Leading Determinants of Dividend Policy: A Case Study of the Indian Banking Industry

Karam Pal* and Puja Goyal**

Introduction

Banking is an integral part of Indian financial system as it plays very important role in mobilizing savings from various sectors, which is the foundation for growth and development of an economy. Indian policymakers at the national level deliberately implemented a series of economic reforms in the wake of a serious balance-of-payments crisis in 1991. To start with, the central plank was to carry out reforms in the financial sector with banking being its mainstay. The objective of these reforms was to promote a diversified, efficient, and competitive banking and financial system with the ultimate objective of improving the utilization of resources.

There are a number of decisions that have to be taken for efficient performance and attainment of objectives in the banking sector and among the most important is decisions relating to dividend. The area of corporate dividend policy has been studied by financial scholars and economists for a long time, resulting in intensive theoretical modeling and empirical examination. Dividend Policy is one of the most complex aspects in finance. Three decades ago, Black (1976: 5) wrote, "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together". Brealey and Myers (2002) have enlisted dividend policy as one of the top ten puzzles in finance.

Dividend policy is a critical decision area in the field of finance. The subject of corporate dividend policy has captivated finance scholars for a long time, resulting in intensive theoretical modeling and empirical investigation. But several questions related to dividend decisions remain perplexing because of diverse and conflicting theories and also due to diverse empirical results. This paper attempts to give a focused overview of the important dividend theories and identify the leading factors that determine the dividend behavior in the corporate financial management. Dividend behavior of Indian Banking Industry has been analyzed using various econometric techniques. It may be concluded that lagged dividend, PAT, interest are the most important factors affecting dividend decisions of the industry whereas capital expenditure is not. However, Target Payout Ratio of the industry has decreased to 44% in 2005-06 from 71% in 1996-97. The paper may serve as ready reference for future researches in this field of corporate finance vis-à-vis Dividend Decision Policy.

*   Reader in Management, Department of Business Management, Guru Jambheshwar University of Science and Technology, Hisar (Haryana)

** Junior Research Fellow (UGC-JRF), Department of Business Management, Guru Jambheshwar University of Science and Technology, Hisar (Haryana)

A number of conflicting theoretical models, all lacking strong empirical support, define recent attempts by research in finance to explain the dividend phenomenon. But to come out with concrete conclusions an intensive study of all theoretical models together with empirical proof is needed. In the Indian context, a few studies have analyzed the dividend behavior of corporate firms. Krishnamurty and Sastry (1971), Mahapatra and Sahu (1993), Bhat and Pandey (1994), Narasimhan and Asha (1997) and Narasimhan and Vijayalakshmi (2002) are the good examples of empirical research carried out in India in the field of dividend decisions. However, it is still not clear what the dividend payment pattern of firms in India is and why they initiate and omit dividend payments or reduce or increase dividend payments. This paper analyzes the dividend payout of the banking industry in India and presents the dividend initiations and omissions and determinants of dividends. The efficiency and performance of banking industry is improving in all conducts. For e.g. the public and private sectors annual compounded growth rate (ACGR) of business per employee are 29.97 and 40.29 respectively in the last 5 years reflecting fairly strong business growth. Regarding dividend decisions too the numbers are very positive. The total dividend paid by listed banks in 1996-97 was Rs 866.4 crore that has ascended to a high of Rs 4106.37 crore in 2005-06. Therefore the dividend decisions of the industry is definitely worth studying.

The present paper is an attempt to understand the banking dividend decisions in a competitive global economy. Dividend decisions may enhance the market value of the firm but on the other hand it may mean less availability of internal funds and more dependence on external sources and expansion purposes. Furthermore, while determining dividend payment, a prudent management strikes a balance between shareholder's expectation and firm's long term interest. Such analysis is of great relevance from the policy standpoint, because as the dividend literature suggests, if these decisions are handled efficiently, this is expected to be reflected in value of firms. More importantly, such analysis is useful in enabling policymakers to identify the success or failure of policy initiatives or, alternatively, highlight different strategies undertaken by banking firms, which contribute to their successes.

The paper consists of four sections. Section I is a review of literature. Section II provides leading determinants of dividend policy. Section III presents the research methodology. Section IV is of empirical analysis of dividend decisions in Indian banking industry. Section V offers conclusion and suggestions.

Review of Literature

Since the literature available in the field under reference is wide in nature and scope, the literature found in the form of popular write-ups, working groups, the research studies/ articles of researchers/ economists and the comments of economic analysts

are reviewed here in this section. The most important theoretical and empirical studies related to dividend decisions have been reviewed here.

Miller and Modigliani (1961) viewed dividends as irrelevant, and believed that in a world without market imperfections like taxes, transaction costs or asymmetric information; dividend policy should have no effect on its market value. However, since the capital market is neither perfect nor complete the dividend irrelevance proposition needs to be re-visited, especially focusing the effects of information content of dividends, agency cost and institutional constraints. The market imperfection of asymmetric information is the basis for three distinct efforts to explain corporate dividend policy. The mitigation of the information asymmetries between managers and owners via unexpected changes in dividend policy is the cornerstone of dividend signaling models. Agency cost theory uses dividend policy to better align the interests of shareholders and corporate managers. The free cash flow hypothesis is an ad hoc combination of the signaling and agency costs paradigms; the payment of dividends can decrease the level of funds available for perquisite consumption by corporate managers. The signaling theories posit dividend policy as a vehicle used by corporate managers to transmit private information to the market (Bhattacharyya, 1979; Miller and Rock, 1985; Williams, 1988; John and Williams, 1985). Agency cost models begins with the agency problems emphasized by Jensen (1986). Agency problems result from information asymmetries, potential wealth transfers from bondholders to stockholders through the acceptance of high-risk and high-return projects by managers, and failure to accept positive net present value projects and perquisite consumption in excess of the level consumed by prudent corporate managers. Large dividend payments reduce funds available for perquisite consumption and investment opportunities and require managers to seek financing in capital markets. The efficient monitoring of capital markets reduces less than optimal investment activity and excess perquisite consumption and hence reduces the costs associated with ownership and control separation (Easterbrook, 1984). Moreover, Lintner (1956) made an empirical attempt to explain corporate dividend behavior by means of conducting interviews of personnel of large firms of United States of America. It was established that the primary determinants of changes in dividends paid out were the most recent earnings and past dividends paid. It was found that management is concerned with change in dividends rather than the amount and it tries to maintain a level of dividends. Also, there was propensity to move towards some target payout ratio but speed of adjustment varies among companies. There exist many empirical studies in India and abroad that identifies the pattern and factors affecting dividend policy. Some of the well established empirical studies have been summed up here under:

Bauer and Bhattacharyya (2006) established that empirical modeling of dividends

has been dominated by Lintner (1956). The study established that Lintner's model is also poorly specified when earnings are serially correlated. In time series testing, model fits the empirical reality at least 75% of the time. Moreover, for firms with longer data series of 35 years or more, it described the empirical data succinctly in 96% of the cases. Li, Feng, Song and Shu (2006) analyzed the decision-making of dividend policy and the reasons for dividends policy selection in non-state-owned listed companies in China by using structural equation modeling. The main research findings are as follows: (1) the dividend policy of non-state-owned listed companies in China can be interpreted by the western agency theory for dividend, and they found that if compared with manager, owner is a more important variable that influence the dividend policy, (2) four motives such as investment opportunities, refinancing ability, stock price and potential repayment capacity are all important factors for decision-maker to determine the dividend policy. Frankfurter and Wood (2002) established that a number of conflicting theoretical models lacking strong empirical support define current attempts to explain the puzzling reality of corporate dividend behavior. The outcome is consistent with the contention that no dividend model, either separately or jointly with other models, is supported invariably. DeAngelo, DeAngelo and Skinner (2000) analyzed the information content of special dividends. The research concluded that special dividends were not displaced by stock repurchases, indicating that most specials failed to survive on their own accord and not because managers discovered the tax advantages of repurchases. Slovin, Sushka and Poloncheck (1994) assessed the information conveyed by commercial bank announcements of dividend reductions. It has been established that valuation effects on announcing banks are negative and significantly greater than for industrial firms. Cross-sectional regressions used in the study indicate that the size of dividend reductions is crucial but there is no evidence of clientele effects. Dhameja (1978) in his study tested the dividend behavior of Indian companies by classifying them into size group, industry group, growth group and control group. The study found that there was no statistically significant relationship between dividend pay out, on the one hand and industry and size on the other. Growth was inversely related to dividend pay out and was found to be significant. The main conclusions re that dividend decisions are better explained by Lintner's model with current profit and lagged dividend as explanatory variables.

Fama and Babiak (1968) studied the determinants of dividend payments by individual firms during 1946-64. For this purpose, the statistical techniques of regression analysis, simulations and prediction tests were used. The study concluded that net income seems to provide a better measure of dividend than either cash flow or net income and depreciation included as separate variable in the model. Smith (1963) studied factors influencing corporate saving decision of firm. The factors have been classified

into two broad categories, first being factors involved in investment decisions and second arising from stability of dividends. It was concluded that income, previous levels of dividend played a very important role in corporate saving in short run but demand for investment funds had somewhat smaller role in deciding behavior of corporate savings. But in long run, demand for investment funds played crucial role in estimating corporate savings.

In the Indian context, a few studies have analyzed the dividend behavior of corporate firms. Krishnamurty and Sastry (1971) analyzed dividend behavior of Indian chemical industry for the period 1962-1967 and took cross sectional data of 40 public limited companies. The results revealed that Lintner model provides good explanation of dividend behavior. Mahapatra and Sahu (1993) find cash flow as a major determinant of dividend followed by net earnings. Bhat and Pandey (1994) undertake a survey of managers' perceptions of dividend decision and find that managers perceive current earnings as the most significant factor. Narasimhan and Asha (1997) observe that the uniform tax rate of 10 percent on dividend as proposed by the Indian union budget 1997-98, alters the demand of investors in favor of high payouts. Mohanty (1999) finds that firms, which issued bonus shares, have either maintained the pre-bonus level or only decreased it marginally there by increasing the payout to shareholders. Narasimhan and Vijayalakshmi (2002) analyze the influence of ownership structure on dividend payout and find no influence of insider ownership on dividend behavior of firms.

Leading Determination of Dividend Policy

Dividend decision in the corporate sector is governed by a large number of determinants. The review of literature reveals that profit after tax, lagged dividend, depreciation, capital expenditure, current ratio, debt equity ratio, interest payments, change in sales, share price behavior, and cash flow are expected to have a direct bearing on the dividend policy decision of the firms. These determinants are briefly discussed here under:

- **Profit after Tax:** The crucial determinant of dividend payments is the current earnings (profit after tax) representing the capacity to pay dividends, which have a positive relationship with dividends. Further, the level of profit is almost invariably the starting point in the management's consideration of whether dividend in any given year. This variable as a key determinant of dividend policy is found in the work of Lintner (1956), Fama and Babiak (1968) and others.

- **Cash Flow:** Brittain (1966) suggests that cash flow is a more appropriate measure of the company's capacity to pay dividend. Cash flow is derived from

profit after tax plus depreciation expense of the concerned financial year. He argues that dividend payment is considered a charge prior to depreciation and hence should be related to earning gross of depreciation. This variable has been proved to be significant determinant of dividend policy in the empirical works of Mahapatra (1992), Mahapatra and Sahu (1993).

- **Lagged Dividend:** Lagged dividend variable is the cash dividends paid by the company one year prior to the year under consideration. In order to follow a stable dividend policy management has to allow the past dividend trend to influence the current dividend payments. Moreover, it exhibits the speed of adjustment mechanism which states that companies try to achieve a certain desired payout ratio in the long run. Most of the theoretical and empirical studies have included this variable as an important determinant of dividend policy.

- **Depreciation Allowance:** Depreciation charge is a non-cash expense; it is added as an independent variable in the dividend behavior model, since regulation and accounting practices regarding depreciation might affect dividend policy inversely through its impact on current net profits. This variable has been used as explanatory variable by Brittain (1966), it was found statistically significant.

- **Capital Expenditure:** Another important factor that determines the dividend decisions is the firm's capital expenditure. The extent to which the company decides to finance these expenditure from internal resources, both dividend and capital expenditure decision would compete with each other, therefore, capital expenditure in a company is negatively related to its dividend payments. The impact of this determinant has been studied by Dhrymes and Kurz (1964), Mahapatra and Sahu (1993).

- **Current Ratio:** Payment of dividend means cash outflows. Though, a firm may have adequate earnings to declare dividends, but it may not have sufficient cash to pay the same. Thus, current ratio of the firm is an important consideration in paying dividends. The greater the current ratio, the greater is ability to pay dividend.

- **Debt Equity Ratio:** Another feature, which has strong impact on dividend behavior, is the debt equity ratio (capital structure). The demand for external finance usually arises in a company on account of constraints imposed by its internal resources. The higher the internal flows, given the investment requirements, lesser will be the demand for borrowings and vice-versa. Internal flows are generated by net profits after tax and dividend. That is, higher the dividend, higher the demand for borrowings. On the other hand, lower dividends

would mean less demand for borrowings and low debt equity ratio. This variable has received emphasis in the work of Dhrymes and Kurz (1964), Mahapatra and Sahu (1993), Mahapatra and Panda (1995).

- **Interest Payment:** Another variable which may have a direct bearing on the dividend policy of the firms is the amount of interest. A rise in interest payment by a company would depress its dividend payment. Brittain (1966) found dividends to be negatively related to interest payment.

- **Change in Sales:** Change in sales measure the difference between the current period sales to the previous period sales. As suggested by Brittain (1966), rapid gains in earnings as indicated by sales change might make firms more cautious. Firms feel that the rapid growth can not be maintained and they might adopt more conservative dividend policy.

- **Share Price Behavior:** There have been many attempts in the past to test whether or not the share price of a company affects its dividend policy (Friend and Puckett, 1964; Khurana, 1985; Mahapatra and Sahu, 1993). This variable is expected to have negative relationship with the dividend policy of a company.

Research Methodology

A well comprehensible modus operandi empowers the innovative researcher to revisit the study setting. Good methodology follows the standards of the established conventions. For the present paper, a number of indispensable inimitabilities of the research methodology are defined here:

- **Objectives of the Study:** The main objective of the paper is to know the functional relationship between dividend decision of Indian Banking Industry and their determinants. Results of this replication will be helpful for designing dividend policies at the firm level.

- **Hypothesis:** Tthe hypothesis of the present study is: dividend decisions are not affected by any determinant (defined earlier in the study).

- **Nature and Sources of Data:** The present paper is of analytical nature and makes use of secondary data. The relevant secondary data are collected from www.rbi.org.in, CMIE database 'prowess' and journals like The Banker, Indian Journal of Commerce, Management Accountant, the Indian Banker, Chartered Accountant, Business Today, Business India, Finance India have also been referred to obtain the relevant information.

- **Data Editing:** For this study, the major part of data comes from secondary sources. The data has been collected in raw form from various sources including

PROWESS and then it was made suitable for analysis as per the methodology defined for the purpose.

- **The Sample:** The determinants of dividend policy have been studied by using Backward Elimination Regression Model pertaining to Indian Banking Industry for the period 1996-97 to 2005-06. The sample companies for each year are based on the following criteria:

  - The companies should be listed on National Stock Exchange (NSE);

  - They should have paid cash dividend for the year under consideration; and

  - They should have declared cash dividends for the year prior to the year under consideration.

  - A total of 39 banking companies are listed on NSE. But, based on another two criteria, number of banks considered for the purpose of analysis varies every year.

- **The Model:** To analyze the data, we have applied some statistical models like Backward Elimination regression model, Granger Causality Model and Lintner Model. Assuming a linear relationship between dividend and its determinants, the Modified Regression Model can be outlined as:

$$\mathbf{DIVIDEND_{it} = a_0 + a_1 PAT_{it} + a_2 LAGDIV_{it} + a_3 DEP_{it} + a_4 FIXASSET_{it} +}$$
$$\mathbf{a_5 CURRATIO_{it} + a_6 DERATIO_{it} + a_7 INTEREST_{it} + a_8 SALE_{it}}$$
$$\mathbf{+ a_9 PRICE_{it} + a_{10} CASHFLOW_{it} + u}$$

Where: $DIVIDEND_{it}$=Dividends in year t; PAT_{it}=Profit after tax in year t; $LAGDIV_{it}$= Dividends in year t-1; DEP_{it} = Depreciation in year t; $FIXASSET_{it}$= Capital expenditure or Fixed assets (t – (t-1)); $CURRATIO_{it}$=Current ratio in year t; $DERATIO_{it}$ = Debt equity ratio in year t; $INTEREST_{it}$= Interest payments in year t; $SALE_{it}$= Sales (t – (t-1)); $PRICE_{it}$= BSE stock price in year t; $CASHFLOW_{it}$ = Cash flow in year t; and u = Random disturbance term.

Backward Elimination Regression Model: It is a variable selection procedure in which all variables are entered into the equation and then sequentially removed. The variable with the smallest partial correlation with the dependent variable is considered first for removal. If it meets the criterion for elimination, it is removed. After the first variable is removed, the variable remaining in the equation with the smallest partial correlation is considered next. The procedure stops when there are no variables in the equation that satisfy the removal criteria.

Granger Causality Model: An Authentic Measure for Cause & Effect

Analysis: To test the relationship between dividend and its determinants regression model can be used. Though regression analysis deals with the dependence of one variable on the other variable, it does not imply causation. In fact, the question arises whether one can statistically detect the direction of causality (cause and effect relationship). The Granger (1969) approach to the question of whether X causes Y is to see how much of the current Y can be explained by past values of Y and then to see whether adding lagged values of X can improve the explanation. Y is said to be Granger-caused by X if X helps in the prediction of Y, or equivalently if the coefficients on the lagged X's are statistically significant. Note that two-way causation is frequently the case; X Granger causes Y and Y Granger causes X. It is important to note that the statement "X Granger causes Y" does not imply that Y is the effect or the result of X. Granger causality measures precedence and information content but does not by itself indicate causality in the more common use of the term. Consider the following model in which X and Y are expressed as deviation of respective means:

$$Y_t = \sum_{i=1}^{n} \alpha_i X_{t-1} + \sum_{j=1}^{n} \beta_i Y_{t-1} + \mu_{1t} \tag{1}$$

$$X_t = \sum_{i=1}^{n} \lambda_i Y_{t-1} + \sum_{j=1}^{n} \delta_i X_{t-1} + \mu_{2t} \tag{2}$$

Where, it is assumed that disturbance u_{1t} and u_{2t} are uncorrelated. The null hypothesis is $H_0: \sum \alpha = 0$, that is X does not Granger-cause Y in the first regression and $H_0: \sum \lambda = 0$ in the second regression, which implies Y does not Granger-cause X. To test the hypothesis, we apply the F test. The null hypothesis is rejected when the lagged X and Y terms come to be significant.

Therefore, Granger Causality Test has been applied over dividend and its determinants to know which factor is actually a dependent variable and which one is independent.

Lintner's Model: The Lintner's model is the foundation of many researches carried out in the field of dividend decision. Lintner elaborates a model in which he affirms that the dividend policy of a company can be summed up in two objectives: the first includes the annual variation in dividends and second expresses the objective dividend as a constant proportion of profits obtained. The final model presented by him is:

$$Div_t = a_0 + k \, r \, E_t + (1-k) \, Div_{t-1} + u$$

or

$$Div_t = a_0 + a_1 \, E_t + a_2 \, Div_{t-1} + u$$

Where: a_0 = Constant term; Div_t = Target dividend payment for any year t; E_t =Earnings in year t; r =Target payout ratio; k= Adjustment factor; and u =Random disturbance term.

Since k r and (1-k) are impounded in a_1 and a_2 (the regression coefficients), respectively, Lintner concluded that these two parameters are embedded in the corporation's dividend behavior.

Target Payment Ratio (R): Corporations desire and, hence, design stable dividend payments in terms of their dividend payout ratio, which is determined by the company's current earnings. In other words, the target payout ratio acts as a guideline for management to follow when the companies intend to declare their dividends. The target payout ratio can be derived from the regression coefficients through the identity: $r = a_1 / (1-a_2)$.

Adjustment Factor (K): Due to strong bias against dividend cuts, increase in earnings is translated into increase in dividends only gradually to avoid future downward revision. This lag in adjustment of current dividends to the increase in earnings is a kind of safety device designed to make dividends a function of permanent earnings rather than transitory earnings that cannot be sustained. Other terminology that is used for k is speed of adjustment, which is derived from the identity: $k = (1 - a_2)$.

Results and Discussions

The analysis of dividend policy of Indian Banking Industry and its determinants has emerged with some concrete results. Four independent variables, specifically, lagged dividend, PAT, interest payments and changes in sales are the major aspects directing dividend decisions in the industry. R square and adjusted R square are high for the whole period under consideration. Moreover, d statistics of Durbin-Watson test is confirming that there is no problem of autocorrelation with the data. Target payout ratio and adjustment factor has also been calculated as per modified Lintner's model. Results of Granger Causality Test have also been incorporated.

Results of Backward Elimination Regression Model: In 1996-97, constant term, PAT, sales and lagged dividend are the only factors affecting dividend policy of banks in India. These factors are significant at 1% level. To quote Lintner (1956, 107), "The constant term will be zero for some companies but will generally be positive to reflect the greater reluctance to reduce than to raise dividends which was commonly observed". Constant factor is significant at 1% level; which supports earlier results. But sales are showing negative relation with dividend, which predicts that if sales are increasing dividend will be decreased.

Table 1

1996-97	Coefficients and Model Summary							
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	5.108	1.754		2.912	0.006			
LAGDIV	0.852	0.114	0.675	7.497	0.000	0.978	0.976	1.603
PAT	0.105	0.022	0.596	4.811	0.000			
SALES	-0.045	0.011	-0.300	-3.937	0.000			

Table 2 exhibits that lagged dividend, PAT and change in sales are significant at 1% level. PAT is abnormally showing negative relationship with dividend policy. Constant term is abnormally negative and significant at 5% level. Debt equity ratio is significant at 10% level. It is having positive impact on dividend payments which shows company's ability to pay current dividends as per target payout ratio.

Table 2

1997-98	Coefficients and Model Summary							
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	-5.629	2.070		-2.720	0.011			
DERATIO	3.760	1.931	0.050	1.947	0.061	0.990	0.988	1.803
LAGDIV	1.423	0.076	1.151	18.717	0.000			
PAT	-0.068	0.011	-0.420	-6.018	0.000			
SALES	0.058	0.012	0.230	4.728	0.000			

Analysis presented by Table 3 shows that only lagged dividend, PAT are significant at 1% level. Interest payments and change in sales are also affecting dividend policy significantly but at 5% level. Interest payments are having negative impact on dividend decision and it is fundamental in nature; illustrating that higher interest payment will lead to a reduction in the after tax earnings available for dividend payments and vice-versa. Constant term is also present in the final model established by using backward elimination regression model. It is significant at 10% level.

Table 3

1998-99	**Coefficients and Model Summary**							
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	3.278	1.830		1.791	0.083			
INTEREST	-0.011	0.004	-0.427	-2.720	0.011	0.980	0.977	2.023
LAGDIV	0.609	0.067	0.638	9.124	0.000			
PAT	0.126	0.019	0.558	6.663	0.000			
SALES	0.025	0.011	0.256	2.244	0.032			

Again, in **1999-00** (see Table 4), lagged dividend and PAT are most significant factors determining dividend policy in Indian Banking Industry. Depreciation and constant term are also significant; the level of significance is 10%. Depreciation is affecting negatively. It confirms that as charge for depreciation augments earnings after tax available for dividend payments diminishes. Therefore, the ability of the company to conform to the predetermined dividend commitments gets weakened.

Table 4

1999-00	**Coefficients and Model Summary**							
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	3.583	2.073		1.729	0.094			
DEP	-0.184	0.096	-0.178	-1.905	0.066	0.977	0.975	1.966
LAGDIV	0.909	0.052	0.838	17.330	0.000			
PAT	0.070	0.015	0.377	4.736	0.000			

Analysis for 2000-01(Table 5) elaborates that lagged dividend is the only factor affecting dividend policy at 1% level of significance. Constant term and debt equity ratio are significant at 5% and 10% respectively. Debt equity ratio is having negative impact on dividend decisions. It exemplifies that higher DE ratio will result into high interest payments and that will lead to a reduction in the after tax earnings available for

dividend payments and vice-versa. But in the year 1997-98 it showed positive relation with dividend payments. These are contradicting results. In this year PAT is not present in the final model indicating that profit is not the basic factor affecting dividend payments.

Table 5

2000-01	Coefficients and Model Summary							
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	4.993	2.194		2.276	0.029			
DERATIO	-0.583	0.328	-0.050	-1.779	0.084	0.974	0.972	2.386
LAGDIV	0.986	0.028	0.988	34.955	0.000			

In 2001-02, (Table 6) yet again lagged dividend and PAT are the most significant factors affecting dividend policy. Interest payments are showing negative relation with dividend decision. Debt equity ratio and changes in fixed assets are also considerably influencing the decision regarding dividend payments; these are significant at 10% level. In other words, the dividend decisions are not independent of the other uses of corporate funds and changed in fixed assets level i.e., capital expenditure would be an important determinant of dividend payments. Debt equity ratio is portraying positive relation with dividend this year.

Table 6

2001-02	Coefficients and Model Summary							
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	0.970	2.302		0.421	0.676			
DERATIO	2.692	1.542	0.092	1.746	0.091	0.985	0.982	1.779
FIXASSET	-0.007	0.004	-0.085	-1.958	0.060			
INTEREST	-0.003	0.001	-0.212	-2.371	0.024			
LAGDIV	0.818	0.057	0.928	14.358	0.000			
PAT	0.069	0.007	0.684	10.123	0.000			

In this year change in fixed assets, interest payments, lagged dividend and change in sales are significant at 1% level. PAT is also influencing dividend and at 5% level of significance. Constant term is not demonstrating significant impact on decision.

Table 7

2002-03		Coefficients and Model Summary						
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	0.216	2.603		0.083	0.934			
FIXASSET	-0.199	0.051	-0.122	-3.920	0.000			
INTEREST	-0.011	0.003	-0.377	-3.439	0.002	0.989	0.987	1.755
LAGDIV	1.099	0.122	0.600	9.028	0.000			
PAT	0.063	0.024	0.334	2.683	0.012			
SALES	0.046	0.003	0.610	17.515	0.000			

As per the results of Table 8, lagged dividend and PAT have emerged as the only factors which can cause noteworthy change in dividend policy. These are significant at 1% level. Constant term is considerable at 10% level of significance. R square and adjusted R square both are high at .981 and .980 respectively; supporting the explanatory power of the model. Durbin-Watson statistics is showing that there is no problem of autocorrelation.

Table 8

2003-04		Coefficients and Model Summary						
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	6.580	3.864		1.703	0.098			
LAGDIV	1.006	0.065	0.825	15.490	0.000	0.981	0.980	1.334
PAT	0.035	0.010	0.182	3.422	0.002			

The analysis results in Table 9 confirm that lagged dividend and changes in sales are significant at 1% level for dividend decisions. Further principal factors are depreciation, interest payments and PAT; significant at 5% level. Depreciation is confirming positive impact on dividend payments; it demonstrates company's ability to pay current dividends as per long term strategy.

Table 9

2004-05		Coefficients and Model Summary						
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	-1.321	3.551		-0.372	0.713			
DEP	0.159	0.067	0.168	2.386	0.024	0.990	0.989	2.199
INTEREST	-0.010	0.005	-0.213	-2.119	0.043			
LAGDIV	0.848	0.062	0.741	13.740	0.000			
PAT	0.049	0.022	0.260	2.200	0.036			
SALES	0.042	0.015	0.077	2.747	0.010			

Regression results in Table 10 exhibit that lagged dividend, change in sales (SALES), interest payments and profit after tax have come out to be the best predictors of dividend policy of banks for the year 2005-06; their coefficients are significant at 1% level. Furthermore, change in fixed assets i.e. capital expenditure is significant at 5% level. It is important to note that fixed asset and interest have negative relation with dividend, which is theoretically and logically correct. Current ratio is significant for the first time. But constant term is not significant in all the years since 2000-01 except 2003-04; illustrating management's desire not to have stable dividend policy.

Table 10

2005-06		Coefficients and Model Summary						
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**R Square**	**Adj. R Square**	**D-W**
(Constant)	-19.826	15.742		-1.259	0.223			
CURRATIO	8.104	4.065	0.059	1.994	0.061	0.986	0.982	1.668
FIXASSET	-0.212	0.093	-0.063	-2.283	0.034			
INTEREST	-0.015	0.005	-0.328	-3.105	0.006			
LAGDIV	0.719	0.113	0.610	6.340	0.000			
PAT	0.124	0.030	0.606	4.205	0.000			
SALES	0.023	0.006	0.155	3.700	0.002			

Target Payment Ratio and Adjustment Factor: The table below demonstrates the target payout ratio and adjustment factor related to dividend policy of Indian Banking Industry. Adjustment factor was never very high during the period of the study but it turned negative in 1997-98, 2003-03 and 2003-04; which is a very abnormal behavior. Afterwards, it reached a higher value of 0.28 in 2005-06. Average adjustment factor for the period under consideration is 0.0731 which is not a very acceptable number; it illustrates that on an average banking company takes 14 years to reach its target payout ratio.

Target payout ratio is significant in almost all the years except for 2002-03 and 2003-04. In these years the ratio turned negative which has no explanation. If the exceptional negative numbers are removed from the list average target payout ratio becomes 44%; which is high ratio for the industry. The industry is following a stable dividend policy as is evident from behavior of lagged dividend in relation to current dividend demonstrated by regression analysis. But the target payout ratio and adjustment speed towards target payout ratio, which are affected by current earnings, are not showing very considerate results. Both these measurements turned negative and average is also not very significant.

Table 11

Year	Adjustment Factor	Target Payout Ratio
1996-97	0.148	0.71
1997-98	-0.423	0.16
1998-99	0.391	0.32
1999-00	0.091	0.77
2000-01	0.014	*1
2001-02	0.182	0.38
2002-03	-0.099	-0.64
2003-04	-0.006	-5.86
2004-05	0.152	0.32
2005-06	0.281	0.44
Average	**0.0731**	**-0.38**

[1]* implies that value could not be computed as PAT coefficient was not available in the final regression model.

Results of Granger Causality Test: Granger Causality Test has been applied over dividend and its determinants to know which factor is actually a dependent variable and which one is independent. The results are very astounding. It was applied to all the determinants decided with the help of concerned literature. But only two factors have shown dependence of dividend decisions over them. These are PAT and Interest payments. In these factors too only 12 and 10 banks respectively have shown significant impact on dividend. Canara Bank, HDFC, IDBI, Indusind Bank, J&K Bank, Lakshmivilas Bank, OBC, SBBJ, UCO, UBI, UTI Bank and Vijaya Bank have demonstrated considerate impact of PAT over dividend decisions. Allahabad Bank, Bank of Maharashtra, Central Union Bank, Federal Bank, ICICI, J&K Bank, OBC, SBI, SBM and UBI have displayed thoughtful impact of interest over dividend. These results are not very well in symmetry with regression results. Through regression the study found lagged dividend imperative but Granger test shows that there is no impact of lagged dividend over current dividend rather current dividend is affecting lagged dividend. But, it can be concluded that two other important factors affecting dividend decisions, namely, PAT and interest are showing same results in Granger test also.

Table 12: Granger Causality Test between PAT and Dividend Payments

Null Hypothesis	Probability Lag 1	Probability Lag 2
ALLDIV does not Granger Cause ALLPAT	0.85582	0.91671
ALLPAT does not Granger Cause ALLDIV	0.24279	0.48268
ANDDIV does not Granger Cause ANDPAT	0.07114	0.18765
ANDPAT does not Granger Cause ANDDIV	0.89331	0.74539
BOIPAT does not Granger Cause BOIDIV	0.13555	0.57526
BOIDIV does not Granger Cause BOIPAT	0.73056	0.59831
BOMDIV does not Granger Cause BOMPAT	0.63172	0.84958
BOMPAT does not Granger Cause BOMDIV	0.18003	0.82753
BOPDIV does not Granger Cause BOPPAT	0.85582	0.91671
BOPPAT does not Granger Cause BOPDIV	0.24279	0.48268
BORDIV does not Granger Cause BORPAT	0.8941	0.90319
BORPAT does not Granger Cause BORDIV	0.28911	0.46509
BARODADIV does not Granger Cause BARODAPAT	0.35617	0.78449
BARODAPAT does not Granger Cause BARODADIV	0.93395	0.87799
CANDIV does not Granger Cause CANPAT	0.99098	0.65966

CANPAT does not Granger Cause CANDIV	0.11414	0.10652
CBPDIV does not Granger Cause CBPPAT	0.37882	0.02737
CBPPAT does not Granger Cause CBPDIV	0.78614	0.62749
CUBDIV does not Granger Cause CUBPAT	0.66329	0.4246
CUBPAT does not Granger Cause CUBDIV	0.81373	0.31023
CORPDIV does not Granger Cause CORPPAT	0.96117	0.34117
CORPPAT does not Granger Cause CORPDIV	0.11602	0.26352
DENDIV does not Granger Cause DENPAT	0.0569	0.4246
DENPAT does not Granger Cause DENDIV	0.41835	0.31023
DHANDIV does not Granger Cause DHANPAT	0.11327	0.55535
DHANPAT does not Granger Cause DHANDIV	0.3337	0.74246
FEDDIV does not Granger Cause FEDPAT	0.63751	0.52184
FEDPAT does not Granger Cause FEDDIV	0.09757	0.08789
HDFCDIV does not Granger Cause HDFCPAT	0.80538	0.95897
HDFCPAT does not Granger Cause HDFCDIV	0.00852	0.04405
ICICIDIV does not Granger Cause ICICIPAT	0.31892	0.0155
ICICIPAT does not Granger Cause ICICIDIV	0.21288	0.01913
IDBIDIV does not Granger Cause IDBIPAT	0.56573	0.74036
IDBIPAT does not Granger Cause IDBIDIV	0.45588	0.42465
IOVERDIV does not Granger Cause IOVERPAT	0.03777	0.0374
IOVERPAT does not Granger Cause IOVERDIV	0.82263	0.49076
INDUSPAT does not Granger Cause INDUSDIV	0.00314	0.03202
INDUSDIV does not Granger Cause INDUSPAT	0.00178	0.00565
INGDIV does not Granger Cause INGPAT	0.34899	0.16038
INGPAT does not Granger Cause INGDIV	0.01198	0.05395
JKDIV does not Granger Cause JKPAT	0.29492	0.09486
JKPAT does not Granger Cause JKDIV	0.68954	0.08953
KARNDIV does not Granger Cause KARNPAT	0.8054	0.83289
KARNPAT does not Granger Cause KARNDIV	0.12814	0.1331
KARUDIV does not Granger Cause KARUPAT	0.93889	0.05273

KARUPAT does not Granger Cause KARUDIV	0.20969	0.27048
KOTADIV does not Granger Cause KOTAPAT	0.84705	0.51683
KOTAPAT does not Granger Cause KOTADIV	0.14142	0.1689
LAKSDIV does not Granger Cause LAKSPAT	0.06775	0.17142
LAKSPAT does not Granger Cause LAKSDIV	0.07243	0.18864
OBCDIV does not Granger Cause OBCPAT	0.04162	0.48208
OBCPAT does not Granger Cause OBCDIV	0.03901	0.67623
PNBDIV does not Granger Cause PNBPAT	0.38577	0.35321
PNBPAT does not Granger Cause PNBDIV	0.37468	0.2903
SIBDIV does not Granger Cause SIBPAT	0.58773	0.30472
SIBPAT does not Granger Cause SIBDIV	0.52967	0.22222
SBBJDIV does not Granger Cause SBBJPAT	0.13175	0.06362
SBBJPAT does not Granger Cause SBBJDIV	0.01173	0.0341
SBIDIV does not Granger Cause SBIPAT	0.03663	0.51199
SBIPAT does not Granger Cause SBIDIV	0.99224	0.75552
SBMDIV does not Granger Cause SBMPAT	0.85582	0.91671
SBMPAT does not Granger Cause SBMDIV	0.24279	0.48268
SBTDIV does not Granger Cause SBTPAT	0.53937	0.76697
SBTPAT does not Granger Cause SBTDIV	0.14791	0.25175
SYNDIV does not Granger Cause SYNPAT	0.70353	0.71621
SYNPAT does not Granger Cause SYNDIV	0.10094	0.48207
UCODIV does not Granger Cause UCOPAT	0.02299	0.01971
UCOPAT does not Granger Cause UCODIV	0.08476	0.29849
UBIDIV does not Granger Cause UBIPAT	0.04146	0.6711
UBIPAT does not Granger Cause UBIDIV	0.00329	0.11934
UWBDIV does not Granger Cause UWBPAT	0.23842	0.5008
UWBPAT does not Granger Cause UWBDIV	0.28575	0.54129
UTIDIV does not Granger Cause UTIPAT	0.09954	0.66279
UTIPAT does not Granger Cause UTIDIV	0.07813	0.04393
VIJDIV does not Granger Cause VIJPAT	0.80538	0.4246
VIJPAT does not Granger Cause VIJDIV	0.00852	0.31023

YBDIV does not Granger Cause YBBPAT	0.23842	0.5008
YBPAT does not Granger Cause YBDIV	0.28575	0.54129

Table 13: Granger Causality Test between Interest and Dividend Payments

Null Hypothesis	Probability Lag 1	Probability Lag 2
ALLDIV does not Granger Cause ALLINT	0.06686	0.56736
ALLINT does not Granger Cause ALLDIV	0.05918	0.43508
ANDDIV does not Granger Cause ANDINT	0.94357	0.29701
ANDINT does not Granger Cause ANDDIV	0.98667	0.9118
BOIINT does not Granger Cause BOIDIV	0.28672	0.15872
BOIDIV does not Granger Cause BOIINT	0.50018	0.42502
BOMDIV does not Granger Cause BOMINT	0.42265	0.80764
BOMINT does not Granger Cause BOMDIV	0.26487	0.00977
BOPDIV does not Granger Cause BOPINT	0.06686	0.56736
BOPINT does not Granger Cause BOPDIV	0.05918	0.43508
BORDIV does not Granger Cause BORINT	0.63756	0.80111
BORINT does not Granger Cause BORDIV	0.2615	0.3417
BARODADIV does not Granger Cause BARODAINT	0.4545	0.13812
BARODAINT does not Granger Cause BARODADIV	0.21588	0.45411
CANDIV does not Granger Cause CANINT	0.47769	0.17092
CANINT does not Granger Cause CANDIV	0.03989	0.14854
CBPDIV does not Granger Cause CBPINT	0.25774	0.92195
CBPINT does not Granger Cause CBPDIV	0.23154	0.16177
CUBDIV does not Granger Cause CUBINT	0.70696	0.36902
CUBINT does not Granger Cause CUBDIV	0.03755	0.0549
CORPINT does not Granger Cause CORPDIV	0.73656	0.64555
CORPDIV does not Granger Cause CORPINT	0.62949	0.0029
DENINT does not Granger Cause DENDIV	0.13505	0.4246
DENDIV does not Granger Cause DENINT	0.67363	0.31023

DHANINT does not Granger Cause DHANDIV	0.20673	0.24569
DHANDIV does not Granger Cause DHANINT	0.27244	0.07156
FEDINT does not Granger Cause FEDDIV	0.07084	0.07908
FEDDIV does not Granger Cause FEDINT	0.74683	0.98146
HDFCINT does not Granger Cause HDFCDIV	0.75927	0.25211
HDFCDIV does not Granger Cause HDFCINT	0.12319	0.04909
ICICIINT does not Granger Cause ICICIDIV	0.54668	0.01101
ICICIDIV does not Granger Cause ICICIINT	0.77574	0.02935
IDBIINT does not Granger Cause IDBIDIV	0.15137	0.25385
IDBIDIV does not Granger Cause IDBIINT	0.19365	0.13318
IOVERINT does not Granger Cause IOVERDIV	0.16696	0.21824
IOVERDIV does not Granger Cause IOVERINT	0.50863	0.34466
INDUSINT does not Granger Cause INDUSDIV	0.40524	0.3595
INDUSDIV does not Granger Cause INDUSINT	0.30319	0.56034
INGINT does not Granger Cause INGDIV	0.41777	0.24778
INGDIV does not Granger Cause INGINT	0.20183	0.16737
JKINT does not Granger Cause JKDIV	0.08839	0.02996
JKDIV does not Granger Cause JKINT	0.80506	0.88531
KARNINT does not Granger Cause KARNDIV	0.25177	0.1347
KARNDIV does not Granger Cause KARNINT	0.64759	0.41307
KARUINT does not Granger Cause KARUDIV	0.19724	0.48334
KARUDIV does not Granger Cause KARUINT	0.74321	0.8269
KOTAINT does not Granger Cause KOTADIV	0.79157	0.34842
KOTADIV does not Granger Cause KOTAINT	0.06792	0.6546
LAKSINT does not Granger Cause LAKSDIV	0.78718	0.82203
LAKSDIV does not Granger Cause LAKSINT	0.27093	0.50016
OBCINT does not Granger Cause OBCDIV	0.0371	0.68935
OBCDIV does not Granger Cause OBCINT	0.49401	0.04159
PNBINT does not Granger Cause PNBDIV	0.67614	0.75949
PNBDIV does not Granger Cause PNBINT	0.40299	0.60985
SIBINT does not Granger Cause SIBDIV	0.30902	0.72713

SBBJDIV does not Granger Cause SBBJINT	0.42591	0.05179
SBIINT does not Granger Cause SBIDIV	0.01699	0.2358
SBIDIV does not Granger Cause SBIINT	0.60068	0.18356
SBMINT does not Granger Cause SBMDIV	0.0371	0.68935
SBMDIV does not Granger Cause SBMINT	0.49401	0.04159
SBTINT does not Granger Cause SBTDIV	0.15229	0.47872
SBTDIV does not Granger Cause SBTINT	0.27483	0.02033
SYNINT does not Granger Cause SYNDIV	0.10991	0.6486
SYNDIV does not Granger Cause SYNINT	0.25788	0.0399
UCOINT does not Granger Cause UCODIV	0.40614	0.01201
UCODIV does not Granger Cause UCOINT	0.02332	0.00214
UBIINT does not Granger Cause UBIDIV	0.06831	0.20645
UBIDIV does not Granger Cause UBIINT	0.33926	0.00197
UWBINT does not Granger Cause UWBDIV	0.13367	0.52783
UWBDIV does not Granger Cause UWBINT	0.26356	0.15634
UTIINT does not Granger Cause UTIDIV	0.44034	0.43872
UTIDIV does not Granger Cause UTIINT	0.08856	0.04367
VIJINT does not Granger Cause VIJDIV	0.75927	0.25211
VIJDIV does not Granger Cause VIJINT	0.12319	0.04909
YBINT does not Granger Cause YBDIV	0.13367	0.52783
YBDIV does not Granger Cause YBINT	0.26356	0.15634

Conclusion and Suggestions

Analysis made with the help of various econometric tools came to some concrete results regarding dividend decisions in the Indian banking industry. It has been summed up that the industry follows stable dividend policy as lagged dividend has emerged as the significant factor. Other results have been summarized below:

- It can be concluded that more or less stable dividend policy is followed by Indian banking industry as lagged dividend has emerged as the most significant factor in Backward Regression Analysis for the period under consideration. Also, constant term is significant in most of the years confirming the stable dividend policy.

- Lagged dividend, change in sales and interest are the factors demonstrating

significant effect over dividend decisions of Indian Banking Industry. Change in sales is showing positive relation with dividend. It was established by Brittain (1966) that growing sales make firms more cautious and they adopt conservative dividend policy. But it is not the case in Indian Banking Industry. Interest is linked negatively with dividend illustrating that higher interest payment will lead to a reduction in the after tax earnings available for dividend and vice-versa.

- Other important factors like capital expenditure, depreciation and cash flow have not proved to be affecting dividend policy.

- Target payout ratio of the industry has decreased to 44% in 2005-06 from 71% in 1996-97. An unusual outcome of the study is negative average target payout ratio. If negative results of two years are removed average target payout ratio becomes 44%.

- Adjustment factor is showing very low speed of the industry to reach target payout ratio; it is only 0.0731 on an average. It indicates that management of Indian Banking Industry is not keen to reach target payout ratio.

- Granger causality test has specified only two factors affecting dividend policy of Indian Banking Industry. These are PAT and interest. In these factors too there are only 12 and 10 banks confirming those results. That is, only 25 percent banks organize their dividend policy keeping in consideration PAT and interest.

Dividend policy continues to be an often-conversed area between financial economist and corporate managers. The theories and justifications that have emerged have resulted in an enormous theoretical and empirical body of research with hundreds of papers. But the controversy over the subject motivates the conduct of research; where answers to many questions are still not clearly developed. The paper summarized the most important theories of dividend and leading determinants of dividend. Dividend policy of Indian Banking Industry has been analyzed using Backward Elimination Regression Model, Modified Lintner's Model and Granger Causality Model. The study may be used as a ready reference for future researches on the area under discussion. Further, for the policy makers of the Indian Banking Industry, the study may prove to be useful for re-sketching their dividend policy keeping in view the results and discussions made.

Select Bibliography

Bauer, L. and Bhattacharyya, N. 2006. Rethinking Lintner: An Alternative Dynamic Model of Dividends, *http://hermes.ssrn.com/sol3/papers.cfm?abstract_id=914197*. Accessed on December 15, 2006.

Bhat, R. and Pandey, I.M. 1994. Dividend Decision: A Study of Managers' Perceptions, *Decision*, 21,(1 & 2) January-June.

Bhattacharyya, S. 1979. Imperfect Information, dividend policy, and "the bird in the hand" fallacy, *Bell Journal of Economics,* 10: 259-270.

Black, F. 1976. The Dividend Puzzle, *Journal of Portfolio Management,* 2: 5-8.

Brealey, Richard A. and Myers, Stewart C. 2002. *Principles of Corporate Finance*, Boston : Irwin / McGraw-Hill.

Brittan, J.A. 1966 *Corporate Dividend Policy*, Washington: the Brooking Institution.

DeAngelo, H. DeAngelo, L. and Skinner, Douglas J. 2000. Special Dividends and the Evolution of Dividend Signaling, *Journal of Financial Economics*, 57(3): 309.

Dhameja, N.L. 1978. Control of Companies and Their Dividend Practices, *Margin*, January.

Dhrymes, P.J. and Kurz, M. 1964. On the Dividend Policy of Electric Utilities, *Review of Economic and Statistics*, Feb.

Easterbrook, Frank H. 1984. Two Agency-Cost Explanations of Dividends, *American Economic Review,* 74: 650-659.

Fama, Eugene F., and Babiak, H. 1968. Dividend Policy: An Empirical Analysis, *Journal of American Statistical Association,* 63: 1132-1161

Frankfurter, George M., and Wood, Bob G. Jr. 2002. Dividend Policy Theories and Their Empirical Tests, *International Review of Financial Analysis*, 11: 111-138.

Friend, I. and Puckett, M. 1964. Dividend and Stock Prices, *American Economic Review*, Sep.

Granger, C. 1969. Investigating Causal Relations by Econometric Models and Cross-spectral Methods, *Econometrica*, 37: 424-438.

Jensen, Michael C., 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *American Economic Review,* 76: 323-329.

John, Kose and Williams, Joseph. 1985. Dividends, Dilution and Taxes: A Signaling Equilibrium, *Journal of Finance*, 40: 1053-1070.

Khurana, P.K. 1985. *Corporate Dividend Policy in India*, New Delhi: Panchsheel Publishers.

Krishnamurty, K. and Sastry, D.U. 1971. Some Aspects of Corporate Behavior in India: A Cross Section Analysis of Investment, Dividend and External Financing for the Chemical Industry: 1962-1967, *Indian Economic Review*, October.

Li, Li Qi, feng, Yin, Song, Liu and Shu, Wang Man. 2006. Who Makes the Dividend Policy Decision and Their Motives for Doing So: An analysis based on a questionnaire survey of non-state owned listed companies in China, *http://ccfr.org.cn/cicf2006/cicf2006paper/20060128200110.pdf*. Accessed on November 15, 2006.

Lintner, J. 1956. Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes, *American Economic Review,* 46: 97-113.

Mahapatra, R.P. and Panda, B.K. 1995. Determinants of Corporate Dividend Policy and the Target Payment Ratio, *Productivity*, July-Sep,36

Mahapatra, R.P. and Sahu, P.K. 1993. A Note on Determinants of Corporate Dividend Behavior in India – An Econometric Analysis, *Decision*, Jan-Mar.

Mahapatra, R.P. 1992. *Corporate Dividend Behavior in India*, Unpublished Ph.D. Thesis, Berhampur University.

Miller, M. and Modigliani, F. 1961. Dividend Policy, Growth, and the Valuation of Shares, *Journal of Business,* 34: 411-433.

Miller, Merton H. and Rock, Kevin. 1985. Dividend Policy under Asymmetric Information, *Journal of Finance,* 40: 1031-1051.

Mohanty, P. 1999. Dividend and Bonus Policies of the Indian Companies, *Vikalpa*, 24,(4) October-December: 35-42.

Narasimhan, M.S. and C. Asha 1997. Implications of Dividend Tax on Corporate Financial Policies, *the ICFAI Journal of Applied Finance*,3 (2): 11-28.

Narasimhan, M.S. and Vijayalakshmi, S. 2002. Impact of Agency Cost on Leverage and Dividend Policies, *The ICFAI Journal of Applied Finance*, 8 (2): 16-25.

Slovin, Myron B., Sushka, Marie E. and Poloncheck, John 1994. Dividend Reductions and Commercial Banks, *http://papers.ssrn.com/sol3/papers.cfm?abstract_id=5739.* Accessed on Nov. 12, 2006.

Smith, D.C. 1963. Corporate Saving Behavior, *The Canadian Journal of Economic and Political Science*, August.

Williams, Joseph 1988. Efficient Signaling with Dividends, Investment and Stock Repurchases, *Journal of Finance,* 43: 737-747.