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RESEARCH ARTICLE

THE RELATION OF INVESTMENT WITH PROFITABILITY AND TANGIBILITY
AN EMPIRICAL ANALYSIS

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ABSTRACT

This paper is about finding out the trend of relationship of investment-profitability and investment tangibility in market of Pakistan. Purpose of this study is to determine the three variables of companies which are listed in Karachi stock exchange that variables are investment, profitability, and tangibility and most importantly finding the relationship plus dependability among these three variables. The hypothesis of research is that there is a positive significant relationship between investment and profitability or in other words investment is associated positively with profitability. Second hypothesis is investment is positively correlated with tangibility; there is direct positive connection between these two variables. In Pakistan not any research been published considering these two hypothesis so far. This research will provide the investors and managers an analytical view of investments which will eventually guide their decisions. For evaluating these variables and their relation data is collected from BSA (balance sheet analysis) then relevant proxies are applied. The data is representing the companies from every industry of Pakistan and is for three years. In this research panel data set testing is used. Investment is independent variable; profitability and tangibility are depending upon it. For deep analysis in this paper random and fixed effect is incorporated. The results suggested that there is a significant positive relation between investment and profitability so that we can infer that as investment increases profitability also increases. As far as second hypothesis is concerned results of tests concluded that it is also accepted. Thus we can say that as investment increases as a result tangibility also increases because whenever a company is investing a major portion of its fixed assets is also increased.

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INTRODUCTION

This paper examines that how investment decisions are effected by the two variables profitability and tangibility. In this study the relation investment with profitability and tangibility is investigated, the main idea of this paper is to identify the dependence these two factors on investment and if they depends how much significant their relation is? The purpose of this paper is to obtain the trend in market of Pakistan regarding the relation of investment with profitability and tangibility. This paper will allow us to build theory upon the investment and its effects on profitability and tangibility. However it is well recognized in finance that investors are at informational disadvantage in this matter but when it comes to companies they can have full exposure and dig down deep in to it. What makes a company to invest? The mindset behind the investment is to preserve money plus attach more of it, make money grow. Sometime this desire of becoming wealthy in future can make your decisions riskier. But these decisions must be supported by some logic or strong facts otherwise it

could lead to loss in this regard a good management always seeks the best options to invest. Profitability is the variable which allows the company to evaluate indirectly the survival of business, whereas tangibility supports the aspects directly relating to investment.

According to Modigliani-Miller Theorem market value of the company is determined by its earning capabilities and risk of its primary assets and method it chooses to finance its investment or distribute its dividends. According to Modigliani and miller, the capital structure does not matter in the perfect capital markets. Some already done researches suggests that assumptions of capital market are flexible and also determined that how various market limitations gives birth to interaction among financial variables and investments. Instead, Stulz and Jensen claimed that in less profitable and small firms with large free cash flows, control can be used as a jailing device because it discourages managers from over investing in risky projects. Some agency models clearly depicts that the conflicts of interest are worrying the investment decision and calibration is given less value. This study separately surveys the dependence of investment opportunities on a firm's investment choices, and the reverse causations according to which financing also affects

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investment decisions former post. Therefore an important question is still there as to how these financing and investment plans interact in a lively context in which growth options with regard to a firm's investment set affect its joint policy of size and investment decisions, which as a result effects its investment events. The objective of this paper is to empirically investigate the symbiotic relations among growth opportunity, profitability, tangibility and investment using amalgamated framework. Explicitly, the purpose of this paper is to find the answers of some questions that are, how firm or company invests and what is its effect on tangibility and profitability of the company. Moreover whether the agency problems are affected in this regard? Up to what extent the liquidity risk problems are faced by the company when decision of investment is not made in accordance with tangibility aspects? Do these decisions act as strategic substitutes in controlling under investment inducements. Whether the short term or long term strategies should be made? What will be the effect of these strategies on long term or short term investment decisions? The paper has taken into the consideration the literature from the country and outside the country as well.

The significance of this research is that companies while investing can make this study as base and they will get more actual results based on many experimentally proven characteristics derived by the facts underlying the investment decisions particularly in Pakistan and generally almost everywhere. The tools, variables and determinants of the variables are overtly designed to get desired results more accurately. This research will explain to the companies that when and how they should invest by keeping what factors in view? Very wide area of observations is taken into the consideration while writing this paper and minor details are incorporated to explain the investment behavior of the company with the perspective of other related variables. Information asymmetry is the only limitation in finding out the profitable investment for such method although it will explain the relation and behavior in Pakistan.

Related literature and hypotheses

Alan E. Singer worked on investment decisions in (2006) and considered the basis of formal financial analysis since many factors that should facilitate understandings of "bottom-up financial analyses" (BUFA). Singer suggests that organizational design influences the establishment of information regarding the various factors in the investment decision. A model of investment decision making that emphasizes administrative contexts may provide a useful point of exodus for the design of effective and wide-ranging investment decision support systems. Then Hamadii and company suggested that even if an organizational complexity has a negative and linear effect on the investment decision reorganization, it creates worth, there is also an observation that there is a positive relationship with the doubt of situation, and a negative relation with the scarcity and sharing of financial possessions between parts in the internal capital market. Various empirical studies examine that what should be the capital structure of the company in order to attain maximum profitability, but in the context of Pakistan there is no such study been published on relation of investment with

the other very important considerable factors. I have tried to establish the relation of investment. There is another study comprising of KBM model (Kester Brealey and Myers) and it was tested on 278 UK companies for 1987-1995. By this method growth opportunity is found to the account for larger proportion of the market values than assets in place, provided all suitable assumptions. The KBM model is highly gentle to the include inflation in interest rate which is free of risk, and with a real interest rate, the model ceases to provide dependable results. The model also fails to provide results consistent with potentials derived from option pricing theory regarding the relationship between the value of growth opportunities and the value of assets-in-place. These confines of the KBM model indicate a need for a revision of the method of evaluating the value of growth opportunities. And then to check the strength of relation between these two factors in Pakistan, analyze the results and suggest the optimal combinations for future.

This study established the relationship of profitability with investment in the context of Pakistani companies mostly belonging to the sugar, textile and fuel and energy industry to check the existing occurrence of this relationship and proposing the optimal situation to invest. How much of companies are making profits and then investing from their profits? There are many studies on investment but none is for relationship of profitability and investment particularly in Pakistan. The determinants of profitability are earning before interest, tax and dividend divided by total assets.

Methodology and data

For this paper the data of almost every company which is listed in Karachi stock exchange for three years is selected, the set of observations for the every determinant of proxy of every variable is consisted of nine hundred values. The data is taken from BSA (balance sheet analysis), We have examined an unbalanced panel data set in this study. The data covers almost every company of all industries from which some major industries are textile, sugar, fuel and energy, oil and gas, FMCG, and food industry. This data set allowed to conduct in-depth analysis. This extensive analysis of a broad range of companies ensures the stoutness of results. The inclusion of companies were subjected to availability of data for different variables in study, only those companies were selected whose data according to the determinants of the variables were available. For this study the data is taken for the time period 2009-2011 of almost 300 companies.

Base line regression model

$$\text{Tangibility}_{it} = \alpha_1 + \beta_1 (\text{investment})_{it}$$

$$\text{Profitability}_{it} = \alpha_2 + \beta_2 (\text{investment})_{it}$$

In this research investment is taken as independent variable whereas profitability and tangibility are taken as dependent variables, the relationships is built separately for tangibility-investment and profitability-investment.

The investment of the firm is determined by capital expenditures less depreciation divided by fixed assets at that

time. In Tobin model, the expectation of future profitability captured prospective evaluation of the stock market, and so the absence of serious financial constraints, firms with more growth opportunities will be able to make more investments. The empirical proxy used for tangibility is ratio of fixed assets to total assets. For this study profitability is calculated as earnings before interest, tax and dividend divided by total assets.

Fixed effect model

$$\text{Tangibility}_{it} = \alpha_1 + \beta_1 (\text{investment})_{it} + \mu_{it}$$

$$\text{Profitability}_{it} = \alpha_2 + \beta_2 (\text{investment})_{it} + \mu_{it}$$

Where:

$$\mu_{it} = \text{error term}$$

Fixed effect model is used when there is need of the analyses of variables that vary over the time. In this paper fixed effect model is also used in order to compare and to have better results.

Random effect model

$$\text{Tangibility}_{it} = \alpha_1 + \beta_1 (\text{investment})_{it} + \mu_{it} + \epsilon_{it}$$

$$\text{Profitability}_{it} = \alpha_2 + \beta_2 (\text{investment})_{it} + \mu_{it} + \epsilon_{it}$$

Where:

$$\mu_{it} = \text{error between entity}$$

$$\epsilon_{it} = \text{error within entity}$$

Random effect model is used when the variation among the bodies is supposed to be random and correlated with predictor or independent variable shown in this model.

Hausman test

Sometimes random and fixed effect gives us conflicting results. In order to consider the best result we need to put them through the test.

Empirical results and discussion

This section will review and debate the empirical results, all the facts relating to that outcome, the tables and analysis. This also includes that up to what extent these results are reliable and aspects which are associated with reliability. These results are including the fixed effect, random effect and common effect model for discussion.

Results of investment-tangibility

As it has been mentioned earlier in this paper that tangibility is dependent on investment, all that needed to be test was that as the company invests weather it increases its tangibles or intangibles and if the tangibles are increased how strong is the relation between these two variables. After running tests, results suggested that the hypotheses of positive relation between these two variables, is accepted. After applying panel

regression between investment and tangibility a positive relationship is found between these two variables the reason is that more fixed assets will be used when investment decision is taken. The companies in Pakistan belonging to almost every sector are whenever investing their tangible assets are being increased and this trend allows us to build the significance reliance on the fact that investing in tangibles assets is considered more secure than investing in intangible securities, which represents the more risk averse behavior of the businessmen overall.

Table 1.

Investment and tangibility					
Tangibility	Coefficient	standard error	z	p > z	95% confidence interval
Investment	0.0011608	0.0005877	1.98	0.048	9.00e-06 .0023127
Investment and tangibility (fixed effect)					
Tangibility	Coefficient	standard error	t	p > t	95% confidence interval
Investment	0.0010452	0.0005932	1.76	0.079	-.0001198 .0022103
Investment and tangibility (random effect)					
Tangibility	Coefficient	standard error	z	p > z	95% confidence interval
Investment	0.0011608	0.0005877	1.98	0.048	9.00e-06 .0023127

Hausman Fe, Re

Investment	Coefficients		
	(b) fixed effect	(B) random effect	Difference (b-B)
	0 .0030002	0.0030002	0

Result of investment-profitability

The results suggested that there is a significant positive relation between investment and profitability so that we can infer that as investment increases profitability also increases. The result showed that when we have more investment opportunities the firm will be more profitable because the aim of any organization is not just cash accumulation but by investing the firm is adding value to its shareholders wealth. This is the trend which has been observed the test results in this regard. The table shows some important numerical figures

Table 2.

Investment and Profitability					
Profitability	Coefficient	standard error	z	p > z	95% confidence interval
Investment	0.0030002	0.0014986	2.00	0.045	0.000063 0.0059373
Investment and Profitability (fixed effect)					
Profitability	Coefficient	standard error	t	p > t	95% confidence interval
Investment	0.0044547	0.0015844	2.81	0.005	0.0013428 0.0075665
Investment and Profitability (random effect)					
Profitability	Coefficient	standard error	z	p > z	95% confidence interval
Investment	0.0030002	0.0014986	2.00	0.045	0.000063 0.0059373

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	Coefficients			
	(b) fixed effect	(B) effect	random	Difference (b-B)
Investment	0.0011608	0.0011608		0

Common effect

As results are showing that there is no difference between random effect and fixed effect therefore we can take common effect into the consideration, because common effect model assumes the homogeneity of cross-sectional variables however all the companies have some similarities that are they all are Pakistani, they all have sustained almost same economical period and culture, their economic growth and attitude towards development, thus the assumption of the common effect is reliable up to the good extent.

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