

Tax Rebate and Dividend Payout in Bangladesh

Sharif Nurul Ahkam Eastern University, Dhaka, Bangladesh Shahzada Muhammad Imran, Syeda Marjia Hossain North South University, Dhaka, Bangladesh

The purpose of this paper is to examine the effects of the introduction of 20% tax rebate in 2002 for certain firms on the dividend policy of firms potentially qualifying for this rebate in Bangladesh. A balanced panel data set of 63 non-financial firms of Bangladesh for 14 (1998-2011) years from the Dhaka stock exchange is used for this purpose. Newey-West estimator is used to estimate a logit model and the specified model uses binary values of 0 and 1 to identify if it met the tax rebate threshold. The explanatory variables are firm size, log of market value to face value ratio and profitability. A dummy variable was used to separate the pre-rebate period (2003 and before) from post-rebate period (after 2003). The dummy variable turned out to be insignificant indicating that introduction of the tax rebate had no impact on dividend policy of qualifying firms.

Keywords: dividend, tax rebate, Newey-West estimator, logit model

Introduction

Evidence has been presented in the literature that firms in emerging countries seem to follow dividend payout policy which is different from developed economies. A few factors have been clearly established as significant in the determination of the dividend payout policy of a firm. Most important of them is the profitability of the firm. Dividend payout also seems to be influenced by the degree of leverage of the firm. One of various other factors examined in the literature potentially influencing the dividend decision of a firm, especially in the emerging markets, is ownership concentration in a family or few hands, over-reliance on short term funds, agency cost, information asymmetry, and clientele effects. The investment opportunity set available to the firms can also play a significant role in determining the dividend policy of a firm.

This paper is organized as follows. First, a brief literature review has been provided. Variables influencing dividend decisions as presented in the literature are identified in the next section. A discussion on the dividend payment pattern in Bangladesh is presented in the next section. Next, the model is specified, variables are identified, and the proxies are defined. The motivation of the paper is further explained in this section. This is followed by presentation and associated discussion of the results. At the end, the concluding remarks are provided.

Sharif Nurul Ahkam, D.B.A., professor, Eastern University, Dhanmondi, Dhaka-1205, Bangladesh.

Shahzada Muhammad Imran, M.Sc. in information systems, lecturer, North South University, Bashundhara, Dhaka-1229, Bangladesh.

Syeda Marjia Hossain, M.Sc. in Financial Management, lecturer, North South University, Bashundhara, Dhaka-1229, Bangladesh.

Correspondence concerning this article should be addressed to Syeda Marjia Hossain, Department of Accounting & Finance, SoB, North South University, Plot-15, Block-B, Bashundhara, Dhaka-1229, Bangladesh. E-mail: moulyctg@gmail.com.

Literature Review

Since the publication of the dividend puzzle article by Black (1976), there had been numerous articles attempting to explain why firms pay dividend and what determines the payout ratio. Ample evidence which has been provided indicates that firm's capital structure, investment and dividend policy are interrelated. Higgins (1977) derived the structural link between the firm's growth and its financing needs. Slow growing firms do not need as much cash flow to support its growth and can afford to pay out a greater proportion of its earnings. High growth firms, as opposed to the slow growth firms have a greater need to finance their working capital and capital investment and must retain a higher proportion of their income, if not all. However, it still leaves the question unresolved—why a firm should pay out the extra dividend since it is a more expensive form of return to the shareholders when comparing it to capital gains.

The seminal work in the dividend theory was advanced by Miller and Modigliani (1961) billed as the dividend irrelevance hypothesis. Since then, a number of competing theories have emerged attempting to explain why firms tend to follow any particular dividend policy. Persistent dividend payment by firms indicates that there may be other factors in play that determines the dividend payment behavior of individual firm. It has been argued that the presence of differential taxes makes dividend policies a relevant phenomenon (Litzenberg & Ramaswamy, 1979; Poterba & Summers, 1984; Barclay, 1987). Yet, another explanation is the clientele hypothesis which contends that investors can be classified in client groups seeking high dividends and no dividends, perhaps because of tax issues or their cash flow needs (Pettit, 1977; Scholz, 1992; Allen, Bernardo, & Welch, 2000).

Two major theories addressing the dividend issue are the asymmetric information theory and the agency theory of dividends. Asymmetric information theory of dividend contends that a consistent dividend payment history conveys information to the investors that the firm is assured of future free cash flows and hence is financially strong (Bhatacharya, 1979; Miller & Rock, 1985; Bali, 2003). Firms of poor quality have inability to match and maintain a consistent dividend policy, perhaps because it cannot be that much certain about the availability of future free cash flows after paying the necessary transaction costs, which convey a negative message about the financial strength of these firms.

Agency theory contends that dividend payment can reduce the costs associated with the agency relationship/conflict between managers and shareholders (Jensen, 1986; Easterbrook, 1984; Rozeff, 1982; Alli, Khan, & Ramirez, 1993).

It is important to recognize that the works cited above are mostly developed for well established capital markets of the world. Furthermore, there is an assumption that ownership and management are separated and capital is raised externally through the capital markets which may not be quite true in the emerging markets. In the emerging markets, family control of businesses is very common and bank financing, instead capital market financing is prevalent.

Key Factors Affecting Dividend Decisions

Profitability

The factor that turns out to be significant time and again in the literature is the profitability of the firm. The firm's ability to generate high profit also enables it to pay high dividend and a firm suffering loss is not likely to pay dividends. Lintner (1956) presented evidence that the firm's net earnings are a critical element in

dividend change decisions. This has been supported quite extensively in the literature (Han, Lee, & Suk, 1999; Fama & French, 2002). The same appears to be true in the emerging markets (Adaglu, 2000; Aivazian, Booth, & Cleary, 2003; Mollah, 2009; Abor & Bopkin, 2010).

Investment and Growth Opportunity

Higgins (1977) delineated a direct link among the payout ratios of a firm with its growth. A firm can lower its payout ratio and reduce its dependence on external financing to fund its growth or increase its reliance on external financing for growth, when it maintains a high payout ratio. If the firm is faced with high growth opportunity, the right thing would be to reduce its reliance on external funds, since external funds are more expensive and in addition to that, it contributes to dilution and control issues. A company with low investment opportunities has no good reason to retain the profit. If it does, it may be tempted to invest in less profitable opportunities. Thus high dividend payout ratio is associated with avoidance of overinvestment (investment in negative net present value projects) and low growth opportunities (Jensen, 1986; Lang & Litzenberger, 1989).

This particular factor provides an interesting opportunity to test its validity in Bangladesh. The country as a whole did not grow as fast as it did in recent years. The high growth of the economy should have provided firms with greater growth opportunities, and if so, firms should have gradually reduced its cash payout ratio to take advantage of the growth opportunities available to them. The importance of retaining a greater share of profit becomes of paramount importance in view of the absence of a bond market and serious lack of capital available in the capital market. There has not been any significant infusion of foreign capital in the form of portfolio investment to support growth of individual firms. Authors are not sure whether they will be able to observe this negative relationship, since high growth probably is also associated with higher profitability. In this scenario, these firms may be able to increase the amount of dividend payout while lowering the cash payout ratio at the same time.

Size of Firm

Firm size has been shown in many studies to be a determining factor in setting the course of the firms' dividend policies (Lloyd, Jahera, & Page, 1985; Barclay, Clifford, & Ross, 1995; Redding, 1997; Holder, Langrehr, & Hexter, 1998; Fama & French, 2001). A large firm is better able to raise funds from the capital market and hence does not have to rely on internally generated funds as much and can afford to pay higher dividends. However, these studies are done on mature economies and authors cannot be sure that the same result will be found in the emerging markets. Al-Najjar (2011) reported positive relationship between firm size and payout ratio in Jordan. However, Aivazian et al. (2003) reported that this variable may not be significant in all countries.

Financial Constraints

High financial leverage may be associated with restrictions placed on the firm regarding the payment of dividends. Moreover, as Rozeff (1982) pointed out, firms with high financial leverage are likely to have low payout ratios to control the transaction costs associated with raising external capital. This negative association has been borne out in many studies (Fazzari, Hubbard, & Peterson, 1988; Jensen, Solberg, & Zorn, 1992; Agrawal & Jayaraman, 1994; Gugler & Yurtoglu, 2003).

Aivazian et al. (2003) pointed out that emerging market firms are more financially constrained and hence, more likely to have a low payout ratio. They also pointed out the case of Turkey where dividend payout ratio is 62%, which they felt that it might have been accounted for by the institutional constraints placed on them

requiring them to pay the larger 50%, or 20% of paid-in-capital up to 75% of the earnings. In many ways, they seem to be discussing about Bangladesh. Bangladesh firms rely on bank financing of shorter terms, since the option of relying on long-term debt is not open to them. Further, non-financial firms in Bangladesh also face a regulatory clause similar to one in Turkey that encourages firms to pay dividend of at least 20% of paid-in-capital (Taka 10 per share since 2002) which entitles them to 10% tax credit. Thus, while the short-term lenders to the firms will clearly prefer low payout, there is an incentive to achieve the 20% threshold. Authors are really not sure if this could be an important factor weighing in the dividend policies of non-financial firms in Bangladesh, and if it does, whether the data will reveal that. At the same time, it is worth pointing out that, for many listed firms, the face value per share (Taka 10 per share) is so small relative to its market value or net book value per share that makes it easy for them to meet the requirement. It is only new firms and perennially poorly performing firms that might have a problem paying 20% of paid-in capital as dividend.

Agency Issues

Agency theory advances the role of dividend as a way of mitigating agency cost (Rozeff, 1982; Easterbrook, 1984; Jensen et al., 1992). Cash payout reduces the amount of internally generated fund that can be used to fund new projects. This propels managers to seek external funds for growth which, in turn, subjects managers to the scrutiny of the capital markets. The firm's ability to fund new projects will depend on manager's taking actions to reduce agency cost via disclosing information which benefits outside shareholders. Thus shareholders may have preference for those firms which have higher cash payout and more frequent interaction with the capital market as this shifts the monitoring cost to the capital market.

An alternative way of reducing agency cost may be accomplished by having debt as a source of capital where high cash payout is not necessary and the firm has to regularly make disclosure to lenders. This would be a difficult thing to test in Bangladesh. As stated before, Bangladeshi firms rely heavily on bank loans which are relatively of short term in nature. The quality of disclosures made by the borrower will be suspect, as Bangladeshi commercial banks (especially government owned banks) have a reputation for being lax in due diligence. On top of that, there is not much of a separation between bankers and borrowers, the bankers also own many of these firms. However, this paper will use the proxies used in the literature to examine the extent of the impact of agency cost. One proxy used is the dispersion of ownership. The more disperse the ownership, the higher will be the demand for a high payout ratio to force more disclosures from management (Rozeff, 1982; Alli et al., 1993). A second proxy used in the literature is a proportion of inside ownership (Lloyd et al., 1985; Jensen et al., 1992; Holder et al., 1998). Higher the proportion of inside ownership is, less the demand for high cash payout is.

Dividend Payout Pattern in Bangladesh

The sample firms display a history of high payout. There is a strong pressure on management to declare and pay dividends and that is perhaps a reflection of strong agency issues in Bangladesh and a response to government's desire to make equity investment attractive. Table 1 below provides a general idea about the dividend payment pattern in Bangladesh. The dividend payout ratio in this table is computed as percent of previous year's profit paid out as dividend this year. The table reports cash dividend of only those firms that pay out dividends. The negative numbers resulting from dividend payment made when previous year's profit was negative were eliminated. Extremely high payout ratios were also eliminated for the specific years, but not for the average number for the economy for the longer time frame of 1995 to 2011. The table is intended to present a general idea about the market feature and has no specific or strict design in mind to present the data.

Payout Ratio	2002	2007	2010	Average of 1995-2011		
90% to above 100%	19	14	8	6		
75% to 90%	7	11	6	7		
50%-75%	7	10	6	18		
30%-50%	17	7	7	16		
Paid dividend but less than 30%	6	6	13	10		
Number of firms	40	50	56	57		
Average	68%	75%	74%	60%		

Dividend Payout Pattern in Bangladesh for Selected Years

Table 1

If this sample is a reflection of the norm, a vast majority of profitable companies pay out a large portion of their earning as dividend. Only a few companies pay dividend that amounts to less than 30% of their income.

This table has added significance for the paper. The primary purpose of this paper is to test if there was a tendency to increase dividend payout after 2003 to take advantage of the tax rebate government introduced for firms paying 20% or more (on the face value of the firm's stock). The above table accounts only for cash dividend. However, if a firm pays stock dividend, that does not involve cash payout but will be counted toward meeting the 20% dividend threshold. Therefore, the above table actually understates the number of firms actually recording a higher dividend payout for tax purposes. As one can see from the average provided in the last column of Table 1, the average cash payout of all the non-financial firms in the sample over 1995-2011 has been 60%.

It is interesting to note that a sizable number of firms somehow managed to pay more than 100% of the profits as dividends (six in the sample of 63 firms). This average was computed as total dividend paid since the beginning of the data point divided by the total net income over the same period. This result is certainly perplexing. Part of it may be explained by low profits which were almost entirely paid out as dividend augmented by gains from revaluation of assets. Further, when profit is low or negative and yet dividend is paid, dividend is not paid to the director/managers.

Tax Rebate Issue in Bangladesh

The national board of revenue introduced a tax rebate of 10% for certain firms (banks, financial institutions and mobile phone companies are excluded) paying 20% (of share face value as) dividends. The purpose is to encourage firms to pay dividends which would encourage people to invest in the capital market. The capital market in Bangladesh, while still small, has become quite vibrant and displays a lot of volatility. The market is clearly not very mature and numerous studies have indicated that the market is not very efficient in absorbing available information. Regardless, if the tax rebate had the intended effect, people should see a statistically significant jump in the number of qualifying companies hiking their dividends above the 20% threshold. The idea will be tested in this paper.

Research Question

There has been a lot of work done on dividend policy and now examination of dividend policies in the emerging economies is getting attention. It has been said that emerging economies follow dividend policies which are not exactly comparable with the advanced economies. The model utilized in this paper will indicate how different it would be for Bangladesh. It is often contended that pressure to pay dividend is very strong in Bangladesh. As stated before, there is encouragement to pay dividends from a regulatory point of view. The goal for this paper is very specific, however. The question being asked is: Did the introduction of tax rebate have any effect on the dividend paying behavior of the firms? This question is turned around to find out what characteristics those firms possess which qualify them for the 10% tax rebate.

Data

The data for this work covers a period spanning from 1998 to 2011 of non-financial firms and only 63 firms listed in Dhaka stock exchange that produced all the necessary data for a balanced panel structure were usable. The data were collected from the annual reports of these firms provided by the Dhaka stock exchange on compact disks. The data on more recent years were obtained by downloading the annual report of the firms from their website (if they were available) or physically obtaining the hard copies of the annual reports. Financial firms and mobile phone operators do not qualify for tax rebate and were excluded. In the sample mix, there are manufacturing companies, food processors, service firms, engineering firms, pharmaceutical and chemical companies, and textile firms.

Methodology

The model employed in this paper is a multivariate logit model which is non-linear in nature and maximum likelihood estimates are generally used. The dependent variable is binary, the value is 1 if the firm has paid dividend amounting to 20% or more of the face value of its share (group 1), otherwise 0 (group 0). If the introduction of tax rebate had induced some companies to increase their dividend payout, then one should see some firms migrate from 0 to 1 category after 2003. Dummy variable was employed as an explanatory variable where the value is 0 from 1998 to 2003 and 1 after 2003 to 2011.

Ample evidence has been provided in the literature that firms with high returns and bigger firms can and do pay larger dividends. It is likely that firms with high return were paying 20% or more on dividend even before 2003 and were naturally categorized as group 1 firms. Similarly the largest firms were more likely placed in group 1 and are unaffected by the tax rebate factor.

It is hypothesized in this paper that those firms with high market value to face value ratios have an easier time to meet the 20% dividend threshold. Assuming that the market value correctly reflects the assets of the firm, earnings are generated with the assets of the firm. A firm with a MV/FV ratio of 1 faces a threshold dividend payout ratio of 20% to claim that the tax rebate has a much smaller asset base, but a firm with a MV/FV ratio of 10, in effect, just needs 2% dividend payout ratio to claim the tax rebate, since it has 10 times the face value in assets to generate the required earnings and dividends.

The logistic function *F* is stated as:

$$F\left(Z_{i}\right) = \frac{1}{1 + e_{i}^{z}}$$

The *Z* value to be estimated in this model takes the form:

$$B_{\rm o} + B_1 X_{1t} + B_2 X_{2t} + B_3 X_{3t} + B_4 X_{4t} + u_i$$

where, X_{1t} is the log of market value to book value ratio, $\ln(mvfv)$; X_{2t} is the return on asset for year *t*, roa; X_{3t} is the log of asset size, $\ln(assets)$; X_{4t} is a dummy variable with value of 0 in year 2003 or before, and value of 1 after 2003; u_i is the error term.

Thus, the model estimates that

$$P(i) = \frac{1}{1 + e^{B_0 + B_1 X_{1t} + B_2 X_{2t} + B_3 X_{3t} + B_4 X_{4t} + u_i}}$$

where, P(i) is the probability that the dependent variable Y_t will take on a value of 1.

The debt ratio was considered for inclusion in the list of independent variables, since it was shown in several papers to be a significant determinant for dividend. However, in a related paper by the authors of this paper, no statistical significance for this variable was found, and hence, the debt ratio variable was dropped.

Model Estimate

The EViews software was used and the Newey-West estimation procedure was employed for this paper. There are several ways in which the estimates may be obtained for maximum efficiency. EViews uses the quadratic hill climbing process. The final estimate after six iterations is presented in Table 2 (method: Maximum Likelihood—Binary Logit {Quadratic hill climbing}) below.

Table 2

Logit Function to Estimate Fa	orm *	*
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Variable	Coefficient	Std. Error	Z-statistics	P-value	
Constant	-9.7062	2.1725	-4.4677	0.0000	
Ln(MV/FV)	1.3734	0.1285	10.6917	0.0000	
ROA	29.9306	3.2663	9.1633	0.0000	
Ln(Assets)	0.2823	0.1078	2.6172	0.0089	
Dummy (0 if year \leq 2003, 1 otherwise)	-0.3344	0.2394	-1.3973	0.1623	
McFadden <i>R</i> -squared: LR statistic: Prob (LR statistic)	0.5056 574.77 0.0000				

Notes. $*B_0 + B_1X_{1t} + B_2X_{2t} + B_3X_{3t} + B_4X_{4t} + u_i$; data period from 1998 to 2011.

The result in Table 2 indicates that the impact of tax rebate initiation (dummy variable) had not been statistically significant. In fact, the MV/FV ratio, firm size and return on assets of a firm will strongly contribute to the probability that a firm will meet the 20% dividend threshold. In other words, larger firms, firms with high MV/FV ratios, and firms with high profitability find it a lot easier to meet the dividend threshold and claim tax rebate. The McFadden *R*-squared indicates that the estimate will correctly categorize if a firm belongs to group 1 (dividend meeting or exceeding 20%) or the other group only in 50% of the cases.

Since the dummy variable had no statistically significant impact on the predictive power of the model, the dummy variable was dropped and the model was re-estimated. The result with the dummy variable excluded is presented in Table 3 (Method: Maximum Likelihood—Binary Logit {Quadratic hill climbing}) below.

As it can be seen, there is no loss in efficiency from this more parsimonious specification. The McFadden *R*-squared basically remains the same. Firm size becomes statistically insignificant at 1% level, but remains significant at 5% level.

Variable	Coefficient	Std. Error	Z-statistics	P-Value
Constant	-9.4129	2.1489	-4.3804	0.0000
Ln(MV/FV)	1.3231	0.1220	10.8433	0.0000
ROA	30.7930	3.2317	9.5284	0.0000
Ln(Assets)	0.2604	0.1061	2.4555	0.0141
McFadden <i>R</i> -squared: LR statistic: Prob (LR statistic)	0.5056 574.77 0.0000			

Table 3

Logit I	^c unction	to	Estimate	Form	(*)

Notes. $*B_0 + B_1X_{1t} + B_2X_{2t} + B_3X_{3t} + B_4X_{4t} + u_i$; data period from 1998 to 2011.

Based on the results, the natural conclusion is that the tax rebate factor had no impact on the dividend payment behavior of Bangladeshi firms. Firms with high return on assets could afford to pay high dividends and they probably did so both before and after year 2003, when the tax rebate rule was introduced. Also those firms which have accumulated substantial assets over the years to sport a high market value to book value ratio find it a lot easier to meet the dividend threshold and the tax rule most likely has played no role in their dividend payment policy.

Conclusions

Using panel data for 63 companies over a period of 14 years, multivariate non linear logit model is applied where maximum likelihood estimates are used to check the tax rebate effect on the dividend payout of Bangladeshi firms. However, tax rebate initiation was found to have no significant effect. This is not surprising as Bangladeshi firms recorded high dividend payment even prior to the tax rebate initiation period. For larger firms, firms with higher MV/FV ratios and firms with higher profitability, it is easy to meet the 20% threshold and thus to get the tax rebate. Dropping the dummy variable also does not show any significant effect. However, firm size becomes insignificant at 1% and remains significant at 5%. Therefore, it can be concluded that tax rebate did not have any significant impact on Bangladeshi market. Firms which can afford to pay higher dividends tended to have high payout ratio even before the tax rebate initiation. Firms with high return on asset ratio, high market value to book value ratio are more likely to have higher payout ratio and thus enjoy tax rebate.

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