CHAPTER IV

RESULTS AND DISCUSSION

The focus of this research is to see how capital structure and dividend policy affect the firm value of a select Indian Pharmaceutical Companies. Secondary data from the Capital Line Database, Money Control, and Annual Reports for a sample of 31 Indian pharmaceutical companies was evaluated and interpreted in accordance with the study's objectives. The Classification of the companies is based on the following:

i) Large Capital Companies

ii) Mid Capital Companies

iii) Small Capital Companies

The results are presented in the following sections:

4.1 Determinants of Capital Structure and Dividend Policy

4.2 Impact of Capital Structure on Firm Value

4.3 Impact of Dividend Policy on Firm Value

4.4 Impact of Capital Structure on Dividend Policy

4.5 Relationship between Capital Structure, Dividend Policy and Firm Value

4.6 Intra Industry differences in Capital Structure and Dividend Policy

4.1. DETERMINANTS OF CAPITAL STRUCTURE AND DIVIDEND POLICY

The most important aspect of any company striving for success is its capital structure. Similarly, corporate finance investigators have been attracted to dividend policy because of its delicate nature, given the importance of stakeholder's expectations and the necessity to meet them. To fund its long-term assets, it has a financial structure that includes a mix of current and long-term debt, owner shares, and other endowments. Aligning the capital structure and dividend policy with the company's strategy is a crucial undertaking that should be recognised. According to Graham (2001), the ideal capital structure is discovered by balancing marginal costs and benefits. Companies with a dynamic capital structure, according to Campbell and Rogers (2018), produce less money

and have higher payout rules than companies with a stable capital structure. Firm-specific and country-specific factors influence a firm's capital structure, according to previous empirical studies. A firm's capital structure is determined by several qualitative and quantitative elements, as well as the subjective assessment of financial management.

4.1.1 CAPITAL STRUCTURE, DIVIDEND POLICY AND FIRM VALUE

Descriptive Statistics

Descriptive Statistics is the essential characteristic of the data in the study. It depicts the Independent variables and Dependent variables of Capital Structure and Dividend Policy of select pharmaceutical companies over a 15-year period (2007-2021).The results were presented in tables, which include Mean and Standard Deviation for the selected variables.

1. Large Capital Companies

The descriptive statistical analysis in Capital Structure, Dividend Policy and Firm Value of select Pharmaceutical Companies belonging to Large Capital Companies was done for the period of 15 years (2007-2021).The variables used were: **DER –** Debt Equity Ratio**, TDR –** Total Debt Ratio**,LTDR –** Long Term Debt Ratio**,STDR –** Short Term Debt Ratio,**DPR-** Dividend Payout Ratio,**DYR –** Dividend Yield Ratio,**FV-** Firm Value,**GR-** Growth,**CR** – Current Ratio,**ROA** – Return on Asset,**ROE** – Return on Equity,**ICR** – Interest Coverage Ratio,**DT** – Debt Tax Shield,**EPS** – Earnings Per Share,**PER** – Price Earning Ratio and **QR**- Quick Ratio.The results are shown below:

Table 4
Capital Structure, Dividend Policy and Firm Value of Large Capital Companies – Descriptive Statistics

S. no	Company Name	DER		TDR		LTDR		STDR		DPR		DYR		FV		GR		CR		ROA		ROE		ICR		DT		EPS		PER		PBR		QR	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Sun Pharma	0.32	0.18	0.51	0.43	14.66	0.35	5.45	0.39	0.16	0.10	0.08	0.07	12.32	15.22	0.48	0.30	0.43	0.51	10.76	4.22	16.97	4.19	2.13	2.93	0.06	0.05	23.46	11.51	2.13	2.93	3.33	2.37	1.30	0.80
2	Divi's Labs	0.06	0.12	0.05	0.08	24.84	0.06	14.05	0.05	0.19	0.08	0.24	0.09	17.57	14.45	0.45	0.08	0.28	0.04	19.32	4.79	24.83	6.88	0.19	0.08	0.02	0.03	53.96	28.63	0.19	0.08	5.96	16.83	2.48	1.24
3	Dr.Reddy Labs	0.19	0.10	0.15	0.07	22.62	0.07	16.47	0.02	0.27	0.05	0.08	0.07	3.67	0.14	0.23	0.14	0.27	0.17	17.45	18.32	21.65	29.56	0.33	0.19	0.16	0.10	0.53	0.26	0.33	0.19	14.34	6.01	0.15	0.08
4	Cipla Ltd	1.37	1.52	0.88	0.53	5.83	0.08	7.28	0.07	4.53	0.32	0.19	0.16	3.63	1.28	0.45	0.08	0.07	0.08	0.64	0.90	31.62	39.93	0.07	0.13	0.04	0.02	0.64	0.51	0.14	0.29	3.84	1.99	2.64	0.75
5	Aurobindo Pharma	2.67	1.48	0.61	0.22	5.42	0.08	4.67	0.11	0.15	0.08	0.36	0.11	2.40	0.54	0.19	0.08	0.12	0.85	16.8	18.92	90.74	325.52	0.03	0.02	0.09	0.04	0.61	0.54	0.60	1.10	8.08	4.49	1.62	0.87
6	Lupin Ltd	0.41	0.29	0.44	0.13	0.26	0.13	0.06	0.33	0.42	0.09	3.29	0.74	2.27	1.27	0.08	0.06	0.24	0.07	0.58	0.85	23.94	27.13	0.07	0.16	0.18	0.20	0.27	0.21	0.07	0.02	5.06	2.74	7.85	4.85
7	Torrent Pharma	2.08	1.55	0.07	0.02	1.83	0.45	0.49	0.27	0.17	0.12	0.56	0.42	2.75	1.79	0.16	0.15	0.30	0.05	2.94	4.41	80.82	327.98	0.21	0.07	1.78	1.61	0.09	0.24	0.17	0.04	5.41	1.68	0.87	0.36

Source: Computed Data (2007-2021)

Table 4 shows the Mean and Standard deviation in Capital Structure, Dividend Policy and Firm Value of Large Capital Companies.

In Sun Pharma, the GR has the highest mean (0.48), it indicates that this company is efficient in utilizing the equity capital to generate better income and for the improvement in their sales volume.The ROE has the low mean value (16.97).It shows that this company is utilizing 17 percent of equity capital or owners fund in its capital structure.

In Divi's Labs, has the highest mean value of LTDR (24.84) and it has the maximum mean of Firm value (17.57). It shows that this company utilizes the debt wisely to enhance their firm value. The ROA has a highest mean (19.32).It shows that this company is utilizing the assets efficiently to generate income for their financial operations.

The Dr.Reddy Labs,has the highest mean value of STDR (16.41).It indicates that they were good at managing their current obligations. The PBR (14.34) has the maximum mean value.It is a good signal for the investors to invest in their company.

The Cipla has the highest mean value of DPR (4.53), it indicates that this company is good at their dividend payouts to the shareholders.

The Aurobindo has the maximum mean value in ROE (90.74), it means that this company is utilizing the debt capital efficiently, but they should borrow loans with low interest. Because, their ICR is minimum (0.03).

The Lupin Pharma has the highest mean value of DYR (3.29) with a decrease in the firm value (2.27).So, this company payout more dividends than retaining their earnings for further business operations. The GR has a minimum mean value (0.08), it indicates that this company should be careful in employing debt capital if its growth in sales is highly fluctuating and inconsistent.

In Torrent Pharma has the highest mean value of DT (1.78) it shows that the debt level can be increased if there are incentives for additional debt in the form of tax reductions and the imposition of debt interest on profit.This tax reduction drives the company to prefer debt financing over equity.

The mean value of QR and GR is greater than standard deviation in all the select companies. It shows that there is a consistency in Quick Ratio and Growth during the study period.

2. Mid Capital Companies

The descriptive statistical analysis of Pharmaceutical Companies belonging to Mid Capital Companies was carried out for the period of 15 years (2007-2021).The results are shown below:

Table 5

Capital Structure,Dividend Policy and Firm Value of Mid Capital Companies – Descriptive Statistics

S. no	Company Name	DER		TDR		LTDR		STDR		DPR		DYR		FV		GR		CR		ROA		ROE		ICR		DT		EPS		PER		PBR		QR	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Alkem Labs	1.21	1.89	0.25	0.21	0.57	0.24	0.17	0.09	0.19	0.10	1.79	0.54	1.91	1.24	0.20	0.08	0.17	0.11	14.52	20.75	53.72	30.01	3.65	2.97/	2.57	1.55	0.09	0.24	0.06	0.02	5.41	1.68	0.87	0.36
2	IPCA Labs	2.15	1.45	0.34	0.19	0.53	0.29	0.20	0.50	0.43	0.14	1.58	0.34	5.22	4.56	2.97	2.83	0.28	0.18	3.97	0.58	1.05	324.45	4.74	2.56	1.00	1.28	0.28	0.60	0.24	0.07	17.99	14.15	0.95	0.72
3	Glaxosmithkline Pharma	1.93	1.03	0.09	0.04	0.36	0.21	0.12	0.07	0.44	0.13	1.55	0.22	1.84	2.00	2.88	2.71	0.79	0.88	17.45	18.32	21.65	29.56	3.75	0.19	1.41	1.54	0.39	0.20	2.00	0.46	12.79	18.16	0.42	0.23
4	Ajanta Pharma	1.31	1.56	0.25	0.03	0.48	0.26	0.25	0.09	0.13	0.02	1.52	0.78	2.12	3.75	0.46	0.11	9.46	2.24	0.12	0.02	31.41	39.92	2.55	1.79	0.48	0.85	0.16	0.26	2.06	0.18	3.94	1.86	0.26	0.35
5	Nacto Pharma	2.74	1.33	0.43	0.07	0.31	0.22	0.40	0.14	0.19	0.13	1.19	0.66	1.51	1.63	0.12	0.02	0.24	0.09	0.64	0.90	97.72	325.07	4.96	0.04	0.05	0.12	1.19	0.76	4.38	1.63	2.81	0.59	0.14	0.38
6	Glenmark Pharma	0.55	0.37	0.34	0.58	0.73	0.64	0.20	0.05	0.52	0.28	0.34	0.61	1.64	1.55	0.34	0.12	0.49	0.80	16.81	18.92	34.87	27.68	5.81	3.99	0.02	0.05	1.17	0.71	2.87	1.48	3.53	2.36	0.41	0.18

Source: Computed Data (2007-2021)

Table 5 shows the Mean and Standard deviation in Capital Structure, Dividend Policy and Firm Value of Mid Capital Companies.

The Alkem Labs has the highest mean value of ROE (53.72), it indicates that this company is generating profits of around 53 percent by utilizing their equity capital. The mean value of LTDR (0.57) is high, it shows that this company is good at their long term obligations.

The IPCA Labs has the highest mean value of FV (5.22) and the DER (2.15).It means that the increase in Debt capital will also enhance the firm value. The PBR has the highest mean value (17.99), it means that this variable is close to mean value and consistent. It is a good signal for the investors to invest in their company and the QR has the highest mean value (0.95), it reveals that this company is good at their liquidity position to pay off their debts

The Glaxosmithkline ltd has the maximum mean value of ROA (17.45).It shows that this company is utilizing the assets around 17 percent for generating their profits.

The Ajanta Pharma has the highest mean value of CR (9.46).It means that this company is good at their current obligations.

The Nacto Pharma has the highest mean value of DER (2.74).It shows that this company is utilizing the debt capital rather than equity and it has the highest mean value of STDR (0.40) which means that this company is good at short term obligations. It has the lowest mean in Firm value (1.51), indicates that the firm can utilize the debt capital with low rate of interest to increase their firm value.

In Glenmark, the DPR has the maximum mean value (0.52), indicates that this company has a good financial ability to pay better dividends to the shareholders. The ROA has a highest mean (16.81), it shows that this company is good in utilizing the assets efficiently to generate income and increase their operational efficiency and the ICR has the highest mean value (5.81), it reveals that this company is efficient to cover its interest charges.

The mean value of LTDR, DPR, GR, PER and ICR is greater than standard deviation. It indicates that there is a consistency between the Long Term Debt, Dividend Payouts, Growth and Interest Coverage Ratio of all select Mid capital companies.

3. Small Capital Companies

The descriptive statistical analysis of Pharmaceutical Companies belonging to Small Capital Companies was carried out for the period of 15 years (2007-2021).The results are shown below:

Table 6

Capital Structure,Dividend Policy and Firm Value of Small Capital Companies – Descriptive Statistics

S. no	Company Name	DER		TDR		LTDR		STDR		DPR		DYR		FV		GR		CR		ROA		ROE		ICR		DT		EPS		PER		PBR		QR	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Aarti Drugs	2.74	0.73	0.19	0.04	0.15	0.04	0.12	0.07	0.54	0.17	0.85	0.62	4.33	2.85	2.42	1.49	0.34	0.07	2.94	4.41	80.83	327.91	0.18	0.05	0.17	0.33	1.63	0.71	0.12	0.07	4.40	1.87	0.58	0.32
2	Orchid Pharma	1.57	1.73	0.06	0.03	0.18	0.06	0.34	0.03	0.44	0.36	0.77	0.33	8.63	1.94	0.19	0.37	0.22	0.04	14.52	20.13	11.5	30.01	0.34	0.08	0.41	0.08	3.22	2.29	0.30	0.09	3.64	0.60	0.45	0.16
3	IOL Chemicals	2.10	1.53	0.09	0.05	0.10	0.05	0.36	0.09	0.03	0.05	0.72	0.68	3.94	7.49	0.20	0.07	0.32	0.11	0.58	0.79	1.05	324.4	0.41	0.13	0.85	0.18	0.06	0.12	0.25	0.04	5.18	3.81	0.89	0.61
4	Amrutanjan Healthcare	1.93	1.09	0.19	0.04	0.22	0.06	0.07	0.05	0.02	0.17	0.09	0.15	4.69	3.10	0.69	1.23	0.04	0.01	17.41	18.32	21.6	29.54	0.42	0.18	0.27	0.07	0.08	0.12	0.41	0.23	3.08	2.56	0.33	0.21
5	Novartis Ltd	1.39	1.50	0.09	0.05	1.31	0.04	0.34	0.03	0.75	0.05	0.86	1.53	1.86	1.31	0.18	0.09	0.32	0.18	0.13	0.82	33.65	19.25	0.55	0.21	0.24	0.14	0.21	0.08	0.86	1.03	2.65	0.90	0.82	0.71
6	Bliss GVS Pharma	3.02	1.63	0.42	0.18	0.12	0.13	1.87	0.36	0.04	0.17	3.40	4.55	1.85	1.00	1.31	0.48	0.44	0.66	2.53	1.74	24.81	6.32	0.42	0.34	1.35	0.05	0.26	0.10	0.40	0.70	3.51	2.19	2.21	2.40
7	SMS Pharma	0.49	0.42	0.93	0.57	0.09	0.05	0.36	0.09	0.19	0.24	2.64	1.31	2.39	2.20	0.14	0.12	0.52	0.32	0.95	0.13	31.62	39.73	0.55	0.25	0.35	0.11	0.16	0.13	0.51	0.17	4.81	4.10	0.97	0.14
8	Anuh Pharma	2.89	0.54	0.31	0.19	0.07	0.03	0.15	0.14	0.44	0.23	1.22	1.00	2.54	2.41	0.26	0.09	0.31	0.10	2.87	4.32	1.91	3.09	0.89	0.46	0.26	0.67	0.24	0.08	0.42	0.27	2.69	0.83	1.26	0.42

S. no	Company Name	DER		TDR		LTDR		STDR		DPR		DYR		FV		GR		CR		ROA		ROE		ICR		DT		EPS		PER		PBR		QR	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
9	Linclon Pharma	1.68	1.84	0.22	0.24	0.09	0.05	0.04	0.02	1.49	0.29	0.45	0.01	9.47	1.36	0.16	0.13	0.25	0.20	14.53	20.12	25.42	30.01	1.46	0.96	0.08	0.03	4.89	2.42	0.55	0.26	3.67	2.63	1.66	0.53
10	Kappac Pharma	2.10	1.53	0.08	0.05	0.29	0.09	0.21	0.06	0.53	0.94	0.04	0.03	3.76	1.98	0.24	0.15	0.36	0.05	0.07	0.87	1.69	34.61	0.37	0.28	0.17	0.29	0.15	0.10	0.85	0.92	5.68	3.80	0.97	0.93
11	Jenburk Pharma	2.21	1.63	0.06	0.04	0.14	0.13	0.26	0.07	0.47	0.30	0.20	0.08	1.07	7.53	0.23	0.06	0.37	0.52	16.54	11.32	7.87	18.32	0.39	0.25	0.41	0.08	0.67	1.11	1.28	0.55	9.37	4.76	0.24	0.03
12	Brooks Labs	1.31	1.56	0.20	0.17	0.24	0.08	1.16	0.12	0.34	0.22	0.27	0.05	1.16	6.49	0.27	0.09	0.33	0.13	0.27	4.77	24.41	11.02	0.27	0.20	0.65	1.08	0.17	0.16	0.20	0.06	3.46	2.23	0.20	0.06
13	Kilitch Drugs	2.26	0.62	0.79	0.32	0.25	0.19	0.02	0.00	0.51	0.86	0.42	0.11	1.05	1.91	0.25	0.17	0.26	0.09	16.81	18.92	97.71	325.03	0.39	0.33	0.19	0.16	0.63	1.52	0.22	0.12	3.58	0.67	0.24	0.88
14	Coral Labs	0.56	0.37	0.37	0.06	0.22	0.11	0.20	0.15	0.86	0.79	0.51	0.74	9.31	1.37	0.07	0.06	0.43	0.12	0.64	0.90	11.71	0.43	0.27	0.54	0.06	0.08	3.02	1.45	0.10	0.08	1.66	0.94	0.22	0.19
15	Bal Pharma	2.14	1.29	0.48	0.20	0.85	0.74	0.16	0.12	0.48	1.52	0.54	0.49	1.45	1.97	0.24	0.17	0.22	0.44	0.75	0.34	0.88	12.32	0.18	0.05	0.16	0.17	0.29	0.05	0.05	0.06	2.42	1.93	0.19	0.09
16	Alpa Labs	1.69	1.87	0.53	0.27	0.22	0.06	0.05	0.05	0.15	0.25	0.18	0.02	5.46	1.48	0.42	0.13	0.39	0.37	30.04	17.92	37.02	34.81	0.25	0.11	0.13	0.12	0.40	0.13	0.16	0.12	1.29	0.67	0.23	0.09
17	Gennex Labs	2.19	1.41	3.39	2.08	0.04	0.03	0.20	0.15	0.04	0.06	0.09	0.09	1.81	2.15	0.66	0.31	0.45	0.14	0.39	0.75	31.52	39.81	0.50	0.35	0.27	0.05	0.37	0.24	0.41	1.01	2.20	0.52	0.29	0.07
18	Alembic Pharma	2.06	1.68	7.43	7.06	0.18	0.07	0.16	0.12	0.17	0.27	0.24	0.12	2.62	2.03	0.76	0.68	0.26	0.11	9.31	15.82	85.21	32.73	0.03	0.02	0.31	0.16	0.49	0.08	0.17	0.15	3.14	0.68	0.16	0.13

Source: Computed Data (2007-2021)

Table 6 shows the Mean and Standard deviation of Small Capital Companies for the study period of 2007 to 2021.

In Aarti Drugs, the mean value of FV (4.33) and DER (2.74) is higher, it shows that this company has good financial ability to manage their debt capital and firm value. The highest mean value in PBR (4.40).It means that this company has good financial efficiency to earn better stock returns.

In Orchid Pharma, the total debt ratio has the lowest mean value (0.06) with increase in firm value (8.63), which means that this company is utilizing the debts wisely to enhance their firm value.

In IOL Chemicals (2.10) and Bliss GVS (3.02), the DER has the maximum mean value, which means that this company utilizes the debt capital wisely rather than equity

In Amrutanjan Healthcare ltd, the DPR has a minimum mean value (0.02), which means that this company has to increase its operating efficiency to enhance their dividend payouts.

In Novartis ltd, the LTDR has the highest mean value (1.31).It indicates that this company is good at their financial ability to manage the long term debts.

In Bliss GVS, the DYR has the maximum mean value (3.40).Thus, it shows that the company is financially good to pay better dividend payments to the shareholders.

In SMS Pharma, the DER has the lowest mean value (0.49) with Firm value (2.39).It means that this company utilizes lesser amount of debt to raise the firm value.

In Linclon Pharma, the firm value has the highest mean value (9.47),which shows that this company is good at their operating efficiency to enhance their firm value.

In Kappac Pharma, the DYR has the minimum mean value (0.04),it indicates that this company is issuing minimum dividends to the shareholders.

The Jenburkt Pharma, has the fluctuation in ROE (7.87), it means that this company utilizes debt capital rather than equity.

In Brooks labs, the mean value of DER (1.31) is also highest but the standard deviation is greater, it shows that there is an inconsistency in debt capital.

In Kilitch Drugs, the STDR has the minimum mean value (0.02), as this company is quiet low in their liquidity.

In Bal Pharma, the mean value of DER (2.14) is less than the standard deviation,it means that this company is can use debt with low interest.

In Alpa Labs, the ROA (30.04) has the highest mean value,it indicates that this company utilizes the assets efficiently for their financial operations.

In Gennex labs, the LTDR has the lowest mean value (0.04), this company is utilizing the minimum of long term debt for the financial activities.

In Alembic Pharma, the TDR has the highest mean (7.43), it means that this company utilizes the maximum of debt capital compared to equity in its capital structure.

4.1.2 DETERMINANTS OF CAPITAL STRUCTURE AND DIVIDEND POLICY Multiple Regression Analysis

I. Determinants of Capital Structure – Multiple Regression

Multiple Regression is an association between a single dependent variable and a number of independent variables can be examined using the statistical technique.Using known independent variables whose values can be used to predict the value of a single dependent value is the purpose of this analysis. The factors influencing capital structure and dividend policy of the select Pharmaceutical companies is determined using multiple regression.

The following variables are measured to reveal the factors determining Capital Structure, Dividend Policy and Firm value.Each of the dependent variables were used to analyze the influence of all the independent variables.The Dependent variables are Debt Equity Ratio,Total Debt Ratio,Long Term Debt Ratio and Short Term Debt Ratio and the independent variables are Growth,Current Ratio,Return on Asset,Return on Equity,Interest Coverage Ratio and Debt Tax Shield.

MODELS FRAMED

$$DER = \beta_0+\beta_1 GR+ \beta_2 CR+ \beta_3 ROA+ \beta_4 ROE+ \beta_5 ICR + \beta_6 DT +e$$

$$TDR = \beta_0+\beta_1 GR+ \beta_2 CR+ \beta_3 ROA+ \beta_4 ROE+ \beta_5 ICR + \beta_6 DT +e$$

$$LTDR = \beta_0+\beta_1 GR+ \beta_2 CR+ \beta_3 ROA+ \beta_4 ROE+ \beta_5 ICR + \beta_6 DT +e$$

$$STDR = \beta_0+\beta_1 GR+ \beta_2 CR+ \beta_3 ROA+ \beta_4 ROE+ \beta_5 ICR + \beta_6 DT +e$$

Table 7

Determinants of Capital Structure of Large Capital Companies – Multiple Regression

Variables	DER		TDR		LTDR		STDR	
	Beta value	**Sig. value**	**Beta value**	**Sig. value**	**Beta value**	**Sig. value**	**Beta value**	**Sig. value**
Constant	1.80	0.00	0.42	0.63	0.12	0.05	0.39	0.00
GR	**-1.97**	**0.05**	0.51	1.02	0.18	0.15	1.01	0.31
CR	**1.69**	**0.01**	-1.46	0.20	0.22	0.11	**-2.43**	**0.01**
ROA	1.14	0.67	-2.06	0.95	**1.50**	**0.00**	**-1.23**	**0.00**
ROE	1.92	0.25	-1.23	0.18	0.04	0.11	-0.87	0.38
ICR	1.55	0.99	2.07	0.95	**0.18**	**0.04**	-2.66	0.95
DTS	1.48	0.96	7.67	0.29	5.74	0.34	-1.23	0.22
R^2	0.11		0.22		0.16		0.17	
F Statistic	2.04		4.75		3.17		3.42	

Source: Computed Data (2007-2021)

Table 7 shows the factors influencing capital structure of large capital companies. The GR has a significant negative influence and CR has a positive impact on DER with 11 percent of variation (R^2 = 0.11, F= 2.04).Return on Asset and Interest Coverage Ratio has a positive impact on LTDR at 16 percent (R^2 = 0.16, F= 3.17).It means that these companies are good to cover its interest payments on its debts in long term. The Current Ratio and Return on Asset has a negative impact on STDR at 17 percent (R^2 = 0.17, F= 3.42) is significant at 1% and 5% level. Thus, in the large capital companies the Growth, Current Ratio, Return on Asset and Interest Coverage Ratio are the factors influencing capital structure. The following equations were derived:

Large Capital Companies:

- **DER = 1.80 -1.97 GR +1.69 CR**
- **LTDR = 0.12 + 1.50 ROA +0.18 ICR**
- **STDR = 0.39 – 2.43 CR – 1.23 ROA**

Table 8

Determinants of Capital Structure of Mid Capital Companies – Multiple Regression

Dependent Variables	DER		TDR		LTDR		STDR	
	Beta value	**Sig. value**	**Beta value**	**Sig. value**	**Beta value**	**Sig. value**	**Beta value**	**Sig. value**
Constant	2.24	0.00	7.54	0.63	4.89	0.00	7.39	0.00
GR	**3.40**	**0.01**	1.55	0.74	0.67	0.57	2.33	0.81
CR	0.81	0.41	-1.53	0.37	0.49	0.49	0.87	0.38
ROA	**3.31**	**0.00**	3.25	0.18	**-1.85**	**0.04**	**-1.75**	**0.02**
ROE	0.66	0.50	-1.03	0.12	0.55	0.84	-0.37	0.70
ICR	**3.27**	**0.00**	1.73	0.22	**0.37**	**0.00**	0.58	0.56
DTS	-1.09	0.27	-1.82	0.08	5.74	0.34	0.92	0.35
R^2	0.35		0.11		0.05		0.08	
F Statistic	7.57		1.75		0.73		1.26	

Source: Computed Data (2007-2021)

Table 8 reveals the factors influencing capital structure of Mid capital companies. The GR, ROA and ICR has a positive impact on DER with 35 percent of variation (R^2 = 0.35, F= 7.57).Return on Asset has a negative influence and Interest Coverage Ratio has a positive impact on LTDR at 5 percent (R^2 = 0.05, F = 0.73).The Return on Asset has a negative impact on STDR at 8 percent (R^2 = 0.08, F = 1.26) is significant at 1% and 5% level It indicates that these companies should borrow debt with low interest to manage the long term debts efficiently.In mid capital companies, the Growth, Return on Asset and Interest Coverage Ratio are the factors influencing capital structure. The following equations were derived:

Mid Capital Companies:

- **DER = 2.24 + 3.40 GR + 3.31 ROA + 3.27 ICR**
- **LTDR = 4.89 -1.85 ROA + 0.37 ICR**
- **STDR = 7.39 – 1.75 ROA**

Table 9

Determinants of Capital Structure of Small Capital Companies – Multiple Regression

Dependent Variables	DER		TDR		LTDR		STDR	
	Beta value	**Sig. value**	**Beta value**	**Sig. value**	**Beta value**	**Sig. value**	**Beta value**	**Sig. value**
Constant	1.83	0.00	0.18	0.63	0.24	0.00	2.49	0.00
GR	**0.34**	**0.00**	4.33	0.05	**-0.26**	**0.02**	0.03	0.05
CR	**-1.17**	**0.01**	0.23	0.78	1.39	0.16	**0.47**	**0.03**
ROA	**0.15**	**0.00**	-0.13	0.24	-1.21	0.22	1.28	0.95
ROE	0.57	0.39	4.26	0.67	0.68	0.40	8.08	0.89
ICR	0.32	0.33	**1.62**	**0.00**	**2.21**	**0.02**	5.40	0.56
DTS	-1.09	0.27	0.51	0.69	0.39	0.52	0.94	0.35
R^2	0.11		0.04		0.05		0.03	
F Statistic	5.88		1.99		2.41		1.47	

Source: Computed Data (2007-2021)

Table 9 shows the factors influencing capital structure of small capital companies. The GR and ROA has a positive impact and CR has a negative impact on DER with 11 percent of variation (R^2 = 0.11, F = 5.88). It indicates that these companies utilize the assets properly to enhance their income and sales.ICR has a positive influence on TDR at 4 percent (R^2 = 0.04, F = 1.99).Growth has a negative impact and ICR has a positive influence on LTDR at 5 percent (R^2 = 0.05, F = 2.41). The CR has a positive influence on Short Term Debt Ratio at 3 percent (R^2 = 0.03, F = 1.47) is significant at 1% and 5% level. In the small capital companies, the Growth, Return on Asset, Current Ratio and Interest Coverage Ratio are the factors influencing capital structure. The following equations were derived:

Small Capital Companies

- **DER = 1.83 + 0.34 GR – 1.17 CR + 0.15 ROA**
- **TDR = 0.18 + 1.62 ICR**
- **LTDR = 0.24 – 0.26 GR + 2.21 ICR**
- **STDR = 2.49 + 0.47 CR**

II. Determinants of Dividend Policy – Multiple Regression

The factors influencing dividend policy of the select Pharmaceutical companies is determined using multiple regression. The Earning Per Share, Price to Book Ratio, Price Earning Ratio, Return on Asset, Return on Equity and Quick Ratio of Large, Mid and Small Companies in Pharmaceutical Industry from 2007-2021 were analyzed using Multiple Regression Analysis to find out the factors determining dividend policy are presented in tables.

MODELS FRAMED

$DPR = \beta_0+\beta_1 PER+ \beta_2 PBR+ \beta_3 ROA+ \beta_4 ROE+ \beta_5 QR + \beta_6 EPS +e$

$DYR = \beta_0+\beta_1 PER+ \beta_2 PBR+ \beta_3 ROA+ \beta_4 ROE+ \beta_5 QR + \beta_6 EPS +e$

Table 10

Determinants of Dividend Policy of Large Capital Companies - Multiple Regression

Dependent Variables	DPR		DYR	
	Beta value	Sig. value	Beta value	Sig. value
Constant	8.10	0.00	1.84	0.00
EPS	1.25	0.98	0.73	0.46
PBR	3.20	0.75	0.572	0.56
PER	-0.93	0.35	**2.06**	**0.04**
ROA	0.24	0.81	**4.82**	**0.00**
ROE	**2.66**	**0.00**	**2.00**	**0.04**
QR	**0.87**	**0.00**	0.40	0.68
R^2	0.12		0.36	.108
F Statistic	2.31		9.38	

Source: Computed Data (2007-2021)

Table 10 reveals the factors influencing dividend policy of large capital companies. The Return on Equity and Quick Ratio has a positive impact on DPR with 12 percent of variation (R^2 = 0.12, F= 2.31). Price Earning Ratio, Return on Asset and Return on Equity has a positive impact on DYR at 36 percent (R^2 = 0.36, F= 9.38) is significant at 1% and 5% level. It shows that these companies good at their current obligations and they were using the assets properly to generate good revenue and enhance their sales volume.In the large capital companies the Price Earning Ratio, Return on Asset, Return on Equity and Quick Ratio are the factors influencing dividend policy. The following equations were derived:

Large Capital Companies

- **DPR = 8.10 + 2.66 ROE + 0.87 QR**
- **DYR = 1.84 + 2.06 PER + 4.82 ROA + 2.00 ROE**

Table 11

Determinants of Dividend Policy of Mid Capital Companies - Multiple Regression

Dependent Variables	DPR		DYR	
	Beta value	Sig. value	Beta value	Sig. value
Constant	5.69	.000	1.76	0.00
EPS	0.31	0.88	9.85	.0.77
PBR	0.94	0.58	1.01	0.27
PER	-0.61	0.37	**2.14**	**0.03**
ROA	**0.55**	**0.04**	**2.37**	**0.02**
ROE	0.14	0.34	1.74	0.08
QR	0.40	0.85	**0.68**	**0.04**
R^2	0.21		0.41	
F Statistic	2.95		3.56	

Source: Computed Data (2007-2021)

Table 11 shows the factors influencing dividend policy of Mid capital companies. The Return on Asset has a positive impact on DPR with 21 percent of variation (R^2 = 0.21, F= 2.95).The Price Earning Ratio, Return on Asset and Quick Ratio has a positive impact on DYR at 41 percent (R^2 = 0.41, F= 3.56) is significant at 1% and 5% level It indicates that these companies utilize the assets wisely enhance their financial efficiency and they good at their liquidity position. Hereby it increases the dividend payouts to the shareholders. In the Mid capital companies the Price Earning Ratio, Return on Asset and Quick Ratio are the factors influencing dividend policy. The following equations were derived:

Mid Capital Companies

- **DPR = 5.69 + 0.55 ROA**
- **DYR = 1.76 + 2.14 PER + 2.37 ROA + 0.68 QR**

Table 12

Determinants of Dividend Policy of Small Capital Companies - Multiple Regression

Dependent Variables	DPR		DYR	
	Beta value	**Sig. value**	**Beta value**	**Sig. value**
Constant	0.40	.000	6.33	0.00
EPS	0.81	0.67	1.41	0.15
PBR	0.25	0.41	1.43	0.26
PER	-0.51	0.78	2.47	0.45
ROA	0.27	0.80	**0.80**	**0.04**
ROE	**-4.24**	**0.01**	0.46	0.64
QR	1.24	0.21	**2.47**	**0.01**
R^2	0.33		0.49	
F Statistic	1.57		2.22	

Source: Computed Data (2007-2021)

Table 12 reveals the factors influencing dividend policy of small capital companies. The ROE has a negative impact on DPR with 33 percent of variation (R^2 = 0.33, F= 1.57). It shows that these companies needs to utilize the equity capital wisely to increase their financial position, so the dividend payout can also be improved. The Return on Asset and Quick Ratio has a positive impact on DYR at 49 percent (R^2 = 0.49, F = 2.22) is significant at 1% and 5% level.It indicates that these companies were good at short term obligations and in utilizing the assets efficiently.In the small capital companies the Return on Equity, Return on Asset and Quick Ratio are the factors influencing dividend policy.The following equations were derived:

Small Capital Companies:

DPR = 0.40 – 4.24 ROE

DYR = 6.33 + 0.80 ROA + 2.47 QR

4.2. IMPACT OF CAPITAL STRUCTURE ON FIRM VALUE

Multiple Regression Analysis

A company's cost of capital, necessary rate of return, earnings per share, firm value, dividend policies, and wealth are all financial factors. "Optimal Capital Structure" is a strategy for maximising firm value and minimizing a company's overall cost of capital. Using Multiple Regression Analysis, the influence of capital structure on the firm value of chosen Pharmaceutical companies is estimated in order to highlight the relationship between capital structure and firm value.

The following variables are used to measure the impact of Capital Structure on firm value.Each of the independent variables are used to analyze the impact on dependent variables.The independent variables are Debt Equity Ratio,Total Debt Ratio,Long Term Debt Ratio and Short Term Debt Ratio and the dependent variable is Firm Value.

HYPOTHESIS

H_{01}: There is no significant impact of Capital Structure on Firm Value of select Pharmaceutical Companies in India.

MODEL FRAMED

$$FV = \beta_0+\beta_1 DER+ \beta_2 TDR+ \beta_3 LTDR+ \beta_4 STDR+e$$

A. LARGE CAPITAL COMPANIES

The impact of Capital Structure on the Firm Value of the selected 7 Large capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis and presented in the following Table.

Table 13
Large Capital Companies

Impact of Capital Structure on Firm Value - Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	**Sig. value**
1	Sun Pharmaceutical Industries Ltd	Constant	1.15	0.04
		DER	**-2.74**	**0.01**
		TDR	1.63	0.59
		LTDR	-2.16	0.57
		STDR	6.97	
		R^2	0.73	
		F Statistic	6.63	
2	Divi's Laboratories Ltd	Constant	0.85	0.55
		DER	-0.65	0.35
		TDR	-0.37	0.50
		LTDR	**64.08**	**0.00**
		STDR	-0.67	
		R^2	0.88	
		F Statistic	17.52	
3	Dr. Reddy's Laboratories Ltd	Constant	-1.64	0.25
		DER	-1.10	0.67
		TDR	3.44	0.08
		LTDR	-6.30	0.87
		STDR	7.40	
		R^2	0.44	
		F Statistic	2.00	
4	Cipla Ltd	Constant	1.82	0.23
		DER	-1.07	0.27
		TDR	-1.89	0.92
		LTDR	1.61	0.14
		STDR	2.47	
		R^2	0.25	
		F Statistic	0.85	
5	Aurobindo Pharma Ltd	Constant	-1.64	0.25
		DER	-1.10	0.67
		TDR	3.44	0.08
		LTDR	-6.30	0.87
		STDR	7.40	
		R^2	0.53	
		F Statistic	2.78	
6	Lupin Ltd	Constant	-1.94	0.82
		DER	**9.36**	**0.04**
		TDR	1.07	0.25
		LTDR	7.49	0.83
		STDR	-5.58	
		R^2	0.76	
		F Statistic	7.78	
7	Torrent Pharmaceuticals Ltd	Constant	1.84	0.46
		DER	**1.33**	**0.03**
		TDR	-5.66	0.06
		LTDR	6.58	0.75
		STDR	5.36	0.34
		R^2	0.43	
		F Statistic	1.92	

Source: Computed Data (2007-2021)

Table 13 reveals the result of Capital Structure impact on Firm Value of 7 large companies under Pharmaceutical Industry. The Regression analysis shows that the DER, TDR, LTDR & STDR significant values are greater than 0.05 for three companies (Dr.Reddy Labs, Cipla and Aurobindo Ltd).This indicates that the capital structure has no impact on firm value. Hence, the null hypothesis H_{01} is accepted for these three companies.

In Sun Pharma, the Debt Equity Ratio have negative impact on Firm Value at 73 per cent (R^2: 0.73) is significant at 1% level. In Divi's Labs, the Long Term Debt Ratio have a positive effect on Firm value at 88 per cent (R^2: 0.88) is significant at 1% level. In Lupin Ltd, the Debt Equity Ratio has an optimistic influence on Firm Value at 76 per cent (R^2:0.757) is significant at 1% level.In Torrent Pharma, the Debt Equity Ratio has an optimistic influence on Firm Value at 43 percent (R^2: 0.43) is significant at 5% level. The appropriate models framed are as follows,

- **Sun Pharma: FV = 1.15 - 2.74 DER**
- **Divi's Labs: FV = 0.84 + 64.08 LTDR**
- **Lupin Ltd: FV = -1.94 + 9.36 DER**
- **Torrent Pharma: FV = 1.84 +1.33 DER**

Thus, the positive association between the capital structure and firm value means that an increase in debt ratio decreases the value of the firm and vice versa.

Hence null hypothesis H_{01} is rejected – 4 companies. "There is a significant impact of Capital Structure on Firm Value of select Pharmaceutical companies in India" for these four companies (Sun Pharma, Divi's Labs, Lupin Ltd and Torrent Pharma).

In Sun Pharma, the Debt Equity Ratio has a negative impact on firm value. This result supports the "Pecking Order Theory" (Nguyen et al.2023;Maasulis 1983;Minnema and Andersson 2018).In Divi's Labs, Long Term Debt Ratio has a positive impact on firm value.The Debt Equity Ratio has a positive impact on firm value in Lupin Ltd and Torrent Pharma.It indicates the confirmation of the "Trade-off Theory" (Divya Aggarwal,2017).

B. MID CAPITAL COMPANIES

The impact of capital structure on the firm value of the select 6 Mid Capital Companies are analyzed for 15 years using Multiple Regression analysis and are presented in the following Table

Table 14

Mid Capital Companies

Impact of Capital Structure on Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	**Sig. value**
1	Alkem Laboratories Limited	Constant	1.63	0.29
		DER	-3.00	0.15
		TDR	3.23	0.83
		LTDR	-1.50	0.34
		STDR	5.76	0.09
		R^2	0.50	
		F Statistic	2.58	
2	IPCA Laboratories Ltd	Constant	5.66	0.32
		DER	1.27	0.27
		TDR	**-1.91**	**0.01**
		LTDR	2.02	0.57
		STDR	1.14	0.61
		R^2	0.51	
		F Statistic	2.57	
3	GlaxoSmithkline Pharmaceuticals Ltd	Constant	4.09	0.04
		DER	-1.02	0.19
		TDR	**-2.24**	**0.02**
		LTDR	1.35	0.55
		STDR	1.08	0.20
		R^2	0.49	
		F Statistic	2.41	
4	Ajanta Pharma Ltd	Constant	1.19	0.16
		DER	-1.84	0.79
		TDR	-3.09	0.41
		LTDR	9.21	0.86
		STDR	-8.85	0.51
		R^2	0.26	
		F Statistic	0.90	
5	Glenmark Pharmaceuticals ltd	Constant	-6.31	0.12
		DER	**3.32**	**0.01**
		TDR	1.11	0.15
		LTDR	9.79	0.86
		STDR	1.12	0.15
		R^2	0.62	
		F Statistic	4.18	
6	Nacto Pharma Ltd	Constant	-7.12	0.01
		DER	**6.70**	**0.01**
		TDR	**1.56**	**0.04**
		LTDR	1.43	0.39
		STDR	-9.79	0.77
		R^2	0.56	
		F Statistic	3.23	

Source: Computed Data (2007-2021)

Table 14 shows the result of Capital Structure impact on Firm Value of 6 Mid companies under Pharmaceutical Industry. The Regression analysis shows that the DER, TDR, LTDR & STDR significant values are greater than 0.05 for two companies (Alkem Labs and Ajanta Pharma).This indicates that the capital structure has no impact on firm value.Hence, the null hypothesis H_{01} is accepted for these two companies

In IPCA Labs,the Total Debt Ratio have negative impact on Firm Value at 50 per cent (R^2: 0.50) is significant at 5% level.In Glaxosmithkline Pharma, Total Debt Ratio have negative impact on Firm Value at 49 per cent (R^2: 0.49) is significant at 5% level. In Glenmark Pharma, the Debt Equity Ratio have a positive effect on Firm value at 63 per cent (R^2:0.63) is significant at 5% level.In Nacto Pharma, the Debt Equity Ratio and Total Debt Ratio has a positive effect on Firm Value at 56 per cent (R^2:0.56) is significant at 5% level. The appropriate models framed are as follows.

- **IPCA Labs: FV = 5.66 - 1.91 TDR**
- **Glaxosmithkline Pharma: FV = 4.09 - 2.24 TDR**
- **Glenmark: FV = -6.31 + 3.32 DER**
- **Nacto Pharma: FV = -7.12 + 6.70 DER + 1.56 TDR**

The result indicates that, the positive association reveals that the increase in (Debt Equity) Capital Structure increases the firm value and vice versa.

Hence the null hypothesis is H_{01} rejected – 4 companies. There is a significant impact of Capital Structure on Firm Value of select Pharmaceutical Companies in India for these four companies (IPCA Labs,Glaxosmithkline Pharma, Glenmark and Nacto Pharma).

In IPCA Labs and Glaxosmithkline Ltd, the Total Debt Ratio has a negative impact on firm value.This results support the "Pecking Order Theory" (Nguyen et al.2023;Dawar 2014;Frank,Z.M.,Goyal & V.K,2002).In Glenmark and Nacto Pharma the Debt Equity Ratio and Total Debt Ratio has a positive impact on firm value.It supports the "Trade-off Theory" (Thi Ngoc Bui,2023; Frank,Z.M.,Goyal & V.K,2002;Ali et al.2022).

C. SMALL CAPITAL COMPANIES

The impact of Capital Structure on the Firm Value of the select 18 small capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis is shown in the following Table.

Table 15

Small Capital Companies

Impact of Capital Structure and Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	**Sig. value**
1	Aarti Drugs Limited	Constant	2.29	0.57
		DER	**5.96**	**0.00**
		TDR	**-5.54**	**0.01**
		LTDR	**-6.56**	**0.03**
		STDR	-1.59	0.18
		R^2	0.48	
		F Statistic	2.32	
2	Orchid Pharma Limited	Constant	1.31	0.69
		DER	4.18	0.15
		TDR	-1.81	0.12
		LTDR	9.54	0.23
		STDR	-4.87	0.57
		R^2	0.28	
		F Statistic	0.95	
3	IOL Chemicals & Pharmaceuticals Ltd	Constant	-1.69	0.33
		DER	**3.16**	**0.04**
		TDR	**1.44**	**0.01**
		LTDR	-1.29	0.80
		STDR	3.70	0.89
		R^2	0.41	
		F Statistic	1.75	
4	Amrutanjan Health Care Limited	Constant	-1.40	0.04
		DER	**3.10**	**0.01**
		TDR	**-4.58**	**0.03**
		LTDR	**7.48**	**0.00**
		STDR	**6.34**	**0.00**
		R^2	0.68	
		F Statistic	5.33	
5	Novartis India Limited	Constant	-5.63	0.45
		DER	**1.57**	**0.01**
		TDR	6.34	0.77
		LTDR	**-6.62**	**0.00**
		STDR	**7.51**	**0.01**
		R^2	0.63	
		F Statistic	4.18	
6	Bliss GVS Pharma Ltd	Constant	3.87	0.49
		DER	**2.37**	**0.04**
		TDR	-3.66	0.70
		LTDR	-8.61	0.53
		STDR	-6.69	0.16
		R^2	0.56	
		F Statistic	3.24	

7	SMS Pharmaceuticals Ltd	Constant	-1.10	-2.36
		DER	4.44	7.45
		TDR	-1.70	-0.86
		LTDR	2.11	1.19
		STDR	2.86	2.67
		R^2	0.88	
		F Statistic	17.83	
8	Anuh Pharma Ltd	Constant	-1.26	0.02
		DER	**5.51**	**0.00**
		TDR	-3.05	0.59
		LTDR	-4.13	0.17
		STDR	**2.27**	**0.01**
		R^2	0.30	
		F Statistic	1.09	
9	Lincoln Pharmaceuticals Ltd	Constant	-4.45	0.31
		DER	7.15	0.28
		TDR	1.05	0.99
		LTDR	7.12	0.80
		STDR	**6.91**	**0.00**
		R^2	0.54	
		F Statistic	2.93	
10	Kappac Pharma Ltd	Constant	8.63	0.57
		DER	**7.12**	**0.02**
		TDR	-4.24	0.66
		LTDR	**1.13**	**0.01**
		STDR	-7.75	0.42
		R^2	0.20	
		F Statistic	0.62	
11	Jenburkt Pharmaceuticals Ltd	Constant	-9.11	0.41
		DER	**3.13**	**0.01**
		TDR	6.95	0.14
		LTDR	1.61	0.34
		STDR	1.87	0.52
		R^2	0.20	
		F Statistic	0.63	
12	Brooks Laboratories Ltd	Constant	-1.92	0.08
		DER	**3.81**	**0.00**
		TDR	-3.43	0.59
		LTDR	**6.66**	**0.02**
		STDR	5.93	0.03
		R^2	0.56	
		F Statistic	3.20	
13	Kilitch Drugs Ltd	Constant	-5.60	0.89
		DER	**4.22**	**0.02**
		TDR	3.40	0.40
		LTDR	-4.75	0.51
		STDR	-2.44	0.92
		R^2	0.62	
		F Statistic	4.01	
14	Coral Laboratories ltd	Constant	-2.57	0.05
		DER	**5.97**	**0.01**
		TDR	1.36	0.73
		LTDR	**9.87**	**0.00**
		STDR	2.28	0.14
		R^2	0.25	
		F Statistic	0.85	

15	Bal Pharma Ltd	Constant	9.54	0.43
		DER	**7.69**	**0.04**
		TDR	-2.11	0.09
		LTDR	4.46	0.17
		STDR	**-1.12**	**0.03**
		R^2	0.35	
		F Statistic	1.32	
16	Alpa Laboratories ltd	Constant	1.32	0.50
		DER	-1.01	0.67
		TDR	-3.76	0.81
		LTDR	-7.22	0.91
		STDR	2.64	0.71
		R^2	0.72	
		F Statistic	6.47	
17	Gennex Laboratories Limited	Constant	-1.42	0.46
		DER	2.72	0.42
		TDR	5.37	0.06
		LTDR	4.37	0.78
		STDR	2.53	0.53
		R^2	0.67	
		F Statistic	4.97	
18	Alembic Pharmaceuticals	Constant	3.82	0.04
		DER	-2.10	0.58
		TDR	5.75	0.47
		LTDR	-3.16	0.65
		STDR	-5.29	0.40
		R^2	0.21	
		F Statistic	0.66	

Source: Computed Data (2007-2021)

Table 15 shows the impact of Capital Structure on Firm Value of 18 small companies under Pharmaceutical Industry. The Regression analysis shows that the DER, TDR, LTDR & STDR significant values are greater than 0.05 for these five companies (Orchid Pharma, SMS Pharma, Alpa Labs, Gennex Labs and Alembic Pharma).This indicates that the capital structure has no impact on firm value. Hence, the null hypothesis H_{01} is accepted for these five companies

In Aarti Drugs, the Total Debt Ratio, Long Term Debt Ratio has a negative impact and Debt Equity Ratio has a positive effect on Firm Value at 48 per cent (R^2:0.48) is significant at 1% level.In IOL Chemicals Ltd, the Debt Equity Ratio and Total Debt Ratio has a positive influence on Firm Value at 41 per cent (R^2:0.41) is significant at 5% level. In Amrutanjan Ltd,the Debt Equity Ratio, Long Term Debt Ratio and Short Term Debt Ratio has a positive effect and Total Debt Ratio has a negative effect on Firm Value at 68 per cent (R^2:0.68) is significant at 5% and 1% level.

In Novartis Ltd the Debt Equity Ratio and Short Term Debt Ratio have a positive influence and Long Term Debt Ratio have a negative effect on Firm Value at 63 per cent (R^2:0.63) is significant at 5% and 1% level.In Bliss GVS Pharma,the Debt Equity Ratio have a positive impact on Firm Value at 56 per cent (R^2:0.56) is significant at 5% level.In Anuh Pharma, Debt Equity Ratio and Short Term Debt Ratio has an optimistic effect on Firm Value (R^2:0.30) at 30 per cent is significant at 1% level. In Linclon Pharma, Short Term Debt Ratio have a positive effect on Firm Value at 54 percent (R^2:0.54) is significant at 1% level.In Kappac Pharma, the Debt Equity Ratio and Long Term Debt Ratio has a positive influence on Firm Value at 20 percent (R^2:0.20) is significant at 1% and 5% level.In Jenburkt Pharma, Debt Equity Ratio has a positive effect on Firm Value at 20 percent (R^2:0.20) is significant at 1% level.In Brooks Labs,the Debt Equity Ratio and Long Term Debt Ratio have a positive effect on Firm Value at 56 percent (R^2:0.56) is significant at 5% and 1% level.

In Kilitch Drugs, the Debt Equity Ratio have a positive effect on Firm value at 62 per cent (R^2:0.62) is significant at 5% level.In Coral labs, the Debt Equity Ratio and Long Term Debt Ratio have a positive effect on Firm Value at 25 per cent (R^2:0.25) is significant at 5% and 1% level. In Bal Pharma, Debt Equity Ratio has a positive and Short Term Debt Ratio have a negative effect on Firm Value at 34 per cent (R^2:0.34) is significant at 5% level. The appropriate models framed are as follows,

- **Aarti Drugs: FV = 2.29 + 5.95 DER – 5.54 TDR – 6.56 LTDR,**
- **IOL Chemicals: FV = -1.69 +3.16 DER +1.44 TDR**
- **Amrutanjan Healthcare: FV = -1.40 + 3.10 DER - 4.58 TDR + 7.48 LTDR + 6.34 STDR**
- **Novartis Ltd: FV = -5.63 + 1.57 DER - 6.62 LTDR + 7.51 STDR**
- **Bliss GVS Pharma: FV = 3.87 + 2.37 DER**
- **Anuh Pharma: FV = -1.26 + 5.51 DER + 2.27 STDR**
- **Linclon Pharma: FV = - 4.45 + 6.91 STDR**
- **Kappac Pharma: FV = 8.63 + 7.12 DER + 1.13 LTDR**
- **Jenburkt Pharma: FV = - 9.11 + 3.13 DER**
- **Brooks Labs: FV = -1.92 + 3.81 DER + 6.66 LTDR.**
- **Kilitch Drugs: FV = -5.60 + 4.22 DER**
- **Coral labs: FV = - 2.57 + 5.97 DER + 9.87 LTDR**
- **Bal Pharma: FV = 9.54 + 7.69 DER – 1.12 STDR.**

It is concluded that, the negative association reveals the increase in Capital Structure (Debt Equity) decreases the firm value and vice versa.

Hence null hypothesis H_{01} is rejected – 13 companies. There is significant impact of Capital Structure on Firm Value of select Pharmaceutical Companies in India for these (Aarti Drugs,IOL Chemicals, Amrutanjan Healthcare Ltd, Novartis Ltd, Bliss GVS Pharma, Anuh Pharma, Linclon Pharma, Kappac Pharma, Jenburkt Pharma, Brooks Labs, Kilitch Drugs, Coral labs and Bal Pharma) thirteen companies.

In Aarti Drugs, Amrutanjan Healthcare ltd, Novartis Ltd and Bal Pharma, the Total Debt Ratio has a negative impact and in Bal Pharma, the Short Term Debt Ratio has a negative impact on firm value. It supports the "Pecking Order Theory" (Frank, Z.M.,Goyal & V.K,2002).In the other companies, the Debt Equity Ratio,Total Debt Ratio,Long Term Debt Ratio and Short Term Debt Ratio has a positive impact on firm value.It supports the "Trade-off Theory" (Obaid Ur Rehman,2016; Frank,Z.M.,Goyal & V.K,2002).

4.3 IMPACT OF DIVIDEND POLICY ON FIRM VALUE

Multiple Regression Analysis

The firm adopts a strategy regarding retention of earnings or payment of earnings for reinvestment. Such strategy generally refers to dividend policy. Current dividend payment as well as the future growth of any firm is well balanced by its optimum dividend policy. This will maximize the firm value. So the impact of dividend policy on firm value of selected Companies under Pharmaceutical Industry is computed to analyse the relationship among them. The Multiple Regression Analysis was applied and the models were framed to evaluate the defined objective.

The following variables are measured to reveal the impact of dividend policy on firm value.Each of the independent variables are used to examine the impact on dependent variable.The independent variables are Dividend Payout Ratio and Dividend Yield Ratio and the dependent variable is Firm value.

(i) Dependent Variable – Firm Value

(ii) Independent Variables – Dividend Payout Ratio (DPR) and Dividend Yield Ratio (DYR)

HYPOTHESIS

H_{02}: There is no significant impact of dividend Policy on firm value of the select Pharmaceutical Companies in India.

MODEL FRAMED

$$FV = \beta_0+\beta_1 DPR+ \beta_2 DYR+ e$$

A. LARGE CAPITAL COMPANIES

The Impact of Dividend Policy on Firm Value of the selected 7 Large Capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis and is presented in the following Table.

Table 16

Large Capital Companies

Impact of Dividend Policy on Firm Value - Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	Sig. value
1	Sun Pharmaceutical Industries Ltd	Constant	-5.31	0.35
		DPR	-7.91	0.70
		DYR	**7.15**	**0.03**
		R Square	0.44	
		F Statistic	4.71	
2	Divi's Laboratories Ltd	Constant	-3.06	0.95
		DPR	2.67	0.34
		DYR	1.78	0.31
		R Square	0.37	
		F Statistic	3.65	
3	Dr. Reddy's Laboratories Ltd	Constant	3.62	0.00
		DPR	-1.89	0.46
		DYR	8.13	0.52
		R Square	0.05	
		F Statistic	0.31	
4	Cipla Ltd	Constant	4.03	0.00
		DPR	-6.79	0.08
		DYR	-1.44	0.86
		R Square	0.32	
		F Statistic	2.89	
5	Aurobindo Pharma Ltd	Constant	-1.22	0.35
		DPR	6.62	0.06
		DYR	23.13	0.97
		R Square	0.25	
		F Statistic	2.08	
6	Lupin Ltd	Constant	-6.37	0.31
		DPR	-1.48	0.36
		DYR	**4.71**	**0.00**
		R Square	0.47	
		F Statistic	5.33	
7	Torrent Pharmaceuticals Ltd	Constant	-67.13	0.97
		DPR	3.88	0.93
		DYR	7.12	0.66
		R Square	0.03	
		F Statistic	0.18	

Source: Computed Data (2007-2021)

The Table 16 displays the effect of Dividend Policy on Firm Value of 7 Large Capital Companies under Pharmaceutical Industry. The Regression analysis shows that, the Dividend Yield Ratio and Dividend Payout Ratio has significant values are greater than 0.05 for these companies five companies (Divi's labs, Dr.Reddy Labs, Cipla, Aurobindo Pharma and Torrent Pharma).This indicates that dividend policy has no impact on firm value. Hence, the null hypothesis H_{02} is accepted for these five companies.

In Sun Pharma, the Dividend Yield Ratio has a positive significant influence on Firm Value at 44 percent (R^2: 0.44) is significant at 5% level.In Lupin Pharma, the Dividend Yield Ratio has a positive significant influence on Firm Value at 47 per cent (R^2 :0.47) is significant at 1% level. The appropriate models framed are as follows,

- **Sun Pharma: FV = - 5.31 + 7.15 DYR.**
- **Lupin Pharma: FV = - 6.37 + 4.71 DYR.**

The results show that, the positive relationship means that the increase in dividend payouts will increase the firm value and vice versa.

Hence null hypothesis H_{02} was rejected – 2 companies.There is a significant impact of Dividend Policy on Firm Value of select Pharmaceutical Companies in India" for these two companies. (Sun Pharma and Lupin Pharma).

In Sun Pharma and Lupin Pharma, the Dividend Yield Ratio has a significant impact on firm value.This result support the "Dividend Relevance Theory" (Sourav Hansda et al.2020).

B. MID CAPITAL COMPANIES

The Impact of Dividend Policy on Firm Value of the selected 6 Mid Capital Pharmaceutical Companies was analyzed for 15 years using Multiple Regression analysis is presented in the following Table.

Table 17

Mid Capital Companies

Impact of Dividend Policy on Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	**Sig. value**
1	Alkem Laboratories Limited	Constant	1.69	0.29
		DPR	-3.76	0.28
		DYR	5.35	0.41
		R Square	0.21	
		F Statistic	1.56	
2	IPCA Laboratories Ltd	Constant	-9.32	0.21
		DPR	**2.77**	**0.00**
		DYR	1.63	0.59
		R Square	0.66	
		F Statistic	11.46	
3	GlaxoSmithkline Pharmaceuticals Ltd	Constant	-6.81	0.86
		DPR	**9.26**	**0.01**
		DYR	-1.02	0.62
		R Square	0.46	
		F Statistic	5.13	
4	Ajanta Pharma Ltd	Constant	1.89	0.61
		DPR	**2.41**	**0.00**
		DYR	-1.95	0.42
		R Square	0.76	
		F Statistic	19.18	
5	Glenmark Pharmaceuticals ltd	Constant	4.57	0.00
		DPR	-3.47	0.25
		DYR	**-1.99**	**0.00**
		R Square	0.50	
		F Statistic	6.06	
6	Nacto Pharma Ltd	Constant	2.36	0.02
		DPR	-1.04	0.50
		DYR	-4.73	0.51
		R Square	0.08	
		F Statistic	0.53	

Source: Computed Data (2007-2021)

The Table 17 shows the result of effect of Dividend Policy on Firm Value of Mid Capital Companies under Pharmaceutical Industry. The Regression analysis shows that the Dividend Yield Ratio and Dividend Payout Ratio significant values are greater than 0.05 for these two companies (Alkem Labs and Nacto Pharma).This indicates that dividend policy has no impact on firm.Hence, the null hypothesis H_{02} is accepted for these two companies.

In IPCA labs, Dividend Payout Ratio has significantly positive impact on Firm Value at 66 per cent (R^2:0.66) is significant at 5% level.In Glaxosmithkline Ltd, the Dividend Payout Ratio has significant optimistic influence on Firm Value at 46 percent (R^2 : 0.46) is significant at 1% level.In Ajanta Pharma the Dividend Payout Ratio has a significant positive influence on Firm Value at 76 percent (R^2: 0.76) is significant at 1 percent level. In Glenmark Pharma, Dividend Yield Ratio has negative effect on Firm Value at 50 percent (R^2: 0.50) is significant at 1 percent level. The appropriate models framed are as follows,

- **IPCA Labs: FV= - 9.32 + 2.77 DPR**
- **Glaxosmithkline Ltd: FV = - 6.81 + 9.26 DPR**
- **Ajanta Pharma: FV = 1.89 + 2.41 DPR**
- **Glenmark Pharma: FV = 4.56 - 1.99 DYR**

The result indicates that, the positive association reveals that the increase in dividend payouts will raise the firm value and vice versa.

Hence null hypothesis H_{02} was rejected – 4 companies. There is a significant impact of Dividend Policy on Firm Value of select Pharmaceutical Companies in India" for these four companies (IPCA labs, Glaxosmithkline Ltd, Ajanta Pharma and Glenmark Pharma).

In IPCA Labs,Glaxosmithkline Ltd,Ajanta Pharma and Glenmark, the Dividend Payout Ratio and Dividend Yield Ratio has a significant impact on firm value. It supports the "Dividend Relevance Theory" (Abhijit Sinha,2022; Hansda et al.2020;Buti et al.2023).

C. SMALL CAPITAL COMPANIES

The impact of Dividend Policy on Firm Value of the selected 18 Small Capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis and is presented in the following Table.

Table 18

Small Capital Companies

Impact of Dividend Policy on Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	Sig. value
1	Aarti Drugs Limited	Constant	3.74	0.24
		DPR	2.20	0.65
		DYR	-7.01	0.60
		R Square	0.05	
		F Statistic	0.30	
2	Orchid Pharma Limited	Constant	1.84	0.38
		DPR	-8.86	0.96
		DYR	-1.22	0.54
		R Square	0.04	
		F Statistic	0.25	
3	IOL Chemicals & Pharmaceuticals Ltd	Constant	5.18	0.12
		DPR	4.00	0.91
		DYR	-1.72	0.59
		R Square	0.03	
		F Statistic	0.16	
4	Amrutanjan Health Care Limited	Constant	5.80	0.00
		DPR	-2.90	0.36
		DYR	-3.96	0.50
		R Square	0.17	
		F Statistic	1.21	
5	Novartis India Limited	Constant	2.19	0.00
		DPR	-8.86	0.14
		DYR	-3.18	0.15
		R Square	0.37	
		F Statistic	3.50	
6	Bliss GVS Pharma Ltd	Constant	4.03	0.04
		DPR	1.54	0.92
		DYR	-6.40	0.22
		R Square	0.13	
		F Statistic	0.88	
7	SMS Pharmaceuticals Ltd	Constant	1.34	0.41
		DPR	-9.78	0.80
		DYR	4.72	0.52
		R Square	0.04	
		F Statistic	0.28	
8	Anuh pharma Ltd	Constant	1.97	0.36
		DPR	1.13	0.73
		DYR	60.19	0.94
		R Square	0.01	
		F Statistic	0.07	

9	Lincoln Pharmaceuticals Ltd	Constant	1.53	0.17
		DPR	4.91	0.71
		DYR	-2.21	0.45
		R Square	0.06	
		F Statistic	0.35	
10	Kappac Pharma Ltd	Constant	4.96	0.00
		DPR	3.60	0.83
		DYR	**-3.12**	**0.04**
		R Square	0.29	
		F Statistic	2.47	
11	Jenburkt Pharmaceuticals Ltd	Constant	1.03	0.17
		DPR	6.89	0.35
		DYR	-1.39	0.58
		R Square	0.13	
		F Statistic	0.89	
12	Brooks Laboratories Ltd	Constant	9.52	0.10
		DPR	**-2.52**	**0.00**
		DYR	4.90	0.11
		R Square	0.52	
		F Statistic	6.51	
13	Kilitch Drugs Ltd	Constant	1.07	0.00
		DPR	-1.81	0.26
		DYR	3.53	0.45
		R Square	0.14	
		F Statistic	0.96	
14	Coral Laboratories Ltd	Constant	68.10	0.99
		DPR	**1.19**	**0.01**
		DYR	-2.13	0.73
		R Square	0.53	
		F Statistic	6.92	
15	Bal pharma Ltd	Constant	7.50	0.36
		DPR	3.39	0.21
		DYR	-5.86	0.47
		R Square	0.26	
		F Statistic	2.16	
16	Alpa Laboratories Ltd	Constant	1.26	0.05
		DPR	-1.37	0.37
		DYR	-5.47	0.80
		R Square	0.07	
		F Statistic	0.48	
17	Gennex Laboratories Limited	Constant	1.15	0.24
		DPR	-3.56	0.69
		DYR	8.97	0.16
		R Square	0.20	
		F Statistic	1.47	
18	Alembic Pharmaceuticals	Constant	3.11	0.03
		DPR	1.43	0.51
		DYR	-2.97	0.54
		R Square	0.06	
		F Statistic	0.36	

Source: Computed Data (2007-2021)

The Table 18 displays the impact of Dividend Policy on Firm Value of 18 Small Capital Companies under Pharmaceutical Industry. The Regression analysis shows that the Dividend Payout Ratio and Dividend Yield Ratio has significant values are greater than 0.05 for these fifteen companies (Aarti Drugs, Orchid Pharma, IOL Chemicals, Amrutanjan Healthcare ltd, Novartis Ltd, Bliss GVS,SMS Pharma, Anuh Pharma, Linclon Pharma, Jenburkt Pharma, Kilitch Drugs, Bal Pharma, Alpa Labs, Gennex Labs and Alembic Pharma).This indicates that the dividend policy has no impact on firm value. Hence, the null hypothesis H_{02} is accepted for these fifteen companies.

In Kappac Pharma,the Dividend Yield Ratio has significantly negative impact on Firm Value at 29 per cent (R^2: 0.29) is significant at 5 percent level.In Brooks labs, the Dividend Payout Ratio has a negative influence on Firm value at 52 per cent (R^2: 0.521) is significant at 1 percent level.In Coral Labs, the Dividend Payout Ratio has significant positive influence on Firm Value at 53 percent (R^2: 0.53) is significant at 5 percent level.The appropriate models framed are as follows,

- **Kappac Pharma: FV = 4.96 – 3.12 DYR**
- **Brooks Labs: FV = 9.52 – 2.52 DPR**
- **Coral Labs: FV = 68.10 + 1.19 DPR**

In Coral Labs, the dividend policy has a positive effect on the firm value. This enables the investors to acknowledge a rise in the dividend. A certain type of investors prefers dividend over capital gains. Consequently, a growth in dividends tells investors that the company has a good potential.

Hence, the null hypothesis H_{02} is rejected – 3 companies. "There is a significant impact of Dividend Policy on Firm Value of select Pharmaceutical Companies in India" is accepted for these three companies (Kappac Pharma, Brooks labs and Coral Labs).

In Kappac Pharma, Brooks Labs and Coral Labs, the Dividend Payout Ratio and Dividend Yield Ratio has a significant impact on firm value, as indicated in the "Dividend Relevance Theory" (Abhijit Sinha,2020;Seth and Sakthi,2022).

4.4. IMPACT OF CAPITAL STRUCTURE ON DIVIDEND POLICY

4.4.1 IMPACT OF CAPITAL STRUCTURE ON DIVIDEND POLICY

Multiple Regression Analysis

The Borrowed capital along with equity in the capital structure of the firm is beneficial to the investors as well as to the firm. The source of capital alternations and its impact on decisions regarding dividend are inseparable. The Multiple Regression Analysis is applied and the models were framed to evaluate the defined objective.

The following variables are measured to reveal the impact of capital structure on dividend policy.Each of the independent variables are used to examine the impact on dependent variables.The independent variables are Debt Equity Ratio , Total Debt Ratio , Long Term Debt Ratio , Short Term Debt Ratio and the Dependent variables are Dividend Payout Ratio and Dividend Yield Ratio

HYPOTHESIS

H_{03}: There is no significant impact of capital structure on dividend Policy of the select Pharmaceutical Companies in India.

MODELS FRAMED

$DPR = \beta_0+\beta_1 DER+ \beta_2 TDR+ \beta_3 LTDR+ \beta_4 STDR+e$
$DYR = \beta_0+\beta_1 DER+ \beta_2 TDR+ \beta_3 LTDR+ \beta_4 STDR+e$

A. LARGE CAPITAL COMPANIES

The impact of Capital Structure on the Dividend Policy of the select 7 Large Capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis and are presented in the following Table.

Table 19
Large Capital Companies
Impact of Capital Structure on Dividend Policy – Multiple Regression Analysis

S.No	Company	Independent Variable	DPR		DYR	
			Beta value	**Sig. value**	**Beta value**	**Sig. value**
1	Sun Pharmaceutical Industries Ltd	Constant	0.31	0.21	0.46	0.07
		DER	0.09	0.28	0.12	0.59
		TDR	-0.31	0.79	-0.71	0.82
		LTDR	-0.26	0.23	**1.88**	**0.00**
		STDR	0.66	0.33	-0.69	0.70
		R^2	0.50		0.61	
		F Statistic	2.54		2.14	
2	Divi's Laboratories Ltd	Constant	0.36	0.00	28.89	0.17
		DER	0.95	0.63	191.16	0.75
		TDR	-0.19	0.96	-276.52	0.79
		LTDR	**-3.73**	**0.03**	-171.54	0.71
		STDR	0.34	0.22	44.44	0.59
		R^2	0.75		0.29	
		F Statistic	0.23		1.01	
3	Dr.Reddy's Laboratories Ltd	Constant	0.03	0.31	52.23	0.26
		DER	-0.19	0.40	-488.66	0.27
		TDR	0.40	0.25	968.91	0.15
		LTDR	-0.25	0.21	-469.18	0.21
		STDR	-0.12	0.30	-251.97	0.23
		R^2	0.20		0.25	
		F Statistic	0.64		0.85	
4	Cipla Ltd	Constant	0.26	0.01	-3.57	0.33
		DER	**0.13**	**0.03**	-0.83	0.72
		TDR	0.02	0.88	**14.09**	**0.01**
		LTDR	**-1.99**	**0.00**	-34.63	0.19
		STDR	-0.22	0.21	1.99	0.78
		R^2	0.59		0.65	
		F Statistic	3.63		4.62	
5	Aurobindo Pharma Ltd	Constant	0.29	0.02	1.33	0.78
		DER	0.00	0.90	0.70	0.44
		TDR	0.00	0.99	-8.21	0.20
		LTDR	-0.36	0.23	9.98	0.47
		STDR	0.76	0.09	**42.11**	**0.04**
		R^2	0.56		0.37	
		F Statistic	3.14		1.50	
6	Lupin Ltd	Constant	0.05	0.81	2.23	0.12
		DER	-0.17	0.09	0.87	0.20
		TDR	0.29	0.18	-1.50	0.30
		LTDR	-0.01	0.93	-0.35	0.52
		STDR	0.41	0.30	3.36	0.22
		R^2	0.22		0.71	
		F Statistic	1.03		6.14	
7	Torrent Pharmaceuticals Ltd	Constant	0.41	0.08	1.91	0.00
		DER	0.02	0.66	**0.25**	**0.02**
		TDR	-2.77	0.28	-8.99	0.11
		LTDR	0.21	0.28	0.39	0.34
		STDR	-0.38	0.45	-0.61	0.57
		R^2	0.25		0.56	
		F Statistic	0.82		3.19	

Source: Computed Data (2007-2021)

Table 19 shows the effect of Capital Structure on Dividend Policy of 7 Large Capital Companies under Pharmaceutical Industry. The Regression analysis shows that capital structure has no impact dividend policy for five companies (Dr.Reddy Labs and Lupin Pharma).Hence, the null hypothesis H_{03} is accepted for these two companies.

In Divi's Labs, Long Term Debt Ratio has negative significant influence on Dividend Payout Ratio at 20 percent (R^2: 0.20) is significant at 5 percent level. In Cipla ltd, the Debt Equity Ratio have a positive influence and the Long Term Debt Ratio have a negative effect on Dividend Payout Ratio at 59 per cent (R^2: 0.59) is significant at 5 percent and 1percent level. In Sun Pharma, the Long Term Debt Ratio have a positive impact on Dividend Yield Ratio at 46 percent (R^2 : 0.46) is significant at 1 percent level.In Cipla Ltd,the Total Debt Ratio have a positive influence on Dividend Yield Ratio at 65 percent (R^2 : 0.65) is significant at 5 percent level.In Aurobindo Pharma, the Short Term Debt Ratio have a positive influence on Dividend Yield Ratio at 37 per cent (R^2:0.37) is significant at 5 percent level. In Torrent Pharma, the Debt Equity Ratio has a positive impact on Dividend Yield Ratio at 56 percent (R^2: 0.56) is significant at 5 percent level.The appropriate models framed are as follows,

- **Sun Pharma: DYR = 0.46 + 1.88 LTDR**
- **Divi's Labs: DPR = 0.36 – 3.73 LTDR**
- **Cipla Ltd: DPR = 0.26 + 0.13 DER – 1.99 LTDR,**
  DYR = - 3.57 + 14.09 TDR
- **Aurobindo: DYR = 1.32 + 42.11 STDR**
- **Torrent Pharma: DYR = 1.91 + 0.25 DER**

Thus, the positive relationship means that the increase in capital structure will increase the dividend yield and vice versa.

Hence null hypothesis H_{03} is rejected – 5 companies. "There is a significant impact of Capital Structure on Dividend Policy of select Pharmaceutical companies in India" for these five companies (Sun Pharma,Divi's Labs, Cipla ltd, Aurobindo Pharma and Torrent Pharma).

B. MID CAPITAL COMPANIES

The Impact of Capital Structure on the Dividend Policy of the select 6 Mid Capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis and is presented in the following Table.

Table 20
Mid Capital Companies
Impact of Capital Structure on Dividend Policy – Multiple Regression Analysis

S.No	Company	Independent Variable	DPR		DYR	
			Beta value	**Sig. value**		
1	Alkem Laboratories Limited	Constant	0.16	0.32	2.04	0.03
		DER	0.02	0.37	-0.12	0.29
		TDR	0.12	0.48	-0.65	0.45
		LTDR	**0.03**	**0.02**	-0.45	0.60
		STDR	-0.17	0.62	1.30	0.47
		R^2	0.17		0.22	
		F Statistic	0.53		0.71	
2	IPCA Laboratories Ltd	Constant	0.57	0.02	1.78	0.01
		DER	**-0.01**	**0.04**	0.01	0.95
		TDR	-0.36	0.15	0.52	0.39
		LTDR	-0.03	0.80	0.23	0.48
		STDR	0.17	0.84	-2.51	0.22
		R^2	0.36		0.30	
		F Statistic	1.43		1.07	
3	Glaxosmithkline Pharmaceuticals Ltd	Constant	0.41	0.01	1.72	0.00
		DER	-0.01	0.85	-0.03	0.81
		TDR	-1.01	0.11	0.41	0.72
		LTDR	0.13	0.44	-0.08	0.80
		STDR	0.79	0.19	-0.99	0.39
		R^2	0.46		0.19	
		F Statistic	2.11		0.60	
4	Ajanta Pharma Ltd	Constant	0.52	0.08	1.40	0.03
		DER	0.00	0.92	0.03	0.62
		TDR	**-1.06**	**0.03**	1.17	0.64
		LTDR	0.02	0.91	-0.10	0.71
		STDR	-0.48	0.29	-0.63	0.49
		R^2	0.35		0.08	
		F Statistic	1.35		0.22	
5	Glenmark Pharmaceuticals ltd	Constant	-0.07	0.77	4.07	0.00
		DER	-0.01	0.73	-0.06	0.37
		TDR	0.05	0.94	-3.32	0.09
		LTDR	0.05	0.78	-0.42	0.34
		STDR	0.62	0.08	**-2.84**	**0.01**
		R^2	0.48		0.84	
		F Statistic	2.31		13.40	
6	Nacto Pharma Ltd	Constant	0.97	0.27	-2.33	0.13
		DER	**-0.51**	**0.04**	0.25	0.53
		TDR	-1.07	0.51	**8.30**	**0.01**
		LTDR	-0.07	0.56	-0.22	0.30
		STDR	1.31	0.43	-0.69	0.80
		R^2	0.39		0.62	
		F Statistic	1.62		4.21	

Source: Computed Data (2007-2021)

Table 20 indicates the effect of Capital Structure on Dividend Policy of 6 Mid Capital Companies under Pharmaceutical Industry. The Regression analysis shows that capital structure has no impact on dividend policy for this company Glaxosmithkline Pharma. Hence, the null hypothesis H_{03} is accepted for these two companies.

In Alkem Labs, the long term debt ratio has a positive influence on dividend payout ratio at 17 percent (R^2: 0.17) is significant at 5 percent level. In IPCA Labs, the Debt Equity Ratio has a negative impact on dividend payout ratio at 36 percent (R^2: 0.36) is significant at 5 percent level.In Ajanta Pharma, total debt ratio has a negative influence on dividend payout ratio at 35 percent (R^2:0.35) is significant at 5 percent level. In Nacto Pharma, the Debt Equity Ratio has a negative impact on dividend payout ratio at 39 percent (R^2:0.39) is significant at 5 percent level. In Glenmark Pharma,Short Term Debt Ratio has a negative influence on Dividend Yield Ratio at 84 percent (R^2:0.84) is significant at 1percent level.In Nacto Pharma,the Total Debt Ratio has a positive effect on Dividend Yield Ratio at 62 percent (R^2 : 0.62) and the Debt Equity Ratio has a negative impact on DPR at 39 percent (R^2 : 0.39) is significant at 5 percent level.

The appropriate models framed are as follows,

- **Alkem Labs: DPR = 0.16 + 0.03 LTDR**
- **IPCA Labs: DPR = 0.57 - 0.01 DER**
- **Ajanta Pharma: DPR = 0.52 - 1.06 TDR**
- **Nacto Pharma: DPR = 0.97 - 0.51 DER,**
  DYR = - 2.33 + 8.30 TDR
- **Glenmark: DYR = 4.07 – 2.84 STDR**

Thus, the positive association means that the increase in leverage increases the dividend payouts and vice versa.

Hence null hypothesis H_{03} is rejected – 5 companies. "There is a significant impact of Capital Structure on Dividend Policy of select Pharmaceutical companies in India". The Regression analysis shows that capital structure has an impact on dividend policy for these five companies Alkem Labs,IPCA Labs,Ajanta Pharma,Nacto Pharma and Glenmark.

C. SMALL CAPITAL COMPANIES

The impact of capital structure on dividend policy of the selected 18 Small Capital Pharmaceutical Companies is analyzed for 15 years using Multiple Regression analysis and is presented in the following Table.

Table 21

Small Capital Companies

Impact of Capital Structure on Dividend Policy – Multiple Regression Analysis

S.No	Company	Independent Variable	DPR		DYR	
			Beta value	Sig. value	Beta value	Sig. value
1	Aarti Drugs Limited	Constant	0.31	0.21	0.46	0.47
		DER	0.09	0.28	0.12	0.59
		TDR	-0.31	0.79	-0.71	0.82
		LTDR	-0.26	0.23	**1.88**	**0.00**
		STDR	0.66	0.33	-0.69	0.70
		R^2	0.30		0.61	
		F Statistic	1.07		4.02	
2	Orchid Pharma Limited	Constant	-0.83	0.52	-0.78	0.42
		DER	0.11	0.16	-0.09	0.15
		TDR	-0.88	0.75	0.16	0.94
		LTDR	2.11	0.28	-0.47	0.74
		STDR	2.23	0.50	5.16	0.06
		R^2	0.46		0.45	
		F Statistic	0.66		2.01	
3	IOL Chemicals & Pharmaceuticals Ltd	Constant	0.08	0.52	3.79	0.07
		DER	0.02	0.16	-0.26	0.24
		TDR	-0.02	0.95	-6.14	0.27
		LTDR	0.35	0.30	-5.03	0.33
		STDR	-0.42	0.05	-3.83	0.22
		R^2	0.58		0.25	
		F Statistic	3.46		0.85	
4	Amrutanjan HealthCare Limited	Constant	-0.01	0.83	-0.44	0.04
		DER	0.00	0.72	**0.16**	**0.00**
		TDR	0.30	0.23	0.08	0.91
		LTDR	-0.06	0.73	**1.27**	**0.04**
		STDR	-0.20	0.33	-1.08	0.10
		R^2	0.26		0.75	
		F Statistic	0.89		7.59	
5	Novartis India Limited	Constant	0.03	0.93	-8.43	0.12
		DER	0.00	0.90	0.49	0.13
		TDR	-0.34	0.37	6.98	0.30
		LTDR	0.34	0.64	16.37	0.22
		STDR	-0.27	0.58	7.85	0.37
		R^2	0.25		0.69	
		F Statistic	0.84		5.48	
6	Bliss GVS Pharma Ltd	Constant	0.01	0.95	2.96	0.00
		DER	0.00	0.91	0.18	0.12
		TDR	0.02	0.95	0.42	0.64
		LTDR	0.06	0.88	0.34	0.77
		STDR	0.00	0.99	-0.36	0.46
		R^2	0.01		0.25	
		F Statistic	0.01		0.84	

7	SMS Pharmaceuticals Ltd	Constant	0.30	0.47	3.18	0.36
		DER	-0.36	0.07	-0.58	0.69
		TDR	-0.04	0.73	-0.35	0.69
		LTDR	-0.82	0.41	-5.94	0.46
		STDR	0.49	0.56	1.72	0.80
		R^2	0.65		0.16	
		F Statistic	4.67		0.48	
8	Anuhpharma Ltd	Constant	0.41	0.38	-0.33	0.70
		DER	-0.05	0.73	**0.79**	**0.00**
		TDR	-0.20	0.57	0.71	0.29
		LTDR	1.61	0.37	-4.29	0.21
		STDR	0.77	0.21	**-4.23**	**0.00**
		R^2	0.42		0.89	
		F Statistic	1.77		19.50	
9	Lincoln Pharmaceuticals Ltd	Constant	0.70	0.08	0.03	0.11
		DER	0.07	0.12	0.00	0.66
		TDR	-0.54	0.16	**-0.03**	**0.04**
		LTDR	-0.81	0.67	-0.01	0.94
		STDR	-2.61	0.47	0.16	0.34
		R^2	0.42		0.67	
		F Statistic	1.80		2.06	
10	Kappac Pharma Ltd	Constant	0.67	0.13	0.02	0.63
		DER	0.00	0.97	-0.01	0.29
		TDR	0.69	0.79	-0.50	0.06
		LTDR	-0.15	0.91	0.02	0.91
		STDR	-0.64	0.79	0.38	0.11
		R^2	0.01		0.63	
		F Statistic	0.04		1.60	
11	Jenburkt Pharmaceuticals Ltd	Constant	1.12	0.13	0.16	0.35
		DER	-0.02	0.80	0.02	0.32
		TDR	-2.21	0.49	1.00	0.20
		LTDR	-0.09	0.92	**-0.48**	**0.03**
		STDR	-1.70	0.34	0.04	0.92
		R^2	0.32		0.41	
		F Statistic	0.28		1.76	
12	Brooks Laboratories Ltd	Constant	0.89	0.11	0.29	0.00
		DER	0.05	0.63	0.03	0.05
		TDR	0.08	0.70	0.02	0.58
		LTDR	-2.18	0.05	**-0.34**	**0.01**
		STDR	-0.56	0.69	-0.15	0.41
		R^2	0.42		0.84	
		F Statistic	1.79		14.08	
13	Kilitch Drugs Ltd	Constant	0.00	1.00	0.01	0.94
		DER	0.12	0.54	-0.01	0.81
		TDR	-0.11	0.69	0.17	0.06
		LTDR	-0.87	0.14	0.24	0.14
		STDR	22.94	0.31	1.93	0.76
		R^2	0.28		0.49	
		F Statistic	0.97		2.14	
14	Coral Laboratories Ltd	Constant	-3.17	0.11	2.37	0.18
		DER	0.81	0.26	-0.69	0.29
		TDR	7.71	0.12	-3.08	0.47
		LTDR	3.46	0.10	-2.25	0.22
		STDR	-0.32	0.77	0.90	0.36
		R^2	0.70		0.44	
		F Statistic	5.70		1.94	

15	Bal Pharma Ltd	Constant	-1.26	0.52	1.07	0.08
		DER	0.46	0.61	-0.47	0.10
		TDR	-0.23	0.91	0.28	0.64
		LTDR	9.49	0.06	-1.91	0.18
		STDR	-3.24	0.71	5.40	0.06
		R^2	0.42		0.53	
		F Statistic	1.81		2.77	
16	Alpa Laboratories ltd	Constant	-0.21	0.41	0.36	0.23
		DER	**0.10**	**0.01**	0.03	0.37
		TDR	0.10	0.61	-0.05	0.81
		LTDR	0.52	0.57	-0.77	0.47
		STDR	0.42	0.66	-0.41	0.71
		R^2	0.66		0.09	
		F Statistic	4.77		0.26	
17	Gennex Laboratories Limited	Constant	0.16	0.04	0.05	0.63
		DER	-0.03	0.06	0.04	1.88
		TDR	0.00	0.86	-0.01	-0.83
		LTDR	-0.89	0.17	-0.16	-0.18
		STDR	-0.08	0.58	-0.02	-0.13
		R^2	0.41		0.39	
		F Statistic	1.73		1.60	
18	Alembic Pharma	Constant	-0.30	0.24	0.12	0.19
		DER	0.02	0.73	0.03	0.17
		TDR	0.00	0.94	0.00	0.35
		LTDR	1.64	0.14	**-0.08**	**0.04**
		STDR	0.79	0.34	**-0.79**	**0.01**
		R^2	0.36		0.61	
		F Statistic	1.38		3.95	

Source: Computed Data (2007-2021)

Table 21 denotes the effect of Capital Structure on Dividend Payout Ratio of 18 Small Capital Companies under Pharmaceutical Industry. The Regression analysis shows that capital structure has no impact on dividend policy for these 10 companies (Orchid Pharma, IOL Chemicals, Novartis India, Bliss GVS, SMS, Kappac Pharma,Kilitch Drugs,Coral Labs,Bal Pharma and Gennex Labs). Hence, the null hypothesis H_{03} is accepted for these ten companies.

In Alpa Labs, the Debt Equity Ratio has a positive influence on Dividend Payout Ratio at 66 percent (R^2:0.66). In Aarti Drugs, the Long Term Debt Ratio have a significant positive influence on Dividend Yield Ratio at 62 per cent (R^2 :0.62) is significant at 1 percent level.In Amrutanjan Healthcare Ltd, Debt Equity Ratio and Long Term Debt Ratio have a positive effect on Dividend Yield Ratio at 75 percent (R^2 : 0.75) is significant at 1 percent and 5 percent level.In Anuh Pharma, the Debt Equity Ratio has a positive influence and Short Term Debt Ratio has a negative effect on Dividend Yield Ratio at 89 per cent (R^2 :0.89) is significant at 1 percent level. In Linclon Pharma, the Total Debt Ratio has a negative influence on Dividend Yield Ratio at 67 percent (R^2:0.67) is significant at 5 percent level.

In Jenburkt Pharma, the Long Term Debt Ratio has a negative effect on Dividend Yield Ratio at 41 per cent (R^2:0.41) is significant at 5 percent level. In Brooks Labs, the Long Term Debt Ratio have a negative effect on Dividend Yield Ratio at 85 per cent (R^2: 0.84) is significant at 5 percent level.In Alembic Pharma, the Long Term Debt Ratio and the Short Term Debt Ratio has a negative influence on Dividend Yield Ratio at 61 percent (R^2:0.61).

The appropriate models framed is as follows,

- **Aarti Drugs: DYR = 0.46 + 1.88 LTDR**
- **Amrutanjan Healthcare Ltd: DYR = - 0.44 +0.16 DER +1.27 LTDR**
- **Anuh Pharma: DYR = -0.33 +0.79 DER – 4.23 STDR**
- **Linclon Pharma: DYR = 0.03 - 0.03 TDR**
- **Jenburkt Pharma: DYR = 0.16 - 0.48 LTDR**
- **Brooks Labs: DYR = 0.29 – 0.34 LTDR**
- **Alpa Labs : DPR = - 0.21 + 0.10 DER**
- **Alembic Pharma: DYR = 0.12 -0.08 LTDR – 0.79 STDR**

The positive relationship means that the increase in leverage increases the dividend yield and vice versa.

Hence null hypothesis H_{03} is rejected – 8 companies. "There is a significant impact of Capital Structure on Dividend Policy of select Pharmaceutical Companies in India" is accepted for these eight companies (Aarti Drugs, Amrutanjan Healthcare Ltd, Anuh Pharma, Linclon Pharma, Jenburkt Pharma, Brooks Labs,Alpa Labs and Alembic Pharma).

4.4.2 IMPACT OF CAPITAL STRUCTURE ON DIVIDEND POLICY – PHARMACEUTICAL INDUSTRY

Correlation Analysis

The Pharmaceutical Industries data regarding is analyzed for 15 years from 2007 to 2021.The results are presented in the following tables.

A. LARGE CAPITAL COMPANIES

Table 22

Large Capital Companies

Impact of Capital Structure on Dividend Policy – Correlation Analysis

	DER	TDR	LTDR	STDR	DPR	DYR
DER	1					
TDR	0.35**	1				
LTDR	0.06	0.18	1			
STDR	0.04	0.65**	-0.17	1		
DPR	0.39**	0.16	0.09	-0.07	1	
DYR	-0.32**	-0.21*	-0.29**	-0.05	-0.18	1

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The Table 22 shows the correlation between Capital Structure and Dividend Policy of large capital companies. The Debt Equity Ratio, Total Debt Ratio and Long Term Debt Ratio has a negative impact on Dividend Yield Ratio (-0.32,-0.21,-0.29).The Debt Equity Ratio has the positive association with Dividend Payout Ratio (0.39) at 1 percent level of significance. Thus, it is clear that the increase in Debt Capital will increase the Dividend Payout and vice versa. The Debt Equity Ratio has the high negative association with Dividend Yield Ratio (-0.32) and Short Term Debt Ratio has the maximum positive relationship with Total Debt Ratio (0.65) during the study period.

B. MID CAPITAL COMPANIES

Table 23

Mid Capital Companies

Impact of Capital Structure on Dividend Policy – Correlation Analysis

	DER	TDR	LTDR	STDR	DPR	DYR
DER	1					
TDR	0.04	1				
LTDR	-0.20*	-0.00	1			
STDR	-0.01	0.45**	-0.10	1		
DPR	-0.09	-0.08	0.10	-0.21*	1	
DYR	0.16	-0.26**	-0.15**	-0.27**	-0.28**	1

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The Table 23 indicates the correlation between Capital Structure and Dividend Policy. The Total Debt Ratio (-0.26), Long Term Debt Ratio (-0.15) and Short Term Debt Ratio (-0.27) has a negative association with Dividend Yield Ratio at 1 per cent level of significance. The Short Term Debt Ratio (-0.21) has the negative relationship with Dividend Payout Ratio at 5 per cent level of significance. Thus, the increase the debt capital decreases the dividend payouts. At 1 percent level of significance, the Short Term Debt Ratio has the high positive correlation with Total Debt Ratio (0.45) and the Debt Equity Ratio has the high negative association with Long Term Debt Ratio (-0.20) during the study period.

C. SMALL CAPITAL COMPANIES

Table 24

Small Capital Companies

Impact of Capital Structure on Dividend Policy – Correlation Analysis

	DER	TDR	LTDR	STDR	DPR	DYR
DER	1					
TDR	0.03	1				
LTDR	-0.03	-0.10	1			
STDR	0.13*	-0.00	-0.16**	1		
DPR	0.11	-0.07	-0.24**	0.55**	1	
DYR	0.00	-0.07	0.21**	-0.36**	-0.14*	1

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The Table 24 shows that, the correlation between Capital Structure and Dividend Policy. The Long Term Debt Ratio has the negative relationship with Dividend Payout Ratio (-0.24) and positive association Dividend Yield Ratio (0.21).The Short Term Debt Ratio has a positive relationship with Dividend Payout Ratio (0.55) and negative association with Dividend Yield Ratio (-0.36) at 1 per cent level of significance.The Debt Equity Ratio and Total Debt Ratio is not associated with Dividend Payout Ratio and Dividend Yield Ratio.Hence, the increase in Debt Capital will decrease the dividend payouts and vice versa.The Dividend Payout Ratio has a high positive association with Short Term Debt Ratio (0.55) at 1 per cent level of significance. The Dividend Yield Ratio has a high negative relationship with Dividend Payout Ratio (0.14) at 5 per cent level of significance.

All these Correlation Analyses results show that there is an impact of Capital Structure on Dividend Policy for all the three category of companies.

4.4.3 IMPACT OF CAPITAL STRUCTURE ON DIVIDEND POLICY – PHARMACEUTICAL INDUSTRY

Panel Data Regression Analysis

In Pharmaceutical Industries the Panel data regression analysis was made for 15 years from 2007 to 2021.The result of Panel Data Regression is presented in the following tables.

The following variables are measured to reveal the impact of capital structure on dividend policy for Pharmaceutical Industry.Each of the independent variables are used to examine the impact on dependent variables.The Independent variables are Debt Equity Ratio, Total Debt Ratio , Long Term Debt Ratio , Short Term Debt Ratio and the dependent variables are Dividend Payout Ratio and Dividend Yield Ratio

HYPOTHESIS

H_{04}: There is no significant impact of capital structure on dividend Policy of the select Pharmaceutical Industries in India.

MODELS FRAMED

$DPR_{it}= \beta_0+\beta_1 DER_{it}+ \beta_2 TDR_{it}+ \beta_3 LTDR_{it}+ \beta_4 STDR_{it}+e_{it}$
$DYR_{it}= \beta_0+\beta_1 DER_{it}+ \beta_2 TDR_{it}+ \beta_3 LTDR_{it}+ \beta_4 STDR_{it}+e_{it}$

A. LARGE CAPITAL COMPANIES

Table 25

Pharmaceutical Industry - Large Capital Companies

Impact of Capital Structure on Dividend Payout – Panel Data Regression Analysis

Variables	**Pooled OLS**		**Random Effect**		**Fixed Effect**	
	Beta (Std Error)	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**
Constant	0.16 (0.02)	5.68 (0.00)	0.18 (0.06)	3.08 (0.00)	0.19 (0.02)	7.07 (0.00)
DER	0.04 (0.01)	3.88 (0.00)	0.00 (0.01)	0.72 (0.46)	0.00 (0.01)	0.45 (0.64)
TDR	0.02 (0.04)	0.49 (0.621)	0.07 (0.04)	1.51 (0.13)	0.076 (0.04)	1.58 (0.11)
LTDR	0.02 (0.05)	0.49 (0.64)	-0.00 (0.05)	-0.06 (0.94)	-0.00 (0.05)	-0.13 (0.89)
STDR	-0.08 (0.08)	-1.03 (0.30)	-0.08 (0.08)	-1.00 (0.31)	-0.07 (0.08)	-0.93 (0.35)
R^2	0.17		0.04		0.53	
F-statistic	5.20**		1.30**		10.85**	
Breusch–Pagan (Prob)	Cross Section 85.44 (0.00) Time 3.43 (0.06)					
Hausman (Chi-Sq)			1.573			
Prob.			0.81			
Wald (Chi-Sq)			145.73			
Prob.			0.00			

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The table 25 shows that the impact of capital structure on dividend payout of the Pharmaceutical Industry (7 large capital companies). The Bresch pagan test shows that the cross section (85.44, 0.00) alone is significant, so "One Way Random Effect model" is choosen. The Hausman test revealed that the p value is greater than 0.05.Hence, the Random Effect model is more appropriate for further analysis. The Random Effect Model

shows that Debt Equity Ratio, Total Debt Ratio, Long Term Debt Ratio, Short Term Debt Ratio have no impact on Dividend Payout Ratio. The result shows that these companies may retain their earnings than the dividend distribution.

Hence, the Null Hypothesis, "H_{04}: There is no impact of capital structure on dividend policy of select pharmaceutical industries in India" is accepted. The R^2 value shows that (0.04) 4.9 percent variations made by selected independent variable on Dividend Payout Ratio.F Stat is significant at 1percent.It shows that model is best fit.Wald Test shows that the p value is significant. It shows the independent variables add value to the model under large capital companies.

Table 26

Pharmaceutical Industry - Large Capital Companies

Impact of Capital Structure on Dividend Yield – Panel Data Regression Analysis

Variables	**Pooled OLS**		**Random Effect**		**Fixed Effect**	
	Beta (Std Error)	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**
Constant	18.00 (2.24)	8.01 (0.00)	17.44 (1.77)	9.84 (0.00)	10.42 (2.05)	5.14 (0.00)
DER	-2.53 (0.85)	-2.96 (0.00)	-2.36 (0.67)	-3.50 (0.00)	0.41 (0.96)	0.42 (0.66)
TDR	-0.89 (3.15)	-0.28 (0.77)	-0.72 (0.77)	-0.29 (0.77)	2.44 (3.65)	0.67 (0.50)
LTDR	-12.53 (4.25)	-2.94 (0.00)	-11.95 (3.34)	-3.57 (0.00)	-5.65 (4.48)	-1.26 (0.03)
STDR	-5.12 (6.44)	-0.79 (0.42)	-4.34 (5.02)	-0.86 (0.39)	2.09 (6.30)	2.09 (0.74)
R^2	0.18		0.16		0.54	
F-statistic	5.69**		4.93**		11.36**	
Breusch–Pagan (Prob)	Cross Section 42.29 (0.00) Time 2.79 (0.09)					
Hausman(Chi-Sq)			67.91			
Prob.			0.00			
Wald (Chi-Sq)			65.32			
Prob.			0.00			

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The table 26 shows the impact of capital structure on dividend yield of the Pharmaceutical Industry (7 large capital companies). The Breusch pagan test shows that the cross section (42.29, 0.00) alone is significant, so "One Way Random Effect model" is

choosen. The Hausman test revealed that the p value is less than 0.05.Hence, the Fixed Effect model is more appropriate for further analysis. The Fixed Effect Model shows that Long Term Debt Ratio has a negative impact on Dividend Yield Ratio. Thus, the negative association means that the increase in capital structure decreases the dividend yield and vice versa.

Hence, null hypothesis H_{04} is rejected. There is an impact of capital structure on dividend policy of select pharmaceutical industries in India.The R^2 value shows that (0.54) 54 percent variations made by selected independent variable on DYR.F Stat is significant at 1percent.It shows that model is best fit. Wald Test shows that the p value is significant. That shows the independent variables add value to the model under large capital companies.

Large Capital Companies: $DYR_{it} = 10.42 - 5.65\ LTDR_{it}$

B.MID CAPITAL COMPANIES

Table 27

Pharmaceutical Industry - Mid Capital Companies

Impact of Capital Structure on Dividend Payout – Panel Data Regression Analysis

Variables	**Pooled OLS**		**Random Effect**		**Fixed Effect**	
	Beta (Std Error)	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**
Constant	0.43 (0.07)	5.93 (0.00)	0.34 (0.09)	3.53 (0.00)	0.33 (0.07)	4.63 (0.00)
DER	-0.01 (0.01)	-0.76 (0.44)	-0.00 (0.01)	-0.52 (0.59)	-0.00 (0.01)	-0.43 (0.66)
TDR	-0.04 (0.15)	-0.27 (0.78)	-0.19 (0.14)	-1.37 (0.17)	-0.19 (0.14)	-1.39 (0.16)
LTDR	0.02 (0.06)	0.37 (0.71)	-0.01 (0.05)	-0.34 (0.73)	-0.02 (0.05)	-0.42 (0.67)
STDR	-0.38 (0.21)	-1.81 (0.07)	0.20 (0.19)	1.06 (0.28)	0.27 (0.20)	1.37 (0.17)
R^2	0.06		0.03		0.48	
F-statistic	1.57		0.73		8.51	
Breusch– Pagan (Prob)	Cross Section 66.25 (0.00) Time 1.87 (0.17)					
Hausman (Chi-Sq)			4.22			
Prob.			0.37			
Wald (Chi-Sq)			71.52			
Prob.			0.00			

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The table 27 shows that the impact of capital structure on dividend payout of the Pharmaceutical Industry (6 mid capital companies). The Breusch pagan test shows that the cross section (66.25, 0.00) alone is significant, so "One Way Random Effect model " is choosen.The Hausman test revealed that the p value is greater than 0.05.Hence, the Random Effect model is more appropriate for further analysis. The Random Effect Model shows that DER,TDR,LTDR,STDR have no impact on DPR.Hence, the Null Hypothesis, H_{04}: There is no impact of capital structure on dividend policy of select pharmaceutical industries in India" is accepted.The R Square value shows that (0.03) 3 percent variations made by selected independent variable on DPR.F Stat is significant at 1percent.It shows that model is best fit.Wald Test shows that the p value is significant. That shows the independent variables add value to the model under mid capital companies.

Table 28

Pharmaceutical Industry - Mid Capital Companies

Impact of Capital Structure on Dividend Yield -- Panel Data Regression Analysis

Variables	**Pooled OLS**		**Random Effect**		**Fixed Effect**	
	Beta (Std Error)	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**
Constant	1.80 (0.21)	8.49 (0.00)	1.82 (0.28)	6.333 (0.00)	1.82 (0.19)	9.61 (0.00)
DER	0.03 (0.04)	0.74 (0.45)	-0.03 (0.03)	-1.04 (0.29)	-0.04 (0.03)	-1.18 (0.24)
TDR	-0.46 (0.45)	-1.00 (0.31)	0.26 (0.37)	0.71 (0.47)	0.31 (0.37)	0.81 (0.4)
LTDR	-0.32 (0.19)	-1.70 (0.09)	-0.11 (0.14)	-1.86 (0.52)	-0.10 (0.14)	-0.73 (0.46)
STDR	-0.96 (0.61)	-1.57 (0.11)	-1.86 (0.52)	-3.56 (0.00)	-1.93 (0.53)	-3.64 (0.00)
R^2	0.09		0.13		0.59	
F-statistic	2.29		3.45		12.88	
Breusch– Pagan (Prob)	Cross Section 119.93(0.00) Time 3.06 (0.08)					
Hausman (Chi-Sq)			4.07			
Prob.			0.39			
Wald (Chi-Sq)			122.10			
Prob.			0.00			

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The table 28 shows the impact of capital structure on dividend yield of the Pharmaceutical Industry (6 mid capital companies). The Bresch pagan test shows that the cross section (119.93,0.00) alone is significant,so "One Way Random Effect model " is

choosen. The Hausman test revealed that the p value is greater han 0.05.Hence, the Random Effect model is more appropriate for further analysis.The Random Effect Model shows that STDR has a negative impact on DYR.The appropriate model framed are:

Mid Capital Companies: $DYR_{it} = 1.82 – 1.86\ STDR_{it}$

Hence, null hypothesis rejected. "There is an impact of capital structure on dividend policy of select pharmaceutical industries in India".The R Square value shows that (0.13) 13 percent variations made by selected independent variable on DYR.F Stat is significant at 1 percent. It shows that model is best fit. Wald Test shows that the p value is significant. That shows the independent variables add value to the model under mid capital companies.

C. SMALL CAPITAL COMPANIES

Table 29

Pharmaceutical Industry - Small Capital Companies

Impact of Capital Structure on Dividend Payout – Panel Data Regression Analysis

Variables	**Pooled OLS**		**Random Effect**		**Fixed Effect**	
	Beta (Std Error)	T (Prob)	Beta (Std Error)	T (Prob)	Beta (Std Error)	T (Prob)
Constant	0.30 (0.08)	3.58 (0.00)	0.24 (0.11)	2.06 (0.04)	0.22 (0.08)	2.65 (0.00)
DER	0.01 (0.02)	0.56 (0.57)	0.00 (0.02)	0.201 (0.84)	0.00 (0.02)	0.12 (0.90)
TDR	-0.01 (0.01)	-1.01 (0.31)	0.00 (0.01)	0.234 (0.81)	0.00 (0.01)	0.39 (0.69)
LTDR	0.81 (0.26)	3.06 (0.00)	0.81 (0.26)	3.09 (0.00)	0.80 (0.26)	3.01 (0.00)
STDR	-0.36 (0.15)	-2.35 (0.01)	-0.11 (0.21)	-0.54 (0.58)	-0.03 (0.23)	-0.13 (0.89)
R^2	0.06		0.03		0.41	
F-statistic	4.85		2.65		8.33	
Breusch–Pagan (Prob)	Cross Section 186.37 (0.00) Time 0.24 (0.62)					
Hausman (Chi-Sq)			1.62			
Prob.			0.80			
Wald (Chi-Sq)			106.49			
Prob.			0.00			

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The table 29 shows the impact of capital structure on dividend payout of the 18 small capital companies. The Bresch pagan test shows that the cross section (186.37, 0.00) alone is significant, so "One Way Random Effect model" is choosen. The Hausman test revealed that the p value is greater than 0.05.Hence, the Random Effect model is more appropriate for further analysis.The Random Effect Model shows that LTDR has a positive impact on DPR. The appropriate model is as follows:

Small Capital Companies: $DPR_{it} = 0.24 + 0.81\ LTDR_{it}$

The result shows that, the positive relationship indicates the increase in the debt funds will increase the dividend payout and vice versa. Hence, null hypothesis is rejected. "There is an impact of capital structure on dividend policy of select pharmaceutical industries in India". The R Square value shows that (0.03) 3 percent variations made by selected independent variable on DPR.F Stat is significant at 1percent. It shows that model is best fit.Wald Test shows that the p value is significant.That shows the independent variables add value to the model under small capital companies.

Table 30
Pharmaceutical Industry - Small Capital Companies
Impact of Capital Structure on Dividend Yield – Panel Data Regression Analysis

Variables	**Pooled OLS**		**Random Effect**		**Fixed Effect**	
	Beta (Std Error)	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**	**Beta (Std Error)**	**T (Prob)**
Constant	0.15 (0.13)	1.17 (0.24)	0.43 (0.16)	2.57 (0.01)	0.55 (0.11)	4.76 (0.00)
DER	0.03 (0.03)	0.91 (0.36)	0.07 (0.02)	2.57 (0.01)	0.08 (0.02)	2.82 (0.00)
TDR	-0.03 (0.02)	-1.66 (0.09)	-0.01 (0.01)	-0.55 (0.57)	-0.00 (0.01)	-0.06 (0.94)
LTDR	-0.43 (0.42)	-1.02 (0.30)	0.27 (0.35)	0.77 (0.44)	0.35 (0.36)	0.97 (0.32)
STDR	2.60 (0.24)	10.54 (0.00)	0.43 (0.28)	1.51 (0.13)	-0.23 (0.31)	-0.73 (0.46)
R^2	0.32		0.03		0.69	
F-statistic	31.70		2.48		27.21	
Breusch– Pagan (Prob)	Cross Section 220.81 (0.00) Time 1.433 (0.23)					
Hausman (Chi-Sq)			30.68			
Prob.			0.00			
Wald (Chi-Sq)			5.79			
Prob.			0.21			

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The table 30 shows the impact of capital structure on dividend yield of the 18 small capital companies. The Breusch pagan test shows that the cross section (220.81, 0.00) alone is significant, so "One Way Random Effect model" is chosen. The Hausman test revealed that the p value is less than 0.05.Hence, the Fixed Effect model is more appropriate for further analysis. The Fixed Effect Model shows that Debt Equity Ratio has a positive impact on Dividend Yield Ratio. The appropriate model is as follows:

Small Capital Companies: DYR = 0.55 +0.08 DER_{it}

The result shows that, the positive relationship indicates the increase in Debt funds increases the dividend and vice versa.Hence, null hypothesis H_{04} is rejected. "There is an impact of capital structure on dividend policy of select pharmaceutical industries in India" is accepted. The R Square value shows that (0.70) 70 percent variations made by selected independent variable on DYR.F Stat is significant at 1percent. It shows that model is best fit.Wald Test shows that the p value is insignificant under small capital companies.

4.5 RELATIONSHIP BETWEEN CAPITAL STRUCTURE, DIVIDEND POLICY AND FIRM VALUE

Correlation Analysis & Multiple Regression Analysis

Capital structure refers to the amount of debt and equity employed by a firm to fund its operations and finance its assets. In order to optimize the capital structure, a firm can issue either more debt or equity. The dividend decision, determined by a firm's dividend policy, affects the level of equity retained in the firm. Financial Managers are very careful in handling the choice of dividend policy of the company as dividends not only influence the value of the firm but more importantly the wealth of their shareholders. So, the association between the Capital Structure, Dividend Policy and Firm Value of select pharmaceutical companies were analyzed using Correlation Analysis and Multiple Regression.The appropriate models were framed to define the objective.

The following variables are measured to reveal the relationship between capital structure, dividend policy and firm value.Each of the independent variables are used to examine the relationship with the dependent variable.The independent variables are Debt Equity Ratio, Total Debt Ratio, Long Term Debt Ratio, Short Term Debt Ratio,Dividend Payout Ratio and Dividend Yield Ratio and the dependent variable is Firm value.

HYPOTHESIS

H_{05}: There is no significant relationship between the Capital Structure, Dividend Policy and Firm Value of select Pharmaceutical Companies in India

MODEL FRAMED

$$FV = \beta_0 + \beta_1 DER + \beta_2 TDR + \beta_3 LTDR + \beta_4 STDR\ \beta_5 DPR + \beta_6 DYR + e$$

The relationship between Capital Structure and Dividend Policy and Firm Value of the selected Pharmaceutical Companies is analyzed for 15 years using Correlation and Multiple Regression.The results are presented in the following tables.

ASSOCIATION BETWEEN CAPITAL STRUCTURE, DIVIDEND POLCIY AND FIRM VALUE

The Pharmaceutical Industries data regarding Capital Structure, Dividend Policy and Firm Value of 7 Large Capital Companies is analyzed for 15 years from 2007 to 2021.The results are presented in the following tables.

Table 31

Large Capital Companies

Association between Capital Structure, Dividend Policy and Firm Value – Correlation Analysis

	DER	TDR	LTDR	STDR	DPR	DYR	FV
DER	1						
TDR	0.36**	1					
LTDR	0.06	0.19	1				
STDR	0.04	0.36**	-0.17	1			
DPR	0.40**	0.16	0.09	-0.08	1		
DYR	-0.32**	-0.21*	-0.29**	-0.05	-0.18	1	
FV	0.05	0.34**	-0.13	0.35**	-0.15	-0.87	1

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The Table 31, reveals the association between the Capital Structure, Dividend Policy and Firm Value of select 7 Large Capital Pharmaceutical companies in India.The Debt Equity Ratio has a positive association with Total Debt Ratio (0.36) and the Short Term Debt Ratio has the positive relationship with firm value (0.35).Thus, it shows that the increase in Capital structure and Dividend Policy increases the firm value. This means that when the company benefits from tax reductions in interest expense from loans, the company will be likely to use external funds in the form of long-term debt to finance the company's assets for the company's operations. It increases the Firm Value, Company operations and financial efficiency etc during the study period.The Debt Equity Ratio has the high negative association with Dividend Yield Ratio (-0.32) and high positive relationship with Total Debt Ratio (0.36).

Table 32

Mid Capital Companies

Association between Capital Structure, Dividend Policy and Firm Value – Correlation Analysis

	DER	TDR	LTDR	STDR	DPR	DYR	FV
DER	1						
TDR	0.09	1					
LTDR	-0.23*	-0.03	1				
STDR	0.11	0.44**	-0.12	1			
DPR	-0.12**	-0.13	0.09	-0.24*	1		
DYR	0.09	-0.18	-0.18	-0.20	-0.35**	1	
FV	0.01	-0.08	0.08	-0.02	0.24*	0.15	1

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The Table 32, reveals the association between the Capital Structure, Dividend Policy and Firm Value of 6 Mid Capital Companies. The Dividend Payout Ratio (0.24) has a positive impact on Firm value. The Debt Equity Ratio has a negative association with Long Term Debt Ratio (-0.23) and Dividend Payout Ratio (-0.12).The Short Term Debt Ratio has a negative relationship with Dividend Payout Ratio (-0.24).Hence, it reveals that the increase in Capital Structure and Dividend Policy will decrease the firm value and vice versa. The Short Term Debt Ratio has the high positive association with Total Debt Ratio (0.44).The Debt Equity Ratio has a high negative relationship with Dividend Payout Ratio (-0.12).

Table 33

Small Capital Companies

Association between Capital Structure, Dividend Policy and Firm Value

	DER	TDR	LTDR	STDR	DPR	DYR	FV
DER	1						
TDR	0.36	1					
LTDR	-0.03	-0.10	1				
STDR	0.13*	-0.02	-0.16**	1			
DPR	0.00	-0.08	0.21**	-0.17**	1		
DYR	0.11**	-0.07	-0.13*	0.56**	-0.15*	1	
FV	0.06	0.50**	-0.10*	-0.04	-0.10	-0.13*	1

Source: Computed Data (2007-2021)

**** Significant at 0.01 level, * Significant at 0.05 level**

The Table 33, reveals the association between the Capital Structure, Dividend Policy and Firm Value of 18 Small Capital Companies. The Total Debt Ratio (0.50) has a positive relationship with Firm value. The Long Term Debt Ratio (-0.10) and Dividend

Yield Ratio (-0.13) has a negative association with Firm value. It shows that the increase in debt capital and dividend policy will decrease the firm value and vice versa. The Total Debt Ratio has the high positive relationship with Firm Value (0.50).The Long Term Debt Ratio has the high negative association with Firm value (-0.10).

A. LARGE CAPITAL COMPANIES

Table 34

Large Capital Companies
Association between Capital Structure Dividend Policy and Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	**Sig. value**
1	Sun Pharmaceutical Industries Ltd	Constant	-56.99	0.99
		DER	**-2.54**	**0.01**
		TDR	3.34	0.32
		LTDR	-4.15	0.31
		STDR	1.98	0.36
		DPR	1.41	0.51
		DYR	4.00	0.18
		R^2	0.78	
		F Statistic	4.82	
2	Divi's Laboratories Ltd	Constant	2.66	0.05
		DER	1.38	0.27
		TDR	-9.45	0.68
		LTDR	-1.12	0.51
		STDR	**-9.03**	**0.00**
		DPR	1.13	0.75
		DYR	67.04	0.72
		R^2	0.88	
		F Statistic	10.24	
3	Dr. Reddy's Laboratories Ltd	Constant	-6.28	0.33
		DER	-1.17	0.08
		TDR	1.41	0.17
		LTDR	4.82	0.36
		STDR	3.38	0.26
		DPR	-9.59	0.97
		DYR	-1.78	0.90
		R^2	0.46	
		F Statistic	1.15	
4	Cipla Ltd	Constant	1.46	0.45
		DER	-2.07	0.39
		TDR	**6.29**	**0.01**
		LTDR	-7.17	0.41
		STDR	3.95	0.08
		DPR	-4.80	0.27
		DYR	1.49	0.21
		R^2	0.77	
		F Statistic	4.56	

5	Aurobindo Pharma Ltd	Constant	5.62	0.10
		DER	-1.07	0.80
		TDR	-2.91	0.37
		LTDR	-6.84	0.34
		STDR	-2.38	0.85
		DPR	3.31	0.65
		DYR	-6.15	0.96
		R^2	0.36	
		F Statistic	0.75	
6	Lupin Ltd	Constant	2.41	0.69
		DER	-1.31	0.73
		TDR	-3.82	0.60
		LTDR	8.74	0.69
		STDR	-8.81	0.44
		DPR	-6.10	0.57
		DYR	2.65	0.12
		R^2	0.48	
		F Statistic	1.23	
7	Torrent Pharmaceuticals Ltd	Constant	7.54	0.29
		DER	-2.17	0.67
		TDR	-3.60	0.14
		LTDR	1.74	0.29
		STDR	**-1.34**	**0.01**
		DPR	-2.75	0.38
		DYR	8.39	0.56
		R^2	0.68	
		F Statistic	2.95	

Source: Computed Data (2007-2021)

Table 34 reveals the result of relationship between Capital Structure,Dividend Policy and Firm Value of 7 large capital companies under Pharmaceutical Industry.The Regression analysis shows that the Debt Equity Ratio, Total Debt Ratio, Long Term Debt Ratio,Short Term Debt Ratio,Dividend Payout Ratio and Dividend Yield Ratio significant values are greater than 0.05 for three companies (Dr.Reddy Labs,Aurobindo Ltd and Lupin Ltd).This indicates that the capital structure and dividend has no significant effect on firm value.Hence, the null hypothesis H_{05} is accepted for these three companies.

In Sun Pharma, the Debt Equity Ratio have negative influence on Firm Value at 78 per cent (R^2: 0.78) is significant at 5 percent level. In Divi's Labs, the Short Term Debt Ratio have a negative effect on Firm value at 88 percent (R^2 : 0.88) is significant at 1 percent level. In Cipla ltd, the Total Debt Ratio has an optimistic influence on Firm Value at 77 per cent (R^2: 0.77) is significant at 5 percent level. In Torrent Pharma, the Short Term Debt Ratio has a negative influence on Firm Value at 68 percent (R^2: 0.68) is significant at 5 percent level. The appropriate model framed is as follows,

- **Sun Pharma: FV = - 56.99 - 2.54 DER**
- **Divi's labs: FV = 2.66 - 9.03 STDR**
- **Cipla ltd : FV = 1.46+ 6.29 TDR**
- **Torrent Pharma: FV = 7.54 – 1.34 STDR**

Thus, the positive association indicates that increase in capital structure and dividend policy simultaneously increases the firm value and vice versa.

Hence null hypothesis H_{05} is rejected – 4 companies. There is a significant relationship between Capital Structure, Dividend Policy and Firm Value of select Pharmaceutical Companies in India for these four large capital companies (Sun Pharma, Divi's Labs, Cipla ltd and Torrent Pharma).

B. MID CAPITAL COMPANIES

Table 35

Mid Capital Companies
Association between Capital Structure, Dividend Policy and Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	Sig. value
1	Alkem Laboratories Limited	Constant	2.25	0.08
		DER	-2.54	0.36
		TDR	-2.87	0.48
		LTDR	6.75	0.60
		STDR	-1.00	0.74
		DPR	1.32	0.51
		DYR	-8.84	0.08
		R^2	0.51	
		F Statistic	2.45	
2	IPCA Laboratories Ltd	Constant	-1.37	0.09
		DER	**1.67**	**0.00**
		TDR	**-1.05**	**0.02**
		LTDR	2.42	0.24
		STDR	1.25	0.35
		DPR	**2.69**	**0.00**
		DYR	2.24	0.36
		R^2	0.88	
		F Statistic	10.42	
3	GlaxoSmithkline Pharmaceuticals Ltd	Constant	3.65	0.42
		DER	-9.91	0.19
		TDR	-1.46	0.13
		LTDR	3.50	0.87
		STDR	3.73	0.66
		DPR	7.09	0.12
		DYR	-1.44	0.51
		R^2	0.64	
		F Statistic	2.39	

4	Ajanta Pharma Ltd	Constant	1.84	0.81
		DER	-8.82	0.84
		TDR	-3.27	0.89
		LTDR	3.69	0.88
		STDR	1.70	0.85
		DPR	**2.41**	**0.00**
		DYR	-1.69	0.58
		R^2	0.76	
		F Statistic	4.32	
5	Glenmark Pharmaceuticals ltd	Constant	2.67	0.59
		DER	**5.23**	**0.03**
		TDR	7.66	0.28
		LTDR	4.39	0.76
		STDR	-7.54	0.15
		DPR	-4.85	0.86
		DYR	-2.41	0.05
		R^2	0.78	
		F Statistic	4.89	
6	Nacto Pharma Ltd	Constant	-1.25	0.01
		DER	**4.75**	**0.00**
		TDR	**2.91**	**0.01**
		LTDR	-1.92	0.69
		STDR	7.48	0.26
		DPR	1.82	0.18
		DYR	**-1.93**	**0.03**
		R^2	0.62	
		F Statistic	4.65	

Source: Computed Data (2007-2021)

Table 35 shows the result of association between Capital Structure, Dividend Policy and Firm Value of 6 Mid Capital companies under Pharmaceutical Industry.The Regression analysis shows that the Debt Equity Ratio, Total Debt Ratio, Long Term Debt Ratio,Short Term Debt Ratio,Dividend Payout Ratio and Dividend Yield Ratio significant values are greater than 0.05 for two companies (Alkem Labs and Glaxosmithkline Pharma).This indicates that the capital structure and dividend policy has no effect on firm value.Hence, the null hypothesis H_{05} is accepted for these two companies

In IPCA Labs,the Debt Equity Ratio and Dividend Payout Ratio has a positive influence and the Total Debt Ratio have negative impact on Firm Value at 88 per cent (R^2: 0.88) is significant at 1 percent and 5 percent level.In Ajanta Pharma, the Dividend Payout Ratio has a positive effect on Firm value at 76 percent (R^2:0.76) is significant at 1percent level.In Glenmark Pharma, the Debt Equity Ratio has a positive effect on Firm value at 78 percent (R^2:0.78) is significant at 5 percent level.In Nacto Pharma, the Debt Equity Ratio and Total Debt Ratio has a positive effect and Dividend Yield Ratio has negative influence on Firm value at 62 percent (R^2:0.62) is significant at 1 percent and 5 percent level.The appropriate models framed are as follows.

- **IPCA Labs: FV = -1.37 + 1.67 DER – 1.05 TDR + 2.69 DPR**
- **Ajanta Pharma: FV = 1.84+2.41 DPR**
- **Glenmark: FV= 2.67 + 5.23 DER**
- **Nacto Pharma: FV= -1.25 + 4.75 DER + 2.91 TDR-1.93 DYR**

Thus, the positive association indicates that increase in capital structure and dividend policy simultaneously increases the firm value and vice versa.

Hence null hypothesis H_{05} is rejected- 4 companies. There is a significant relationship between Capital Structure, Dividend Policy and Firm Value of select Pharmaceutical Companies in India for these four mid capital companies (IPCA Labs, Ajanta Pharma, Glenmark and Nacto Pharma).

C. SMALL CAPITAL COMPANIES

Table 36
Small Capital Companies
Association between Capital Structure, Dividend Policy and Firm Value – Multiple Regression Analysis

S.No	Company	Independent Variable	FV	
			Beta value	Sig. value
1	Aarti Drugs Limited	Constant	5.08	0.24
		DER	3.03	0.06
		TDR	-3.04	0.13
		LTDR	-3.51	0.50
		STDR	-1.71	0.15
		DPR	2.94	0.95
		DYR	-4.97	0.80
		R^2	0.30	
		F Statistic	0.58	
2	Orchid Pharma Limited	Constant	-2.46	0.76
		DER	5.25	0.28
		TDR	-1.99	0.23
		LTDR	1.26	0.29
		STDR	8.45	0.76
		DPR	-1.10	0.64
		DYR	-1.19	0.70
		R^2	0.29	
		F Statistic	0.56	
3	IOL Chemicals & Pharmaceuticals Ltd	Constant	2.37	0.33
		DER	-1.05	0.67
		TDR	5.31	0.38
		LTDR	-7.17	0.22
		STDR	-3.43	0.40
		DPR	-3.26	0.95
		DYR	-3.58	0.30
		R^2	0.49	
		F Statistic	1.28	

4	Amrutanjan Health Care Limited	Constant	-6.36	0.27
		DER	3.21	0.84
		TDR	3.31	0.86
		LTDR	3.88	0.05
		STDR	2.28	0.20
		DPR	-1.79	0.48
		DYR	-3.01	0.71
		R^2	0.68	
		F Statistic	5.33	
5	Novartis India Limited	Constant	5.85	0.09
		DER	-1.71	0.40
		TDR	**1.06**	**0.02**
		LTDR	-1.26	0.13
		STDR	-1.84	0.71
		DPR	3.40	1.00
		DYR	-1.12	0.40
		R^2	0.63	
		F Statistic	4.18	
6	Bliss GVS Pharma Ltd	Constant	3.43	0.15
		DER	-2.46	0.32
		TDR	-1.70	0.33
		LTDR	-6.90	0.76
		STDR	9.36	0.34
		DPR	4.40	0.81
		DYR	-2.52	0.69
		R^2	0.56	
		F Statistic	3.24	
7	SMS Pharmaceuticals Ltd	Constant	4.26	0.33
		DER	-5.46	0.83
		TDR	-2.21	0.06
		LTDR	1.59	0.13
		STDR	-5.60	0.51
		DPR	5.49	0.37
		DYR	-1.78	0.98
		R^2	0.88	
		F Statistic	17.83	
8	Anuh Pharma Ltd	Constant	3.47	0.96
		DER	5.11	0.86
		TDR	3.99	0.46
		LTDR	-2.08	0.49
		STDR	-1.83	0.99
		DPR	2.88	0.59
		DYR	-2.57	0.93
		R^2	0.30	
		F Statistic	1.09	
9	Lincoln Pharmaceuticals Ltd	Constant	-1.68	0.95
		DER	-3.74	0.16
		TDR	2.40	0.93
		LTDR	6.55	0.50
		STDR	2.61	0.20
		DPR	2.16	0.22
		DYR	-3.68	0.35
		R^2	0.54	
		F Statistic	2.93	

10	Kappac Pharma Ltd	Constant	2.68	0.21
		DER	7.15	0.08
		TDR	-7.47	0.60
		LTDR	5.04	0.41
		STDR	-1.80	0.89
		DPR	4.55	0.77
		DYR	-2.45	0.16
		R^2	0.20	
		F Statistic	0.62	
11	Jenburkt Pharmaceuticals Ltd	Constant	5.16	0.96
		DER	**3.31**	**0.00**
		TDR	**1.58**	**0.00**
		LTDR	-2.02	0.16
		STDR	4.49	0.83
		DPR	4.92	0.25
		DYR	**-4.23**	**0.04**
		R^2	0.84	
		F Statistic	7.28	
12	Brooks Laboratories Ltd	Constant	9.06	0.59
		DER	4.50	0.13
		TDR	-2.28	0.68
		LTDR	-2.76	0.93
		STDR	3.04	0.43
		DPR	**-2.24**	**0.04**
		DYR	2.49	0.90
		R^2	0.56	
		F Statistic	3.20	
13	Kilitch Drugs Ltd	Constant	1.10	0.01
		DER	-1.91	0.12
		TDR	-4.54	0.83
		LTDR	-2.99	0.94
		STDR	1.73	0.22
		DPR	-1.91	0.35
		DYR	3.99	0.58
		R^2	0.62	
		F Statistic	4.01	
14	Coral Laboratories Ltd	Constant	3.38	0.36
		DER	-1.36	0.29
		TDR	-1.09	0.22
		LTDR	7.19	0.08
		STDR	2.23	0.23
		DPR	7.06	0.20
		DYR	-5.01	0.40
		R^2	0.25	
		F Statistic	0.85	
15	Bal pharma Ltd	Constant	1.86	0.29
		DER	-4.97	0.53
		TDR	-6.42	0.68
		LTDR	1.83	0.67
		STDR	-1.65	0.83
		DPR	1.61	0.52
		DYR	1.54	0.86
		R^2	0.35	
		F Statistic	1.32	

16	Alpa Laboratories Ltd	Constant	1.32	0.60
		DER	-4.18	0.33
		TDR	-5.92	0.74
		LTDR	3.30	0.70
		STDR	-3.89	0.66
		DPR	8.04	0.79
		DYR	5.17	0.98
		R^2	0.72	
		F Statistic	6.47	
17	Gennex Laboratories Limited	Constant	-3.74	0.20
		DER	7.25	0.31
		TDR	5.07	0.13
		LTDR	2.29	0.30
		STDR	2.78	0.52
		DPR	3.88	0.70
		DYR	6.38	0.37
		R^2	0.67	
		F Statistic	4.97	
18	Alembic Pharmaceuticals	Constant	5.26	0.03
		DER	-8.30	0.84
		TDR	-3.42	0.68
		LTDR	-5.99	0.95
		STDR	-1.51	0.10
		DPR	**5.55**	**0.04**
		DYR	-5.52	0.43
		R^2	0.20	
		F Statistic	0.66	

Source: Computed Data (2007-2021)

Table 36 shows the result of association between Capital Structure, Dividend Policy and Firm Value of 18 small companies under Pharmaceutical Industry. The Regression analysis shows that the Debt Equity Ratio, Total Debt Ratio, Long Term Debt Ratio, Short Term Debt Ratio, Dividend Payout Ratio and Dividend Yield Ratio significant values are greater than 0.05 for these fourteen companies (Aarti Drugs, Orchid Pharma, IOL Chemicals, Bliss GVS Pharma, Amrutanjan Healthcare ltd, SMS Pharma, Anuh Pharma, Linclon Pharma, Kappac Pharma, Kilitch Drugs, Coral labs, Bal Pharma, Alpa Labs and Gennex Labs).This indicates that the capital structure has no impact on firm value. Hence, the null hypothesis H_{05} is accepted for these fourteen companies.

In Novartis ltd, the Total Debt Ratio has a positive influence on Firm Value at 63 percent (R^2:0.63) is significant at 5percent level. In Jenburkt Pharma, the Debt Equity Ratio and Total Debt Ratio has a positive effect and Dividend Yield Ratio has a negative influence on Firm value at 84 percent (R^2:0.84) is significant at 1percent level. In Brooks Labs, the Dividend Payout Ratio has a negative influence on Firm value at 56 percent (R^2:0.56) is significant at 5percent level. In Alembic Pharma, the Dividend Payout Ratio

has a positive effect on Firm value at 20 percent (R^2:0.20) is significant at 5 percent level. The appropriate models framed are as follows.

- **Novartis Ltd: FV = 5.85 + 1.06 TDR**
- **Jenburkt Pharma: FV= 5.16 + 3.31 DER + 1.58 TDR – 4.23 DYR**
- **Brooks Labs: FV= 9.06 – 2.24 DPR**
- **Alembic Pharma: FV= 5.26 + 5.55 DPR.**

Thus, the positive association indicates that increase in capital structure and dividend policy simultaneously increases the firm value and vice versa.

Hence, the null hypothesis H_{05} is rejected- 4 companies. There is a significant relationship between Capital Structure, Dividend Policy and Firm Value of select Pharmaceutical Companies in India is accepted for these four small capital companies (Novartis Ltd, Jenburkt Pharma, Brooks Labs and Alembic Pharma).

4.6 INTRA INDUSTRY DIFFERENCES IN CAPITAL STRUCTURE AND DIVIDEND POLICY

Compound Annual Growth Rate Values (CAGR)

The Compound Annual Growth Rate calculates the growth rate of any financial activity over multiple time periods of more than one year.The needed Rate of Return (ROR) for an investment to increase from its initial balance to its final balance and the provided profits are reinvested at the end of each period of the investment's life span.The growth rate of the Indian pharmaceutical sector was studied using compound growth rate techniques. To examine the growth pattern of the components of capital structure and dividend policy of the select pharmaceutical industries, the following variables were used.Debt Equity Ratio,Total Debt Ratio,Long Term Debt Ratio,Short Term Debt Ratio,Dividend Payout Ratio and Dividend Yield Ratio.The representative charts are displayed in exhibits 5,6 and 7.

Table 37

Large Capital Companies - Compound Annual Growth Rate 2007- 2021

Companies	DER	TDR	LTDR	STDR	DPR	DYR
Sun Pharma	0.03	0.00	0.05	-0.07	-0.08	-0.22
Divi's Labs	0.16	-0.04	0.06	0.03	-0.04	0.06
Dr Reddy Labs	0.00	0.01	0.08	0.01	-0.00	0.08
Cipla ltd	-0.11	0.04	0.08	0.04	0.00	0.08
Aurobindo Pharma	0.15	0.05	0.21	-1.52	-0.01	0.00
Torrent Pharma	0.00	0.00	0.01	-1.80	-2.14	0.05
Lupin ltd	0.29	0.09	0.15	0.07	-0.03	0.04

Source: Computed Data (2007-2021)

The Table 37 reveals the Capital Structure and Dividend Policy (Compound Annual Growth Rate (CAGR)) growth comparison of the select 7 Large Capital Companies for the period of study. In Cipla Ltd, the DER(0.11) shows negative growth.The remaining six companies under large capital companies show positive growth.In Sun Pharma (0.00),Dr.Reddy labs (0.01),Cipla ltd (0.04),Aurobindo Pharma (0.05),Torrent Pharma (0.00) and Lupin ltd (0.09),the TDR shows positive growth. LTDR shows positive growth for all the select large capital companies. In Divi's labs (0.03), Dr.Reddy labs (0.01), Cipla ltd (0.04) and Lupin ltd (0.07), STDR shows positive growth.All the three remaining companies shows a negative growth.But the dividend payouts were decreasing for all the six companies except in Cipla ltd (0.00).The dividend

yield were decreasing except in Sun Pharma (-0.22).Thus, it indicates that debt capital may also increase or decrease the dividend payouts and vice versa.

The dividend Payout is highly decreasing in torrent pharma (-2.14).It may be due to their low earnings irrespective of debt.The dividend yield ratio is increasing in Divi's Labs (0.06),Dr.Reddy Labs (0.08), Cipla Ltd (0.08),Aurobindo Pharma (0.00),Torrent Pharma (0.05) and Lupin Ltd (0.04) except in Sun Pharma (-0.22). It means that the company is retaining their earnings for their further investment or business expansion.

Exhibit 7

Large Capital Companies CAGR for 2007-08 to 2021-22

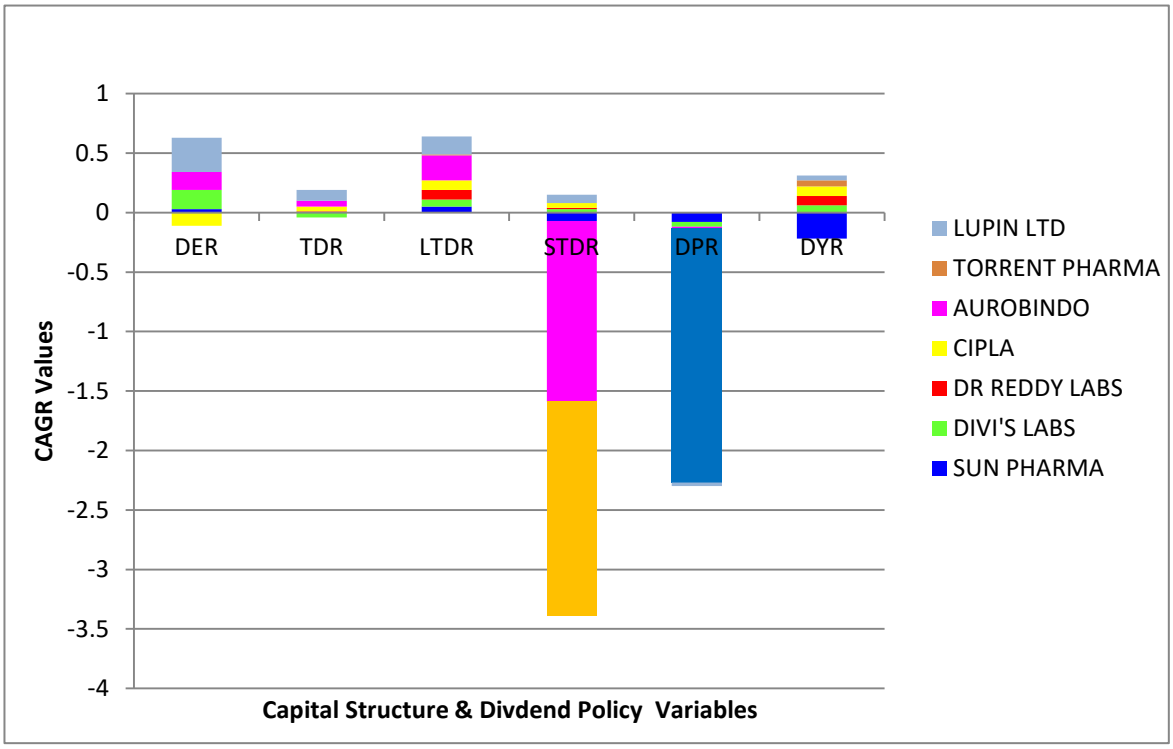


Table 38

Mid Capital Companies - Compound Annual Growth Rate - 2007-2021

Companies	DER	TDR	LTDR	STDR	DPR	DYR
Alkem Labs	0.02	0.02	0.15	-0.02	-0.14	0.11
IPCA Labs	0.20	0.16	0.11	0.12	0.02	0.03
Glaxosmithkline	0.09	-0.06	-0.14	0.98	-0.08	0.13
Ajanta	-0.05	0.33	0.10	0.05	-0.01	-0.03
Glenmark	0.16	0.06	0.07	0.05	0.06	0.02
Nacto Pharma	-0.14	0.19	0.24	-0.07	-0.04	-0.04

Source: Computed Data (2007-2021)

The Table 38 reveals the Capital Structure and Dividend Policy (Compound Annual Growth Rate (CAGR)) growth comparison of the select 6 Mid Capital Companies. In Alkem labs (0.02),IPCA Labs (0.20), Glaxosmithkline Ltd (0.09), Glenmark (0.16), the DER shows positive growth but not in Ajanta Pharma (-0.05) and Nacto Pharma (-0.14). In Glaxosmithkline ltd (-0.06), TDR shows negative growth and the remaining five companies Alkem Labs (0.02),IPCA Labs(0.16),Ajanta Pharma (0.33),Glenmark (0.06) and Nacto Pharma (0.19) shows a positive growth.In Alkem Labs (0.15), IPCA Labs (0.11), Ajanta Pharma (0.10), Glenmark (0.07) and Nacto Pharma (0.24) the LTDR shows positive growth.

The remaining company Glaxosmithkline ltd (-0.14) shows negative growth.It means that they should improve their productivity to manage their business activities.The STDR shows negative growth in Alkem Labs (-0.02) and Nacto Pharma (-0.07).The remaining four companies IPCA Labs (0.12), Glaxosmithkline ltd (0.98), Ajanta Pharma (0.05) and Glenmark (0.05) shows positive growth in STDR. The Dividend Payouts were decreasing in four companies except IPCA Labs (0.02) and Glenmark (0.06).Thus, it is clearly understood and proved that the increase in debt capital may decrease the dividend payouts and viceversa. The Dividend Yield is decreasing in Ajanta Pharma (-0.03) and Nacto Pharma (-0.04).The remaining four companies shows a positive growth.The Dividend Payout Ratio was found to be highly decreasing in Alkem Labs (-0.14).It shows that the company should increase their earnings to pay better returns to the shareholders.The Dividend Yield Ratio is highly decreasing in Nacto Pharma (-0.04). It shows that this company was retaining their earnings than the distribution of dividends.

Exhibit 8

Mid Capital Companies CAGR for 2007-08 to 2021-22

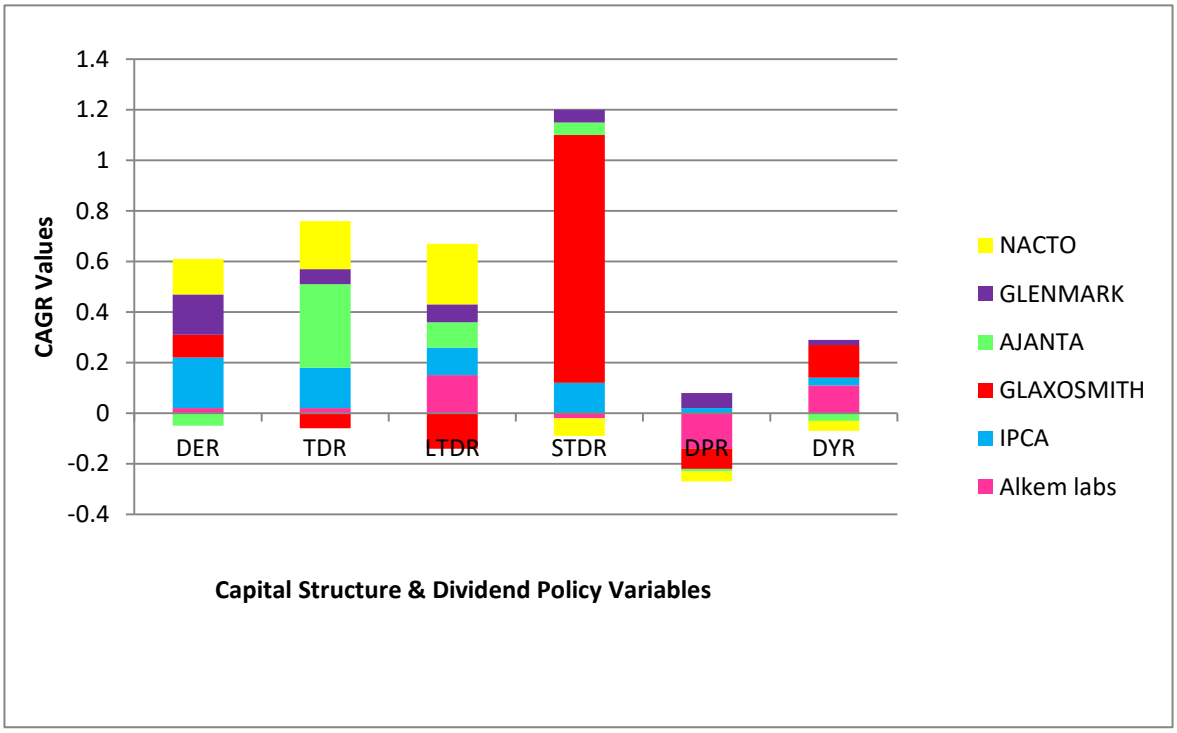


Table 39

Small Capital Companies - Compound Annual Growth Rate -2007-2021

Companies	DER	TDR	LTDR	STDR	DPR	DYR
Aarti Drugs	0.01	0.01	0.14	-0.01	-0.14	0.11
Orchid Pharma	0.20	0.15	0.10	0.12	0.02	0.03
IOL Pharma	0.09	-0.06	-0.14	0.98	-0.07	0.12
Amrutanjan	-0.04	0.32	0.10	0.05	-0.00	-0.02
Novartis ltd	0.15	0.06	0.06	0.05	0.06	0.02
Bliss GVS	0.13	0.19	0.24	-0.06	-0.04	-0.04
SMS Pharma	0.08	0.03	0.04	0.03	-0.03	0.09
Anuh Pharma	0.08	0.03	0.04	-0.03	-0.03	0.03
Linclon	0.28	0.07	0.09	0.07	0.07	-0.05
Kappac Pharma	-0.12	-0.25	0.37	0.36	0.53	0.01
Jenburkt	0.23	0.10	0.06	0.10	0.05	-0.01
Brooks Labs	0.26	0.07	0.21	0.01	-0.01	-2.08
Kilitch Drugs	0.20	0.11	0.37	0.09	-0.04	0.00
Coral Labs	0.14	0.06	0.15	0.04	-0.01	0.01
Bal Pharma	-0.01	-0.01	0.03	-0.02	0.08	-0.03
Alpa Labs	-0.01	-0.01	0.03	-0.02	0.08	-0.03
Gennex labs	-0.04	-0.03	0.28	-0.07	0.05	-0.01
Alembic Pharma	0.14	0.11	0.07	0.14	-0.01	0.14

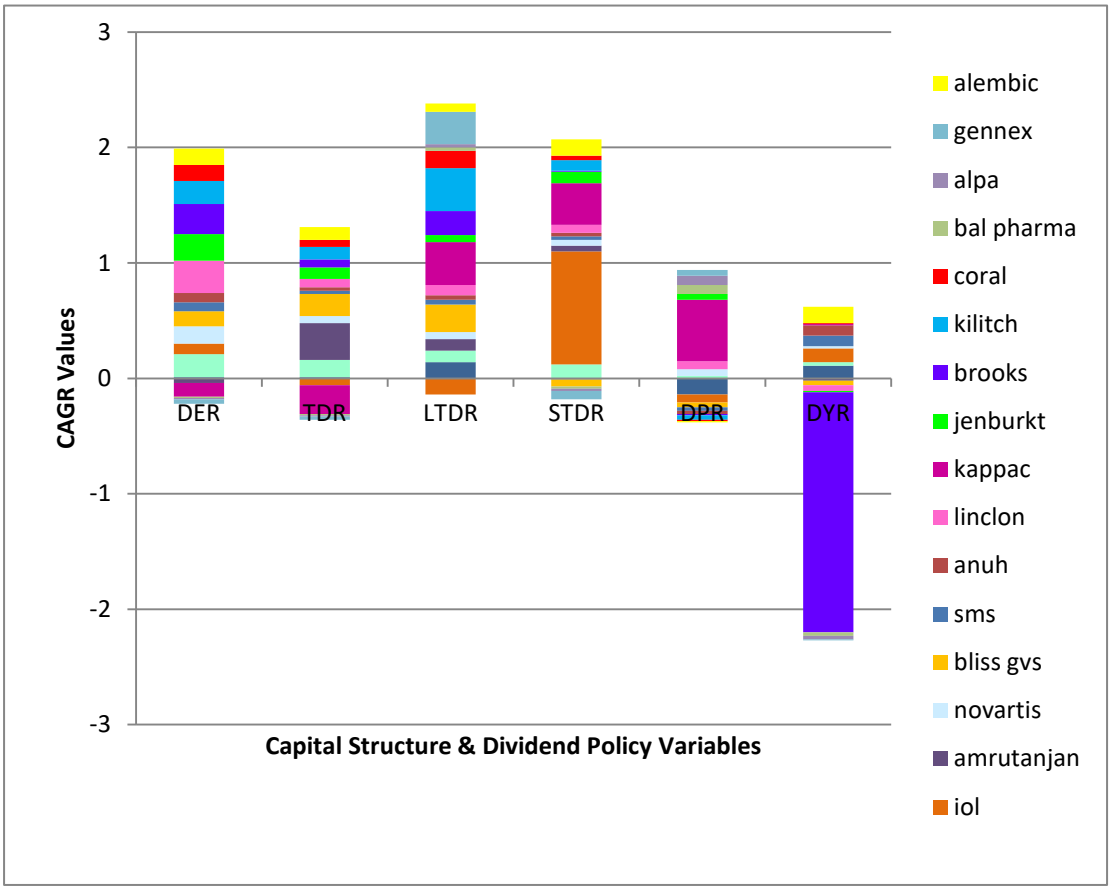
Source: Computed Data (2007-2021)

The Table 39 reveals the Capital Structure and Dividend Policy (Compound Annual Growth Rate (CAGR)) growth comparison of the select 18 Small Capital Companies. In Amrutanjan Healthcare Ltd (-0.04), Kappac Pharma (-0.12), Bal Pharma (-0.01), Alpa Labs (-0.01) and Gennex Labs (-0.04), Debt Equity Ratio shows negative growth. The remaining thirteen companies shows positive growth.In IOL Pharma (-0.06), Kappac Pharma (-0.25), Bal Pharma (-0.01), Alpa Labs (-0.01) and Gennex Labs (-0.03) the Total Debt Ratio shows negative growth. The remaining thirteen companies show positive growth during the study period.

The Long Term Debt Ratio shows positive growth in all seventeen companies except IOL Pharma (-0.14). In Aarti Drugs (-0.01), Bliss GVS Pharma (-0.06),Anuh Pharma (-0.03) Bal Pharma (-0.02), Alpa Labs (-0.02) and Gennex Labs (-0.07), Short Term Debt Ratio indicates negative growth. The remaining thirteen companies show positive growth during the study period. Hence, it is proved that the increase in debt capital will increase or decrease the dividend payouts during the study period.The Dividend Payout Ratio was found to be highly decreasing in Aarti Drugs (-0.14).It shows that the company should increase their earnings to improve their dividend payouts.The Dividend Yield Ratio is highly decreasing in Brooks labs (-2.08).It could mean that the companies were retaining their profits for their further business expansion.

Exhibit 9

Small Capital Companies CAGR for 2007-08 to 2021-22



4.6.1 INTRA INDUSTRY COMPARISON – CAPITAL STRUCTURE AND DIVIDEND POLICY

Trend Analysis

Trend Analysis is a technique for analysing current movements of a concern's financial position and predicting future movements. This technique aims to forecast long term market behaviour in the right direction.The intra industry comparison of capital structure and dividend policy were examined.

The Debt Equity Ratios (DER),Total Debt Ratios (TDR), Long Term Debt Ratios (LTDR),Short Term Debt Ratios (STDR),Dividend Payout Ratios (DPR) and Dividend Yield Ratios (DYR) of Large, Mid and Small Capital Companies in Pharmaceutical Industry from 2007- 2021 were analyzed using Trend Analysis. The five year projections (2022-2026) were forecasted by Trend Analysis using Linear Least Square Equation and presented in tables.

Table 40
Intra Industry Comparison of Debt Equity Ratio –

Trend Analysis 2006-2007 to 2025-26

Years (2007 as Base Year)	Large Capital Companies		Mid Capital Companies		Small Capital Companies	
	DER	Trend Percentage	DER	Trend Percentage	DER	Trend Percentage
2006-07	5.31	100	12.28	100	46.70	100.00
2007-08	5.62	105.83	10.83	88.15	35.93	76.93
2008-09	4.85	91.36	6.93	56.43	29.38	81.78
2009-10	4.59	86.46	4.89	39.80	28.77	97.91
2010-11	4.72	88.94	6.68	54.37	33.33	115.86
2011-12	3.06	57.76	10.17	82.80	37.30	111.92
2012-13	4.33	81.59	10.17	82.76	33.33	89.35
2013-14	3.18	59.91	7.81	63.61	30.53	91.59
2014-15	3.24	61.01	7.25	59.03	31.55	103.35
2015-16	3.97	74.87	9.76	79.43	30.95	98.09
2016-17	11.06	208.28	15.15	123.31	33.47	108.16
2017-18	8.68	163.46	11.28	91.82	29.34	87.64
2018-19	5.70	107.34	8.99	73.19	26.36	89.85
2019-20	6.78	127.68	9.88	186.12	27.98	106.14
2020-21	6.22	117.13	9.86	80.26	33.17	118.57
	Y= 3.60x + 73.23 x= Projected years Y= Predicted value of the dependent variable		Y= 3.27x + 57.85 x= Projected years Y= Predicted value of the dependent variable		Y = 0.956x + 90.82 x= Projected years Y = Predicted value of the dependent variable	
2021-22	-	152.62	-	129.96	-	112.80
2022-23	-	156.23	-	133.24	-	113.76
2023-24	-	159.84	-	136.52	-	114.72
2024-25	-	163.45	-	139.80	-	115.67
2025-26	-	167.06	-	143.07	-	95.25

Source: Computed Data (2006-2007 to 2025-26)

The Table 40 interprets the trend and projections of Debt Equity Ratio of Large,Mid and Small Capital Companies.DER trend is fluctuated from 100 percent in 2007 to 117.13 percent in Large Capital Companies,80.26 percent in Mid Capital Companies and 118.57 percent in small capital companies in 2021.The linear least square trend line equation forecast the trend projection for next five years i.e, 2021-22 to 2025-26.They are shown in exhibits 8,9 and 10.DER is forecasted at 167 percent in Large Capital Companies,143 percent in Mid Capital Companies and 95 percent in Small Capital Companies in 2026.This indicates that Debt Equity Ratio though fluctuating but increasing trend in Large capital companies and Mid capital companies, which means that the companies were aggressive in financing its growth with debt. In small capital companies though highly fluctuating, a slight increase in trend is found. It shows that the company uses lesser debt compared to equity and it will be less risky for the investors and lenders for their investment in these companies.

Table 41

Intra Industry Comparison of Total Debt Ratio – Trend Analysis 2006-2007 to 2025-26

Years (2007 as Base Year)	Large Capital Companies		Mid Capital Companies		Small Capital Companies	
	TDR	Trend Percentage	TDR	Trend Percentage	TDR	Trend Percentage
2006-07	1.87	100	0.92	100	5.89	100
2007-08	2.14	114.51	1.00	108.26	5.77	97.82
2008-09	2.42	129.18	0.97	104.85	8.67	147.06
2009-10	1.64	87.50	1.03	111.27	8.33	141.31
2010-11	1.84	98.35	1.00	109.05	8.51	144.36
2011-12	2.38	126.94	1.13	122.72	8.15	138.24
2012-13	1.88	100.22	1.18	127.85	9.26	157.13
2013-14	2.15	114.58	1.37	149.02	9.35	158.61
2014-15	2.13	113.50	1.40	102.11	9.32	158.08
2015-16	1.89	100.70	1.15	124.68	8.65	146.75
2016-17	3.80	203.06	1.66	180.61	9.36	158.85
2017-18	3.84	205.24	2.47	268.03	8.66	146.87
2018-19	3.67	196.08	2.06	223.46	6.99	118.57
2019-20	4.44	237.01	1.82	197.72	15.60	264.58
2020-21	4.11	219.29	2.33	252.45	9.89	167.83
	Y = 9.46x+ 67.35 x= Projected years Y= Predicted value of the dependent variable		Y = 10.95x + 67.85 x= Projected years Y= Predicted value of the dependent variable		Y= 5.05x + 109.20 x= Projected years Y= Predicted value of the dependent variable	
2021-22	-	275.58	-	308.75	-	220.49
2022-23	-	285.04	-	319.70	-	225.55
2023-24	-	294.51	-	330.65	-	230.61
2024-25	-	303.97	-	341.60	-	235.67
2025-26	-	313.44	-	352.55	-	240.73

Source: Computed Data (2006-2007 to 2025-26)

Table 41 explains that the trend and projections of Total Debt Ratio of Large,Mid and Small Capital Companies.TDR trend had fluctuated from 100 percent in 2007 to 219.28 percent in Large Capital Companies,252.44 percent in Mid Capital Companies and 167.83 percent in small capital companies in 2021.They are shown in exhibits 11,12 and 13.The linear least square trend line equation forecast the trend projections for next five years i.e, 2021-22 to 2025-26.TDR is forecasted at 313.44 percent in Large Capital Companies,352.55 percent in Mid Capital Companies and 240.73 percent in Small Capital Companies in 2026.This indicates that Total Debt Ratio shows an increasing trend in Large capital companies, Mid capital companies and Small Capital Companies. It means that the companies were funded by more debt compared to equity. Hence, the company should increase their earnings to pay better returns to the shareholders.

Table 42

Intra Industry Comparison of Long Term Debt Ratio - Trend Analysis

2006-2007 to 2025-26

Years (2007 as Base Year)	Large Capital Companies		Mid Capital Companies		Small Capital Companies	
	LTDR	Trend Percentage	LTDR	Trend Percentage	LTDR	Trend Percentage
2006-07	0.42	100	2.81	100	3.74	100
2007-08	0.32	77.07	1.53	54.57	3.97	106.15
2008-09	0.20	47.61	3.19	113.58	3.26	87.21
2009-10	0.19	46.25	2.53	90.15	2.91	77.88
2010-11	0.31	71.46	2.61	92.94	3.23	86.36
2011-12	0.32	74.47	2.70	96.22	2.38	63.81
2012-13	0.95	222.18	2.06	73.37	2.88	77.10
2013-14	1.05	245.03	2.29	81.62	2.86	76.46
2014-15	0.92	214.67	1.84	65.60	2.55	68.18
2015-16	1.17	272.87	2.88	102.55	2.85	76.15
2016-17	1.70	396.96	2.05	73.07	2.89	77.23
2017-18	1.55	363.04	2.12	75.50	2.78	74.51
2018-19	2.15	502.64	2.95	104.98	3.04	81.48
2019-20	2.34	547.89	3.02	107.51	3.42	91.49
2020-21	1.40	326.98	1.51	53.62	3.19	85.28
	Y = 33.29x-32.4 x= Projected years Y= Predicted value of the dependent variable		Y = - 0.58x + 90.35 x= Projected years Y= Predicted value of the dependent variable		Y = -0.87x + 88.94 x= Projected years Y= Predicted value of the dependent variable	
2021-22	-	699.98	-	77.52	-	69.71
2022-23	-	733.27	-	76.94	-	68.83
2023-24	-	766.56	-	76.35	-	67.96
2024-25	-	799.85	-	75.77	-	67.09
2025-26	-	833.14	-	75.19	-	66.21

Source: Computed Data (2006-2007 to 2025-26)

Table 42 describes the trend and projections of Long Term Debt Ratio of Large, Mid and Small Capital Companies.LTDR trend had fluctuated from 100 percent in 2007 to 326.98 percent in Large Capital Companies,53.61 percent in Mid Capital Companies and 85.28 percent in small capital companies in 2021.They are shown in exhibits 14,15 and 16.The linear least square trend line equation forecast the trend projections for next five years i.e, 2021-22 to 2025-26.LTDR is forecasted at 833.14 percent in Large Capital Companies,75.19 percent in Mid Capital Companies and 66.21 percent in Small Capital Companies in 2026.This indicates that Long Term Debt Ratio shows increasing debt trend in Large capital companies.This shows that these companies depend more on debt rather than the safety of their investors.The Mid capital companies and Small Capital Companies show decreasing trend.It means that the companies were not funded much by debt compared to equity.

Table 43

Intra Industry Comparison of Short Term Debt - Trend Analysis
2006-2007 to 2025-26

Years (2007 as Base Year)	Large Capital Companies		Mid Capital Companies		Small Capital Companies	
	STDR	Trend Percentage	STDR	Trend Percentage	STDR	Trend Percentage
2006-07	1.37	100	0.91	100	3.35	100
2007-08	1.45	105.76	1.04	114.50	3.24	96.81
2008-09	1.57	114.51	0.96	105.51	3.14	93.74
2009-10	1.89	138.24	1.08	118.79	3.53	105.55
2010-11	2.21	161.74	1.25	137.50	3.66	109.40
2011-12	1.61	117.90	1.40	154.82	4.17	124.60
2012-13	1.59	116.38	1.25	138.06	3.57	106.57
2013-14	1.51	110.04	1.21	133.17	3.24	96.75
2014-15	1.49	108.94	0.97	106.93	4.84	144.46
2015-16	1.46	106.43	1.43	147.23	4.83	144.15
2016-17	2.15	157.32	0.70	76.81	4.03	120.29
2017-18	1.73	126.13	1.82	200.88	4.83	144.10
2018-19	1.83	133.68	1.48	162.75	4.31	128.81
2019-20	1.74	127.43	1.91	209.96	4.99	148.96
2020-21	1.65	120.76	1.62	178.07	4.42	131.89
	y = 0.99x + 115.0 x= Projected years Y= Predicted value of the dependent variable		y = 5.37x + 95.98 x= Projected years Y= Predicted value of the dependent variable		y = 3.48x + 91.87 x= Projected years Y= Predicted value of the dependent variable	
2021-22	-	136.91	-	214.25	-	168.49
2022-23	-	137.90	-	219.62	-	171.97
2023-24	-	138.90	-	225.00	-	175.46
2024-25	-	139.930	-	230.38	-	178.94
2025-26	-	140.89	-	235.75	-	182.42

Source: Computed Data (2006-2007 to 2025-26)

Table 43 denotes the trend and projections of Short Term Debt Ratio of Large, Mid and Small Capital Companies.STDR trend hadd fluctuated from 100 percent in 2007 to 120.76 percent in Large Capital Companies,178.07 percent in Mid Capital Companies and 131.88 percent in small capital companies in 2021.They are shown in exhibits 17,18 and 19.The linear least square trend line equation forecast the trend projection for next five years i.e, 2021-22 to 2025-26.STDR is forecasted at 140.89 percent in Large Capital Companies,235.75 percent in Mid Capital Companies and 182.42 percent in Small Capital Companies in 2026.This indicates that Short Term Debt Ratio shows increasing trend in Large capital companies, Mid capital companies and Small Capital Companies.It means that the companies are good at their short term obligations.

Table 44

Intra Industry Comparison of Dividend Payout Ratio - Trend Analysis

2006-2007 to 2025-26

Years (2007 as Base Year)	Large Capital Companies		Mid Capital Companies		Small Capital Companies	
	DPR	Trend Percentage	DPR	Trend Percentage	DPR	Trend Percentage
2006-07	1.18	100	1.41	100	4.88	100
2007-08	1.52	128.86	1.99	141.68	4.95	101.38
2008-09	1.50	126.88	1.80	90.34	4.75	97.42
2009-10	1.28	108.54	1.83	129.93	6.23	127.65
2010-11	1.26	107.18	1.79	127.29	5.82	119.23
2011-12	1.23	104.52	1.41	99.93	6.64	136.00
2012-13	1.21	102.56	1.51	107.51	6.17	126.49
2013-14	1.18	100.49	1.63	115.85	6.15	126.02
2014-15	1.16	98.05	1.20	85.30	6.20	127.10
2015-16	1.15	97.33	1.11	78.86	5.68	116.34
2016-17	1.00	84.95	1.12	79.30	2.74	56.25
2017-18	1.05	89.39	1.05	74.64	2.47	50.57
2018-19	0.83	70.05	1.26	89.59	1.68	34.36
2019-20	1.24	105.17	1.57	111.63	2.41	49.43
2020-21	1.21	102.83	1.57	111.68	2.40	49.20
	Y = -2.03x + 11 x= Projected years Y= Predicted value of the dependent variable		Y= -1.89 x + 118.1 x= Projected years Y= Predicted value of the dependent variable		Y = -5.42x + 137.80 x= Projected years Y= Predicted value of the dependent variable	
2021-22	-	73.34	-	76.32	-	18.4
2022-23	-	71.31	-	74.42	-	13.07
2023-24	-	69.28	-	72.52	-	7.64
2024-25	-	67.25	-	70.62	-	2.22
2025-26	-	65.22	-	68.72	-	-3.19

Source: Computed Data (2006-2007 to 2025-26)

Table 44 indicates the trend and projections of Dividend Payout Ratio of Large, Mid and Small Capital Companies.DPR trend had fluctuated from 100 percent in 2007 to 102.83 percent in Large Capital Companies,111.68 percent in Mid Capital Companies and 49.19 percent in small capital companies in 2021.They are shown in exhibits 20,21 and 22.The linear least square trend line equation forecast the trend projections for next five years i.e, 2021-22 to 2025-26.DPR is forecasted at 65.22 percent in Large Capital Companies,68.72 percent in Mid Capital Companies and 3.19 percent in Small Capital Companies in 2026.This indicates that the Large Capital Companies and Mid capital companies shows decreasing trend.It means that these companies should improve their business efficiency to pay better for the shareholders.In small capital companies Dividend Payout Ratio shows highly decreasing trend.Hence, these companies should increase their earnings for better dividend payout

Table 45

Intra Industry Comparison of Dividend Yield Ratio - Trend Analysis

2006-2007 to 2025-26

Years (2007 as Base Year)	Large Capital Companies		Mid Capital Companies		Small Capital Companies	
	DYR	Trend Percentage	DYR	Trend Percentage	DYR	Trend Percentage
2006-07	116.34	100	7.82	100	5.88	100
2007-08	72.24	62.10	7.19	92.02	5.19	88.27
2008-09	135.12	116.14	7.17	91.75	4.39	74.62
2009-10	73.65	63.30	8.24	105.40	4.40	74.94
2010-11	91.00	78.22	8.81	112.77	4.17	70.99
2011-12	74.01	63.62	7.20	92.17	5.04	85.72
2012-13	75.94	65.28	7.50	95.95	4.57	77.81
2013-14	79.99	68.76	7.73	98.85	4.43	75.32
2014-15	82.97	71.32	8.21	106.24	5.15	87.63
2015-16	73.06	62.80	7.98	102.13	5.72	97.37
2016-17	65.74	56.51	8.57	109.68	5.02	85.39
2017-18	51.61	44.36	6.45	82.55	6.63	112.80
2018-19	40.46	34.78	7.80	99.77	5.18	88.16
2019-20	60.39	51.91	8.13	104.28	5.91	100.54
2020-21	62.65	53.85	6.85	87.65	5.86	99.63
	y = -3.31x + 92.69 x= Projected years Y= Predicted value of the dependent variable		y = -0.15x + 99.98 x= Projected years Y= Predicted value of the dependent variable		y = 1.30x + 77.47 x= Projected years Y= Predicted value of the dependent variable	
2021-22	-	19.82	-	96.59	-	106.26
2022-23	-	16.51	-	96.4	-	107.57
2023-24	-	13.20	-	96.28	-	108.88
2024-25	-	9.89	-	96.13	-	110.19
2025-26	-	6.57	-	95.97	-	111.50

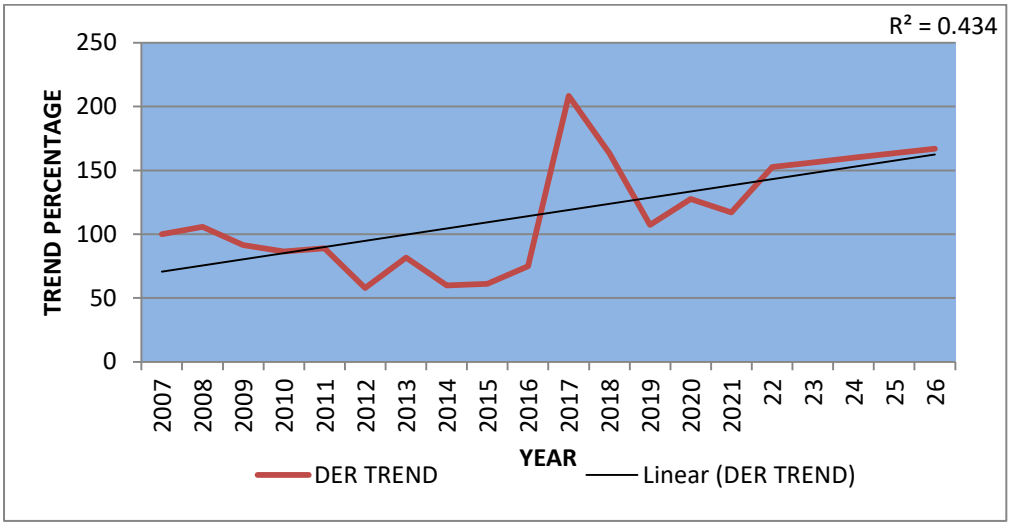
Source: Computed Data (2006-2007 to 2025-26)

Table 45 portrays that the trend and projections of Dividend Yield Ratio of Large, Mid and Small Capital Companies.DYR trend had fluctuated from 100 percent in 2007 to 53.84 percent in Large Capital Companies,87.65 percent in Mid Capital Companies and 99.63 percent in small capital companies in 2021.They are shown in exhibits 23,24 and 25. The linear least square trend line equation forecast the trend projections for next five years i.e, 2021-22 to 2025-26.DYR is forecasted at 6.57 percent in Large Capital Companies,95.97 percent in Mid Capital Companies and 111.50 percent in Small Capital Companies in 2026.

This indicates that the Small Capital Companies shows increasing trend.It means that these companies were good at earnings to pay good returns to the shareholders. Dividend Yield Ratio shows decreasing trend in Large capital companies and Mid capital companies. It means that these companies were retaining some of their profits for the future business expansion or projects than the dividend distribution.

Exhibit 10

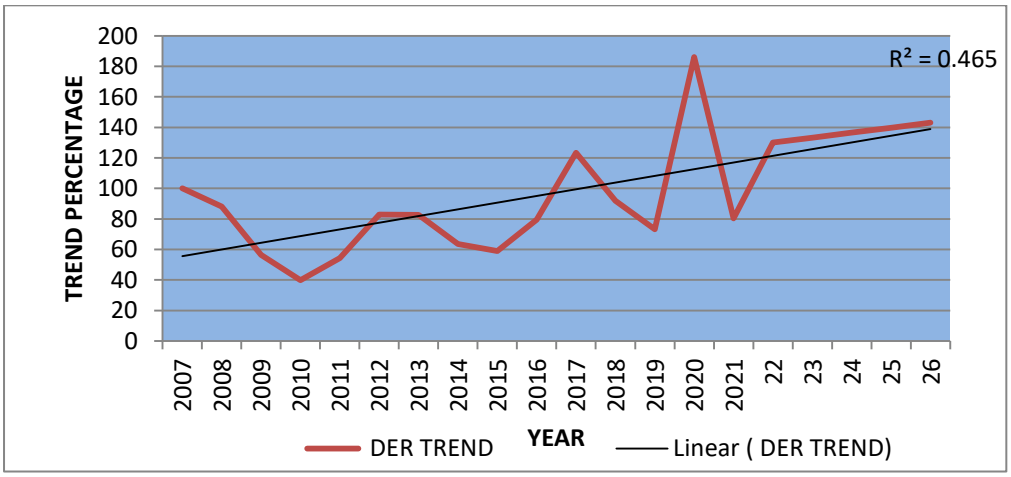
LARGE CAPITAL COMPANIES DER TREND PROJECTION (2007-2026)



Source: Computed Data (2007 - 2026)

Exhibit 11

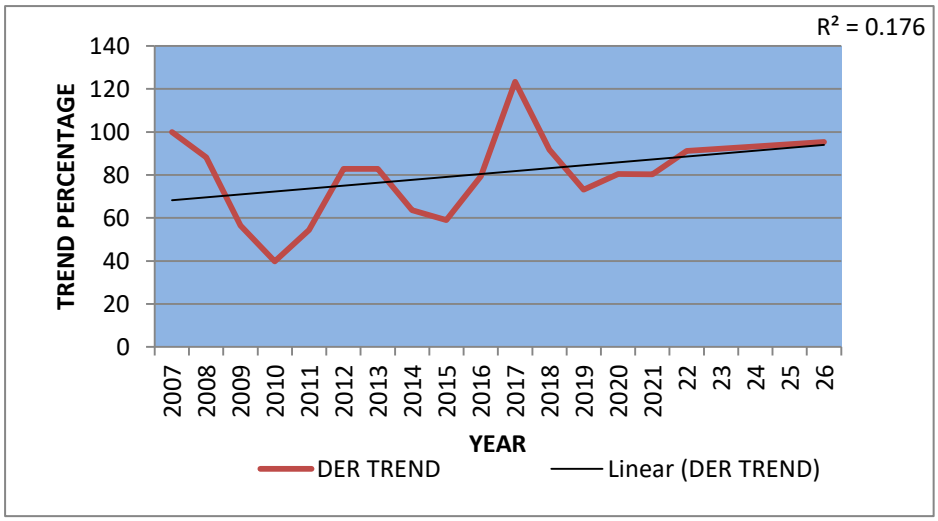
MID CAPITAL COMPANIES DER TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 12

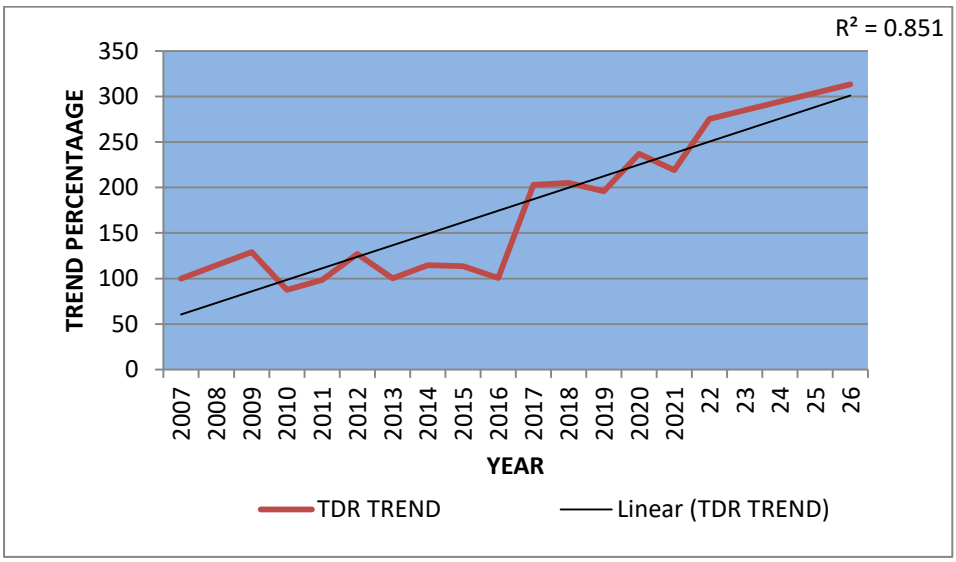
SMALL CAPITAL COMPANIES DER TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 13

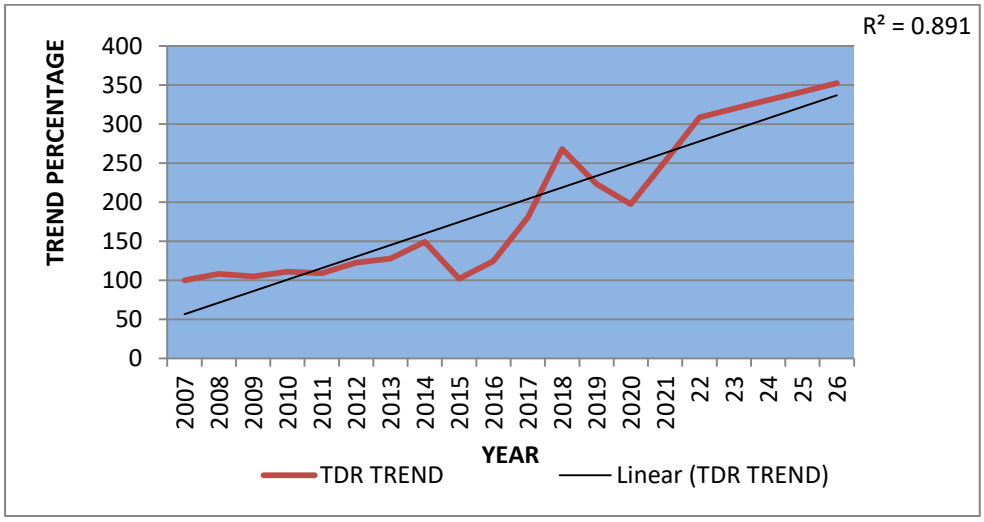
LARGE CAPITAL COMPANIES TDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 14

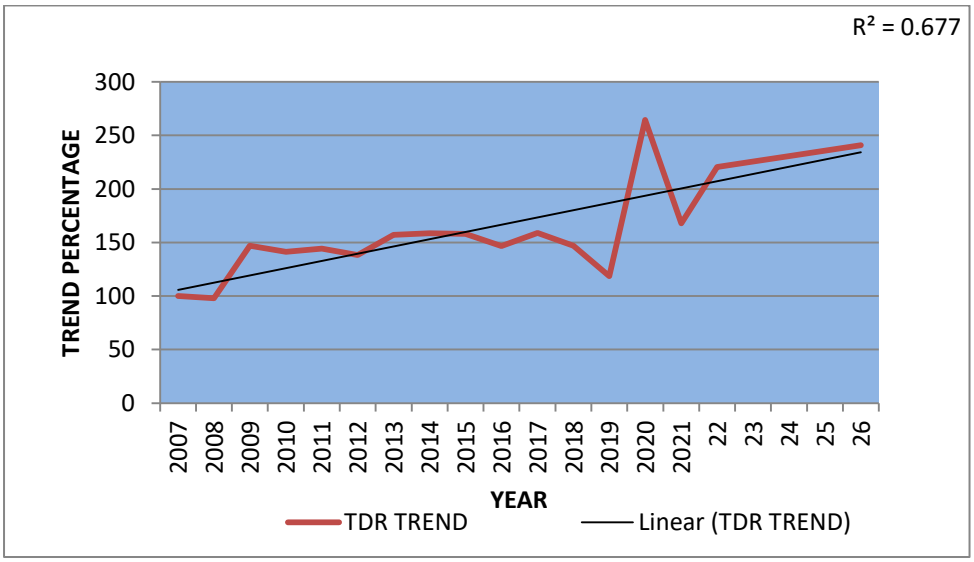
MID CAPITAL COMPANIES TDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 15

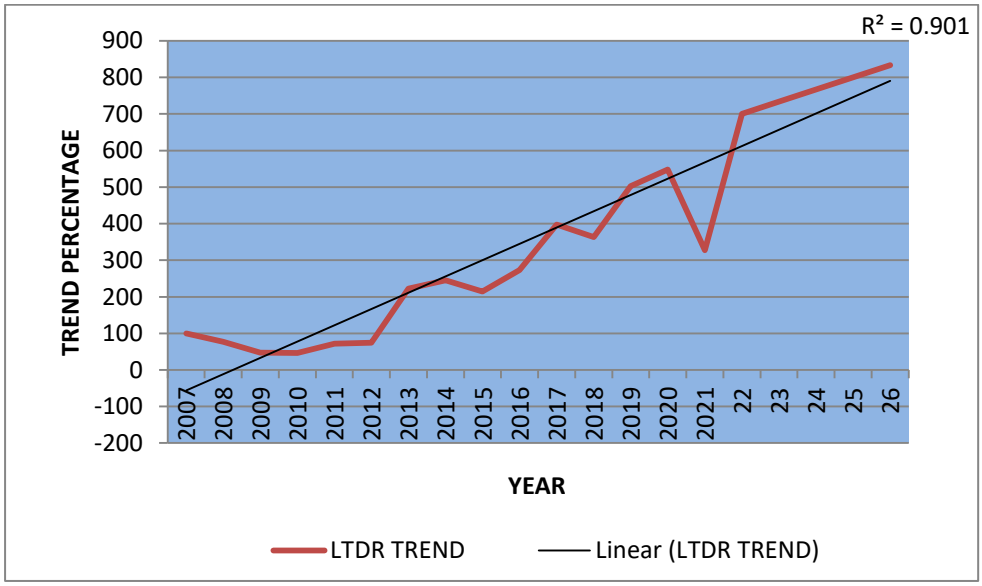
SMALL CAPITAL COMPANIES TDR TREND OJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 16

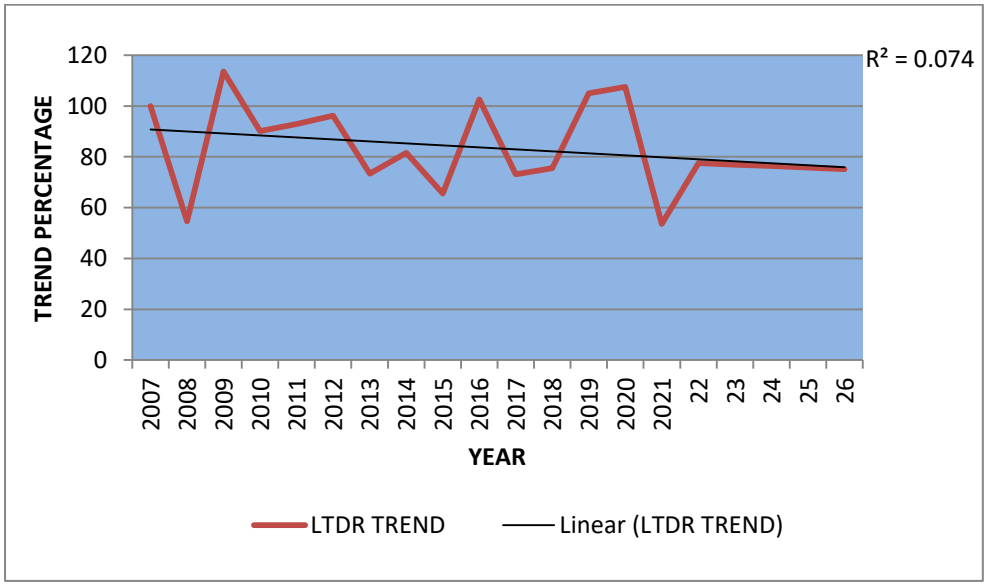
LARGE CAPITAL COMPANIES LTDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 17

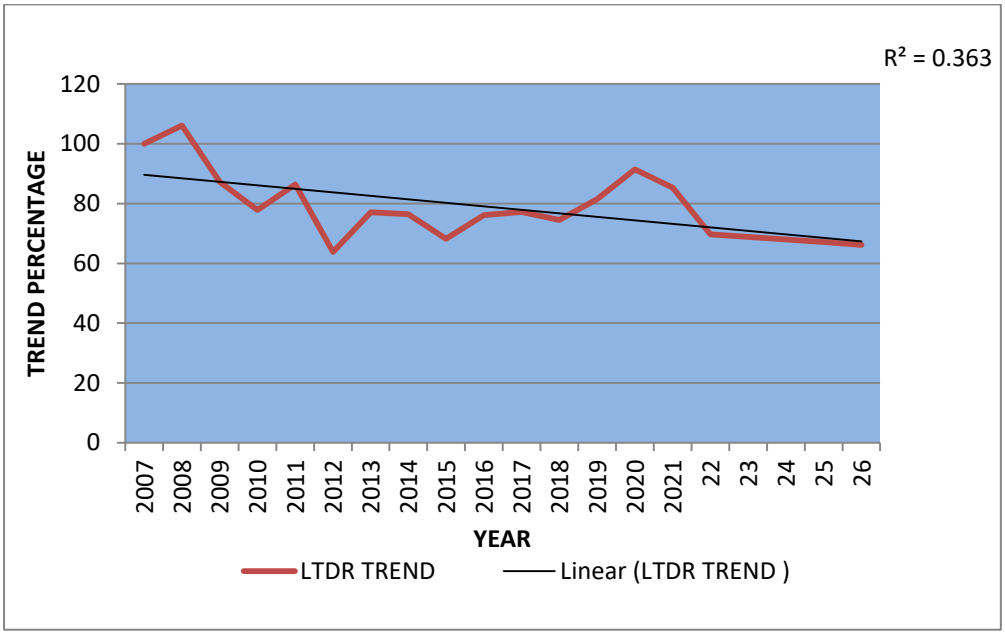
MID CAPITAL COMPANIES LTDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 18

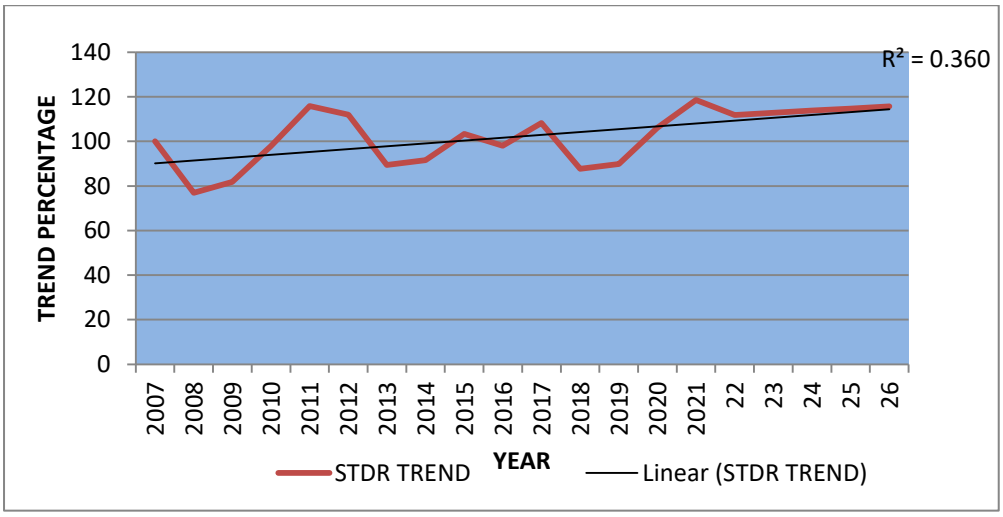
SMALL CAPITAL COMPANIES LTDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 19

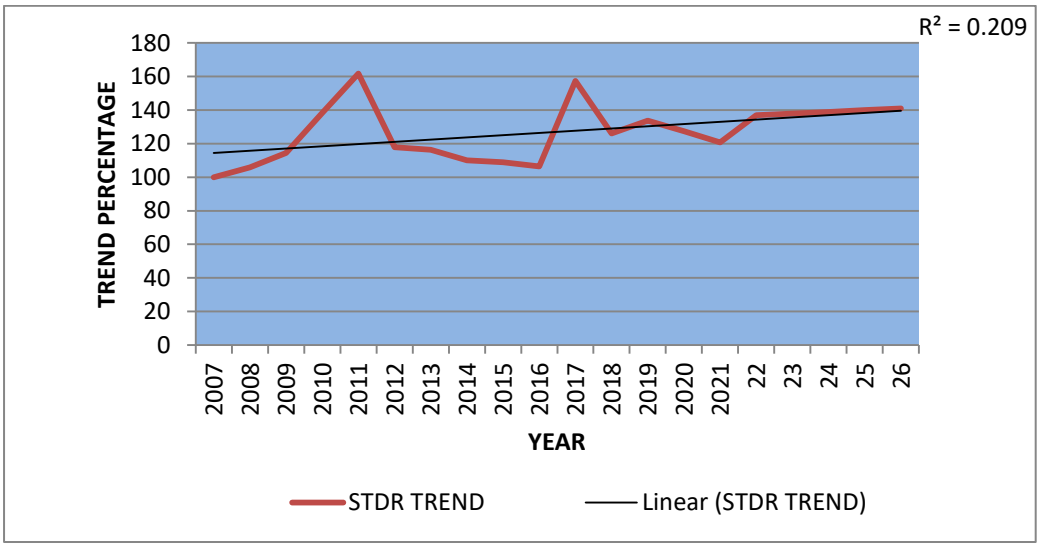
LARGE CAPITAL COMPANIES STDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007- 2026)

Exhibit 20

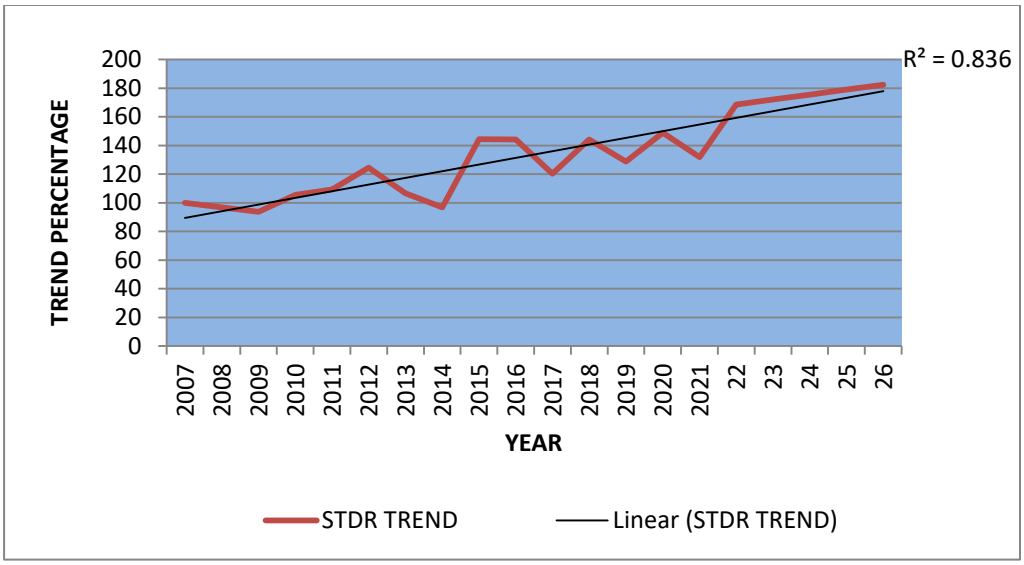
MID CAPITAL COMPANIES STDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 21

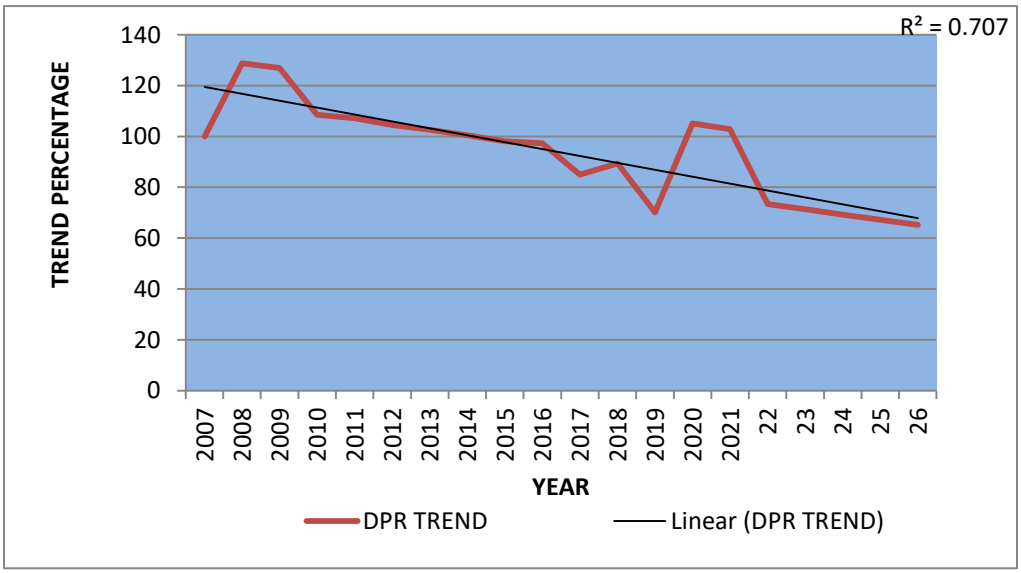
SMALL CAPITAL COMPANIES STDR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 22

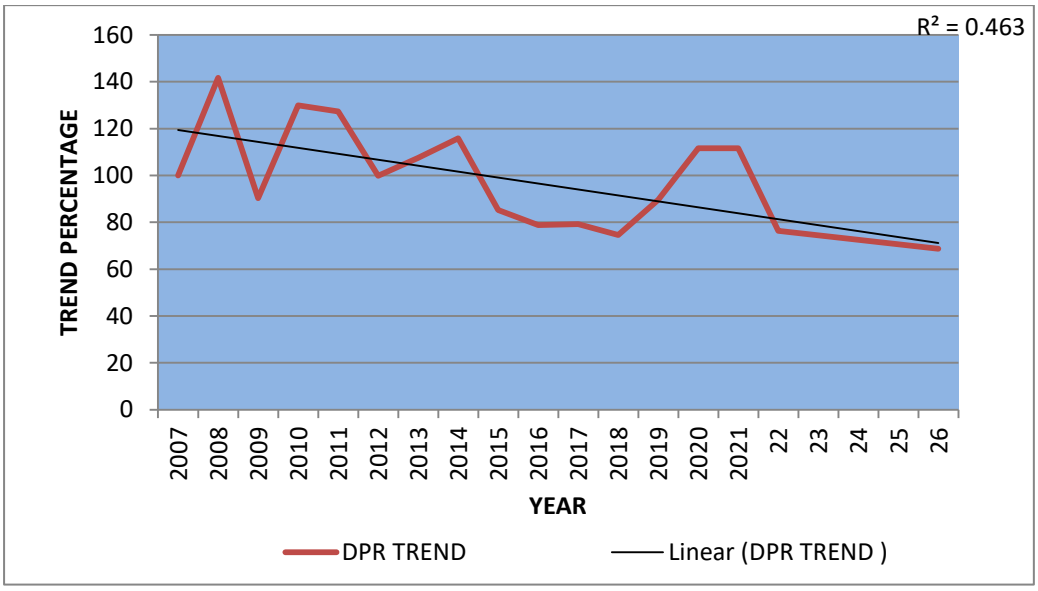
LARGE CAPITAL COMPANIES DPR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 23

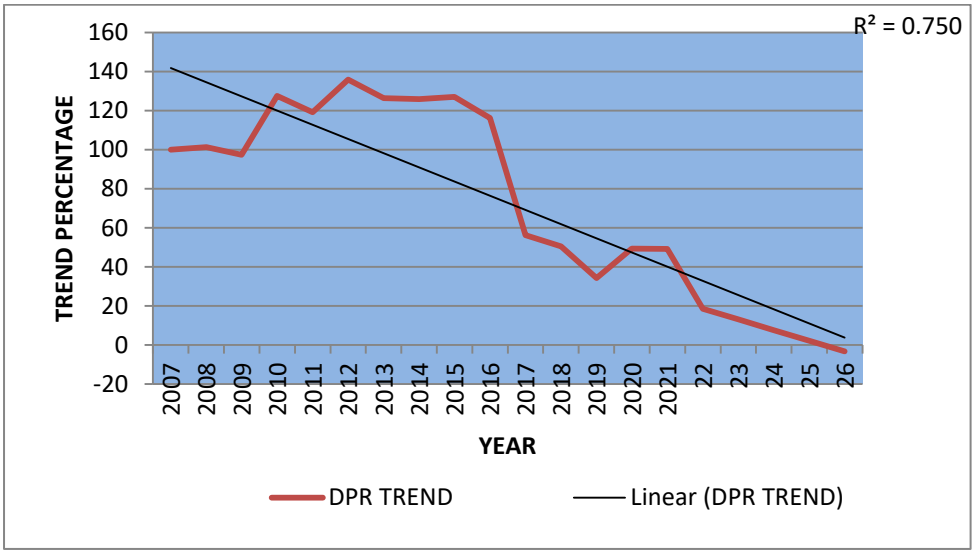
MID CAPITAL COMPANIES DPR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 24

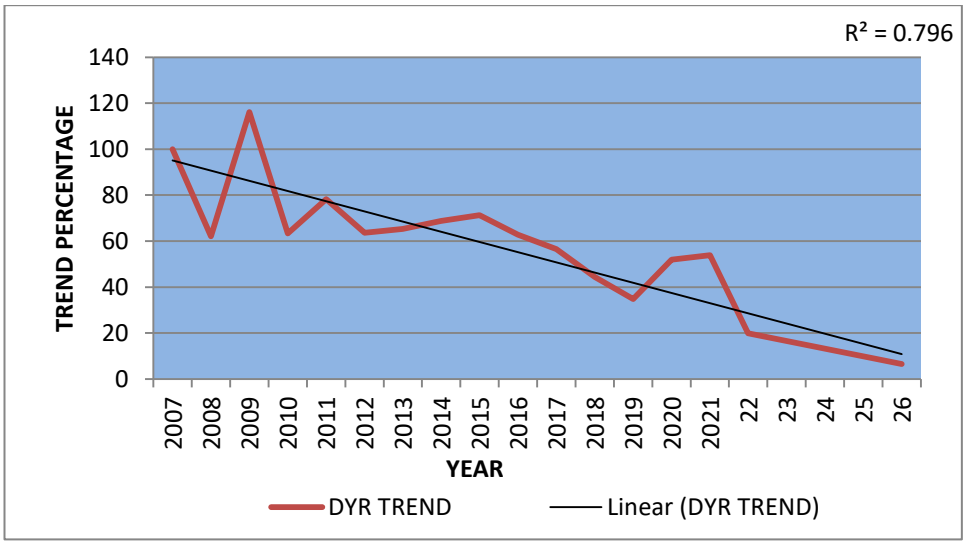
SMALL CAPITAL COMPANIES DPR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 25

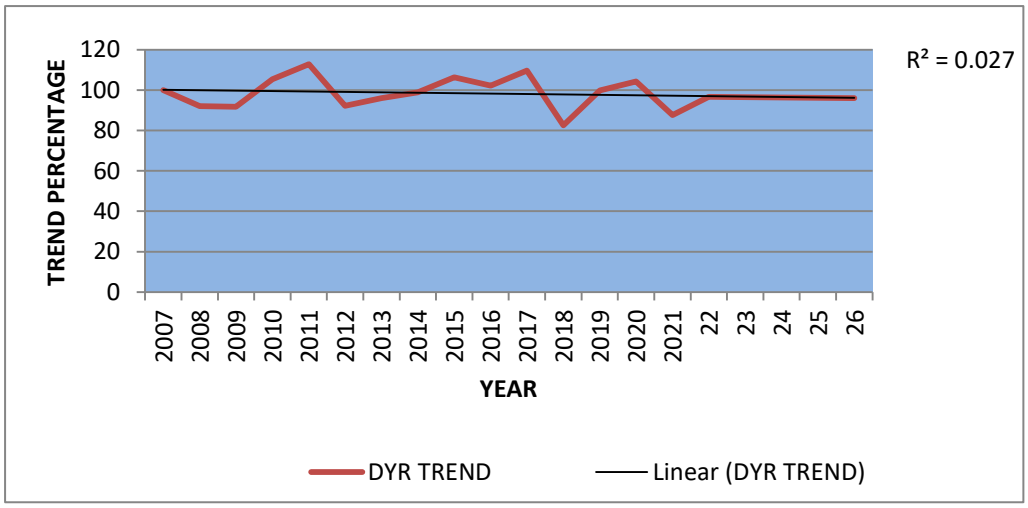
LARGE CAPITAL COMPANIES DYR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)

Exhibit 26

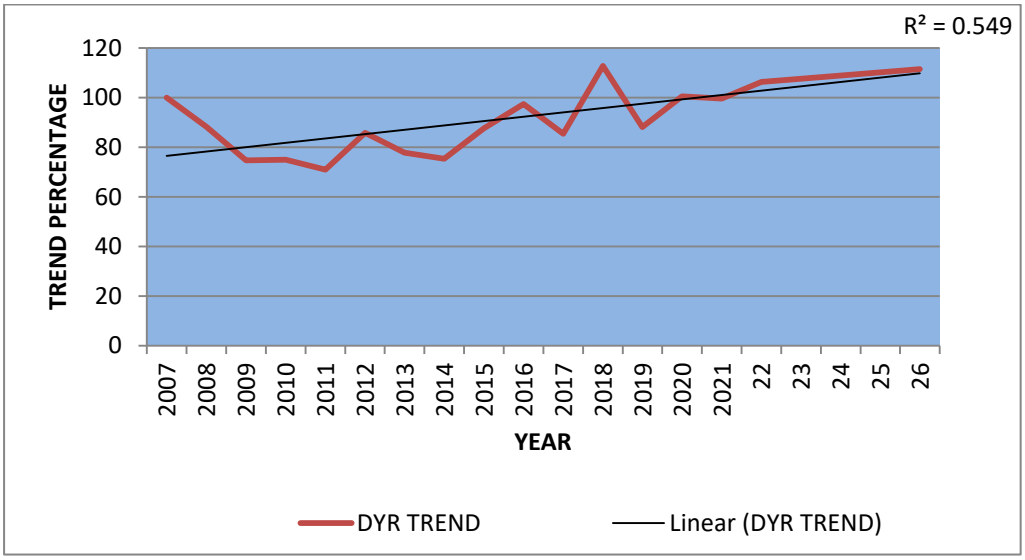
MID CAPITAL COMPANIES DYR TREND PROJECTION (2007-2026)



Source: Computed Data (2007- 2026)

Exhibit 27

SMALL CAPITAL COMPANIES DYR TREND PROJECTION (2007-2026)



Source: Computed Data (2007-2026)