International Journal of Development and Sustainability
ISSN: 2168-8662 – www.isdsnet.com/ijds
Volume 3 Number 8 (2014): Pages 1658-1674
ISDS Article ID: IJDS14042501

Firm size and return on retention

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Abstract

The present study examines the effectiveness with which retained earnings are put to use by the Indian companies. Due to the fact that retained earnings are the cheapest sources of finance for long-term growth, firms tend to retain more when they have good future prospects. Firms should however distribute the earnings to shareholders when they do not find prosperous investment options where they can increase shareholders wealth. If retained earnings are invested in such projects where firms are not able to increase the market value of shares, retained earnings are said to be inefficiently invested. When firms issue shares of common stock or bonds for such new projects, these funds should be effectively used to generate a high return as the stock market discipline (Financial Discipline) forces firms to use such funds more profitably. Whereas such financial discipline is not in force for earnings retained. So, retention is a source of inefficiency, if not invested with due care. The study, on the basis of the analysis of 149 Indian companies during the period 1996-2010, reports that the Indian firms have not used their retained earnings which are free from the financial discipline as efficient as the external funds mobilized through the stock market.

Keywords: Retained Earnings; Financial Discipline; Agency problem; shareholder wealth

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Cite this article as: Thirumalaisamy, R. (2014), "Firm size and return on retention", *International Journal of Development and Sustainability*, Vol. 3 No. 8, pp 1658-1674.

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1. Introduction

One of the major challenges being faced by the companies is not only mobilizing funds for their future investments but also the efficient deployment of such funds to generate maximum return to shareholders. Most common sources of funds are equity and debt raised externally and retained earnings generated internally. When the sources of funds are similar; cost of such funds are indifferent across the companies; why are fund managers of some of the companies able to maximize return on shareholder investment, but others are not able to? There are empirical efforts which suggest that the internally generated funds are generally not put into the best use as compared to the external funds as the investment of external funds is subject to serious financial discipline exerted by the stock market. The stock market imposes conditions upon companies, when external funds are raised, which force them to efficiently invest such funds to generate a return greater than what investors would have earned on other investment choices. Thus, the opportunity cost of investing in shares is seriously taken into consideration while funds are put into use. Therefore, fund managers invest externally generated funds very cautiously to maximize the return on investment of such funds. But they do not attach such seriousness while handling the internal funds. There are also reasons to believe that finance managers do not risk themselves in initiating potentially high-return projects with retained earnings to protect their interest. Because they must invest external funds in such risky projects to maximize return on investment due to the stock market discipline. So they reserve the internal funds to invest in moderate-risk projects where the success rate is high in generating average return on investment. The return on such projects is for sure, though not as high as that of risky projects. Eventually the managers will be able to safeguard their interest of sustaining their employment. This agency problem arising due to the conflict of interest between managers and shareholders is expected to develop inefficiency in utilizing retained earnings in the long-run. When retained earnings are invested in such projects where the rate of return is lower than the cost of such funds, the stock market would penalize the shareholders in the form of capital losses (Little, 1962). Is there any difference between the average return on retained earnings and that of external funds in the long-run? Do the managers act in the best interest of the shareholders? If they are, then they should be able to produce return on retained earnings as close as that of external funds. The present study empirically examines the effectiveness on investment of retained earnings as compared to the external funds.

2. Review of literature

Empirical evidences in the past explaining the association between firm size and decision to retain are enumerated here. Firms follow a stable dividend pattern and it is influenced by both size and nature of a firm. Thus, decision to retain profits is generally secondary (Florence, 1959). However, internal finance has been the most important source of funds for the growth of small business enterprises. Growth is possible for small firms only if it could be financed largely from earnings retained in the business. Small firms tend to save more out of their income than do large companies. Bates and Henderson (1967) conclude that small firms rely more heavily than large firms on savings as a source of finance. Rao and Rao (1970) and Appavadhanulu

(1974) who tested the relation between corporate savings and size of the firm find that the savings propensity is higher for small firms than that of large firms.

Corporate retention ratio depends upon many factors like the type, size, and nature of business and the industry characteristics. Large companies have higher saving ratio than small companies. Bhole (1980) who studied the retention behavior of Indian companies concludes that the single and most important determinant of the saving ratio for medium and large public limited companies is the net profile after tax, while the variables which determine this ratio in the case of medium and large private limited companies are the cash flow, the availability and cost of external funds and price level.

The above studies exhibit that retained earnings are considered the most preferred source of finance for all firms irrespective of the size of firms. However, are the firms able to efficiently invest such funds to maximize shareholders return? This has to be explored reviewing the following empirical studies.

Rate of return on investment of retained earnings is lower than that of debt and equity. Retained earnings and future growth are weakly or not associated (Little, 1962; Jaaskelainen, 1967; Whittington, 1972; Grabowski and Muller, 1975). Retained earnings would significantly lead to future growth in firms which have high potentials for future profits (Buell, Beidleman and Moyer, 1981)

On the contrary, Friend and Husic (1974) evidence 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. Brealey, Hodges and Capron (1975) and McFetridge (1978) have also found that firms do not indulge in any serious exercise of investing external funds more effectively than internal funds. They are of the opinion that the firms are indifferent among internal and external funds while deploying for growth. According to them, managerial policy on earnings retention is not proved to be inefficient.

Results of these earlier research studies are not uniform in addressing the argument if the retained earnings are invested efficiently or not as compared to the external funds. Only a few studies have been conducted in this regard worldwide that too with diverse conclusions. Moreover, studies which address this issue are almost nil in India where corporations heavily depend on retained earnings for financing their growth prospects. So the present study has been taken up.

3. Methodology

The research methodology followed is explained in the following paragraphs.

3.1. Sample

One hundred and forty nine companies have been selected from across 23 major industries classified by the Official Directory of the Bombay Stock Exchange to constitute the sample under purposive sampling. The companies are all on average profitable during the study period of 15 years from 1996-2010. The sample companies are again classified into large, medium and small based on their average net worth during the period under study.

3.2. 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 follows.

3.2.1. 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.

3.2.2. Independent variables

Three independent variables are used. They are as below:

- Past Profitability (PT_{t-1})

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

- 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 current year over the last year by the sum of net assets in the last year.

- 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.

3.2.3. 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 more 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} more than or equal to one per cent. When EGR_{t-1} is less 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.

3.2.4. 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.

3.3. Scheme of analysis

Efficiency on retained earnings investment has been examined with the help of the analytical framework developed by Whittington (1972). Nine equations are used to analyse the existence of agency problem on retained earnings investment due to which retained earnings are expected to be invested less profitably than external funds. 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 (1972), 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 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 attempt to 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:

$$P_t = a + b_1 EGR_{t-1} + e \quad (1)$$

$$P_t = a + b_1 D_{t-1} + e \quad (2)$$

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 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:

$$P_t = a + b_1 PT_{t-1} + e \quad (3)$$

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:

$$P_t = a + b_1 PT_{t-1} + b_2.EGR_{t-1} + e \quad (4)$$

$$P_t = a + b_1 PT_{t-1} + b_2 D_{t-1} + e \quad (5)$$

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 in the following equations:

$$P_t = a + b_1 GR_{t-1} + b_2 PT_{t-1} + b_3 EGR_{t-1} + e \quad (6)$$

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

$$P_t = a + b_1 GR_{t-1} + b_2 PT_{t-1} + b_3 D_{t-1} + e \quad (7)$$

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:

$$P_t = a + b_1 PT_{t-1} + b_2 D'_{t-1} + e \quad (8)$$

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

$$P_t = a + b_1 GR_{t-1} + b_2 PT_{t-1} + b_3 D'_{t-1} + e \quad (9)$$

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.

4. Results and discussion

This section confines to findings related to firms classified into three groups based on size.

4.1. Relative Impact of External Financing over Internal Financing on Future Profitability Large Sized Companies

Results of regression models framed to explain the relative impact of external financing as represented by EGR_{t-1} and D_{t-1} and D'_{t-1} over internal financing on future profitability for large-sized companies are summarized in Table 1.

4.1.1. Past period external growth rate (EGR_{t-1})

Regression coefficient of 0.0001 exhibiting the impact of external growth rate in the past period upon future profitability is highly insignificant which suggests that the extent of amount of external finance raised in the past period has explained a very little amount of variation in future profitability.

4.1.2. Dummy variable (D_{t-1})

Second row of the table explains the association between future profitability and D_{t-1}. Regression coefficient of 0.1236 indicates that the companies which raised external finance, irrespective of the amount raised, in the past period have profitability in the future period 12 per cent higher than that of internally financed companies. Here, internally financed companies mean the companies whose external growth rate during the past period is less than one per cent. A close examination of external financing of the sample companies reveals that companies whose external growth rate is less than one per cent have issued capital due to merger and acquisition. So, this is clearly not the case where the stock market discipline could have affected the companies' investment pattern. Thus, in the process of quantifying the efficiency with which the external funds are employed as against the employment of retained earnings, companies whose external growth rate falls below 0.01 per cent are regarded as internally financed companies. Regression results of the basic two

equations explain that the act of going to the stock market rather than the extent of external finance raised would to some extent influence the effectiveness on use of external funds over internal funds. This is due to the exercise of stock market discipline which forces companies who raise funds through capital market to put such funds into effective utilization.

Table 1. Relative Impact of External Financing over Internal Financing on Future Profitability- Large-Sized Companies

Equation No	GR_{t-1}	PT_{t-1}	EGR_{t-1}	D_{t-1}	D'_{t-1}	R^2
1			0.0001 (0.6489)			0.0036
2				0.1236 (0.7020)		0.0042
3		0.0958 (0.4828)				0.0020
4		0.0833 (0.4163)	0.0001 (0.5997)			0.0051
5		0.0789 (0.3935)		0.1144 (0.6420)		0.0055
6	-0.0583 (1.0155)	0.1076 (0.5345)	0.0001 (0.9645)			0.0139
7	-0.0367 (6991)	0.0997 (0.4905)		0.1186 (0.6636)		0.0197
8		0.1991 (0.6826)			0.0243 (0.4845)	0.0040
9	-0.0350 (0.6656)	0.2161 (0.7364)			0.0265 (0.5077)	0.0078

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

*** Significant at one per cent level*

4.1.3. Past profitability (PT_{t-1})

Third row produces the regression results explaining the association between past profitability and future profitability. Regression coefficient of 0.0958 suggests that on average 10 per cent profitability in 1997-2003 continues to persist in 2004-2010. Past period profitability does explain some amount of variation, though not very strong, in future profitability, irrespective of the fact whether or not the companies are externally financed.

4.1.4. Relative impact of external financing, when incorporated in conjunction with past profitability in the analysis, on future profitability

To identify the independent effect of external financing on future profitability, association between past period external growth together with growth and profitability of the past period and the future profitability

is examined in equation six. Value of regression coefficient implies that the effect is as negligible as found in the previous models.

The coefficient of dummy variable D_{t-1} listed in equation seven explains that on average companies which raised external finance in the past period has earned future profitability 12 per cent higher than that of internally financed companies. When coefficients of determination are compared between equations six and seven, the effect of D_{t-1} on future profitability is found better. Thus, the companies which raised external finance in the past period, irrespective of the amount of external finance raised, provides a better explanation of the subsequent period profitability. The analysis confirms that the exercise of the stock market discipline, at least to some extent, persists upon the investment pattern of external finance because of the event of going to the stock market rather than the extent of external finance raised. Companies which raised external finance in the past period satisfy the market expectations by cautiously investing the funds in such projects that the overall profitability is maximized.

4.2. Relative impact of external finance on future profitability of the companies with below-average past profitability

The result is again scrutinized dividing the sample companies into below-average and above-average profitable companies. Companies with above-average past profitability could easily satisfy the market demands if they continue to be above-average profitable in the subsequent period. However, externally financed companies with below-average past profitability, should attain above-average profitability or at least the average profitability, if they are to satisfy the market requirements. Keeping this proposition, the model is again refined by incorporating a new dummy variable $D't_{-1}$ which is equated to one when the companies raised substantial amount of external finance in the past period i.e. D_{t-1} is equal to one and had below average profitability during the past period. Equation eight of the summary table 2 shows the regression coefficient of $D't_{-1}$ as 0.0243. When $D't_{-1}$ is tested in conjunction with past profitability as an explanatory variable in explaining the variation in future profitability, $D't_{-1}$ performs better than the basic variables $EGR\ t_{-1}$ and D_{t-1} tested earlier representing the external finance. The coefficient value suggests that externally financed companies with below-average past profitability has future profitability 2.43 per cent higher than internally financed companies.

Equation nine explains the independent impact of $D't_{-1}$ when it is regressed in conjunction with profitability and growth of the past period with future profitability. Coefficient value of 0.0265 suggests that the effect is found better than that of equation eight. Externally financed companies with below average profitability in the past period have been able to produce profits in the subsequent period which is 2.65 per cent higher than internally financed companies in the past period. The goodness of fit of the regression equation nine is higher than that of preceding eight equations which confirms that external financing are effectively invested for generating their overall future profitability by companies with below-average past profitability. The discipline of stock market works effectively in improving the below-average past profitability rather than making high profitability higher. The R^2 values of models are found low suggesting that the magnitude of variations explained by both the variables representing external finance in future profitability is small.

The above-concluded analysis confirms that the stock market discipline is found to have a smaller impact on future profitability, particularly amongst the companies whose profitability in the past period was below-average, but the impact is definite. Retained earnings are used less profitably than external financing due to the effect of stock market discipline which forces companies to effectively invest their external sources of funds, especially by the companies whose past profitability was below the average level.

The following section describes the results of analysis for medium-sized companies.

4.3. Relative impact of external financing over internal financing on future profitability of medium-sized companies

Table 2 exhibits the results of regression models intended for examining the efficiency with which external funds are invested as against internal funds among medium-sized companies selected for the study.

Table 2. Impact of External Financing over Internal Financing on Future Profitability – Medium - Sized Companies

Equation No	GR_{t-1}	PT_{t-1}	EGR_{t-1}	D_{t-1}	D'_{t-1}	R^2
1			0.0001 (0.3877)			0.0002
2				0.0147 (1.0729)		0.0016
3		0.0968 (2.5653)				0.0089
4		0.0926 (2.4703)	0.0001 (0.3279)			0.0085
5		0.0951 (2.5352)		0.0163 (1.1957)		0.0103
6	-0.0002 (-0.0220)	0.0966 (2.5542)	0.0001 (0.3094)			0.0090
7	-0.0004 (- 0.0373)	0.0988 (2.6139)		0.0163 (1.1839)		0.0108
8		0.0762 (1.8952)			0.0178 (1.4702)	0.0118
9	-0.0017 (-0.1726)	0.0760 (1.8869)			0.0179 (1.4740)	0.0119

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

** *Significant at one per cent level*

4.4. Past period external growth rate (EGR_{t-1})

Equation one describes the association between external growth rate of net assets in the past period and the future profitability. Regression coefficient of 0.0001 does not look promising which indicates that the extent of external finance raised does not significantly contribute to the variation in future profitability.

4.5. Dummy variable ($_{Dt-1}$)

Regression coefficient of 0.0147 relating to D_{t-1} incorporated as a dummy variable to examine the effect of the event of going to the stock market or debt market for raising finance upon future profitability listed in the second row signifies that companies which raised external finance in the past period have profitability in the future period 1.5 per cent higher than that of internally financed companies.

Both the independent variables representing the effect of external financing have regression coefficients which are not significant at one per cent level despite huge number of observations. Their impact is also very small. Therefore the effect of external financing on future profitability is negligible. The stock market does not exert any sort of discipline which would have otherwise resulted in efficient use of external finance than internal finance. By closely looking at the coefficients of both the explanatory variables, another conclusion can be worth-drawing. The variable D_{t-1} performs slightly better than EGR $_{t-1}$ showing that the event of going to the stock market rather than the extent of external capital raised has a notable effect on future profitability. Same result is derived when R^2 values are compared.

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

Association between past profitability and the future profitability is identified in equation three of the summary Table 3. The regression coefficient of 0.0968 which is significant at one per cent level, suggests that on average 9.7 per cent of the past profitability is carried to the future period. Though magnitude of the impact is small, it cannot be neglected. This supports the conclusion drawn by Whittington (1968) that the past period profitability of a firm has a direct impact on its future profitability.

4.7. Relative impact of external financing, when incorporated in conjunction with past profitability in the analysis, on future profitability

Effect of external financing, when it is used in association with past profitability, on future profitability is examined in equations four and five. Regression coefficient of past period external growth rate which is 0.0001 reported in equation four shows that the extent of external financing employed still appears to be having a negligible impact on future profitability.

The regression coefficient of D $_{t-1}$ tested in conjunction with past profitability in equation five is 0.0163. This implies that companies which raised external finance in the past period have profitability, on average, 1.63 per cent higher than that of internally financed companies. At this stage of analysis, it is the event of going to the stock market rather than the extent of external capital employed has shown some amount of variations in future profitability of the companies.

4.8. Relative impact of external financing, when incorporated in conjunction with growth and profitability of the past period, on future profitability

Further refinement of the model leads to the inclusion of past period growth and profitability in each of the above basic models. The regression coefficient of EGR_{t-1} which remains with no improvement explains insignificant variation in future profitability. The regression coefficient of 0.163 related to D_{t-1} also does not improve in its contributions to the variation in future profitability. However, when R^2 values are compared between equations six and seven, variation explained by D_{t-1} on future profitability sounds better. Regression equations framed so far confirm that the stock market discipline has paved way for improvement, to some extent, of overall profitability of the companies. Companies which raised external capital have selected such investment projects that would enhance the overall return on invested capital.

4.9. Relative impact of external finance on future profitability of the companies with below-average past profitability

The final improvement of the model attempts to find out the effect of external finance on future profitability of the companies with the below-average past profitability. For the analysis, another new dummy variable D'_{t-1} has been added in the regression analysis which is analyzed in conjunction with past profitability and past growth in the equations eight and nine respectively. The coefficient of 0.0178 pertaining to D'_{t-1} listed in the eight model suggests that the stock market discipline has forced the companies with below average past profitability to improve the future profitability by a smaller proportion. On average, future profitability of externally financed companies, whose past profitability was below-average level, has improved 1.78 per cent higher than that of internally financed companies. The regression coefficient of 0.0179 relating to D'_{t-1} in equation nine suggests that the externally financed companies with below average past profitability has on average future profitability 1.78 per cent higher than the companies which are internally financed. The value of coefficient is greater than that of mentioned in equation eight. The goodness of fit of the regression equation nine explains comparatively better variation in future profitability than that of equation eight.

Thus, it has been proved form the regression analysis performed for medium-sized companies that it is the event of going to the stock market rather than the extent of external finance raised, which influences the future profitability. Though the impact is not statistically significant, it is definite. The second result derived from the analysis is that the impact of stock market discipline resulting from the event of going to the stock market for raising funds is found, though not significant, among the companies whose past profitability was below-average level. The stock market expectations and the companies' desire to fulfill these expectations have paved way for improving below-average profitability to average or above average profitability level rather than improving high profit to higher ones.

The analysis for small-sized companies follows.

4.10. Relative impact of external financing over internal financing on future profitability- small-sized companies

The summary Table 3 records the results of regression models explaining the association between external capital raised and future profitability for small-sized companies in India.

4.10.1. Past period external growth rate (EGR_{t-1})

Association between past period external growth rate representing external finance in the form of actual amount raised, and future profitability is expressed in the first row of the Table 3. The coefficient of 0.0038 is highly insignificant suggesting that the actual amount of external capital raised does not explain any significant variation in future profitability.

Table 3. Impact of External Financing over Internal Financing on Future Profitability- Small-Sized Companies

Equation No	GR_{t-1}	PT_{t-1}	EGR_{t-1}	D_{t-1}	D'_{t-1}	R^2
1			0.0038 (1.0464)			0.0039
2				0.0570 (0.8602)		0.0058
3		0.3578** (1.9172)				0.0193
4		0.3632 (1.1040)	0.0040 (0.1355)			0.0257
5		0.4200 (2.1907)		0.0921 (1.3643)		0.0290
6	-0.0051 (- 0.2341)	0.3660 (1.9524)	0.0037 (0.9997)			0.0260
7	-0.0085 (- 0.4035)	0.4237 (2.2027)		0.0898 (1.3216)		0.0298
8		0.2848 (1.3852)			0.0367 (0.8512)	0.0231
9	-0.0097 (- 1.4191)	0.2937 (1.4191)			0.0353 (0.8143)	0.0242

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

** *Significant at one per cent level*

4.10.2. Dummy variable (D_{t-1})

Equation two shows the association between external finance in the form of actual event of going to the stock market and future profitability. Regression coefficient of 0.0570 implies that companies which raised substantial amount of external funds in the past period have profitability in the subsequent period which is on average 5.7 per cent higher than that of internally financed companies.

When R^2 values of both the equations are compared, D_{t-1} performs better than EDR_{t-1} in terms of explaining variation in future profitability. Thus, the stock market discipline has worked to a smaller extent in effectively utilizing the external capital as compared to the internal funds.

4.10.3. Past profitability (PT_{t-1})

Past profitability has been regressed on future profitability in the third row of the Table. The coefficient of 0.3578 which is statistically significant at one per cent level indicates that on average 35.78 per cent of above or below average profitability in 1997-2003 continues to persist in 2004-2010. Therefore, past profitability is definitely a determinant of future profitability irrespective of the fact whether companies are internally or externally financed.

4.10.4. Relative impact of external financing, when incorporated in conjunction with past profitability in the analysis, on future profitability

Effect of external financing in association with past profitability on future profitability is examined in equations four and five. The coefficient of EGR_{t-1} reported in equation four is 0.0040 which explains that external financing still appears to be less effective on future profitability. Equation five contains the coefficient value of 0.0921 which suggests that companies which were externally financed in the past period have future profitability 9.21 per cent higher than that of internally financed companies in the past period. Though both the measures of external financing do not account for any significant amount of variation in future profitability, the explanation of D_{t-1} is slightly better than that of EGR_{t-1}. The same results continue even at this stage that it is the event of going to the stock market rather than the amount of external finance raised which influences effective utilization of external finance over internal finance.

4.10.5. Relative impact of external financing, when incorporated in conjunction with growth and profitability of the past period, on future profitability

EGR_{t-1} and D_{t-1}, in conjunction with growth and profitability of the past period, have been regressed on future profitability and the results are summarized in equation six and seven. The coefficient is insignificant suggesting that the effect of EGR_{t-1} on future profitability is negligible. The coefficient of D_{t-1} which is 0.0898 implies that on average companies which raised external finance in the past period have profitability in the future period which is 9 per cent higher than that of companies which did raise substantial amount of external finance in the past period. The value of coefficient relating D_{t-1} to future profitability is higher than that of EGR_{t-1}. When results of equations six and seven are compared, D_{t-1} is proved to be an accurate measure of explaining the stock market discipline, since R2 value is slightly higher in this case. Thus, the discipline of stock market arises out of actual event of going to the stock market rather than the extent of external capital raised.

4.10.6. Relative impact of external finance on future profitability of the companies with below-average past profitability

Equation eight consolidates the results of regressing D'_{t-1} used in conjunction with past profitability with future profitability. D'_{t-1} is the new dummy variable added in the analysis to measure the effect of external finance on future profitability of companies with below-average past profitability. The coefficient indicates

that the externally financed companies with below average past profitability have an average future profitability 3.67 per cent higher than the companies which were internally financed in the past period. But the new variable does not perform better than EGR_{t-1} and D_{t-1} in equations four and five. It suggests that the stock market does not impose any sort of discipline which is relatively more effective on those companies which are externally financed in the past period and whose past profitability is below the average level. The association between D'_{t-1} representing the external finance used in conjunction with below-average past profitability and past period growth is explained in equation nine of the Table 3. The coefficient suggests that average future profitability of externally financed companies with below-average past profitability is 3.53 per cent higher than that of internally financed companies. For small-sized companies, it is the event of going to the stock market rather than the amount of external funds raised which influences future profitability. It confirms that stock market discipline works better when companies resort to raise external finance, whatever is the extent of capital raised. The effect of stock market discipline does not show any additional effect on companies with below-average past profitability in enhancing the future profitability.

5. Conclusion

The study concludes that the discipline of stock market has a small but definite effect which leads to a comparatively effective utilization of externally raised funds than internal savings especially among the firms with below-average past profitability. The results look similar invariably for all the companies irrespective of the size differential. The discipline of 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. Because of the existence of stock market discipline, external funds are forced to be invested wisely. At the same time, retained earnings are not put into effective utilization. This may be due to the fact that the investment of retained earnings is free from such a pressure like the discipline exerted by the stock market on investment of external funds. The results across all the companies classified based on their size re-affirm what was found out by Whittington (1972) and Baumol et al. (1970). According to them, the rate of return on new equity capital is higher than that of debt and retained earnings. However, results of the present study contradict with that of Brealey, Hodges and Capron (1975) and McFetridge (1978) who find 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. Donald G. McFetridge, attempting to test the proposition made by BHMQ, 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.

Firms must pay dividends when they do not find effective investment opportunities. This would benefit, though subject to double taxation, shareholders since they are able to invest the dividend amount at a better rate of return than what the firms are able to generate. It has been however observed that the Indian firms retain at a high rate even when they hardly find competent investment opportunities during the period of retention. They create reserves that can be used later when they'll find a better investment proposal. This

practice would keep the amount of earnings retained idle till the amount is put into the best use. In this case retention is a source of inefficiency.

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