Earnings Persistence and Business Strategies:
An Indian Analysis

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Abstract

Earnings of the firm are a vital tool for the evaluation of company's performance. Stakeholders as well as shareholders take decisions after analysing earnings and its growth prospects. This brings the concept of earnings persistence. If earnings are not steady, the returns of the firm in the future will decline and stakeholders as well as shareholders will lose out their money. This paper captures the earnings persistence of firms in India. This paper also captures the various business strategies adopted by firms to enhance their earnings. On the basis of various strategies, firms are classified into four groups. This paper has applied panel regression methodology.

Keywords: Earnings Persistence, Operating Earnings, Non-Operating Earnings, Panel Data

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1. Introduction

The returns on equity are either in the form of dividends or in the form of capital appreciation or both. Both depend primarily on the earnings of the firm. If earnings are not persistent then returns are likely to decline in the near future. As Penman and Zhang (2004) said, 'if earnings are of low quality then they are likely to decline in future, and therefore the returns will also decline'.

A firm can achieve higher competitive advantage and have better future prospects that have earnings persistence [Porter (1985)]. Ghosh, Gu & Jain (2005) captured this earnings persistence of firms and further divided these firms into various groups based on the business strategies adopted by them to enhance their earnings.

There are extraordinary items, transitory items and one-time items in financial statements, which bring noise in the persistence of earnings. The removal of these items is required to enhance the creditability of earnings. Such removals also help in improving the estimation of earnings persistence. The quality of earnings can also be poor due to reporting manipulations, accounting measurement problems and non-recurring items.

This study captures the persistence of earnings growth for Indian firms. This study also analyses the various business strategies adopted by firms to enhance their earnings. On the basis of a broad classification, there can be two strategies, first can be to enhance earnings growth through revenue labelled as a growth strategy and second can be to enhance earnings growth through cost-reduction strategy and further classifying each of these strategies into operating earnings growth and non-operating earnings growth. Further, this section discusses the literature review, significance, objectives and models for persistence of earnings growth. Section two discusses the research design of the study which consists of various hypothesis, sample, variables and statistical techniques adopted. In section three, analysis of results is done and lastly, in section four this study has been concluded.

1.1 Literature Review

A comprehensive literature review has been done. Various studies have identified different variables to capture earnings persistence like fundamental variables, accounting variables, accruals, and many others. Mostly studies pertain to United States markets. There are few ways to assess the earnings persistence like Kormendi and Lipe (1987) analysed the information contained in accounting earnings. They examined if the effect

of unexpected earnings on stock prices is positively correlated with the revision in expected future earnings present value or not. Ou and Penman (1989) captured the sustainability of earnings from reported earnings in financial statements after filtering out the transitory components of current earnings. Lev and Thiagrajan (1993) analysed twelve analyst's fundamental variables for securing valuation and tried to estimate the incremental value relevance of these variables over earnings. Dechow (1994) investigated the conditions under which accruals are anticipated to improve earnings ability to depict firm performance through stock returns. Feltham and Ohlson (1995) captured the relationship between accounting data of operating and financial activities and market value of a firm. They took variables like abnormal earnings persistence, growth and accounting conservatism. According to Molodovsky (1995), if future earnings are not predictable from current earnings, then changes in price-earnings ratios should compensate for these deviations. Fairfield, Sweeny and Yohn (1996) attempted to find out whether disaggregating net income into explicit components would help in evaluating the profitability of the firm or not. Sloan (1996) studied accrual accounting and cash flow accounting to ascertain quality of earnings. Abarbanell and Bushee (1997) investigated the financial statements of the companies to find out the fundamental signals and to check whether the signal about earnings, changes if there is a change in the current signal. They found that analysts' revision of forecasts failed to incorporate all the information of fundamental signals. Penman and Zhang (2004) studied financial statements to assess the quality of earnings. Ghosh, Gu and Jain (2005) linked the persistence of earnings to various business strategies adopted by firms. They captured the impact of each strategy on earnings persistence. Richardson et al. (2005) investigated the relation between accrual reliability and earnings persistence. Elliott (2006) analysed how two underlying characteristics of pro forma earnings (Non-GAAP earnings measures) announcements, which are pro forma emphasis and the presence of quantitative reconciliation, influence non-professional investors and analysts on pro forma disclosures. Dechow et al. (2010) found that earnings quality is not only dependent upon the firm's performance but also on how these have been measured.

1.2 Significance of the Study

The studies related to the persistence of earnings mostly belong to the United States market. The gap was found for Indian markets. This study will analyse the persistence of earnings growth for Indian Markets and will also analyse the various business strategies adopted by firm's earnings growth. This study also enhances the methodology in comparison to previous studies by applying panel regression.

1.3 Objectives of the Study

On the basis of above discussion, this study has two major objectives, which are as follows:

1. To capture earnings persistence in Indian context.

2. To examine the impact of various business strategies on persistence of earnings.

1.4 Model of the Study

As per Ghosh et al. (2005), the firm is having earnings persistence if earnings are increasing for five consecutive years. There are broadly two ways for earnings growth: first is revenue-growth strategy and second is non-revenue growth strategy known as cost-reduction strategy. As Ertimur, Livnat and Martikainen (2003) said, increase in earnings can also emerge through cost-reduction. An analysis is further extended for operating earnings. Groups based on strategies of firms were further divided into two sub-groups, one is having persistence of operating earnings but other is not having the same.

1.4.1 Grouping of Firms

The Ghosh et al. (2005) classified the firms on following basis (Figure: 1):
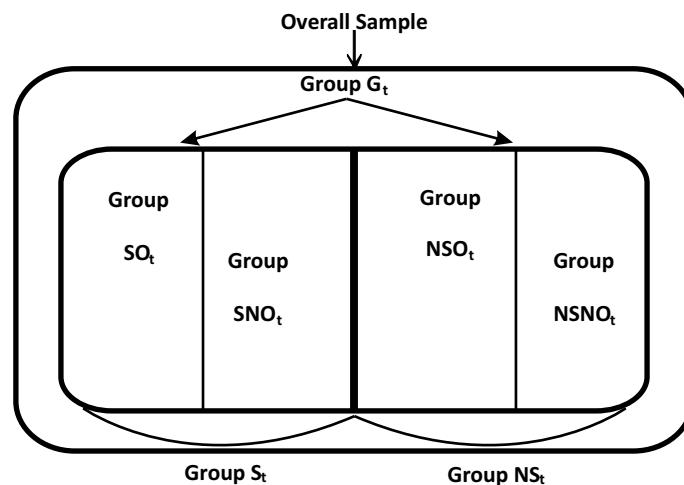
Group G_t: All firms which are having at least five years of consecutive increases in earnings per share up to year t.

Group S_t: Firms in Group G_t which are having at least five years of consecutive increases in revenue per share up to year t.

Group NS_t: Firms in Group G_t that do not belong to Group S_t.

Group SO_t: Firms in Group S_t which are having at least five years of consecutive increases in operating earnings per share up to year t.

Group SNO_t: Firms in Group S_t that do not belong to Group SO_t.

Group NSO_t: Firms in Group $N_s t$ which are having at least five years of consecutive increases in operating earnings per share up to year t.

Group $NSNO_t$: Firms in Group $N_s t$ that do not belong to Group NSO_t.

1.4.2 Sustainable Earnings

After classifying the firms into various groups, Ghosh et al. (2005), examined the persistence of earnings growth with the help of following model:

$$\frac{\Delta E_{t+1}}{P_t} = b_0 + b_1 \frac{\Delta E_t^-}{P_{t-1}} + b_2 \frac{\Delta E_t^+}{P_{t-1}} + b_{31} \frac{\Delta E_t}{P_{t-1}} * D_t^{SO} + b_{32} \frac{\Delta E_t}{P_{t-1}} * D_t^{SNO} + b_{41} \frac{\Delta E_t}{P_{t-1}} * D_t^{NSO}$$

$$+ b_{42} \frac{\Delta E_t}{P_{t-1}} * D_t^{NSNO} + \varepsilon_t \qquad (1)$$

In above equations (1), Δ is the first-difference operator. Positive and negative earnings changes are denoted as ΔE^- and ΔE^+. Here, earnings growth is defined as a positive change. Therefore various sub-groups are subsets of firms with ΔE_t^+. P is the stock price at the end of the third month after the fiscal year end; Ds are dummy variables denoting groups SO_t, SNO_t, NSO_t, $NSNO_t$ in equation (1). In the above models, b_1 and b_2 encapsulate the earnings persistence of negative and positive earnings changes for firms without sustained earnings growth and coefficients b_{31}, b_{32}, b_{41}, and b_{42} captures the operating earnings and non-operating earnings growth.

2. Research Design

The elaborate research design consists of following hypothesis, data, variables, methods. The detailed description is as follows:

2.1 Hypotheses

The null hypotheses for various objectives are as follows:

Objective 2: To examine the various elements of sustainable earnings in India.

H_1: There is no significant difference between persistence of earnings growth of Group SO_t and Group NSO_t firms.

H$_2$: There is no significant difference between persistence of earnings gr$_o$wth of Group SNO$_t$ and Group NSNO$_t$ firms.

H$_3$: There is no significant difference between persistence of earnings gr$_o$wth of Group SO$_t$ and Group SNO$_t$ firms.

H$_4$: There is no significant difference between persistence of earnings growth of Group NSO$_t$ and Group NSNO$_t$ firms.

2.2 Sample

The NSE NIFTY 500 index was selected to analyse this study objectives. The annual data was collected from the financial statements available at ACE EQUITY database maintained by Accord Fintech Pvt. Ltd. The structure of data was balanced and micro panel. First of all, financial and banking firms were removed and then firms having less than fifteen years data or missing data were removed. At Last, 189 firms were left for analysis. The period of study is ten years ranging from January 2006 to December 2015.

2.3 Variables

Sustained increases are defined as increases for five consecutive years. Group G$_t$ is formed which is composed of firms with five consecutive years of earnings per share increases up to year t.

Various variables for fiscal year t are measured as follows:

• Et : Earnings per share

First of all, earnings are calculated as follows:

Earnings = Profit after tax - Exceptional income - Preference dividend.

Secondly, data on outstanding shares was collected. Paid up outstanding shares are considered.

Lastly, E$_t$ is calculated as Earnings divided by outstanding shares.

$$E_t \quad = \quad \frac{\text{Earnings available for shareholders}}{\text{Outstanding shares}}$$

• Revenue per share

It is calculated as net sales of the firm divided by outstanding shares.

$$\text{Revenue Per Share} \quad = \quad \frac{\text{Net Sales}}{\text{Outstanding shares}}$$

• Operating Earnings per share

It is calculated as operating earnings before depreciation divided by outstanding shares.

$$\text{Operating Earnings Per Share} = \frac{\text{Operating Profit before depreciation}}{\text{Outstanding shares}}$$

• D^{SO} is a dummy variable which denotes firms having consecutive five years of earnings per share increases and consecutive five years of revenue per share increases along with five consecutive years of operating earnings per share increases upto year t.

• D^{SNO} is a dummy variable which denotes firms having consecutive five prior years of earnings per share increases and consecutive five years of revenue per share increases but do not have five consecutive years of operating earnings per share increases upto year t, their operating profits decreases in one or more years and firms has to resort to non-operating measures to support earnings growth.

• D^{NSO} is a dummy variable which denotes firms having consecutive five years of earnings per share increases and also have consecutive five years of operating earnings per share increases but do not have five consecutive years of revenue per share increases upto year t.

• D^{NSNO} is a dummy variable which denotes firms having consecutive five years of earnings per share increases but neither have consecutive five years of revenue per share increases nor consecutive five years of operating earnings per share increases upto year t, these firms have adopted cost reduction strategy as well as non-operating earnings measures to maintain the level of earnings growth.

2.4 Statistical Techniques

To analyse the regression equation, first of all, Pooled Regression is run ignoring the time effect and entity-effect. After this, Hausman test is applied to check whether random effects panel model is applicable or not. On the basis of Hausman tests result, fixed-effects panel regression is run. After regression analysis, four assumptions are checked. First one is normality, which is checked through Jarque-Bera test. Secondly, mean value of error terms is analysed through t-statistics. Thirdly, homoscedasticity is checked through likelihood ratio, and lastly the assumption of autocorrelation is checked through Wooldridge test. After analysing all assumptions, the problem of heteroscedasticity and autocorrelation, if found, which is then removed through robust regression analysis. Wald test is also applied to check the significance of difference between different coefficients.

3. Analysis of Results

3.1 Objective 1: Defining Sustainable Earnings

To define sustainable earnings in India, Ghosh et al. (2005) definition has been adopted. Earnings are sustainable if earnings per share is increasing consecutively for five years. The Group Gt in figure (1) denotes the firms having sustainable earnings.

3.2 Objective 2: Determinants of Sustainable Earnings

To find out the various determinants of sustainable earnings, equation (1) has been analysed with the help of Panel Data Regression.

Analysis of Equation (1)

Table 1: Results of Equation (1)

Variable	Pooled	Fixed-Effects	Robust
b_0	0.00113 (0.865)	0.00310 (0.6545)	0.00310 (0.769)
$\dfrac{E_t^-}{P_{t-1}}$	-0.15771*** (0.000)	-0.14981*** (0.000)	-0.14981** (0.035)
$\dfrac{E_t^+}{P_{t-1}}$	-0.08556*** (0.000)	-0.10565*** (0.000)	-0.10565*** (0.009)
$\dfrac{E_t}{P_{t-1}} * D_t^{SO}$	0.58613*** (0.000)	0.60445*** (0.000)	0.60445*** (0.000)
$\dfrac{E_t}{P_{t-1}} * D_t^{SNO}$	0.82979*** (0.000)	0.86504*** (0.000)	0.86504*** (0.001)
$\dfrac{E_t}{P_{t-1}} * D_t^{NSO}$	0.681123 (0.117)	0.76156 (0.111)	0.76156*** (0.001)
$\dfrac{E_t}{P_{t-1}} * D_t^{NSNO}$	1.17641*** (0.004)	1.14656** (0.011)	1.14656*** (0.004)
Wald Test for b_{31} and b_{41} coefficients	-0.21886 (0.827)	0.1079 (0.743)	0.43344 (0.510)

Wald Test for b$_{32}$ and b$_{42}$ coefficients	-0.79772 (0.425)	0.36082 (0.548)	0.6136 (0.433)
Wald Test for b$_{31}$ and b$_{32}$ coefficients	-1.71935* (0.086)	2.82983* (0.093)	1.9373 (0.164)
Wald Test for b$_{41}$ and b$_{42}$ coefficients	-0.79772 (0.406)	0.34593 (0.556)	0.10337 (0.748)
Adjusted R-Squared	0.337	0.298	0.298
Hausman Test Result	19.946*** (0.003)		

Note: Value in parentheses denotes p-values.
* denotes significant at 10%.
** denotes significant at 5%.
*** denotes significant at 1%.

As per pooled regression results obtained in Table 1, all the persistence parameters are positive and significant (except for group NSO$_t$). On the basis of Hausman-Test result, the random effects panel model is not applicable. Hence, fixed effects panel model is applied. On testing the post-estimation assumptions presented in Table 2, the problem of autocorrelation and heteroscedasticity is found and is removed through robust regression analysis. As per robust regression analysis, all incremental persistence parameters are significant. All incremental persistence parameters are highly significant. The persistence parameter is negative and significant for negative earnings changes, which is in line with Ghosh et al. (2005). The persistence parameter is negative and highly significant for positive earnings changes. The incremental persistence parameter is positive and highly significant for all groups, Ghosh et al. (2005) results were significant only for group SO$_t$, SNO$_t$.

The revenue growth sub-groups SO$_t$ and SNO$_t$ have lower incremental persistence parameter than their cost reduction sub groups NSO$_t$ and NSNO$_t$, that is, b$_{31}$ = 0.604 < b$_{41}$ =0.762 and b$_{32}$ = 0.865 < b$_{42}$ =1.147. Even Operating sub-groups incremental persistence parameters are lower than their non-operating sub-groups in both revenue group and cost-reduction group, that is, b$_{31}$ = 0.604 < b$_{32}$ =0.865 and b$_{41}$ =0.762 < b$_{42}$ =1.147. This

shows that in India, firms focus more on cost reduction strategies than revenue boosting strategies to increase their level of earnings. The testing of difference among coefficients is done through Wald Methodology. None of the four paired differences are significantly different as checked through Wald Methodology.

Table 2: Assumptions testing of Equation (1)

Test	Null Hypothesis	Statistic
Jarque-Bera Test	Residuals are normally distributed	556193.5*** (0.000)
t-statistics	Mean value of Error term is zero	0.0000 (1.000)
Likelihood ratio test	Homoscedasticity of residuals	4654.87*** (0.000)
Wooldridge Test	No serial autocorrelation	12.228*** (0.001)

Note: Value in parentheses denotes p-values.

* denotes significant at 10%.

** denotes significant at 5%.

*** denotes significant at 1%.

3.3 Results of Hypotheses

The results of hypotheses are presented in table 3.

Table 3: Results of Hypotheses

S.No.	Name	Null Hypotheses	Decision
1.	H_1	There is no significant difference between persistence of earnings growth of Group SO_t and Group NSO_t firms.	Not Rejected
2.	H_2	There is no significant difference between persistence of earnings growth of Group SNO_t and Group $NSNO_t$ firms.	Not Rejected

S.No.	Name	Null Hypotheses	Decision
3.	H_3	There is no significant difference between persistence of earnings growth of Group SO_t and Group SNO_t firms.	Not Rejected
4.	H_4	There is no significant difference between persistence of earnings growth of Group NSO_t and Group $NSNO_t$ firms.	Not Rejected

H_1: There is no significant difference between persistence of earnings growth of Group SOt and Group NSOt firms.

This hypothesis analyses if the incremental persistence of earnings growth of Group SO_t firms is different from Group NSO_t firms. The null hypothesis was not rejected, which was in contrast to Ghosh et al. (2005) study. These shows in India, operating earnings are not considered while evaluating persistence of earnings growth.

H_2: There is no significant difference between persistence of earnings growth of Group SNOt and Group NSNOt firms.

This hypothesis analyses if the incremental persistence of earnings growth of Group SNO_t firms is different from Group $NSNO_t$ firms. The null hypothesis was not rejected, which was in contrast to Ghosh et al. (2005) study. This shows that in India, non-operating earnings are not considered while evaluating persistence of earnings growth.

H_3: There is no significant difference between persistence of earnings growth of Group SOt and Group SNOt firms.

This hypothesis analyses if the incremental persistence of earnings growth of Group SO_t firms is different from Group SNO_t firms. The null hypothesis was not rejected, which was in line with Ghosh et al. (2005) study. This shows that in India, operating and non-operating earnings are not considered while evaluating persistence of earnings growth of Group S_t firms.

H_4: There is no significant difference between persistence of earnings growth of Group NSO_t and Group $NSNO_t$ firms.

This hypothesis analyses if the incremental persistence of earnings growth of Group NSO_t firms is different from Group $NSNO_t$ firms. The null hypothesis was not rejected, which was in line with Ghosh et al. (2005) study. This shows that in India, while evaluating persistence of earnings

growth of Group NS_t, no distinction is made between operating and non-operating earnings.

Overall results suggest that, in context of India, cost-reduction strategies as well as non-operating earnings play a major role in deciding the persistence of earnings and growth of earnings.

4. Conclusion

In this study an attempt is made to analyse the persistence of earnings growth of Indian firms. The earnings persistence was measured as a consecutive increase in earnings per share for at least five years. The various business strategies followed by firms to enhance their earnings were also analysed. Broadly there were two strategies; first one captures the earnings growth through revenue-growth strategy and second one captures the earnings growth through cost reduction measures. Further these strategies were classified into operating earnings growth and non-operating earnings growth. The results depict a higher concentration of firms adopting cost-reduction measures for earnings growth as compared to firms adopting revenue-growth measures. It is also observed that growth of non-operating earnings in India have more weightage.

This study could be used by investors, analysts and assets management companies in choosing various firms the portfolio. This study could also be of use to managers in planning various strategies for firm's future.

4.1 Limitations and Scope for further Study

This study analysed only the NSE NIFTY 500 index. This study can be extended to other indices as well. Further, since this study excluded all banking and financial firms, another study can be conducted for banking and financial sector.

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