

# “Empirical evidence on the determinants of dividend pay-outs in the auto components sector in India”

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<b>ARTICLE INFO</b>	Suman Chakraborty, Sandeep S. Shenoy and Subrahmanya Kumar N. (2018). Empirical evidence on the determinants of dividend pay-outs in the auto components sector in India. <i>Investment Management and Financial Innovations</i> , 15(4), 356-366. doi: <a href="https://doi.org/10.21511/imfi.15(4).2018.29">10.21511/imfi.15(4).2018.29</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/imfi.15(4).2018.29">http://dx.doi.org/10.21511/imfi.15(4).2018.29</a>
<b>RELEASED ON</b>	Monday, 24 December 2018
<b>RECEIVED ON</b>	Thursday, 06 September 2018
<b>ACCEPTED ON</b>	Friday, 21 December 2018
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<b>JOURNAL</b>	"Investment Management and Financial Innovations"
<b>ISSN PRINT</b>	1810-4967
<b>ISSN ONLINE</b>	1812-9358
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

23



NUMBER OF FIGURES

0



NUMBER OF TABLES

9

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10, Sumy,  
40022, Ukraine

[www.businessperspectives.org](http://www.businessperspectives.org)

**Received on:** 6<sup>th</sup> of September, 2018  
**Accepted on:** 21<sup>st</sup> of December, 2018

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# EMPIRICAL EVIDENCE ON THE DETERMINANTS OF DIVIDEND PAY-OUTS IN THE AUTO COMPONENTS SECTOR IN INDIA

## Abstract

Determinants of dividend policy have been a topic of debate in the academic literature for several decades, but the studies have not been able to give a concluding result on the topic. Existing literature reveals that one of the most challenging decisions, dividend payout, is affected by multiple determinants thereby impacting the value of stock, among which profitability, capital structure and level of cash flows are identified to be significant factors. The aim of this study is to evaluate empirically the determinants of dividend payout among the companies in the Indian auto components sector which are listed in major Indian bourses. This paper constitutes a modest attempt to explore the relationship between dividend policy (dividend pay-out ratio) of the companies and the variables representing profitability, capital structure, investments, liquidity and cash flows. The other salient feature of the study is that it examines casual relationship of financial performance, operational efficiencies and investment strategies on decision of paying the dividend. ANOVA, correlation analysis and regression analysis have been used to explore the relationship between the identified variables. The study finds that the dividend policy of the companies in the Indian auto components sector is largely influenced by the operating profit, cash from operations, proportion of cash from operations used for financing the investment activities and the proportion of equity in the capital structure of the companies. The study addresses the Indian auto components sector, which is not researched much, and suggests rejuvenation in dividend policy after accounting a derived variable of cash flow to capital expenditure, as identified relevant to the group of auto manufacturers selected for the study.

## Keywords

cash flows, dividend, liquidity, dividend pay-out,  
profitability, Indian auto component manufacturing  
companies

**JEL Classification** C22, G11, G32

## INTRODUCTION

Corporate dividends play a pivotal role in communicating the financial and operational efficiency to the shareholders and to the investor fraternity. While some companies pay dividend to shareholders on a regular basis, some do not prefer to do that to take advantage of prevailing investment opportunities through ploughing back of profit. Theoretically and empirically the above point has been established by an exemplary paper authored by Lintner (1956). Paper reiterates two parameters for dividend policy: (a) the target pay-out ratio and (b) the speed at which current dividends adjust to the target, based on his two major observations: (i) companies tend to set long-term target dividends-to-earnings ratios according to the amount of positive net present value projects available to them and (ii) increase in earnings is not always sustainable, as a result, dividend policy is not changed until managers can see the sustainability of new level of earnings. Miller and Modigliani (1961) assert that the dividend policy has no effect on

the value of the firm, even though dividend the change provides an occasion for the price change, it does not cause the change. The price change following the change in dividend is a result of investors' perception that dividend change is a result of change in management's views of future profit prospects of the company and, hence, the price still be solely a reflection of future earnings and growth opportunities of the company. Brav et al. (2005) indicate that perceived stability of future earnings affects dividend policy as in Lintner (1956) and management views provide little support for agency, signalling and clientele hypothesis of pay-out policy, and pay-out policies have little impact on the investor clientele. However, dividend decision is one of the most sensitive decisions that the financial managers will have to take. This is so because shareholders may, at times, prefer to gain higher value through market price appreciation than receiving cash dividends and vice versa. Thus, the mystery surrounding dividend decision of the companies remains unsolved.

## 1. INDIAN AUTO COMPONENTS SECTOR

The auto components sector plays a major role in Indian economy by contributing 2.3% to the nation's GDP and by providing three million employment opportunities. The sector has had an annual turnover of \$41 billion during the financial years 2016–2017, which is 14.3% more than the previous year and has maintained a compounded annual growth rate (CAGR) of 7% over the six-year period up to 2016–2017 (Auto, 2017). Indian auto components sector is characterized by the coexistence of the organized sector, which caters to the original equipment manufacturers (OEMs), and the unorganized sector catering to the aftermarket category. Organized sector has considerably less number of firms (compared to unorganized sector) producing high value items contributing around 85% of the total turnover of the Indian auto components sector. Unorganized sector has large number of firms (compared to organized sector) producing products of lower value and contributes only 15% to the total turnover of the Indian auto components sector. According to a report published by Confederation of Indian Industries (CII) in 2016, India is the largest producer of tractors, second largest producer of two wheelers, fifth largest producer of heavy trucks, sixth largest producer of passenger vehicles and seventh largest producer of commercial vehicles. India's passenger vehicle is expected to grow to more than 48 million vehicles by 2020. Owing to these, Indian auto components sector has enormous growth potential, which is also reflected in the 12% growth achieved by the domestic aftermarket of auto components sector in India in 2015–2016 and in fact that the Indian auto components sector accounted for

around \$8.4 billion in 2016–2017. Globally, India is emerging as a hub for auto component sourcing due to (i) its geographical proximity to key automotive markets like Middle-Eastern countries and Europe, (ii) lower production costs, and (iii) large pool of skilled and semi-skilled workforce. The exports of auto components from India registered an increase at a CAGR of 9.96% during FY09 – FY17. The volume of exports by the industry is highest to Europe (35%) followed by Asia (27%) and America (26%) (ACMA, n.d.).

## 2. LITERATURE REVIEW

Dividend policy has been a topic of debate in the academic literature for over four decades without resulting in a consensus among researchers. The dividend, considered as a tool to enhance the value of the firm, as well as a matter of corporate policy (Black, 1976), is an interesting puzzle in the academic literature. Research on general theory of dividend policy has always remained elusive, because the effect of dividend on the value of the firm varies due to nature of companies, time and other macro and micro variables pertaining to the companies, industry and economy. Pioneering work by Miller and Modigliani (1961) demonstrates that value of the firm is solely determined by the firm's earning capacity and investment decisions, which are independent of dividend policy, and refute the empirical findings of Gordon (1959), Gordon and Shapiro (1956), Lintner (1962) and Walter (1963), which support the incidence of dividend and its impact on value of stock price. At the same time, the accounting metrics, which above studies have not considered, viz., cost of capital of the firm and the capital structure decision, have

been found to significantly impact the dividend policy (Azhagaiah, 2008) along with the profitability of the firm. Similarly, Fama and French (2001), for instance, found in their empirical work a sharp decline in the dividend pay-outs by publicly traded firms in the US over the period of 25 years studied by them. Empirical findings of Farsio et al. (2004) suggest that the relationship between the dividends of the companies and their earnings hold good only in the short period and, in the long run, the relationship is not significant. Hence, the companies' future earnings will suffer if they pay higher dividends without giving due consideration to present investment needs. Gayathridevi and Mallikarjunappa (2012) have concluded that the lagged earnings belonging to common shareholders, profits after tax, earnings belonging to common shareholders, cash flows, size and lagged dividends determine the dividend policy of the companies in India. Gupta and Banga (2010) have revealed that leverage, liquidity, profitability, growth and ownership structure are significantly influencing dividend decision with respect to Indian firms. Yarram (2002) examined the dividend behavior of Indian companies from 1990 to 2001 and found that trade-off or tax-preference theory does not hold in the Indian context and found dividend changes signal concurrent and lagged earnings performance rather than the future earnings performance. Various studies show that Indian equity stock holders always appreciate stable dividend policy irrespective of other financial parameters. Pandey (2003) studied the impact of differences in dividend policies of different Malaysian firms and identified a high degree of influence of industry on dividend policy of the firms, which is sensitive to the changes in earnings.

The above brief review of the literature on the determinants of dividend policy shows that the researchers have identified profit after tax, cash flows, size of dividends, lagged and present earnings, investment policy of the firm, ownership structure and size of the firm to be the major determinants of dividend policy of a firm. However, there is no specific study on emerging sectors like the auto component sector in the Indian economy, though the studies have identified that the determinants of dividend policy are influenced by industry and time (Pandey, 2003). At the same time, we find that the results are inconclusive as

the researchers have expressed conflicting results such as the firms striving to maintain stable dividend policy versus fluctuations in the pattern of dividend payments (Bhayani, 2011; Gayathridevi & Mallikarjunappa, 2012). Hence, an attempt has been made in this study to analyze a set of variables that determine the dividend policy of firms in the auto components sector in India in the light of conclusions drawn by Graham and Dodd (1934) who have related the dividend policy with the financial constraints in terms of long-term capital and financial performance of the companies, respectively. The relevance of our study stems from the fact that the liberalization and globalisation policy of India has resulted in many domestic and international firms, especially in medium enterprises segment, competing for capital and profitability, which may have bearing on the dividend policies adopted by the companies.

### 3. OBJECTIVES OF THE STUDY

In view of the inconclusiveness of the existing literature, the present study focusses on analyzing the determinants of dividend policy (dividend pay-out ratio) of the companies in auto component sector in India. The study is guided by the following specific objectives:

- 1) identifying the relationship between profitability and dividend pay-out ratio;
- 2) investigating the relationship between dividend pay-out and leverage;
- 3) finding the inherent relationship between dividend pay-out and liquidity and cash flows;
- 4) measuring the factors influencing the decisions on dividend pay-out policy of in the Indian auto-component manufacturing companies.

### 4. RESEARCH ISSUES AND HYPOTHESES

In light the of existing literature and the objectives of the present study, the following hypotheses have been postulated:

- H1: *Dividend pay-out is positively associated with profitability.*
- H2: *Dividend pay-out is positively associated with profitability capital structure.*
- H3: *Dividend pay-out is positively associated with profitability liquidity and cash flows.*
- H4: *Dividend pay-out is positively associated with investment activities.*

Gugler (2003) argues that dividend pay-out ratio (DPR) is the percentage of a company's net income, which is given to shareholders in the form of dividend. It is calculated by dividing dividend per share by earnings per share. The dependent variable of the study, Dividend Pay-out Ratio (DPR) – derived by dividing the earnings per share by the dividend per share of the company – indicates the company's board room's prowess in distributing the available earnings to equity shareholders as dividends (Gupta & Banga, 2010) and represents the dividend policy of the companies selected for the study. Following the conclusion drawn by Benito and Young (2003), this study has identified twelve independent variables. Under liquidity: 1) Cash From Operation (CFO), 2) Current Ratio (CR), and 3) Liquid Assets to Current Liabilities Ratio (LACL); under profitability: 4) Net Profit Ratio (NPR), 5) Ratio of EBIT to Total Assets (ETA), 6) Return on Net Worth (RONW), and 7) Operating Profit Ratio (OPR); under strategic investment decision: 8) Capital Expenditure (CAPEX) and 9) Ratio of Cash Flow to Capital Expenditure (CFCE) and under the category of capital gearing: 10) Debt to Equity Ratio (DER), 11) Shareholders' Equity to Total Assets (SETA) and 12) Capitalization Ratio (CAPR). Considering each broad category selected for the study, effect of independent variables on dividend payout has been studied.

#### 4.1. Liquidity and cash flows

Higher level of liquidity offers higher financial security to the company thereby providing the managers with the opportunity to maintain or to increase the dividend pay-outs (Acharya & Viswanathan, 2011). It is argued that, in the absence of suitable investment opportunities, excess cash with the company should be disbursed as dividends and managers support an increase in dividends when future cash

flows are higher and guaranteed (Lintner, 1956). Higher cash flows can also provide for capital expenditure by the companies to amass assets without altering the debt equity ratio. Therefore, an inverse relationship between capital expenditure and dividend pay-outs has been observed (La Porta et al., 2000; Mota, 2007). Hence, the study has identified Current Ratio (CR), Liquid Assets to Current Liabilities Ratio (LACL), and Cash from Operation (CFO) as the independent variables to represent the liquidity of the companies under study.

#### 4.2. Profitability

Companies enjoying higher level of profitability are expected to pay higher dividends than the other companies. The independent variables considered in the present study to represent the profitability of the companies are Net Profit Ratio (NPR), Ratio of EBIT to Total Assets (ETA), Return on Net Worth (RONW), and Operating Profit Ratio (OPR).

#### 4.3. Capital gearing

Use of debt in the capital structure has various advantages and disadvantages by influencing the liquidity and solvency of the companies. In the context of auto components sector in India, majority of the auto component manufacturing companies have predictable cash flows as they have long-term contact with auto majors providing them the opportunity to introduce higher level of leverage into the capital structure, which may influence the dividend policy of the companies. Debt to Equity Ratio (DER), and Capitalization Ratio (CAPR) are being identified as independent variables in the present study to represent the effect of capital gearing on the dividend policy of the companies.

#### 4.4. Investments

The present study will also consider two variables representing the investments made by the companies in the form of the Ratio of Cash Flow to Capital Expenditure (CFCE) and Capital Expenditure (CAPEX) of the companies selected for the study. It can be noted here that in the existing literature, little importance is given to the Ratio of Cash Flow to Capital Expenditure as a factor that influences dividend policy of the companies. The list of twelve constructs and their definitions are given in Table 1.

**Table 1.** List of variables

Source: Developed by the authors.

Twelve independent variables	Variables explained
Cash from Operation (CFO)	CFO = Net income + Noncash expenses + Changes in working capital Empirical findings from previous literature confirm a contradictory view on the effect of dividend pay-outs due to changing cash from operating activities of a firm
Current Ratio (CR)	CR = Current Assets/Current Liabilities Liquidity has the potential to influence the dividend pay-outs and a very important determinant of dividend pay-out as poor liquidity position will lead to non-payment of dividends (DeAngelo et al., 2004)
Liquid Assets to Current Liabilities Ratio (LACL)	LACL = (Current Assets – Stock)/Current Liabilities It has been found that liquidity is positively related to dividend pay-out. These results are consistent across all sectors of industries, except small and medium auto market in India
Net Profit Ratio (NPR)	NPR = Net Profit after tax/Net sales Studies conducted in India among the Bombay Stock Exchange companies found that dividend pay-out has outpaced the growth in net profit during 2010–2015. On the contrary, several companies are found to have decent profits, but do not declare dividends regularly
Ratio of EBIT to Total Assets (ETA)	ETA = (Net profit + Taxes + Interest payments)/Total assets The ratio indicates effectiveness of company's asset utilization and capability of generating earnings before paying to contractual obligations
Return on Net Worth (RONW)	RONW = Net profit/Net worth This ratio indicates profit generated for each unit of equity investment. Return on net worth is a measure to assess the company's net profit generating capability vis a vis with investment made by equity investors
Operating Profit Ratio (OPR)	OPR = (Net profit + Taxes + Interest payments)/Net sales Studies showed and higher operating ratio does not confirm higher dividend pay-outs for all the industrial sectors
Capital Expenditure (CAPEX)	In a scenario of higher future growth rate of revenues, firms are likely to retain funds for future capital expenditures and thereby lowers the dividend pay-out (Myers & Majluf, 1984). The residual theory suggests that firms will pay dividends only when there are residual cash flows after satisfying all its investment requirements (Fama, 1974; Higgins, 1972)
Ratio of Cash Flow to Capital Expenditure (CFCE)	CFCE = Cash flows/Capital expenditures This ratio projects the company's cash from operations to its capital expenditures for acquiring or upgrading productive assets
Debt to Equity Ratio (DER)	DER = Total external debt/Shareholder's equity This ratio shows the relation between the portion of assets financed by creditors and the portion of assets financed by stockholders. Higgins (1972) explained that firms' cash flow constraint influences its optimal debt equity ratio, which further relates dividends to profits and investments. The model developed by Higgin points that the optimal payout is a function of residual dividend policy combined with the minimization of the sum of the costs of "excessive current assets" and the costs of external equity financing
Shareholders' Equity to Total Assets (SETA)	SETA = Total shareholders' equity/Total assets This ratio measures the financial leverage and shows the quantum of company's equity holders claim on total assets. Previous empirical findings noted higher the ratio may increase the dividend pay-outs. On the contrary, Miller and Modigliani (1961) find that dividend policy is irrelevant in measuring the value of the firm or shareholders' wealth in a perfect market
Capitalization Ratio (CAPR)	CAPR = Total debt/Total capital This ratio can be used to assess the risk in capitalization. Companies with high capitalization ratio are considered to be risky, because they are at a risk of insolvency if they fail to repay their debt on time, which may affect dividend pay-outs

## 5. SAMPLE AND METHODOLOGICAL APPROACH

There are 750 member companies in the Automotive Component Manufacturers Association of India (ACMA) of which only seventy six companies are listed in the Indian Stock Market. Out of seventy-six listed companies, thirty companies are traded regularly on the Indian bourses. Because of their small size (capitalization and market share in auto

component market), the selected twenty customized sample companies reflects the generic trend which suits for this present study. Twenty dividend paying companies were selected from these listed companies for the study with the due consideration given to the data availability, on continuous basis, for the study period 2007–2017. Ten years' data, from the annual reports, of the variables and for each of the selected companies were collected following the Indian financial year starting on April 1 every year (financial year in India starts from April 1 to March 31). Since the data

points are indexed in time order, they are considered as discrete time-series data. Durbin-Watson statistic is applied to test for the presence of autocorrelation and minimize the errors of regression model. Diagnostic tests like correlation matrix and variance inflation factor have been used to determine the extent of collinearity among the variables. Data have been standardized, without disturbing the basic parametric characteristics of the data set, for the variables for which absolute data are used.

In order to test the association and relationship between the selected independent variables and the dividend policy of the companies selected for the study, ANOVA and correlation analysis have been used in the study. Multiple regression analysis is applied to assess the influence of the selected variables on the dividend policy of the companies under study. 5% level of significance is used to test the hypotheses.

## 6. RESULTS AND DISCUSSIONS

Durbin-Watson test was used to check the presence of autocorrelation in the time series data. The test statistic is found to be 1.542, which is within the range of 1.5 to 2.5 (Field, 2009), indicating that the data are not affected by autocorrelation.

The data presented in Table 2 show the summary statistics of all the variables. The data indicate that the average dividend pay-out ratio for the Indian small and medium auto component manufacturing firms is 33% and having a moderate variation from company to company. The net profit is in range of 30% and operating profit and return on net worth showing 45% and 40%, respectively, with very high variation in operating profit. As the selected companies are small and medium in nature and have high debt component in the capital structure, therefore considerably significant variation can be seen in the profitability metrics. A little further exploration of the data revealed that companies under this category are paying regular dividends despite high leverage presence in the capital structure. Data in the summary statistics reveal dividend pay-out of the selected firms has reasons beyond profitability.

**Table 2.** Summary statistics

Source: Compiled from the study.

Variable	N statistic	Mean statistic	Std. deviation statistic
Dividend Pay-out Ratio (dependent variable)	200	0.3296	0.60364
Cash From Operation (CFO)	200	0.0246	0.07435
Current Ratio (CR)	200	1.1984	1.09302
Liquid Assets to Current Liabilities Ratio (LACL)	200	2.4653	1.12291
Net Profit Ratio (NPR)	200	0.3096	0.64557
Ratio of EBIT to Total Assets (ETA)	200	0.1723	0.38645
Return on Net Worth (RONW)	200	0.4092	0.73376
Operating Profit Ratio (OPR)	200	0.4581	1.11203
Capital Expenditure (CAPEX)	200	19.8902	0.56065
Ratio of Cash Flow to Capital Expenditure (CFCE)	200	0.2765	1.5768
Debt to Equity Ratio (DER)	200	0.6104	0.7705
Shareholders' Equity to Total Assets (SETA)	200	0.3896	0.02324
Capitalisation Ratio (CAPR)	200	0.5298	1.00198

On applying ANOVA to test the relationship between the measures of profitability selected in the study (NPR, ETA, RONW and OPR) and dividend pay-out ratio of the companies selected, we find that all the measures of profitability are associated with the dividend pay-out ratio, but the association is not significant in the case of RONW at 5% level of significance (see Table 3). On applying Karl-Pearson's coefficient of correlation, we find that the measures of profitability have positive correlation with DPR (see Table 3), indicating that the increased profitability will result in higher DPR in the absence of other influencing factors. But the correlation is significant at 5% level of significance in the case of ETA and OPR, while the correlation is not statistically significant between NPR and DPR and RONW and DPR. The results, thus, indicate that operating profit of the companies exhibit larger influence on dividend pay-out of the companies than the NPR and RONW. Hence, there is statistical evidence to reject the null hypothesis H1 and it is concluded that there is significant relationship between profitability and dividend pay-outs of the companies in the Indian auto component sector. This corroborates with Goaiad (2006), in which it is observed that the firms with higher earnings and profitability manage larger cash flows and hence tend to pay higher dividends.

**Table 3.** Results of ANOVA and Correlation Analysis of the relationship between measures of profitability and dividend pay-out ratio

Source: Authors' calculations.

Profitability metrics	ANOVA		Karl-Pearson's correlation	
	F statistics	Sig.	r	Sig.
Net Profit Ratio (NPR)	9.129	0.000*	0.316	0.135
EBIT to Total Assets (ETA)	3.009	0.038*	0.455	0.047*
Operating Profit Ratio (OPR)	4.985	0.000*	0.289	0.023*
Return on Net Worth (RONW)	3.932	0.051	0.387	0.310

Note: \* Significant at 5% level of significance.

Dividend policy of the companies may be influenced by the capital structure and investment decisions and vice versa resulting in enhanced value of the firm for the shareholders (Baker et al., 2001). Shareholders' wealth can be maximized by adopting effective investment strategies and optimal capital structure. Dividend pay-out ratio can be viewed as the result of the disbursement of wealth generated by the company through effective investment and financing decisions (Dhanani, 2005). To ascertain the association between capital structure and dividend policy (Dividend Pay-out Ratio) of the companies in the Indian auto components sector, three variables representing the capital structure (DER, CAPR, and SETA) of the companies have been identified.

The results of ANOVA and Karl-Pearson's coefficient of correlation applied to ascertain the relationship between capital structure policy of the companies and their dividend pay-out ratio has been presented in Table 4. Results derived from the application of ANOVA indicate a significant association between all the variables representing the capital structure and dividend pay-out ratio in the companies selected for the study. Hence, the capital structure of the companies does influence the dividend policy of the companies in the Indian auto components sector. It is, however, observed that CAPR and DER have a moderately negative and statistically significant correlation with the DPR. This indicates that higher debt component in the capital structure in relation to the equity negatively influences the dividend pay-out by the companies possibly owing to the debt servicing re-

quirements of the companies. This is supported by the positive correlation between SETA and DPR, though the correlation is not significant at 5% level of significance, showing that higher residual claim of shareholders on the assets of the company influences the company to distribute higher dividend to the shareholders. The above results lead us to reject the hypothesis H2 and conclude that there is significant relation between capital structure and dividend pay-outs of the companies in the Indian auto component sector.

**Table 4.** Results of ANOVA and correlation analysis of the relationship between capital structure and dividend pay-out ratio

Source: Authors' calculations.

Leverage metrics	ANOVA		Karl-Pearson's correlation	
	F statistics	Sig.	r	Sig.
Capitalisation Ratio (CAPR)	1.683	0.000*	-0.354	0.048*
Debt to Equity Ratio (DER)	3.009	0.003*	-0.291	0.038*
Shareholders' Equity to Total Assets (SETA)	4.985	0.000*	0.119	0.058

Note: \* Significant at 5% level of significance.

Liquidity and cash flows is a major concern of financial managers and influences all the decisions made by the financial managers. The association between the variables representing liquidity (CR and LACL) and cash flows (CFO) of the companies in the Indian auto components sector and their dividend pay-out ratio has been tested using ANOVA and Pearson's coefficient of correlation has been calculated between the variables. The results presented in Table 5 show that there exists association between liquidity and cash flows and dividend pay-out of the companies in the Indian auto components sector. The association is significant in the case of CFO and LACL, unlike CR where the association is not statistically significant. The correlation between CFO and DPR is found to be positive and significant at 5% level of significance. There is positive correlation between the other two measures of liquidity (CR and LACL) with the DPR, but they are not statistically significant at 5% level of significance. The results, thus, indicate that cash flows and liquidity of the company influence DPR of the company in the Indian auto component sector, cash

from operations (CFO) being a significant influencing factor. Hence, we reject the hypothesis H3 and conclude that there is significant relation between liquidity and cash flows and dividend pay-outs of the companies in the Indian auto component sector.

**Table 5.** Results of ANOVA and correlation analysis of the relationship between cash flows and liquidity and dividend pay-out ratio

Source: Authors' calculations.

Cashflow and liquidity metrics	ANOVA		Karl-Pearson's correlation	
	F statistics	Sig.	r	Sig.
Current Ratio (CR)	2.003	0.058	-0.094	0.055
Cash from Operations (CFO)	2.809	0.012*	0.191	0.038*
Ratio of Liquid Assets to Current Liabilities (LACL)	3.185	0.003*	0.119	0.058

Note: \* Significant at 5% level of significance.

It is recommended to use the earnings for reinvestments rather than to issue dividends so that physical assets of the company can be increased to help the company generate higher cash flows in the future (Friend & Puckett, 2004). It is a well-accepted argument that the companies should plough back profit if the available investment opportunities can generate higher returns than the cost of capital of the firm. Indian auto component sector is characterized by limited availability of capital, but certain cash flows due to their contractual agreements with major automobile manufacturers. In this scenario, it can be expected that the companies in Indian auto components sector will require to use their cash flows for investment activities and cannot depend on raising additional capital for the purpose. This unique aspect of the companies in the Indian auto components sector has led us to check the association of capital expenditure (CAPEX) and ratio of cash flow to capital expenditure (CFCE) with the dividend pay-out ratio. On applying ANOVA to the relevant data, we find that CAPEX and CFCE have statistically significant association with dividend pay-out ratios of the companies selected in the sample (Table 6). Correlation analysis shows that both CAPEX and CFCE have negative correlation with DPR and the correlations are statistically significant (see Table 6). The results, thus, suggest

that the dividend policies of the companies in the Indian auto components sector are significantly affected by CAPEX and CFCE. This indicates that the companies in the auto components sector are utilizing the regular cash flows to finance their investment activities thereby reducing the amount disbursed as dividends to shareholders. Hence, we reject the hypothesis H4 and conclude that there is significant relationship between investment activities and dividend pay-outs of the companies in the Indian auto component sector.

**Table 6.** Results of ANOVA and Correlation Analysis of the relationship between investment activities and dividend pay-out ratio

Source: Authors' calculations.

Investment metrics	ANOVA		Karl-Pearson's correlation	
	F statistics	Sig.	r	Sig.
Capital Expenditure (CAPEX)	4.883	0.002*	-0.484	0.001*
Ratio of Cash Flow to Capital Expenditure (CFCE)	4.109	0.000*	-0.441	0.000*

Note: \* Significant at 5% level of significance.

### Regression analysis

To corroborate the above results, regression analysis has been carried out. The results are presented in Tables 7, 8 and 9. The model summary shows the R square value to be 0.616 indicating that the regression model, with twelve independent variables, can explain 61.6% of the variability in the dependent variable, viz., dividend pay-out ratio.

**Table 7.** Model summary of regression

Source: Authors' calculations.

Model	R	R square	Std. error of the estimate
1	0.785	0.616	0.90311

**Table 8.** Multiple regression ANOVA

Source: Authors' calculations.

Model	Sum of squares	Degree of freedom	Mean square	F statistics	Significance at 95% confidence level
1	46.480	12	3.873	4.749	0.000
	152.520	187	.816		
	199.00	199	-		

**Table 9.** Regression coefficients of independent variable

Source: Authors' calculations.

Model	Coefficients		t	Sig.	Collinearity statistics	
	Beta	Std. Error			Tolerance	VIF
1 (Constant)	-167.865	41.523	-4.043	0.000*		
NPR	7.34	23.231	0.316	0.241	0.659	1.518
ETA	7.241	7.921	0.914	0.003*	0.883	1.133
RONW	0.721	0.57	1.266	0.047*	0.533	1.877
OPR	41.71	17.441	2.392	0.018*	0.273	3.667
CR	-0.383	4.965	-0.577	0.014*	0.77	1.299
CFO	0.269	1.626	0.466	0.004*	0.803	1.246
LACL	2.557	2.681	0.254	0.341	0.851	1.176
DER	-34.715	69.601	-0.499	0.019*	0.058	5.19
CAPR	-12.638	2.934	-4.307	0.000*	0.96	1.041
SETA	1.878	11.977	0.157	0.876	0.368	2.719
CAPEX	-12.58	48.556	-0.359	0.025*	0.063	4.857
CFCE	-126.417	24.779	-5.102	0.312	0.051	1.494

Note: \* Significant at 5% level of significance.

The regression coefficients ( $\beta$ ) of CR, DER, CAPR, CAPEX and CFCE are found to be negative, like the results of correlation analysis, and statistically significant at 5% level of significance except the beta value of CFCE. This indicates that higher short-term liquidity, presence of higher amount of debt in capital structure, higher capital expenditure by the companies selected for the study have resulted in lower dividend pay-outs by these companies. This finding, thus, supports our earlier analysis using ANOVA and Correlation analysis and proves clearly that dividend pay-out policies of the companies in the Indian auto components sector are influenced by the concerns of the companies regarding liquidity, debt servicing requirements and capital investments. The regression coefficient of all the other variables selected for the study (NPR, ETA, RONW, OPR, CFO, LACL and SETA) are positive and statistically significant at 5% level of significance except the beta coefficients of NPR, LACL, and SETA. This provides us the evidence to suggest that the operating efficiency of the companies,

$$\text{Dividend payout} = 7.34\text{NPR} + 7.241\text{ETA} + 0.721\text{RONW} + 41.71\text{OPR} - 0.383\text{CR} + 0.269\text{CFO} + 2.557\text{LACL} - 34.715\text{DER} - 12.638\text{CAPR} + 1.878\text{SETA} - 12.58\text{CAPEX} - 126.417\text{CFCE} - 167.865$$

which results in higher cash flows from operations resulting in higher ETA, RONW, OPR and CFO, has very high influence on the dividend policy of the companies in the Indian auto components sector. Statistically significant influence of NPR, LACL and SETA is not found both in the case of regression coefficients and correlation coefficients indicating that though net profit, proportion of liquid assets in total current assets and the proportion of fixed assets financed through equity capital are among the influencing factors on dividend policy. The study also highlights that a major concern of the companies while framing the dividend policy is their ability to generate cash flows. Hence, it can be assumed that the companies with a regular stream of cash flows will opt for higher dividend pay-outs in the absence of the requirements of immediate capital expenditures.

Based on the data presented in Table 9, the following regression equation can be derived:

## CONCLUSION

The study has presented the analysis of the ability of various financial variables to influence the dividend policy of companies with samples for the study being selected specifically from the Indian auto components sector which has promising potential for higher growth. The study identifies that the debt component in the capital structure significantly affects the dividend policy of the companies akin to

the findings of Azhagaiah (2008) and Gupta and Banga (2010). The companies with higher debt in the capital structure tend to pay less dividend. In the case of variables that were selected to represent the profitability of the companies, the study finds that, though all the measures of profitability influence the dividend policy of the companies in line with the findings of Gayathridevi and Mallikarjunappa (2012) and Gupta and Banga (2010), it is the operating profit that plays significant role in determining the dividend pay-outs by the companies. It is found that higher liquidity leads to higher dividend pay-out by the companies like in Gupta and Banga (2010), but most prominently, it is the cash from operations that determines the actual dividend payment by the companies. A growing industrial sector will see the companies making higher level of capital expenditure leading to larger utilisation of existing funds by the companies. The study identifies that larger capital expenditure leads to lesser dividend payment by the companies. An interesting observation of the study is that the ratio of cash flow to capital expenditure has significant influence on the dividend policy of the companies selected for the study. This shows that the companies in the Indian auto components sector depend largely on their cash flows to make capital expenditures, which adversely affects their dividend payments. The study concludes that the dividend policy of the companies in the Indian auto components sector is largely influenced by the operating profit, cash from operations, proportion of cash from operations used for financing the investment activities and the proportion of equity in the capital structure of the companies. The results arrived at by the study is largely influenced by the characteristics of the sector (like contractual cash flows, utilization of cash flows for financing the investment activities, etc.) selected for the study. This provides an opportunity to carry out further research in industrial sectors with similar characteristics.

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