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Effects of Dividends of Common Stock Prices: The Nepalese Evidence

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Abstract

This paper attempts to explain the effect of dividend payment and retained earnings on market price of share in the context of Nepalese companies. A majority of earlier studies conducted in USA mostly indicate that retained earning effect is more than the dividend effect given investment opportunities. A study of Indian evidence shows that their stock market has also started recognizing the impact of retained earnings. This paper investigates these implications in the context of Nepal and finds only limited support for it. The results indicate the customary strong dividend and very weak retained earnings effect on market price of share. The study shows a predominant influence of dividends and an absence of retained earning effect on share price. Dividends are found relatively more attractive among the Nepalese stockholders. They are therefore not indifferent toward dividend and retained earnings.

Introduction

Corporate dividend policy decision is not an easy, straightforward and simple job as many people conceive it (Hackett, 1981). Corporate dividend policy has long been regarded as an unresolved economic puzzle, which require rational resolution if the prevailing economic paradigm of corporate finance is to continue (Miller, 1986). The controversy centers on whether or not the positive association between common stock return and dividend yields reported in a number of empirical studies can be attributed entirely to information effects (Litzenberger and Ramaswami, 1982). Due to complex nature of the problem, corporate dividend policy has been a subject of considerable study particularly since the emergence of MM's classical work (Miller and Modigliani, 1961). According to MM, given the investment decision of the company, shareholders in a perfect capital market are indifferent whether the company distributes dividend or retains earnings in the business. Their dividend irrelevance hypothesis gained much popularity in the literature of finance.

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The major purpose of this paper is to explain share price, dividend and retained earnings relationships in the context of Nepal. It attempts to ascertain the effect of dividend payment and retained earnings on market price of share. It is not yet known in Nepal whether there is customary strong dividend or retained earning effect on market price of share and if the Nepalese stock market has started recognizing the impact of retained earnings. The study is directed towards resolving the following issues in the context of Nepal:

- Whether dividends or retained earnings are more attractive among Nepalese stockholders?
- What is the elasticity of dividends and/or retained earnings with respect to the market price per share? Is there any presence of economies of scale in dividend supply functions?
- If the dividends and/or retained earnings increases by one percentage point, market price per share will increase by less than or more than unity.
- Whether the speed of adjustment through dividend payment or retained earnings between desired and actual share prices is slow or fast?

The first section of this paper is devoted to review of related literature while the second section explains methodological aspects such as the model, nature and sources of data, and the selection of enterprises. The regression results are presented and interpreted in the following section, while the empirical findings are summarized and the conclusions are indicated in the last section.

Review of Related Literature

The relationship between dividend and share price is not yet clear and it is still a controversial issue in the literature of finance. Those who believe that dividend payment affects share price base their arguments on the following hypotheses (Chawla and Srinivasan, 1987):

- Shareholders prefer current to future income.
- Dividend has information content and the payment of dividend indicates that company has a good earning capacity.

Those who believe in the retention of earnings base their arguments on the following hypotheses:

- If earnings are retained in the business, it indicates that the company has good investment opportunities.
- Dividend in the form of capital gain is subject to lower taxes.

The optimal dividend policy is yet an unresolved issue. The optimal dividend implies the one that maximizes shareholder wealth. As the perfect market assumptions are relaxed, arguments that dividend policy may affect value can be viewed in two categories (Van Horne and McDonald, 1971):

- Investors may have a net preference for dividends relative to capital gains or vice versa

owing to uncertainty resolution, transaction and inconvenience costs, and differential tax rates.

- Costs associated with the sale of new issues of equity securities may make these issues more costly source of equity financing than retained earnings.

Gordon alleged that the required rate of return used by investors to discount dividends expected in future period increases with time (Gordon, 1959). If the level of investment depends on financing from retained earnings, retention for current investment implies that current dividends are foregone in order to increase the future growth of dividends. In other words, required rate of return rises with the proportion of earning retained. As a result, investors would value current dividends over capital gains.

The existence of transaction costs and any aversion to the inconvenience of selling shares tend to favor current dividends over capital gains. The irrelevance doctrine implies that investor with a preference for current income above the current dividends can always sell stock to obtain additional income. In this connection, it may be interesting to point out the evidence of Litzenberger and Ramaswami that firms with higher dividend yields sell for lower prices (1982).

Previous studies on corporate management attitudes toward dividend policy reveal a preference for a stable dividend policy (Lintner, 1956) and less preoccupation with tax effect Abrutyn and Turner,1990). If ordinary income tax rates are to be lowered and preferential tax treatment of capital gains is to be eliminated, increase in corporate dividend payout ratios can be noticed (Papaioannou and Savarese, 1994). Some institutional investors may favor dividends, owing to legal constraints or tax considerations. But the more favorable tax rate on capital gains relative to that on dividends for most investors creates a powerful bias in favor of the retention of earnings (Elton and Gruber, 1970). If there exists a net preference among investors for capital gains as opposed to dividends, then the firms' dividend policy would be a residual decision determined by the profitability of its investments. Given the investment decision, if the firm has earnings remaining after financing all "acceptable" investment opportunities would it distribute dividends to stockholders.

If the company raises dividend payout, it means it is increasing the likelihood of selling common stock (Easterbrook, 1984). Public utility managements often follows a policy of high dividends combined with frequent external equity financing. It is regarded as a useful strategy for forcing their regulators to keep utility rates high enough to continue attracting new funds from investors (Miller, 1986). It is not uncommon to find regulated electric utility issuing large amounts of new equity while, over the same period, paying proportionately large cash dividends (Hansen et al., 1994).

It is widely accepted that dividend payments serve as signals to market participants. However, recent evidence has increased the uncertainty regarding the information conveyed when a firm drops its dividend (Jensen and Johnson, 1995). Dividend reduction tends to be followed by a significant increase in firm earnings (DeAngelo and Skinner, 1992; Healy and Palepu, 1988). At the other end, dividend-drop also marks the end of a firm's financial decline and the beginning of firm restructuring (Jensen and Johnson, 1995).

In India, a study conducted in 1965 showed that the coefficient of retained earnings was insignificant (Desai, 1965). Similarly, a study conducted in 1971 using time series data concluded that the retained earnings had no effect on the share price (Sarkar, 1971). Another study carried out in 1975 by using cross section data revealed impact of retained earnings in cotton textiles industry and the impact of dividend in electrical and engineering industries (Kumar and Man Mohan, 1975).

As regards dividend retained earnings hypothesis, no study has been conducted yet in Nepal. This is the first study of its kind dealing with the various issues raised above.

The Basic Model

The model to be estimated in this paper is the one most commonly applied to cross-section data such as the following (Friend and Puckett, 1964):

$$MPS_{it} = a + b\ DPS_{it} + c\ RE_{it} + e_{it} \qquad (1)$$

Where,

MPS_{it} = Market price per share

DPS_{it} = Dividend per share

RE_{it} = Retained earning per share

The above model assumes the following reasonable *a priori* hypotheses:

$DPS_{it} > 0$

$RE_{it} > 0$

The subscript i denotes the i^{th} company as a sample of n companies selected from a particular industry and all variables are measured in the i^{th} time period. Market price per share is the average of high, low and closing prices of the year.

Here it is necessary to point out that a higher b than c—the typical result—indicates investor preference for dividends. The equation is useful for estimating price behavior within the observed range of dividend payout.

If the companies in a sample tend, on the average, to pay out less than the optimum, b should be greater than c; if they pay out more than the optimum, b should be less than c; and if they pay just the optimum, regardless of what that optimum is, or if the payout is matter of indifference, b should equal c. Theory would suggest that regardless of the optimum payout for any individual company, at that optimum Rs.1 of dividends would on the average have the same effect on stock price as Rs.1 of retained earnings.

Theoretically speaking, continuous cross-section techniques are the most appealing. The separate effects on price of all omitted variables should be aggregated to take into account the firm effect. The firm effects cannot be measured directly, as they are both additive and constant over time. Such firm effects include those relevant to investor assessment of both profit

prospects and risk, some of which could alternatively be measured directly.

The aggregate firm effect for any firm is assumed proportional to its per share earnings. Therefore under stated assumptions, firm effects can be held constant by introducing into the regression equation a variable $(PE)_{t-1}$. The firm effects include the profitability of investment opportunities as assessed by the market.

The problem of least squares bias can be handled by specifying a dividend-supply function such as the following:

$$MPS_{it} = a + b\ DPS_{it} + c\ RE_{it} + (PE)_{t-1} + e_{it} \quad \ldots \quad \ldots \quad (2)$$

Short run changes in income evoke relatively small short run changes in relative price. Here, d measures only the influence of past expectations on current expectations. Lagged price also hold constant any firm effects that exist.

$$MPS_{it} = a + b\ DPS_{it} + c\ RE_{it} + MPS_{it-1} + e_{it} \quad \ldots \quad \ldots \quad (3)$$

This study also takes into account a partial adjustment or flexible accelerator model. This model hypothesizes that each company has a desired target level of increasing market price per share, and that each company, finding its actual market price per share not equal to optimum or desired level, attempts only a partial adjustment towards the optimum or desired level within any one period. The model indicates the speed with which firms adjust their actual share price to the desired share price.

The above models were tested in linear and logarithmic forms.

Nature and Sources of Data

In order to estimate the above-specified models, the required data have been taken from Financial Statements of Listed Companies, Vol. III published by Nepal Stock Exchange Ltd. Thus the above models are estimated by using secondary data for the listed companies of Nepal.

Though there are about 110 companies listed in Nepal Stock Exchange Ltd., all of them do not provide scope for their study. On the one hand, many of them are new and have just begun their operation, on the other, many of the old listed companies do not submit their financial statements to Nepal Stock Exchange Ltd. leading to the absence of data. On examining financial statements of listed companies, the usable data that could be obtained for the purpose of this study may seen as presented in the Appendix of this paper. The Appendix shows that the study is based on pooled cross section data of 29 companies from 1994 to 1999 with a total of 93 observations as indicated above.

Empirical Results

The following results for equation (1) indicated above present the usual simple linear relationships between average market prices and dividends and retained earnings. The results

show the customary strong dividend and very weak retained earnings effect. The dividend coefficient is statistically significant at 5 percent level of significance indicating attractiveness of dividends among Nepalese investors.

$$MPS = 1709.62 + 4.57\ DPS - 12.54\ RE \quad \ldots \quad \ldots \quad (4)$$

(2.41) (4.72*) (1.71)

R-bar square = 0.43 F = 7.60 SEE = 225.90 DW = 1.29

The negative coefficient obtained for retained earnings as indicated above is questionable.

Throughout this paper, figures in parentheses are 't' values and the asterisk (*) sign indicates that the coefficient is significant at 5 percent level of significance.

One simple approach to holding firm effects constant (and in the process to reduce the problem of regression weights) is to add a lagged price-earning ratio to the equation (1). The following are the results for equation (2) indicated above.

$$MPS = 1701.37 + 4.54\ DPS - 12.43\ RE + 0.09\ PE_{t-1} \quad \ldots \quad (5)$$

(2.38) (4.71*) (1.69) (0.28)

R-bar square = 0.42 F = 5.04 SEE = 229.13 DW = 1.30

The above results again indicate that dividends have a predominant influence on stock prices. The dividend coefficient is significant while all other coefficients are not significant at 5 percent level of significance. Results indicate that dividends are relatively more attractive. The retained earning coefficient is again negative indicating the absence of its effect on share price which is contradictory to the findings of Friends and Puckett, etc. It can be said that Nepalese stock market has not started recognizing the impact of retained earnings.

To provide some direct evidence on the potential bias arising from short-run income movements, the standard linear equation (1) can be modified to include a lagged price variable as indicated in equation (3) which allows for slow short-run adjustment in prices to current levels of income. As noted earlier, to some extent the lagged price variable also holds firm effects constant; it also minimizes the problem of regression weights.

The following are the results for equation (3) indicated above.

$$MPS = 1666.18 - 9.31\ DPS - 15.57\ RE + 0.75\ MPS_{t-1} \quad \ldots \quad (6)$$

(3.07) (0.82) (2.78) (8.08)

R-bar square = 0.49 F = 30.45 SEE = 77.99 DW = 0.49

The results show that dividends receive greater relative weight than retained earnings. The dividend effect is still larger than the effect of retained earnings. Dividends are still relatively more attractive. The negative sign of retained coefficient is however quite surprising which is the major limitation. The lagged price variable may serve in part as a proxy for dividends. The regression equation exhibits such undesirable properties as negative dividend coefficients (though it is not significant) and large standard errors for both dividends and

retained earnings. In any case, there is no indication at all that retained earnings are more important than dividends.

One of the issues in dividend models is whether linear or logarithmic models explain better relations. A re-computation of the regression equation (4) utilizing logarithms produced the following results:

$$\ln MPS = 3.62 + 0.60 \ln DPS + 0.24 \ln RE \quad \ldots \quad (7)$$

(0.92) (5.28*) (0.29)

R-bar square = 0.63 F = 20.91 SEE = 0.86 DW = 1.44

Equation (7) confirms earlier result indicating a higher dividend effect rather than retained earnings effect. However, it is interesting to note here that coefficient of retained earning has a correct sign though it is not significant. The explanatory power of the model has also increased with improved DW statistic. Equation (7) shows that the dividend coefficient is significant with a priori expected sign. The elasticity of dividend with respect to share price is less than unity, which shows the absence of economies of scale. This equation also indicates that a one-percentage point increase in dividends led on the average to about 0.60 percent increase in share price, holding the other variables constant.

Similarly, the re-computation of equations (5) and (6) in logarithmic forms respectively produced the following results:

$$\ln MPS = 3.96 + 0.63 \ln DPS - 0.05 \ln RE + 0.32 \ln PE_{t-1} \quad \ldots \quad (8)$$

(1.10) (5.75*) (0.06) (3.70*)

R-bar square = 0.56 F = 13.04 SEE = 0.787 DW = 1.42

$$\ln MPS = 3.73 - 0.01 \ln DPS - 0.51 \ln RE + 0.77 MPS_{t-1} \quad \ldots \quad (9)$$

(1.38) (0.07) (0.91) (8.55*)

R-bar square = 0.64 F = 39.84 SEE = 0.591 DW = 2.28

Again, equations (8) and (9) confirm the results obtained earlier in equations (5) and (6) confirming higher dividend effect than the effect of retained earnings. The recomputed equations have improved explanatory power and DW statistics. The coefficient of retained earnings does not have a correct sign. Equation (8) also shows that the dividend coefficient is significant with a priori expected sign. The elasticity of dividend with respect to share price is less than unity, which shows the absence of economies of scale. This equation also indicates that a one-percentage point increase in dividends led on the average to about 0.63 percent increase in share price, holding the other variables constant. Looking at the overall results, higher investor valuation may be placed on dividends than on retained earnings. Thus management might be able to increase share prices by raising dividends.

In equation (9), the coefficient of the lagged dependent variable has been observed to be 0.77. Since the coefficient of lag dependent variable is equal to 1 minus the adjustment coefficient, the adjustment coefficient is equal to 0.23. Thus the speed of adjustment between

desired and actual share prices as implied by this value is therefore slow. It seems that only 23 percent of the adjustment, of actual to desired share price is completed within a year.

It is not possible to choose conclusively between the linear and logarithmic results on statistical or a priori grounds. The logarithmic relations do reduce the problem of regression weights (Friend and Puckett, 1964). However, the linear and logarithmic relations discussed above produced the same type of results. The linear regressions, unlike the logarithmic relations, can handle satisfactorily very small and negative retained earnings (Friend and Puckett, 1964). The major difference between the logarithmic and non-logarithmic regressions may be due to the differing degrees of bias in the regression coefficients produced by short-run income disturbances which is held constant in statistical analysis undertaken in this paper.

Summary and Conclusions

This paper examined the valuation of firms whose shares are traded in the Nepalese stock market. Using pooled cross section data of 29 companies from 1994 to 1999 with a total of 93 observations, it attempts to determine relative importance of dividends and retained earnings in determining market price of share. The findings indicate that share value is affected by dividend payments. This finding is consistent with the existence of net preference for current dividends as opposed to capital gains. There is an indication that a somewhat higher investor valuation may be placed on dividends than on retained earnings. To the extent that this conclusion is valid, it is possible that management might be able, at least in some measure, to increase stock prices by raising dividends. However, the opposite may be true in growth companies where management might be able to increase share price by greater retention of earnings that could not be revealed by this study.

Thus it may be pointed out that dividend payment is more important as compared to retained earnings in Nepal. If the company retains more earnings, the market price of share may decline. In this connection, it may be interesting to conduct a similar study at different points in time to ascertain whether importance of retained earning has increased over a period of time. Similarly, an industry-wise analysis may also be very rewarding as such study can reveal the degree of importance of dividend or retained earnings in different industries.

The generalizations that can be made from these findings are limited, as tests were undertaken for few companies (93 observations). Moreover, the regression models explained less than half of the total variance in linear equations and exhibited other empirical shortcomings. Nevertheless, the paper offers considerable promise in testing for the relevance of dividends. In a world of market imperfections, it is useful to view separately the net preference of investors for dividends or for capital gains and the fact that new equity financing is more costly than the retention of earnings (Van Horne and McDonald, 1971). As additional years are tested and the number of companies investigated is expanded, greater insight into the effect of dividend policy on value may be gained.

Appendix

Selection of Nepalese Companies

S. N.	Company name	Year selected for study	No. of observations
1	Nepal Battery Company Limited	1994 to1998	5
2	Jyoti Spinning Mills Limited	1995, 1997 to1999	4
3	Nepal Lever Limited	1998 to 1999	2
4	Nepal Bank Limited	1994 to 1998	5
5	Nepal Arab Bank Limited	1995 to 1999	5
6	Nepal Indo Suez Bank Limited	1995 to 1999	5
7	Nepal Grindlays Bank Limited	1995 to 1999	5
8	Himalayan Bank Limited	1997 to 1999	3
9	Nepal SBI Bank Limited	1998 to 1999	2
10	Soaltee Hotel Limited	1996 to 1999	4
11	Necon Air Limited	1999	1
12	Bishal Bazar Company Limited	1995 to 1999	5
13	Salt Trading Company Limited	1995 to 1999	5
14	Nepal United Company Limited	1995 to 1999	5
15	Nepal Insurance Company Limited	1995 to 1999	5
16	National Life and Gen. Ins. Co. Ltd.	1995 to 1999	5
17	Himalayan General Insurance Limited	1997 to 1999	3
18	United Insurance Company (Nepal) Ltd.	1998 to 1999	2
19	Premier Insurance Co. (Nepal) Ltd.	1998 to 1999	2
20	Everest Insurance Company Limited	1998 to 1999	2
21	Nepal Industrial Development Corp.	1996 to 1999	4
22	Nepal Finance and Saving Co. Ltd.	1999	1
23	NIDC Capital Markets Ltd.	1997 to 1999	3
25	National Finance Company Ltd.	1997 to 1999	3
26	Nepal Share Markets Company Ltd.	1997 to 1999	3
27	Annapurna Finance Company Ltd.	1998 to 1999	2
28	Kathmandu Finance Limited	1999	1
29	Nepal Housing Devt. Finance Co. Ltd.	1999	1
	Total		93

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