# Determinants of Dividend Policy: Evidence From IT Sector In India

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## **Abstract**

The objective of this paper is to analyze the determinants of dividend policy (**DP**) of IT sector in India. Out of 84 firms listed in National stock exchange (NSE) 20 firms were considered for analysis. **DP** of corporate sector is widely researched topic in finance however it remains a debatable issue to decide what factors determine the **DP**. The present paper is an attempt to empirically analyze the determinants of **DP** of Information Technology (**IT**) Sector in India. For this purpose, various factors affecting **DP** such as price earnings ratio (PER), dividend payout ratio (DPR), debt equity ratio (DER), cash from operation (CFO), earnings (ERN), corporate tax(CT), earnings per share(EPS) and Beta (SYSETAMATICRISK) are considered for analysis. The empirical evidence from the study reveals that **PER**, **DER** has significant impact on EPS and also good predictors of dividend payout in IT sector. Ordinary least square models are used to estimate the impact of **PER**, **DPR**, **DER, CFO, ERN, CT, EPS** and **\(\beta\)** (SR) on the DP. The DP of overall IT sector is strongly influenced by DPR, DER, EPS, CFO, \$ (SR) and CT, which reveals that the **DP** of **IT** sector is significantly influenced by the selected financial variables during the period of the study. The overall regression analysis shows that the determinants of **DP** is significantly and positively influenced by the PER, DER and EPS.

## **Keywords:**

Dividend per share (**DPS**), Dividend policy (**DP**), Market price per share (**MPS**), Price earnings ratio (**PER**), Shareholders wealth.

## Introduction

Dividend policy (*DP*) is considered as one of the three major decisions of financial management. The decision of the firm regarding how much earnings could be paid out as dividend and how much could be retained by the firm is the concern of *DP*. The *DP* determines what proportion of earnings is paid out to shareholders by way of dividends and what proportion is ploughed back in the firm itself for reinvestment purposes. The development of such a policy will be greatly influenced by investment opportunities available to the firm and the value of dividends as against capital gains to the shareholders. Each firm should develop such a *DP*, which divides the net earnings into dividends and retained earnings in an optimum way to achieve the objective of maximizing the wealth of the shareholders.

The *IT* sector in India is one of the fastest growing industries and has built up valuable brand equity for itself in the global market. It plays a vital role in

strengthening the economic and technological foundations in India, which comprises Software industry and *IT* enabled services (*ITES*), which also includes business process outsourcing (*BPO*) industry. India is considered as a pioneer in software development and a favorite destination for *IT*-enabled services. The industry was begun by Bombay-based conglomerates which entered into the business by supplying programmes to global *IT* firms located overseas. During that time Indian economy was state-controlled and the state remained hostile to the software industry through the 1970s. Government policy towards *IT* sector changed when Rajiv Gandhi became Prime Minister in 1984. His New Computer Policy (NCP-1984) consisted of a package of reduced import tariffs on hardware and software, recognition of software exports as a "deli censed industry", permission for foreign firms to set up whollyowned, export-dedicated units and a project to set up a chain of software parks that would offer infrastructure at below-market costs. These policies laid the foundation for the development of a world-class IT industry in India.

The cost of software development and other services in India is very competitive which compared to the West. Indian *IT* industry has also gained enormously from the availability of a robust infrastructure (telecom, power and roads) in the country. The domestic information technology (*IT*) market has grown to the tune of 16.7 percent to  $\stackrel{?}{\sim}$  918 billion during 2011-2012. The aggregate revenue for the *IT* sector is estimated to cross\$US100 billion in 2011 – 2012. The contribution of the *IT* sector to India's gross domestic product has been increased from 6.4% in 2008 to 7.5% in 2012.

Hence, the present paper is to analyze the financial data of 20*IT* firms, which are selected based on multi stage sampling method for the financial periods 2008-2012 focusing on estimating the impact of financial variables such as *PER*, *DPR*, *DER*, *CFO*, *ERN*, *CT*, *EPS*, and *SR* on *DP* in the *IT* Sector of India.

## Review of Literature

Alzomania and Alkhadiri (2013) examined the factors determining dividend policy represented by dividend per share for firms in the Saudi Arabia stock exchanges. They used regression *model* and used a panel data covering the period during 2004-2010 for 105 non-financial firms listed in the stock market. The results consistently supported that Saudi Arabia non-financial firms rely on current earning per share and past dividend per share of the firm to set their dividend payments. Okpara (2010) investigated the relationship between asymmetric information and DP in Nigeria. The data were sourced from the published data of the Nigerian Securities and Exchange Commission. To carry out research work, the researcher employed the unit root test, Dickey fuller test, Johansen co-integration and Vector error correction model to ascertain the long run relationship between variables. Granger causality tests suggested that DP has casual impact on information asymmetry without a reverse or feedback effect. The study investigated the long run effect of the dichotomy of information on **DP** and found that **DP** is a positive and significant function of information asymmetry.

**Mistry (2011)** attempted to ascertain the influence of the *factors affecting dividend decision of Indian Cement Industry* for a period from 2004-05 to 2008-09 based on secondary data of 28 out of 36 listed public firms listed *NSE*. The study found that significant

increase in the selected factors influence the dividend decision rather than the factors which has resulted marginal or moderate increase. The study also found that the change in *total assets (TA)* and *profitability* affects dividend decision positively while change in *liquidity, inventory turnover ratio, retained earnings* affect dividend decision negatively.

Acharya and Mahapatra (2012) examined the validity of Linter's dividend behavior model in three major commercial banks of Indian bank namely HDFC, ICICI, SBI. Data related to *PAT*, equity dividend paid, covering a period of 11 years i.e. from 1998-99 to 2008-09. The study found that the Linter's model was holding good only in ICICI bank with all specifications. Asif et al. (2011) examined the relationship between *DP* and financial leverage of 403 firms listed with Karachi stock exchange during the period from 2002 to 2008. Descriptive statistics, correlation matrix and regression were used to analyze the significance and magnitude through fixed and random effect models. Financial leverage was found to have negative impact on *DP*, indicated less dividend payments by high debt firms. The study revealed that change in earnings has no significant impact on *DP* in case of Pakistani firms.

Gill and Obradovich (2012) found a relationship between corporate governance, institutional ownership and the decision to pay dividends in American service firms. A sample of 296 American firms listed on Newyork stock exchange for a period of three years was selected. The study applied a co-relational and non-experimental research design and indicated that the decision to pay dividends was a positive function of board size, CEO duality, internalization of the firm, a negative function of institutional ownership.

Bawa and Prabhjot (2012) examined the dividend policy of small and medium enterprises in Indian manufacturing sector. Sample consists of 106 dividend paying listed firms of MSMEs for 5 years from 2006 to 2010. Data have been collected from Acc-equity base. Regression model such as Linter's, Britain, Darling and Dobrovolskys model have been studied to test their validity in Indian conditions. Linter's model and Dobrovolskys model have best fit in the Indian manufacturing MSMEs as per cross-sectional regression results. Linter's model, Darling and Dobrovolskys model hold good for Indian manufacturing MSMEs. Abbas and Zahra (2012) investigated the impact of financial leverage operating cash flow and size of firm on the dividend policy (Case study of Iran). A sample of 74 firms has been selected and investigated. F-limer test, Hasman test and random effects model were used for analysis and the study found a negative relationship between *financial leverage* and **DP**; positive relationship between operating cash flow, size of the firm and DP.

Afza and Mizra (2011) investigated the impact of institutional ownership and growth opportunities on *DP* based on a sample of 120 listed firms of Karachi stock exchange for a period of 5years from 2002 to 2007. The estimated results using *OLS*, and *Tobit regression* models suggested that *DP* is positively affected by growth opportunities, proportion of shares held by insurance firms and profitability; negatively affected by leverage. Large firms are less likely to pay high dividends but the relationship of size with *DP* is insignificant.

Shahteimoari Collins et al. (2013) investigated the impact of

investment opportunity set and corporate financing in the industrial products sector. The sample consists of 62 firms, which were listed on the main board of Malaysia. Tools like *Tobin's Q* were used to measure investment opportunity set, financial leverage and debt maturity. The study suggested that investment opportunity and debt maturity are the factors significantly influence **DP**. Profitability and risk play significant role in determining **DP** in the industrial products sector of Malaysia.

## Objectives and Hypotheses Development of the Study

The main objective of the study is to empirically analyze the dynamics and determinants of dividend policy. The following are the specific objectives of the paper:

- To analyze the determinants of **DP** of **IT** sector in India.
- To analyze the variation in the impact of *PER*, *DER*, *CFO*, *ERN*, *CT*, *EPS* and *SR* (*RISK*) on the *DP* of *IT* sector in India.

#### Hypotheses

 $\mathbf{H_0}^1$ : "There is no significant impact of price earnings ratio on **DP** of **IT** sector in India"

 $\mathbf{H_0}^2$ : "There is no significant impact of debt equity ration **DP** of **IT** sector in India"

 $\mathbf{H_0}^{3:}$  "There is no significant impact of debt equity ratio on **DPR** of **IT** sector in India"

#### Research methodology

#### Data source

The study is analytical and empirical in nature and is based on secondary data. For the present study, a sample of 20*IT* firms listed

in *NSE* has been selected using multi stage sampling. The period of study is 5 years i.e. from 2008 to 2012. The data have been collected from money control website. For the analysis, descriptive statistics, correlation and regression are used.

#### Research methods

To achieve the aforementioned research objectives, data for the study are collected from the annual reports of the *IT* firms concerned. The annual data for selected *IT* firms during 2008-2012 are used for calculating key financial ratios to analyze the determinants of *DP*.

## General Form of the Regression Model

EPS = 
$$\beta$$
1 (PER) +  $\beta$ 2 (DER) +  $\beta$ 3 (ERN) +  $\beta$ 4 (SR) + e  
DPR =  $\beta$ 1 (PER) +  $\beta$ 2 (DER) +  $\beta$ 3 (ERN) +  $\beta$ 4 (SR) + e

Earnings per share (EPS), Price earning ratio (PER), Debt equity ratio (DER), Earnings (ERN), SR (RISK), Dividend payout ratio (DPR).

## Sources of data

The study used secondary data collected from the money control data source and websites of various *IT* firms. The period covered by the study extends to 5 years ranging from 2008 to 2012.

## Sampling technique

The study used multistage sampling technique to select sample units for the study. Out of 84 listed firms in *NSE*35 firms were selected based on the availability of data. Based on full-fledged data, 20 firms only have been selected for the study based on the data availability in the data source concerned.

Table - 1 List of Measures (ratios) Used in the Study for Analysis

SLN o.	Variable/ Measure	Formula	Inference				
1	Price earnings ratio (PER)	Market value per share / Earning per share	High price earnings ratio indicates that investors are anticipating higher growth in the future.				
Dividend payout ratio (DPR)  Debt equity ratio (DER)		Dividends / Net income  Total liabilities / Sharcholders' equity	The payout ratio provides an idea of how well earnings support the dividend payment. More mature firms tend to have a higher payou ratio.  Higher the dividend, larger the demand for borrowings and higher is the debt equity ratio. Firms with high debt ratio ought to pay lower dividends.				
4	Cash from operation (CFO)	Farnings before interest and tax + Depreciation - Corporate tax	Higher the correlation between income and cash flow higher will be the earnings quality. Negative eash flow results from a firm's growth strategy in the form of expanding its operations.				
5	Earnings (ERN)  Corporate tax (CT)	Earnings before interest and tax / Total assets  Tax / profit before tax	Earnings typically refer to after — tax net income. Higher earnings normally increase capacity to pay dividend given the liquidity position of the firm.  Higher tax payment reduces the amount available for dividend payment. But at the same time higher tax payment means higher earnings.				
7	Earnings per share (EPS)	Net income / Number of shares	It is representing the capacity of corporation to pay dividends. Firm is willing to pay higher amount of dividend if it increases the profitability.				
8	Beta(SYST EMATICRI SK)	Cov (r <sub>1</sub> ,r <sub>11</sub> ) / σ <sup>2</sup> m .com/essays/finance.php	It measures the systematic risk of the firms. Higher the market risk lower will be the dividend payout and vice versa.				

#### Analysis and discussion

## Descriptive analysis

Table - 2 Descriptive Statistics of Selected Variables of IT firms in India

from 2008 to 2012 (₹ in crore)

					Std.
Variables	N	Minimum	Maximum	Mean	Deviation
PER	20	47.44	874.66	301.75	228.04
DPR	20	0.03	0.55	0.21	0.14
DER	20	4.78	260.29	41.40	58.08
CFO	20	26.16	7770.70	1313.31	2450.67
EAN	20	0.12	0.54	0.29	0.12
CT	20	0.09	0.24	0.15	0.04
EPS	20	8.95	108.12	33.72	28.10
SR (Risk)	20	-0.08	0.99	0.54	0.32

Source: Computed results based on compiled data from Annual Financial Reports

moneycontrol.com

Table 2 shows the descriptive statistics of the variables used in the regression model. This shows the average indicators of variables computed from the financial statements. The average dividend payout ratio is 0.21 i.e., 21%. This means, on an average, the firms pay about 21% of their profit as dividend. The cash flow is determined by "Earnings before interest and tax + Depreciation -Corporate tax" as a mean of 1313.31. Cash flows into the firm generally mean sales in the normal course of trade. In addition, cash inflows occur in the form of sale of an asset, interest or dividend income on different forms of investment, etc. On the other hand, cash flows, out of the business generally arise in the form of immediate or deferred payment for the goods purchased in the normal course of trade. In addition, cash outflows occur in the form of purchase of assets, payment to different stakeholders in the form of interest, dividend, taxes, compensation etc. The pattern of cash flows during a particular period has an impact on the cash position of the firm and hence, it has a relation with the cash requirement for dividend payout.

The average corporate tax 0.15 is worth consideration in the sense

that from the surplus income over the expenditure, first of all, the contractual payments in the form of interest is to be made. From those net earnings, the governmental claim in the form of tax is to be paid. After the payment of tax only the dividend can be paid. Higher tax payment means lower amount available for dividend payment. But at the same time higher tax payment means higher earnings too. Higher earnings normally mean higher capacity to pay dividend given the liquidity position of the firm. Hence, it is worthwhile to study the relationship between the current tax rate and current dividend payment. The average debt to equity is 41.40, which reflects that the firms are paying moderate level of dividend. SR (Systematic Risk) shows the average of 54%, which shows that there is a moderate market risk and there will be a fluctuation in the dividend payout. The average and maximum of earning is 0.29 and 0.54, which reflects that the IT firms are in good earnings during the period of study and also indicates that the firms will be profitable and successful in the long run. The average and maximum of earnings per share is 33.72 and 108.12 respectively, which reflects the *IT* firms are in good position in earnings during the period of study.

Table - 3 Results of Correlation Analysis for Selected Variables of IT Firms in India from 2008 to 2012 (₹ in crore)

Variables		PER	DPR	DER	CFO	EAN	CT	EPS	SR
DER	Pearson Correlation	-0.40	0.62**	1)					
	Sig. (2-tailed) N	0.07 20	0.00 20	20	,				
EPS	Pearson Correlation	0.65**	0.34	0.70**	0.42	0.22	0.52		
	Sig. (2-tailed)	0.00	0.13	0.00	0.06	0.34	0.018		
	N	20	20	20	20	20	20	20	
SR(Risk)	Pearson Correlation	-0.10	0.09	0.20	0.53*	0,24	0.01	0.07	I
	Sig. (2-tailed)	0.64	0.68	0.37	0.014	0.29	0.95	0.74	
	N	20	20	20	20	20	20	20	20

Source: Computed results based on compiled data from Annual

Financial Reports

moneycontrol.com

<sup>\*\*</sup> Significant at 1% level

## Correlation analysis

Pearson's correlation analysis is used to study the relationship between predictor variables and responding variable, and the relationship between EPS and PER(-0.65); DER and DPR(0.62); EPS and DER(0.70) is highly significant positively at 1% level; whereas the relationship between EPS and CFO(0.52); SR and CFO(0.53) is significant positively at 5% level(vide table 3).

## Regression analysis

Table 4 shows that **PER** has significant negative co-efficient (-0.05) on **EPS** in **IT** firms in India.  $H_0^{-1}$ : "there is no significant impact of **PER** on **EPS**" is rejected at 5% level; while **ERN** has

insignificant positive co-efficient (41.08) on *EPS.DER* has significant positive co-efficient (0.27) on *EPS* of *IT* firms in India.  $H_0^2$ : "there is no significant impact of *DER* on *EPS*" is rejected at 1% level. However, *SR* has insignificant negative co-efficient (-10.91) on *EPS*. The value of *F statistics* is 8.606 with  $R^2$  0.70.

The regression result shows (see table 5) that **DER** has significant positive co-efficient (0.001) on **DPR** of **IT** firms in India. Hence,  $H_0^3$  "there is no significant impact of **DER** on **DPR**" is rejected at 1% level. However, **PER** and **ERN** have insignificant positive coefficient with  $\beta$  (0.00) and (0.09) respectively on **DPR**. The F-statistics is 2.538, which is significant at 1% level with R<sup>2</sup> 0.40.

Table - 4 Results of Regression Analysis for Selected Variables of TT Firms in India during 2008-2012 (₹ in crore)

	Unstandardized Coefficients		Standardized Coefficients		
Variables		Std. Error	β	t	Sig.
EPS	32.48	14.26		2.27	0.03
PER	-0.05*	0.01	-0.42	-2.71	0.01
DER	0.27**	0.08	0.55	3.46	0.00
ERN	41.08	35.33	0.17	1.16	0.26
SR(Risk)	-10.91	12.98	-0.12	-0.84	0.41
				R	0.83
				R <sup>2</sup>	0.70
					8.606
				F	(0.001)**

Source: Computed results based on compiled data from Annual Financial Reports moneycontrol.com

Table - 5 Results of Regression Analysis for Selected Variables of 1T Firms in India from 2008 to 2012 (₹ in crore)

	Unstandardized Coefficients Std.  B Error		Standardized Coefficients		Sig.	
Variables			β	t		
DPR	0.15	0.09		1.54	0.14	
PER	0.00	0.00	-0.06	-0.31	0.76	
DER	0.00**	0.00	0.60	2.72	0.01	
ERN	0.09	0.24	0.08	0.40	0.69	
SR(Risk)	-0.02	0.08	-0.05	-0.27	0.78	
				R	0.63	
				R <sup>2</sup>	0.40	
					2.538	
				F	(0.083)*	

**Source**: Computed results based on compiled data from Annual Financial Reports moneycontrol.com

## Summary of findings of the study

The major findings of the study are:

The findings from the regression analysis (in *table 4* and *table 5*) shows that from the model, the R<sup>2</sup>, which is often referred to as the coefficient of determination of the variables is 0 .70 and 0.40 respectively. The R<sup>2</sup> which is also a measure of the overall fitness of the model indicates that the model is capable of explaining about

70% and 40% respectively of the variability of firms' earning per share and DP, which means that the model explains about 70%, 40% of the systematic variation in the dependent variable.

The average of dividend payout ratio and earnings is 0.21 and 0.29 respectively, which shows that the *IT* firms are able to pay to the extent of 21% of profit as dividend and it further shows that the *IT* firms have good earnings during the period

<sup>\*\*</sup> Significant at 1% level; Figure in parenthesis shows p value.

<sup>\*\*</sup> Significant at 1% level; Figure in parenthesis shows p value.

- of study and also indicates that the *IT* firms will be able to gain profit and sustain in the long run.
- The average and standard deviation of cash flow and corporate tax is 1313.31 and 2450.67, 0.15 and 0.04 respectively, which reveal that the *IT* firms have capacity to pay dividend.
- The mean and standard deviation of *SR(Risk)* is 0.54 and 0.32 respectively, which represents that there is a moderate market risk thereby there will be a volatility in the dividend payout.
- The relationship between *EPS* and *PER* (-0.65) is highly significant negatively at 1% level
- > **DER** and **DPR** (0.62); **EPS** and **DER** (0.70) is highly significant positively at 1% level.
- > **DER** has significant positive co-efficient (0.27) on **EPS** of the **IT** firms in India during the study period.
- > **DER** has significant positive co-efficient (0.001) on **DPR** of IT firms in India during the study period.

EPS = 
$$\beta$$
1 (PER) +  $\beta$ 2 (DER) +  $\beta$ 3 (ERN) +  $\beta$ 4 (SR) + e  
(32.48) (-0.05) (0.27) (41.08) (-10.91)  
DPR =  $\beta$ 1 (PER) +  $\beta$ 2 (DER) +  $\beta$ 3 (ERN) +  $\beta$ 4 (SR) + e  
(0.15)(0.00) (0.00) (0.09) (-0.02)

## Concluding remarks

The importance of the study may be viewed from its contribution to fill an important gap in literature. That is, findings of the study can add to the existing body of literature, and can serve as a starting point on which future studies can be done. On the practical dimension, the study may help firms to focus on the major factors which will have impact on DP. Such information should help the IT firms in creating appropriate strategies to improve the dividend payment and firm's performance. The regression analysis used in the study to estimate the impact of predictor variables on the responding variable shows that DER has significant positive coefficient (0.27) on EPS and DER has significant positive coefficient (0.001) on DPR at 1% level for the IT firms in India during the study period.

This is corroborated with the correlation analysis, which shows the existence of positive relationship between the *EPS* and *DER*. The relationship between *EPS* and *PER* (-0.65) is highly significant however, negatively at 1% level, which reveals that the selected *IT* firms have smooth dividend payout pattern during the study period. It represents that the firm's earnings have grown up and the shareholders also benefited highly. Moreover, greater profitability enabled the firms to easily afford to a higher amount of dividend payouts, which does not disturb its financial needs. Dividend per share is also a positive function of profitability of *IT* firms, which implies that the firms announce more cash dividend as their net income boost up. Last, but not the least, managers' awareness on adopted dividend policies is very important for investors, because they will also suffer in respect substantial costs to obtain information in this regard. Dividend payment to common

shareholders is one of the ways that a firm directly affects shareholders' wealth.

## Limitations and scope for further studies

The study is based on secondary data collected from the money control data source, and websites of various firms concerned. Therefore, the quality of the study depends upon the accuracy, reliability, and quality of secondary data source.

In the study, a sample of 20 *IT* firms has been considered for analyzing the "determinants of dividend policy". In future, researchers can consider inclusion of more firms to take up a study with large sample units to explore more possible results. In the study, basic financial ratios, correlation, and regression are only used for analysis, therefore inclusion of some or more predictor variables may change the result of determinants of dividend policy of the *IT* firms in India.

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