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Research

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# SUSTAINABLE GROWTH OF NONFINANCIAL FIRMS: MICROECONOMETRIC EVIDENCE FROM PAKISTAN

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## Abstract

*This research has investigated the sustainability of growth of non-financial firms in case of Pakistan. For this purpose, explanatory variable of earnings per share and total assets turnover were used as controlling factors and liquidity, size and cash flows were used as independent variables. Balanced panel of 27 firms with 24 annual time dimensions has been used from 1988 to 2011. Model specification criteria were in favour of pooled least squares but due to heterogeneity of firms, fixed effect model was opted for. The results of research were robust against internal growth but not robust to sustainable growth indicating that, in case of Pakistan, the leverage impact, which is the key difference between internal growth and sustainable growth might be playing some unexplained role for the growth of nonfinancial firms. For steady, regular and internal growth, liquidity and cash generation ability are playing a significant role but fail to support growth in the long run and in a sustainable way.*

**Keywords:** Sustainable Growth, Internal Growth, Fixed Effect Model, Balanced Panel, nonfinancial firms

**JEL Classification:** E 000

*\*Any opinions expressed here are those of the author (s) and not those of their affiliated institutes*

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### **Introduction**

Financial planning frames the way whereby financial goals of firms are achieved (Ross et al, 2008). So a financial plan is a policy of what is to be prepared in the future. Most choices have long lead times, which mean they take quite a while to execute and bear fruit. In an uncertain world, this means that choices must be made far ahead of the time of their usage.

The existing academic literature has established a direct link between companies' growth and financial planning (Faboozi, F.J. and Peterson, P.P., 2003). Numerous managers have a tendency to feel that a higher growth rate will be better. However higher growth rate could be disastrous for business if it results in financial distress to firms in the form of financial losses, high costs, debt burden and also results in decrease of share prices in the market (Fonseka, M.M. et al, 2012). So growth is gainful up to a certain level and after that level it will not be beneficial to the business (Higgins, 1977). Sustainable growth could be distinguished as the capability to encourage balance and economic expansion and it helps in survival as well as keeps firms competitive inside the industry. Each organization normally builds objectives for its growth and achievement of these objectives can either increase the financial distress of a firm or enhances the financial outlook of a firm. Thus, the dilemma of improving the financial outlook of firms requires changes in some operating, investing and financing policies. So balance is required in the attainment of optimum level of all the relevant policies to improve the financial outlook.

The administration of a firm realizes that rapid sales growth requires extra resources in the form of assets which need cash for support of excess growth. They also realize the fact that if sufficient funds when required are not available, it will not quicken the company's growth. The sustainable growth model exhibits the situation expressly. The SGR is a convenient tool for an investor to figure out the financial soundness of a firm and there is some modern programming software that accommodates the feature for this reason. The comparison of sustainable growth rate with other relevant proxies of growth such as sales growth, man power growth, assets growth, internal growth will clarify the areas which are consistent with specific types of financial

indicators. This will further point out the pattern of different financial indicators which are associated with the growth of any firm. Further, it also helps an investor to comprehend why a firm may be in need of cash or loan and to what extent the requirement will proceed. This model also helps the financiers to highlight the financially weak areas of the debt seeker firms. That's the reason it is important to have a proper balance among the different determinants of growth (Higgins, 2007).

The concept of SGR has been applied by many researchers in different dimensions which add to its acceptance for use in assessing potential growth of firms. Jarvis, Mayo and Lane (1992) made macro marketing choice using sustainable growth model. Geiger and Reyes (1997) utilize sustainable growth rate model for small firms to find out which growth rate is better considering the interest and debt used. Maksimovica and Demirguc-Kunt (1998) also investigate dissimilarities of financial legal systems by using external finance impact on funds growth. SGR model was also applied in the banking industry to check the applicability to growth (Vasiliou and Karkazis, 2002). Cao (2005) evaluates whether sustainable growth is a reliable measure or not. The correlation between the disclosure quality and the accessibility of external finance was obtained by Hyytine and Pajarinen (2005). Escalante et al (2009) used sustainable growth approach to check farm growth for grain and poultry the farm businesses. Jin and Wu (2008) demonstrate SGR application to see the correlation of intellectual capital with growth ability of firms. Pickett (2008) identifies the indirect correlation of operations and marketing proficiencies. The relevance value of financial information for predicting share return was checked using SGR by Martani, Mulyono and Khairurizka (2009). Dhannapal and Ganesan (2010) use the same model to dig out answers concerning profitability and optimum leverage in the Textile sector of India. The above researches show the importance and general acceptability of SGR for different research purposes.

Firer (1995) inspected twenty six modern strategic finance course books and established the fact that three-fourths of the reading material have concept of sustainable growth rate models. Ashta (2008) finds that two-fifths of finance-based books incorporate and talk about

the sustainable growth rate and he expressed that its usage is convenient.

#### *Distinguishing between the two concepts of Sustainable Growth*

In macroeconomic environment, Sustainable Growth means a growth in real GDP which can be sustained over a relatively longer period and thus the boom period can be extended as long as possible. In Finance Literature, there is also a concept of Sustainable Growth, which talks about how much growth in sales a firm can achieve without changing its assets structure, capital structure and retention policy. (Higgins, 1977)

#### *Research Problem*

This research will investigate which factor of sustainable growth as well as internal growth is more powerful/influential among the factors of profit margin, total assets turnover, equity multiplier and retention rate (in case of sustainable growth) and among profit margin, total assets turnover and retention rate (in case of internal growth) through their equality from Nonfinancial companies, industry wise. Moreover, this research will also investigate the effect of other possible factors which are contributing towards growth, i.e. Size of the Firm, Liquidity and Cash Flows from Operation. This research will point out some key indicators for investors to identify the growth firms for their portfolios.

#### *Research Questions*

The above Research Problem is investigated by the following Research Questions:

- Which factor, among Liquidity, Cash flows generation ability and Size, is/are contributing towards growth of nonfinancial companies?
- Is consistency of prominent factor equal in all nonfinancial companies or it varies from industry to industry?
- Is there any industry-wise difference of growth among factors of profit margin, total assets turnover, equity multiplier and retention rate?

*Objectives of the Study*

- To determine prominent determinants of Internal Growth as well as Sustainable Growth not only in overall perspective but industry wise perspective as well.
- To identify any potential factor which may contribute towards the growth in overall perspective as well as industry wise perspective?

*Limitations and Delimitations*

This study will not focus on the 3<sup>rd</sup> stage origin of the DuPont model for growth analysis where tax ratio and financial cost ratio have also been discussed due to non-availability of detailed data.

Secondly, for econometric analysis it is good to have a high frequency data but due to availability of annual reports only annual frequencies for sample companies are used.

This study includes only nonfinancial firms rather than financial firms as they may have different determinants of capital structure. Moreover, legislative requirement of financial firms is completely different from nonfinancial firms as shutdown of nonfinancial firm affects some limited stakeholders whereas shutdown of financial firm affects a large number of stakeholders in comparison.

*Scope*

This study will take into account all the companies of the Six Industries of KSE 100 Index which are Fuel and Energy Sector, Cement Sector, Chemical Sector, Engineering Sector, Transport and Communication Sector and Textile Sector and the recommendations and conclusions will be beneficial to the Strategic Managers of the Relevant Industries.

The research will take into account the companies' perspective as to how they carry out financial planning in their weak area of profitability and growth and also the investor's perspective regarding growth pattern in nonfinancial firms of Pakistan.

### Literature Review

Many different models were utilized by various researchers. They identified that these models are normally adapted without considering any financial structure or firm specific context. Whereas other researchers discussed explicit circumstances when to use which model. Platte et al. (1995) have adapted SGR for debt burden; Martani D. et al (2009) utilized it for cash flows identification; Escalante, Barry and Turvey (2009) applied that model to the agriculture sector. Most of these specific models are direct or indirect extensions of Higgins (1977) general SGR model. Thus, general sustainable growth rate model for academia and research is used widely. However, there still exist prominent differences in the usage of commonly used benchmarks.

Arlowa and Ulrich (1980) exhibits sustainable growth rate with assumption of maximum capacity of assets utilization and they related revenues with changes in firms' assets. They also disjointed equity balance at the start of the period from additional equity and debt burden then they calculated sustainable growth rate from the beginning balance of equity. Platt et al (1995) practice various growth rates but did not highlight the reason for getting the similar results. Ashta (2008) adapted a technique in which he relatively compared two growth models which were deviation of Higgins (1977; 1981) SGR model and determined consistency in both models but used imaginary and hypothetical figures for his conclusion. Moreover, in the same study its limitation was pointed out that practitioners, academics and financial analysts were unable to suggest any justified reasoning for adapting any growth rate.

#### *Historical Development of Sustainable Growth Rate of Higgins Model*

Even if a firm is highly profitable there is still a chance that it may go bankrupt. The reason may be that it may have grown excessively. Another possibility is that another firm may take it over if it does not use its idle cash. That's the idea presented by Robert C. Higgins in 1977 with the name of sustainable growth. He presented his research paper titled "How much growth a firm can afford?" (Higgins, 1977) which is a commonly used approach for classroom and research discussion regarding sustainable growth. Higgins initial model of 1977 for sustainable growth was flawlessly valid for discrete time periods which later on in 1981 were revised for continuous time

periods (Higgins, 1981) without many differences in results. Arlow and Ulrich (1980) obtained the same results for sustainable growth rate but the issue of beginning and ending balances of assets and equity were not considered. Arlow and Ulrich (1980) showed that maximum capacity of assets turnover is linked with sales directly and to debt to equity ratio indirectly. Clark, et al (1985) contradicts Ulrich and Arlow (1980) by using only the ending figures of balance sheet. Platt, et al (1995) modeled sustainable growth rate with opening equity but did not justify non-inclusion of opening debt in the study, however, their results were in consistency with Higgins (1977).

Higgins (2001, 2007) in his textbook modified the sustainable growth rate model with fixed capital structure concept which was criticized by Ashta (2008) claiming that constant leverage ratio will match two financial figures of different dates as if we assume constant leverage ratio then assets of the opening balance of one period will be divided by the equity of the ending balance of another period (Olson and Pagano 2005). So it matters that in calculating leverage ratio which date is used whether it is the ending date or the opening date and if both figures are of the same date then it will not create an issue and will be appropriate, (Liow 2010). But Ashta's (2008) criticism was still only limited to the academic and classroom discussion due to its usage of arbitrary figures. Indeed, Higgins (1977) model of sustainable growth was practiced by many researchers with progressive changes in it till 2007's Model, Hall and Tochterman (2008).

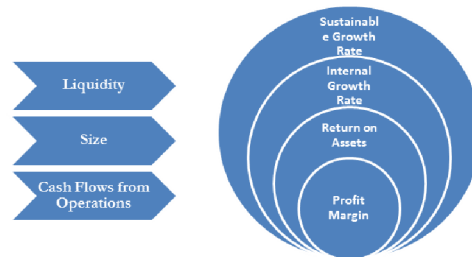
#### *Criticism on Sustainable Growth Rate*

Bivona (2000) pointed out that despite the fact that Higgin's Model (1977, 1981) is straightforward and easy to use and focuses to assess the impact of structural changes but does not help business managers in setting their growth targets for future. When discussing its limitation, we can easily observe that it does not express causal factors of profitability and growth. That Model also doesn't look into the "time" variations (i.e. impact of policy changes and results) and so to study the interrelationship of profitability's other proxy, i.e. Earnings Per Share (for Investor Outlook) and Liquidity impact (to assess business health's impact on growth) there is a dire need of establishing a revised model which considers the above mentioned variables' impact.

From the above literature survey we can easily identify that for growth diversified research is available approximating sustainable growth rate as a bench mark and adapting various strategies to find out their possible determinants but not a single study has been done applying that particular phenomenon of growth to Pakistan. So the Research Gap in geographical sense is filled by this study. Moreover, very few studies have focused on liquidity impact of growth so this study focused on Current Ratio and Cash Flows from Operation as Liquidity determinants and Size and other relevant literature cited determinants as control variables.

### Research Methodology

#### *Conceptual Framework*



#### *Research Design*

This research is quantitative in nature and has been done through gathering financial figures of Net income after Tax, Sales, Total Assets, Current Assets, Non-Current Assets, Current Liabilities, Total Shareholders' Equity, Retained Earnings at End of Period, Cash flows from Operations declared during the period. Listed nonfinancial Companies of Karachi Stock Exchange 100 Index provided by the State Bank of Pakistan in their Annual Report Balance Sheet Analysis and also the Official Website of KSE has been referred.

The financial figures of sample companies have been converted into Financial Ratios of Total Assets Turnover, Net Profit Margin, Return on Equity, Equity Multiplier, Internal Growth and



Sustainable Growth for Descriptive and ANOVA Analysis for Equality or Consistency. To find out potential Factors of Growth, Growth Ratio will be regressed as Dependent Variable and Independent Variables will be Size of the Firm, Cash Flows from Operation and Liquidity whereas Earnings per Share and Assets Utilization have been included as controlling factors to hold their effect constant and also Industry wise dummy variable will be introduced to identify the industry Effect on Growth.

#### *Population, Sampling Framework and Sampling Method*

The population of this research will consist of all the listed nonfinancial companies of Pakistan. We will not consider financial sectors due to different Nature of their operations.

The Sample in this research comprises of all the nonfinancial companies of KSE 100 Index taken by focused/purposive sampling. Following pre-determined criteria will be followed:

- The firm has published its Annual Reports for the period 1988 to 2011.
- The firm does not have negative equity at the end of period 2011.
- The firm does not have Net Loss for the Average of Years 2007 to 2012.
- The firm's shares have been actively traded during December 2013.

After fulfilling above criteria, only those firms were considered which were having full twenty four annual observations from 1988 to 2011 for Balanced Panel.

#### **Hypotheses**

##### *Objective 1: Common Factors of Growth (Regression Based)*

The hypotheses for this Objective will be as follows:

*H1a:* Liquidity impact growth of nonfinancial firms significantly

*H1b:* Size of the Firm impact growth of nonfinancial firms significantly.

*H1c:* Cash Flows from Operation impact growth of nonfinancial firms significantly.

*H1d:* Above Factors remain significant in different industries of Pakistan.

*Objective 2: Factors of Sustainable Growth (Non Regression ANOVA)*

*For RoE:* Average Return on Equity of Six Industries will be analyzed.

$$H2a: \mu_{(FE)} \neq \mu_{(CM)} \neq \mu_{(CH)} \neq \mu_{(EN)} \neq \mu_{(TC)} \neq \mu_{(TX)}$$

*For PM:* Average Profit Margin of Six Industries will be analyzed.

$$H2b: \mu_{(FE)} \neq \mu_{(CM)} \neq \mu_{(CH)} \neq \mu_{(EN)} \neq \mu_{(TC)} \neq \mu_{(TX)}$$

*For TATO:* Average Assets Turnover of Six Industries will be analyzed.

$$H2c: \mu_{(FE)} \neq \mu_{(CM)} \neq \mu_{(CH)} \neq \mu_{(EN)} \neq \mu_{(TC)} \neq \mu_{(TX)}$$

*For EM:* Average Equity Multiplier of Six Industries will be analyzed.

$$H2d: \mu_{(FE)} \neq \mu_{(CM)} \neq \mu_{(CH)} \neq \mu_{(EN)} \neq \mu_{(TC)} \neq \mu_{(TX)}$$

*For DP:* Average Dividend Policy of Six Industries will be analyzed.

$$H2e: \mu_{(FE)} \neq \mu_{(CM)} \neq \mu_{(CH)} \neq \mu_{(EN)} \neq \mu_{(TC)} \neq \mu_{(TX)}$$

*For GR:* Average Growth of Six Industries will be analyzed.

$$H2f: \mu_{(FE)} \neq \mu_{(CM)} \neq \mu_{(CH)} \neq \mu_{(EN)} \neq \mu_{(TC)} \neq \mu_{(TX)}$$

Where FE = Fuel and Energy Sector, CM = Cement Sector, CH = Chemical Sector,  
EN = Engineering Sector, TC = Transport and Communication Sector,  
TX = Textile Sector  
DP = Dividend Policy, GR = Growth

#### *Econometric Model*

Following are the statistical models to be utilized for hypothesis testing of Objective 1

#### *Simple Model*

$$SGR_{it} = b_0 + b_1 LIQ_{it} + b_2 SZ_{it} + b_3 CFO_{it} + e_{it}$$

$$IGR_{it} = b_0 + b_1 LIQ_{it} + b_2 SZ_{it} + b_3 CFO_{it} + e_{it}$$

#### *Extended Model*

$$SGR_{it} = b_0 + b_1 LIQ_{it} + b_2 SZ_{it} + b_3 CFO_{it} + b_6 EPS_{it} + b_7 TATO_{it} + e_{it}$$

$$\text{IGR}_{it} = b_0 + b_1\text{LIQ}_{it} + b_2\text{SZ}_{it} + b_3\text{CFO}_{it} + b_6\text{EPS}_{it} + b_7\text{TATO}_{it} + e_{it}$$

*Extended Model with Industry wise Dummy*

$$\text{SGR}_{it} / \text{IGR}_{it} = b_0 + b_1\text{LIQ}_{it} + b_2\text{SZ}_{it} + b_3\text{CFO}_{it} + b_6\text{EPS}_{it} + b_7\text{TATO}_{it} + e_{it} \\ b_7\text{D}_{1i} + b_8\text{D}_{2i} + b_9\text{D}_{3i} + b_{10}\text{D}_{4i} + b_{11}\text{D}_{5i} + b_{12}\text{D}_{6i} + e_{it}$$

Where LIQ = Liquidity SZ = Size of Firm, CFO = Cash Flows from Operation, EPS = Earnings per Share, TATO = Total Assets Turnover SGR = Sustainable Growth Rate, IGR = Internal Growth Rate,

Plan of Analysis/Statistical Tools

- Hypotheses H1a/H1b/H1c of Growth have been tested by multiple regression technique on Econometric Model. T test will be the criteria to find out significant impact.
- Hypothesis H1d regarding Industry Effect on Growth has been tested by multiple regression technique on Econometric model with dummy variable
- Hypotheses H2a, H2b, H2c, H2d, H2e and H2f regarding Test of Equality on Profit Margin, Return on Equity, Total Assets Turnover, Dividend Policy, Equity Multiplier, and Growth in mentioned industries, One Factor ANOVA technique has been applied respectively. F Test will be the criteria for Every One Factor ANOVA Analysis.

## Results and Discussion

*Description of Sample Companies*

Table 1 shows sample companies used for this study. Initially all KSE 100 Index companies were selected as convenience sampling for representation of Pakistani stock market but then due to subjective address and to avoid econometric issues some more companies were discarded for having balanced panel results in above 27 companies of 6 different industries having 24 annual observations each from 1988 to 2011.

*Table 1*  
**Description of Sample Companies**

Type of Industry	Companies selected
Fuel and Energy	9
Chemical	5
Engineering	9
Cement	1
Transport and Communication	1
Textile	2
Total	27

### Panel Based Regression Analysis

#### *Model Selection Criteria for Panel Regression*

For Model selection criteria, first Poolability Test suggested by Baltagi (2005) was applied which was showing pooled OLS can be applied on data but due to heterogeneity of panel data structure, Pooled Regression was not used. Then either Fixed Effect Model or Random Effect Model was suitable to apply. For this purpose Hausman Specification Test was run and the results favored to apply Fixed Effect Model.

*Table 2:*

#### **Comparison of Pooled and Fixed Effect Model**

VARIABLES	Pooled		Fixed	
	SGR	IGR	SGR	IGR
Earnings per Share	0.387 (1.177)	0.233*** (0.0227)	1.211* (0.661)	0.197*** (0.0626)
Total Assets Turn	1.432 (12.23)	0.464*** (0.154)	20.05 (20.05)	1.476*** (0.486)
Liquidity	-1.885 (21.47)	2.982*** (0.418)	12.80 (16.74)	1.603** (0.588)
Size	46.26 (34.79)	-1.436*** (0.214)	22.59 (28.35)	-0.708 (0.594)
Cash flows	0.318 (1.087)	0.0393 (0.0252)	0.413 (0.864)	0.0711** (0.0329)
Constant	-686.1 (454.8)	22.93*** (3.661)	-390.3 (460.1)	12.08 (9.177)
Observations	643	643	643	643
R-squared	0.008	0.405	0.004	0.362
Number of co	27	27	27	27
F	.	.	1.601	8.057

**Robust standard errors in parentheses**  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 2 is showing Pooled Regression for Internal Growth rate having 40.5% R square but as theoretical reasoning of individual cross specific heterogeneity among sample firms is forcing to go for

Fixed Effect Model of Internal Growth Rate which is having 36.2% R Square.

*Robustness of Independent Variables on Internal Growth Rate (Stepwise)*

**Table 3:**

Robustness of Independent Variable on Internal Growth Rate

VARIABLES	Internal Growth Rate	Internal Growth Rate	Internal Growth Rate	Internal Growth Rate
Earnings per Share	0.237*** (0.0649)	0.226*** (0.0624)	0.238*** (0.0633)	0.197*** (0.0626)
Total Assets Turn	1.653*** (0.528)	1.754*** (0.595)	1.459*** (0.498)	1.476*** (0.486)
Liquidity		1.474** (0.554)	1.641*** (0.586)	1.603** (0.588)
Size			-0.794 (0.587)	-0.708 (0.594)
Cash flows				0.0711** (0.0329)
Constant	3.634*** (1.270)	1.178 (1.715)	13.63 (9.029)	12.08 (9.177)
Observations	643	643	643	643
R-squared	0.321	0.345	0.352	0.362
Number of co	27	27	27	27

Robust standard errors in parentheses and \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

From the above table3 we can see that our control variables are robust in all cases. The other independent variables in the model such as liquidity and cash flows per share are also significant as per the legend of p values and showing the consistency in robustness being significant while one of the independent variables, Size, is still insignificant as far as the robustness is concerned.

*Internal Growth Rate Model – Industry-wise Regression*

Table 4 showing Industry-wise Regression Estimation of Internal Growth Model, estimations in Column 2(Cement Sector), Column 4(Textile Sector) and Column 6 (Transport and Communication Sector) have been calculated on the basis of Unbalanced Panel due to Only 2, 1 and 1 firms remaining in Balanced Panel of 24 Annual Time Dimensions. From the above Table we can interpret that both our controlling variables remain significant throughout Industry-wise regression Analysis, but when we look at our Independent Variable of Liquidity which is not significant in case of Chemical and Textiles whereas it is significant in case of the other four Industries. Size of Firm is Insignificant in all our industries except Transport and Communication Sector. Even Size is insignificant in overall analysis forcing us to interpret that For Sustainability; Size does not matter in

our sample firms. Coming towards Cash Flows Generation Ability's impact on sustainability, we can interpret that Cash Flows per Share is significant in case of Fuel and Energy, Cement and Chemical sectors whereas it is insignificant in case of the rest of the industries. But Overall Significance of Cash flows per share in our model tells that there is positive impact of Cash Flows Generation Ability towards Internal Growth.

Table 4:

**Industry wise Internal Growth Rate Model**

Industry	Fuel and Energy	Cement	Chemical	Textile	Engineering	Transport and comm	Total
Earnings per Share	0.132*** (0.0366)	1.307*** (0.178)	0.632** (0.165)	0.363** (0.0377)	0.158 (0.131)	2.656*** (0.567)	0.197*** (0.0626)
Total Assets Turn	1.027*** (0.187)	-6.329 (2.972)	13.02** (3.202)	2.472 (1.937)	6.486*** (1.663)	-6.105** (2.208)	1.476*** (0.486)
Liquidity	-1.369** (0.444)	1.688* (0.613)	2.035 (1.567)	0.933 (4.374)	5.265* (2.546)	-2.364*** (0.268)	1.603** (0.588)
Size	-0.177 (0.478)	-3.064 (1.616)	-1.544 (1.275)	-3.258 (5.070)	0.105 (0.825)	-10.34*** (2.335)	-0.708 (0.594)
Cash flows	0.0523* (0.0275)	-0.480* (0.193)	-0.328* (0.152)	0.480 (0.330)	0.0149 (0.0583)	-0.0858 (0.408)	0.0711** (0.0329)
Constant	7.542 (7.614)	53.53 (27.58)	18.12 (22.98)	43.14 (70.02)	-12.67 (13.52)	174.6*** (36.99)	12.08 (9.177)
Observations	213	72	120	54	216	58	643
R-squared	0.479	0.810	0.584	0.690	0.496	0.870	0.362
Number of companies	9	5 <sup>v</sup>	5	3 <sup>v</sup>	9	6 <sup>v</sup>	27
Adjusted R-Square	0.466	0.795	0.566	0.657	0.484	0.858	0.357
F- Statistics	25.37	-	-	-	12.28	414.4	8.057

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1  
<sup>v</sup>.As Balanced Panel were only having 1, 1 and 2 companies so for these industries only Unbalanced Panel has been used

Table 5

**Summary of Hypothesis Acceptance and Rejection**

Objective 1: Common Factors of Growth (Regression Based)			
Hypothesis No.	Statement Hypothesis	Co-efficient (T-Statistics)	Null Hypothesis
H1a	Liquidity impact growth of nonfinancial firms significantly.	1.603 (2.72)***	Rejected
H1b	Size of the Firm impact growth of nonfinancial firms significantly.	-0.708 (-1.19)	Not Rejected
H1c	Cash Flows from Operation impact growth of nonfinancial firms significantly.	0.0711 (2.16)**	Rejected
Objective 2: Factors of Sustainable Growth (Non Regression ANOVA)			
Hypothesis	Statistical Hypothesis	F - Statistics (P-Values)	Null Hypothesis
H2a: (RoE)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	0.66 (0.6553)	Not Rejected
H2b: (PM)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	22.68 (0.0000)***	Rejected
H2c: (TATO)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	23.44 (0.0000)***	Rejected
H2d: (EM)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	0.64 (0.6714)	Not Rejected
H2e: (DP)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	0.51 (0.7681)	Not Rejected
H2f(i): (SGR)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	0.66 (0.6518)	Not Rejected
H2f(ii): (IGR)	$\mu_{(FE)} \neq \mu_{(CEM)} \neq \mu_{(CHI)} \neq \mu_{(TS)} \neq \mu_{(TC)} \neq \mu_{(TX)}$	22.92 (0.0000)***	Rejected

*Interpretation of Co-efficient of Hypothesis*

- Liquidity Co-efficient of 1.6 shows that 10% improved position of Liquidity will impact sustainable growth by 16% (Significant at 99%)
- Size Co-efficient of -0.7 shows higher the firm will result in decrease in Growth of the Firm (Being Insignificant we are Inconclusive about Interpretation)
- Cashflows Per Share Co-efficient of 0.711 shows that Higher the ability of cash generation a firm is having it will Increase the Growth of Firm say 1 Rs. Per share more generation will increase Internal Growth by 7% (Significant at 95%)

**Discussion and Conclusion**

This paper has investigated the sustainability of growth rate of non-financial firms in case of Pakistan. For this purpose, explanatory variable of Earnings per Share and Total Assets Turnover used as Controlling Factors and Liquidity, Size and Cashflows were used as Independent Variables. The results of research were robust against Internal Growth but not robust for Sustainable Growth indicating that in case of Pakistan the Leverage impact, which is the key difference between Internal Growth and Sustainable Growth, must be playing some unexplained role in the growth of nonfinancial firms. For steady, regular and internal growth, Liquidity and Cash generation ability are playing a significant role but failed to support the growth in the long term and in a sustainable way. Although Size of firm has mixed trend in some of the industries but those must be industry specific so it cannot be generalized for all the nonfinancial firms.

The study explained the role of leverage for sustainability of nonfinancial firms although leverage is a factor which has special nature in financial firms but there is also empirical evidence in case of nonfinancial firms of Pakistan the reason might be weak financial infrastructure of Pakistan which needs further detailed investigation. Results of this study also suggest that for long term sustainability of

firms in Pakistan the focal area must be leverage so it needs strict statutory implementation in this regards.

### **Recommendation**

On the basis of this research

- Investors targeting growth firms for their investment must look for Liquidity and cash generation ability of firms in case of Pakistan as key indicators to identify growth firms
- Business Managers, if they want to have business sustainability in financial terms then they must focus on Leverage, Liquidity and cash generation aspect of their operations



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