DOES STOCK MARKET EXERT FINANCIAL DISCIPLINE ON FIRMS? - EVIDENCE FROM INDIA

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ABSTRACT: *Funds mobilized, internally or from the stock market, are to be put to the best use to make sure such investment results in assured return, in turn helping the financial manager to maximize the wealth of the shareholders. Nevertheless, it is claimed that internally generated funds are not invested following the principles of finance, strictly. Enough evidence exists to indicate that retained earnings are not profitably used compared to the funds raised from the market. This contention is supported by the argument that stock market imposes financial discipline on firms when they raise funds from the market. It is also widely believed that the rate of return on retained earnings is expected to fall below the return on the externally raised funds. This paper examines the relative profitability of retained earnings as against capital raised through the stock market by the corporate India. The results indicate that the internally generated funds are put to use at a relatively lesser rate of return than the externally sourced funds which are, because of stock market discipline, deployed with care so that they earn a better return. A dissection of the firms into three segments, based on the growth rate, reaffirms the findings for the sample units as a whole.*

Keywords: profitability, retained earnings, external finance, stock market discipline, shareholder wealth, growth rate

1. INTRODUCTION

Firms retain earnings with an aim to take up investment opportunities. Compared to equity and debt, retained earnings are less costly and they, in a way, constitute additional equity fund. Investors do also expect firms to employ higher proportion of earnings for investment purposes under some special circumstances. Lintner [1] observes that as long as a firm is pursuing an optimal investment policy, existence of flotation costs, differential personal taxes and divergent investor expectations should, in each case, have the effect of creating an investor preference for capital gains over dividend, because capital gains taxes can be deferred into the future. Further, tax on capital gains is generally low. Contrary to this, dividend, representing current income, is taxed at a relatively higher rate and the liability is immediate. Whenever there is an increase in the personal income tax of the shareholders, they will allow their firm to retain and reinvest the earnings. An opportunity to deploy earnings for the growth of a firm is lost when dividends are declared. Friend and Puckett [2] report that investors of growth firms prefer retained earnings to dividend. Oscar Harkavy [3] and Muhammad Ali Tirmizi [4] contend that plough back of profits results in appreciation in the value of corporate securities. William Droms [5] says that investors benefit more from reinvested earnings.

2. Internal Funds and Investment

Financing pattern of corporate investment is primarily important in an environment driven by capital market imperfections, the recent world-wide phenomena. Since when Modigliani and Miller [6] advocated that the investment decisions of firms are independent functions of the nature of sources of funds, till now there have been immense developments in financing patterns and their implications on the investment of different sources of funds. By the development of pecking order theory, it is supposed that firms would prioritize their sources of funds for their investment needs in the order of internal savings, debt and external equity.

Retention policy is said to have a definite impact upon the economic growth of a country. There are evidences to prove that internal funds and long-term investment are positively and strongly associated. Braj Kishor [7] observes that corporate earnings are a worthy source of finance for firms. Being the cheapest source, retained earnings are mainly considered for stabilizing the dividend payments, preventing the need to tap the capital market, reducing the weighted average cost of capital and accelerating the pace of a firm's growth ultimately.

According to Rozeff [8], firms bank on retained earnings, reducing their dependence on external funds, when they find potential investment opportunities. So, retained earnings are positively associated with firm's growth. Myers and Majluf [9] are of the opinion that retained earnings are considered the prime source of funds for investment. Fazzari, Hubbard and Petersen [10] have identified that the investments of financially-constrained firms would display relatively high responsiveness to the internal funds. Demirgue-Kunt and Maksimovic [11] have found that firms mostly use internally available funds to finance their fixed assets. Further, Gilchrist and Himmelberg [12] observe a relatively strong statistical relation between internal funds and investments. Khodly and Sohrabian [13] confirm that large firms extensively depend on retained earnings and debt to finance their fixed asset needs. O'Brien [14] associates retained earnings with lower level of corporate leverage due to the reason that retained earnings provide financial cushion to the firms in the times of cash flow volatility which would enable the firms to enjoy continuous flow of funds for their projects with positive net present values

Bhattacharyya *et al.* [15] find retained earnings to be positively associated with capital expenditure. Inci et al. [16] prove that retained earnings are heavily used for long-term

investment needs. Internal funds, therefore, are proved to be an obviously convenient and more importantly the first available source of finance for the firms. This view is also supported by the empirical findings of Chaya, Soojung Kim and Jungwon Suh [17], who conclude that investments are more responsive to internal funds than to external funds, not merely because firms raise more funds internally than they do externally, but because a dollar of internal funds is more likely to be used for investments than is a dollar of external funds.

There is a reason to strongly believe that the conflict of interest between corporate managers and shareholders and another conflict between shareholders and debt holders, due to asymmetric information, would decide different selective investment opportunities leading to different rates of return on internal and external funds employed. For instance, the managerial considerations upon the use of internal savings for investment lead to the maximization of corporate growth since such funds are invested in projects taking into view the long-run growth of the firms, where the returns might be lower than what the shareholders could benefit on the investment of their foregone dividend elsewhere. On the other hand, the firms would try to resort to careful investment of externally raised funds for the reason that they are closely monitored by the stock market.

3. Profitability of Retained Earnings

By virtue of established theory in corporate finance, retained earnings are less profitably used than external finance due to the fact that the external financing involves the most serious exercise of market discipline. That is, the process of raising finance through capital market leads to a more efficient use of funds so raised, in terms of returns, than internally generated funds. Whittington [18] observes that the rate of return on retained earnings is expected to fall below that of externally raised funds. The stock market discipline, as viewed by Whittington [18], is expected to work in two ways. According to the first way, the market expects at least a satisfactory return on the new funds raised through the capital market. Otherwise, the dividends and interest are payable at the expense of existing shareholders. Another way the market is expected to work is that the new external finance raised should be invested in such plans and projects that the overall profitability of the firms can be increased as the providers of external finance look into the overall profit of the firm for their expected return on their investment in shares rather than the profit on the new external finance only.

4. Review of Literature

An early attempt to examine the rate of return on net assets financed by each of the sources-equity, debt and retained earnings - has been made by Baumol, Heim, Malkiel, and Quandt-popularly known as BHMQ [19]- in 1970. Their empirical analysis has found that the plough back of profit does yield a positive return. Yet, that return is surprisingly small. According to them, the rate of return on new equity capital is higher than that of debt and retained earnings.

In 1972, Whittington [18] has tested the hypothesis that the rate of return from invested funds would be the greatest when the financing involved the most serious exercise of market discipline. The concluding remarks from his analysis reveal that retained earnings are less profitably used than external finance and the stock market discipline has a

definite but small effect on future profitability of the firms especially whose profitability remained below the average level in the past period.

Irwin Friend and Frank Husic [20] have reviewed the efficiency of the process of capital formation by recalculating the regression equations framed by BHMQ [19], correcting them for scale effects. They conclude the investigation with results contrary to what was arrived at by BHMQ evidencing that the rate of return on new investment financed by new common equity is not significantly higher than the return on investment financed by retained earnings. They also contradict BHMQ by challenging what has been concluded by them that the rate of return on new investment financed by external debt is higher than that of investment exclusively financed by retained earnings, as incorrect. Their empirical evidence arguably concludes that there is little reason to believe that retained earnings are not inefficiently invested as compared to external funds, due to the effect of differentials in transaction costs.

Brealey, Hodges and Capron [21] have done some more extensive tests on BHMQ's hypothesis using a sample of British Company Data in the year 1975. The principal conclusion of their study is that firms do not impose any serious process of investment of external capital so as to increase the return on new assets financed by external finance over that of internally generated funds. McFetridge [22], attempting to test the proposition made by BHMQ, has found that the new assets financed by internal funds appear to be neither more nor less productive than those financed by the new equity issues. He opines that managerial policies on earnings retention are not a source of inefficiency.

Dhingra [23] has examined whether management-controlled firms, as compared to other firms, tend to use more internal financing. He tests a hypothesis that there exists a difference in the relative amounts of retained earnings to total earnings among corporations characterized by different types of managerial control. The study focuses on 139 large manufacturing Canadian firms. The regression model framed to test the hypothesis specifies the retention ratio as a function of the types of managerial control plus additional variables such as industrial activity, size, growth, profit, age, valuation, leverage and liquidity, as these are expected to influence the retention ratio. The main result of this study is that management - controlled firms have had a higher extent of retained earnings than the firms of other control types, but by a rather small proportion.

Braj Kishor [7] tests the hypothesis that if the corporate financing trends noticed in the advanced countries, which point to a synchronization of thrusts in internal funds with peaks in asset expansion and capital formation, are followed in India. The hypothesis is tested with data collected for non-financial non-governmental firms in the private sector for the period from 1951-52 to1973-74. He also tries to identify the variables explaining the corporate saving behaviour. The results of the analysis reveal that the internal finance constitutes the most important source for financing the asset needs of the selected firms. The average annual retentions have recorded a consistently rising trend throughout the period. The examination of relative position of internal and external finance in total finance raised by these firms in India has revealed that the importance is gradually emerging in favour of internal as against external sources. It is

concluded that the retentions and new stock issues are largely substitutable sources of finance and over the long-run the former replaces the latter given the size of profitable investment opportunities.

Bhole [24] reiterates that retention of net profits would lead to growth of the firms and in turn shareholder wealth can be maximized. He supports his views by quoting that the Japanese Industrial sector has developed though the stock market remained very much underdeveloped.

Chaya, Soojung Kim and Jungwon Suh [17] investigate the extent to which corporate investments are responsive to internal and external funds. The sample comprises non-financial and non-utility U.S. firms over the period 1981-2005. The regression results reveal that internal funds have a greater impact on investments than do external funds irrespective of investment levels. This result holds for different groups of firms classified by proxies for financial constraints and even for firms that raise relatively large amounts of external funds. In contrast, external funds have a greater impact on the amount of liquid assets than do internal funds. Overall, the observed patterns of investment financing conform to the predictions of the pecking order theory.

Studies reviewed reveal that retained earnings play a significant role as a source of fund available to firms. Many, in fact, depend heavily upon internally generated funds while taking up investment decisions. Results of earlier research studies are not concrete about the profitability of retained earnings. Studies focusing on this area are relatively scant in India. To fill this vacuum, the present study has been taken up.

5. Internal Funds use by the Corporate India

The corporate India seems to have relied heavily upon internal funds for the investment needs. An overview of the financing pattern followed by the Indian corporate sector during the study period 1996-2010 is presented in Table 1.

Both internal and external funds appear to be crucial in funding long-term investment requirements of the firms. The relative importance of internal over external funds has varied considerably from one part of the period to another. Still, on average, the share of internal financing is more than that of external financing to the new financing over the period. The corporate investments in India are predominantly responsive

Table 1 Growth of Corporate Assets and Relative Importance of Internal and External Financing of Indian Profitable Firms, 1996-2010*

Year	Annual Growth Rate of Net Assets	Internal Financing to Net Assets	External Financing to Net Assets
1997	29.26	50.53	49.47
1998	25.13	31.87	68.13
1999	14.62	28.69	71.31
2000	5.69	35.46	64.54
2001	5.23	94.80	5.20
2002	4.81	29.24	70.76
2003	-4.31	27.82	72.18
2004	1.25	100.00	0.00
2005	5.56	100.00	0.00
2006	22.17	40.48	59.52
2007	22.97	65.23	34.77
2008	29.88	55.12	44.88
2009	25.32	54.92	45.08
2010	25.59	46.94	53.06
Average	**15.23**	**54.36**	**45.64**

* Since 1996 is the beginning year, growth rate for that year has not been computed
Source: Compiled for the sample firms from data sourced through PROWESS database of Centre for Monitoring Indian Economy (CMIE)

to internal funds than external funds, as has been found over the fifteen-year period that by nearly 54 per cent of the new investment, on average, is funded by internal savings while external funds contribute only 46 per cent. During the years where the firms were with growth rates more than the average, the retained earnings played a significant role in their financing pattern. Even in the periods where the net assets grew at rates lower than the average rate of 15.23 per cent, the firms have heavily employed internal financing. Thus, internally generated funds have contributed enormously to the financing and growth of corporations over a period of time. It becomes, therefore, imperative to examine if the internally raised funds are put to the best use by the Indian corporate sector.

6. METHODOLOGY

The research methodology adopted is explained in the following paragraphs.

i. Sample

The Official Directory of the Bombay Stock Exchange, Mumbai classifies the Indian industries into 23 major industries. From the official classification, seven major Indian industries are selected at random which form the sampling frame. One hundred and forty nine firms, which are on average the most profitable for a period of 15 years from 1996-2010, constitute the sample for the study.

ii. Variables used

The financial variables consisting of profitability, annual growth rate of net assets and annual growth rate of net assets as represented by the external finances are computed for the analysis. As a first step, annual growth rate has been computed for these variables. So, the period of analysis reduces to a 14-year period from 1997 to 2010. The period from 1997-2003 is considered as the past period. All the independent variables pertain to the past period. The period from 2004-2010 is regarded as the future period to which the dependent variable is related to. Detailed description of the variables and the process of their computation are as below:

A. Dependent Variable

Future Profitability (PT_t) is used as the dependent variable. The level of profitability pertaining to the seven year period from 2004 to 2010 is regarded as future profitability. Return on net assets is used to represent the profitability of the firms. It is computed by dividing earnings before interest and tax by net assets.

B. Independent Variables

Three independent variables are used. They are:

a. Past Profitability (PT_{t-1})

Profitability pertaining to the seven year period from 1997 to 2003 is regarded as past profitability.

b. Growth Rate (GR_{t-1})

The annual growth rate of net assets is designated as the

growth rate. It is calculated by dividing the increase or decrease of net assets during the current year over the last year by the sum of net assets in the last year.

c. External Growth Rate (EGR$_{t-1}$)
This rate indicates the annual growth rate of net assets as represented by the external finance. It is calculated by multiplying the annual growth rate by the extent of external capital raised in the past period. The effect of the extent of external finance raised in the past period on future profitability is examined through this measure.

d. Dummy Variable (D$_{t-1}$)
The stock market discipline is tested from another angle with the help of the dummy variable, D$_{t-1}$. This variable intends to test the effect of the actual event of going to the stock market in the past period on future profitability. D$_{t-1}$ is equated to one when EGR$_{t-1}$ is greater than or equal to one per cent. The rationale behind the description of this variable is that the firms which raised substantial amount of external finance are the firms with EGR$_{t-1}$ greater than or equal to one per cent. When EGR$_{t-1}$ is lesser than one per cent, the firms are considered as internally financed since the external finance raised in this case is due to merger and acquisition and clearly this is not the case where the market discipline could have been exercised. So this variable, when used in the regression analysis, measures the effect of going to the stock market upon future profitability.

e. Dummy Variable (D'$_{t-1}$)
The firms with above-average past profitability could easily satisfy the market demands if they continue to be above-average profitable in the subsequent period. However, the externally financed firms with below-average past profitability, should attain above-average profitability or at least the average profitability in the subsequent period, if they are to satisfy the market requirements. Thus, to quantify the effect of external finance associated with past below-average profitability upon future profitability, a new dummy variable, D'$_{t-1}$ has been incorporated which is equated to one when the firms raised substantial amount of external finance in the past period.

iii. Scheme of Analysis
Profitability of retained earnings has been examined with the help of the analytical framework developed by Whittington (18). Nine equations are used to analyse the impact of stock market discipline on the use of externally raised funds and to examine the profitability of retained earnings. The first equation of the model explains the association between external finance as represented by EGR$_{t-1}$ and future profitability. The effect of the amount of external capital raised in the past period upon future period profitability is examined in the first model. The effect of actual event of going to the stock market for raising funds as represented by D$_{t-1}$ upon future period profitability is studied through the second equation. These two are the basic models constructed to explain the effect of external finance upon future profitability. Further refinement of the basic models is done by including past period profitability in the model. The third equation of the model intends to test the association between past period profitability and the future profitability. Past profitability is expected to have a positive impact on future profitability. Each of the basic measures representing the external finance is regressed in conjunction with past profitability in equation four and five.
Second phase of refinement of specification of the model is done by incorporating past period growth rate. According to

Whittington [18], the rationale for introducing past period growth as an explanatory variable is that growth itself is bad for profitability. External financing may tend to be associated with very high levels of growth and may therefore receive the blame for the effect of high growth in lowering the future rate of profit. Thus, past growth is added in the analysis to examine the independent effect of external financing on future profitability. Equations six and seven make an attempt to identify the effect of EGR$_{t-1}$ and D$_{t-1}$, the basic measures, on future profitability. The final improvement of the models is done by adding another dummy variable D'$_{t-1}$ which is equal to one when the firms resorted to substantial external finance in the past period and had profitability below the average level in the same period. Models eight and nine identify the effect of external financing on future profitability of those firms which had below-average profitability in the past period.

The description of the equations is as follows:

Equation I
$$P_t = a + b_1 \, EGR_{t-1} + e$$

Equation II
$$P_t = a + b_1 \, D_{t-1} + e$$
where,
P_t =   Future Profitability (i.e.) Profitability for the period 2004-2010
EGR$_{t-1}$ = External Growth Rate for the period 1997-2003
D$_{t-1}$ = External Growth Rate dummy for the period 1997-2003, which is equated to one when EGR$_{t-1}$ is greater than or equal to one.
'a' is a constant
't' refers to the period 2004-2010
't-1' refers to the period 1997-2003
The term 'e' is the random error which means that the profitability and growth are not sufficient by themselves to explain the variation in future profitability. So, it consolidates the effect of other variables not included in the study on future profitability.
The specification of the model is improved by adding the past profitability.
The effect of past profitability on future profitability is tested by making use of simple regression analysis. The model is as follows:

Equation III
$$P_t = a + b_1 \, PT_{t-1} + e$$
where, PT$_{t-1}$ = Past Profitability (i.e.) Profitability for the period 1997-2003
Each of the basic models is improved by adding past profitability. Multiple regression analysis has been used to examine the effect of external finance as represented by EGR$_{t-1}$ and D$_{t-1}$ used in conjunction with past profitability on future   profitability.
The models are explained as follows:

Equation IV
$$P_t = a + b_1 \, PT_{t-1} + b_2 EGR_{t-1} + e$$

Equation V
$$P_t = a + b_1 \, PT_{t-1} + b_2 \, D_{t-1} + e$$

Past period growth rate has been incorporated in each of the basic models for further improvement on the specification of the models. The effect of external capital as against internal capital used in conjunction with profitability and growth in the past period on future profitability is tested through the following equations:

Equation VI

$P_t = a + b_1 GR_{t-1} + b_2 PT_{t-1} + b_3 EGR_{t-1} + e$

where, GR_{t-1} = Growth Rate for the period 1997-2003

Equation VII

$P_t = a + b_1 GR_{t-1} + b_2 PT_{t-1} + b_3 D_{t-1} + e$

Final refinement of the models is that the dummy variable D'_{t-1}, which is to represent the effect of external finance on future profitability of the firms which have substantially raised external finance in the past period and had profitability below the average level in the same period, has been added in conjunction with past profitability, and past profitability and growth in the same period, respectively, in the following models:

Equation VIII

$P_t = a + b_1 PT_{t-1} + b_2 D'_{t-1} + e$

where,

D'_{t-1} = Dummy for External Growth Rate associated with below average profitability for the period 1997-2003

Equation IX

$P_t = a + b_1 GR_{t-1} + b_2 PT_{t-1} + b_3 D'_{t-1} + e$

The results of regression analysis explaining the association between external finance and future profitability are interpreted in the following section which presents the results for the entire sample firms.

7.   RESULTS AND DISCUSSION

Findings are discussed under two headings. The first pertains to the results of analysis carried out for all the sample firms while the second confines to findings related to firms classified into three groups based on growth rate.

7.1 All Firms

Table 2 consolidates the results of regression equations explaining the relative association between external financing as represented by EGR_{t-1} and D_{t-1} and D'_{t-1} over internal financing and the future profitability for all the firms considered in the study.

i. External Growth Rate (EGR_{t-1})

The equation one relates to the association between external capital as represented by EGR_{t-1} accounting for the extent of external capital raised in the past period and the future period profitability. The coefficient is highly insignificant indicating that the effect is very negligible. It is clear from the R^2 that the amount of external capital raised in the past period does not explain any amount of variation in the future profitability.

ii. Dummy Variable (D_{t-1})

The coefficient of D_{t-1}, listed in the second equation, implies that the firms, which raised external finance in the past period, irrespective of the amount, have profitability in the subsequent period which is on average 0.16 per cent higher than that of internally financed firms.

The coefficients of EGR_{t-1} and D_{t-1} are neither significant at one per cent level nor the magnitude of their impact is high. It can be concluded from the regression results of the basic two models, explaining the association between external capital and the future profitability, that the investment of external

Table 2 Relative Impact of External Financing over Internal Financing on Future Profitability

Equation	GR_{t-1}	PT_{t-1}	EGR_{t-1}	D_{t-1}	D'_{t-1}	R^2
1	-	-	0.0001 (0.0978)	-	-	0.0000
2	-	-	-	0.0016 (0.0988)	-	0.0001
3	-	0.1228** (2.9853)	-	-	-	0.0085
4	-	0.1228** (2.9827)	0.0001 (0.0488)	-	-	0.0085
5	-	0.1228** (2.9807)	-	0.0003 (0.0217)	-	0.0085
6	-0.0034 (-0.3708)	0.1233** (2.9932)	0.0001 (0.1221)	-	-	0.0086
7	-0.0033 (-0.3622)	0.1233** (2.9900)	-	0.0013 (0.0818)	-	0.0086
8	-	0.1221** (2.9630)	-	-	0.0059 (0.3896)	0.0086
9	-0.0038 (-0.4218)	0.1226** (2.9741)	-	-	0.0069 (0.4522)	0.0088

** Significant at one per cent level; Figures in parentheses represent t values

capital does not provide relatively better reward than that of internally generated funds. That is, the stock market does not exert any discipline over the investment of externally raised funds amongst 149 firms considered in the study.

iii. Past Profitability (P_{t-1})

The specification of the model is improved in the first phase by associating the past profitability to the dependent variable-future profitability. Past profitability is believed to have a direct impact on future profitability. Whittington (18) also proves that the past profitability is a strong determinant of future profitability. The value of the coefficient of past period profitability, which is significant at one per cent level as explained in equation three, is 0.1228. It suggests that on average, 12 per cent of past profitability continues to carry forward to the future period. Clearly, past profitability has a definite impact on future profitability though the magnitude of its impact is small. Irrespective of the fact whether or not the firms are externally financed, past profitability has an influence upon future profitability.

iv. Relative Impact of External Financing, when incorporated in conjunction with Past Profitability, on Future Profitability

The relative effect of external financing over internal financing in conjunction with past profitability upon future profitability is studied and the results are reported in equations four and five. The coefficients of both the variables are not promising which indicates that the effect of external financing either in the form of the extent of external finance raised, or in the form of the event of going to the stock market does not describe any variation in future profitability.

v. Relative Impact of External Financing, when incorporated in conjunction with Growth and

Profitability of the past period, on Future Profitability

The specification of the models is further improved by adding past period growth of net assets as an explanatory variable in each of the basic regression models. Rows six and seven consolidate the regression results explaining the association between external growth in conjunction with past profitability and growth rate and the future profitability. The justification for incorporating the past period growth rate of net assets is attributable to the assumption that the growth of the firms is negatively correlated to profitability. When external financing is associated with high level of growth of the firms, it would lower the profitability [18]. Equations six and seven summarize the results. The coefficient of external growth rate does not improve at all. The coefficient of 0.0001 implies that for every 100 per cent higher than the average external growth rate, there is an associated increase in future profitability by about 0.01 per cent which is highly insignificant.

In the case of the dummy variable D_{t-1} in equation seven, the value of the coefficient 0.0013 implies that on average, the firms which raised external finance in 1997-2003 have profitability in 2004-2010 which is 0.13 per cent higher than that of internally financed firms.

A comparison of the results of equation six and seven conveys that D_{t-1} is relatively a more accurate measure of predicting the stock market discipline, since the coefficient is slightly higher than that of EGR_{t-1}. The firms, which raised external finance in the past period, provide a slightly better explanation of its future period profitability than the extent of external finance raised. Thus, the discipline of stock market arises out of the actual event of going to the stock market rather than the extent of external capital raised. It can be concluded from the analysis of series of regression equations that the stock market discipline has helped the firms improve their overall profitability though not strongly, but the impact of the discipline is small though certain.

vi. Relative Impact of External Finance on Future Profitability of firms with below-average Past Profitability

Final refinement of the analysis is incorporated in equations eight and nine. The effect of external finance upon future profitability is studied dividing the firms into below-average profitable and above-average profitable firms. Since the impact of external finance on future profitability is expected to be effective with the firms with below-average past profitability as clearly specified in the theoretical discussion, only the firms with below-average past profitability are taken up for discussion.

In conjunction with growth rate of net assets and profitability of the past period, the effect of external finance is studied in equations eight and nine. The new dummy variable D'_{t-1}, representing the firms which raised substantial amount of external capital in the past period and had below-average profitability in the same period, studied in conjunction with past profitability, performs better than EGR_{t-1} and D_{t-1} in the preceding equations in terms of explaining variation in future profitability. The coefficient of 0.0059 indicates that externally financed firms with below-average past profitability have an average future profitability 0.59 per cent higher than that of internally financed firms. Thus, market discipline does appear to have an effect on future

profitability and the effect is relatively higher, though not significant, for the firms with below-average past profitability.

The results explained by equation nine is even a bit stronger when the external finance as represented by D'_{t-1} is studied in conjunction with profitability and growth in the past period. The average future profitability of externally financed firms with below-average past profitability is now 0.69 per cent higher than that of internally financed firms.

The R^2 value of the equation nine is better than that of any of the preceding eight equations suggesting that the external financing has been effectively invested in terms enhancing the overall profitability of the firms with below-average past profitability.

7.2 Firms Classified based on Growth Rate

The regression equations tested for the sample of 149 firms are again used to investigate if retained earnings are efficiently used across firms with different growth levels. The reason is that growth is certainly positively associated with the level and use of retained earnings - the prime source of fund for growth firms. It is expected that firms which have future growth prospects would use relatively more retained earnings, effectively. This is tested by classifying the firms into high, moderate and low-growth firms on the basis of simple average growth rate of sales over 15 years from 1996-2010.

7.2.1. High-Growth Firms

The results of regression equations explaining the association between past period external financing and future profitability for high-growth firms are reported in Table 3.

i. External Growth Rate (EGR $_{t-1}$)

The external growth rate which represents the extent by which the external capital was raised in the past period has been regressed with future profitability in the first equation. The value of the coefficient 0.0001 reveals that the association is highly insignificant and the magnitude of the impact is very small.

ii. Dummy Variable (D$_{t-1}$)

The coefficient of 0.0460 related to the dummy variable D_{t-1} representing the effect of the actual event of going to the stock market for raising funds has suggested the existence of its negligible impact on future profitability. The coefficient quantifies that the firms which raised external finance in the past period have profitability in the subsequent period only 4.6 per cent higher than that of internally financed firms.

The superficial conclusion that can be drawn from the analysis of the above basic regression equations is that the stock market exerts a negligible effect of discipline on the effective utilization of external capital as against internal financing.

iii. Past Profitability (PT $_{t-1}$)

By introducing past profitability, the specification of the model is improved. Past profitability is assumed to be positively associated with future profitability. Equation three explains the association existing between past profitability and the future profitability. The value of the coefficient 0.0089 suggests that on average 0.9 per cent of the past profitability continues to the subsequent period. It is clear that the past profitability does not explain any significant variation in future profitability which is contrary to what was established by Whittington [18].

Table 3 Relative Impact of External Financing over Internal Financing on Future Profitability - High-Growth Firms

Equation	GR $_{t-1}$	PT $_{t-1}$	EGR $_{t-1}$	D $_{t-1}$	D' $_{t-1}$	R^2
1	-	-	0.0001 (0.2950)	-	-	0.0005
2	-	-	-	0.0460 (1.0636)	-	0.0060
3	-	0.0089 (0.1515)	-	-	-	0.0001
4	-	0.0100 (0.1711)	0.0001 (0.3050)	-	-	0.0032
5	-	0.0207 (0.3484)	-	0.0487 (1.1065)	-	0.0067
6	-0.0010 (-0.0750)	0.0102 (0.1734)	0.0001 (0.2682)		-	0.0007
7	-0.0003 (-0.0211)	0.0207 (0.3468)	-	0.0489 (1.0917)	-	0.0067
8	-	0.0184 (0.2973)	-	-	0.0151 (0.4829)	0.0014
9	-0.0016 (-0.1215)	0.0186 (0.2996)	-	-	0.0167 (0.4995)	0.0072

Figures in parentheses represent t values

iv. Relative Impact of External Financing, when incorporated in conjunction with Past Profitability, on Future Profitability

Measures representing the external finance in conjunction with past profitability have been regressed with future profitability. The results are summarized in equations four and five. The regression coefficients of 0.0001 and 0.0487 related to EGR$_{t-1}$ and D$_{t-1}$ respectively which are not statistically significant suggest that the effect of past period external financing on future profitability is still negligible. At this stage of analysis, it has become clear that the effect of stock market discipline does not significantly contribute towards effective utilization of external financing than internal financing.

v. Relative Impact of External Financing, when incorporated in conjunction with Growth and Profitability of the past period, on Future Profitability

The second phase of refining the basic regression models incorporates past period growth rate of net assets. The results of regression equations regressing EGR$_{t-1}$ and D$_{t-1}$ in conjunction with past period profitability and growth with future profitability are explained in equations six and seven. The value of the coefficient of EGR$_{t-1}$ in equation six is 0.0001, which has not been improved, indicates that 10 per cent higher than the average external growth rate is associated with 0.001 per cent higher than the average future profitability.

In the case of dummy variable D$_{t-1}$ in equation seven, the value of the coefficient which is 0.0489 implies that on average the firms which raised external finance in the past period has profitability in the subsequent period which is 4.9 per cent higher than that of the firms which were internally financed during the past period. When the results obtained from equations six and seven are compared, D$_{t-1}$ explains relatively higher variation in future profitability than EGR$_{t-1}$. This specifies that the actual event of going to the stock market in the past period is more accurate than the extent of external finance raised in the same period in marginally influencing the firms to effectively utilize the external financing in comparison to the internal financing.

To summarize, the internal financing is found, to a smaller extent, less profitably invested than external financing due to the stock market discipline arising out of the event of going to the stock market in the past period, irrespective of the amount of finance raised.

vi. Relative Impact of External Finance on Future Profitability of the firms with below-average Past Profitability

To identify the effect of stock market discipline in effectively utilizing the external financing than internal financing amongst the firms with below-average past profitability, the specification of the model is improved by adding another new dummy variable D'$_{t-1}$ which is, in conjunction with past profitability and growth, regressed on future profitability. The results are summarized in equations eight and nine. The regression coefficient of 0.0151 related to D'$_{t-1}$ which is used in conjunction with past profitability suggests that externally financed firms with below-average past profitability has an average future profitability 1.51 per cent higher than the firms which are internally financed. The result is even stronger when past growth is incorporated in the analysis. The results of regressing D'$_{t-1}$ in association with past profitability and growth on future profitability is consolidated in equation nine. The externally financed firms with below average past profitability has future profitability 1.67 per cent higher than the internally financed firms in the past period. The new dummy variable D'$_{t-1}$ in both the equations performs better than EGR$_{t-1}$ and D$_{t-1}$ as revealed by equations four and five which suggests that the effect of stock market discipline which is found to a smaller extent across the firms constituting this sub-sample is comparatively stronger in the case of the firms with below-average past profitability.

The R^2 value of the equation nine is better than that of any of the preceding eight equations. Thus, the external financing in the past period is comparatively profitably invested in terms of enhancing the overall profitability of the firms with below-average past profitability than internal financing.

It has been seen that the external financing has its comparatively better impact on future profitability amongst the firms whose profitability in the past period was below the average level. Thus, stock market discipline is of the nature which significantly improves low profitability rather than increasing high profit higher.

7.2.2 Moderate-Growth Firms

Table 4 consolidates the results of regression equations explaining the association between past period external finance and the future profitability for moderate-growth

firms.

i. External Growth Rate (EGR$_{t-1}$)
The first row of the Table 4 exhibits the association between past period external growth and the future profitability. The coefficient value of 0.0001 does not signify a strong impact of EGR$_{t-1}$ on future profitability suggesting that the stock market discipline arising out of the extent of external finance raised does not work in effectively investing the external finance than internal finance.

ii. Dummy Variable (D$_{t-1}$)
The regression coefficient of 0.0212 related to the dummy variable D$_{t-1}$ describes that the firms which raised external finance in the past period have future profitability which is on average 2.12 per cent higher than that of internally financed firms in the past period. When the effects of EGR$_{t-1}$ and D$_{t-1}$ are compared, it can be seen that, though both the effects are insignificant, D$_{t-1}$ has better explanation on the future profitability. This suggests that the overall future profitability has marginally increased due to stock market discipline arising out of the event of raising external finance rather than the extent of external finance raised in the past period. Thus, internal financing is said to be less profitably used than external finance due to the lack of market discipline.

Table 4 Relative Impact of External Financing over Internal Financing on Future Profitability - Moderate-Growth Firms

Equation	GR$_{t-1}$	PT$_{t-1}$	EGR$_{t-1}$	D$_{t-1}$	D'$_{t-1}$	R^2
1	-	-	0.0001 (0.5308)	-	-	0.0005
2	-	-	-	0.0212 (1.0862)	-	0.0019
3	-	0.2987** (4.8204)	-	-	-	0.0361
4	-	0.2977** (4.7926)	0.0001 (0.2439)	-	-	0.0362
5	-	0.3175** (5.0705)	-	0.0368 (1.8983)	-	0.0416
6	-0.0070 (-0.5562)	0.3018** (4.8221)	0.0001 (0.3395)	-	-	0.0366
7	-0.0033 (-0.2627)	0.3193** (5.0661)	-	0.0362 (1.8472)	-	0.0417
8	-	0.3051** (4.6149)	-	-	0.0033 (0.2811)	0.0362
9	-0.0071 (-0.5632)	0.3120** (4.6378)	-	-	0.0045 (0.3777)	0.0367

**Significant at one per cent level; Figures in parentheses represent t values

iii. Past Profitability (PT$_{t-1}$)
The above conclusion is put to serious testing process by way of further refinement of the basic models. In the first phase of refinement, past profitability is added in the basic regression models on the assumption that past profitability has a significant impact on future profitability. The value of the coefficient of 0.2987 relating PT$_{t-1}$ to future profitability is statistically significant at one per cent level. It says that on average, 30 per cent of past profitability continues to be with future period. Thus, past profitability is a strong determinant of future profitability of the firms irrespective of whether or not they are externally financed.

iv. Relative Impact of External Financing, when incorporated in conjunction with Past Profitability, on Future Profitability
The effect of external finance on future profitability is studied in conjunction with past profitability in equation four and five. Equation four has the regression coefficient of 0.0001 related to EGR$_{t-1}$ which suggests that the effect of external growth is still negligible.

The coefficient of D$_{t-1}$ as represented by equation five which is 0.0368, though not significant, better explains variation in future profitability when compared to the effect of EGR$_{t-1}$. The R^2 value suggests that it is the event of going to the stock market rather than the extent of external capital raised in the past period which influences the future profitability.

v. The Relative Impact of External Financing, when incorporated in conjunction with Growth and Profitability of the past period, on future profitability
The effect of past period external finance examined in conjunction with past profitability and growth upon future profitability is recorded in equations six and seven. The coefficient of EGR$_{t-1}$ does not show any improvement which suggests that the stock market discipline does not arise out of the extent of external finance raised in the past period. The coefficient value of 0.0362 relating to D$_{t-1}$ implies that an average firm which raised external finance in 1997-2003 has profitability in 2004-2010 which is 3.62 per cent higher than that of internally financed firm in 1997-2003. D$_{t-1}$ has higher coefficient value when compared to the equations four and five. When the results are compared between equations six and seven, D$_{t-1}$ explains variation in future profitability better than EGR$_{t-1}$. The R^2 value as reported by equation seven is slightly higher than that of EGR$_{t-1}$ as expressed by equation six which reassures that the actual act of going to the stock market in the past period provides slightly better explanation of subsequent period profitability than the actual extent of external finance raised in the same period as represented by EGR$_{t-1}$.

vi. Relative Impact of External Finance on Future Profitability of firms with below-average Past Profitability
The final improvement of the analysis is done by incorporating the next dummy variable D'$_{t-1}$. The coefficient value expressed in equation eight suggests that the externally financed firms with below average past profitability has an average future profitability 0.33 per cent higher than the firms which were internally financed in the past period. The results, when past growth is added in the analysis, are reported in equation nine. The coefficient of 0.0045 suggests that the average future profitability of externally financed firms with below average past profitability is 0.45 per cent higher than that of firms which relied on internal finance in the past period.

From the analysis it can be concluded that the discipline of stock market has a small effect, which cannot be neglected, which leads to a comparatively effective utilization of externally raised funds especially among the firms with below-average past profitability. The discipline of the stock market works effectively in enhancing

the past period below-average profitability to average or above-average profitability in the subsequent period rather than enhancing the above-average past profitability to a higher level in the future period.

7.2.3 Low-Growth Firms

The association between external finance as against internal finance in the past period with future profitability is examined through a series of regression equations. The results are reported in Table 5.

i. External Growth Rate (EGR $_{t-1}$)

The first model of the regression analysis explains the association between external finance as represented by the extent of external finance raised in the past period and the future period overall profitability of the firms. The regression coefficient of 0.0004 relating to EGR$_{t-1}$ suggests that the effect is negligible.

ii. Dummy Variable (D$_{t-1}$)

In the second row of the Table 5, the effect of external finance in the form of the actual event of going to the capital market by the firms -represented as D $_{t-1}$ - on future profitability is examined. The effect is insignificant. The coefficient value indicates that the firms which raised external finance substantially in the past period, have future profitability three per cent more than that of internally financed firms in the past period.

The comparison of the regression coefficients of both the measures of external finance reveals that both the effects are insignificant. Nevertheless,   D$_{t-1}$ explains slightly higher variation in future profitability. The results confirm once again that the actual event of going to the capital market by the firms rather than the extent of raising external finance in the past period would affect the future profitability and accordingly the overall future profitability of externally financed firms is slightly higher than that of internally financed firms.

iii. Past Profitability (PT $_{t-1}$)

The association between past profitability and future profitability is explained in equation three. The regression coefficient of 0.3782 relating to past profitability suggests that a definite impact of past profitability is found on future profitability. On average 38 per cent of past profitability continues to be with the future period.

Table 5 Relative Impact of External Financing over Internal Financing on Future Profitability - Low-Growth Firms

Equation	GR $_{t-1}$	PT $_{t-1}$	EGR $_{t-1}$	D $_{t-1}$	D' $_{t-1}$	R^2
1	-	-	0.0004 (0.7553)	-	-	0.0025
2	-	-	-	0.0299 (0.8151)	-	0.0029
3	-	0.3782* (2.4706)	-	-	-	0.0260
4	-	0.3863* (2.5184)	0.0005 (0.9093)	-	-	0.0295
5	-0.0016 (-0.0419)	0.3760* (2.3242)	-	-	-	0.0260
6	-0.0292 (- 0.6981)	0.4043* (2.5964)	0.0004 (0.7034)	-	-	0.0316
7	-0.0398 (- 0.9471)	0.3896* (2.3980)	-	0.0114 (0.2875)	-	0.0298
8	-	0.3336* (2.1103)	-	-	0.0405 (1.1192)	0.0313
9	-0.0297 (- 0.7230)	0.3586* (2.2138	-	-	0.0359 (0.9765)	0.0335

* Significant at five per cent level; Figures in parentheses represent t values

iv. Relative Impact of External Financing, when incorporated in conjunction with Past Profitability in the analysis, on Future Profitability

Appropriate regression equations are framed to explain the association between the external finance used in conjunction with past profitability on future profitability. The results are presented in equations four and five. There is no improvement in both the effects of external finance on future profitability.

v. Relative Impact of External Financing, when incorporated in conjunction with Growth and Profitability of the past period, on Future Profitability

The effect of external finance used in conjunction with past profitability and growth of the firms on future profitability is presented in equations six and seven. There is no improvement found with the impact exhibited by EGR$_{t-1}$ on future profitability of the firms. In the case of dummy variable D$_{t-1}$ a marginal impact is noticed on future profitability. The firms which raised external finance in the past period has, on average, future profitability 1.14 per cent more than that of internally financed firms. Thus, the results indicate that the stock market discipline which works in the event of going to the stock market rather than the extent of external finance raised has resulted in effective investment of the external finance than internal finance. The impact is very less but definite.

vi. Relative Impact of External Finance on Future Profitability of firms with below-average Past Profitability

Appropriate regression models incorporating the second dummy variable D'$_{t-1}$ are fitted to identify the effect of external finance on future profitability in the case of the firms whose past profitability is below the average level. The results are reported in equations eight and nine. The coefficient of D'$_{t-1}$ which indicates the past period external finance associated with below-average profitability is 0.0405, which suggests that on average the event of going to the stock market in the past period has resulted in future profitability of the firms with below-average past profitability four per cent more than that of internally financed firms.

The association between the dummy variable D'$_{t-1}$ used in conjunction with profitability and growth of the firms in the past period and the future profitability are summarized in equation nine. The effect of external financing in the form of the event of going to the stock market on future profitability of those firms whose past profitability was below the average level is consistent at the same level.

The results once again confirm that the effect of stock market discipline is definite but small in terms of effective

investment of external finance as against internal finance especially among the firms with below-average past profitability. The stock market discipline effectively works in enhancing the past period below-average profitability to average or above-average profitability in the subsequent period rather than enhancing the high level of past profitability to a higher level in the future period.

8. CONCLUSION

So, it can be concluded that the discipline of stock market has a small but definite effect which leads to a comparatively effective utilization of externally raised funds especially among the firms with below-average past profitability. The discipline of the stock market works effectively in enhancing the past period below-average profitability to average or above-average profitability in the subsequent period rather than enhancing the above-average past profitability to a higher level in the future period. The results derived from the analysis reveal that the retained earnings are less profitably invested compared to the externally raised funds. The results of the analysis performed for Indian firms re-affirm what was found out by Whittington [18] and Baumol, Heim, Malkiel, and Quandt [19]. According to them, the rate of return on new equity capital is higher than that of debt and retained earnings. However, the results of the present study contradict with that of Brealey, Hodges and Capron [21] and McFetridge [22]. Brealey, Hodges and Capron [21] conclude that firms do not impose any serious process of investment of external capital so as to increase the return on new assets financed by external finance over that of internally generated funds. McFetridge [22], attempting to test the proposition made by BHMQ [19], has found that the new assets financed by retentions appear to be neither more nor less productive than those financed by the new equity issues.

The findings of the study imply that (i) the managers of corporate undertakings in India shall use the retained earnings for profitable investment proposals and (ii) they shall retain profits only when there are better opportunities to reinvest them, rather than retaining the earnings first, and then looking for their investment. In many of the firms considered in the study, the retained earnings are presumed to have been retained without any purpose in the hands of the managers, and then the amount is kept idle till the opportunities knock the door, or parked in some of the short-term investment proposals where the return would be less. Because of this, the retained earnings are blamed to have not contributed anything to the shareholders in the form of capital appreciation.

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