Managerial Motives Underlying the Revaluation of Non-Current Tangible Assets: A Study of Non-Financial Sector Companies Listed on Pakistan Stock Market

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According to generally accepted accounting principles as applicable in Pakistan, all the listed companies, in addition to the company's act 2017, must follow international accounting / financial reporting standards. For subsequent measurement IAS-16 PPE gives the companies two options, either measure their non-current tangible assets on Cost model or revalue them. As the objective of the FS is to fulfil the information needs of the users, especially the shareholders, and fair value measurement provides more relevant information through which the quality of decision making of the shareholders can be improved. In addition, the management as an agent of the shareholders may have their own motives for measuring the NCA on fair value. The purpose of this research is to find out the management motives underpinning the revaluation of NC tangible assets. For the said purpose 10 years data was collected i.e., for the period from 2009-2018 for 109 companies listed on Pakistani stock market which revalued their non-current tangible assets during that period. This study examined the different motives of management like leverage, size of the firm, fixed assets intensity, liquidity, growth, ownership structure, bonus issue, disclosure and CFO have on the revaluation decision. For the analysis purpose the study used Logistic regression model as the predicted variable is binary in nature which is coded as dummy variable. The findings show that the leverage has no significant impact on the decision to revalue the NCA. As for as size of the firm is concerned, this revealed a positive and a significant impact on the decision to revalue the non-current assets. The study found that the fixed assets intensity has a significant impact on the decision to revalue the non-current assets. The relationship between the liquidity and revaluation decision was found negative but insignificant. The results also cleared a positive and almost significant relationship between the revaluation decision and growth and a negative but significant relationship between the revaluation decision and presence of foreign investors in the portfolio of shareholders. Stock dividend or bonus shares issuance has no significant association with the dependent variable. Cash flow from operations negatively and significantly related to the predicted variable. Eventually it was concluded that size of the, fixed asset intensity, growth opportunities and decline in the operational cash flows will motivate the management to revalue the non-current assets according to IAS -16.

Keywords: SOFP, SOCI, SCIE, SOCF, NCA, FS, Positive Accounting Theory, Information Asymmetry, Revaluation.

INTRODUCTION

The purpose of the Financial statements i.e., SOFP, SOCI, SCIE ,SOCF and notes to the accounts Notes as stated by the IASB's frame work is to provide credible information to be used by the stakeholders especially the funds providers (Shareholders +Lenders) to take appropriate decisions. Credibility is the main issue as in the past many financial scandals as if Enron and World com occurred which have shaken the confidence of the investors and the reason behind this among other things is the bogus and fraudulent financial reporting. To make the information credible and to improve their quality IASB's framework has described some fundamental as well as enhancing qualities which the financial statements must have otherwise the investor and other stakeholders cannot take accurate decisions.

Two of the qualities i.e., reliability and relevancy are the most important. To make the information reliable it must be neutral, complete, based on substance and prudently presented, free from errors and verifiable from the original source. To make the information relevant the information should be prepared on timely basis and have the predictive and confirmatory values. Improving reliability at the cost of relevancy is not suitable like vise-increasing relevancy at cost of reliability is also not appropriate. As both the qualities are in evitable and equally important for the financial statements.

Different accounting options are available in different accounting standards to deal with different issues. It is the case with IAS 16 property, plant & equipment. As for as initial measurement is concerned all the tangible non-current assets must be measured at cost but Regarding subsequent measurement, IAS 16 gives choice i.e., either to measure the assets on historical cost basis or revalue it. Cost model-based measurement and valuation of fixed assets can easily be verified with original documents and hence more reliable. However, these figures did not reflect or show the current market value of the assets. consequently, the figures that were shown on the basis

of cost model were significantly lower than the current market values and in this way the investors are not able to have clear and true picture of the company and so could potentially misled investors, for instance in their decision making process. Fair value information can be more relevant to the financial statement users. However, its reliability can be questionable especially when assets market value is in active, volatile or dose not exists at all.

Balancing between the relevance and reliability becomes the base for measuring the NCA on fair value basis. (Landsman 2007). The argument that was given by the proponents of fair value measurement is that under this model more accurate timely, and comparable amounts can be estimated than given by the cost model (Ryan 2008). Additionally under this model managers can be in a position to communicate underpinning information to the capital market(Beaver and Venkatachalam 2003) eventually transparency of the financial information will be enhanced. On the other side the values which are estimated by this method are less verifiable, and less reliable, particularly for those assets for which no active market is available for knowing the fair values. Opportunistic behavior of management also affects the reliability of these measurements (Aboody, Barth et al. 2006); (Bartov, Mohanram et al. 2007): argued that fair value model provide an opportunity to the management to manipulate the figures and use its discretion (Song, Thomas et al. 2010). In addition to the above mentioned arguments, volatility in the earnings of the firm will be increased due to unrealized gains in terms of revaluation surplus.

As the agency theory suggested that there is a conflict of interest between the management and the shareholders. Managers have more priorities for their own benefits as compared to the shareholders. This opportunistic behavior of the managers was reflected in the revaluation of NCA. Normally in the companies the manager's performance is based on key accounting ratios and the management want to select those accounting policies through which those ratios can be good looking so that they can be better compensated. Conflict of interest between the managers and the shareholders is the underlying assumption of Agency theory. The fact is obvious that the managers used to give preference to their benefits like salaries, bonuses, perks and other incentives while the prime focus of the shareholders is to increase their own wealth. (Saam 2007); (Malik, Abumustafa et al. 2019)

This study examined the management motives behind the revaluation of non-current assets using a sample of 1090 firm-year observations from Pakistani listed companies between 2009 and 2018. Our findings indicated that fixed asset revaluation decision is positively related to size, FIA, growth, opportunities of the business and stock dividend whereas leverage ownership structure, liquidity, disclosure and cash flow from operations are negatively related to this decision.. These results suggest that choosing the revaluation method for measurement of non-current assets can improve transparency of the financial information for investors.

This study enhanced the imperial evidence to the theory and give guidance regarding the selection of accounting policy for the measurement of NCA. The findings of this research also revealed that instead of having opportunistic behavior the honest desire of managements underlying the revaluation of NCA will increase the transparency and confidence of the investors and eventually the market performance.

The sequential arrangement of the paper is as follows: literature review is discussed in the Section 2 whereas section 3 contained the methodology of the study. Section 4 is related to the result findings, and finally, the conclusions and managerial applications/ recommendations for future research are discussed in the Section 5.

Problem Statement

The industrialization pace in Pakistan has witnessed few rapid growth phases. The companies listed in stock market therefore, reflect remarkable difference in book value to market value of stocks. This differential also revealed the aspect of revalued value of assets of companies normally, land, buildings and machinery. Despite the factual reflection, companies remain to take advantage of revaluation surplus to be duly recognized in books to improve upon enhanced equity base, achieving required debt equity ratio, building additional liquidity through borrowing and revealing the real rate of return on assets.

The absence of revaluation also puts the company to disadvantages in terms of strategic decision making especially in terms of pricing policies under emerging competitive environment. Continuing with the historical value demotivate the general public shareholders forcing them to sell of their investments which are in fact bought back by controlling owners concentrating the ownership and defying the basic spirit of a public limited company. The foregoing aspects raised question about true and fair view of the state of financial affairs as presented by the management to the shareholders through the audited financial statements. Therefore, revaluation of fixed assets in a rational manner offers a remedy to the above stated problems.

Research Questions

As every country has its own economic, legal and social environment so context based studies can be conducted to explore ground realities. So due to the above mentioned differences, this research will be focused on Pakistan. The research questions which becomes the base for the said research are mentioned below.

- Are the companies listed on the Pakistani stock market are more inclined towards measuring their assets using the revaluation model?
- Can variables like leverage, firm's size, fixed asset intensity, liquidity, opportunities for business growth, ownership structure, stock dividend or bonus share issuance, disclosure and CFO be used to predict companies' motives for asset revaluation decisions?
- Whether the CFOs can take guidance from this model in selecting the accounting policy options available in the IAS-16 regarding the measurement methods regarding the no-current assets revaluation?

Research Objectives

Within the context of IAS/IFRS the objective of this study is to develop a conceptual model, through which we can determine the factors affects the revaluation decision and to through light on the underpinning motives of management behind this decision pertaining to companies listed in Pakistani stock market. The research objectives are:

- To analyze about the companies which are listed on the Pakistani stock market, whether most of them measuring their NCA's on cost model or using revaluation model.
- To understand and determine the managerial inducements which motivates the management to measure the NCA on fair value basis instead of using cost model.
- To examine the management motives underlying the selection of accounting policy regarding the measurement of NCA tangible assets which guides them whether to choose cost or revaluation NC tangible assets according to IAS 16.

Significance of Study

This research provides the following contributions to new knowledge:

- The conceptual model which was given by this research will provide guidance to the firms in deciding the appropriate methods for measurement of NCA tangible assets.
- The companies and their management are in a better position to have a deep understanding the effectiveness of the proxies which can be used as underpinning management motives.
- Shareholders and lenders can be in a better position to take appropriate decisions regarding their investments, either to sell, hold or buy shares.
- Financial analysts, researchers as well as will corporate policy makers can also be benefitted from this model by understanding the underpinnings of the model.

PRIOR LITERATURE

Positive Accounting Theory

The Positive Accounting Theory suggested by (Watts and Zimmerman 1986)can explain why a company chooses the accounting method it will apply. This positive accounting theory explains that every company has its own accounting policy which may be varied from one to another, and this company can freely decide on the accounting policy which can minimize the contract costs and maximize the company's value. The freedom given to the company's manager to decide on the accounting policy will make the manager more likely to take opportunistic action (Omoye and Eriki 2014)The opportunistic action in deciding on an accounting policy aims at putting the manager in a favorable position and, eventually, improving the manager's satisfaction.

Three hypothesis theories are connected to the management behavior's opportunistic behavior by (Watts and Zimmerman 1986) namely *bonus plan hypothesis, debt covenant hypothesis,* and *political cost hypothesis.* The research conducted by Watts and Zimmerman (1986) found that the bonus plan hypothesis was indicated by the manager's attitude towards the selection of an accounting method which could increase the compensation they received. The debt covenant hypothesis was indicated by

the reduced possibility of the bond covenant being violated. Finally, the political cost hypothesis was indicated by the selection of accounting procedure, i.e., greater companies were more likely to choose an accounting procedure which could decrease their profits in financial statements.

(Yu, Jin et al. 2010)classified the factors which could influence a manager in deciding on their accounting policy into three, namely: (1) *contracting factors*, explaining that the accounting policy selected was to influence debt covenants; (2) *political factor*s which had tight relationship with *political cost hypothesis,* where the company's aim was to reduce profit in its financial statements to lower any possible political visibility and political cost; (3) *information asymmetry*, explaining that the accounting policy was decided by information asymmetry which tried to influence the appraisal or price of an asset.

Information Asymmetry Theory and Signaling Theory

As the day to day matters of the company is being dealt by the management and they have more underlying information in terms of quantity as well as quality so, the shareholders have to depend on the information which is provided by the management. This difference of information becomes the base of the Information asymmetry theory. The decision regarding the revaluation of NCA is basically undertaken by the management to give signal to the shareholders and other investors regarding the future performance of the company.

Leverage Level : Violation of restrictive covenants by the firms is strongly recognized as a very costly and badly affects the wealth of the shareholders**.** (Brown, Izan et al. 1992) pointed out that high level of leverage and debt covenants violation would eventually results in terms of increase in the debt repayment cost and debt renegotiation cost in the future. (Beneish and Press 1995) discussed that due to the increase in default risk more restrictive covenants will be imposed by the lenders, cost of borrowing the funds will be increased and in addition to this there will be a decrease in the borrowing capacity of the firm. On the basis of the said argument the management of firm is more inclined towards the selection of the method which help them in reducing above mentioned cost. (Whittred and Zimmer 1986). As due to revaluation the equity base (Beneish and Press 1995) of the company increases due to on one side debiting assets and on other side crediting to the revaluation reserve. Since an upward revaluation of fixed assets would increase the book value of total assets and the asset revaluation reserve, so, due to this arrangement the company' debt equity ratio would be improved. It is thus expected that firms with high leverage may tend to use upward asset revaluation to expand asset base, reduce debt ratio, and therefore restore firms' borrowing capacity. Hence, a positive relationship is predicted between firms' leverage and the incentive to revalue their fixed assets.

H1: Firms with higher level of leverage are more likely to revalue their fixed assets.

Declining Cash Flows From Operations:

As the ability of the firm to pay back the borrowed funds is the key factor which is considered by the lenders and the cash generating capacity of the firm can be predicted from the CFFO. If the CFFO is less than the company's profit and over the years

decline in this worried the debtholders. An Australian study by (Cotter and Zimmer 1995) argued that as normally the NCA are used by the companies as collateral or security to borrow funds from the financial institutions and through upward revaluation the value of NCA was increased which will put the company in a more comfort zone. Therefore, upward revaluations would restore firms' borrowing capacity. On the basis of the above discussion we can assume a negative relationship between the declining operating cash flows and upward asset revaluation decision.

H2: Firms experiencing declining in cash flows from operations are more likely to revalue their fixed assets.

Firm Size: Firm's size was considered an important factor in deciding whether to revalue or not. Previous studies concluded that large firms are under more pressure from government regulations as compared to the small ones. Governmental price controls have focused more heavily on large firms than on small ones and are more likely to take price leadership roles (Standish and Ung 1982, Lin and Peasnell 2000). CBA's or employee's Unions are normally very strong and in a position to demand high salaries and packages. (Brown, Izan et al. 1992) . In order to reduce the above mentioned pressure from the government as well as the unions, firms tend to avoid reporting excessively high profits ((Standish and Ung 1982). As due to upward revaluation the onwards depreciation would be increase and eventually the profits will be decreased, and eventually this will result in the mitigation of the political pressures from the government as well as employee's unions (Lin and Peasnell 2000a). Based on the above-mentioned arguments therefore, it is expected that there is a positive relationship between firm size and the revaluation decision.

H3: Larger firms are more likely to revalue their fixed assets

Fixed Asset Intensity: Normally manufacturing companies have a strong base of tangible NCA as compared to the service providers and this is the reason that manufacture industry is more interested in revaluation as the process of revaluation is very expensive so before this exercise the companies do the cost benefit analysis. So the heavy investment in NCA is prudently to be more cost-effective (Brown, Izan et al. 1992, Whittred and Chan 1992) and (Lin and Peasnell 2000) concluded that the revaluation (Brown, Izan et al. 1992) decision and fixed asset intensity has a positive relationship. So, we can assume that;

H4: Firms with higher fixed asset intensity are more likely to revalue their fixed assets.

Growth Options: As the internal financing is volatile and not sufficient to meet the financing needs of the companies having high growing opportunities. (Brown, Izan et al. 1992) argued that those firms which have high opportunities for growth are more inclined towards revaluation of NCA.. There are two factors for this. First, the firm's management want to give signal to the market and other parties about the future potential difference in the book value and fair value of the assets. Second, through the implementation of revaluation model, the companies can increase their borrowing capacity, decrease their cost of funds and under inappropriate investment decisions can be avoided. (Brown, Izan et al. 1992) and (Whittred and Chan 1992) found

that those firms which use revaluation model have greater growth opportunities than the firms which use cost model. Therefore, the asset revaluation decision is predicted to have a positive relationship with firms' growth potential.

H5: Firms with more growth options are more likely to revalue their fixed assets.

Liquidity: Liquidity reflects a company's ability to repay its current liability (Pickell, Andison et al. 2015) A company with lower liquidity is more likely to perform asset revaluation. Since liquidity indicates the company's ability in repaying their current liabilities, any company with low liquidity reflects its inability in repaying their current liabilities. Therefore, a company with lower liquidity is more likely reevaluate its assets, since revaluation can provide more relevant information regarding the amount of cash it can receive from asset sales, and hence can help improve the loan capacity. (Manihuruk and Farahmita 2015) who conducted a study in companies registered in stock exchanges of some ASEAN countries found that liquidity has a negative influence on fixed asset revaluation decision. This research finding was consistent with Tay (2009), (Aljinović Barać and Šodan 2011) (Perera and Baydoun 2007)On the other hand, Black, Sellers, and Manly (1998) found that liquidity ratio had an insignificant positive influence on fixed asset revaluation policy. Based on the explanation above and previous studies, the researcher could formulate the following hypotheses:

H6: Firms with Lower liquidity are more likely to revalue their fixed assets.

Ownership Structure: Foreign investors are keener in fair value measurements as according to this method the true picture of the company's NCA was shown in the FS. Information asymmetry is another factor for these investors because to take appropriate decisions they want relevant assets values to take quality decisions. A positive effect was observed in the prior studies between the foreign ownership and decision of revaluation (Piera (2007). so it is predicted that the presence of foreign shareholder in the portfolio of shareholders will increase the chances to measure the assets on revaluation basis and therefore we assume a positive association between the disclosure and revaluation of NCA.

H7: Firms having Foreign Ownership are more likely to revalue their fixed assets.

Disclosure: As the major objective of the international accounting/ financial reporting standards is to enhance the relevancy and reliability of the FS and all the above-mentioned standards have disclosure requirements which increases the understandability and underpinnings of the financial information. Through proper disclosure the confidence of the investor was increased, and information asymmetry was decreased. The underlying accounting standards and other guidelines of the IASB is that the company disclose all the information in such a way that the stakeholder can be able to understand the true and factual position of the company's current as well as future position. Therefore, this study assumed a positive relationship between disclosure and revaluation decision.

H8: Firms having export sales are more likely to revalue their fixed assets.

Bonus Issue: Through the issuance of bonus shares or stock dividend the companies give signal to the market that the company in the future will be able to pay more dividends. As due to bonus issue the number of shares were increased and if the company maintain the same DPS, higher dividends will be received by the shareholders and therefore it may have a positive impact on a company's share prices (Ball et al., 1977). Emanuel (1979) argued that the issuance of bonus shares was understood by the external parties as increase in the dividend and considered it as future growth of earnings. As the revaluation results in the creation of a reserve or surplus on revaluation which is a part of equity and normally the companies issue bonus shares by utilizing the revaluation reserve. Therefore, it was proposed that firms are more likely to revalue their assets in the year they declare bonus issues. This argument was supported by (Brown, Izan et al. 1992) and (Easton, Eddey et al. 1993).

H9: Firms that declare bonus issues are more likely to revalue their fixed assets.

CONCEPTUAL MODEL

Figure 3.1 - Conceptual Model of the Asset Revaluation Decision Cycle
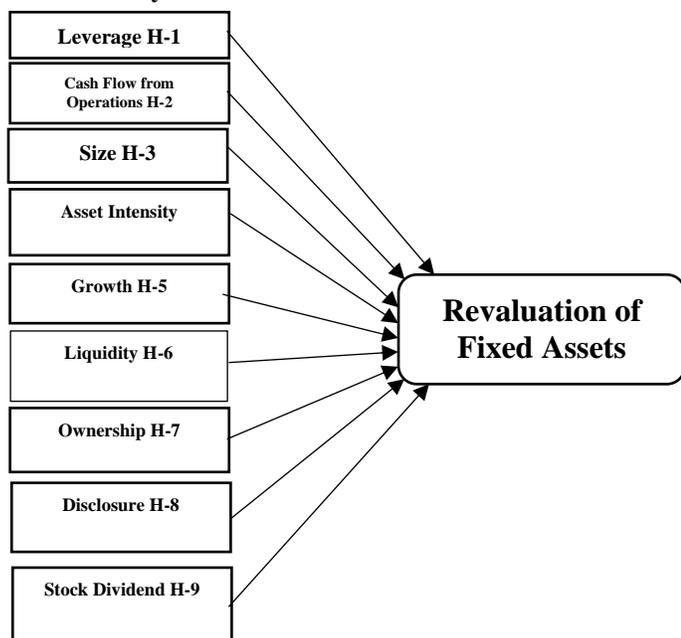
RESEARCH METHODOLOGY

Population, Sample, data collection and Sampling technique

In this study organization is taken as the unit of analysis and as for as population is concerned, all companies listed on the Pakistan Stock market and belongs to Non-financial sector were studied. The period of analysis is 10 years i.e., from 2009 to 2018. Sample consist of only those companies which revalued their non-current assets during the above mentioned period. This study contained 1090 observations from 109 non-financial sector companies. Secondary data was collected from the annual reports of the companies listed on the Pakistan stock market and official website of the State bank of Pakistan. This study considered only Non-financial sector as the financial sector has its own characteristics which are quite different from the financial sector and in addition to this financial sector has its own regulatory environment. The research used the Purposive sampling technique to study the phenomenon.

Research Model

Logistic regression: the statistical model which was used by this study is logistic regression model (logit) as the dependent variable is non-numeric or binary in nature i.e., the revaluation decision which has two options ether the entity revalue its assets or use cost model for the measurement of its NC tangible assets and it is according to the International Accounting Standard no.16. The periods in which the company used revaluation model were coded as 1 while for those periods in which cost model was used (in other words did not revalue its assets) were coded as 0. Leverage, log of assets, fixed assets intensity, liquidity, growth, ownership structure, stock dividend, disclosure and cash flow from operaions were taken as independent variables.

Quantitative Models

To capture the effects of the independent variables on the dependent variable i.e., revaluation decision Logistic regression approach will be used through the following regression equation.

$Rev_{ti} = \beta_{0+} \beta_1 lev_{ti} + \beta_2 lnassets_{ti} + \beta_3 fia_{ti} + \beta_4 liq_{ti} + \beta_5 gro_{ti} + \beta_6 owst_{ti} + \beta_7 std_{ti} + \beta_8 disc_{ti} + \beta_9 cfo_{ti} + e_{ti}$ Where:

1. Rev means the explained or predcted variable which is 1 if the company revalue its assets otherwise 0
2. X denotes the nine explanatory variables i.e. lev = leverage lnassets = log of assets: fia = fixed assets intensity: liq = liquidity: gro = growth: owst = ownership structure: std = stock dividend or bonus shares: disc = disclosure: CFO = cash flow from operations.

Table 1: Variables and their Measurements

Variable	Measurement	Represented by	Exp. sign of Rel.	M. Scale	Reference
Revaluation decision	A dummy variable, which equals 1 if the firm had revalued its asset and 0 otherwise;	*Rev*	(+)	Nominal	Agnes Cheng & Lin, (2009); Iatridis & Kilirgiotis (2012).
Leverage	DER = Total debt or Liabilities / Total Equities	*lev*	(+)	*Ratio*	Cotter & Zimmer (1995); Missonier-Piera (2007); Iatridis & Kilirgiotis (2012)
Ownership structure	*Foreign Ownership*	*owst*	(+)	Nominal	Pierra, (2007), Chen dan Luzhen (2012)
Firm Size	Size = Ln total assets	*lnassets*	(+)	*Ratio*	Brown et al. (1992); Lin

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Variable	Definition	Symbol	Sign	Type	Reference
F.A Intensity	Fixed Assets Investments = Fixed Assets / Total Assets	*fai*	(+)	Ratio	& Peasnell (2000); (Brown et al., 1992)
Liquidity	$CR = \dfrac{Current\ Assets}{Current\ Liabilities}$	*liq*	(-)	Ratio	Lin & Peasnell (2000); Barac & Sodan (2011)
CFO	Cash flow from operations	*cfo*	(-)	Ratio	(Cotter & Zimmer, 1995)
Growth	MBR = Market value of Equity/Book Value of Equity	*gro*	(+)	Ratio	Missonier-Piera (2007); Lin & Peasnell (2000);
Disclosure	A dummy variable which is equal to 1 if the company has export sales otherwise 0	*disc*	(+)	binary	
Stock Dividend	A dummy variable which is equal to 1 if the company issue bonus shares otherwise 0	*std*	(+)	Nominal	(Brown et al., 1992)

RESULTS AND DISCUSSION

Data Analysis

Bryman and Cramer (2009) illustrate the steps to be taken when conducting quantitative research, namely build theoretical framework; formulate hypothesis; select samples; collect data; analyses data; and confirm the findings by the validation of the hypotheses. This section explains the hypothesis testing undertaken, which employed logistic regression model. This employed STATA 14 to automate data collection, organization and statistical analysis. STATA provided all the relevant tests required about data requisite testing, descriptive statistics, logistic and importantly, helped to accurately apply complicated statistical techniques (Bryman and Cramer (2009)

Descriptive statistics

The research commenced by calculating the descriptive statistics to summarize and describe particular aspects or characteristics of the data set (Kleinbaum, Kupper et al. 1988). The measures included central tendency (e.g. mean, median, and mode) and variability (e.g. standard deviation, maximum and minimum values). (Adams, Khan et al. 2007) state that descriptive statistics help the researcher to understand and summarize the data, either in tabular or graphical form; in this instance, such statistics enabled the researcher to gain greater insight into the data characteristics prior to conducting deterministic modelling. Descriptive statistics clarify different things like averages, deviations from averages (SD) maximum and minimum values of different variables.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
id	1090	55	31.47871	1	109
year	1090	2013.5	2.8736	2009	2018
company	0				
lev	1090	-.1125786	61.44351	-1604.517	795.6967
lnassets	1090	6.617664	.7757901	3.779019	8.675501
fai	1090	.6074052	.2056002	.0134518	1.334811
liq	1090	1.664785	6.089174	.0000277	128.545
gro	1090	.720837	7.813067	-148.9876	150.1024
rev	1090	.8348624	.3714751	0	1
owst	1089	.2800735	.4492412	0	1
std	1089	.0606061	.2387159	0	1
roa	1090	.0584225	.1362314	-1.960707	.6553265
str	1090	.3331028	1.327193	-.8803828	20.66667
disc	1090	.5394495	.4986701	0	1
cfo	1090	1245500	5002644	-2.11e+07	4.41e+07
ni	1090	1110165	4751912	-3.28e+07	4.63e+07
accruals	1090	.0047647	.2290288	-2.200593	1.161765
invassets	1090	1.88e-06	.0000118	2.11e-09	.0001663
saltoassets	1090	.860869	12.1312	-2.371627	325.5361
debtorstoa~s	1090	.0381932	.3821011	-.326344	10.3801
ppetoassets	1090	.6904727	.7659079	0	18.51037

Correlation Analysis

Table 2 depicts the correlation among different independent variables. To find out the multicollinearity this matrices was used and if there is any independent variable which is highly associated with any other independent variable then there is a need to delete one of them. The table showing the relationship and correlation whether there is strong or weak correlation and according to the results there is no need to delete any variable which means that there is no single variable which is 100% correlated with any other variable.

Table - 2: Correlation matrices

	lev	lnassets	fai	liq	gro	owst	std	disc	cfo
lev	1.0000								
lnassets	-0.0456	1.0000							
fai	-0.0288	0.0143	1.0000						
liq	0.0028	-0.1604	-0.2102	1.0000					
gro	0.8602	-0.0260	-0.0719	0.0103	1.0000				
owst	-0.0103	0.3760	-0.1744	0.0325	0.0445	1.0000			
std	0.0047	0.0174	-0.1262	0.0034	0.0376	0.0728	1.0000		
disc	0.0487	0.2595	-0.1636	-0.0270	0.0447	0.0235	-0.0042	1.0000	
cfo	0.0061	0.3996	0.0314	-0.0135	0.0413	0.3104	0.0375	0.0565	1.0000

Variance inflation factor test is also applied to check the multicollinearity among the independent variables and if the value is less than 10 then it is assumed that there is no problem of multicollinearity. As in the below mentioned table the values are less than 10 so there is no problem of multicollinearity.

Table - 3: Variance inflation factor

Variable	VIF	1/VIF
gro	3.93	0.254304
lev	3.91	0.255923
lnassets	1.47	0.682056
owst	1.29	0.776618
cfo	1.25	0.800635
fai	1.15	0.868647
disc	1.13	0.886960
liq	1.08	0.923845
std	1.02	0.977014
Mean VIF	1.80	

Hetroscedasticity test was applied to check whether there is a constant variance or not among the residuals. According to the assumptions of the regression analysis there should be a constant variance among the residuals. Since the p value of the test was statistically significant, so the H0 is rejected depicting the existance of the problem of Hetroscedasticity so for this reason, we applied robust logistic regression as a remedy.

Table - 4: Breush-pagan test for heteroskedasticity

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

       Ho: Constant variance

       Variables: fitted values of rev


       chi2(1)      =    142.53
       Prob > chi2  =    0.0000
```

Table 5: Logistic Regression Analysis

Logictic regression is defined as a mathematical modelling approach which describes the relationship of predictor variables with a dichotomous dependent variable that has two possible qualitative categories (measures) coded as Boolean (binary) 'quantitative' variables (Kleinbaum, Kupper et al. 1988, Mendenhall and Sincich 2003). The research employed logistic regression (logit) analysis because it used non-metric data; that is, a revaluation decision (the qualitative dependent variable) which fundamentally has two possible answers. The decision to revalue is dummy coded by 1, while the not to revalue decision is coded by 0.

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Logistic regression                        Number of obs   =      1088
                                           Wald chi2(9)    =    123.90
                                           Prob > chi2     =    0.0000
Log pseudolikelihood = -411.59694          Pseudo R2       =    0.1539
```

rev	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
lev	-.0082873	.0051277	-1.62	0.106	-.0183373	.0017628
lnassets	.489697	.1426975	3.43	0.001	.210015	.769379
fai	3.087747	.4345215	7.11	0.000	2.2361	3.939393
liq	-.0030242	.0095795	-0.32	0.752	-.0217996	.0157513
gro	.0494061	.0281042	1.76	0.079	-.0056771	.1044893
owst	-1.199029	.2083607	-5.75	0.000	-1.607408	-.7906492
std	.3818616	.3397536	1.12	0.261	-.2840431	1.047766
disc	-.5535341	.2008595	-2.76	0.006	-.9472114	-.1598568
cfo	-9.20e-08	1.92e-08	-4.80	0.000	-1.30e-07	-5.45e-08
_cons	-2.475251	.9248552	-2.68	0.007	-4.287934	-.6625678

Pseudo R2 value, which is similar to the coefficient of determination in multiple regression and is used to assess the goodness-of-fit of the estimated model (Hair, Black et al. 2006) ; Kleinbaum *et al.,* 2008). A higher value of Pseudo R2 represents a better prediction level of independent variables in the model (Field, 2009). The detail discussion is as under:

Leverage (H1): The findings of the logistic regression model did not supported the H1 as a positive relationship was assumed in H1 whereas, the results show a negative relationship between debt equity ratio and revaluation decision which means that those companies having high leverage are not keen to revalue their assets. This is not in line with the previous research (Brown, Izan et al. 1992**)** Lin and Peasnell 2000a) which shows that there is a positive relationship between the leverage and revaluation decision.

Cash flow from Operations H2: A negative relationship was hypothesized between the cash flow from operations and revaluation decision and the findings are supporting H2 as the relationship that was shown by the logistic regression model is negative and significant which means that the companies having decline in their operating cash flows are inclined towards revaluing their fixed assets. The results accepted our H2 that as this is in line with the previous research (Cotter and Zimmer, 1995; Cotter, 1999; Choi *et al.,* 2009; Seng and Su, 2010; Piera, 2007) which shows that if the firm is in shortage of cash flow from operations they want external financing and to compensate this they have to manage their equity base to balance their debt equity ratio.

Firm' size H3: The research findings accept H3 and concluded that larger firms are more interested to revalue their NA as a positive and significant relationship was found by the logistic regression model between the size of the firm and revaluation decision.. Previous research **(Brown, Izan et al. 1992)** Barlev *et al.*, 2007; Choi*et al.,* 2009) also confirmed this relationship. Bigger firms are more inclined towards revaluation of their assets.

Fixed assets intensity H4: A positive relationship was hypothesized in H4 and the results also confirmed a positive and significant relationship between the fixed asset intensity and revaluation decision. The results accepted our H4 and this is in line with the previous research (Lin and Peasnell, 2000a; Barlev *et al.*, 2007) which shows that there is a positive relationship between the fixed assets intensity and revaluation. As the ratio of fixed assets to total assets increase the motivation for the management to revalue its non-current assets increases.

Growth H5: According to H5 it was assumed that those companies which have more opportunities for growth are more interested in revaluing their NA to increase their equity base and to finance the new projects. The results accepted our H5 as the relationship between revaluation decision and growth was found significant. This is in line with Whittred and Chan, 1992; Cotter, 1999; Seng and Su, 2010 findings which shows that there is a positive relationship between the growth and revaluation of non-current assets. Opportunities for the growth motivates management to go for revaluation of non-current assets as they need external financing to fulfil their growth needs.

Liquidity H6: This hypothesis assumed a negative relationship between the liquidity and revaluation decision and the results confirmed the same so, H6 was accepted as relationship was found negative but statistically insignificant which means that if the company is not comfortable to pay its liabilities on timely basis then resultantly, to enhance the debt capacity the management wants to revalue the NA and this is according to the previous results. Previous research showed mixed results. Some studies concluded the positive whereas others showed negative relationship (Whittred and Chan, 1992; Cotter, 1999) between the liquidity and revaluations. As the liquidity decreases the motivation for the management to revalue its non-current assets increases.

Ownership Structure H7: Presence of foreign investor in the portfolio of investors is assumed to have positive relationship with the revaluation decision but the results found a negative and significant relationship between the above mentioned variables. The results rejected our H7 and this is not in line with (Whittred and Chan, 1992; Cotter, 1999; Seng and Su, 2010) the previous research which shows that foreign investors are more interested in relevant information in terms of the fair valuation of the firms non-current assets.

Disclosure H8: According to this hypothesis a positive relationship was assumed between the disclosure (export sales) and revaluation decision but the results concluded a negative relationship so, reject our H8 which is not in line with (Brown *et al.,* 1992; Piera, 2007; Iatridis and Kilirgiotis, 2012) which shows that to enter into foreign markets or export sales there is a need to show the relevant information in terms of the fair valuation of the firms non-current assets.

Stock dividend or Bonus shares H9: The findings of the logistic regression model test found a positive but insignificant relationship between the revaluation decision and bonus issue so, our hypothesis (H9) was rejected and this is not in line with the findings of Brown *et al.,* 1992 which shows that there is a positive relationship between stock dividend or bonus shares and revaluation. Issuance of bonus shares motivates management to revalue its non-current assets.

CONCLUSIONS AND RECOMMENDATIONS

Concluding remarks and Managerial Implications

This study concluded regarding the measurement options which are given by the international accounting standard-16 for subsequent measurement of non-current assets to the management of Pakistani listed companies and management motives underlying the use of fair value measurement. It was concluded that size of the firm, fixed asset intensity, growth opportunities, and decline in the operational cash flows and liquidity will motivate the management to revalue the non-current assets whereas leverage and liquidity showed a negative but insignificant relationship. Ownership structure and export sales showed a negative but highly significant relationship with the revaluation decision. Stock dividend revealed a positive but insignificant association ship with this. Basically fair value measurement was introduced by the international accounting standard board (IASB) to improve the relevancy of the financial statements and to improve the quality of decision making of the investors.

As for as upward revaluation is concerned, the managerial motives underpinning this is a strong argument as concluded by this study for the said period. The study found the two major factors or reasons why the management is more inclined to revalue their fixed assets in Pakistani corporate world. First and the most important reason is to manage the debt equity ratio and to increase the debt raising capacity and to avoid insolvency or debt covenants. The second major cause behind this decision is that the management want to give signal to market as well as stakeholders regarding the growth and prosperity to decrease the information asymmetry.

Basically the behavior of the management is opportunistic in the selection of method for the measurement of non-current assets and they use this to improve the borrowing capacity of the firm to manage debt equity ratio and to avoid violence of debt covenants, to deceive the lenders and to give positive signal to the market. The management of the companies can communicate through revaluation to the shareholders regarding the future performance and position of the business. Chances for maximum positive consequences are more inclined management to do the revaluation.

Limitations and Future Research Limitations and Future Research

As other many studies this study also has some limitations. Leverage, size of the firm, fixed assets intensity, liquidity, growth, ownership structure or presence of foreign shareholders in the portfolio of shareholders, stock dividend, disclosure in terms of export sales and cash flow from operations were taken as independent variables to examine their impact on the revaluation decision. Other variables can also be included to find the underpinnings.

The present study considered only the non-financial sector, further studies can be undertaken on both financial as well as non-financial sectors. Although the managerial practices and many other characteristics are common in the developing countries yet each country has its own dynamics of business environment. Therefore, this study cannot be generalized to all the settings. To generalize the results such kind of studies can also be conducted in other developing countries also. The impact of revaluation decision on firms as well as market performance in terms of return on assets and stock market returns respectively can also be studied. Financial institutions can also undertook a study as a base to approve the loan demanding applications. A longitudinal study can also be undertaken to explore the short as well as long term effect of the decision of revaluation on the company's profitability and market performance.

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