1.35	87.5	12.5	100	0	100	0
No. 12	Observed No.	69	5	7	1	4	2	14	1
	Percent	93.24	6.76	87.5	12.5	66.67	33.33	93.33	6.67

Details of every question (3-12) mentioned in questionnaire part A about accounting system in automobile industry at above table.

Table 5.17 details of every question(13-27) mentioned in questionnaire

Question no.	Options	Experts		Advisor		Executive management team		Auditor/ Inspector	
		Yes	No	Yes	No	Yes	No	Yes	No
No. 13	Observed No.	72	2	7	1	6	0	15	0
	Percent	97.29	2.71	87.5	12.5	100	0	100	0
No. 14	Observed No.	47	27	3	5	3	3	8	7
	Percent	63.51	36.49	37.5	62.5	50	50	53.33	46.67
No. 15	Observed No.	72	2	7	1	6	0	14	1
	Percent	97.3	2.7	87.5	12.5	100	0	93.33	6.67
No.16	Observed No.	73	1	5	3	6	0	14	1
	Percent	98.65	1.35	62.5	37.5	100	0	93.33	6.67
No.17	Observed No.	69	5	8	0	4	2	9	6
	Percent	93.24	6.76	100	0	66.67	33.33	60	40
No. 18	Observed No.	67	7	5	3	5	1	11	4
	Percent	90.54	9.46	62.5	37.5	83.33	16.67	73.33	26.67
No. 19	Observed No.	68	6	6	2	5	1	14	1
	Percent	91.89	8.11	75	25	83.33	16.67	93.33	6.67
No. 20	Observed No.	72	2	8	0	6	0	12	3
	Percent	97.29	2.71	100	0	100	0	80	20

Cont. Table 5.17

No. 21	Observed No.	71	3	7	1	6	0	15	0
	Percent	95.94	4.06	87.5	12.5	100	0	100	0
No. 22	Observed No.	69	5	8	0	4	2	10	5
	Percent	93.24	6.76	100	0	66.67	33.33	66.67	33.33
No. 23	Observed No.	69	5	7	1	4	2	15	0
	Percent	93.24	6.76	87.5	12.5	66.67	33.33	100	0
No. 24	Observed No.	1	73	1	7	0	6	0	15
	Percent	1.35	98.65	12.5	87.5	0	100	0	100
No. 25	Observed No.	70	4	6	2	3	3	12	3
	Percent	94.59	5.41	75	25	50	50	80	20
No. 26	Observed No.	12	62	3	5	2	4	6	9
	Percent	16.22	83.78	37.5	62.5	33.33	66.67	40	60
No. 27	Observed No.	8	66	3	5	1	5	4	11
	Percent	10.82	89.18	37.5	62.5	16.67	83.33	26.67	73.33

Details of every question (13-27) mentioned in questionnaire part B about Indian accounting standards in automobile industry at above table.

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