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Conditional CAPM using Expected Returns of Brazilian Market from 1992 to 2013: a New Approach

By Elmo Tambosi Filho
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Abstract- In the last decades, CAPM model has been of great interest in the scientific scene. Despite all the criticism, the improvement of the static CAPM, which has generated new dynamic models, provided investors with stronger guarantee through financial transactions. The CAPM and its static version were and are still very important in the financial scene. Nowadays, more sophisticated adaptations of the CAPM are found, which allow us to explain some matters in finance that had remained unqualified for a couple of time. Considering such discussion about the CAPM validity, this study aims to create a basis for reflection upon the conditional model, comparing it with the static one. In order to verify such facts, tests of conditional models are examined (with beta varying throughout the exercise), something uncommonly studied in the literature. Such tests are suitable to incorporate variances and covariance that change at long run. Methodological wise, the study tested the conditional CAPM model borrowing a leaf from Jagannathan and Wang (1996) using macroeconomics and financial variables from the Brazilian New Market. Based on our findings, there is evidence that the conditional CAPM of Jagannathan and Wang (1996) for the North American market is perfectly applicable to the Brazilian New Market.

Keywords: *conditional CAPM, financial markets, portfolio.*

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CONDITIONALCAPMUSINGEXPECTEDRETURNSOFBRAZILIANMARKETFROM1992TO2013ANEWAPPROACH

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Conditional CAPM using Expected Returns of Brazilian Market from 1992 to 2013: A New Approach

Elmo Tambosi Filho

Abstract- In the last decades, CAPM model has been of great interest in the scientific scene. Despite all the criticism, the improvement of the static CAPM, which has generated new dynamic models, provided investors with stronger guarantee through financial transactions. The CAPM and its static version were and are still very important in the financial scene. Nowadays, more sophisticated adaptations of the CAPM are found, which allow us to explain some matters in finance that had remained unqualified for a couple of time. Considering such discussion about the CAPM validity, this study aims to create a basis for reflection upon the conditional model, comparing it with the static one. In order to verify such facts, tests of conditional models are examined (with beta varying throughout the exercise), something uncommonly studied in the literature. Such tests are suitable to incorporate variances and covariance that change at long run. Methodological wise, the study tested the conditional CAPM model borrowing a leaf from Jagannathan and Wang (1996) using macroeconomics and financial variables from the Brazilian New Market. Based on our findings, there is evidence that the conditional CAPM of Jagannathan and Wang (1996) for the North American market is perfectly applicable to the Brazilian New Market.

Keywords: conditional CAPM, financial markets, portfolio.

I. Introduction

The last two decades witnessed a growth in numbers of empirical studies that examined the product capacity of the static version of Capital Asset Pricing Models (CAPM). Conclusions from these studies demonstrated that static CAPM was unable to give a reasonable explanation to *cross-sectional* variation of the average returns of the analyzed portfolios.

Costa Jr. (1996) Emphasized this idea when he mentioned that an original version of CAPM of absolute simplicity, recognized information of a greater relevance and applied it in a comprehensible manner. What happens is that the hypothesis that surrounds this original version requires a market of a perfect competition, which makes one to fear for lack of realism. Answers to this skeptism could be found in the empirical test done in the current study, that is, what is important is not the realism of the hypothesis of startup, but, to know if it is capable of concluding for the adjustment of the models to reality.

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Fama and French (1992) the ferrous critics of CAPM performed multivariate tests (multiple regression) and found two variables that explain the greater part of *cross-section* variation of medium returns: Book Value/Market Value index have a positive correlation with the returns of stocks while the variable as a whole is negative and significantly correlated and the beta appeared insignificant in this test.

Fama and French (1993) found in their model three statistically associated factors that are significant as different from zero. This result suggests that the *proxy* of the factors associate's risks to returns of the human capital and the betas are unstable. Notwithstanding, this model was able to explain the *cross-sectional* of the expected returns.

The CAPM and it static version were and are of great importance in finance. Therefore, in today's applications we find complex adaptations of CAPM that enables one to envisage results for questions that are yet to be resolved in finance.

Based on this panorama therefore, and considering the whole scope of discussion that surrounds the validity of CAPM, this study aims to present the advantages of the conditional or dynamic model (models that incorporate variances and co-variances that changes during a space of time), in relation to a static model.

Therefore, we study the tests of conditional models (*beta* variance during a period) that are not commonly studied in literature. These tests are convenient in order to incorporate variances and co-variances and changes in a future period. In the conditional model test, we highlight the studies of Jagannathan and Wang (1996), and Ferson and Harvey (1999).

Bonomo (2002) mentioned yet, important studies about conditional CAPM among these, we cite Bodurtha and Mark (1991) where a *beta* of a group of assets is defined as a conditional covariance of error committed upon forecast of the returns on assets and the error on forecasted market returns. These models have various beta coefficients while the standard CAPM has only one.

Finally, this study is structured in five sections, firstly, being contemplation of introductory aspects of the study; the second section has the background of

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Conditional Capital Asset Pricing Model, thirdly, about the methodological approach of Fama and MacBeth (1974).

II. Background of Conditional Capital Asset Pricing Model

CAPM is defined as a model which relates an expected profitability of an asset in a certain market and equilibrium with its undiversified risks, also known as *beta*. Besides Sharpe, other authors also formulate CAPM, in its static version. Among these authors are Lintner (1965), Mossin (1966) and Treynor. This version of static CAPM or conditional has some consistent results when we perform empirical tests in order to verify the adherence capacity of the model to the reality of some economies.

In all tests of non-conditional CAPM such as that of Fama and MacBeth (1974), Black, Jensen and Scholes (1972) it was supposed that beta would be static, that is, the assets systematic risk would not change.

Haugen (1986) shows that Black, Jensen and Scholes consider that there is a positive linear relationship between beta and the expected return. As a consequence of this fact, Black, Jensen and Scholes (1972) encounter in their test of CAPM a positive relationship between profitability and the beta.

Merton (1973) shows that the Consumption Capital Asset Pricing Model (ICAPM) had as an objective, generalize the CAPM model of Sharpe (1964) for an intertemporal context. The original ICAPM takes the hypothesis that the investors consumed all the reaches after a period, such that the said reaches and the consumptions are confused.

The static CAPM of Sharpe- Lintner-Black, given as R_i , which denotes the returns on, shares $_i$ and R_m the portfolio market returns for all shares of the economy. The version of Black (1972) is:

$$E[R_i] = \gamma_0 + \gamma_1 \beta_i \tag{2.1}$$

where γ_0 and γ_1 are defined as expected market returns and risk Premium expected from the market respectively, and where β_i is defined as:

$$\beta_i = Cov(R_i, R_m)/Var[R_m] \tag{2.2}$$

Fama and French (1992) followed Black (1972) and examined empirically the static CAPM, arriving at a conclusion that, there is a weak relationship between medium return and the *beta*, and finding a strong evidence against static CAPM.

Thus, Jagannathan and Wang (1996) developed a study which partially contradicts these evidences. In these same studies they observed that, upon application of CRSP index as a base for market portfolio, they found in their non-conditional model, implicit in the conditional CAPM, an explanation close to 30% of *cross-sectional variation of the medium returns of* 100 market portfolios, similar to that used by Fama and French (1992). For the implementation of CAPM therefore, is commonly used as *proxy* all the shares that are enlisted in the *New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX)*, which could be considered as a reasonable *proxy* for the market returns on portfolio of all assets. However, Fama and French (1992) found that, upon usage of that *proxy*, the same was not sufficient for a satisfactory analysis of the performance of CAPM.

As a result of this fact and in order to ameliorate the *proxy*, Jagannathan and Wang (1996) followed Mayers (1972) and included in their models returns on human capital. When human capital is also included in the portfolio of the market, the non-conditional model implicit in conditional CAPM conditional is then capable of explaining more than 50% of the *cross-sectional* variation of the medium return. Besides this, the statistics tests where unable to give answers as they reject the model.

III. Methodology of Fama and Macbeth (1974)

Haugen (1986) shows that Fama and MacBeth (1974) methodology introduced a significant difference as related to the former tests, since they arrived at coherent results concerning fundamental forecasts of CAPM (Black, 1973 version).

Fama and MacBeth (1974) constituted 20 portfolios which contain shares enlisted in *NYSE* for the period of 1926 through 1929. Latter, they estimated the beta of each of the portfolios and highlighting the monthly returns of the market index for the period of 1930 through 1934. They used the betas of each of the portfolios of the prior periods to forecast the monthly returns of the portfolios for the periods subsequent to 1935 through 1938. The process estimating the market beta was repeated nine times until 360 estimations were ascertained which was in the January 1935 through June of 1968.

Haugen (1986) showed that in this case, Fama and MacBeth adopted betas and returns from different periods. The estimated beta in a period is used to estimate interest rate of returns for a future period. The results of these tests were very comforting, in that, CAPM gained the supports of scientists after the publication of this study.

Even though the critics of the model are yet to find in various studies that takes it as literary support, amongst these, one would observe the model produced by Jagannathan and Wang (1996) through Fama and MacBeth (1974) that utilizes the same methodology.

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IV. The Conditional CAPM Model for Brazil using Returns of Brazilian Market

The selected variables (in the first place) are consisted of integral part of the Conditional *CAPM Model* for Brazil. It refers to the portfolios constructed through the monthly share returns negotiated at the Stock Market of São Paulo (Ibovespa), GDP of the market and, for the premium, the spread between Inter-finances Operation Deposit Index (DI), reported by the Central of Custody and Liquidation of Private Sector Papers (CETIP) and the interest rate (Selic), that is aimed to serve as a forecast for the variations of the business cycle.

Using the approach cited above, seven portfolios were created for the Brazilian market, containing five shares of Ibovespa during the period of jan/1992 through dec/2013.

The data were collected from the Central Bank of Brazil, and the Economática databases.

Following the steps above, Jagannathan and Wang (1996), used the returns of all the shares of NYSE and AMEX and constituted 100 portfolios in function of size variable with monthly returns from July of 1963 to December of 1990, summing 330 observations. For each portfolio one calculates a regression between shares that compose the portfolio and the market indexes (NYSE and AMEX).

We created a time series of the monthly returns for each of the seven portfolios (Brazil). The model for the moment is estimated using the method of generalized moment.

Also, we used the average value of each of the coefficients to determine their significance, and thus, the portfolios were gradually re-balanced annually.

According to Fama and MacBeth (1974) these portfolios were rebalanced period by period, before the estimation of the beta attains the total of the estimation of the analyzed period. All the shares were attributed the same weight in each portfolio.

An observation that confronts the literature review with the research deals with the prior decision as to selection of the Brazilian index, as gearing the regional markets of the region. This implies an implicitly assumption that the market is segmented.

V. Analysis of Results based on Brazilian IBOVESPA

The regressions of the models are estimated using Fama & MacBeth (1974) methodology. The model was estimated using the generalized model of the moments. Through the correction of the errors we verified that if the residual variance has an effect on the price of the assets or the expected rate of returns and, base on the results, there is no indication that the assets with residual variance greater than the average, produces rate of return higher than the weighted average during the future period. Seven portfolios were constructed with five shares in each one. The tested period ranged from january, 1992 through december 2013. For the Brazilian market the premium is represented by *spread* between the interest rate of CETIP and that of SELIC. While in the human capital it is represented by the market Gross Domestic Product (*GDP*), the market *proxy* will be Ibovespa. Thus, the equation that is being estimated for the Brazilian market would be as follows:

Table 5.1 : Static CAPM without Human Capital (Brazil)

$$E[R_{it}] = c_0 + c_{size}\log(ME_i) + c_{ibov}\beta + c_{premio}\beta + c_{pib.mer}\beta$$

Coeficients:	C_0	C_{ibov}	C_{premio}	$C_{pib\ mer}$	C_{size}	R-square
Estimate:	-2,47	1,30				8,50
t-value:	-0,93	0,33				
p-value:	0,00	0,00				
Correction -t:	-0,28	0,09				
Correction- p:	0,00	0,00				
Estimate:	-0,74	0,64			0,75	45,00
t-value:	-0,46	0,16			4,80	
p-value:	0,00	0,00			0,00	
Correction -t:	-0,35	0,67			2,66	
Correction -p:	0,00	0,00			0,00	

Results available in tables 5.1, above show that *t value* for C_{ibov} is 0,33. The R^2 of the regression is only 8,50%. This means to say that the *cross-sectional* variance of the average returns is yet to be fully applied when we use a static CAPM without the inclusion of the market *GDP* in the case of Brazil.

The model for the correction of errors as per estimation, is not significant. Thus, after correction of errors, that treat the error of the model so that one would use this term to reflect on the behavior of the variables in short run with its value a long run, that is, it is a means of reconciliation of the behavior in a short run of a variable

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with its behavior for a future period. The C_{ibov} is not significantly different from zero. When the size variable is introduced into the model, we found for C_{size} a *t-value* of 4,80 and the R^2 rose to 45,00%.

Notwithstanding the increase of R^2 and the fact that the model did not present any significant changes after the correction of the errors, the model appears inconsistent (because even after inclusion of the size variable, for the Brazilian market, it does appears to not have been influenced as a result of the static model not absorb the effects of this variable). Analysis of the Brazilian market appears to be in the same direction as conclusions reached for the, the North American market.

The regressions of the models are estimated using Fama & MacBeth (1974) methodology. The model was estimated using the generalized model of the moments. Through the correction of the errors we verified the if the residual variance has an effect on the price of the assets or the expected rate of returns and, base on the results, there is no indication that the assets with residual variance greater than the average, produces rate of return higher than the weighted average during the future period. Seven portfolios were constructed with five shares in each one. The tested period ranged from january, 1992 through December 2013. For the Brazilian market the premium is represented by *spread* between CETIP and SELIC interests' rates, while the human capital is represented by the *GDP* on the nation. The *proxy* of the market would be Ibovespa. The equation that is being estimated for the Brazilian market is as follows:

Table 5.2 : Static Capm with Human Capital (Brazil)

$$E[R_{it}] = c_0 + c_{size}\log(ME_i) + c_{ibov}\beta + c_{premio}\beta + c_{pib.mer}\beta$$

Coeficientes:	C_0	C_{ibov}	C_{premio}	$C_{pib\ mer}$	C_{size}	R-square
Estimate:	-2,10	-1,19	-3,74			11,20
t-value:	-0,99	-0,15	-0,80			
p-value:	0,00	0,00	0,00			
Correção -t:	-0,34	-0,22	-0,35			
Correção -p:	0,00	0,01	0,00			
Estimate:	-0,79	0,66	0,43		0,61	41,00
t-value:	-0,30	0,12	0,33		3,90	
p-value:	0,00	0,18	0,32		0,00	
Correção-t:	-0,24	0,03	0,26		2,50	
Correção-p:	0,00	0,06	0,45		0,00	

Results in table 5.2 above show that the estimated value for C_{premim}, is not significantly different from zero. The *t-value* for C_{premim} is –0,80. The R^2 is only 11,20%. Note that the R^2 is similar to the result encountered in the previous model.

When the model for the correction of errors is introduced the *t-value* for C_{premio} becomes –0,45. When the variable *size* is added to the model the *t-value* for C_{size} comes to 3,90. And when one introduce the model for correction of errors, the *t-value* for C_{size} declines to 2,50 and R^2 grows to 41,00%.

The value of R^2 for the Brazilian market remained 41,00% (a value close to that found in the static CAPM) and the estimated value for C_{premim}, and after the correction of the errors, it became significantly different from zero. This fact could be explained by non-inclusion of market GDP. In this regards, the conditional model appears to be more effective for the explanation of the *cross-sectional* variances average of the market returns for Brazilian market.

The regressions of the models are estimated using Fama & MacBeth (1974) methodology. The model was estimated using the generalized model of the moments. Through the correction of the errors we verified the if the residual variance has an effect on the price of the assets or the expected rate of returns and, base on the results, there is no indication that the assets with residual variance greater than the average, produces rate of return higher than the weighted average during the future period. Seven portfolios were constructed with five shares in each one. The tested period ranged from january, 1992 through december 2013. For the Brazilian market the Premium is represented by *spread* between the CETIP and SELIC interest rates, while the human capital is represented by the GDP of the Brazilian market. The market *proxy* would be Ibovespa. The equation that is being estimated for the market is as follows:

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Table 5.3 : Conditional CAPM with Human Capital (Brasil)

$$E[R_{it}] = c_0 + c_{size}\log(ME_i) + c_{ibov}\beta + c_{premio}\beta + c_{pib.mer}\beta$$

Coeficientes:	C_0	C_{ibov}	C_{premio}	$C_{pib\ mer}$	C_{size}	R-square
Estimate:	-1,01	2,65	2,60	-0,59		13,00
t-value:	-0,95	0,25	-0,28	-0,51		
p-value:	0,00	0,00	0,00	0,00		
Correção -t:	-0,28	0,12	-0,19	-0,03		
Correção-p:	0,00	0,03	0,18	0,12		
Estimate:	-0,66	10,75	1,86	-1,28	0,71	53,00
t-value:	-0,34	0,31	0,18	-0,43	4,10	
p-value:	0,00	0,00	0,00	0,00	0,00	
Correção-t:	-0,11	0,02	0,10	-0,23	0,31	
Correção-p:	0,23	0,12	0,56	0,01	0,00	

Results showed by table 5.3 above show that the estimated value for $C_{pib.mer}$, using Fama-MacBeth methodology, is not significantly different from zero. The *t-value is* –0,51 and R^2 is 13,00%.

While in the Brazilian market, when one introduces a model for the correction of the errors *t-value for* $C_{pib.merr}$ drops to –0,23, the *p-value* goes to 0,31 and the coefficient C_{premio} becomes significant. When the *size* is added to the model, the *t-value for* C_{size} becomes 4,10, and o R^2 rises to 53,00%.

The conditional CAPM with the inclusion of *GDP* of the Brazilian market appears to be closer in results at to that of the United States. Besides that the $C_{premio\ and}$ $C_{pib.mer}$ variables have become significantly different from zero after the correction of the errors, the consistence of the model does not seem to have been touched.

Table 5.4 : Conditional CAPM without Human Capital (Brazil)

$$E[R_{it}] = c_0 + c_{size}\log(ME_i) + c_{ibov}\beta + c_{premio}\beta + c_{pib.mer}\beta$$

Coeficientes:	C_0	C_{ibov}	C_{premio}	$C_{pib\ mer}$	C_{size}	R-square
Estimate:	-1,43	3,97		-0,52		11,00
t-value:	-0,89	0,80		-0,55		
p-value:	0,00	0,00		0,00		
Correção-t:	-0,19	0,13		-0,03		
Correção-p:	0,00	0,01		0,04		
Estimate:	-0,95	1,58		-1,35	0,78	52,00
t-value:	-0,46	0,70		-0,66	3,80	
p-value:	0,00	0,00		0,00	0,00	
Correção-t:	-0,12	0,02		-0,13	0,38	
Correção-p:	0,02	0,03		0,15	0,00	

Results found in tables 5.4 above show that the estimated value of $C_{pib.merr}$, using Fama-MacBeth methodology is not significantly different from zero. The *t-value is* –0.55 and R^2 is only 11.00%. However, after the correction of the errors, we conclude that $C_{lpib.mer}$ becomes significantly different from zero as against the North American market.

When we introduce the *size* variable, the *t-value* becomes 3,80 and R^2 grows to 52,00%. Besides the rise of R^2 the model is not consistent. It is necessary to permit that beta varies at long run so that the expected *cross-sectional* returns of the market would be explained.

After inclusion of variable "*size*", the R^2 of all the models had an abrupt change. And besides this fact that the finding are being coherent with what is found in literature, we conclude that the models for the analyzed countries appears inconsistent for they did not present any changes in the parameters at long run.

The model did not appear to present satisfactorily the reality of the various economies. Firstly, because we know that business cycle is dynamic in most economy and as per models analyzed above this variable was not contemplated and secondly, because the market *proxy* would not just be enough to represent any economy.

The model needs to be ameliorated with the inclusion of new variables that better represent each market.

Therefore, we must not discard static CAPM, because it is capable of explaining the market for a determined space of time.

VI. Final Comments

The static CAPM, without the inclusion of the human capital variable does not appear to satisfactorily explain the expected *cross-sectional* returns of the analyzed markets.

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As different from the North American market, the Brazilian market have an increasing relations between the average returns of the portfolios and the size, thereby showing a substantially high returns for a bigger sized portfolio.

In relation to the conditional CAPM, without the inclusion of human capital variable we observed in the Brazilian case, the estimated value of C_{premim} is not significantly different than zero for the new market shares

However, when we introduce the model for the correction of errors variable C_{premim} becomes significantly different from zero for the case of Brazil. In case of North America and even after adoption of the model for the correction of errors, the variable C_{premim} continue to be significantly different from zero. This signifies that the risk premium drasticaly influenced the market analyzed. When the *size* variable is incremented to the model the R^2 rises proportionately for the Brazilian.

When the *size* variable is added to the model the R^2 suffers a considerable increase, even though the variable *size* presents some effects on the model. This means that the conditional CAPM, even without the inclusion of human capital, is able to explain the efficacy of the *cross-sectional* variance medium returns of the analyzed portfolios. This happens in that the *size* variable or size effect aggregately influenced the Brazilian Market.

In relation to the conditional model using New Market Ibovespa Portfolio we may conclude with no doubt that the power of explanation of the model increases reasonably for each one of the cases analyzed.

The model appears to be able to capture the effects of the dynamics of the economy. By introducing the *size* variable, the models have a considerable increase in their R^2, but note that this variable appear to be more significant in the Brazilian market as probably as a result of differences found in the composition of new market shares of these market.

Finally, there is evidence that the conditional CAPM of Jagannathan and Wang (1996) for the North American market is perfectly applicable to the Brazilian new market , Our finding in this study permits us to differentiate and also identify an important tool for the potential investor of these countries.

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The Effect of Announcing Private Offering Placement on Stock Exchange on Stock Returns in Amman Stock Exchange at Semi-Strong Level(Jordan Case)

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Abstract - The study aims at testing the efficiency of Amman stock exchange at the semi- strong level and examining the effect of announcement of stock offering for placement by the existing companies on stock prices of Amman stock exchange (ASE). The researchers followed the event study methodology.

The importance of this research is to highlight the motives that make the managements of the companies registered at ASE tend more to financing through stock issuance than to debt financing.

Results showed that the abnormal Returns after the event don't have statistical significance , its graph shows that Amman Stock Exchange is inefficient at the Semi- Strong level and these a leak in the information pertaining to stock offering before the approval of Commission on the offering at the Semi – Strong Level. However these results are consistent with evidence provided in (Siswesik 2002, Costello 2004, and Malhotra 2010.)

The study presented a number of recommendations that may be helpful in improving the efficiency of the ASE, which in turn increases its role in the Jordanian economy as whole.

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THEEFFECTOFANNOUNCINGPRIVATEOFFERINGPLACEMENTONSTOCKEXCHANGEONSTOCKRETURNSINAMMANSTOCKEXCHANGEATSEMISTRONGLEVELJORDANCASE

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Chapter One

I. General Framework of the Study

a) Introduction

The company can obtain long –term financing in the form of stocks, debts, or retained earnings or through a combination of these resources. The process of Capital Financing through the issuance of stocks is the highest cost choice in comparison todebt financing. Different economic sectors vary in the debt rate, for example high-tech industries in the United States are characterized by low debt rate of approximately 21%, while service companies are characterized by highdebt rate of approximately 60% (Ehrhardt, 2005). However, the companies working in the same sector vary in this percentage. The theory of Capital Structure tries to find the reasons behind such variation and to determine the ability of the company to raise its value by selecting the optimum debt weight in the Capital Structure.

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The companies working in the developing countries are characterized by a low debt rate comparing with the debt rate of the companies working in industrial countries. At the local level, for example, the average debt rate for forty one Jordanian industrial companies representing the most important companies in the industrial sector listed in Amman Stock Exchange is approximately 28%, including Petroleum Refinery Company and Phosphate Mines Company, both of which are characterized by unusual high debt rate, while the rate is 26% without these two companies, which is considered a weak rate (see Table 1 in the Appendix of Tables).

By examining these figures, the researcher believes that there is a preference for decision-makers at Jordanian public shareholding companies to using Stock Offering as a source for long-term financing[1], which may be due to the fact that they are not obliged, according to the Jordanian Companies Act, to distribute the profits of such stocks, and consequently regard it, mistakenly, a source of financing at no cost, even though it is more expensive, compared with debt financing. They also may not realize the fact confirmed by the theory of Financial Structure that stock offering incorporates informational content that has negative effects on stock value [2].

The theoretical basis suggests that sudden announcement of new stock offering gives an indication to the investors outside the company that the returns are less than expected, since it did not resort to financing through Capitalization of Profits (Retained Profits) in financing its new projects. Moreover, the investors from outside the company may attribute the Private Placement offering to a motive by directors to make use of the internal information they have obtained, by issuing

[1] This notion confirms the data related to stock-issuance companies, where a continuous repetition of stock offering is noticed when a decision is taken to increase the Capital.

[2] These two notions need to be proved through the use of a questionnaire. This has been confirmed for the researcher by the general impression of the workers in the financial sector that announcing stock offering is good information, which indicates that the company is in a good situation and the stocks of such companies actually witness a noticeable movement.

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stocks they already know they are priced higher than they should be, thus external investors will infer non-positive conclusions about the actual value of the company assets as well as its development opportunities, which negatively affects the stock prices in the market. Other financing choices available for company's management, of low debt rate, give an indication to external investors on the low confidence of creditors regarding potential future profit available for the company.

This study will try, by using Event Methodology, to examine the effect of announcement of stock offering for private placement on the stock returns at Amman Stock Exchange for the period from 2011 to 2012 in order to identify the efficiency of Amman Stock Exchange at the semi-strong level. The study will also try to shed light on the informational content to announce for stock offering for private placement, in an attempt to prove the negative content included in stock offering for private placement, which goes in line with the theoretical framework of stock offering, or the opposite as the common belief that stock offering contains positive content.

b) Significance of Study

The studies that investigate markets efficiency at the semi-strong level are considered of great importance, since proving the possibility of achieving abnormal returns through an announcement enables investors to build investment strategy based on such announcement, which enables them to achieve abnormal returns, and if the investor was able to achieve this, then the Amman Stock Exchange would be inefficient market at the semi-strong level.

Furthermore, repeating such studies is also important since the size of the market in terms of number of stocks and their trading volume, particularly in emerging markets, passes through a continuous change and increase, so that markets that proved to be inefficient in a certain period of time may become efficient in another period of time, And vice versa. Proving that the market is inefficient at the semi-strong level gives a motive to interpret the deviation in the abnormal returns resulting from this announcement. There are various Western studies in this field, some of which try to interpret this deviation in terms of behavior, while others relate it to what is known as (anomalies) in financial markets.

In addition, what gives this study an additional significance is that it tries to highlight the motives that make the managements of the companies registered at Amman Stock Exchange tend more to financing through stock issuance than to debt financing, which is the least costly source of financing according to financial theories. Finally, the lack of studies oriented towards efficiency at the semi-strong level in Jordan gives this study more significance.

c) Objectives of Study

This study aims at investigating the efficiency of Amman Stock Exchange at the semi-strong level and examining the effect of announcement of stock offering for placement by the existing companies on stock prices at Amman Stock Exchange, in order to make sure of reactions on such type of announcements. Empirical studies conducted in different countries have shown mixed results; for example the study of Nelson (1965), which used monthly data of returns and examined (380) private placement in the United States, did not find any effect for placement announcements. Hou and Meyers (2002) examined (69) private placement issuance and have found that the issuance is connected to negative abnormal returns. McConnell and Muscarella (1985) and Tan, Chng & Tong (2002) found that stock prices react positively to companies' announcement for investment opportunities as well as to investment expenditures during the periods of stock issuances.

d) Statement of the Problem

The issue of efficiency, especially at the weak level and semi-stronglevel[3], represents an important research case, which has received a remarkable attention in the financial literature. Thus, the inefficient market at these two levels means that the market does not reflect the real actual value of the stock, and efficiency should be achieved so that the markets can achieve their goals in the proper allocation of financial resources for the most productive projects. The prices of the stocks should reflect their real values for the following reasons:

1. Lack of monopoly power on prices able to impose prices on the market, i.e. the prices move randomly without the ability to control them by dealers.
2. Lack of spread of reliance on authenticated information and spread of effect of rumors or false information in taking the investment decision.
3. Preventing sharp fluctuations that take place at inefficient markets that would reach up to the breakdown point or the spread of Price Bubble phenomenon.

Accordingly, this study will try to answer the following questions:

1. Is Amman Stock Exchange efficient at the semi-strong level, regarding the announcement of stock offering for private placement for company shareholders?
2. Does the effect of stock offering for private placement that aims to finance investment projects

[3] the case of efficiency on the strong and very strong levels, which represents the trade of insiders and market specialists and professional money managers, is considered the maximum (absolute) hypothetical case for the hypothesis of market efficiency, consequently the hypothesis of efficiency within this level may not apply, i.e. the market within this type of (special) information is likely to be inefficient.

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by public shareholding companies registered at Amman Stock Exchange have a positive or negative effect on prices?

e) Review of Related Literature

Malhotra et al (2010) investigated the reactions of abnormal returns of stock prices for the announcements of stock offering for private placement at Indian stock markets. It also examined information hypothesis, price squeeze hypothesis, market conditions hypothesis, and market efficiency hypothesis at the semi-strong level. The methodology of Event Study has been used, in addition to Multivariate Regression Analysis. Results of study have revealed that the Indian market responds positively to the announcements of stock issuances and that there is no leak of information prior to stock issuance at the Indian markets, and there is a weak evidence that the Indian market is efficient at the semi-strong level. The study has not also found any evidence supporting market conditions hypothesis and information hypothesis, whereas the study has found evidences on price squeeze hypothesis.

Samuel siswesik (2002) investigated the effect of announcing stock offering and the bonds that are convertible to shares as well as normal bonds during the period from the year1980 to 1993 at New York Stock Exchange. The results have shown that the average abnormal return for the announcing companies is negative and statistically important for each of the public shares and the bonds convertible to shares. The average abnormal return for conventional bonds was negative but not statically important, and the average rate of the abnormal return for the non-announcing companies was negative and statistically important for the three types of public offering. Besides, the Correlation Coefficient for the abnormal returns of companies as well as the abnormal return of the industrial sector as a whole were positive, which means that the investors deduce certain connotations about the general capabilities of industry as a whole, not from shifts in the competitive advantage between announcing and non-announcing companies.

Augusto Costello (2004) discussed the effect of announcement of offering bonds and stocks in the case of Chile. This study examined the effect of announcement of offering of securities on stock prices for a sample of (172) issuances of securities at the Chilean Financial Market during the period from 1993-2003. The study found that the bond issuance has not resulted in any abnormal profits that are statistically important, while the stock issuance has resulted in negative abnormal returns that are statistically important. The researcher has also found that the size of the negative abnormal returns was directly connected to the size of stock issuance. This study is considered a leading one in investigating the effect of announcement of offering securities for private placement in the developing countries. Regarding bond issuance, the results were in line with the (No News Theory), or with (No Impact Theory). These results are also in harmony with Myers and Majlov (1984), owners of "Asymmetry of Information Theory" which states that the announcement of debt issuance should not have any effect on stock prices, or has very slight negative effect, as indicated by the study of the Chilean market.

The model of Myers and Majlov (1984) suggests that, in the presence of asymmetry of information between the company directors and the market, there would be a motive for stock issuance when the stocks are priced more than they should be, then the market would connect to the event positive possibilities, represented by that the company is priced higher than it should be when the company issues new stocks, and hence comes the result that stock prices must fall when companies announce stock issuance, which makes such financing more costly. The study revealed that approving the stock issuance results in negative abnormal returns, which is compatible with the Asymmetry of Information model suggested by Myers and Majlov (1984) and Millerorruk (1985).

The evidences offered in the study of Carmen Coty & Tarun Mukherjee (2004) confirm the theoretical predictions of Rama Krishnan & Thakur (1984) and Gorton (1985) who predicted that banks announcements have Externalities Effect on other banks and that the Initial Public Offerings (IPO's) of banks may offer valuable information about future potential in the banking industry, since the bank value depends partially on the potential of the sector as a whole, as the value of the competing banks may become affected in response to the announcement of initial public offerings. The analyses of announcements of IPO's for the banks located in 45 U.S. states, divided into five regions, during the period from 1983-2000 from regional competitors and intrastate competitors have positive and important reactions for the majority of the sample of IPO's announcements. However, the differences between the regions in terms of reactions are significantly noticeable, as there are positive important reactions in two regions, while a third region has shown negative important reactions. These contradictory effects explain the total unimportant reactions of regional competitors in response to the announcement of IPO's during the period from 1997-2000, but they have also shown that the regional location of the announced bank has a role in the regional effects accompanying the announcement of IPO's. It is also important to notice to what extent the regional considerations can affect the reactions of stock prices of the announcing banks. With regard to Jordan, there are two refereed studies conducted by Dr. khoury & sevlek (1993) and Dr. Kamal Al-Qudah (1996) related to the efficiency of the Jordanian stock market at the weak

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level. However, in the field of market efficiency at the semi-strong level, subject of our study, there is a single study conducted by Khalayleh & Istanbuli (1997) which examined the effect of announcement of change in capital expenditures on returns during the Event Window, and whether there was a relationship between the change in capital expenditures and the change in trading volume of the company's stocks regarding the date of announcing for the change in capital expenditures. The study concluded with the confirmation of the presence of abnormal returns on the stocks during the Event Window that extends to four weeks. However, the study of Khalayleh and Istanbuli is different from this study as it has not examined the effect of announcements of profits on stock returns.

The researcher believes that the study in question is considered the first in terms of examining the effect of stock offering announcement for the purpose of investments financing, or what is called "Private Placement" at Amman Stock Exchange.

f) Hypotheses of Study

i. *First nihilistic hypothesis*

It is expected that Amman Stock Exchange would react upon the announcement of stock issuances by the public shareholding companies registered at Amman Stock Exchange immediately and rapidly, in other words Amman Stock Exchange is an efficient market.

ii. *Second nihilistic hypothesis*

Abnormal returns do not respond positively or negatively to stock offering announcement for placement at Amman Stock Exchange.

g) Methodology of Study

In order to verify the hypotheses of the study, the Event Study methodology will be used. This methodology was firstly used by each of Jensen, Fisher, Fama and Roll as well as Fuller J. & Farrell Jr. (1987) who were interested in examining the effect of stock split on stock prices. The same methodology used by them will be used, as follows:

Equation (1) will be used to calculate the Abnormal Return:

$$\text{Abnormal Return} = \text{Actual Return} - \text{Normal Return} \quad (1)$$

In order to calculate the Abnormal Return, we follow the steps below;

1. First we find the Actual Return by using equation (2):

$$\text{Actual Return } (R_{jt}) = \frac{P_{jt} + D_{jt} - P_{jt-1}}{P_{jt-1}} \quad (2)$$

Where:

P_{jt}: *closing price for stock (J) at the end of period (t)*

D_{jt}: *distributed profits during the period (t)*

P_{jt-1}: *closing price for stock (J) at the end of the period (t-1)*

The Test Period has been considered nine days before the event and nine days after the event, and the distributed profits(D_{jt}) have been assumed to equal to zero.

2. With regard to the Normal Return, it can be calculated using the equation of Single Index Model, as follows:

$$\text{Normal Return (NR)} = \alpha_j + \beta_j R_{mt} \quad (3)$$

Where:

R_{mt}: *Market Index for the period t*

$\alpha_j \beta_t$: *Coefficients of Single Index Model*

3. Using the information collected in the Estimation Period, represented by the closing price and market index for each stock for one hundred days prior to the first day of Event Window for the purpose of estimating α_t β_t .The program of Social Sciences Statistical Package for SPSS will be used to make the regressions required to estimate the coefficients.
4. By applying equation (3), the Normal Return can be calculated for each company of the study samples.
5. By applying equation (3), the Abnormal Return can be calculated for each company of the study samples, for each day of the Event Window.
6. To calculate the Average Abnormal Return on a specific day, we use the following equation for each day of the Test Period days:

$$AAR_{j-9} = \frac{AR_{(1)t=-9} + AR_{(2)t=-9} + AR_{(3)t=-9} + \Lambda\Lambda\Lambda + AR_{(n)t=-9}}{N}$$

Where:

AAR_{j-9}: Average Abnormal Return (AAR) for the companies of sample (j) on the ninth day prior to the Event Day, and in the same way this average is calculated for the rest of the days of the Test Period.

N: no. of companies representing the sample.

After estimating the average for each day of the Event Window, this average will be tested using the T-test and by using the One-Sample test. The following formula will be used to calculate the Cumulative Average Abnormal Return (CAAR):

$$\text{CAAR} = \sum_{TP}^{j=n} AARjt$$

(For the purpose of drawing the curve of Cumulative Abnormal Return before and after the Event).

i. *Selection of the Event Day*

There are several dates related to the announcement of stock offering for placement (which does not include stock offering for the first time). These dates are:

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- Date of Board of Directors meeting and taking a decision of raising the Capital of the public shareholding company.
- Date of approval of the Ministry of Industry and Trade on raising the Capital of the public shareholding company.
- Date of approval of Securities Commission on the registration of the securities issued by the public shareholding company.
- Date of publication in the daily newspapers of the offering of the company's stocks for private placement.
- The researcher has chosen the date of approval of Securities Commission, as it is the date of the Event Day, for the following reasons[4]:
- The company's stock is witnessing a movement of sale and purchase since the meeting of the Board of Directors to take a decision in this matter.
- Offering shall not be legal except after the approval of Securities Commission, and thus offering may not take place in case of non-approval.
- Intermediaries, speculators and owners of companies wait the approval on the meeting day of Board of Commissioners of Securities Commission to consider the issue of stock offering.
- Accordingly, the researcher has taken a decision to consider the day of approval of Securities Commission to be the day on which the information has become announced and available for the public.

ii. *Population and Sample of Study*

The population of study includes all the issuances of private placement for the companies listed in the industrial and services sectors at Amman Stock Exchange during the period between 2005 -2006. The sample includes (21) issuances over two years from 2005- 2006, taking into account availability of trading movement on the issuance when selecting such issuance. The sectors of banks, insurance and public utilities, such as communications, electricity and water will be excluded, due to the specific nature of these companies.

iii. *Limitations of Study*

The short period of the study over two years from 2011-2012 is the main limitation of the study. This period was chosen because of the difficulties pertaining to the poor quality of historical data, which is before the end of 2005, prior to the automation of the data storage at the Stock Exchange, especially regarding the dates of stock issuances. Furthermore, the old data of prices are suddenly interrupted, or is fixed for long periods, or there are no data at all. In some cases, there is no full mentioning for the companies that have announced stock offering for placement on the schedules of prices.

iv. *Definition of Terms*

- Event Study: a methodology used to test the effect of the information announced and available for public on the stock returns
- Actual Return: the capital profit of the stock plus the distributions of profits, where distributed profits were assumed to equal to zero.
- Normal Return: the return estimated by the single index model.
- Abnormal Return: the difference between the Actual Return and the Normal Return, which represents the remainders resulting from the single index model.
- Private Placement: the placement carried out by the companies listed in Amman Stock Exchange, whether for the purposes of Recapitalization, financing expansion projects or settling debts, where the purchase option is confined to shareholders in the period of offering.

v. *Structural Framework of Study*

The study will contain three chapters; the first one discusses the general framework of the study, including objectives of study, significance of study, statement of the problem, review of literature, methodology of the study, population and sample of study, limitations, hypotheses, and definition of the terms used in the study. The second chapter contains the theoretical literature of the study, where the topic of market efficiency will be discussed at the three levels as well as how to test such hypotheses at each level. The topic of stock issuance will also be discussed for the purpose of financing in addition to its relation to the debt rate. Finally, the third chapter will examine the analysis of the Event methodology, test of study hypotheses, results and recommendations.

Chapter Two

II. Theoretical Literature

a) *Informational Content of the Announcement of Stock Offering for Private Placement*

Researches related to the effects of stock offering indicate that this type of announcement for such financial events includes new information for the investor. Negative reactions have been documented to stock prices after the announcement of stock offering. Researchers generally agree that such reactions reflect more than the direct effect of financing on the cash flow of the announcing company, as the announcement of stock offering seems to give connotations of internal non-preferential information pertaining to the announcing company.

Several studies provide theoretical bases for this interpretation, including that the announcement of

[4] An Event mini-study can be conducted to choose the best date from the above mentioned four dates.

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stock offering suggests that returns are less than expected, or suggests the existence of a motive for directors to exploit their internal information in the issuance of stocks which they know they are priced more than they should be. Consequently, the external investors will receive undesirable signals about the value of the company and its available growth opportunities. Moreover, the financing strategies that reduce the debt rate, such as stock issuance, give indications about the decline in the administration confidence in future profit opportunities for the company.

Administrations of public shareholding companies in Jordan have an excessive tendency towards financing by stock issuance, which is confirmed by the data of issuances as there are cases for more than two issuances per year for the same company due to considering this financial source as cost-lacking source, as the researcher believes, despite its known cost for the financial literature represented in the return that the company should pay for the shareholder or the drop in stock value which may occur in the event the return has not been distributed to shareholder as well as the drop in the return that affects the old shareholder due to entry of new shareholders, not to mention the cost of issuance. Besides, financial management literature confirms that the cost of financing by stock is higher than the cost of debt, which is considered the least costly source among the sources of finance.

The drop in the debt rate for the public shareholding companies, previously mentioned, confirms also the excessive use of the source of finance by stocks, since this source reduces the debt rate.

It is worth mentioning here that, according to the Securities Law, the opening price is modified on the sixteenth day from the approval of Securities Commission on the offering of the private placement for the company shareholders, i.e. after determining the right of private placement, according to the following formula:

$$\frac{closing\ price * no.of\ securities + (issuance\ price + issuance\ premium) * no.of\ securities}{no.of\ the\ total\ old\ securities\ and\ the\ new\ issuance}$$

And that this change in price may not affect the Event Study since the Event Window comes within the abovementioned fifteen days and it does not affect the returns of the nine days that come after the event.

b) Market Efficiency

The issue of Market Efficiency is considered one of the important issues which has prevailed the academic literature since the sixties and has gained a specific meaning in the field of financial management , as the efficient market is the one that the prices of securities reflects all the necessary information available, rapidly and accurately. In other words, the market efficiency investigates in demonstrating whether investors' expectations regarding the future cash flow and the risks related to these expectations for certain securities are reflected rapidly and accurately on the prices of such securities.

In an article published in 1970, Jensen defined the market for a certain set of information as the market in which it is impossible for the investor to achieve, through trading in information (or its knowledge), a profit of economic value (Fuller, J. & Farrell Jr., 1987).

Prices available at an efficient market represent unbiased estimations for the fair value of securities. If all securities were assessed fairly, investors would gain a return that fits the proposed level of risks for these securities, i.e. the Normal Return, regardless of the securities that have been purchased, that is; all securities at the efficient market are assessed fully and appropriately, and there are no securities priced less or more than they should be, and the investor would only gain a suitable return for the risks, and any return exceeding such return would be unjustified, as in the efficient market the expected return is equal to the required return.

Prices at the rational and efficient market would not follow an expectable pattern, rather the change in prices would be a random change since in such type of markets the prices of securities will be renewed depending on the information related to certain events at a specific time, as the change in price is a function of new appearing information.

$$\Delta P_t = f\ (\Delta\ \text{inf.set @ t})$$

Provided that there is a speed, accuracy and response in the market for the new information as well as efficiency in the interpretation of information correctly and reflecting it on prices.

c) Significance of Market Efficiency

Why Market Efficiency is considered an important issue:

- The idea of Market Efficiency would have a direct effect on mechanisms and strategies made by investor. If the market was efficient at the three levels, then the time, the money and the effort spent on the analysis of securities would be a waste of time, and if there was sectors ineffective or less effective than others in the market, then efforts should be made to detect the securities that are improperly priced at those sectors.
- The issue of Market Efficiency affects the quality of the information that the investor or the financial analyst would care about. If the market was effective at the weak level and ineffective at the semi-strong level, the financial analyst would neglect the historical events and focus on the

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present information that are announced for public and may decide to follow an investment strategy based on imitation of insiders.

- The issue of Market Efficiency sheds light on the role of the financial analyst and the role of "Market specialists" and insiders.

d) Factors that should be available in the effective market

1. Prices should respond rapidly and accurately to the new information, which prevents the exploitation of information by a certain investor.
2. The prices of consecutive transactions of securities should be close to the previous one, i.e. lack of gaps between the purchase price and the sale price (Ghunaim and Khalifeh, 1998).
3. To be able to absorb a large quantity of securities, in supply or demand, without affecting the price of securities, i.e. the fluctuation in market occurs due to information, not to supply and demand.
4. It should be possible to buy and sell securities rapidly and in quantities without affecting their prices. This liquidity is available whenever the continuous trading is available with a large number of investors in the market and few market constraints, such as taxes and transaction costs.

i. *Forms of the Efficient Market Hypothesis (EMH)*

Information set available for investor can be divided into three main types:

1. Past Information Set
2. Present Information Set
3. Future Information Set

According to this classification of information, the theory of Efficient Market has been divided into three levels:

1. Weak Form EMH.
2. Semi-Strong EMH.
3. Strong EMH, which is divided into Near Strong EMH and Super Strong EMH.

ii. *Weak Form EMH*

This level suggests that securities prices at the stock exchange reflect all historical information (past information) and that investors cannot achieve abnormal (unjustified)profits through attention to historical information.

The technical analysis based on graphs of stock prices versus time and the data like previous stock prices, previous trading volume and the financial figures on the financial lists would not have feasibility if it was proved that the market is efficient at this level.

e) How can we judge whether the market is efficient or inefficient at this level?

The proper test of this level of efficiency is the test through which it is possible to know whether it is possible to use a past information about the price or the change in price as a basis to set an investment strategy through which an unjustified return can be achieved, and if that was possible then we can say that the market is inefficient at the weak level.

The approach or method of such expectation would be the test that helps identify a steady path or track for securities prices. However, if the changes in prices follow the pattern of random path with time, this means that each observation is independent from the previous one. Accordingly, if prices follow a random path and were high yesterday, this will not offer any information about the changes in prices on this day.

i. *Auto-Correlation*

One of the methodologies used in the test of random changes in stock prices is the Autocorrelation, i.e. the study of the correlation between the prices over a period of time and the changes in the prices of the same stocks in another period of time. If the autocorrelation was close to zero, we conclude that the changes in prices are independent, i.e. they follow a random path. After finding the autocorrelation, the result will be tested to identify whether it has a statistical significance or not.

In most field studies that have investigated this issue, and regarding New York Stock Exchange, it has been found efficient at the weak level and the autocorrelation of different stocks does not have statistical significance and the end lies between +10 to -10, which is a strong evidence that investment strategies based on historical information are not capable to predict the changes in future prices.[5]

ii. *Occurrence Test (Run-Test)*

Most tests used to test the usefulness of historical information in predicting future returns use the Autocorrelation, yet it tends to be affected by extreme observation. Therefore, results may be attributed to one or two extreme observations, thus the Run Test is considered one of the tests that gets rid of the effect of large observations. This test works as follows:

Through stock prices series, signs are calculated by subtracting the first observation from the second one. If the answer was greater than zero, we put a positive sign before the second, and if it was less than zero then we put a negative sign before the second. Each similar set of signs are called (Run) where the number of (Runs) indicates the number of changes in sign.

If the number of (Runs) in the prices series was equal to the number of (Runs) in a Random Series, this means that the market is efficient at the weak level.
Random Series can be obtained through the computer. If there was a difference in the number of (Runs) between two series, it should be verified whether this difference has a statistical significance or not.

[5] This result was stated in: Fuller J., Farrell Jr. James, Modern Investments and Security Analysis. McGraw Hill Inc, Washington. 1987 p100.

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iii. *Test by Filter Rules*

This type of tests depends on following the strategies that are based on the historical data used by market dealers and verifying that they achieve profits. If such strategies were successful, the market is considered inefficient at the weak level. One of the strategies used is the filter rules method. To describe this method, we assume that, for example, the filter rule is 10%, and the stock prices were falling. If prices stopped declining and increased by 10% higher than the lowest point it has reached, this gives indication to buy the stock. However, if the price was increasing then stopped increasing and dropped by 10% from the higher value it has reached previously, this gives an indication to sell the stock.

Thus, buy the stock when it rises by 10% from its previous low level, and retain it until it falls by 10% from its previous high level.

Several studies have examined this type of trading strategies using filter rates ranging from 0.5% to 50% and have found after deducting commissions that this strategy leads to results that are less than normal. In all cases, these studies have found that using a small purchase and retention strategy, for a well-diversified investment portfolio, outperforms the performance of filter rules.

f) Why technicians are available

Despite the existence of massive evidences that historical prices data do not have predictive value and that the market is efficient at the weak level, then why are investors willing to pay for obtaining the predictions that depend on historical data? And how did market technicians manage to survive and even prosper despite the negative effects by academics relating to the lack of historical data effect on the investment decision?

The existence of technicians at financial markets can be attributed to the following reasons:

1. It is impossible to test all the strategies used by each technician separately.
2. Most, if not all, technicians use, in addition to the historical data, information of another type which may have predictive power.
3. Despite technological advancement, technicians are considered the market sorcerers and many investors resort to them, although the market is efficient. Despite the progress in medicine, a lot of people still refer to sorcerers for healing (a human nature).

g) Semi-Strong EMH

This level of efficiency suggests that securities prices change rapidly and accurately for all available and fully announced information, i.e. the current prices not only reflect prices historical information, but also other information such as revenues reports, profit distribution announcements, annual and quarterly reports, and topic news in financial newspapers. This means that any information available to the public must reflect rapidly on securities prices, and accordingly investors cannot obtain unjustified returns through the definition according to such general information.

h) Test of Semi-Strong EMH

i. *Residual Analysis & Event Studies*

One of the first studies that tested the Semi-Strong Efficient Market Hypothesis was conducted by each of Fama, Fisher, Jensen, and Roll (FFJR) in 1965, which focused on the analysis of the effect of stock split on its price. This study is considered important for the following reasons:

1. It was one of the first studies that offered evidences and proofs for the issue of financial markets efficiency.
2. It has examined an important issue that preoccupied specialists, namely the effect of stock split on the wealth of investors, whether the specialists in financial institutions or the investors.
3. It has developed a research methodology to test market efficiency, which was used by other researchers.

The method used in the study of (FFJR) was the estimation of the Abnormal Return as follows:

Abnormal Return (AR) = Realized Return-Normal Return

Where the Realized Return is the one that includes the Abnormal Return, and is equal to (P_1–P_0/P_0). Single Index Model was used to estimate the Normal Return which is equal to ($\alpha_i + \beta_i k_m$), while the Realized Return is represented by the formula: ($\alpha_i + \beta_i k_m + e_i$).

This method in estimating the Abnormal Return is normally referred to as the Residual Analysis, as the equation of the Realized Return represents the Normal Return + Residuals (e_i) or the random error coefficient.

The Abnormal Return equals

$$e_i = K_i - \alpha_i + \beta_i k_m$$

Where K_i is the Realized Return.

The other methodological innovation for the study of (FFJR) is estimating the Cumulative Average Abnormal Return (CAAR) by collecting the Average Abnormal Return (AAR) during time, where time intervals are different around the date of Event announcement. This type of studies is called Event Study.

Where:

$$AAR_t = \frac{1}{n} \sum_{i=1}^{n} A\mathrm{Rit}$$

Where n is the no. of stocks under study

$$CAAR = \sum_t AA\mathrm{R}$$

Event Study is conducted as follows:

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1. Define the Event date and the period before and after it provided that such period is short.
2. When studying a certain event, a group of companies should be taken so that the studied event is available at all companies.
3. Determine the Event Date so that it should be accurate. For example, when studying the effect of announcement of financial lists, the Event Date is the date of announcement of these lists, not the date of obtaining such lists, i.e. the date on which these lists have become announced to all people.
4. AR is calculated for each company for each period of time during the Event Window periodAR-5, AR -4…AR5. Estimation Period is used to estimate α and β which are used in calculating the Normal Return.
5. AAR is calculated for all companies in the sample for each specific period of time.
6. CAAR is also calculated so that

$$CAAR\text{-}5 = AAR\text{-}5$$
$$CAAR\text{-}4 = AAR\text{-}4 + AAR\text{-}5$$
$$CAAR\text{-}3 = AAR\text{-}3 + AAR\text{-}4 + AAR\text{-}5$$
$$CAAR5 = AAR\text{-}5 + AAR\text{-}4 + \ldots + AAR5$$

7. Periods could be days, weeks or months.

Chapter Three

III. Results of the Event Study

By applying the Event methodology mentioned in chapter one within the general framework of the study the Actual Return has been calculated in the Event period, as shown on Table (2) in the appendix, for a sample consisting from (21) events referring to eighteen companies. The sample consisting from (21) events is indicated on Table (1) below. Event Date or Zero-Day is indicated against each company.

Table 1 : Sample of Study

No.	Name of Company	Date of Commission's Approval
1	The Industrial Commercial & Agricultural (In tag)	16/10/2005
2	Jordan Sulphochemical	31/08/2005
3	Al-qaryah for Food Industries and Vegetable Oils	19/04/2005
4	Ready Mix Concrete and Construction Supplies	01/06/2005
5	Middle East Pharmaceutical& Chemical Industries Company	23/06/2005
6	Union Tobacco & Cigarette Industries Company	23/06/2005
7	International Ceramic Industries	03/01/2005
8	Nutria Dar	13/06/2005
9	Amana Agricultural & Industrial Investments	16/06/2005
10	Ad Dulayl Industrial Park and Real Estate Company	08/05/2005
11	First National Vegetable Oil Industries	18/09/2005
12	Al Quds Ready Mix Concrete Company	17/07/2005
13	Investors & Eastern Arab For Industrial & Real estate Invs.	03/05/2005
14	The Industrial Commercial & Agricultural (In tag)	01/02/2006
15	National Cables & Wire Manufacturing Co	08/11/2006
16	El-Zay Ready Wear Manufacturing Co.	25/04/2006
17	Ready Mix Concrete and Construction Supplies	30/04/2006
18	Jordan Steel Co.	22/06/2006
19	Middle East Pharmaceutical& Chemical Industries Company	27/02/2006
20	Arab International Food Factories & Investment Co.	25/07/2006
21	Al Quds Ready Mix Concrete Company	25/05/2006

In selecting companies, only those working in the industrial sector were selected. Financial companies like banks and insurance companies were excluded according to the specific nature of such companies and the special circumstances differing from industrial sector, yet such companies can be examined separately. Public utilities companies, such as communications, electricity and water were also excluded. The companies chosen were also compatible in terms of size. Afterwards, as shown on Table (3) in the appendix, one hundred Actual Returns for each company were extracted, nine days prior to the Event (Day -9), as shown on Table (4) in the appendix, then by using the Statistical Package for Social Sciences (SPSS), 21 simple linear regressions (regression of Stock Actual Return on Market Return for one hundred business days) were made according to the Single Index Model mentioned in chapter one of this study. Table (2) shows Alpha and Beta, the coefficients of the Single Index Model, extracted for the sample that consists of (21) events.

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Table 2 : Coefficients of Single Index Model estimated through Market Return and Sample Companies' Return

No.	Alpha	Beta
1	-0.00356	0.41
2	0.001780	-0.208
3	0.002035	-0.0493
4	-0.000411	0.0349
5	0.002111	-0.0049
6	0.028996	-1.466
7	-0.004678	0.629
8	0.0030121	0.0092
9	0.0004522	-0.44
10	-0.001586	-0.001333
11	-0.001557	0.122
12	0.0076986	0.09541
13	-0.004650	1.217
14	-0.001970	0.825
15	-0.0004501	1.037
16	0.0011753	0.406
17	-0.0005386	0.882
18	-0.002264	0.158
19	-0.00003613	0.02132
20	-0.005027	-0.168
21	-0.008211	0.09776

By using these coefficients, the Normal Return (sometimes called Fair Value or Theoretical Return) was estimated by multiplying each Actual Return in the Event Window of Beta then adding Alpha to the quotient, and for each company. Table (4) in the appendix shows the Normal Return for all companies.

By subtracting the Actual Return on Table (2) in the appendix from the Normal Return on Table (5) in the appendix, the Abnormal Return was extracted for each of the Event Days and for each company. Table (6) in the appendix shows the Abnormal Return.

The Average Abnormal Return (AAR) was extracted for each of the Event Days by adding the Abnormal Returns of the companies and dividing them by their number. The Cumulative Average Abnormal Return (CAAR) was also extracted for each of the event Days. Table (3) shows these two variables.

Table 3 : Average Abnormal Return (AAR) for Sample Companies and Cumulative Average Abnormal Return (CAAR)

Days of Event Window	AAR	CAAR	Sig t
-9	0.012909	0.012909	.097**
-8	0.005053	0.017963	.492
-7	0.011953	0.029915	.123
-6	0.012716	0.042631	.026*
-5	0.002167	0.044798	.768
-4	-0.00123	0.043564	.880
-3	0.007101	0.050665	.365
-2	-0.00947	0.041194	.159
-1	0.015906	0.0571	.029*
0	-0.00247	0.054628	.732
1	0.00878	0.063408	.173
2	0.0064	0.069808	.371
3	0.003002	0.07281	.676
4	0.0044	0.07721	.528
5	-0.00113	0.07608	.845
6	0.013578	0.089658	.066**
7	0.009305	0.098963	.135
8	-0.0003	0.098665	.962
9	0.005511	0.104176	.361

** Significant on the level of significance of 5%*
*** Significanton the level of significance of 10%*

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Table (3) shows the statistical significance for the Average Abnormal Return which indicates that there in only one average that has a statistical significance on the level of significance of 10% on the sixth day after the event, while the average on the first day after the event does not have a statistical significance. Thus, we accept the first nihilistic hypothesis which states that Abnormal Returns do not respond negatively or positively to the announcements of stock offering for placement at Amman Stock Exchange.

The sketch of the Cumulative Abnormal Return curve during the Event Window, as shown in figure (1) below, shows that CAAR curve began to rise in the first nine days prior to the announcement, i.e. the investors have known that the company intends to increase its Capital by offering stocks for placement, and have interpreted this information contrary to the theoretical interpretation of stock offering information, where most investors regarded it as a positive information, and on the basis of this information they have raised the stock price through the rise in demand.

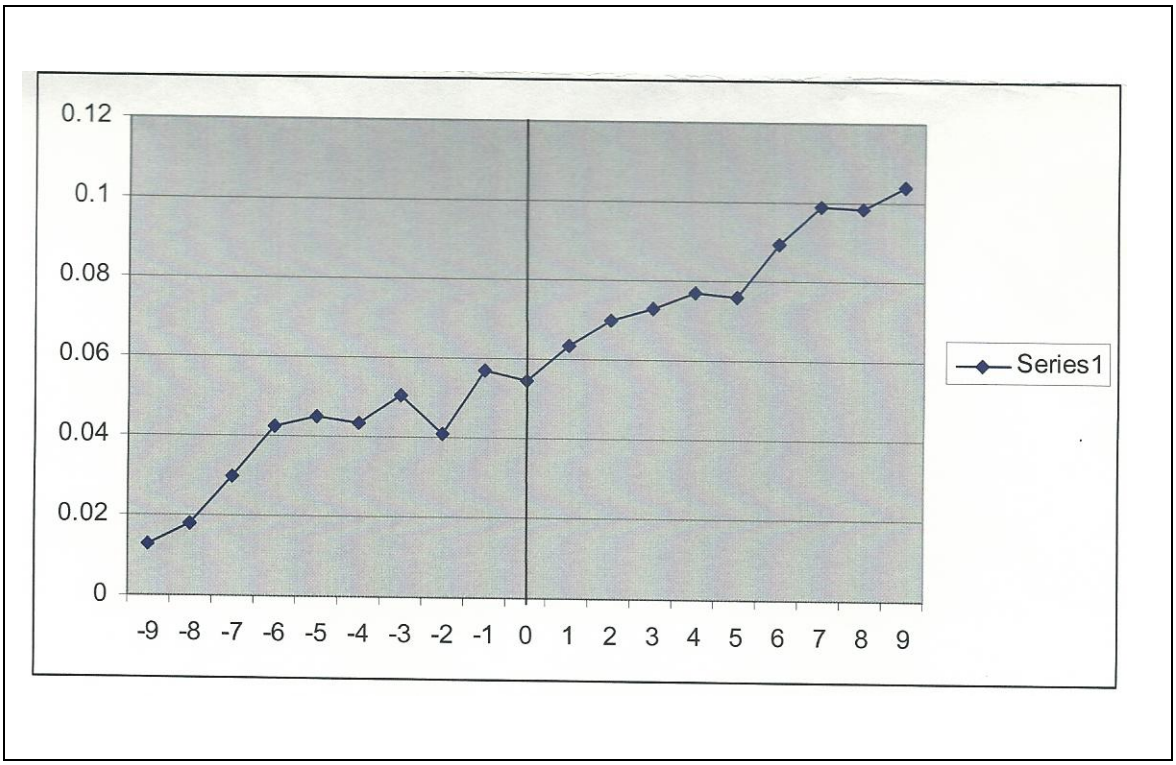

Figure 1 : CAAR Curve for the sample of 21 events
(Event Window consists of 9 days prior to the event, 9 days after the event and the Day Zero)

It is noticed that there is agradualrise before the event, which means that this information did not reach to all investors, but some of them have benefited from it. After the event, the gradual rise in returns (prices) has continued, which means that the market has not reflected the information rapidly and effectively and a number of investors have benefited and managed to achieve Abnormal Returns.

Thus, Amman Stock Exchange is inefficient at the Semi-Strong level regarding the info of stock offering for private placement, which leads to rejecting the first nihilistic hypothesis stating that Amman Stock Exchange does not react rapidly and immediately upon the announcement of stock issuances by the Jordanian public shareholding companies registered at Amman Stock Exchange, i.e. Amman Stock Exchange is an inefficient market at this level.

a) Results, Recommendations

i. *Results*

1. In general, Abnormal Returns after the event do not have statistical significance, which means that the information does not have any effect that can be proved statically on returns. The Average Abnormal Return after the event is positive, although it does not have statistical significance, which means that the information of stock offering for private placement has a positive informational content, in contrast to the theoretical explanation that confirms the negative effect of the stock offering information.
2. The graph of cumulative abnormal returns shows that Amman Stock Exchange is inefficient at the Semi-Strong level. The researcher believes that the reason behind this is the shallowness of Amman

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Stock Exchange, as at *shallow* markets the information has a significant role in influencing the decision of investor to purchase, since the only guide for the investor is the information circulating in the market, which is often misleading information, whereas in *deep* markets we can observe a greater role for Capital Asset Pricing Models (CAPM)as well as consulting firms and financial analysis in taking the investment decision.

3. There is a leak in the information pertaining to stock offering before the approval of Commission on the offering, proved by the increase in CAAR before the Event Day, which contributes to deepening the lack of market efficiency at the Semi-Strong level.
4. The investor at Amman Stock Exchange can develop a strategy based on the information of stock offering for placement in order to achieve Abnormal Returns. However, verifying such thing needs more empirical studies.
5. The fact that Amman Stock Exchange is an emerging market is considered an important factor that contributes to the positive effect of the stock offering information, as investors lack experience in addition to shortage of the consulting firms which the investors do not feel there is a need to consult them.
6. Reliance on Debt Financing contributes to a decline in the debt rate of the public shareholding companies at Amman Stock Exchange.

ii. *Recommendations*

1. The researcher recommends the importance of repeating Event Studies since the efficient market at a time may become inefficient at another time, and vice versa. Furthermore, the market conditions vary from time to time in terms of trading volume, number of dealers and number of contracts.
2. There is an urgent need to encourage investment institutions and some brokerage houses to estimate Beta for companies periodically, and to educate investors about the importance of Beta in estimating the stock fair price using Capital Asset Pricing Model (CAPM), and thus Jordan becomes a leading country among Arab markets in disseminating the culture of stock fair price. The investor in the stock market who cannot estimate the fair price is like the sailor who lost his way in the middle of the ocean without a star in the sky guiding him.
3. Amman Stock Exchange, which is the leading one among Arab stock markets, should consider the issue of legalizing the presence of "market makers" in the stock market for their important role in deepening the market.

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Working Capital Management and Profitability of the Manufacturing Sector: An Empirical Investigation of Nestle Nigeria PLC and Cadbury Nigeria PLC

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Abstract - Working capital management is very fundamental to the liquidity and profitability of any organisation and the two variables are vital in evaluating the performance and ultimately deciding the survival of any organisation. This study presents an empirical investigation of the relationship between working capital management and profitability using Nestle Nigeria Plc and Cadbury Nigeria Plc as case studies. The study used correlation and regression analysis to analyse data. Quick ratio was used to measure liquidity, current ratio, trade receivable collection and trade payables payment periods were used as efficiency variables to capture the working capital manage-ment policy adopted by these companies while return on equity was used as the profitability variable. Liquidity and efficiency variables were correlated against return on equity. The study found a negative relationship between the liquidity, two of the efficiency ratios and return on equity for Nestle Nigeria Plc while it found a positive relationship between the liquidity, efficiency ratios and return on equity of Cadbury Nigeria Plc. To enhance profitable short-term investments, the study recommends that companies should manage their working capital efficiently by upgrading the quality of their assets while obsolete inventories should be written off.

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WORKINGCAPITALMANAGEMENTANDPROFITABILITYOFTHEMANUFACTURINGSECTORANEMPIRICALINVESTIGATIONOFNESTLENIGERIAPLCANDCADBURYNIGERIAPLC

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Working Capital Management and Profitability of the Manufacturing Sector: An Empirical Investigation of Nestle Nigeria PLC and Cadbury Nigeria PLC

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Abstract- Working capital management is very fundamental to the liquidity and profitability of any organisation and the two variables are vital in evaluating the performance and ultimately deciding the survival of any organisation. This study presents an empirical investigation of the relationship between working capital management and profitability using Nestle Nigeria Plc and Cadbury Nigeria Plc as case studies. The study used correlation and regression analysis to analyse data. Quick ratio was used to measure liquidity, current ratio, trade receivable collection and trade payables payment periods were used as efficiency variables to capture the working capital management policy adopted by these companies while return on equity was used as the profitability variable. Liquidity and efficiency variables were correlated against return on equity. The study found a negative relationship between the liquidity, two of the efficiency ratios and return on equity for Nestle Nigeria Plc while it found a positive relationship between the liquidity, efficiency ratios and return on equity of Cadbury Nigeria Plc. To enhance profitable short-term investments, the study recommends that companies should manage their working capital efficiently by upgrading the quality of their assets while obsolete inventories should be written off.

Keywords: working capital management, liquidity, profitability, working capital management policy.

I. Introduction

It is imperative for every business to have sufficient liquid resources so as to maintain a daily cash flow. This is not only essential in the short run but it is much necessary to keep a business as a going concern (BPP, 2006). It therefore implies that it is a vital element of an organisation. However, as important as that is, care must be taken so that balance is maintained in the level of liquidity of a firm since "cash pays no interest" (Uremadu, Egbide and Enyi, 2012). The short-term solvency of a firm is a function of how liquid a firm is and alsocrucial to the working capital. Working capital is the difference between a firm's current assets and current liabilities. Furthermore, Pass and Pike's study (as cited in myfinancelab, n. d.) posits that working capital management is to increase the profitability of a company and to ensure that it is liquid enough to meet its obligations in the short-term. Also, working capital has a lot to do with how risky a business is and therefore managing it properly can improve the performance of an organisation. According to Sen and Oruc (2009), working capital management is consequential to a firm and this is usually explained by the relationship between working capital management and profitability.

Before the wake of the global recession, working capital management has been an important subject matter to ensuring the stability and hence the survival of a business and after the economic meltdown it became much more important. According to a study carried out by the Royal bank of Scotland (RBS, 2011), it was found that as a result of the last economic recession that hit the world, companies around the world especially in North America, Europe and Asia have tried to improve on their efficiencies and one of their strategies is the management of their working capital. This study investigates if the statement is also true for Nigeria based companies, using Nestle Nigeria Plc and Cadbury Nigeria Plc as case studies. In addition, what defines how an organisation manages her working capital is consequent on the policies adopted by her. In this paper, working capital management was examined in the light of two policies which are the aggressive and conservative policies.

a) *Background Information about Study Sample*

Nestlé foods Nigeria Plc is a Nigeria-based Company engaged in the food sector. The Company is focused on the manufacturing, marketing and distribution of cereals, beverages, confectionery, bouillon, and table water. Nestlé Nigeria Plc is part of the Nestlé group, the respected and trustworthy Nutrition, Health and Wellness Company renowned world-wide for its high quality products. The company began trading operations in Nigeria in 1961 and has today grown into a leading food manufacturing and marketing company. Nestlé Nigeria Plc was listed on the Nigerian Stock Exchange on April 20, 1979. Nestlé S.A of Switzerland and Nestlé CWA Limited, Ghana is the major share-

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holder of the Company. As at December 2012, the number of shareholders was more than 30,000.

The strategic priorities of the Company are focused on delivering shareholder value through the achievement of sustainable and profitable long-term growth. The Company's turnover in year 2012 was N116.7billion and profit after tax was N21.1billion (Annual Report & Accounts, 2012). With its historical root in nutrition, wide product portfolio and strong brands, Nestlé Nigeria Plc appears to be positioned to continue to contribute meaningfully to the growth of the food industry in Nigeria.

Cadbury Nigeria PLC was incorporated on 9 January, 1965. Cadbury Nigeria Plc is principally engaged in the manufacture and sale of branded fast moving consumer goods mostly to the Nigerian market, but increasingly for exports as well. (Applied logic, 2014).The company is involved in Marketing and Manufacturing of Cocoa based Beverages, Confectionery and Food Products. Cadbury Nigeria is a member company of Cadbury Schweppes Plc, a major player in the global confectionery and beverages markets with 40,000 employees and business operations in 200 countries. Cadbury's initial objective in the 1950s to source cocoa and prospect for a market in Nigeria led to the establishment of a manufacturing facility in Ikeja, north of Lagos, in 1965. Its top brands are bournvita, tom tom and buttermint. It was listed on the Nigerian stock exchange on 26 November 1976 and has well over one million ordinary shares in issue. (Internet Securities Inc., 2013).

b) Rationale for the Choice of Study Sample

The choice of Nestlé Nigeria Plc and Cadbury Nigeria Plc for this study is hinged on a variety of reasons. First, both companies made the Forbes top 25 companies in Africa for year 2012 (Adeyemo, 2012). Second, they are among the biggest companies listed on the Nigerian Stock Exchange and have sustained a good track performance over a period of time. Third, they are the only companies listed as food products-diversified on the floor of the Nigerian Stock Exchange (NSE). Thus, an evaluation of the performance indicators of these companies will elucidate the factors leading to their emergence as strong brands in the Nigerian market. The **objectives** of this study are following research are as follows:

1. To ascertain the relationship between quick ratio and profitability of food products companies in Nigeria using empirical data.
2. To ascertain the working capital management policy adopted by each of the companies and its effect on profitability using empirical data.

The following research questions will be answered in this study:

1. What is the relationship between quick ratio and profitability of food products companies in Nigeria?
2. What type of working capital management policy is adopted by each of the companies and what is the effect of the policy on profitability.

The following null hypotheses were formulated and tested for the study:

1. H_0: There is no significant relationship between quick ratio and profitability of food products companies in Nigeria.
2. H_0: There is no significant relationship between working capital management policy adopted by food products companies in Nigeria and profitability?

Therefore, against this backdrop, there is the need to examine this need to investigate the relationship between working capital management and profitability of the manufacturing sector specifically Nestle Nigeria Plc and Cadbury Nigeria Plc. This paper is therefore divided into five sections with Introduction being section one. Section two and three dwell on literature review and methodology. Section four dwells on data presentation and analysis while section five ends with conclusion and recommendation

II. Literature Review

Ikpefan and Enahoro (2007) used time series (ordinary least square method) to analyse sales, operating leverage, financial leverage and combined leverage in the manufacturing sector specifically Nigerian brewery industry between (1979-2004). The result showed that sales, operating leverage, financial leverage and combined leverage have significant influence on earnings of Nigerian Brewery Plc. This study is an attempt to investigate the Nigerian manufacturing sector with emphasis now on working capital management. There have been many studies carried out on the subject of liquidity and profitability and this section is devoted to the review of the existing literatures on this subject. Nonetheless, this paper used the most recent information available in doing a comprehensive analysis. Uremadu et al. (2012) studied the effect of working capital management and liquidity on corporate profits among Nigeria firms using 25 manufacturing companies for the period of two years and they found there is a significant relationship between liquidity and corporate profitability in the firms studied with the relationship being either positive or negative. Owolabi and Alayemi (2010) in their study of working capital as a financial strategy found that there is a strong and negative relationship between the working capital (especially in terms of whether the company adopted an aggressive or conservative approach in managing their working capital) and the profitability of a Nigerian manufacturing firm. Again, Almazari (2013) studied eight Saudi cement firms and found that liquidity and profitability and consequent upon working capital management and there is a significant relationship between liquidity and profitability. Also, Shin and Soenen

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(1998) in their empirical investigation found that there is a negative and even significant relationship between liquidity and profitability for all variables used.

However, Pira (n.d.) in analysing the relationship between liquidity and profitability took a sample of 48 airline companies and observed that for the three years studied, there was a positive although significant relationship between the liquidity and profitability of firms which contradicted usual findings in other literatures. Although he noted that companies with better liquidity ratios had better performance in the face of financial crisis using year 2008 which was the year of the global financial crisis as the basis for judgment. In their work, Pedro and Pedro (2007) studied the effects of working capital management on the profits of 8872 companies and found out that shortening the cash conversion cycle improves the profitability of companies. This implies that there is a negative relationship between liquidity and profitability. Cash conversion cycle is a measurement of liquidity as well as a working capital management variable. It is calculated as:

Inventory days + trade receivable days – trade payable payment period

On the other hand, Hirigoyen's study (as cited in Roman & Tomuleasa, 2012) posits that on mid and long-term basis, there can exist a positive relationship between liquidity and profitability implying that a low liquidity would lead to a lower profitability. He argued this by analysing it as a vicious cycle whereby if a company has need for loan, it will lead to a reduced profitability and at the end would not generate adequate cash flow to sustain the growth of its need and hence leading to a liquidity-profitability trade-off. Furthermore, according to Gul et al. (2013), the relationship between liquidity and profitability can either be positive or negative. In their findings, accounts payable has a positive relationship with profitability while average collection period, inventory turnover and cash conversion cycle have a negative relationship with profitability. Therefore, Charitou, Elfani and Lois (2010) concluded that there are "inconclusive and inconsistent" results with respect to how working capital management affects the profitability of an enterprise.

III. Methodology

The annual report and financial statements of Nestlé Nigeria Plc and Cadbury Nigeria Plc were accessed and from the reports, all key ratios to this paper were computed on the basis of information obtained in the statement of comprehensive Income and the Statement of financial position. Correlation and regression analysis was used in analysing the data.

a) Model Specification

This study establishes the relationship between liquidity, working capital management and profitability variables. Therefore a model is specified based on this as follows:

$$ROE = f\,(QR, CR, TRCP, TPPP) \quad (1)$$

Assuming a linear relationship between the variables, the specification of the regression equation for the main model 1 above could be written explicitly states as:

$$ROE = \beta_{0+}\beta_1 QR + \beta_2 CR + \beta_3 TRCP + \beta_4 TPPP + u_{it} \quad (2)$$

Where:

ROE = return on equity
QR = quick ratio
CR = current ratio
TRCP = trade receivable collection period
TPPP = trade payables payment period
u_{it} = error

b) Variable measurement

- ROE is used as a measure of profitability and it is calculated as profit after tax/total equity.
- QR is used as a measure of liquidity.
- It is calculated as (current assets-inventory)/current liabilities.
- CR is used as a measure of working capital management.
- It is calculated as current assets/current liabilities.
- TRCP is the number of days taken to collect monies from trade debtors. It is used as a measure of working capital management and policy adopted. It is calculated as trade receivables/ turnover * 365 days
- TPPP is the number of days taken to pay trade creditors. It is used as a measure of working capital management and policy adopted. It is calculated as trade payables/cost of sales * 365 days.

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IV. Data Presentation and Analysis

Table 4-1 : Statement of Comprehensive Income for Nestle (2008-2012) N'000

	2012	2011	2010	2009	2008
Turnover	116,707,394	97,961,260	82,726,229	68,317,303	51,742,302
Cost of sales	(66,538,762)	(57,368,192)	(46,495,387)	(39,956,777)	(31,300,680)
Gross profit	50,168,632	40,593,068	36,230,842	28,360,526	20,441,622
Operating profit	25,989,569	21,514,273	18,933,379	15,732,203	11,903,627
PBT	25,050,172	18,199,249	18,244,454	13,783,244	11,862,213
Tax	(3,912,897)	(1,702,796)	(3,642,345)	(3,999,666)	(3,530,614)
PAT	21,137,275	16,496,453	12,602,109	9,783,578	8,331,599

Source: Nestle Nigeria Plc Annual report and accounts (2008-2012)

Table 4-2 : Statement of Financial Position for Nestle (2008-2012) N'000

	2012	2011	2010	2009	2008
Non-Current Assets	62,607,073	55,517,888	40,723,074	25,404,616	13,817,348
Current Assets	26,356,145	22,210,405	20,105,323	18,845,756	15,342,204
Total Assets	88,963,218	77,728,293	60,828,397	44,250,372	29,159,552
Current Liabilities	25,179,644	24,814,835	19,455,299	19,010,968	11,093,617
Non-Current Liabilities	29,598,012	29,703,474	26,026,410	14,695,469	9,034,695
Total Liabilities	54,777,656	54,518,309	45,481,709	33,706,437	20,128,312
Working Capital	1,176,501	(2,604,430)	650,024	(165,212)	4,248,587
Total Equity	34,185,562	23,209,984	14,865,353	10,543,935	9,031,240

Source: Nestle Nigeria Plc Annual report and accounts (2008-2012)

Table 4-3 : Key Financial Ratios computed for Nestle Nigeria Plc

	2012	2011	2010	2009	2008
ROCE (%)	40.75	40.66	45.76	62.33	65.89
Gross profit margin (%)	42.99	41.44	43.80	41.51	39.51
Operating profit margin (%)	22.27	21.96	22.89	23.03	23.01
current ratio (times)	1.05	0.90	1.03	0.99	1.38
Quick ratio (times)	0.70	0.50	0.60	0.43	0.80
Trade receivable collection period (days)	24.66	18.05	21.93	10.42	22.00
Trade payable payment period (days)	51.17	46.40	32.07	28.53	35.00
EPS (N)	26.67	20.81	19.08	14.81	12.61
DPS (N)	12.55	10.33	12.55	12.55	8.40

Source: Compiled from research study (2014)

Table 4-4 : Correlation of Nestle Nigeria PLC

		Return on equity
Quick ratio	Pearson Correlation	-.081
	Sig. (2-tailed)	.896
	N	5
Trade receivable collection period	Pearson Correlation	-.509
	Sig. (2-tailed)	.381
	N	5
Current Ratio	Pearson Correlation	.448
	Sig. (2-tailed)	.449
	N	5
Trade payables payment period	Pearson Correlation	-.949*
	Sig. (2-tailed)	.014
	N	5

Source: Statistical package (SPSS)

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In table 4-4, the statistical result found there is a negative but not significant relationship between the quick ratio and the return on equity of Nestle Nigeria Plc. This implies that if the quick ratio reduces, profitability increases for Nestle and vice-versa. This is consistent with the findings of Deloof (2003) that there is a negative relationship between liquidity and profitability of firms. However, the current ratio shows a positive relationship with the return on equity (ROE). The positive relationship between current ratio and ROE implies that if current ratio increases, profitability also increases. Drawing from tables 4-2 and 4-3, the ratio of current assets to current liabilities for the five (5) years under consideration was approximately one (1). This may not be satisfactory because according to Pandey (2005), it is a ratio of 2:1 between current assets and current liabilities that is considered satisfactory. Therefore, anything above that may mean there is a problem.

For example, it may mean that there are obsolete inventories that are no longer of good quality being carried as current assets. The reason why this is possible is that current ratio only measures quantity and not quality. Hence, it may increase to a level where it will not translate to profitability for Nestle Plc. Also, if it is lower than that range, then the firm may find it difficult to meet its obligations in the short-term. On the other hand, the trade receivable collection period shows a negative relationship with ROE, it is however not a significant relationship. The trade payable payment shows a significant negative relationship with the ROE. This therefore implies that as the payment period is increasing the profitability of Nestle will decrease and vice-versa and this variable has the highest impact on profitability. This result is in line with the result of Uremadu et al. (2012).

This is a possible situation showing that available funds are not well utilised. Furthermore, combining the results of the working capital management variables, it is seen that Nestle adopted a conservative approach to working capital management and so its working capital was not adequately managed during the period studied. From the ratios computed (see table 4-3), quick ratio was never up to the ratio of 1:1 which is the widely accepted standard. Again, the current ratio was not up to 2:1 in the period under consideration and in years 2009 and 2011, it was less than 1. The trade receivables collection and payables payment periods fluctuated sometimes widely throughout the period of study implying that there is no strict policy as regarding the working capital management. This implies that the working capital management of Nestle Nigeria Plc is not efficient enough. Hence, they are conservative about their working capital management. Consequently, from table 4-4, we accept the two hypotheses stating that there is no significant relationship between quick ratio and profitability of Nestle Nigeria Plc and also there is no significant relationship between working capital management policy adopted by Nestle and its profitability. However, out of the three variables used, only one that was significant that is trade payable payment period is significant to profitability

Table 4-5 : Statement of Comprehensive Income for Cadbury (2008-2012) N'000

	2012	2011	2010	2009	2008
Turnover	33,550,501.00	34,110,547.00	29,170,500.00	25,585,571.00	24,298,496.00
Cost of sales	22,453,202.00	22,951,350.00	19,921,100.00	16,860,415.00	17,173,213.00
Gross profit	11,097,299.00	11,159,197.00	9,249,500.00	8,725,156.00	7,125,283.00
Operating profit/loss	4,008,386.00	4,578,174.00	2,179,200.00	154,383.00	(852,787.00)
Profit/loss before taxation	5,511,518.00	5,053,022.00	2,395,300.00	(2,379,440.00)	(2,847,703.00)
Tax	(2,056,527.00)	(1,382,467.00)	(784,400.00)	(1,143,523.00)	(95,435.00)
PAT	3,454,991.00	3,670,555.00	1,610,900.00	(1,235,917.00)	(2,752,268.00)

Source: Cadbury Nigeria Plc Annual report and accounts (2008-2012)

Table 4-6 : Statement of Financial Position for Cadbury (2008-2012) N'000

	2012	2011	2010	2009	2008
Non-Current Assets	13,992,153.00	13,424,430.00	13,978,899.00	14,308,294.00	14,587,945.00
Current Assets	26,164,355.00	20,231,922.00	14,454,300.00	10,938,632.00	9,313,261.00
Total Assets	40,156,508.00	33,656,352.00	28,433,199.00	25,246,926.00	23,901,206.00
Current Liabilities	16,905,424.00	13,875,181.00	12,285,563.00	9,011,945.00	23,180,450.00
Non-Current Liabilities	3,211,728.00	3,192,000.00	3,247,199.00	3,569,746.00	3,733,526.00
Total Liabilities	20,117,152.00	17,067,181.00	15,532,762.00	12,581,691.00	26,913,976.00
Working Capital	9,258,931.00	6,356,741.00	2,168,737.00	1,926,687.00	(13,867,189.00)
Total Equity	20,039,356.00	16,589,171.00	12,900,437.00	12,665,235.00	(3,012,770.00)

Source: Cadbury Nigeria Plc Annual report and accounts (2008-2012)

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Table 4-7 : Key Financial Ratios computed for Cadbury Nigeria Plc

	2012	2011	2010	2009	2008
ROCE (%)	17.24	23.14	13.50	0.95	(118.32)
Gross profit margin (%)	33.08	32.71	31.71	34.10	29.32
Operating profit margin (%)	11.95	13.42	7.47	0.60	(3.51)
current ratio (times)	1.55	1.46	1.18	1.21	0.40
Quick ratio (times)	1.43	1.27	0.90	0.88	0.25
Trade receivable collection period (days)	41.96	31.88	33.35	19.26	32.81
Trade payable payment period (days)	55.77	33.58	49.11	36.86	38.91
EPS (N)	1.41	1.21	0.43	-0.84	-2.44
DPS (N)	0.50	-	-	-	-

Source: Compiled from research study (2014)

Table 4-8 : Correlation of Cadbury Nigeria PLC

		Return on equity
Current ratio	Pearson Correlation	.965**
	Sig. (2-tailed)	.008
	N	5
Quick ratio	Pearson Correlation	.921*
	Sig. (2-tailed)	.026
	N	5
Trade receivable collection period	Pearson Correlation	.149
	Sig. (2-tailed)	.810
	N	5
Trade payable payment period	Pearson Correlation	.294
	Sig. (2-tailed)	.631
	N	5

Source: Statistical package (SPSS)

From table 4-8, the result shows that there is a positive significant relationship between quick ratio and ROE of Cadbury Nigeria Plc. This is consistent with the result of Hirigoyen's study (as cited in Roman & Tomuleasa,2012) which argues that it is possible to have a positive relationship between liquidity and profitability in the mid and long term. The current ratio, trade receivables collection period and trade payable payment periods all reveal a positive relationship with profitability but only that of current ratio is significant at 8%. Although, Cadbury seems to have a better liquidity ratio **(tables 4-7/4-3)** than Nestle Plc. Nonetheless, the result reveals inefficiency in their working capital management because while trade receivables collection period reduced, the trade payable payment period increased much more. Besides, both companies failed to meet the minimum standard of 2.1 for working capital.

This agrees with the position of Pandey (2005) which says that it is possible for a company that has a high current ratio to suffer from insufficient funds while a company with lesser current ratio may be able to meet its obligation as it falls due. For Cadbury, table 4-7 shows that even when trade receivables collection period reduced, the trade payable payment period increased much more. For instance, the percentage change in trade receivables collection period between years 2008 and 2009 reduced by 41.3% whereas payable payment period only reduced by 5.3%. This suggests that there may be much slow-moving inventory as part of their current assets that could not be turned over as quickly as possible (which may be the advantage Nestle has enjoyed) or some of their debtors have become illiquid such that they cannot pay promptly. Hence, from table 4-8, we reject the first hypothesis because quick ratio shows a significant relationship with profitability and accept the second hypothesis which says there is no significant relationship between working capital management policy adopted by Cadbury and its profitability.

V. Conclusion and Recommendations

The study found that there is a negative relationship between liquidity and profitability with the exception of trade payables payment period which has a positive relationship for Nestle Nigeria Plc. On the

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other hand, Cadbury Nigeria Plc had all liquidity ratios positive in relationship with profitability. Both companies can work on their working capital by managing it more efficiently. For example, quality of assets could be upgraded and obsolete inventories should be written off.

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How to Invest Safely in Emerging Markets during the Global Financial Crisis: A Case Study of Taiwan

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Keywords: *EGARCH, granger causality, short selling, program trading, security lending.*

GJMBR-C Classification : *JEL Code: F65, G00*

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How to Invest Safely in Emerging Markets during the Global Financial Crisis: A Case Study of Taiwan

Yu-Wei Lan[α], Dan Lin & Lu Lin[ρ]

Abstract- Following the globalization of financial markets, Taiwan opened up for security lending in July 2007 to attract Qualified Foreign Institutional Investors (QFIIs) to participate in Taiwan's equity markets. Based on the security lending data, this paper uses systematic trading and generalized autoregressive conditional heteroscedasticity model (EGARCH) to investigate the volatility of returns in Taiwan futures market. The evidence suggests that during the financial crisis, the leverage effect has declined due to the involvement of QFIIs in security lending. The Taiwan futures market has become more stabilized. Secondly, including the security lending data, we find that the leverage effect is the Granger cause of short selling by QFIIs. Finally, the Multi Charts program trading experimental results show that QFIIs are informed traders and the investment performance can be improved with the information of security lending.

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I. Introduction

In response to the rapid development and intense competition in the global financial market, the Taiwan Government had relaxed the restrictions on security lending. In 2003, the Taiwan Stock Exchange set up the security lending system. In 2005, the Taiwan Authority further allowed Qualified Foreign Institutional Investors (QFIIs) to participate in security lending. In 2007, the Authority established a security lending center and allowed security broker and securities finance companies to engage in security lending. An amendment to the Guidelines for Investment and Security Management by Foreign Investors and Overseas Chinese was also made to allow for security lending by QFIIs. In 2011, the QFIIs contribute to 1/3 of the total equity market value and the number of security lending stocks had reached 4.3 million with a total value of $239 trillion. QFIIs are the largest player in Taiwan's stock market.

With the stocks that QFIIs own and no time limit on short covering, it is very easy for QFIIs to short sell using security lending. The Taiwan stock market index crashed by 57.5% during the 2008 financial crisis from 9309 points in May 2008 to 3411 points in November 2008.Surprisingly, the degree of decline in Taiwan stock market was even greater than the US stock market, which was the starting country of the global financial crisis. Therefore, the legislators in Taiwan proposed to ban security lending for short selling by QFIIs on 24 September 2008 in order to maintain market order and stabilization. On 29 September 2008, the Authority announced more strict restrictions on security lending and short sell. On 27 July 2011, the Euro crisis again caused a crash in Taiwan stock market. The stock market index fell from 8819 points to 6877 points on 26 September, representing a decline of 22%. The investors suffered great losses. The issue of security lending for short sell by QFIIs was again put on the table and the Authority further tightened the control for security lending.

Due to the announcement by the Federal Reserve on 22 May 2013 that QE was likely to shrink, stock markets around the world had experienced a serious fall; for example, the Japanese market fell by 21%. Nasdaq fell by 4.4%. Both the Brazilian and Russian stock markets declined by 15%. However, the Taiwan stock market had a slight rise of 5.4%. Following the critique of security lending during the financial crisis (Swartz and Connolly, 2009), this study aims to examine the causality relationship between security lending by QFIIs and stock price crash. Specifically, we test if security lending by QFIIs during the financial crisis (2007.7.1~2011.11.28) has the ability to stabilize the market. The organization of this paper is as follows. The literature review is provided in Section 2. In Section 3, we discuss the methods used in this paper, including Granger Causality and EGARCH models, and the experimental design. Descriptions of the data and the results are provided in Section 4 and 5, respectively. A conclusion is provided in Section 6.

II. Literature Review

Previous research has discussed whether institutional investors have the advantage on picking stocks. Jensen (1968) first proposes that institutional investors do not have a stock-picking advantage. In contrast, recent studies by Kent et al. (1997) and Chen et al. (2000) find that institutional investors have the stock-picking advantage in US mutual funds. San (2007), however, reports that in the post-1990s,

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compared to institutional investors, individual investors have 2% abnormal returns every month. Fama and French (2010) also find that if we consider the transaction management costs, returns on equity fund is no better than the stock index, suggesting that institutional investors have no stock-picking advantage. In Asia, Kang and Stulz (1997) find that between 1975 and 1991, most foreign institutional investors have better stock-picking skills. Seasholes (2000) also suggests that the foreign institutional investors in Taiwan are able to buy (or sell) before positive (or negative) news are announced. Foreign institutional investors have better stock-picking ability. However, Choe et al. (2001) find that in Korea institutional investors does not have better stock-picking ability in medium and large trading transactions. Deng et al. (2011) show that institutional investors in China have positive (or negative) short- and long-run cumulated abnormal returns when increasing (or decreasing) their holdings. The above review reveals current conflicting findings on institutional investors' stock-picking ability among countries.

Moreover, prior studies have examined whether security lending is mostly conducted by informed investors. Seneca (1967) reports a negative relationship between security lending for short selling and stock prices, implying a bear market. McCorry and Swan (1998) find that 15 minutes after security lending for short selling, the stock prices in the Australian stock market fall. Diether, Lee and Werner (2008) prove a leading and lagging relationship between stock prices and security lending for short selling. Especially when there is a rapid rise in stock prices, the volume of short selling increases, suggesting an information advantage by short sellers.Karpoff and Lou (2010) suggest that short selling is a warning for financial problems in companies. Christophe, Ferri and Hsieh (2010) find that security lending for short selling is usually related to informed trading and investors can profit from such strategy. Boehmer, Jones and Zhang (2010) further suggest that investors can profit from security lending based on operation predictions and earnings announcements. Engelberg, Reed and Ringgenberg (2012) also argue that the advantage of security lending for short selling stems from the ability to interpret the open market information. Lakonishok and Lee (2001) study all public companies listed on NYSE, AMEX and Nasdaq between 1975 and 1995 and find that inside traders use information from the futures market. Montier (2010) advances Petitt's (2000) research and show that inside traders do not usually trade in mid-year. However, when there are negative abnormal returns, they are usually on the sell-side.

Furthermore, investors usually dislike financial uncertainties. The prospect theory of Kahneman and Tversky (1979) suggests that people will give greater weighting to events that are certain and this is called the "certainty effect". Gilboa and Schmeidler (1989) propose the maxmin expected utility. They argue that investors dislike uncertainty and when they face with uncertainty, they will make decisions in the worst scenario. Heath and Tversky (1991) propose the competence effect and argue that when facing uncertainty, investors' attitude will be influenced by their competence. That is, confident investors will be willing to participate in uncertain investment while doubtful investors will not. Coval and Moskowitz (1999) find that fund managers believe that they have an information advantage. Cao et al. (2005) hypothesize that the higher the level of uncertainty, the less likely the investors will participate in the market. Using dynamic asymmetric GARCH, Caporin and McAleer (2006) further show that the leverage effect is not only related to the type of news (good or bad news) but also the seriousness of good or bad news.

Finally, the volatility of financial asset prices has been studied

by prior research. Cox et al. (1976) and Black (1976) show that current stock market returns and future volatility are negatively related. Campbell et al. (1992), Laopodis (1997) and Yang (2000) find evidence of asymmetric volatility in the foreign exchange and stock markets. When there is positive news, the volatility of future price is smaller. In contrast, negative news has greater impact on future price volatility. This is called the leverage effect, where the negative news impact is greater than the positive news impact. This is because a fall in stock price will cause a rise in debt to equity ratio, increasing the riskiness of shareholders and of their future cash flow.

The cause of financial crisis has been a hot debate. The legislators in Taiwan had questioned that security lending by QFIIs was the cause of Taiwan stock market crash during the financial crisis. Thus, this study incorporates the security lending data by QFIIs to examine the causality relationship between the leverage effect and security lending by QFIIs using EGARCH model and program trading. The hypotheses are as follows:

H1: During the financial crisis, allowing security lending by QFIIs can reduce the leverage effect, thereby lowering the effect of negative news on investors.

H2: During the financial crisis, the leverage effect that negative news has a greater impact on investors than positive news is the Granger cause of security lending by QFIIs.

H3: Holding the information of security lending by QFIIs can reduce investment uncertainty and increase investor confidence and investment performance.

III. Research Methods

Miller (1991) argues that opening up the futures market will not increase the volatility in the spot market; instead, it is likely to lower the volatility. However, Chen

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and Lee (2007) suggest that by allowing QFIIs to invest in Taiwan's futures market for non-hedging purposes, the international hot money is likely to cause uncertainty in the financial market. Hedge funds that search for short-term inequality in international financial markets are likely to carry out one-side trade in large amounts, leading to instability in that country's financial market. Therefore, this study adopts the following methods to solve this puzzle.

a) Granger Causality Model and the Estimation Method

As the relationship between stock prices and investment behavior remains inconclusive, Granger (1969, 1988) causality test can be used to analyze how they are related. Testing if the coefficients of current y series and the past values of x series have causal relationship is similar to testing if the past values of x can explain the present values of y. That is, if adding a lagged value of x can increase the degree of explanation, or similarly the correlation coefficient of x and y are statistically significant, then we can conclude that y is Granger caused by x.

$$Y_{t1} = \delta_0 + \sum_{i=1}^{m} \delta_i Y_{t1-i} + \sum_{i=1}^{m} \gamma_i Y_{t2-i} + \varepsilon_t$$
$$Y_{t2} = \lambda_0 + \sum_{i=1}^{n} \lambda_i Y_{t2-i} + \sum_{i=1}^{n} \omega_i Y_{t1-i} + \nu_t \quad (1)$$

where ε_t and ν_t in Equation (1) are white noise error terms. *m* and *n* are the optimal lag periods based on SC's minimum value. The null hypothesis is that Y_2 has a Granger lead on Y_1. The alternative hypothesis is that Y_1 has a Granger lead on Y_2. If both γ and ω do not equal to 0, this means that there is bidirectional causality.

b) GARCH Model and the Estimation Method

GARCH (generalized autoregressive conditional heteroscedasticity) model was developed by Bollerslev (1986) based on a modification of ARCH (autoregressive conditional heteroscedasticity) model developed by Engle (1982). Let $\psi_{t-1} = \{y_{t-1}, x_{t-1}, y_{t-2}, x_{t-2}, ...\}$ denote the distribution of random error term in time period t-1, and the model is as follows:

$$\varepsilon_t | \psi_{t-1} \sim N(0, h_t)$$

$$h_t = \alpha_0 + \sum_{i=1}^{q} \alpha_i \varepsilon_{t-i}^2$$

where $\alpha_0 > 0, \alpha_i \geq 0, i = 1,..., n$. GARCH(p,q) model overcomes the restriction that the latter term, α, is nonnegative and the model can be represented as follows:

$$y_t = x_t' \beta + \varepsilon_t \quad (2)$$

$$\varepsilon_t = \sqrt{h_t} v_t \quad (3)$$

$$h_t = \alpha_0 + \sum_{i=1}^{q} \alpha_i \varepsilon_{t-i}^2 + \sum_{j=1}^{p} \beta_j h_{t-j} \quad (4)$$

where h_t is the conditional variance of the GARCH model, *p* is the order of the GARCH terms h^2 and *q* is the order of the ARCH terms ε^2. Therefore, the response of conditional variance to positive error term and negative error term is symmetric. However, in Finance, negative news often has greater impact on stock prices than positive news. Therefore, to overcome this weakness in the GARCH model, Nelson (1991) develops the conditional variance of EGARCH model which is adopted in this study and is presented below:

$$\ln(h_t) = \alpha_0 + \sum_{j=1}^{p} \beta Ln(h_{t-j}) + \sum_{i=1}^{q} (\alpha_i \left| \frac{\varepsilon_t}{\sqrt{h_t}} \right| + \gamma \frac{\varepsilon_t}{\sqrt{h_t}}) \quad (5)$$

If the coefficient of leverage effect *r* does not equal to 0, this shows that the response of conditional variance on positive error term and negative error term is asymmetric. Therefore, this study analyzes the effect of security lending on the stock market from the volatility point of view. Specifically, we compare the effects when the information of security lending (as at July 2007) is adopted or not.

In order to examine the possible asymmetric effect of security lending by QFIIs, this study adopts the news impact curve (Gao, 2006; Brooks, 2002; Pagan and Schwert, 1990) that can be used to explain the

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asymmetric effects of positive and negative news on stock price volatility. The asymmetry response coefficients from the stock price volatility and previous model can then be used to draw the news impact curve. The methods are described in detail below:

1. Let $z = \frac{\mu}{\sigma}$. From the EGARCH model, we can estimate the conditional variance series σ^2 and take the square root, which is then divided by the error term to derive *z*.
2. Rank *z* from the lowest to the highest and structure a new series containing *z*.
3. Use the coefficients α and γ from the EGARCH model and the following equation to drive *s*:

$$\log(s) = \alpha * abs(z) - \gamma * z \qquad (6)$$

4. Plot *z* and *s* on a graph (where the x-axis is *z*, representing the degree of market deviation; y-axis is *s*, indicating the fearfulness on the part of investors) to draw the news impact curve and observe the impact of security lending by QFIIs on the stock market. If the curve tilts upwards to the left with a large angle, it suggests a high degree of panic.

c) Experimental Design and the Estimation Method

This study uses two stages of testing to examine if the market is strong efficient during the financial crisis. First, we use program trading to obtain the optimal trading simulation. The purpose is to see if holding the security lending information of QFIIs can enhance the trading performance in the futures market. Secondly, we substitute the coefficients from the first stage of optimal transaction to Taiwan financial market data. If investors are able to make abnormal returns, this suggests that Taiwan financial market is not strong efficient.

Based on the design concept of program trading (Williams, 1999), we include a second set of data (data2) as the filter in addition to the initially proposed Taiwan index futures data (data1) to increase the trading performance. Therefore, to ensure the fairness in evaluation, the two models are estimated based on the following trading strategies. Model 1 considers only data1 and data2 (which is the net trading value in the spot market by the three largest institutional investors). The concept of program trading is to buy if the net value of data2 is greater than 0 or if the closing price of data1 is greater than the 10-day moving average price, and vice versa. The position should be closed out if the profit is greater than 300 points or the loss is greater than 100 points.

The design concept of Model 2 considers data1, data2 (the net trading value in the spot market by the two largest institutional investors), and data3 (the security lending information by QFIIs), and the following conditions: (1) the closing price of data2 is greater than the 20-day moving average price; (2) the closing price of data3 is greater than the 5-day moving average price; and (3) the 14-day RSI closing price of data1 is greater than 60. If all three conditions have been met, a long position is adopted. In contrast, if the following three conditions have been met (i.e., (1) the closing price of data2 is smaller than the 20-day moving average price; (2) the closing price of data3 is smaller than the 5-day moving average price; and (3) the 14-day RSI closing price of data1 is smaller than 25) a short position is adopted. The position is closed out if the profit is greater than 350 points or the loss is greater than 100 points.

Apart from these basic settings, this study also uses the optimal MultiCharts[1] program trading to conduct back-testing. By comparing the trading performance in the optimal condition, we can see if including the security lending information of QFIIs can enhance the trading performance of the three largest institutional investors in the futures market.

IV. Data

To analyze the effect of security lending by QFIIs in Taiwan futures market, the data used in this study includes: (1) daily closing price of Taiwan futures market, obtained from Taiwan Futures Exchange; (2) net trading value by QFIIs in the futures market, obtained from Taiwan Futures Exchange; and (3) the security lending data, obtained from Taiwan Stock Exchange. In order to standardize the estimation, each variable is calculated based on the daily closing price of the futures market using the logarithm of returns r_t, defined as $r_t = \ln(P_t / P_{t-1}) \times 100$, where P_t is the closing price at time *t* and P_{t-1} is the closing price at time *t-1*. The distribution of returns (or volatility) of each variable shows skewness. It is common to observe fat-tailed distribution in financial data. Also, all returns (or volatility) are characterized by autocorrelation. Note that this study focuses on the stock price changes after opening up for security lending, which is not necessary for the purpose of short selling.

The sample covers the pre-period from 2 July 2007 to 28 November 2011 (i.e., the global financial crisis period), including 1123 trading days and the post-period from 29 November 2011 to 20 August 2013, including 406 trading days. That is, a total of 1529 trading days over the entire sample period. As the number of security lending for each stock differs everyday, we multiply the number of security lending stocks with its market value to obtain the total value of security lending each day and to calculate the volatility. The data on net trading value of QFIIs in the futures market and the security lending by QFIIs is also divided into pre-period (i.e., the global financial crisis) and post-

[1] Please refer to http://www.multicharts.com.

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period (where the Taiwan Government opened up for security lending by QFIIs from July 2007). In the empirical research, we often use daily trading volatility. If the estimated coefficient of this variable is significant, it shows that the market and thus the price reacts very quickly. The net trading value and the amount of security lending by QFIIs should then quickly reflect the change according.

V. Results

a) Unit Root Test of EGARCH Model Variables

To ensure the validity of empirical results, we need to ensure that the series are stationary. The results in Table 1 show that at level, the daily closing price and trading volume of the Taiwan Stock Exchange, the options in open position in the futures market and the security lending value in the Taiwan Stock Exchange all reject the null hypothesis. That is, the variables are very stable. Since I(0) is a stationary series, we can proceed with Granger causality test and EGARCH estimation.

Table 1 : Unit root test of EGARCH model variables

	Level	
Variable / Model	Intercept	Intercept and Trend
LZTXAF26063729	-33.6597(0)*	-33.6487(0)*
LZTXAF37294135	-19.8778(0)*	-19.8661(0)*
LZTXAF26064135	-39.2240(0)*	-39.2198(0)*
LOAN26063729c	-30.3924(0)*	-30.4035(0)*
LOAN37294135c	-20.5800(0)*	-20.5551(0)*
LOAN26064135	-36.5273(0)*	-35.5168(0)*
FSPOT26063729	-20.5154(0)*	-20.5337(0)*
FSPOT37294135	-7.2072(2) *	-7.2020(2)*
FSPOT26064135	-23.9105(0)*	-23.9396(0)*
FS26063729SPOTL	-34.83513(0)*	-34.92417(0)*
FS26064135SPOTL	-40.09275(0)*	-40.28587(0)*

*Note: According to Mackinnon(1991), *, **, *** shows significance level at 1%, 5% and 10%. ( ) shows the number of lag periods. LZTXAF, SPOT and LOAN represent Taiwan futures market, daily closing price of the spot market, and the security lending with the Taiwan Stock Exchange, respectively. The numbers behind each variable 2606, 3729 and 4136 shows the data period 2007.07.02, 2011.11.28, and 2013.08.20 respectively.*

b) Granger Causality Test

In order to simulate program trading of the time series in the next section, this section conducts the Granger Causality Test based on the security lending data from 25 November 2004 to 20 August 2013 (obtained from TEJ database). The results show that spots (FSPOT19654135)and futures (LZTXAF19654135) by QFIIs are Granger cause of each other. In addition, futures are the Granger cause of security lending (LOAN19654135C). To save space, we only report the models for QFIIs here.

Table 2 : Granger causality test of QFIIs for the entire period

Dependent variable: LZTXAF19654135			
Excluded	Chi-sq	df	Prob.
FSPOT19654135	5.521736	2	0.0632
LOAN19654135C	1.297957	2	0.5226
All	6.707912	4	0.1522
Dependent variable: FSPOT19654135			
Excluded	Chi-sq	df	Prob.
LZTXAF19654135	28.63947	2	0.0000
LOAN19654135C	0.315197	2	0.8542

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All	30.59043	4	0.0000
Dependent variable: LOAN19654135C			
Excluded	Chi-sq	df	Prob.
LZTXAF19654135	8.190241	2	0.0167
FSPOT19654135	0.272018	2	0.8728
All	9.112682	4	0.0583

c) EGARCH Model Estimation

i. *Entire sample period (2007.7.2~2013.8.20)*

a. *EGARCH Model Estimation excluding Security Lending by QFIIs*

All variables in this stage are significant at the 1% level. α is 0.184719, β is 0.986434 and γ is negative (-0.074005). The results suggest that the leverage effect has a greater impact on negative news, causing investors to become panic. The positive news leverage effect is represented by 0.1107=(0.1847-0.0740), whereas the negative news leverage effect can be represented by 0.2587=(0.1847+(-0.0740)*(-1)), as shown in Table 3.

Table 3 : EGARCH model estimation for the entire period (excluding security lending)

	Coefficient	Std. Error	z-Statistic	Prob.
FSPOT26063729	8.81E-07	2.26E-08	38.97324	0.0000
C	-0.00075	0.00025	-2.96067	0.0031
Variance Equation				
C	-0.25851	0.03353	-7.70822	0.0000
|RES|/SQR[GARCH](1)	0.18471	0.01641	11.2503	0.0000
RES/SQR[GARCH](1)	-0.07400	0.01345	-5.49982	0.0000
EGARCH(1)	0.98643	0.00312	315.468	0.0000
R-squared	0.27252	Prob(F-statistic)		0.00000

b. *EGARCH Model Estimation including Security Lending by QFIIs*

All variables in this stage are significant at the 1% level. α is 0.170173, β is 0.987195 and γ is negative (-0.058180). The results suggest that the leverage effect has a greater impact on negative news, causing investors to become panic. Table 4 shows that the positive news leverage effect is represented by 0.112=(0.1847-0.0740). The negative news leverage effect is 0.2282, which is less than the leverage effect of 0.2587 when security lending by QFIIs is not included.

Table 4 : EGARCH model estimation including security lending by QFIIs

	Coefficient	Std. Error	z-Statistic	Prob.
FSPOT37294135	7.41E-07	2.28E-08	32.49105	0.0000
LOAN37294135C	1.42E-06	5.55E-08	25.62506	0.0000
C	-0.00099	0.00023	-4.21674	0.0000
Variance Equation				
C	-0.24261	0.03461	-7.00887	0.0000
|RES|/SQR[GARCH](1)	0.17017	0.01654	10.2878	0.0000
RES/SQR[GARCH](1)	-0.05818	0.01293	-4.49734	0.0000
EGARCH(1)	0.98719	0.00294	334.750	0.0000
R-squared	0.36099	Prob(F-statistic)		0.00000

ii. *Financial Crisis Period (2007.7.2~2011.11.28)*

a. *EGARCH Model Estimation excluding Security Lending by QFIIs*

All variables in this stage are significant at the 1% level. α is 0.197811, β is 0.983400 and γ is negative (-0.091169). The results suggest that leverage effect has a greater impact on negative news, causing investors to become panic. The positive news leverage effect is represented by 0.1067=(0.1978-0.0911), whereas the negative news leverage effect is 0.2889, as shown in Table 5.

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Table 5 : EGARCH model estimation during the financial crisis (excluding security lending)

	Coefficient	Std. Error	z-Statistic	Prob.
FSPOT26063729	8.44E-07	2.74E-08	30.85404	0.0000
C	-0.00091	0.00035	-2.58228	0.0098
		Variance Equation		
C	-0.28968	0.04247	-6.82049	0.0000
|RES|/SQR[GARCH](1)	0.19781	0.02291	8.63174	0.0000
RES/SQR[GARCH](1)	-0.09116	0.01711	-5.32620	0.0000
EGARCH(1)	0.98340	0.00420	233.970	0.0000
R-squared	0.26019	Prob(F-statistic)		0.00000

b. *EGARCH Model Estimation including Security Lending by QFIIs during the Financial Crisis*

All variables in this stage are significant at the 1% level. α is negative (0.206398), β is negative (0.984182) and γ is negative (-0.069186). The results suggest that leverage effect has a greater impact on negative news, causing investors to become panic. The positive news leverage effect is represented by 0.1371= (0.2063-0.0691), whereas the negative news leverage effect is 0.2755, as shown in Table 6.

Table 6 : EGARCH model estimation including security lending during the financial crisis

	Coefficient	Std. Error	z-Statistic	Prob.
FSPOT26063729	7.38E-07	2.79E-08	26.41038	0.0000
LOAN26063729C	1.55E-06	7.91E-08	19.64516	0.0000
C	-0.00094	0.00031	-2.97627	0.0029
		Variance Equation		
C	-0.29454	0.04952	-5.94691	0.0000
|RES|/SQR[GARCH](1)	0.20639	0.02472	8.34727	0.0000
RES/SQR[GARCH](1)	-0.06918	0.01751	-3.95021	0.0001
EGARCH(1)	0.98418	0.00459	214.313	0.0000
R-squared	0.35124	Prob(F-statistic)		0.00000

This study further plots the news impact curve based on the EGARCH model estimates, as shown in Figure 1

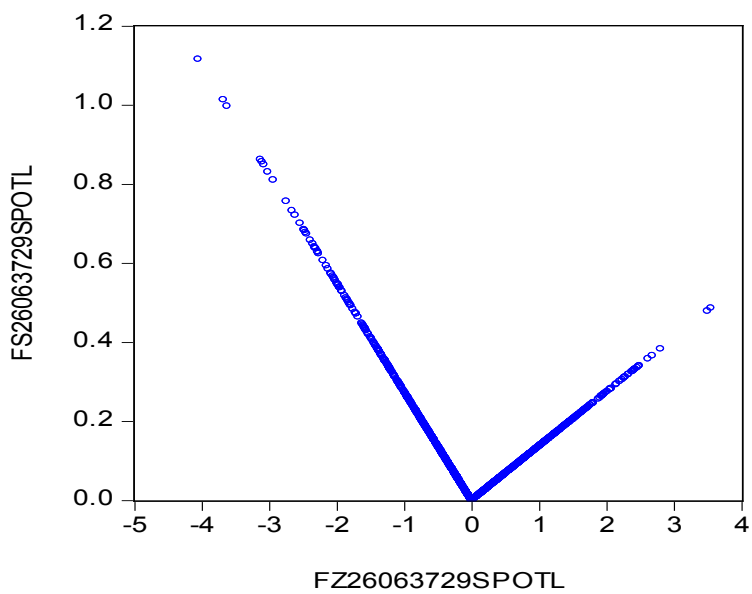

Figure 1 : News impact curve including security lending by QFIIs during the financial crisis

Figure 1 shows that when the news impact is less than 0 (i.e., when having negative impacts), the curve is steeper compared with the positive impacts. The figure suggests that negative news impact will cause greater volatility in stock prices.

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iii. *Post-Financial Crisis Period (2011.11.29~2013.08.20)*

a. *EGARCH Model Estimation excluding Security Lending by QFIIs*

Only γ is significant at the 2% level. Although γ is negative (-0.125388) suggesting that leverage effect has a greater impact on negative news, α (0.092925) and β (0.365130) are not significant at the 10% level, as shown in Table 7.

Table 7 : EGARCH model estimation during the post-financial crisis period

	Coefficient	Std. Error	z-Statistic	Prob.
FSPOT37294135	1.00E-06	6.87E-08	14.55211	0.0000
C	-0.00021	0.00038	-0.55612	0.5781
		Variance Equation		
C	-6.28259	3.38290	-1.85716	0.0633
|RES|/SQR[GARCH](1)	0.09292	0.08523	1.09027	0.2756
RES/SQR[GARCH](1)	-0.12538	0.05655	-2.21723	0.0266
EGARCH(1)	0.36513	0.34671	1.05312	0.2923
R-squared	0.36472	Prob(F-statistic)		0.00000

b. *EGARCH Model Estimation including Security Lending by QFIIs during the Post-Financial Crisis Period*

In this stage, only γ is not significant at the 10% level. α (0.124766) and β (-0.553569) are negative but insignificant while γ is positive (0.078967). The results suggest that the leverage effect has a smaller impact on negative news compared to positive news, as shown in Table 8.

Table 8 : EGARCH model estimation including security lending by QFIIs during the post-financial crisis period

Dependent Variable: STO1				
	Coefficient	Std. Error	z-Statistic	Prob.
FSPOT37294135	7.27E-07	6.17E-08	11.79288	0.0000
LOAN37294135C	1.46E-06	9.32E-08	15.63370	0.0000
C	-0.00051	0.00034	-1.47547	0.1401
		Variance Equation		
C	-15.6821	3.30661	-4.74265	0.0000
|RES|/SQR[GARCH](1)	0.12476	0.07482	1.66745	0.0954
RES/SQR[GARCH](1)	0.07896	0.05796	1.36228	0.1731
EGARCH(1)	-0.55356	0.33218	-1.66645	0.0956
R-squared	0.36472	Prob(F-statistic)		0.00000

Similarly, this study plots the news impact curve based on the EGARCH model estimates in the post-financial crisis period, as shown in Figure 2.

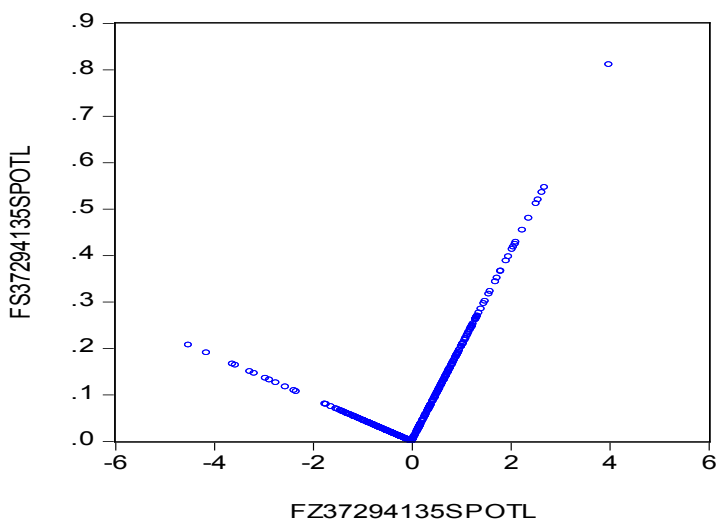

Figure 2 : News impact curve including security lending by QFIIs in the post-financial crisis period

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Figure 2 shows that when the news impact is less than 0 (i.e., when having negative impacts), the curve is not as steep compared to positive impacts. The result suggests that positive news impact will cause greater volatility in stock prices.

This study also compares the effect on investor behavior when security lending variable is excluded and included by conducing γ coefficient difference test before and after the financial crisis (as shown in Table 9). The t-value is calculated as follows:

$$t = (|\gamma_2| - |\gamma_1|) / \sqrt{\frac{\hat{\sigma}_1^2}{n_1} + \frac{\hat{\sigma}_2^2}{n_2}}$$

where γ_1, γ_2 are the γ coefficients before and after the financial crisis. $\hat{\sigma}_1^2, \hat{\sigma}_2^2$ are the square of γ coefficients. n_1, and n_2 represent the sample size. As in the post-financial crisis period, the γ coefficient is a positive value. It is only necessary to conduct the γ coefficient difference test for the pre-financial crisis period. The t-value is 5.06 (as shown in Table 9). This suggests that there is a significant difference in γ coefficients in the pre-financial and post-financial crisis periods. In other words, although the financial crisis has already happened, if we do not incorporate security lending information when setting the investment strategy, investors will have greater concern about their future cash flow risk. Additionally, this study examines the difference between excluding and including security lending variable in the pre-financial crisis period. The t-value is 6.66. The result suggests that if including the security lending information when setting the investment strategy, investors have less concern about their future cash flow risk. Similarly, we can test for the financial crisis period, the t-value is 6.68. Again, the result suggests that if including the security lending information when setting the investment strategy, investors have less concern about their future cash flow risk. Overall, the evidence supports hypothesis 1 that opening up for security lending by QFIIs can reduce the leverage effect and reduce the larger impact of negative news (compared to positive news) on investors.

Table 9 : Leverage ratio of security lending variable and difference test for γ coefficients of security lending

Model	Excluding security lending		Including security lending		Difference test
	Coefficient	Std. Error	Coefficient	Std. Error	t-value
Financial crisis period (2007.07.02~2011.11.28)	-0.091169	0.017117	-0.069186	0.017515	6.66
Post-financial crisis period (2011.11.29~2013.08.20)	-0.125388	0.056552	0.078967	0.057967	---
Entire period (2007.07.02~2013.08.20)	-0.074005	0.013456	-0.058180	0.012936	6.68

d) Granger Causality Test of Security Lending and the Leverage Ratio

i. Granger Causality Test of Security Lending and the Leverage Ratio during the Financial Crisis

During the financial crisis, all variables are significant and the γ coefficient is negative, suggesting that negative news has a greater impact on investors than positive news. Also, the negative news leverage effect (0.28) during the financial crisis is greater than that in the post-financial crisis period. The negative news leverage effect over the entire sample period is 0.25 and after including the security lending information, the leverage effect reduces to 0.26 and 0.22 for the financial crisis period and the post-financial crisis period, respectively. The evidence may be explained by the ability of QFIIs to control the market using security lending.

This study examines whether QFIIs have the ability to stabilize the market during the financial crisis period (2007.7.1~2011.11.28). Therefore, we further compare the causality relationship between the security lending leverage ratio and security lending by QFIIs. As all variables are consistent with I(0) stationary relationship based on the previous unit root test, we can proceed with the causality test. After a number of VAR estimations, we find that lagging two periods is the best estimation, significant at the 5% level and we choose Model (1) with the minimum SC value. The results are presented in Table 10.

Table 10 : Causality test of security lending leverage ratio and security lending by QFIIs

Dependent variable: FS26063729SPOTL			
Excluded	Chi-sq	df	Prob.
LOAN26063729C	0.022416	2	0.9889
All	0.022416	2	0.9889

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Dependent variable: LOAN26063729C			
Excluded	Chi-sq	df	Prob.
FS26063729SPOTL	5.444871	2	0.0657
All	5.444871	2	0.0657

Note: This model includes security lending variable (LOAN26063729C) and changes in security lending (FS26063729SPOTL). The latter proxies for the leverage effect after including the security lending variable.

Further, after incorporating the security lending variable, the relationship between the leverage effect and the security lending variable is significant at the 10% level (with p-value of 0.0657). This shows that the leverage effect after incorporating the security lending variable does have an impact on the stock market. That is, the impact of negative news on investors is greater than positive news. The results also suggest that investors will be concerned that the leverage effect from the future risk in cash flow is the Granger cause of security lending by QFIIs rather than the other way round. Therefore, based on this study's findings, the argument by the public that security lending by QFIIs is the cause for the crash in Taiwan stock market is incorrect. However, the story behind this phenomenal might confirm Engelberg et al. (2012) and Montier's (2010) arguments. With its huge market share, QFIIs can get profit by just following the trend. It's an interesting topic for further investigation.

The leverage effect after incorporating security lending variable falls from 0.28 to 0.26. This shows that during the financial crisis, the leverage effect will reduce as the security lending by QFIIs in Taiwan stock market increases, thereby helping to stabilize the stock market. Therefore, we find evidence supporting hypothesis 2; that is, the leverage effect that negative news has a greater impact on investors than positive news is the Granger cause of security lending by QFIIs. However, this hypothesis is valid only during the financial crisis, and we will present the evidence in the next section.

ii. *Granger Causality Test of Security Lending and the Leverage Ratio for the Entire Sample Period*

This study also investigates whether security lending by QFIIs has the ability to stabilize the market and we examine the causality relationship between the security lending leverage ratio and security lending by QFIIs by including the security lending variable. As all variables are consistent with I(0) stationary relationship based on the previous unit root test, we can proceed with the causality test. After a number of VAR estimations, we find that lagging one period is the best estimation, significant at the 5% level and we choose Model (1) with the minimum AIC value, which is then used as the estimation model to conduct the following tests. We do not find evidence of a causality relationship and the results are presented in Table 11.

Table 11 : Causality test of security lending leverage ratio and security lending by QFIIs for the entire sample period

Dependent variable: FS26064135SPOTL			
Excluded	Chi-sq	df	Prob.
LOAN26064135C	1.240269	1	0.2654
All	1.240269	1	0.2654
Dependent variable: LOAN26064135C			
Excluded	Chi-sq	df	Prob.
FS26064135SPOTL	0.385363	1	0.5347
All	0.385363	1	0.5347

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e) An Evaluation of Security Lending by QFIIs on the Taiwan Index Futures Trading Performance of the Three Largest Institutional Investors

This section discusses whether the three largest institutional investors in Taiwan are able to make better trading profits based on the security lending information. The empirical results are presented in the following sections.

i. *QFIIs*

Based on the above experimental models, we find that in the pre-financial crisis period (2004.11.25~2007.7.1) and using Model 1 (i.e., using the data from Taiwan index futures and spot market information of QFIIs), the net trading profit of QFIIs in a 2.5 year period (i.e., the first stage) between 25 November 2004 and 1 July 2007 is -$128,000. Since the net trading is a loss, it shows that the investment strategy based on this information is ineffective. Therefore, it is not necessary to simulate the trading in the other two sample periods (2008.11.28~2011.11.28 and 2011.11.28~2013.8.16). Using the third set of information (i.e., security lending) to simulate optimal program trading in Model 2, the net trading profit in the first stage, the pre-financial crisis (2004.11.25~2007.7.1) period, is $332,200 (as shown in Table 12). If the optimal simulated variable is used in the second stage (2007.7.2~2011.11.28), the net trading profit is $502,600 (grown by 51%). Again if we use the optimal simulated variables in the third stage where QE is likely to shrink, there is a net trading profit of $664,600 (grown by 32%). Therefore, the results suggest that simulated trading strategy is effective. If investors can get hold of the security lending information, they are able to make profits. The evidence also suggests that an efficient market does not exist.

Table 12 : Trading analysis of investment trusts, dealers and QFIIs before and after the financial crisis

Unit: $, %

Net profits	2004.11.25~2007.7.1		2007.7.2~2011.11.28		2011.11.29~2013.8.20	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Investment Trusts	87,000	232,200	27,200 (-69%)	435,600 (88%)	-612,000 (-2350%)	373,400 (-14%)
Dealers	308,800	372,200	407,800 (32%)	732,800 (97%)	80,400 (-80%)	668,400 (-9%)
QFIIs	-128,000	332,200	---	502,600 (51%)	---	664,600 (32%)

Note: The number in the bracket shows the growth rate between two periods.

ii. *Investment Trusts*

Similarly, we repeat the above experiment in investment trusts. The results show that in the pre-financial crisis period (2004.11.25~2007.7.1) and using Model 1 (i.e., using the data from Taiwan index futures and spot market information of investment trusts), the net trading profit of investment trusts in a 2.5 year period (i.e., the first stage) between 25 November 2004 and 1 July 2007 is $87,000 (as shown in Table 12). Since the net trading is a loss, it shows that the investment strategy based on this information is ineffective. However, we use the optimal simulated variables till the recent date (2013.8.16 where the announcement that QE was likely to shrink was made), the net trading loss is -$612,000 (reduced by 2350%). This again shows that this set of information does not contribute toa profitable trading strategy. Using the third set of information (i.e., security lending) to simulate optimal program trading in Model 2, the net trading profit in the pre-financial crisis (2004.11.25~2007.7.1) period is $232,200. If we use the optimal simulated variables in the second stage (the financial crisis period, 2007.7.2~2011.11.28), the net trading profit is $435,600 (grown by 88%). Again if we use the optimal simulated variables in the third stage where QE is likely to shrink, the net trading profits reduce to $373,400 (declined by 14%). Therefore, the results suggest that the simulated trading strategy is effective in a volatile market. However, due to the correction after the Euro crisis in 2011 and the ease of market panic, this trading strategy becomes less effective.

iii. *Dealers*

The results show that in the pre-financial crisis period (2004.11.25~2007.7.1) and using Model 1 (i.e., the data from Taiwan index futures and spot market information of dealers), the net trading profit of dealers in a 2.5 year period (i.e., the first stage) between 25 November 2004 and 1 July 2007 is 308,800 (as shown in Table 12). When we use the optimal simulated variables till the year 2011 (i.e., the Euro crisis), the net trading profit is 407,800 (increased by 32%). If we use the optimal simulated variables till the recent date (i.e. 16 August 2013on which day an announcement for a likely withdrawn of QE was made), the net trading profit becomes $80,400 (reduced by 80%). The results suggest an effective trading strategy during the financial crisis period. Using the third set of information (i.e., security lending) to simulate optimal program trading in Model 2, the net trading profit in the pre-financial crisis (2004.11.25~2007.7.1) period is $372,200. If we use the optimal simulated variables in the second stage (the financial crisis period, 2007.7.2~2011.11.28), the net

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trading profit is $732,800 (grown by 97%). Again if we use the optimal simulated variables in the third stage where QE is likely to shrink, the net trading profit reduces to $668,400 (declined by 9%). Therefore, the results suggest that the simulated trading strategy can generate profits during the financial crisis. The information on security lending of QFIIs is necessary for ensuring a positive trading performance. The results are consistent with the arguments by Kyle and Wang (1997). They suggest that in an incomplete competitive stock market, over-confident investors can simulate to trading strategies of informed traders to make profits, supporting hypothesis 3 (i.e., holding the information of security lending by QFIIs can reduce investment uncertainty and increase investor confidence and investment performance).

VI. Conclusion

Following the internationalization of financial markets, Taiwan Government opened up for security lending in July 2007 to encourage QFIIs to participate in Taiwan's securities market. Based on the security lending data in recent years and using program trading and EGARCH models, this study analyzes the volatility of returns in Taiwan's futures market to examine the effect of security lending on futures market. By using the daily closing price returns and total value of security lending, we find evidence of a leverage effect in Taiwan futures market and that opening up for security lending lessens the panic feeling of investors.

The results show that during the financial crisis, the leverage effect will be lowered caused by the increasing security lending by QFIIs in Taiwan stock market. Thus, adding security lending in the investment portfolio can help stabilize the stock market in Taiwan. In addition, we find that the leverage effect is the Granger cause of security lending by QFIIs. Moreover, based on the MultiCharts program trading experiments, we find that QFIIs buy and sell with known information and this can help increase trading performance. Meanwhile, the proportion of foreign ownership accounted for approximately 60% recently relative to the market three years also increased by about 350 billion Taiwan dollars. In conclusion, the results confirm the findings of Pope et al. (1994) that unless the market participants already hold the stocks, it is not possible for them to short sell and make arbitrage profits. Therefore, under the asymmetry of information and incomplete competition market, in order to protect the uninformed domestic investors in emerging market, the government should examine the relevant regulations and set contingency strategies for possible financial crisis before adopting financial open-door policy. For example, in Taiwan, the government limits the total order for short selling based on security lending and relies on National Stabilization Funds[2] to control the financial risk. However, the limitation of this study is that as we have adopted the security lending data, we are not able to conduct higher frequency data analysis which could be carried out by future studies.

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[2] In 1999, Ministry of Finance formally organizes the National Stabilization Fund, which basically includes four government funds: Public Service Pension Fund, the Postal Savings Fund, the Labor Insurance Fund, the labor pension fund, the scale is of five hundred billion Taiwan dollars. The National Stabilization Funds make a buy or sell order through eight government owned banks, which had over bought the stocks for four times from the end of 2009 to August 2011. It was found that when the eight government owned banks over-bought for more than 2% of the total market and changed trading strategy to over-sold, the stock market index would rise.

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Portfolio Performance Evaluation of Mutual Funds in India - A Study of Hybrid Growth Funds

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Abstract - This research paper attempts to study the portfolio performance evaluation of selected Hybrid growth schemes using Net Asset Values, Return, Beta and Standard Deviation and further used the risk adjusted evaluation methods such as Sharpe, Treynor, and Sortino Ratio. Researchers only emphasized on secondary data sources and selected 12 Mutual Fund schemes of 6 mutual fund institutions and the period of study is kept limited for 5 years i.e. from 2007-08 to2011-2012. To test the significance; F-test and Spearman's rank correlation were used and found out that there is significant difference between NAV's of two select categories, There is significant difference between scheme returns and benchmark returns of both Hybrid Equity Oriented (HEO) schemes and Hybrid Debt Oriented (HDO) schemes, there is mismatch between ranks of Risk and return of sample funds and the unique risk was meager. On the whole, the performance of the sample Hybrid funds during the study period was average.

Keywords: portfolio performance evaluation, hybrid funds, beta, standard deviation, sharpe ratio, treynor ratio, sortino ratio.

GJMBR-C Classification : JEL Code: G19

PORTFOLIOPERFORMANCEEVALUATIONOFMUTUALFUNDSININDIAASTUDYOFHYBRIDGROWTHFUNDS

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Portfolio Performance Evaluation of Mutual Funds in India – A Study of Hybrid Growth Funds

Ch. Usha Rekha [α] & Dr. K. Rajender [σ]

Abstract- This research paper attempts to study the portfolio performance evaluation of selected Hybrid growth schemes using Net Asset Values, Return, Beta and Standard Deviation and further used the risk adjusted evaluation methods such as Sharpe, Treynor, and Sortino Ratio. Researchers only emphasized on secondary data sources and selected 12 Mutual Fund schemes of 6 mutual fund institutions and the period of study is kept limited for 5 years i.e. from 2007-08 to2011-2012. To test the significance; F-test and Spearman's rank correlation were used and found out that there is significant difference between NAV's of two select categories, There is significant difference between scheme returns and benchmark returns of both Hybrid Equity Oriented (HEO) schemes and Hybrid Debt Oriented (HDO) schemes, there is mismatch between ranks of Risk and return of sample funds and the unique risk was meager. On the whole, the performance of the sample Hybrid funds during the study period was average.

Keywords: portfolio performance evaluation, hybrid funds, beta, standard deviation, sharpe ratio, treynor ratio, sortino ratio.

I. Introduction

Portfolios contain groups of securities that are selected to achieve the highest return for a given level of risk. How well this is achieved depends on how well the portfolio manager or investor is able to forecast economic conditions and the future prospects of the companies, and to accurately assess the risk of each security under consideration. The portfolio performance evaluation primarily refers to the determination of how a particular investment portfolio has performed relative to some comparison benchmarks. The evaluation can indicate the extent to which the portfolio has outperformed or underperformed or it has performed at par with the benchmark. The evaluation of portfolio performance is important because, the investors and the fund managers whose funds have been invested/ managed need to know the relative performance of the portfolio. The performance review will generate and provide information that will help the investor/ fund manager to assess any need for rebalancing of the investments.

II. Review of Literature

"Mutual funds are associations of trusts of public members who wish to make investments in the financial instruments or assets of the corporate sector for the mutual benefit of its members." According to Securities Exchange commission (SEC), "A mutual fund is a company that brings together money from many people and invests it in stocks, bonds or other assets. The combined holdings of stocks, bonds or other assets the fund owns are known as its *portfolio*. Each investor in the fund owns shares, which represent a part of these holdings". The SEBI (Mutual Funds) Regulations, 1993 defines a mutual fund as "a fund established in the form of a trust by a sponsor, to raise monies by the trustees through the sale of units to the public, under one or more schemes, for investing in securities in accordance with these regulations." According to SEBI (Mutual Funds)Regulation 1996, "Mutual Funds" means a fund established in the form of a trust to raise money through the sale of units to the public or a section of the public under one or more schemes for investing in securities including money market instruments or gold or gold related instruments or real estate assets. Mutual Fund is an investment vehicle that is made up of a pool of funds collected from many investors for the purpose of investing in securities such as stocks, bonds, money market instruments and similar assets. Mutual funds are operated by money managers, who invest the fund's capital and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus.

Performance evaluation of mutual funds has been extensively used by Sharpe (1966), Treynor (1965), Jensen (1968), Barua et al (1991) evaluated the performance of master share using CAPM approach from the view point of large investors and fund managers. The study concluded that the fund performed better than the market for small investors and fund management but the fund did not do well when compared to CML. Ravinderan (2003) made the performance analysis of 269 open ended funds in the bear market. Used Sharpe,

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Treynor, Jensen and Fama measures for the period of 4 years and found out that the funds are not managed optimally. Sodhi and Jain (2004) evaluated 26 equity schemes drawn from 26 AMCs belonging to public and private sector. They concluded that the equity mutual funds have overall inferior performance in comparison of risk and Return. Gupta and Amitabh (2004) evaluated the performance of 57 growth schemes and concluded that there is no conclusive evidence which suggests that, performance of sample schemes is superior to the market. Bodla (2005) appraised 24 growth schemes of mutual funds and evaluated by applying risk adjusted performance measures as suggested by Sharpe, Treynor and Jensen and founded out that the difference between market return and fund return is insignificant and systematic risk is not much risky. Phaniswara Raju B. (2008) evaluated performance of 60 mutual fund schemes of 29 mutual fund companies operating during that time and analyzed using risk adjusted performance measures and founded out that many selected schemes failed to outperform the market and there is mis match of the risk return relationship in some schemes. Sukhwinder Kaur et al (2012) studied 10 equity schemes for the period of two years and identified that all sample schemes failed to give reward to variability and only 4 schemes are able to give more reward to volatility than benchmark.

Many research works followed the risk adjusted performance developed by Sharpe, Treynor and some followed Sortino Ratio. Keeping in view the above reviewed literature, this study made an attempt to evaluate the sample funds.

III. Objectives of the Study

The **primary objective** of this research study is to evaluate portfolio performance of hybrid funds in India.

The specific objectives are:

1. To know is there any difference between NAV's of two categories of Hybrid funds.
2. To understand, whether there is any difference between Scheme returns and benchmark returns of hybrid funds.
3. To recognize, is there any mismatch between Risk and Return of sample funds.
4. To identify the magnitude of unique risk.

IV. Hypothesis of Study

1. There is no significant difference between the two categories of NAV's of Hybrid schemes
2. There is no significant difference between returns of sample Hybrid Equity oriented schemes and their Benchmarks.
3. There is no significant difference between returns of sample Debt oriented schemes and their Benchmarks.
4. There is no Association between the ranks of risk and return of sample Hybrid funds.
5. There is no Association between the ranks of Sharpe measure and Treynor measure of sample Hybrid funds.

V. Methodology

To conduct the study, the researchers selected 6 mutual Fund AMCs and 12 Mutual fund open ended schemes; 6 from the category of Hybrid Equity Oriented (HEO) and 6 From Hybrid Debt Oriented categories. All schemes are growth option schemes and selected using convenient sampling. Researchers emphasized only on secondary Data. The major source of data is CRISIL, the India's first Credit Rating Agency and the others include Text books, Journals, Websites and Newspapers. Period of study is kept limited for 5 years i.e. 2007-08 to 2011-2012 financial years. Ranks and Averages are calculated in order to know the category performance and overall performance of sample hybrid schemes. Average of 91 day t-bill issued by Government of India is used as proxy for risk free rate of return. The formulated hypotheses were tested at 5% level of significance using Excel QI Macros 2014 and SPSS Version16.

VI. Tools of Analysis

i. *Net Asset Value (NAV)*

NAV= Market value of securities of a scheme ÷ Total number of units of the scheme.

ii. *Portfolio Return*

$$Rp = \frac{(NAV\ t - NAV\ t\text{-}1)\ Dt + Ct}{NAV\ t\text{-}1}$$

Rp = Portfolio return, NAVt = Net asset value on time period t, NAV t-1 = Net asset value on time period t-1, Dt = Dividend in the form of the bonus that are distributed during the period t, Ct = Cash dividend distributed during the time period t

iii. *Standard Deviation*

$$\sigma R = \sqrt{\Sigma}\ (Rp - Rp)\ 2N$$

σ R = Standard deviation of the overall return, Rp = Return of the portfolio, Rp = Average of the annual returns, N = Number of the observations.

iv. *Beta*

β = Cov (R p, RM) / σ2 (RM), Cov (R p, RM) = Covariance of the portfolio and the returns of the market, σ2 (RM) = Variance of the returns of the market

v. *Sharpe Ratio*

Sharpe =Rp –Rf/σP , Where, Rp =Portfolio Return, Rf = Risk free rate of return, σP = Total risk of the Portfolio

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vi. *Treynor Ratio*

Treynor = Rp –Rf/βp, where Rp =Portfolio Return, Rf = Risk free rate of return, β = Beta of Portfolio (Systematic Risk of the Portfolio)

vii. *Sortino Ratio*

Sortino Ratio = Rp – Rmar/σd , where; Rp =Portfolio Return, Rmar = Minimum acceptable return or Risk free rate of return, σd = Total Risk of Portfolio (Downside deviations of the Portfolio)

viii. *Averages are calculated using the following Excel formula:*

=AVERAGE (number1, [number2]…)

ix. *Ranks are calculated using the following Excel formula:*

=RANK (number, ref, [order])

The inferential statistics (F test and Spearman's correlation) was used for the purpose of analysis and interpretation with the help of EXCEL QI Macros 2014 and Statistical Package for Social Sciences (SPSS) 16.0 version.

VII. Results and Discussion

The portfolio performance evaluation was carried out using Net Asset Values, comparing scheme returns with their benchmark returns, Risk Vs Return and finally used risk adjusted performance evaluation methods like Sharpe, Treynor and Sortino measures.

a) Net Asset Value

The performance of a particular scheme of a mutual fund is denoted by Net Asset Value (NAV). Net Asset Value is the market value of the securities held by the scheme. Since market value of the securities changes every day, NAV of a scheme also varies on day to day basis. The NAV per unit is the market value of the securities of a scheme divided by the total number of units of the scheme on any particular date. In this study the daily NAV's of all selected schemes are collected and yearly mean NAV is calculated for each of five years to know the trend of NAV's for the study period (2007-08 to 20011-12) and 5 years Average NAV was also calculated.

When one observes the NAV values of six selected Hybrid equity oriented schemes, from Year 2007-08 to 2008-09 there is a decrement in the value of NAV and raised for the two consecutive years 2009-10 and 2010-11 and again there is a slight declain in the values of NAV's in 2011-12. In the year 2011-12 when the benchmark index fell down, ICICI Balanced scheme's NAV raised. Except this in all other years the NAV's of sample funds and their benchmark index values are moving alike. Among six selected Hybrid Debt Oriented schemes, 4 (66.67%) schemes were having year on year increment in their NAVs from 2007-08 to 2011-12 and 2 (33.33%) schemes, namely **Kotak Monthly Income Plan** and **FT India Monthly Income Plan - Plan A** recorded a very slight decline in 2008-09 when the benchmark index value recorded slight increment. (Appendix, table II)

To find out $1H_0$, F test was used and the result was; F Critical Two Tail is 7.15 and Calculated F is 3799.11. Hence, the formulated null hypothesis was rejected. Therefore, the researchers conclude that there is significant difference between NAVs of Hybrid Equity Oriented and Hybrid Debt Oriented funds. (Appendix, Table I)

b) Scheme Returns Vs Benchmark Returns

The return of the portfolio is commensurate with the returns of its individual assets. The return of the portfolio is the weighted average of the returns of its component assets. In this study an attempt is made to understand the differences of yearly mean returns with that of their benchmark returns for the five years period. The daily actual returns of each selected scheme and its benchmarks were collected for every year for the period of five years and mean is calculated using excel software and annualized returns are calculated using annualization factor.

Appendix, Table III depicts the five year annualized mean returns of selected Hybrid Equity and Debt Oriented Schemes and The benchmarks; CRISIL Balance Ex and CRISIL MIPEX respectively. The mean return of CRISIL Balance Ex was 9.6110%. Among all selected hybrid equity oriented schemes, 3 (50%) i.e. Reliance Regular Savings Fund – Balanced, FT India Balanced Fund – Growth and Kotak Balance Fund earned high returns over its benchmark and other 3(50%) i.e. SBI Magnum Balanced Fund, ICICI Prudential Balanced Fund and UTI Balanced Fund failed to earn returns like its proxy. CRISIL MIP EX's mean return was 7.1691%. Among the selected Hybrid debt oriented schemes, 4 (66.67%) schemes i.e. Reliance Monthly Income Plan, UTI Monthly Income Scheme, FT India Monthly Income Plan - Plan A and SBI Magnum Children's Benefit Plan gained higher returns than their proxy and ICICI Prudential Blended Plan - Plan B - Option I and Kotak Monthly Income Plan failed to earn higher mean returns in comparison to their benchmark.

To find out 2 H_0 and 3 H_0 F test is applied. For 2 H_0 f critical =7.15 < f calculated 99.00. Therefore, the formulated null hypothesis is rejected. Therefore the researcher concludes that there is significant difference between Scheme returns and Benchmark returns of Hybrid Equity Oriented schemes. For 3 H_0 f critical =7.15 < f calculated 353.00. Thus, the researchers conclude that there is significant difference between Scheme returns and Benchmark returns of Hybrid Debt Oriented schemes. (Appendix, Table I)

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c) *Risk Vs Return*

The risk and the returns are the important factors in the evaluation of the mutual funds. During the evaluation of the funds and comparing of the funds with that of the other funds of the similar category, the risks should be taken into account during the measuring of the returns. That is, the risks that are involved in achieving of those returns from each of the schemes have to be taken in to account.

At the time of evaluation of the mutual funds and while comparing the funds with that of the other funds of the similar category, the risks should be taken into account. During the measurement of the risk of each of the schemes, the past volatility will be considered as the measure of the risk and as an indicator or pointer for the future risk. According to capital asset pricing model (CAPM) total risk is having two components; Systematic risk (Market risk) and unsystematic risk (unique risk). Standard deviation is the measure of total risk i.e. market risk plus unique risk and beta is the measure of systematic risk.

Beta is also very important tool in measuring of the risk. Beta measures the risk of a fund by measuring the volatility of its past returns in relation to the returns of benchmark. Stocks have positive beta, when stocks move in same direction as the general market. Some stocks have negative beta, they move in opposite direction to the general market. A beta of less than 1 is generally less risky than general market. By definition the market index beta is considered to be 1. A beta of 1.0 indicates that the investment's price will move in lock-step with the market. A beta of less than 1.0 indicates that the investment will be less volatile than the market, and, correspondingly, a beta of more than 1.0 indicates that the investment's price will be more volatile than the market.

Portfolio risk can be calculated like calculating the risk of single investment, by taking the standard deviations of the variance of actual returns of the portfolio overtime. This variability of returns commensurate with the portfolio risk and this risk can be quantified by calculating the standard deviation of the variability. It is a tool investment managers use to help quantify risk or deviation from the expected returns. As standard deviation is a performance measure for total risk, the lower the standard deviation, better is the scheme performance.

In this study the returns are measured by comparing the returns of the sample schemes with one another, Beta and standard deviation.

i. *Return*

Appendix, Table IV shows the following; when the scheme returns of the select Hybrid schemes are compared within the categories, Reliance Regular Savings Fund - Balanced with 15.3948% highest mean return in the Hybrid Equity Oriented category ranked top followed by FT India Balanced Fund - Growth with 10.1891% of mean return ranked 1 and 2 ranks respectively. In this category SBI Magnum Balanced Fund with 8.4158% got sixth rank. The category average of the hybrid equity oriented schemes was 10.4348%; out of six selected schemes in this category 33.33% i.e. 2 schemes had higher return than category average. In the category of Hybrid debt oriented; Reliance Monthly Income Plan with 10.5914% of mean return ranked top followed by UTI Monthly Income Scheme with 8.3914% of mean return. Kotak Monthly Income Plan ranked least with 5.0019% of mean return. The category average return of Hybrid debt oriented was 7.6380% and out of six schemes 2 i.e. 33.33% had higher mean return than the category average. The category average of hybrid Equity Oriented funds is higher than Hybrid debt oriented by 2.7968%.

When the ranks are assigned to the Hybrid schemes irrespective of categories, mean return of Reliance Regular Savings Fund - Balanced with 15.3948% stood first in hybrid equity oriented category and Reliance Monthly Income Plan with 10.5914% of Hybrid debt oriented category got second rank. ICICI Prudential Blended Plan - Plan B - Option I and Kotak Monthly Income Plan with 7.0437% and 5.0019% of mean returns got least two ranks i.e. eleventh and twelfth ranks respectively.

ii. *Beta*

The **beta** of Hybrid Equity oriented schemes fall in the range of 0.9764 the highest for SBI Magnum Balanced Fund - G and 0.8327 the lowest for FT India Balanced Fund - Growth-G scheme in the category. All the selected schemes have Beta less than one, hence, less volatile than the market. The beta of Hybrid Debt Oriented schemes fall in the range of 0.9633 the highest in case of Reliance Monthly Income Plan - G scheme and 0.2288 the lowest in case of ICICI Prudential Blended Plan - Plan B - Option I - G in that category. In this category also the selected schemes have Beta less than one, hence, less volatile than the market.

The category average of Hybrid Equity Oriented Schemes and Hybrid Debt Oriented schemes was 0.8791 and 0.7245 respectively. Comparatively Hybrid Equity Oriented Schemes had higher average Beta than the Hybrid Debt Oriented schemes. While assigning ranks to all selected Hybrid schemes irrespective of their categories; the beta is in between 0.9762 and 0.2288.The Mean Beta of all Hybrid Schemes was 0.8018 and among 12 selected Schemes 9 i.e. 75% of schemes are having Beta higher than the average Beta.

iii. *Risk (Standard Deviation)*

When the analysis was carried out comparing mean risk (standard deviation) the following interpretation was drawn; the standard deviation of hybrid Equity Oriented schemes varies from 19.9803% to 18.1976%. The risk is high for Reliance Regular

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Savings Fund - Balanced 19.9803% followed by SBI Magnum Balanced Fund 19.6441% and low to FT India Balanced Fund with 18.1976% of standard deviation. The standard deviation of Hybrid debt oriented schemes varies from 5.8263% and 0.7400% to Reliance Monthly Income Plan and ICICI Prudential Blended Plan - Plan B - Option I respectively. The category average risk of hybrid equity oriented schemes was 19.0509% and out of 6, 3 schemes had higher risk than the category average.

The category average risk of Hybrid debt oriented was 4.2366% and out of six selected schemes, four schemes had higher risk than the category average. The category average standard deviation of hybrid Equity Oriented schemes was higher than category average of Hybrid debt oriented schemes by 14.8143%. The CRISIL Balance Ex Standard Deviation was 19.2916% which is the proxy of hybrid Equity Oriented schemes and two selected schemes standard deviation was higher than their benchmark standard deviation. The CRISIL MIP Ex standard deviation was 4.8681% which is the surrogate for Hybrid debt oriented schemes and out of six selected schemes; three schemes had higher standard deviation than their benchmark.

iv. *Risk Free Rate of Return*

The risk free rate of return was 7%. In Hybrid equity oriented category, all schemes earned risk premium ranging from 8.3948% to 2.2631%. In Hybrid debt oriented category 5 schemes out of 6 i.e. 83.33% selected schemes earned risk premium ranging from 3.5914% to 0.0437%. Only one scheme i.e. Kotak Monthly Income Plan failed to earn risk premium.

To test 4 H_0, spearman's rank correlation was applied and the result was; calculated p is .692 greater than p critical 0.649. Hence, the formulated null hypothesis was rejected. As a result, the researchers conclude that there is moderate positive correlation between the ranks of risk and return of sample Hybrid funds. This indicates that there is a meager mismatch between ranks of risk and return of select hybrid funds. (Appendix, table I)

d) Risk Adjusted Performance Measurement

William F. Sharpe (1966) developed a method of measuring return per unit of risk also called as reward to variability. The Sharpe Ratio uses standard deviation which is 'non directional' meaning it does not differentiate between upside volatility or downside volatility. It is risk premium for the unit of risk, which is quantified by the standard deviation of portfolio. It examines whether the return that has been generated was sufficient to reward the persons who invested in the scheme for the degree of the assumed risk. Hence, the Sharpe ratio is a measure of performance of the portfolio compared to the risk taken - the higher the Sharpe ratio, the better the performance and greater the profits for taking additional risk.

Jack L. Treynor (1965) developed a method which is helpful measure the fund's excess return from each unit of systematic risk. It compares the portfolio risk premium (fund's rate of return minus the risk free rate of return) to the diversifiable risk (Beta).The beta of general market is defined as 1. The higher the Treynor ratio the better is the performance of the scheme. The negative Treynor index ascertains that the scheme did not outshine the market.

Sortino Frank (2001) developed a variation of the Sharpe ratio which differentiates harmful volatility from volatility in general by replacing standard deviation with downside deviation in the denominator. Thus the Sortino ratio is calculated by subtracting the minimum acceptable return or Risk free rate of return from the return of the portfolio and then dividing by the downside deviation. The Sortino ratio measures the return to "bad" volatility. A large Sortino ratio indicates a low risk of large losses occurring and vice versa. The reason for using a "Downside risk", calculation in the denominator is that, the purpose of investing is to make money and this requires volatility to the upside. It makes no sense to downgrade the money manager for gaining upside advantage.

From Appendix, table V the following interpretation was carried out using the risk adjusted performance ratios:

When the Sharpe Ratio is compared, in the Hybrid Equity Oriented category; Reliance Regular Savings Fund - Balanced 0.4202 and SBI Magnum Balanced Fund got the highest (1 rank) and lowest (6 rank) respectively. In the Hybrid Debt Oriented category; Reliance Monthly Income Plan 0.6164 and Kotak Monthly Income Plan -0.3965 got first and sixth ranks respectively. The average reward to variability of Hybrid Equity Oriented schemes was 0.1787 and Hybrid Debt Oriented was 0.1340. Category average of Hybrid Equity Oriented schemes was little high by 0.0434. Overall average of the Hybrid schemes stood at 0.1564. The CRISIL Balance Ex's Sharpe ratio was 0.1353. UTI Balanced Fund, ICICI Prudential Balanced Fund and SBI Magnum Balanced Fund had less Sharpe value than the benchmark. Hence those funds are not performing better and attaining very small amount of reward to variability. The CRISIL Mip Ex's Sharpe ratio was 0.0347. Except Kotak Monthly Income Plan, other five selected Hybrid debt oriented schemes Sharpe Ratio was higher than their benchmark. Hence one can conclude that the reward to variability of Hybrid debt oriented schemes is good. While analyzing Sharpe Ratio of Hybrid schemes irrespective of their categories; Reliance Monthly Income Plan 0.6164 and Reliance Regular Savings Fund - Balanced 0.4202 got first and second ranks respectively. ICICI Prudential Blended Plan - Plan B - Option I 0.0591 and Kotak Monthly Income Plan got least ranks i.e. eleventh and twelfth ranks respectively.

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Taking into account **Treynor Ratio**; Treynor value of Hybrid Equity Oriented schemes was ranging from 0.0926 to 0.0145. Reliance Regular Savings Fund - Balanced and SBI Magnum Balanced Fund got first and sixth ranks respectively. Treynor Value of Hybrid debt oriented schemes fell in the range of 0.0373 and -0.0245. Reliance Monthly Income Plan ranked first and Kotak Monthly Income Plan ranked sixth in the category. The category average of Treynor ratio of HEO schemes was 0.0391 and except one fund i.e. Reliance Regular Savings fund –Balanced, all other five schemes had less than the category average. The category average of Hybrid debt oriented schemes was 0.0076, except two schemes named UTI Monthly Income Scheme and Reliance Monthly Income Plan other four schemes had less than category average. The category average of Hybrid Equity Oriented schemes was high over Hybrid debt oriented schemes. When we observe the ranks of Reward to variability (Sharpe) and reward to volatility (Treynor) the ranks are identical to all schemes of both the categories, which means the total risk and systematic risk of those schemes are same. Hence, it is concluded that the unique risk of the sample schemes are very negligible. When the ranks were assigned to Treynor Ratio irrespective of categories, Reliance Regular Savings Fund - Balanced got first rank followed by FT India Balanced Fund - Growth which ranked second. ICICI Prudential Blended Plan - Plan B - Option I and Kotak Monthly Income Plan ranked eleventh and twelfth ranks respectively.

From the **Sortino ratio**, when the values are observed, the highest rank under Hybrid Equity Oriented schemes was assigned to Reliance Regular Savings Fund - Balanced – G 0.2277 and the least rank goes to SBI Magnum Balanced Fund with -0.2398. In Hybrid Debt Oriented category the schemes Reliance Monthly Income Plan ranked the top with -0.3252 and ICICI Prudential Blended Plan - Plan B - Option I ranked the least with -13.0690. The category average of Hybrid equity Oriented schemes was -0.3070 and Hybrid Debt oriented schemes was -1.6102. As Sortino ratio only considers the bad volatility eleven Hybrid schemes out of twelve (91.67%) having negative values indicates high risk for large losses.

To test **5 H_0**, Spearman's rank correlation was used and the result was; the calculated p is .881 is greater than critical p .649. Hence the formulated null hypothesis was rejected. Therefore the researcher concludes that the association between the ranks of Sharpe measure and Treynor measure of Hybrid funds has strong positive correlation. This indicates that the unique risk was low for select Hybrid funds.(Appendix, Table I)

VIII. Major Findings

NAV's of Hybrid Equity Oriented schemes are moving with ups and downs because of higher share of equity investments whereas Hybrid Debt Oriented schemes NAV's are increasing year on year. Hybrid Equity oriented category, the benchmark CRISIL BALANCEEX mean return was 9.6110% and 3 schemes out of 6 gained higher return than the benchmark. In Hybrid Debt Oriented category, the benchmark CRISIL MIPEX mean return was 7.1691%, 4 schemes out of 6 earned higher returns than benchmark. Systematic risk of Hybrid Equity Oriented schemes and Hybrid Debt Oriented schemes was less than 1. Hence, the funds systematic risk was less and less volatile. There is mismatch between the risk and return of hybrid funds. But the magnitude of difference was low. The association between the ranks of Sharpe and Treynor ratio has high positive correlation, indicates less proportion of unique risk. The use of downside volatility allows the Sortino ratio to measure the return of negative volatility. It is found that 5 equity funds i.e. 41.67%, all debt funds (12) i.e. 100% and 11 hybrid funds i.e. 91.67% have negative Sortino ratio indicates more number of downside deviations. Reliance Regular Saving Fund-Balanced fund in Hybrid Equity Oriented category, Reliance Monthly Income plan fund in Hybrid Debt Oriented category outshined the benchmarks from all angles of portfolio evaluation. On the whole the performance of hybrid funds was moderate during the study period.

IX. Suggestions

91.67% (11 out of 12) Hybrid funds have negative Sortino Ratio indicating more downside deviations in the portfolio. The fund managers should try to reduce downside deviations as investors are only concerned with downside returns as these are associated with losses. By hedging the investments the portfolio manager can beat the benchmark. During the period of frequent volatility the investors should invest in hybrid funds. The mutual fund investors in India have so many fund houses and funds with different investment objectives. Due to this the decision to invest has become a greater challenge before the investors. So the fund houses must conduct more awareness programs.

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Appendix

Table 1 : Hypothesis Results

No	Hypothesis statement	Critical value	Calculated Value	Decision
$1H_0$	There is no significant difference between the two categories of NAV's of Hybrid schemes	F=7.15	F=3799.00	Reject
$2H_0$	There is no significant difference between returns of sample Hybrid Equity oriented schemes and their Benchmarks.	F=7.15	F=99.00	Reject
$3H_0$	There is no significant difference between returns of sample Debt oriented schemes and their Benchmarks.	F=7.15	F=353.00	Reject
$4H_0$	There is no Association between the ranks of risk and return of sample Hybrid funds.	P=0.649	P=0.692	Reject
$5H_0$	There is no Association between the ranks of Sharpe measure and Treynor measure of sample Hybrid funds	P=0.649	P=0.881	Reject

(Results generated by SPSS, 16 version & EXCEL QI Macros 2014)

Table 2 : Yearly mean NAV's of Hybrid Equity and Debt Oriented Schemes

Hybrid Equity Oriented Schemes							
Year	Mean NAV's and Benchmark Index Values						
	SBI Magnum Balanced Fund - G	UTI Balanced Fund - G	Kotak Balance-G	Reliance Regular Savings Fund – Balanced - G	ICICI Prudential Balanced Fund - G	FT India Balanced Fund – Growth-G	CRISIL BalanceEx
2007-08	41.51	628.74	49.79	13.67	38.91	38.69	1195.27
2008-09	33.42	507.61	41.74	11.89	30.47	32.55	1044.63
2009-10	42.93	650.76	50.68	17.27	36.15	40.57	1278.87
2010-11	50.77	796.08	60.17	22.25	44.31	47.84	1472.83
2011-12	46.79	764.99	58.74	21.15	46.33	47.67	1450.46
Average	**43.08**	**669.64**	**52.22**	**17.25**	**39.23**	**41.46**	**1288.412**
Hybrid Debt Oriented Schemes							
Year	SBI Magnum Childrens Benefit Plan - G	UTI Monthly I ncome Scheme - G	Kotak Monthly Income Plan - G	Reliance Monthly Income Plan - G	ICICI Prudential Blended Plan – Plan B - Option I - G	FT India Monthly Income Plan - Plan A - G	CRISIL MIPEX
2007-08	17.77	14.75	13.83	14.12	11.77	22.31	1077.18
2008-09	18.02	15.31	13.47	14.88	12.79	22.22	1097.55
2009-10	19.68	17.64	14.12	18.86	13.51	25.28	1231.68
2010-11	21.92	19.29	15.30	21.13	14.18	27.25	1321.60
2011-12	23.21	20.23	15.92	22.07	15.34	28.52	1379.74
Average	**20.12**	**17.44**	**14.53**	**18.21**	**13.52**	**25.12**	**1221.55**

Source: CRISIL (Data compiled by the researchers)

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Table 3 : Yearly Mean Returns of schemes and benchmarks of Hybrid Equity and Debt Oriented Schemes

Hybrid Equity Oriented Schemes							
Year	Mean Yearly Returns of Schemes in %						Mean Yearly returns of Benchmark %
	SBI Magnum Balanced Fund – G	UTI Balanced Fund – G	Kotak Balance Fund-G	Reliance Regular Savings Fund – Balanced – G	ICICI Prudential Balanced Fund – G	FT India Balanced Fund – G	CRISIL Balance Ex
2007-08	19.20	15.11	20.48	20.95	13.03	17.81	19.81
2008-09	-31.24	-27.16	-29.31	-19.09	-30.88	-22.96	-20.59
2009-10	55.16	53.08	48.93	67.21	46.73	46.32	36.85
2010-11	4.82	9.20	8.07	7.08	12.05	9.31	9.64
2011-12	-5.91	-3.03	1.35	0.80	5.37	0.40	2.34
Average	**8.41**	**9.44**	**9.90**	**15.39**	**9.26**	**10.18**	**9.61**
Hybrid Debt Oriented Funds							
Year	Mean Yearly Returns of Schemes in %						Mean Yearly returns of Benchmark %
	SBI Magnum Children's Benefit Plan – G	UTI Monthly Income Scheme – G	Kotak Monthly Income Plan – G	Reliance Monthly Income Plan – G	ICICI Prudential Blended Plan - Plan B - Option I – G	FT India Monthly Income Plan - Plan A – G	CRISIL MIPEX (Benchmark)
2007-08	7.30	10.37	7.15	3.39	9.23	10.95	10.22
2008-09	-1.53	3.72	-8.25	13.07	6.64	2.56	0.73
2009-10	15.15	16.39	14.60	22.76	4.46	13.41	13.72
2010-11	8.14	6.06	5.62	7.01	6.35	4.67	6.02
2011-12	7.59	5.40	5.88	6.72	8.50	5.77	5.15
Average	**7.33**	**8.39**	**5.00**	**10.59**	**7.04**	**7.47**	**7.17**

Source: CRISIL (Data compiled by the researchers)

Table 4 : Sample Hybrid funds Average Annualized Scheme Returns, Beta, Standard Deviation and Risk free rate of return.

S.No	Name of the Scheme	Average Annualized Scheme Returns %	Rank(Category)	Rank (Type)	Average Beta	Rank(Category)	Ra nk (Type)	Average Scheme's Standard Deviation %	Rank (category)wise)	Rank (Type)	Average Risk Free Rate of Return %
	Hybrid-Equity Oriented										
1	SBI Magnum Balanced Fund - G	8.4158	6	7	0.9764	1	1	19.6441	2	2	7
2	UTI Balanced Fund - G	9.4439	4	5	0.8618	3	5	19.0841	3	3	7
3	Kotak Balance-27	9.9017	3	4	0.8370	5	7	18.4375	5	5	7
4	Reliance Regular Savings Fund - Balanced - G	15.3948	1	1	0.9067	2	4	19.9803	1	1	7
5	ICICI Prudential Balanced Fund - G	9.2631	5	6	0.8599	4	6	18.9619	4	4	7

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6	FT India Balanced Fund - Growth-30	10.1891	2	3	0.8327	6	8	18.1976	6	6	7
	Category Average	10.4348	-	-	0.8791	-	-	19.0509	-	-	7
	CRISIL BALANCEEX	9.6110	-	-	1.0000	-	-	19.2916	-	-	7
	Hybrid Debt Oriented										
7	SBI Magnum Childrens Benefit Plan - G	7.3277	4	10	0.7574	4	10	4.5228	4	10	7
8	UTI Monthly Income Scheme - G	8.3914	2	8	0.6483	5	11	3.7927	5	11	7
9	Kotak Monthly Income Plan - G	5.0019	6	12	0.8157	3	9	5.0388	3	9	7
10	Reliance Monthly Income Plan - G	10.5914	1	2	0.9633	1	2	5.8263	1	7	7
11	ICICI Prudential Blended Plan - Plan B - Option I - G	7.0437	5	11	0.2288	6	12	0.7400	6	12	7
12	FT India Monthly Income Plan - Plan A - G	7.4721	3	9	0.9333	2	3	5.4991	2	8	7
	Category Average	7.6380	-	-	0.7245	-	-	4.2366	-	-	7
	Average of All schemes	9.0364	-	-	0.8018	-	-	11.6438	-	-	7
	CRISIL MIPEX	7.1691	-	-	1.0000	-	-	4.8681	-	-	_

*Source: CRISIL (Data compiled by the researchers) *State Bank of India, **Unit Trust of India*

Table 5 : Hybrid Funds Average Sharpe's, Treynor's, and Sortino's ratios

S.No	Name of the Scheme	Mean Sharpe 's Ratio	Rank (Category)	Rank (Type)	Mean Treynor's Ratio	Rank (Category)	Rank (Type)	Mean Sortino's Ratio	Rank (Category)	Rank (Type)
	Hybrid Equity Oriented funds									
1	SBI Magnum Balanced Fund - G	0.0721	6	10	0.0145	6	8	-0.2398	6	6
2	UTI Balanced Fund - G	0.1281	4	6	0.0284	4	5	-0.1805	4	4
3	Kotak Balance-G	0.1574	3	5	0.0347	3	4	-0.1484	3	3
4	Reliance Regular Savings Fund - Balanced - G	0.4202	1	2	0.0926	1	1	0.2277	1	1
5	ICICI Prudential Balanced Fund - G	0.1194	5	7	0.0263	5	6	-0.1842	5	5
6	FT India Balanced Fund - G	0.1752	2	4	0.0383	2	2	-0.1383	2	2
	Category Average	0.1787	-	-	0.0391	-	-	-0.0307	-	-
	CRISIL BALANCE EX	0.1353	-	-	0.0261	-	-	NA	-	-
	Hybrid Debt oriented Funds									
7	SBI Magnum Children's Benefit Plan - G	0.0725	4	9	0.0043	4	10	-1.3755	3	9
8	UTI Monthly Income Scheme - G	0.3669	2	3	0.0215	2	7	-1.3769	4	10
9	Kotak Monthly Income Plan - G	-0.3965	6	12	-0.0245	6	12	-1.8053	5	11
10	Reliance Monthly Income Plan - G	0.6164	1	1	0.0373	1	3	-0.3252	1	7
11	ICICI Prudential Blended Plan - Plan B - Option I - G	0.0591	5	11	0.0019	5	11	-13.069	6	12
12	FT India Monthly Income Plan - Plan A - G	0.0858	3	8	0.0051	3	9	-1.1866	2	8
	Category Average	0.1340	-	-	0.0076	-	-	-3.1898	-	-
	Average of All schemes	0.1564	-	-	0.0234	-	-	-1.6102	-	-
	CRISIL MIPEX	0.0347	-	-	0.0017	-	-	NA	-	-

Source: CRISIL (Data Compiled by the researchers)

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Outreach and Financial Performance of Microfinance Institution in Case of Seka Cokorsa Woreda of Jimma Zone

By Dereje Regassa & Rijalu Negash
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Abstract- This study investigates the outreach and financial performance of microfinance institution in case of seka cokorsa woreda in seka town of jimma zone. The purpose of this study is to appraise the performance of seka town MFIs in terms of various criteria such as outreach to the poor and financial sustainability through comparing with each other.

The MF industry as a whole is challenged by the need to reach the poorest customers and at the same time being financially self sufficient. Although the industry as a whole is growing at a faster pace still the two critical questions of reaching the poor and building a financially sustainable MF industry that walk on their own leg freely are empirical questions. This research paper, although will not solve these crucial questions, will at least contribute to the other researchers, practitioners and policy makers by showing where the seka's MFIs are lying on the outreach to the poor, sustainability, and a couple of other performance dimensions.

Secondary and primary are used in conducting this paper. Those data for the research was taken from some written material, website and sample respondents. For data analysis, we were use descriptive statistics, graphs and charts. There some factors that affect micro finance institution not to perform its objectives effectively and efficiently. The study also includes the presence of several challenges that constrain the MFIs operation not to be efficient.

Keywords: outreach, financial performance.

GJMBR-C Classification : JEL Code: G21

OUTREACH ANDFINANCIALPERFORMANCEOFMICROFINANCEINSTITUTIONINCASEOFSEKACOKORSAWOREDAOFJIMMAZONE

Strictly as per the compliance and regulations of:

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Dereje Regassa [α] & Rijalu Negash [σ]

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I. Introduction

Microfinance institutions (MFIs) in sub-Saharan Africa include a broad range of diverse and geographically dispersed institutions that offer financial services to low-income clients especially in developing (least developed) countries. African MFIs appear to serve the broad financial needs of their clients. Ethiopia is one of the least developed sub Saharan countries. The per capita income of the country, though it showed improvement in recent years, is only USD 380 as at end of 2013. This is very little money to cover daily meal, let alone health, education and other emergency expenses, which make the poor venerable to unforeseen illness expenses and others. There is also high level of unemployment even with the skilled labor force. For instance, according to 2004 World Development Indicators, out of the total unemployment of the active labor force 26.9, 61.3 and 8.3 percent have complete primary, secondary, and tertiary education, respectively. And, this unemployed population is increasing from time to time as the population of the country is increasing (befekadu, 2007).

It is also the experience in the country that the poor households are the main participants in some kind of informal sector ranging from small petty trading to medium scale enterprises (befikadu, 2007). And due to the fact that this sector uses intensive labor force and as well since it is the livelihood of most of the poor, developing this sector argued to be a weapon to resolve the problem of unemployment and poverty of a household (befekadu, 2007).

Several studies noted different causes for poverty in a country. Some argued that the cause of poverty in developing economies among other things is that the poor does not have access to credit for the purpose of working capital as well as investment for its small business (befekadu, 2007). To this end many developing economies have developed and have been providing credit to the poor through microfinance schemes. The experience of several Asian, African as well as Latin American countries could be a typical example for this. In Ethiopia, several micro finance institutions (MFIs) have established and have been operating towards resolving the credit access problem of the poor particularly to those participates in the petty business.

Micro financing is the provision of financial services to the poor households as a means of assisting in poverty alleviation programs among the communities. The primary objective of Microfinance institutions is the outreach to the poor by providing financial services in a sustainable base. Microfinance projects were originally entirely donor funded with limited budgets, limited time period, limited economic activity and limited geographical location (letenah, 2009). While the going concern of microfinance projects was limited, the poverty levels and financing needs among the communities was unlimited. There were growing needs for financial services among the poor communities especially from those who were financially constrained and vulnerable but have feasible and promising investment ideas (Morduch, 2005; Morduch & Haley, 2002) cited by (letenah, (2009). Microfinance institutions arose as a

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way to ensure the continuous provision of microfinance services to the poor beyond the donor budgets and the time limit of microfinance projects. The new hope brought by the rise of Microfinance institutions among the poor communities as a continuous source of finance did not last longer.

a) Objectives of the study

The general and overall objective of this study is to investigate the outreach and financial performance of microfinance institutions in case of sakka cokorsa woreda of jimma zonne. The study Specifically aims to know MFIs outreach to the poor, assess the financial sustainability MFIs, identify the related methods of performance measurement of micro finance institution.

II. Materials and Methodology

a) Research design

The selected design to conduct this research was both quantitative and qualitative descriptive survey. Quantitative can be used to get numerical information while that of qualitative is used to get some non numerical information. But our design was mostly qualitative survey. Interview schedule were prepared to collect data from participants. Questions were framed in a way that is easy to understand for the respondents using simple words or expressions. Difficult technical terms are avoided.

b) Sampling technique and sample size

We have selected the purposive sampling of the non probabilistic technique in which the respondents are selected by choice but not by chance. Jimma zone is selected purposively, from jimma, zone seka cokorsa district is chosen and from towns of seka cokorsa woreda sakka town is selected based on the availability of information about the outreach and financial performance of microfinance institution. The researchesr use this technique to select some individuals that have detail information about the outreach and financial performance of their companies and give information correctly. In determining the sample size of the respondents, the reearcher have 30 clients from each institution for responding our questionnaires so we have 60 total respondents.

c) Source of Data and Data Collection Method

Both types of data i.e. primary and secondary data are used in conducting this study. The investigators have got secondary data from some sources such as the annual financial reports of MFIs, data from books, journals. And we have got the primary data from the sample respondents that are selected through purposive sampling technique through the questionnaires. We have used an interview to get detail information about the micro finance from the manager of the micro finance. To increase the reliability of data, audited annual reports will be used.

d) Method of data analysis

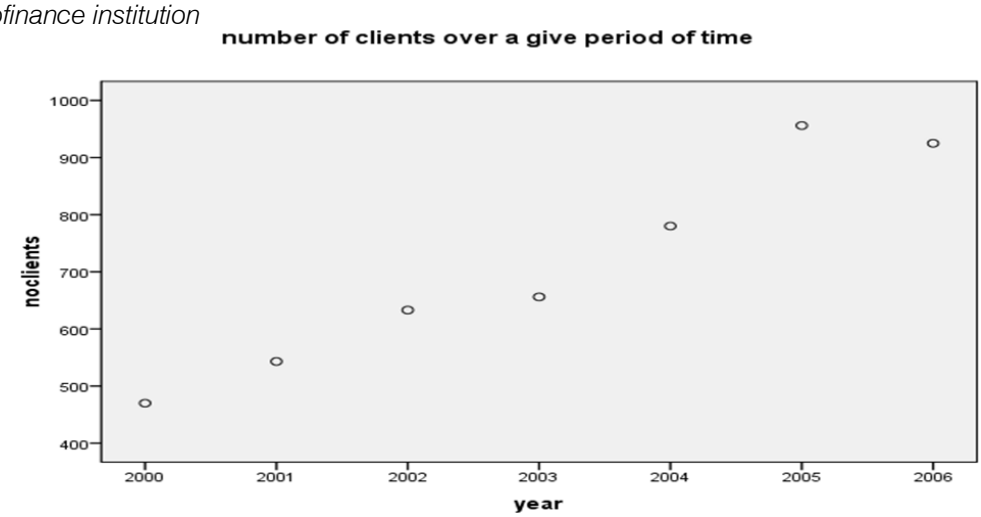
The method of analysis used in the study is descriptive statistics, graphs and charts. In this study descriptive analysis were chosen because of its simplicity and clarity to draw inferences. Averages, percentages, diagrams, charts and tables of microfinance institutions, the performance of microfinance institutions and challenges of the micro financing industry were analyzed.

III. Result of the Study

a) Breath of outreach

Breath of the outreach means the total number of clients including poor and non poor households that are served over a given period of time in certain micro finance institution. The breaths of outreach of two microfinance institutions were showen below in the form of graph.

i. *Eshet microfinance institution*



Source: own survey

Figure 1 : Number of clients of eshet micro finance from 2000-2006

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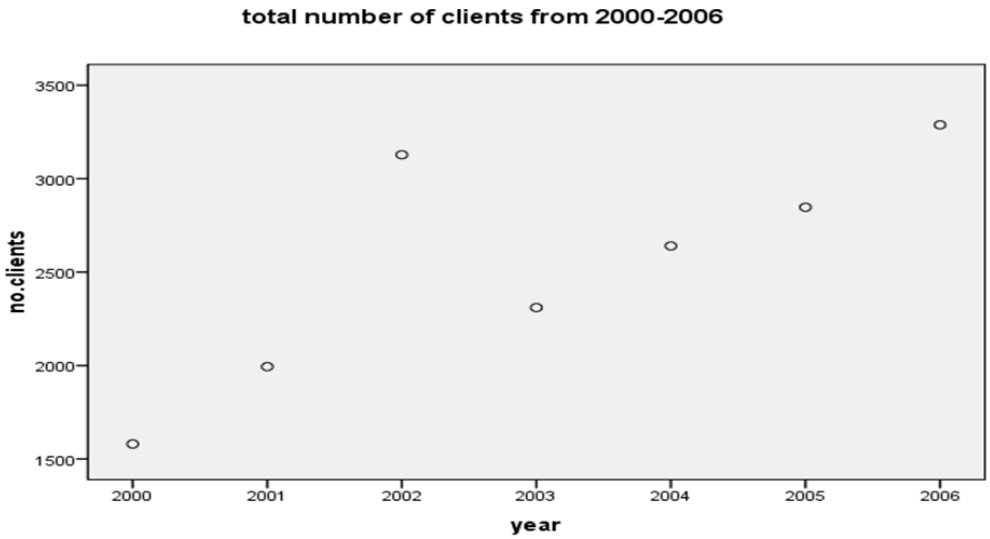
ii. *Oromia credit and saving institution S.C*



Source: own survey

Figure 2 : Total number of clients of Oromia saving and credit association S.C from 2000-2006

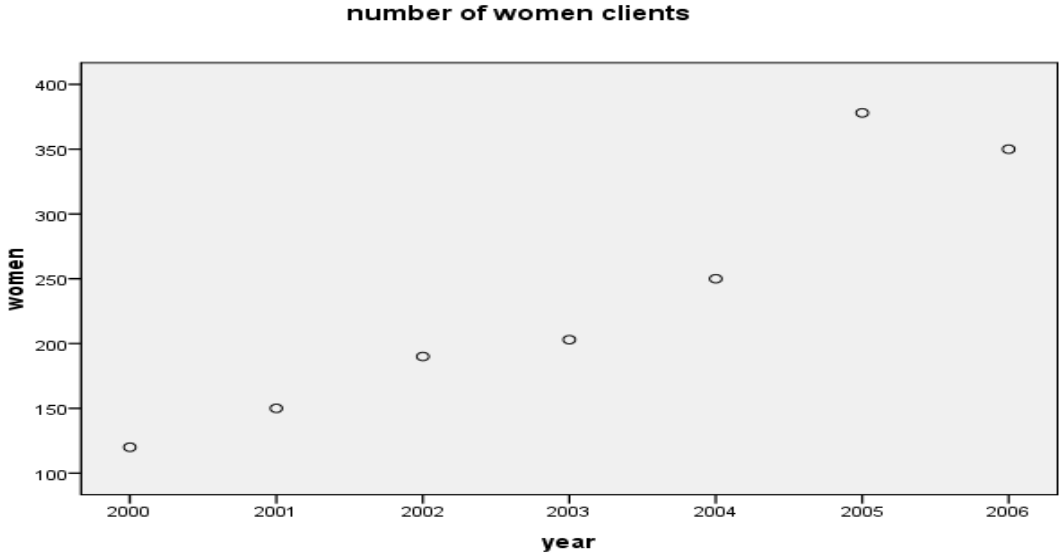
Generally Oromia saving and credit association serves large number of clients when it is compared to that of Eshet micro finance institution. The clients of Oromia saving and credit association increases by higher percentage than Eshet microfinance institution from 2000-2006 period. So in terms of breath of the outreach Oromia saving and credit association is better than Eshet.

b) Depth of the outreach

This aspect of outreach measures the total amount of poor clients that are served in certain microfinance institution over a given period of time. It also measures if there is affirmative action in certain microfinance institution for previously affected groups such as women; disabled people etc. for instance let us see depth of clients in terms of poor clients and women served over a given period of time.

i. *In terms of women clients*

a. *Eshet micro finance institution*



Source: own survey

Figure 3 : Total number of women clients of Eshet MFI from 2000-2006

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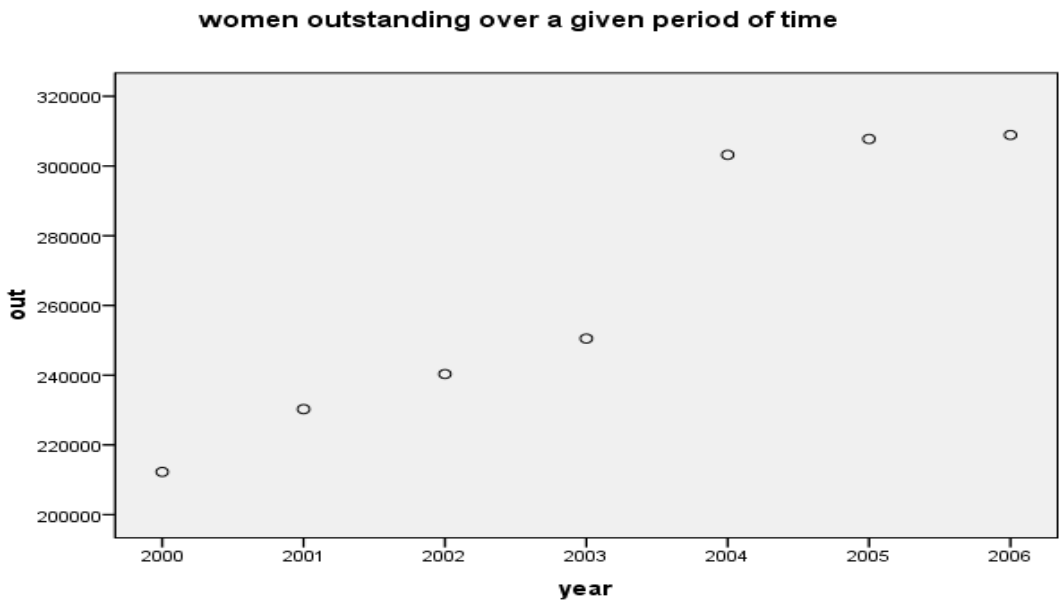
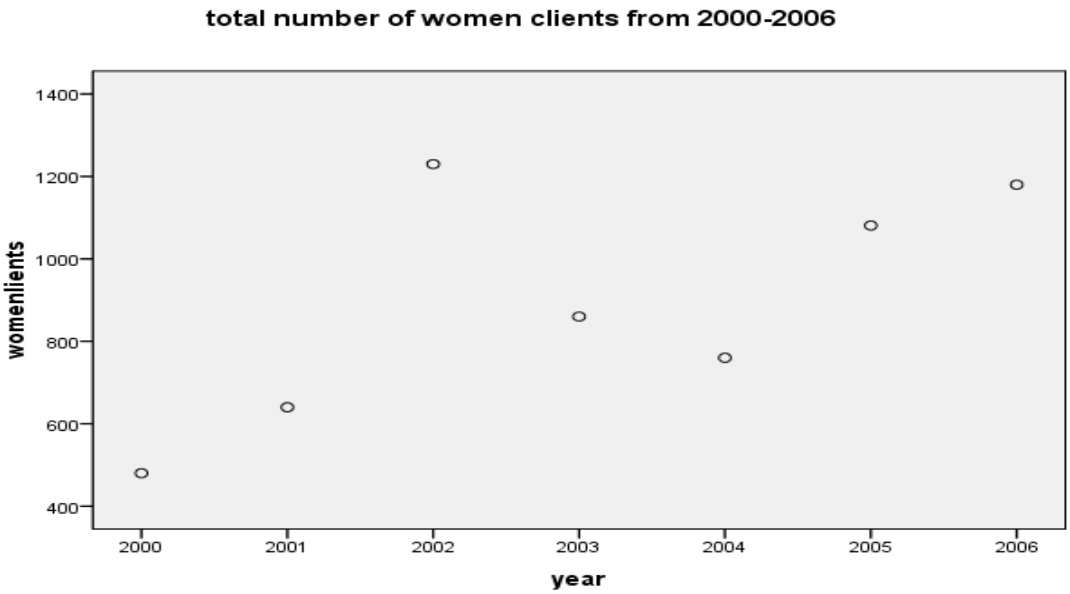


Source: own survey

Figure 4 : Women's outstanding in Eshet microfinance from 2000-2006

b. *Oromia credit and saving institution S.C*

Oromia credit and saving association does not have affirmative action. Even if the is no affirmative action in this micro finance institution the number of women clients and their outstanding is increasing from time to time. When we compare this micro finance institution with Eshet micro finance institution it serves large amount of women clients and its outstanding is also very large. The number of women clients in Oromia saving and credit association increases more than that of Eshet microfinance in the period from 2000-2006 this indicates that Oromia saving and credit association have more performance than that of Eshet micro finance institution in serving women clients.



Source: own survey

Figure 5 : Total number of women clients in OCSA.S.C from 2000-2006

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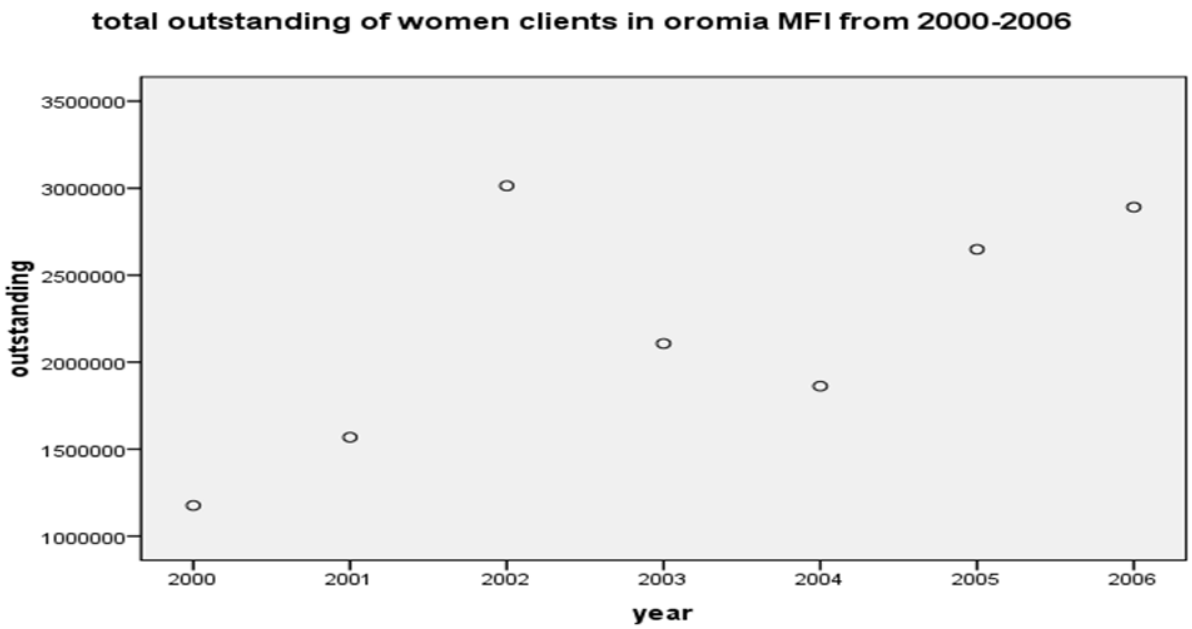


Source: own survey

Figure 6 : Total outstanding of women clients in Oromia MFI from 2000-2006

ii. *In terms of income of the clients*

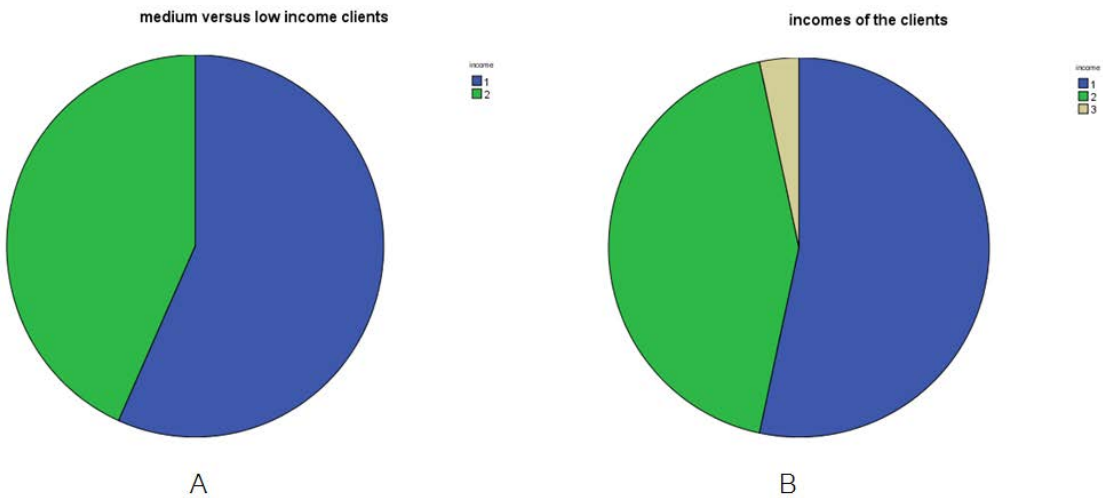
What is the level of your income when you are joining this micro finance institution?

a. *Eshet micro finance institution*

In terms of income of the clients this micro finance institution serves low income clients more than that of high income and medium income clients. Even if the objective of micro finance institutions is poverty alleviation in the country through giving credit and saving service to the low income community, this micro finance institution serve some amounts of medium income clients. Our sample survey indicates that there are more poor clients served in this micro finance than that of medium income clients. Our survey indicates that 56.66% of clients are poor while 43.334% of clients are medium income clients. So this institution has somewhat good performance.

b. *Oromia saving and credit institution S.C*

This micro finance also serves more of low income clients than that of high and medium income clients. For instance Oromia microfinance institution serves 53.33%, 43.33%, 3.33%, of clients of low income, medium income and high income respectively.



Source: own survey

Figure 7 : A income arrangement of the clients in Eshet MFI
B income arrangement of the clients of OCSA.S.C

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NB: 1 = low income clients
2 = medium income clients and
3 = high income clients

When we compare two micro finance institutions Eshet micro finance is better than Oromia micro finance institution in serving low income clients. This means 56.333% of low income clients of Eshet microfinance is greater than that of 53.33% of that of low income clients of Oromia saving and credit association S.C.

c) Financial sustainability

It is difficult to measure financial sustainability of MFIs, as almost all MFIs are subsidized, where some subsidies are in kind form. Nevertheless, alternative measures were used to assess financial sustainability of MFIs in this study.

d) Current ratio

Probably the best-known liquidity ratio is the Current Ratio, the quotient of current assets and current liabilities. Primarily this ratio is not recommended for MFI. In this case, there is recorded data in Eshet micro finance institution. The Oromia credit and saving association S.C current ratio in this year is given below in the table form.

Table 1 : current ratio of Oromia credit and saving association

Year	Current asset (in million)	Current liability (in million)	Current ratio(in million)
2006	9	3	3

Source: own survey

The above table indicates that in this year the current ratio of OCSA.S.C is greater than one. This condition is favorable for microfinance institution because the company has the ability to recover its liability and it is under a profitable condition.

e) Cash position indicator

The cash position indicator compares vault cash and demand deposits at other banks including the central bank to the total asset base of the institution: This ratio obviously ranges between 0 and 1, where a larger proportion of cash implies that the institution is in a stronger position to handle immediate cash needs. Let us se the cash position indicator of OCSA.S.C in 2006 below in table form.

Table 2 : Cash position indicator of OCSA.S.C in 2006

Year	Total asset in million	Cash and deposit due from banks in million	Cash position
2006	9	3	0.333

Source: own survey

The above table indicates that the cash position indicator of OCSA.S.C is less than one and is small. So cash of the company is not in stronger position this year to handle immediate cash needs.

f) Capacity ratio

The mirror image to the cash position is captured by the capacity ratio, which should be understood as a negative liquidity indicator:

Capacity Ratio = Net loans \Total assets.

The capacity ratio indicates the extent to which an institution has loaned out its funds; the higher the capacity ratio, the lower the institution's liquidity. The capacity ratio of oromia credit and saving association in 2006 year is indicated in the table below

Table 3 : capacity ratio of OCSA.S.C in 2006

Year	Net loan in million	Total asset in million	Capacity ratio
2006	8	9	0.8888

Source: own survey

The above table indicates that the capacity ratio of OCSA.S.C in 2006 is lower this implies the higher institution's liquidity because the institution loaned the small amount out of its total asset.

g) Total Deposit Ratio

A large base of retail deposits would be evidenced by a high total deposit ratio. OCSA.S.C gets its fund not from government or NGO but it finance from the customer deposit. So this a god measure of performance of this microfinance. The total deposit ratio of OCSA.S.C in 2006 is given below.

Total Deposit Ratio = Total customer deposits \Total assets

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Table 4 : Total deposit ratio of OCSA.S.C in 2006

Year	Total customer deposit	Total asset	Total deposit ratio
2006	4898	9000000	0.00054422

Source: own survey

The higher the total deposit ratio, the lower is the perceived liquidity risk because contrary to purchased funds, retail deposits are less sensitive to a change in interest rates or a minor deterioration in business performance. As indicated on the above table in case of total deposit ratio this micro finance is not at a good position because the total deposit ratio is very small. So there is higher perceived liquidity risk.

h) Financial sustainability in terms of loan size to the clients

Loan size is one measurement of the financial sustainability of certain micro finance institution. If the loan size to the client over a given period of time increases then that micro finance said to have good performance and in a good profitable condition. First let us see the loan that is given to the new customer over a given period of time in table form.

i. *Eshet*

Table 5 : loan size of the new customer from 2000-2006 periods

Year	Loan size of new customer
2000	1500
2001	2000
2002	2000
2003	2500
2004	2500
2005	2500
2006	3000

Source: own survey

The above table indicates that the loan size for new customer is increasing over a given period of time. Thus even if the increasing rate is somewhat small Eshet micro finance institution is at good financial performance. When we see the average loan size of sample respondents in Eshet micro finance, this year this institution gives average loan size of 3650 birr per individual. The average loan size of the clients in 2006 in Eshet micro finance institution is indicated in the fig below.

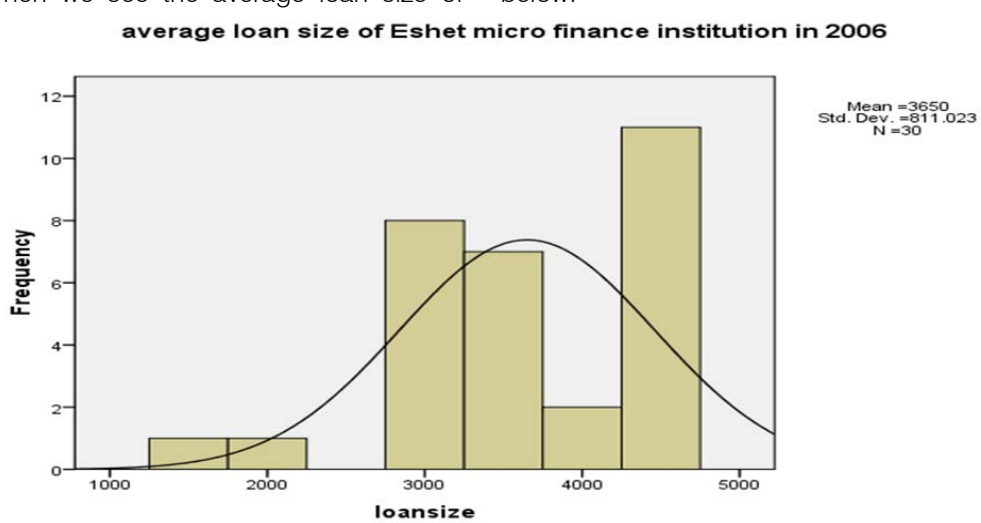

Figure 8 : average loan size of Eshet micro finance in 2006 year

ii. *Oromia credit and saving association S.C*

In Oromia credit and saving association the loan size to new customer is increasing from time to time. The increment may be due to some reasons such as inflation, customer improvement and the financial sustainability of the microfinance. Anyhow Oromia microfinance institution increases its loan size to the new customer in the period if study (2000-2006).

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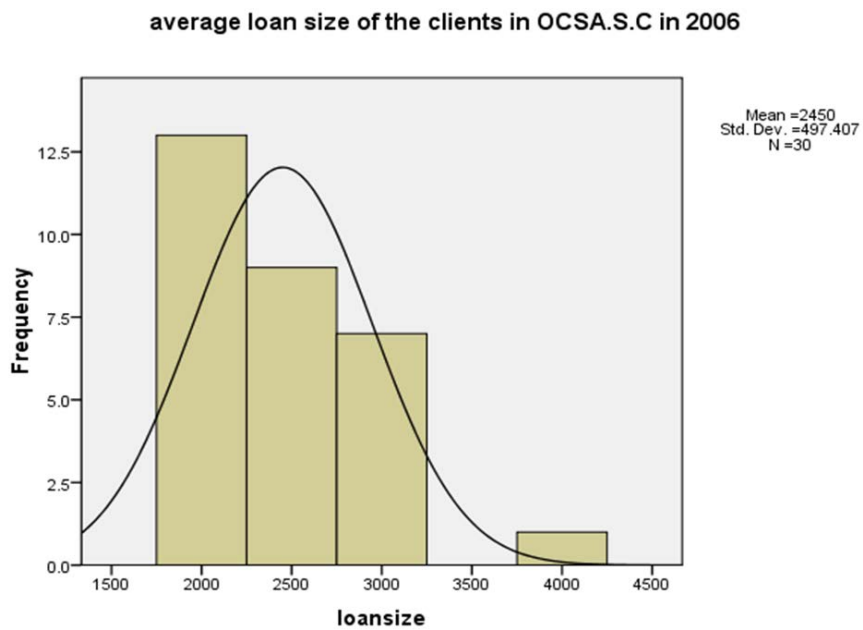
Table 6 : loan size to the new customer from 2000-2006 periods in OCSA.S.C

Year	Loan size to the new customer
2000	1500
2001	2000
2002	2500
2003	2500
2004	2500
2005	2500
2006	3000

Source: own survey

The above table indicates that the loan size is increased even if the increment rate is still limited. When we see the average loan size of sample respondents in oromia credit and saving association S.C this year this institution gives average loan size of 2450 birr per individual. This is little birr when it is compared to that of eshet micro finance institution. The average loan size is less than that of loan size of the new customer in this year which is 3000 birr per individual. This is due the willingness of the clients to take the amount that the microfinance planed to give them. As indicated so far most of the clients of this microfinance institution are low income clients and they do not want to take large loan size to overcome the challenge of repayment. Let we see the average loan size of this fiscal year in graph form.



Source own survey

Figure 9 : average loan size of OCSA.S.C in 2006

i) Financial sustainability in terms of outstanding of the clients

Outstanding to the client is one of the best indicators of the financial sustainability of microfinance institution. Increment in outstanding of the outreach may come from two sources i.e. from the increment in the loan size to the client and from the increment in the number of the clients. Even though the number of clients is increasing over time in both microfinance institutions, their loan size is also increasing over a given period of time. The indicator of this is that both microfinance institutions lend different loan size in the different fiscal year for the new clients. Let us see outstanding of each microfinance institution over a given period of time.

i. *Eshet*

In Eshet micro finance institution the outstanding to the clients is increased from 2000-2006. Let us see this below in table form.

Table 7 : total outstanding of Eshet microfinance institution from 2000-2006

Year	Total outstanding of the clients
2000	868330
2001	929330
2002	948100
2003	1060321
2004	1106500
2005	1347825
2006	1709390

Source own survey

The table indicates that amount of the outstay-nding of the clients are increasing from time to time dramatically. So the institution is at a good financial performance in satisfying the need of the clients.

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ii. *Oromia saving and credit association S.C*

As that of Eshet microfinance institution Oromia saving and credit association also increases the clients outstanding dramatically from time to time. This indicates the financial viability of the microfinance. Le we see it in the table form below.

Table 8 : Total outstanding of Oromia credit and saving association S.C from 2000-2006

Year	Total outstanding of the client
2000	3871000
2001	4885300
2002	7663600
2003	5659500
2004	6468000
2005	6975150
2006	8055600

Source: own survey

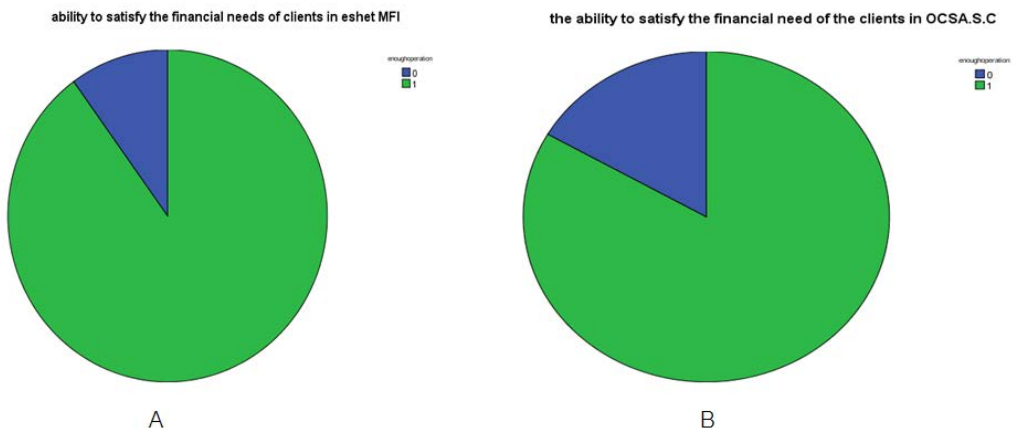
The above table indicates that the amount of outstanding to the clients is increasing from time to time. So this micro finance institution is at a good financial position in helping the community.

When we compare the outstanding of the two microfinance institution, Oromia gives high amount of loan to the customer to its clients. The difference might be come from the difference in the number of clients and difference in the loan size of the customers. Anyhow Oromia saving and credit association S.C has more outstanding every year than that of Eshet microfinance institution.

j) Financial sustainability in terms of satisfying the financial needs of the clients

Giving the loan that satisfies the financial need of the customer is another indicator financial sustainability of micro finance institution. If the micro finance has the ability to supply sufficient amount of credit at the time the customer need then the companies said to have good performance.

Eshet microfinance institution said to have a good performance in satisfying the financial needs of the clients. Out of the total respondents about 90% of the clients get the loan that is enough to their operation. As that of Eshet, Oromia saving and credit association S.C has an ability to satisfy the financial need of its clients. Our survey indicates that out of total respondents about 83.333% get the credit that is enough for their operation in Oromia credit and saving association S.C. This indicates that both micro finances have enough amount of capital at every time and has the ability to lend up to the needs of the customer. But when we compare the two micro finance institutions Eshet has more performance in satisfying the financial needs of the clients.



Source own survey

Figure 10 : A the ability to satisfy the financial needs of the clients in Eshet micro finance institution
B the ability to satisfy the financial needs of the clients in OCSA.S.C

NB: 1 =the clients that get enough amount of credit for their operation

0=the clients that did not get the amounts of credit for their operation

k) Welfare impacts of the clients

As discussed in chapter two welfare impacts is one way of measuring the performance of micro finance institution. Welfare impact of the service of the microfinance is measured by asking the client's whether they continue to use the service of micro finance or not.

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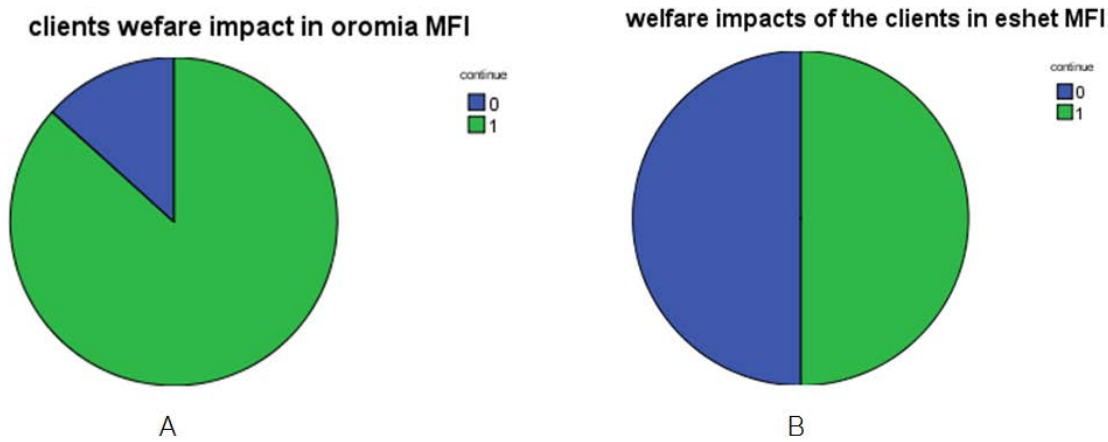
Table 9 : welfare impacts of the clients

Question	Oromia		Eshet	
	Yes	No	Yes	No
Did you want to continue as the member of this micro finance institution?	86.7%	13.3%	50%	50%

Source: own survey

The above table indicates that in Oromia credit and saving association S.C out of the total respondents about 86.7% of the respondents are willing to continue to be served in this micro finance institution. The remaining 13.3% of the respondents are not willing continue as the member of this micro finance institution. When we see that of Eshet micro finance institution out of total respondents only about 50% are willing to continue as the member of this micro finance institution. The remaining 50% of the clients do not want to take the service of this micro finance institution. When we compare the two micro finance institution the Oromia saving and credit association S.C is better in principles of welfare impact performance indicator of the microfinance institution. In Eshet microfinance institution half of the clients did not want to continue as the member of the microfinance institution; this because of they become self sufficient and they want to perform their operations with their own capital. There are also other reasons behind the high default rate in the Eshet microfinance institution. They are;

- Ineffective repayment enforcement mechanism;
- Absence of effective group pressure or collateral;
- Negligence of clients;
- Crop failure in rural areas;
- Sickness of the borrower or family member; and
- Bankruptcy in the business of clients, etc.



Source: own survey

Figure 11 : A welfare impacts of the clients in OCSA.S.C
B welfare impacts of the clients in Eshet microfinance institution

NB: 1=number of the client that are willing to continue as the member of micro finance
0= number of the clients that not willing to continue as the member of the micro finance institution.

Table 10 : interest rate in average loan in Oromia and Eshet micro finance institution

Sector	Interest rate in Oromia (%)	Interest rate in Eshet (%)
Rural agriculture	15	24
Urban employee	10	18
Business	10	18

Source: own survey

The above table indicates that there is high interest rate in Eshet than in Oromia. So Oromia is better in balancing the customer benefit and its profit.

l) Credit delivery system

Credit delivery system means the period taken by the financial institution for delivering of loan to their clients. The researcher asked the question to respondents about the credit delivery system and their response is in the table blow.

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Table 11 : response of the clients to credit delivery

Question	Oromia		Eshet	
	Yes	No	Yes	No
Did you get loan on time?	83.333%	16.33%	100%	0%

Source: own survey

The above table indicates that both micro finance institutions have a good performance in delivering the loan to their clients on time. When we compare the two, Eshet micro finance institution is better than Oromia.

m) Performance of micro finance institution in terms of Client improvement

What is the level of your income before you join this micro finance institution?

What is the total level of your income after you join this micro finance institution?

As indicated in chapter two the aim of micro finance is to improve the living standards of the society through providing the financial need of the clients. In this aspect both microfinance institutions show the considerable change on the level of incomes of the clients.

Table 12 : income level of the clients before and after joining the microfinance

Micro finance institution	Level of income before joining micro finance			Level of income after joining microfinance		
	low	medium	High	Low	medium	high
Oromia	53.33%	43.33%	3.33%	0%	96.66%	3.33%
Eshet	56.66%	43.33%	0%	0%	86.7%	13.3%

Source: own survey

The above table indicates that in Oromia credit and saving institution S.c there is some improvement in terms of client's level of income. For instance 53.33% 43.33%, 3.33%, of clients are low income, medium income and high income respectively before they start to be served in this microfinance. But now they income position is improved. 96.66% and 3.3% of the total respondents are medium and high income clients after they join the Oromia credit and saving association S.C. when we compare before and after membership there is considerable change.

Eshet microfinance also brings a change of the welfare of the clients. Out of total respondents 56.66% of clients are poor while 43.334% of clients are medium income clients before joining this micro finance. But after the join this micro finance the income of the clients is increases. Thus, out of our respondents 86.7% percents of the clients become medium income clients and 13.3% of the clients become high income clients in this micro finance institution. Generally not only the income the following aspects of the clients are also improved after the join this micro finance institution.

- They totally creates their own source of income;
- They advances\improves their expenditure patterns;
- They improves their standards of living, (educate their children, construct new house buy a pair of oxen etc)
- They expand or extend their agricultural production size\volume.

n) Improving the saving habits of the clients

The other related indicator of the performance of microfinance institution is improving the saving habit of the clients. The saving habits of the clients before joining micro finance and after joining microfinance is indicated in table below

Table 13 : saving habits of the clients

Question	Oromia		Eshet	
	Yes	No	Yes	No
Did you have saving habit before you join this micro finance institution?	0%	100%	3.33%	96.77%
Did you have saving habit after you join this micro finance institution?	100%	0%	100%	0%

Source: own survey

The above table indicates that both micro finance institutions show a considerable change on the saving habits of the clients. For instance in OCSA.S.C 0% of the clients has saving habit before joining the microfinance. But after they join the micro finance all of clients (100%) of the clients start to save their incomes. This indicates that OCSA.S.C is making a great influence in saving habits of the clients. In cases of Eshet micro finance only 3.33% of the clients have saving habit before joining the micro finance but after

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they join all of the clients (100%) of the clients start to save. This indicates that micro finance has a great role in improving the saving habits of the clients which is the source of capital and finally a key for economic development of the country.

o) Asses to credit before joining

The clients of both Oromia and Eshet micro finance institution did not get the credit service from any other institutions such as banks, village money lenders and relatives and friends. This is because of the following condition.

- High interest rate on their loan
- Lack of finance to perform their operation
- Shortage of repayment time; this means the give their loan for only two month up to six month.
- Lack of awareness about the significance of the loan or credit service is also another challenge that hinder them from taking the credit from monetary institution

Table 14 : credit access of the clients before joining micro finance institution

Question	Oromia		Eshet	
	Yes	No	Yes	No
Did you get credit access before you join this micro finance institution?	0%	100%	0%	100%

Source: own survey

The above table indicates that Because of the above reason 100% of the clients of both micro finances do not have any access to credit service. So both micro finances are said to have a good performance in giving the awareness about the significance of micro finance institution in the improvement of wealth of the clients and economic development of the country.

p) The Desire of the Respondents

Most of the respondents initiated by desire or willing to earn profit from the money that take from the micro finance rather than to survive with it. The table below indicates that what initiates the clients to be the member of the micro finance institution.

Table 15 : willing of the clients to be the member of the micro finance

Question	Oromia		Eshet	
	Willing to earn profit	For survival	Willing to earn the profit	For survival
What initiates you to be a member of this micro finance institution?	90%	10%	90%	10%

The above table indicates that 90% of the clients of both micro finance institutions are initiated by profit of the micro finance while only 10% of the clients of both microfinance institutions are willing to survive with a birr. This indicates that most of the clients are profit oriented and the use their birr in a manageable way.

IV. Discussion

a) Performance of microfinance institution

Assessing the number of clients being served by a MFIs has been noted in literatures as core performance indicator for a given MFIs. Outreach is one of the methods of measuring the performance of microfinance institution over a given period of time. If the number of clients that are served in certain microfinance institution are increased over a given period of time, then that microfinance is said to have a good performance and vice versa. Outreach can be measured in two ways i.e. in terms of its breadth and in terms of its depth.

In figure, 1 indicated that the number of clients in Eshet micro finance is increasing from time to time except 2006 . 2006 is not completed still so there is dropout and coming in clients until the end of the year this is reason why the numbers of clients are decreased. When we see in terms of percentage Eshet microfinance institution increases its client by 14.3% from 2000-2006 except 2006. So in terms of breadth of the outreach Eshet microfinance of seka town is at good position.

In Oromia saving and credit institution the number of clients served over a given period of time are sometimes increases and other time decreases. This variation is due to the following factors:

- Seka woreda is the main producer of cash crops; when the income they get from cash crops is increases the number of clients are decreases and vice versa.
- Most of the time clients of Oromia saving and credit association S.C increases during the winter time because people want credit at that time to buy fertilizer and to fattening the livestock.

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- Again the clients of this company increases during the summer season because the clients want credit at that time to sustain themselves
- One of the disadvantaged from economic empowerments point of view are women. The study found that credit access to women is still limited. Even if there is no affirmative action in Eshet micro finance institution, the number of women clients and their outstanding is increasing from time to time. Thus this microfinance institution is at a good position in the depth of outreach.
- Oromia credit and saving association does not have affirmative action. Even if the is no affirmative action in this micro finance institution the number of women clients and their outstanding is increasing from time to time. When we compare this micro finance institution with Eshet micro finance institution it serves large amount of women clients and its outstanding is also very large. The number of women clients in Oromia saving and credit association increases more than that of Eshet microfinance in the period from 2000-2006 this indicates that Oromia saving and credit association have more performance than that of Eshet micro finance institution in serving women clients.

Provision of different kind of product by MFIs is also one form of performance indicator. The study find that though both MFIs in the woreda focus on loan provision and saving product, Oromia saving and credit association share company also provide micro insurance as social service , leasing, pension, and consultancy services for the woredas community. The study also found that the MFIs provide credit to all kind of business on both individual and group loans basis. Especially Oromia give attention to different sector services and micro and small enterprise. For instance Oromia credit and saving association S.C is giving its service for the following sectors.

- Service sector
- Trade sector
- Construction sector (the sector in which the government pay a great attention)
- Agriculture sector and
- The manufacturing sector (this is also the sector in which the government pay attention).

b) Duration of the loan

Looking at the credit term of MFIs, it was found that they are totally concentrated on short-term loan ranging from 12 months to 24 months. This definitely would have a negative impact on the selection of investment projects by the clients. The clients will tend to only participate on trade related activities and short term production activities rather than long tem investment which will have high returns in the long run.

c) Interest rate

The study also found that most MFIs charge different interest rate ranging from 10% to 24%, but some charge flat interest rate. To the majority (who charge varied interest rate), the rationales for the variations of the interest rate are:

- Variations in human power and material cost involved in processing and follow up of the credit facility;
- Variations in risk involved in the type of the business; and
- Vulnerability to draught or extreme poverty.

The study finds an increase in trend of the interest rate, even when the outstanding lending of the institutions is escalating, which implies that probably the beneficiaries are price insensitive in association with their desperate demand for the credit. This may in turn imply exploitation of the profit of the poor client given their disparate need for the money. Let us look the interest rate of the two micro finance institution in different sector.

d) Challenges of microfinance institution in seka woreda

The study also found the presence several challenges that constrain the MFIs operation not to be efficient. Some of the challenges according to the representative sample MFIs are:

- Less saving habits;
- Lack of choosing profitable enterprise;
- Sometimes the clients don't get they want to take; lack of satisfying the financial needs of the customer;
- Reluctant service rendering; lack of punctuality ;
- Increasing of interest rate from time to time;
- Easy dissemination of bad mouthing (some clients are not visionary; they opt for immediate benefits in illegal way);
- lack of trust between the member of the groups in the repayment of the loan;
- The legal environment is not conducive enough in enforcing the loan contract;
- Shortage of experienced human resources; and Shortage of Logistics in rural areas such as road, telephone, etc.
- Lack of recording data in manageable way

Lack of adequate information about the client's financial management and absence of recorded evidence is the main challenge. This makes the MFIs to rely on fellow group member's oral information. Additionally, problem of certifying the real ownership of business, problem of clients to target on profitable business, and sometimes lack of understanding of clients about the operation of the institutions, are the challenges.

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V. Conclusion

The paper examines the performance of MFIs in relation to outreach and financial sustainability. It reviews literatures on core performance indicators of MFIs. The literatures noted that MFIs could be examined through three main polar: outreach to the poor, financial sustainability and welfare impact. The study also include some related performance indicator of micro finance institution

From the angle of the outreach both micro finance institution shows the considerable change in the period of study from 2000-2006. This means the increment is not only in its breath but there is also increment in the depth of the outreach. The number of economically disadvantaged groups for instance low income group and women groups are increasing in the period of study from 2000-2006. This implies in that the outreach to the clients of the two microfinance institution found in seka town is said to have good performance.

From financial sustainability angle, the study does not get enough information to assesss the financial sustainability indicator of the micro finance institution. However the study found some indicator of the financial sustainability of microfinance. In terms the current ratio and capacity ration oromia credit and saving association S.C said to have good performance this year (2006). But in case of total deposit ratio and cash position indicator this company is not in the favorable condition. Eshet micro finance does not have any recorded information on the financial sustainability indicator of micro finance. In case of increasing the loan size to the new customer, increasing the outstanding to the customer, and satisfying the financial needs of the customer both micro finance shows the considerable change in the period of study from 2000-2006.

From the angle of the welfare impact 50% and 86.7% of the Eshet micro finance and OCSA.S.C respectively are willing to continue as the member of micro finance. Even the reason of the default of the clients are different the oromia credit and saving association S.C is at a good position than that of Eshet micro finance. Only 13% of the clients' do not want to continue as the member of oromia but half the clients of Eshet micro finance do not want to continue as the member of the micro finance.

As the related indicator of microfinance, both companies are at the better position in increasing the social benefits of the clients. They improve the saving habits and the living standards of the clients. They take the interest rate that balances the profitability of the micro finance and social benefits (especially oromia credit and saving association S.C. They provide their service to every individual and the provide loan, credit service to the clients. But oromia provide the insurance, leasing, pension, and consultancy services for the woredas community. In the future both micro finances aimed to increase their clients and the benefits of the clients through increasing their loan size, decreasing the interest rate and encouraging the saving habits of the clients.

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Automated Teller Machine usage and Customers' Satisfaction in Nigeria

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Abstract- This paper endeavors to investigate ATM Usage and Customers' Satisfaction in Nigeria. It was discovered that despite the increasing number of ATM installations in Nigeria. Customers' needs are not satisfactorily met as customers are always seen on queue in large numbers at various ATM designated centers as well as poor service delivery of some of these machine. The research engages comparative analysis of three banks in Ogun State, Metropolis of Nigeria viz-a-viz First Bank, Guaranty Trust Bank and Skye Bank. However, questionnaires were distributed to the respondents. A total of 200 respondents answered the questionnaire cutting across the three banks, the chi-square statistical tool was used to analyze the data and the results showed a positive and significant relationship between ATM Usage and Customers' Satisfaction.

Keywords: ATM, bank, customers' satisfaction, nigeria.

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I. Introduction

Automated Teller Machine (ATM) is a product of technological development developed to enhance quick service delivery as well as diversified financial services such as cash deposits, withdrawals, funds transfer, transactions such as payment for utilities credit card bills, cheque book requests and other financial enquiries. All financial institutions are using this method/system, aggressively encouraging all their customers to take advantage of these services on the grounds of ease process but an unannounced financial generation to the bank.

Automated Teller Machine (ATM) is the first well known machines to provide electronic access to customers. With the advent of ATM, banks are able to serve customers outside the banking hall. ATM is designed to perform the most important function of banks such as withdrawal of cash, deposits, printing of mini statements settlements of bills. It does all through an access to personal identification number (PIN), and a plastic that contains magnetic chip which the customer is identified through.

In the years back, banking operation and or transaction was an ease process of walk-in to deposit or withdraw with less congestion or time consuming process via pass-book or cheque book. In recent time, the complexity of human demand and or business transaction informed the influx of customers in and out of banking halls, which in one hand requires either the need for additional hands or stretching the services of the available staff on the other hand. In another perspective, this in and out banking operation with polythene bags of money created attraction for hoodlums and thus exposed the customers to robbery. To reduce the congestion within banking halls, and in a bit to reduce the volume of carrying cash, banks came up with electronic business transaction. Today, banking has developed into an era of menu-driven ultra robust specialized software programmes called banking applications. These applications can carry out virtually all banking functions relying strongly on information collection, storage, transfer, and processing. (Ovia 2006)

The consolidation and bail out exercise in the Nigerian banking industry drew the attention of many banks to application of various technological devices in promoting/ achieving better customer service delivery that guaranteed customer satisfaction and translates into increase profitability and higher return on Investment.

Globalization, left bank with no option other than to adopt convenience of transaction to enhance customers' satisfaction if they really want to stay in business and also be profitable. Electronic Banking system is a brain child of ICT that made it possible for service providers and their customers in developing economies to enjoy a good semblance of the services enjoyed in the developed countries. It afforded banks the opportunities to satisfy customers which will encourage their consistence and continuous patronage.

The ATM card can also be regarded as Plastic Money; it is not only safe but convenient. The ease of settlement of bills has made it acceptable and important throughout the country. Virtually all banks in Nigeria have introduced ATM because they want to remain relevant in the sector.

ATM was conventionally introduced as a means of satisfying customers in 1989. It was installed by the defunct Societe Generale Bank of Nigeria (SGBN) in the same year. Since its introduction, many Nigerian banks have installed ATM in response to the changing nature of modern banking operation.

Mohammed (2010) in his study opined that ATM deployments and its use by customers is just gaining ground and it has also been characterized with some disadvantages such as fraud perpetration, network failure in time of dire need of money, ignorance in terms of services provided by ATM and large queue on ATM in

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the designated places. The recent removal of service charge pose another challenge, causing more patronage. With nearly 12,000 Automated Teller Machines, 131,000 point of sales machines, several internet payment portals and 25 million bank cards in circulation, the number of people with bank accounts grew from 18.3 million in 2008 to 28.6 million in 2012.

It is against this backdrop that this paper tends to investigate Automated Teller Machine usage and Customers' Satisfaction in Ogun Metropolis of Nigeria with a particular reference to three (3) selected commercial banks. The motivation for this study stems from the fact that only limited empirical studies in this area have so far been carried out in most emerging countries, particularly in Africa. Conducting research of this nature using the Nigerian environment will reduce the knowledge gap to the barest level.

The paper is organized as follows: Section 1 introduces the topic, sections 2 deals with literature review, 3 with methodology while 4 and 5 deals with result and conclusion respectively.

II. Literature Review

Limited studies were available in the area of ATM, both in the developed and developing nations. The researchers look at some of the recent ones on the relationship between Automated Teller Machine and Customers' Satisfaction.

Singh (2009) described ATM as 'Avoid Travelling with Money' or 'Any Time Money' but certainly it implies both. He asserts that Slim ATM cards are fast replacing compounding withdrawal form as a convenient way of getting your money from banks. A smart person no longer needs to carry a wallet-full of paper money on his person. All he needs to do is fish-out an ATM card inserts it in the slot, punch in a few details and go home with hard cash.

According to Asabere et al (2012), It is believed by some people that Luther George Simjian was the inventor of ATM because his idea came first. Some also believed it was Dan Wetzel because he's got patents on display in the Museum of American History to prove it. Still others, including the Queen of England believe the inventor of ATM is John Shepherd-Barron. John D. White contacted ATMmachine.com and sent copies of patents and gave convincing evidence that he is the ATM inventor. James Goodfellow of Scotland also contacted ATMmachine.com and gave his account, including copies of patents. Jairus Larson contacted ATM machine.com and, although he did not invent the ATM, he did develop the first 'online' ATM. Since the patent on an ATM was never applied for until years Mr. Simjian, confusion on the inventor still exists.

The Central Bank of Nigeria (2007) maintained that ATM is the most patronized form of technology by Nigerian Banks and customers are even attaching the quality of banks services with online real time thereby meticulous on choosing the bank to patronize. The reason for the choice is mainly due to the fact that customers are seen to always be on queue in large number on these selected banks in Ogun State.

However, the recent withdrawal of ATM service charge (N100) per transaction when one inter-change ATM and card and its implementation on 1st of March 2013 is a welcome development and this cause customers to be more satisfied with ATM.

Singh (2009), studied the 'Impact of ATM on Customers' Satisfaction' comparatively studying three banks in India conducted his research using 360 respondents from the three banks, he used the F-ratio statistics to test the difference in the customers satisfaction of the three banks. He concluded that Material satisfaction level is the highest in State Bank of India, followed by ICICI and then to HDFC bank

Alabar, (2012), conducted research on 'Electronic Banking Services and Customers Satisfaction in the Nigerian Banking Industry. He sampled 400 respondents of some selected banks (FBN, UBA, Access, Diamond, GTB and Ecobank) across the six geopolitical zones of Nigeria, Abuja inclusive. He found out that Electronic Banking Services has significant influence on customers' satisfaction after testing his hypothesis using regression analysis.

Ogunniyi, Onuaoha and Izogo (2012), studied the 'Analysis of the Negative Effects of the ATM as a channel for delivering banking services in Nigeria'. The authors sampled 600 respondents from Anambra and Lagos states in Nigeria. The reason according to the authors was because the two states constitute different people from different parts of Nigeria. Chi-square was used to test the hypothesis, and result showed that ATM should not be installed indiscriminately everywhere and that ATM has increased the rate of crime in Nigeria.

Muhammed (2010), empirically studied ATM Service Quality and Customer Satisfaction in Pakistani Banks using data from 500 customers of multinational and national banks. He used regression analysis to test his six hypotheses. The most captivating hypothesis in his study was the sixth hypothesis, he found that 'ATM Service Quality has positive and significant relationship with customer satisfaction'.

Moutinho and Brownlie (1989) recommended that some consumers have positive attitudes towards ATMs based on dominant perceptions of convenience, accessibility and ease of use.

On the other hand, Reichheld and Sasser (1990) have recognized the benefits the customer satisfaction delivers to a bank. For instance, the longer a customer stays with a bank the more utility the customer generates. This is a result of a number of factors relating to the time the customer spends with a bank. Without usage of technology the banking sector cannot provide customers with a satisfactory service (Patricio et al.,

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2003). Effective service delivery is a new or significantly improved service concept that is taken into practice. Musiime and Biyaki,(2010). According to, Patricio et al. (2003) customers will use different service delivery systems dependending on their assessment of each channel and how it contributes to the overall service offering. Hence service satisfaction will not merely be based on isolated service encounters and experiences but rather on the overall feelings of satisfaction. With automated teller machines networks already in place in most of the urban areas, the drive is now focused towards the rural areas where the use of automated teller machines is still uncommon. Musiime and Biyaki (2010).

III. Methodology

The rationale for picking these three banks was their level of ATM business compared to other banks ATM that customers rarely patronize. Is it because customers are too satisfied with the performance of these banks ATM or what? The researchers want to know from this study. A total of 200 users of these banks ATM were carefully selected for sample. They constitute Lecturers, Students, Business Men and Women, Artisans, Politicians, and Civil/government Workers. Questionnaire was used to collect data, the respondents filled and returned the questionnaire immediately. Those not willing to return immediately were asked not to bother, because to retrieve it may be difficult..

IV. Data Presentation, Analysis and Ynterpretation

Table 1: What are the positive effects of the usage of ATM?

Items	SA	%	A	%	U	%	DA	%	SDA	%
ITEM5	63	31.5	99	49.5	12	6.0	22	11.0	4	2.0
ITEM8	80	40.0	68	34.0	17	8.5	28	14.0	7	3.5

The table shows that for the two items, SA and A when combined has the higher percentages 81.0% and 74.0% respectively. It follows that majority of the respondents are of the opinion that ATM has increased the ability to hold cash for transactionary precautionary and speculative motive. Also, the introduction of ATM has reduced the number of customers transacting business inside the banking hall.

Table 2 : What are the problems facing the use of ATM?

Items	SA	%	A	%	U	%	DA	%	SDA	%
ITEM6	76	38.0	64	32.0	15	7.5	37	18.5	8	4.0
ITEM7	49	24.5	63	31.5	24	12.0	40	20.0	24	12.0
ITEM9	47	23.5	53	26.5	16	8.0	69	34.5	15	7.5

The table shows that for the three items on the problems facing the use of ATM, the percentages range between 50.0% and 70.0%. It follows that the use of ATM caused more spending than before the introduction of ATM, the introduction of ATM has increased the rate of crime in the state and the illiterates using the ATM have increased the rate of fraud.

Table 3 : Is there any major means of increasing the usage of ATM?

Items	SA	%	A	%	U	%	DA	%	SDA	%
ITEM20	77	38.5	69	34.5	22	11.0	20	10.0	12	6.0

From the table, the item has higher percentage for SA and A when combined that is 73.0%. It follows that customers need to be sensitised on the advantages of ATM.

Table 4 : Are the customers significantly satisfied with the usage of ATM?

ITEMS	RESPONSES							
	SA	A	U	DA	SDA	TOTAL	X2	Sig
B10 Count	54	101	15	21	9	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B11 Count	45	89	39	16	11	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B12 Count	86	67	21	17	9	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B13 Count	66	83	32	11	8	200		

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Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B14 Count	82	89	13	8	8	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B15 Count	35	66	81	44	24	200	397.6	0.00
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B16 Count	21	55	31	50	43	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B17 Count	26	41	49	54	30	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B18 Count	28	49	54	46	23	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
B19 Count	88	68	16	14	14	200		
Expected	53.1	70.8	30.1	28.1	17.9	200.0		
TOTAL Count	531	708	301	281	179	2000		
Expected	531.0	708.0	301.0	281.0	179.0	2000.0		

The table shows the chi-square value 397.6 which is significant at 0.05, ($P < 0.05$). This indicates that customers are significantly satisfied with the usage of ATM.

V. Conclusion and Recommendations

This study investigates automated teller machine usage and customers' satisfaction in Ogun State, Nigeria. The result of the study indicates a strong and positive relationship between ATM usage and customers' satisfaction. The result is consistent with other related empirical studies.

Result further showed that ATM increases the ability to hold cash for transactionary, precautionary and speculative motive. ATM also reduces the volume of customers transacting business in the banking hall.

On the other hand, this study reveals that ATM caused lavish spending, increased crime rate and the illiterates sing ATM paved way for fraud on ATM.

By and large, the study ATM and customers' satisfaction despite its shortcomings makes life easier for customers viz-a-viz cost reduction, time saving, easy access to cash even at odd time (mid-night for emergency), error on ATM has equally reduced.

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Appendix

Section A: Tick the box as appropriate

1. Age

18-28	
29-38	
39-48	
49-58	
59- Above	

2. Gender

Male	
Female	

3. Branch

FIRST BANK		GTB		SKYE BANK	
Abeokuta		Abeokuta		Abeokuta	
Abeokuta II		Agbara		Agbara	
Agbara Indusrial Estate		Ijebu Ode		Ijebu Igbo	
Babcock Cash centre		Sagamu		Ijebu Ode	
Ewekoro				Sagamu	
Igbogila				Ota	
Ijebu Ode					
Mosinmi					
Mowe					
Ogbere					
Olabisi Onabanjo University					
OPIC Cattle					
Ota					
Ota II					
Sagamu					

4. Occupation

Student	
Artisan	
Business Man/ Woman	
Civil/Public Servant	
Politician	
Lecturer	
Banker	

Section B: Tick as appropriate

SA – STRONGLY AGREED
A – AGREED
U – UNDECIDED
DA – DISAGREED
SDA – STRONGLY DISAGREED

		S A	A	U	DA	SDA
5	The ATM can be said to have increased the ability to hold cash for transactionary, precautionary and speculative motive					
6	The use of ATM cause more spending than before the introduction of ATM					
7	The introduction of ATM has increased the rate of crime in the state					

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8	The introduction of ATM has caused a reduction in the number of customer transacting business inside the banking hall, thereby leaving the banking hall for those customers transacting other than depositing and withdrawing					
9	The illiterates using the ATM has increased the rate of ATM fraud					
10	The removal of ATM service charge has also increased the patronage of ATM					
11	Customers Satisfaction is important and vital for a successful ATM operation, although that satisfaction is in question?					
12	ATM usage in my bank branch has led to timely and effective withdrawal of cash but sometimes customers are disappointed due to network failure					
13	The period at which a customer can hold an ATM card before it expires is a good security measure which should be guarded jealously to keep the ownership of such accounts, so that the bank can always update the Know Your Customer (KYC) data					
14	ATM allows for some transactions such as recharging of phones, payment for subscription on Dstv etc, and this has reduce the stress of going through that rigor in the respective places					
15	There are too many challenges or failures attached to the usage of ATM, thereby causing customers to dislike the use of ATM					
16	ATM provided by my bank is not a 24 hour service own, and this has reduce my interest in using ATM					
17	My bank ATM allows deposit into accounts, but because of my ignorance on how to use it, I don't bother myself					
18	Nigeria is not ripe for ATM service, because in my bank, the bank official's lackadaisical attitude towards correcting errors in ATM has reduced its patronage					
19	The continuous advertisement that I should not reveal my personal identity number to anybody is a good security measure which must be encouraged					
20	There is still need for sensitization of the public or customers on the advantages of using ATM, because many customers abandoned their ATM card in the card.					

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Interactive Effect of Diversification Strategy on Capital Structure and Corporate Performance: An Analytical Evaluation

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Thapar University, India

Abstract- Whether diversification benefits a corporation and its shareholders have been the subject of relevant discussion and research wherein economist and policy managers are working at different fronts towards gaining sustainable advantage and development. Present paper investigates possible measures to understand the effect of product diversification strategy on capital structure (CS) and corporate performance with respect to Indian context. The study involved database collected from non-financial companies listed in NSE and BSE for determining the relationship between variables- corporate growth, size, asset tangibility and profitability. However, research design using different models have been used to analyse the possible effects and relationships in between and among the dependent and independent variable of the study. In conclusion, study variables are associated and different relationships have been captured, analysed and interpreted using statistical tools (E-Views) and techniques. The results are representing and focussing the importance in line of the context of the study.

Keywords: diversification strategy, systematic risk, corporate performance, correlation analysis, regression analysis, sustainable corporate value creation.

GJMBR-C Classification : JEL Code: F65

INTERACTIVE EFFECTOFDIVERSIFICATION STRATEGYON CAPITALSTRUCTURE ANDCORPORATEPERFORMANCEANANALYTICAL EVALUATION

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Interactive Effect of Diversification Strategy on Capital Structure and Corporate Performance: An Analytical Evaluation

Rishi Manrai [α], Rudra Rameshwar [σ] & Vinay Nangia [ρ]

Abstract : Whether diversification benefits a corporation and its shareholders have been the subject of relevant discussion and research wherein economist and policy managers are working at different fronts towards gaining sustainable advantage and development. Present paper investigates possible measures to understand the effect of product diversification strategy on capital structure (CS) and corporate performance with respect to Indian context. The study involved database collected from non-financial companies listed in NSE and BSE for determining the relationship between variables- corporate growth, size, asset tangibility and profitability. However, research design using different models have been used to analyse the possible effects and relationships in between and among the dependent and independent variable of the study. In conclusion, study variables are associated and different relationships have been captured, analysed and interpreted using statistical tools (E-Views) and techniques. The results are representing and focussing the importance in line of the context of the study. These findings and results are pertinent for managers and top management assessing diversification strategies for investors, shareholders choosing suitable corporate and for researchers seeking to describe corporate performance differences.

Keywords: diversification strategy, systematic risk, corporate performance, correlation analysis, regression analysis, sustainable corporate value creation.

I. Introduction

The explosion of product diversification activities over the past few decades has encouraged strategic thinkers, policy makers, management research scholars to examine the effect and impact of diversification on a corporate performance and other variables of the study. Traditionally financial and economic theory recommends alongside diversification at the corporate level since investors have the chance to diversify and expand within their own portfolios added rapidly and at lesser rate. Though, corporate prolong to enlarge both inside and outside their core area of businesses regardless of the fact that lacking some kind of strategic fit product diversification adds little value, if no matter which to the vigorous strength of the individual business divisions. Present research paper empirically investigates the possible relationship diversification, capital structure and corporate performance by drawing from both the finance and the management literatures. It also broaden preceding research via the utilization of an improved accustomed performance measure, profitability, sample size etc. The intent is not to spotlight on the means of diversification strategy nevertheless rather the decisive consequence and impact as measured in the marketplace Jahera et al (1993).

The term "*diversification strategy*" coined by Ansoff (1972) in his famous study "*A model for diversification*" which explained different type of expansion strategies to be followed by a company. Out of several reasons for the corporate to diversify, the primary reason is, reducing risk of relying on only one or a few sources of income. Some other possible reason to diversify is avoiding cyclical or seasonal fluctuations (by producing goods or services with different demand cycles), achieving higher growth rate and competing a rival by invading its core industry or market. A number of studies have hypothesized that diversification improves corporate profitability through economies of scope by pre empting the product space. Although the general views on the phenomenon are quiet inconclusive, one possible explanation by famous work of Scott (1982) which demonstrated three effects of diversification is worth mentioning. The first one is that it may generate multi market economies thereby increasing corporate profit.

When a corporate chooses to diversify, it tries to relate the new business is to the existing businesses of the corporate. Strategic actions are aimed at creating value for the organization. Therefore, it is important to look at the value creation rationale of diversification. Diversification moves create value when economies of scope exist among the multiple businesses in the organization, and exploiting these scope economies can be done more efficiently by the corporate rather than by shareholders on their own. The general discussion on value creation in diversification sets the stage for the next important pasture for the instructor – outlining the key elements of economies of scope. The concept of diversification strategy is indeed not rare. The inimitability of a corporate diversification strategy depends upon the economy of scope which is the focus of the strategy. Core competencies and multipoint

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competition are obvious examples of costly-to-duplicate economies of scope, while tax advantages and risk reduction are typically less costly-to-duplicate economies of scope.

II. Literature Review

An early study by Barton and Gordon (1976) suggested the usefulness of the corporate strategy perspective in understanding capital structure. According to the study by Ajay and Madhumathi (2012), multinational and domestic companies differs significantly from each other with respect to parameters like leverage, tangibility, non-debt tax shield, age, size and agency cost. The study also reveals that Indian companies have higher debt as a part of their capital structure as compared to multinational corporations. However, Alonso (2003) tried to investigate the effect of diversification strategy on corporate capital structure and found a non-significant relationship between corporate leverage and the degree of corporate diversification.

Abor (2008) provided and compared the capital structure of publically listed companies with that of large unlisted companies and small and medium enterprises in Ghana. The study highlighted that company size, age, asset structure, profitability, risk and managerial ownership are important in influencing the capital structure decision of Ghanaian companies. The result of this study is contrary to the trade-off theory by Modgilani and Miller (1963) and seems to support pecking order hypothesis by Myers (1984) and Myers and Majluf (1984).

Myers and Majluf (1984) suggested that both long term and short term debts have inverse relation with company profitability. Company growth was found to have a positive relation with long term debt for the unlisted company and short term debt ratio for small and medium corporate. Balakrishnan and Fox (1993) in their research showed the consequence of specialized assets and former exclusive description of a corporate in explaining the variance in capital structure across corporate. Evidence from the study of 295 mining and manufacturing firms strongly suggests that unique corporate specific assets and skills are, by far, the most important determinants of capital structure.

For Rumelt's six diversification categories they found that betas for unrelated diversifiers are significantly higher than those of other firms. Emphasizing the fact that diversification strategy not only increased the return but also significantly reduces the systematic risk of the firm. Systematic risk is defined as the volatility of a particular stock to the market. Many researchers and economists interested to study the risk return pattern of diversified firms, including Montgomery and Singh (1984), tried to examine relationship between diversification strategy and systematic risk beta. On the similar lines Bettis and Mahajan (1985) suggested that diversified firms are able to reduce their systematic risk significantly and increase returns. The author also very strongly confirmed that there is still some level of correlation between related diversification and firm performance but the unrelated firm performance bears a negative correlation with diversification.

An additional study indicates two major effects on systematic risk, which operate in opposite directions and usually offset each otter. It is seen that diversification particularly into unrelated businesses reduces operating risk and, hence, systematic risk. At the same time, such diversification is associated with increase in leverage, which tends to increase systematic risk. It was categorically pointed that the two effects are of similar magnitude and, therefore, conclude that diversified firms trade off operating risk for financial risk.

Literature based on past studies (Levy and Samat, 1970) eventually reflects that under financial market assumptions, there are no economic motives for unrelated diversification. Tsai, in the research tried to derive a relationship between construction firm's financial performance/risk and there diversification strategies. The research suggests that for maximization of corporate profitability in construction business a single business strategy is a good choice. For risk aversive manager, dominant vertical strategy is the strategy recommended by major group of researchers studying the subject.

Lubatkin and Rogers (1989) concentrated and confirmed the corporate structure that are diversified in a constrained manner demonstrated significantly lower levels of systematic risk and significantly higher levels of shareholder returns than corporate employing other strategies. The findings accentuate the popular, though weakly supported, belief that controlled diversity is associated with the highest performance. Raphael and Livnat (1988), in their cross-sectional path analysis also confirmed that corporates trade off the reduction in operating risk due to diversification with increased financial leverage, and thus the systematic risk remains the same. Their study uses theoretical considerations to empirically examine the effects of various diversification strategies on the capital structure of firms and on the systematic risk. It also documents that firms reduce their operating risk by diversification and increase financial leverage to take advantage of tax benefits. Chatterjee S. and Lubatkin M. (1994) on the other hand proved that the relationship between corporate diversification and both forms of stock return risk generates a U-shaped graph. Thus, the author recommended that an important way for corporations to minimize risk is to diversify into similar businesses rather than into identical or very different businesses.

Daud, Salamudin and Ahmad (2009) examined relationship between diversification effect on performance using multiple measures of performance

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namely accounting and market measurements. The evidence produces some interesting findings with regard to risk factors and effect on firm's performance while other factors are consistent with previous findings. In particular, firms that adopt the focused strategy perform better than those with diversified strategy. Different measures of performance used in the study produced varying results after controlling for risk, firm size and economic condition, using the inflation rate as a proxy.

Interestingly, Thompson (1984) examine the impact of strategic diversification on a market-based measure of firm. The results do not match with the earlier results. His studies further suggested that the companies do not bank on risk reduction as a general motive for diversifying merger. In fact they do not support the positive association between systematic risk and conglomerate status found in many US studies. Barton and Gordon (1988) emphasized that profit and debt levels are negatively correlated and therefore suggested that pure economic factors are not the sole mechanism for establishing capital structure. The result is consistent with the behavioral proposition that management of corporate desire flexibility and freedom from excessive restrictions of debt whenever possible. Profitability provides the ability to avoid debt by using self-generated funds to finance the business.

Gahlon and Stover (1979) employed a model, which incorporates variables measuring the effects of these motivations on a return-adjusted beta, to compare the performance of conglomerates with a control sample of non conglomerates, before and after the major external expansion period of 1967 and 1968. The results confirm our hypothesis that the effects on adjusted beta of the diversification efforts of conglomerate managements were at least partially negated by the greater risk inherent in their use of increased debt capacity. At the same time that conglomerates increased their internal and external diversification, their degree of financial leverage increased and their return-adjusted beta exhibited no change practically. In addition, with respect to the market's evaluation of the conglomerates' performance relative to that of non conglomerates, the significant diversification was not the external form which is implied when conglomerate market price performance is compared with that of mutual funds.

Raphael and Livnat(1988) using market based risk measures found that firms' trade off the reduction in operating risk due to diversification with increased financial leverage, and thus the systematic risk remains the same. This study uses theoretical considerations to empirically examine the effects of various diversification strategies on the capital structure of firms and on the systematic risk. It documents that firms reduce their operating risk by diversification and increase financial leverage to take advantage of tax benefits.

After going through the extensive literature above it can be easily estimated that there are different views of various researchers on the risk associated with diversified firms and the return associated with them. The present study is an attempt to establish a relationship between the risk-return relationships of those firms which have followed diversification strategy because as the company diversifies, it appears to be a change in the risk profile of the firm and thus the expected change in the returns of the company. This is particularly important because the change in firm returns brings about change in the market returns of the company and thus increases / decreases the share holder value of the firm. The following section discussed the objective of the study and linked hypothesis.

III. Research Objectives

The research aims to study the impact of diversification strategy on capital structure and corporate performance in Indian context using non-financial companies. As a first objective, the study targets to see the impact of diversification strategy on capital structure of listed companies in BSE and NSE. Secondly, the paper attempts to study and establish the impact of diversification strategy on Corporate performance of listed companies in BSE and NSE in that period. Further, the research study also aims to examine and analyze the behavior of diversification strategy, capital structure and corporate performance of listed companies and their importance to achieve competitive advantage. To end with, present study intends to highlight their importance by companies stakeholders, investors etc.

IV. Research Hypothesis

Based on the literature review the next section will discuss the hypothesis of the study. The main objective of the study is to the impact of corporate diversification on capital structure financial risk and corporate financial performance of companies listed in Indian stock market. Additionally the researches would like to measure the change in the financial risk of diversified companies and its effect on their corporate growth these companies. The hypotheses of the study are:

Hypothesis–1: There is no significant difference in diversification index which is expected to have a strong effect on capital structure.

Low and Chen (2004) from their study, emphasized that product diversification is positively related to financial leverage, indicating that such diversification allows corporates to reduce their risks, thereby enabling corporates to carry higher debt levels. The findings for the effect of product diversification on capital structure generally indicate that corporates that diversify across product lines have higher debt ratios

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than non-diversified corporate. Lim et. Al. (2009) also used agency theory to predict the influence of related and unrelated product diversification on a corporate level of debt financing and established a link between diversification and capital structure is moderated by the environment in which corporates operate.

Hypothesis–2: There is no significant difference in corporate profitability, which has a strong correlation with corporate capital structure.

The capital structure of a corporate is expected to reduce the cost of capital of a corporate and is this expected to positively impact its profitability ROA, ROE, etc. Although there are many instances of positive relation between leverage and corporate performance Mojtaba Akbarpour et al (2011). Ahmad and Abbas (2011) identified the determinants of capital structure of banks in Pakistan by using corporates level determinants of capital structure. Using panel data fixed approach model, the researchers showed that out of seven variables three (profitability, size, non-debt tax shields) are statistically significantly related to leverage. Chikir, Arcas and Bachiller (2008) have also supported the same by saying that profitability is higher for less leveraged corporates in all zones except for the British countries.

Hypothesis–3: There is no significant difference in growth opportunities which decreases corporate leverage.

The literature review suggests that Growth opportunities decrease corporate leverage. Panda (2011) in their work have linked capital structure with corporate performance. The research drawn from the capital structure literature to carve out the variables, i.e., tangible assets (AT), profitability, size, volatility, growth opportunities, etc. Research clearly indicate that venture capitalist very clearly watch corporate leverage and corporate growth before further funding the corporate. However, Barton and Gordon (1988) in there empirical study found that the capital structure is not directly influenced by the managing generation, but indirectly through the realized growth rate of the company. Bowman (1979) et. al. (2004) have also proved relationship of corporate growth and capital structure. The study proposes that growth opportunities decreases corporate leverage.

Hypothesis–4: There is no significant difference in asset tangibility which has a strong correlation with corporate capital structure.

Asset Tangibility is also one of the major determinants of corporates performance. Many researchers such as Mackie- Mason (1990) concluded that a corporate with high fraction of plant and equipment (tangible assets) in the asset base opted for higher leverage and were proved to be more profitable than their counterparts. Campello (2006) in their research claims that when asset tangibility is high managers have heightened incentives to deliver on investors claims since liquidation/reorganization becomes a more credible threat. It is also observed that the component of investment that is explained by external financing is associated with superior (inferior) corporate product market performance, capital market valuation, and accounting returns when asset tangibility turns out to be high (low) after the corporate raises financing.

Hypothesis–5: There is no significant difference in diversification index which is expected to have no effect on systematic risk.

Many researchers including Montgomery and Singh (1984) found that betas for unrelated diversifiers are significantly higher than those of other corporates. Thus emphasizing the fact that diversification strategy not only increased the return but also significantly reduces the systematic risk of the corporate. Bettis and Mahajan (1985) suggested that diversified corporates have significantly able to reduce their systematic risk, beta and increase returns, ROA. The author had also very strongly confirmed that there is still some level of correlation between related diversification and corporate performance but the unrelated corporate performance bears a negative correlation with diversification.

Hypothesis–6: There is no significant difference in the growth opportunities which decreases corporate systematic risk.

Bowman (1979) and other researcher provided theoretical biases for empirical research into the relationship between risk and financial variables. In a theoretical relationship between systematic risk and the corporates leverage and accounting beta, the researcher observed and categorically commented that systematic risk is not a function of earning variability, growth etc. Thopmson (1984) also emphasized that, there remain other possible managerial motives besides risk reduction including growth and other objectives which might be advanced by diversification.

Hypothesis–7: There is no significant difference in diversification index which is expected to have a strong effect on corporate performance.

Diversification strategy is a very important tool used by companies these days to divide their risk by developing a range of products using the concept of asset specificity. Rumelt (1982) has shown an association between diversification strategy and profitability. Tallman and Li (1996), showed a consistent quadratic relationship between product diversification and MNE performance. Thompson R. S. (1984) linked the impact of strategic diversification on a market-based measure of corporate. Stephan M. (2002) studied the relationship between product diversification and concluded that companies looking at the positive impact of unrelated diversification had moved to different

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product gradually. But this change has happened over a period of time. Aleson and Escuer (2002) examined the impact of product diversification on corporate performance. The results indicate that there is a positive correlation between levels of product diversification has and the corporate performance Zhang (2011) from the study also, found a positive relationship between the listed textile corporates' unrelated diversification and their corporate value.

Hypothesis–8: There is no significant difference in capital structure which effect corporate performance.

Ramachandran and Rao (2010) provided empirical evidence on the relationship between industry pricing and capital structure. The researchers analyzed growth in corporate sales and profitability post an industry downturn under different financial structures. This methodology helps mitigate the endogenous nature of capital structure and corporate performance, since it is assumed that the downturn was not anticipated by industry participants. Also, inclusion of lagged values of debt ratio ensures that spurious relation between contemporaneous values of debt ratio and corporate performance is not obtained. It was thus confirmed that corporates which are over-levered compared to the industry median, experience lower sales growth and profitability vis-à-vis a benchmark corporate which assumes industry median characteristics. This lends support to the hypothesis that external financing induces financial fragility that leads to reduction in marketing spending at the time of distress.

V. Research Methodology, Data Presentation & Results

The data for the study is supported a from well known academic data house known as Prowess of CMIE (Centre for Monitoring Indian Economy). The sample for study is a set of 44 companies which diversified during the year 2006-2011 and are listed at BSE and NSE (Bombay and National Stock Exchange) of India. These companies belong to different sectors like manufacturing, construction sector, industry automation sector, refractories / intermediates, automobile sector, cement/agri-business sector, ceramic tiles, chemicals and fertilizers sector, construction sector etc. This classification helped in segmenting sectors uniformly in studying the relationship of the variables in various sectors and to develop the policy framework. The present research work intent and indicates to measure the impact of diversification strategy on capital structure and corporate performance.

a) Variables Description

In line of identification study variables, the dependent variables are capital structure (leverage), systematic risk and corporate performance through structured models know as: (a) Leverage (LEV) Model, (b) Market Risk (β) Model and (c) Corporate Performance Model. The capital structure of the corporate is measured by popular corporate leverage ratio like debt equity ratio or total debt to total assets (TDTA) some of the other ratios are total debt to total assets (TDTA), long-term debt to total assets (LTDTA) and short-term debt to total assets (STDTA) as proxies for capital structure. Further the systematic risk of the companies is measured by calculating the covariance of market movement with respect to that of the stock movement [Cov (Ri, Rm)/Var (Rm)]. The corporate financial performance is price earnings (PE) Ratio measured by market price of common stock / earnings per share, return on assets (ROA), measured by profit after tax / total assets, and return on equity (ROE) measured by profit after tax / no. of shares outstanding.

However, the independent variables are classified as Diversification Index (DI), Corporate Size (SIZ), Profitability (PROF) and Asset Tangibility (AT). The extent of diversification can be measured using various index found in the literature like Herfindahl Index (HI), Entropy Index (EI) etc. based on corporate revenues.

Alonso, E. (2003) discussed the concept of Herfindahl Index (HI) which is defined as the sum of squares of the sales of the corporate by segment as a fraction of total corporate sales. If the corporate has only one segment, Herfindahl Index (HI) is one. According to its steps of construction, Herfindahl Index (HI) falls as the degree of corporate diversification increases. Other independent variable used in the study is profitability measured by EBIT + Depreciation / Total Assets, Onaolapo (2003). In related context other variables - Growth has been calculated by Book Value of Equity + Market Value of Equity / Total Assets whereas; Corporate Size was measured by using natural log of Sales, Hoskisson (1987).

As far as explanatory variables are concerned, dependent and independent variables are linked to test the hypothesis using three models approach through regression as a popular technique in business research domain. In present study, we intent to use fixed effects regression models / equations as listed below:

(a) Leverage (LEV) Model:

$$y_i^L = \Psi_0 + \Psi_1 DI_i + \Psi_2 PROF_i + \Psi_3 GROW_i + \Psi_4 SIZ_i + \Psi_5 AT_i + u_i$$

(b) Market Risk (β) Model:

$$y_i^\beta = \Psi_0 + \Psi_1 DI_i + \Psi_2 LEV_i + \Psi_3 PROF_i + \Psi_4 GROW_i + \Psi_5 SIZ_i + u_i$$

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(c) Corporate Performance (CP) Model:

$$y_i^P = \Psi_0 + \Psi_1 DI_i + \Psi_2 LEV_i + \Psi_3 GROW_i + \Psi_4 SIZ_i + u_i$$

These models are classified and further explained - (a) Leverage Model, (b) Market Risk (β) Model and (c) Corporate Performance Model. It is detailed as follows:

i. *The Leverage (LEV) Model*

The Dependent Variable of the model is Capital Structure (Leverage) is alternatively measured by Total Debt to Total Assets (TDTA), Total Debt to Total Equity (TDTE), Long Term Debt to Total Assets (LTDTA), and Short-Term Debt to Total Assets (STDTA). Independent Variables on the other hand are Diversification, Corporate Profitability, Corporate Growth, Corporate Size, and Corporate Asset Tangibility with Ψ_0, Ψ_1, Ψ_2, Ψ_3, Ψ_4, Ψ_5 as its coefficients which is to be estimated. ui stands for error term in regression equation.

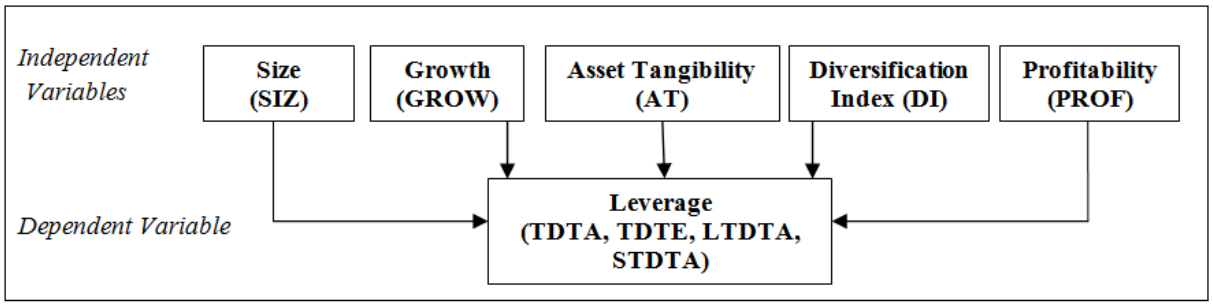

Figure 1 : Model Layout– Relationship b/w other variables and Leverage

ii. *The Market Risk (Beta) Model*

The Dependent Variable of the model is Market Risk value is alternatively given by Systematic Risk i.e. Beta (β). The Independent Variables are Diversification Growth, and Corporate Size with Ψ_0, Ψ_1, Ψ_2, Ψ_3, Ψ_4, Ψ_5 as Index, Leverage, Corporate Profitability, Corporate its coefficients which is to be estimated. ui stands for error term in regression equation.

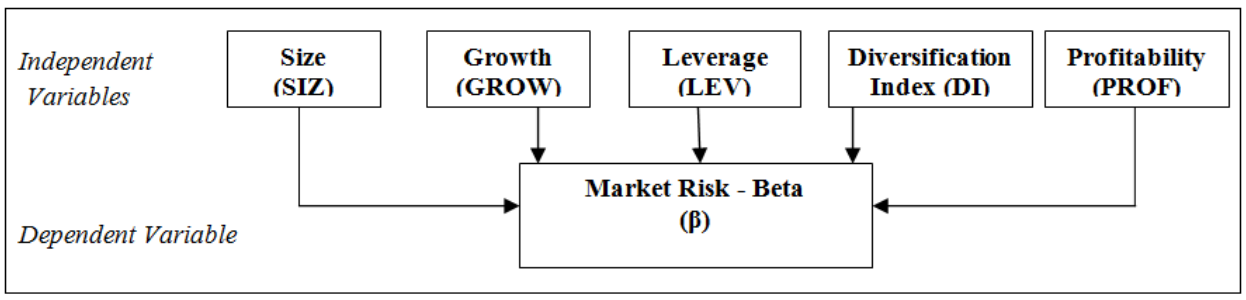

Figure 2 : Model Layout– Relationship b/w other variables and Market Risk (β)

iii. *Corporate Performance (CP) Model*

The Dependent Variable of this model is Corporate performance value is alternatively measured by PE, ROA, ROE. Whereas Independent Variables are Diversification Index, Corporate Leverage, Corporate Growth, Corporate Size with $\Psi_0, \Psi_1, \Psi_2, \Psi_3, \Psi_4$ as its coefficients which is to be estimated. ui stands for error term in regression equation.

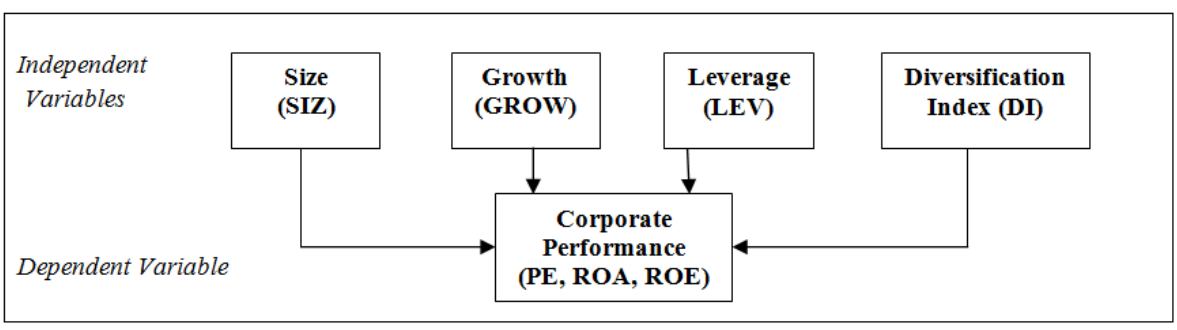

Figure 3 : Model Layout– Relationship b/w other variables and Firm performance

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b) Empirical Results

Research Sample Size and its characteristics: The sample of non-financial firms is taken from CMIE (Prowess) included 44 listed companies in Indian BSE as well as NSE selected on the basis of company segmentation. The sample covers period from 2006 to 2011. Explanatory variables summary statistics shown in Table–1.

Table 1: Explanatory Variables Summary Statistics

Variable	TDTA	TDTE	LTDTA	STDTA	PE	ROA	ROE	PROF	GROW	SIZ	AT	DI	BETA
Mean	0.34	1.63	0.12	0.11	17.37	0.04	6.35	0.13	0.71	3.52	0.34	0.49	0.01
Median	0.35	0.82	0.07	0.08	10.93	0.03	4.27	0.11	0.93	3.51	0.29	0.51	0
Max	0.97	13.3	0.55	0.68	79.7	0.25	27.74	0.33	1	4.9	0.99	0.95	0.05
Min	0	0	0	0	-18.71	-0.1	-17.87	0	0	1.31	0	0	-0.01
Std. Dev.	0.25	2.25	0.15	0.14	21.84	0.05	8.68	0.07	0.42	0.76	0.3	0.23	0.01
Skewness	0.24	3.34	1.32	2.3	1.43	1.2	0.47	1.13	-1.09	-0.34	0.54	-0.37	1.78
Kurtosis	2.21	17.42	3.7	9.24	4.57	7.22	3.98	4.18	2.27	3.27	2.08	2.55	5.94
J-Bera	1.58	463.16	13.72	110.21	19.53	43.3	3.39	12	9.68	1	3.67	1.37	39.13
Probability	0.45	0	0	0	0	0	0.18	0	0.01	0.61	0.16	0.5	0

Manrai et al. (2014) discussed and testified that whether diversification influence systematic risk and corporate performance using TDTA, TDTE, LTDTA, STDTA, PE, ROA, ROE, PROF, GROW, SIZ, AT, DI and BETA. According to Table –1, it reveals that there is a great deal of variation in different conditions how diversification strategy exists and impacted corporate performance. Therefore, the firms mainly expected to diversify and expand are those in marketplace which restrain the corporate growth or profitability and found that beta (*β*), measure of systematic (market) risk, approximated the risk of the market for single businesses and associated diversifiers. The beta for un-associated diversifiers was actually higher than that of the market portfolio.

i. *Model – Correlation Matrix*

The correlation matrix for the variables is indicated in Table–2 in order to investigate the correlation between the explanatory variables for LEV model.

Table 2 : Correlation Matrix– Explanatory Variables for Leverage (LEV) Model

	PROF	AT	GROW	DI
PROF	1			
AT	0.11	1		
GROW	0.05	0.26	1	
DI	0.04	-0.23	0.07	1

In LEV model, the results show that there was a positive relationship between GROW and PROF, GROW and AT. However, relationship between DI with PROF and GROW found positive, wherein DI has negative relation with AT. Table – 3 depict the correlation matrix using explanatory variables to investigates the correlation between variables applicable to Market Risk (β) model.

Table 3: Correlation Matrix– Explanatory Variables for Market Risk (β) Model

	TDTA	TDTE	LTDTA	STDTA	GROW	DI	BETA
TDTA	1						
TDTE	0.40	1					
LTDTA	0.60	0.24	1				
STDTA	0.64	-0.01	0.14	1			
GROW	0.02	-0.09	0.16	-0.13	1		
DI	-0.17	0.20	-0.13	-0.36	0.07	1	
BETA	-0.01	0.17	0.03	-0.15	0.10	-0.26	1

Here, the results signifies positive relationship between TDTE and GROW, LTDTA and GROW, however STDTA and TDTA establishes a negative relation with GROW. According to Table–3, DI has positive relation with LTDTA, TDTA, STDTA but TDTE and GROW has weak relation with DI. Thus, diversification index approach and framework has significant action with LEV model ratios and GROW found weak relation such that diversification is infuriated from growing opportunities to form a bigger markets.

Moreover, the other results shows positive relationship between TDTE and BETA, BETA and GROW, LTDTA, BETA; while BETA has negative association with TDTA, STDTA and DI. It further implied that corporate and firms are not exposed to BETA and having impact on GROW but not reduces its complete corporate performance. There could be other variables are responsible, which are not taken into account of study to measure its impact of explanatory variables. This is a general phenomenon that follows by every company tries to remain in the market without DI strategies failure.

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Table 4 : Correlation Matrix– Explanatory Variables for Corporate performance Model

	TDTA	TDTE	LTDTA	STDTA	GROW	SIZ	DI
TDTA	1						
TDTE	0.40	1					
LTDTA	0.60	0.24	1				
STDTA	0.64	-0.01	0.14	1			
GROW	0.02	-0.09	0.16	-0.13	1		
SIZ	0.04	-0.11	0.12	-0.04	0.28	1	
DI	-0.17	0.20	-0.13	-0.36	0.07	0.43	1

The correlation matrix for the variables is outlined in Table–4. It shows different correlations between the explanatory variables responsible for corporate performance model. TDTA having a positive relation with TDTE, LTDTA, STDTA, GROW and SIZ but negative with DI. TDTE has positive influence on LTDTA and DI; negative influence on other STDTA, GROW and SIZ. LTDTA establishes positive relation with STDTA, GROW and SIZ; negative with DI. However, GROW, SIZ and DI having negative association with STDTA. Other important variable GROW having a positive relationship with SIZ and DI. Subsequently, SIZ and DI found to be positively correlated. In conclusion, supporting variables of LEV - TDTE, LTDTA, STDTA and TDTA, DI, GROW and SIZ are majority in positive correlation. Thus, corporate size having a strong relation with corporate growth, wherein diversification generate increase in variety and/or segmentation of corporate when its size increases to take competitive advantage in growing market.

a. *Regression Analysis*

The following segment discusses the empirical results of the regression analysis using method - Least Square (LS) for 44 observations on case to case basis considering dependent and independent variable combinations applicable to different models (a), (b) and (c) as shown in Table–5 for (a) Leverage Model.

ii. *Model (a): The Leverage (LEV) Model*

Table 5 : Estimate Results for LEV Model

	TDTA	TDTE	LTDTA	STDTA
Constant	0.30	3.75	0.09	0.10
PROF	-0.62	-10.31	-0.64	0.12
t-Statistics	-1.33	-2.19	-2.02	0.48
Prob.	0.19	0.03	0.05	0.63
GROWTH	-0.09	-0.47	0.02	-0.09
t-Statistics	-1.09	-0.57	0.42	-2.00
Prob.	0.28	0.57	0.68	0.05
AT	0.57	2.15	0.18	0.22
t-Statistics	4.83	1.81	2.22	3.43
Prob.	0.00	0.08	0.03	0.00
DI	0.00	-4.09	0.05	0.16
t-Statistics	-0.02	-2.49	0.47	1.83
Prob.	0.98	0.02	0.64	0.07
No. Observations	44	44	44	44
R-squared	0.41	0.23	0.23	0.38
Adjusted R - squared	0.34	0.13	0.13	0.29
S.E. of regression	0.21	2.10	0.14	0.11
Sum squared residual	1.62	167.02	0.76	0.50
Log likelihood (LL)	10.15	-91.78	26.98	3607503.00
Akaike info criterion (AIC)	-0.19	4.44	-0.95	-1.37
Schwarz criterion (SC)	0.05	4.69	-0.71	-1.12
Hannan-Quinn criterion (HQC)	-0.10	4.53	-0.86	-1.28
Durbin-Watson stat (DW)	1.81	2.22	2.51	2.06

** p value < 0.05 significance level*

According to Table–5, the positive square root of R^2, namely R, is the coefficient of multiple correlations between all independent variables with the dependent variable. Furthermore, for independent (exogenous) variable in which arbitrary external conditions and in achieving a more realistic model behavior, then R^2 will be reduced to the coefficient of simple determination, namely r^2, and r is a bivariate (simple) coefficient of correlation with $-1 \leq r \leq +1$. The adjusted R-squared value is never larger than R2, can decrease as

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independent variables are added and, for poorly fitting models, it may be negative. However, t-statistic will be used to test the adjusted effect of an independent variable on the corresponding dependent (endogenous) variable. Note that the t-statistic presented in the output can also be used to test the one-sided hypothesis. Finally, the log likelihood (LL) function is maximized with respect to other variable used in OLS regression. Hence, the GLS estimate is also the maximum likelihood estimate where, STDTA, LTDTA and TDTA are positive and TDTE is negative. The Akaike Information Criterion (AIC) is used in model selection for nonnested alternatives, with smaller values of AIC preferred. The Schwarz Criterion (SC) is an alternative to the AIC and imposes a larger penalty for an additional coefficient. Two models are considered as nonnested models if and only if the set of independent variables of the first model is not the subset or upper set of the other model. The Durbin-Watson (DW) statistic = 2.51 in case of LTDTA, which indicates that this model is better than the other variables. The Hannan-Quinn Criterion (HQC) is preferred in case of TDTE out of TDTA, LTDTA and STDTA in a statistical sense, under the assumption that they are non-nested models, since they have the same independent variable.

Hypothesis 1: There is no significant difference in diversification index which is expected to have a strong effect on capital structure.

From the regression results in Table–6, the coefficient of diversification index variable was negatively and positively significantly related to TDTA, TDTE and LTDTA, STDTA respectively. The types of assets by a corporate helps to control their financial decisions, however it is promising to set up a relationship between capital structure and the diversification strategy of a corporate through dealings. Results also show that the financial leverage of international corporate decreases with their diversification level. Besides, international companies like MNCs with a top level of international and product diversification countenance inferior stages of default risk. Corporate following both types of diversification have upper level of profitability and productivity than the international companies pursuing a single diversification strategy.

Thus, it is concluded that the two types of diversification complement one another is generating debt utility, although individually they may be negatively related to corporate leverage. Therefore, based on the statistical result and inference, Hypothesis–1 is accepted where the diversification index has a strong effect on capital structure.

Hypothesis 2: There is no significant difference in corporate profitability, which has a strong correlation with corporate capital structure.

Four capital structure variables were used, TDTA, TDTE, LTDTA and STDTA. From the regression results in Table–5, the coefficient of profitability variable was negatively related to TDTA, TDTE and LTDTA and significantly related to STDTA. This result was contrary to the predictions of trade-off theory but consistent with the pecking order theory. According to this theory, companies prioritized their sources of financing (from internal financing to equity) according to the law of least effort or of least resistance, preferring to raise equity as a financing means of last resort. Hence, internal funds were used first and when that was depleted, debt was issued and when it was not sensible to issue any more debt, equity was issued. Jensen (1986) predicted that if the market of corporate control was effective, the relationship between profitability and leverage was positive. If it was ineffective, however, mangers of profitable firms prefer to avoid the disciplinary role or debt, which would lead to a negative correlation between profitability and debt. Finally, the result indicated that corporate control of international firms was ineffective and the profitability was negatively correlated with leverage. If in the short run, dividends and investments were fixed and if debt financing was the dominant mode of external financing, then changed in profitability would be negatively correlated with changes in leverage. Therefore, based on the statistical result and inference, rejection of Hypothesis–2 is valid as the firm profitability has a positive correlation with firm capital structure.

Hypothesis 3: There is no significant difference in growth opportunities which decreases corporate leverage.

Hypothesis–3 predicts that growth opportunities decrease firm leverage. From the regression results in Table–5, the coefficient of growth opportunities was negatively and insignificantly related to TDTA, TDTE and STDTA. However, growth opportunities was positively and significantly correlation with LTDTA, while the coefficient of growth opportunities was found to be positively related to LTDTA, but statistically insignificant. These findings were contradictory with the research done by Myers (1977) and predicted that International firms with expected growth opportunities would maintain low short-term debt levels, but the growth opportunities also put pressure on retained earnings and pushed International firms into borrowing long-term debt. According to the result above, Hypothesis–3 is accepted that growth opportunities decrease firm leverage.

Hypothesis 4: There is no significant difference in asset tangibility which has a strong correlation with corporate capital structure.

Hypothesis–4 predicted that asset tangibility is expected to be positively related to corporate leverage. From the regression results in Table–5, the coefficient of assets tangibility was positive and significantly related to none of variables. This result showed that if corporate tangible assets were large, the ratio of short-term debt to total assets would be lower. However, the asset

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tangibility had positive and significant impact on all variables – TDTA, TDTE, LTDTA and STDTA, but was insignificantly related to none of variables. This findings was consistent with Rajan and Zingales (1995), Margaritis and Psillaki (2007). They argued that if a large fraction of a firm's assets are tangible, then assets should serve as collateral, diminishing the risk of the lender suffering the agency costs of debt (like risk shifting). They should also retain more value in liquidation. Therefore, the greater the proportion of tangible assets on the balance sheet (fixed assets divided by total assets), the more willing should lenders be to supply loans, and leverage should be higher. So, the result of regression model showed that International companies had high ratio of fixed assets to total assets would use more long-term debt as a main source of financing. Therefore, based on the result, Hypothesis–4 is accepted: asset tangibility is expected to be positively related to corporate leverage.

iii. *Model (b): The Market Risk (Beta) Model*

Table 6 : Estimate Results for Beta Model

	TDTA	TDTE	LTDTA	STDTA
Constant	0.00	0.00	0.00	0.00
TDTA	0.00	0.00	0.01	-0.01
t-Statistics	0.23	0.92	0.40	-0.37
Prob.	0.82	0.36	0.69	0.71
PROF	0.01	0.01	0.01	0.01
t-Statistics	0.24	0.48	0.31	0.26
Prob.	0.81	0.63	0.76	0.80
GROWTH	0.002480	0.002593	0.002204	0.002170
t-Statistics	0.52	0.55	0.46	0.45
Prob.	0.61	0.59	0.65	0.66
SIZE	0.00	0.00	0.00	0.00
t-Statistics	-0.15	0.09	-0.18	-0.05
Prob.	0.88	0.93	0.86	0.96
DI	0.014558	0.011454	0.014815	0.012607
t-Statistics	1.53	1.19	1.56	1.24
Prob.	0.13	0.24	0.13	0.22
No. Observations	44	44	44	44
R-squared	0.08	0.10	0.08	0.08
Adjusted R-squared	-0.04	-0.02	-0.04	-0.04
S.E. of regression		0.01	0.01	0.01
Sum squared residual	0.01	0.01	0.01	0.01
Log likelihood	0.01	133.90	133.51	133.50
F-statistic	133.45	0.80	0.66	0.65
Prob (F-statistic)	0.63	0.55	0.66	0.66
Mean dependent var	0.67	0.01	0.01	0.01
S.D. dependent var	0.01	0.01	0.01	0.01
Akaike info criterion	0.01	-5.81	-5.80	-5.80
Schwarz criterion	-5.79	-5.57	-5.55	-5.55
Hannan-Quinn criterion	-5.55	-5.72	-5.71	-5.71
Durbin-Watson stat	-5.70	1.90	1.87	1.79

** p value < 0.05 significance level*

In above Table–6, concept of R^2 and adjusted R-squared etc are similar to previous section discussed in Leverage Model having usual meaning and value interpreted in BETA model. Hence, the LS estimate is also the maximum likelihood estimate where, TDTE, LTDTA and STDTA are positive and found same value equal to133 and TDTA= 0.01, which significantly less as compared to other variables. The different criterion like AIC and SC have weak relationship mostly in negative value with respect to TDTA, TDTE, LTDTA and STDTA. The Durbin-Watson (DW) statistic = 1.90 in case of TDTE, which indicates that this model is better than the other variables and poorest is TDTA = -5.70. The Hannan-Quinn Criterion (HQC) found negative and having similar value equal to -5 where, TDTA is preferred in case out of TDTE, LTDTA and STDTA in a statistical output, under the assumption that they are non-nested models, since they have the same independent variable.

Hypothesis–5: There is no significant difference in diversification index which is expected to have no effect on systematic risk.

Here, Table–6 depict the relationship between systematic risk beta and other variables in different measures of capital structure. For capital structure measured by TDTA the relationship between beta and

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diversification index is 0.014558 which is maximum among the four groups. This clearly states that as the corporate diversifies i.e. the corporate following the product diversification strategy tends to increase their systematic risk while increasing their profits marginally. Similarly for capital structure measured by TDTE relationship between beta and diversification index is 0.011454 which is expected. In case of LDTA the value reflected by the table is 0.014815 and in case of STDTA the value is 0.012607, this signifying that product diversified corporate, which increase their long term debt decrease their systematic risk significantly. The effects on adjusted beta of the diversification strategy of conglomerate corporate are partially negated by the greater risk inherent in their use of increased debt. This leads to a conclusion that there exist a positive relationship between diversification index and systematic risk, thus accepting hypothesis–5 that there is a positive relationship between systematic risk and diversification index.

Hypothesis–6: There is no significant difference in the growth opportunities which decreases corporate systematic risk.

The Table–6 describes the relationship between systematic risk beta and corporate growth in different measures of capital structure. The values obtained in case of TDTA, TDTE, LTDTA and STDTA are 0.002480, 0.002593, 0.002204 and 0.002170 respectively. There is a very week or negligible relationship between systematic risk of the firm measured by beta and growth opportunities of corporate. Only in case of Long term debt to total assets i.e. LTDTA the value is slightly higher but in other cases the value is very insignificant. An important thing to be observed here is all the values of the table are positive, which means that there is a positive relationship between systematic risk and growth of a corporate, i.e. on increase in systematic risk the growth opportunities of the firm increases. Thus not accepting hypothesis–6 that the growth opportunities decreases with corporate systematic risk.

iv. *Model (c): Corporate Performance (CP) Model*

Table 7 : Estimate Results for CP Model using TDTA

	PE	ROA	ROE
Constant	1.90	0.04	-8.23
TDTA	-9.48	0.02	0.06
t-Statistics	-0.69	0.64	0.01
Prob.	0.49	0.53	0.99
GROWTH	4.05	0.00	4.72
t-Statistics	0.47	0.23	1.49
Prob.	0.64	0.82	0.15
SIZE	4.33	0.00	3.03
t-Statistics	0.83	0.18	1.56
Prob.	0.41	0.85	0.13
DI	1.27	-0.03	1.15
t-Statistics	0.08	-0.76	0.18
Prob.	0.94	0.45	0.86
No. Observations	44	44	44
R-squared	0.05	0.03	0.1655
Adjusted R-squared	-0.05	-0.0666	0.0799
S.E. of regression	22.36	0.06	8.32
Sum squared residual	19505.43	0.12	2702.21
Log likelihood	-196.51	66.59	-153.02
F-statistic	0.50	0.33	1.93
Prob (F-statistic)	0.74	0.86	0.12
Mean dependent var	17.37	0.04	6.35
S.D. dependent var	21.84	0.05	8.68
Akaike info criterion	9.16	-2.80	7.18
Schwarz criterion	9.36	-2.60	7.39
Hannan-Quinn criterion	9.23	-2.72	7.26
Durbin-Watson stat	2.08	1.90	1.88

** p value < 0.05 significance level*

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Table 8 : Estimate Results for Corporate Performance Model using TDTE

	PE	ROA	ROE
Constant	-0.75	0.04	-7.12
TDTE	-0.10	0.00	-0.40
t-Statistics	-0.06	-0.17	-0.69
Prob.	0.95	0.86	0.50
GROWTH	4.05	0.00	4.63
t-Statistics	0.47	0.22	1.46
Prob.	0.64	0.83	0.15
SIZE	3.83	0.00	2.76
t-Statistics	0.72	0.22	1.41
Prob.	0.48	0.83	0.17
DI	3.97	-0.04	2.32
t-Statistics	0.23	-0.82	0.36
Prob.	0.82	0.42	0.72
No. Observations	44	44	44
R-squared	0.04	0.02	0.1754
Adjusted R-squared	-0.06	-0.0769	0.0909
S.E. of regression	22.50	0.06	8.27
Sum squared residual	19741.11	0.13	2670.05
Log likelihood	-196.77	66.38	-152.76
F-statistic	0.38	0.23	2.08
Prob (F-statistic)	0.82	0.92	0.10
Mean dependent var	17.37	0.04	6.35
S.D. dependent var	21.84	0.05	8.68
Akaike info criterion	9.17	-2.79	7.17
Schwarz criterion	9.37	-2.59	7.37
Hannan-Quinn criterion	9.25	-2.71	7.25
Durbin-Watson stat	2.04	1.89	1.86

** p value < 0.05 significance level*

Table 9 : Estimate Results for Corporate Performance Model using LTDTA

	PE	ROA	ROE
Constant	-1.09	0.04	-8.00
LTDTA	1.94	-0.09	-5.93
t-Statistics	0.08	-1.49	-0.69
Prob.	0.93	0.14	0.50
GROWTH	3.98	0.01	4.99
t-Statistics	0.46	0.41	1.57
Prob.	0.65	0.68	0.12
SIZE	3.83	0.01	3.24
t-Statistics	0.73	0.50	1.67
Prob.	0.47	0.62	0.10
DI	-3.95	0.05	-0.29
t-Statistics	-0.23	1.20	-0.05
Prob.	0.82	0.24	0.96
No. Observations	44	44	44
R-squared	0.04	0.08	0.1754
Adjusted R-squared	-0.06	-0.0197	0.0909
S.E. of regression	22.50	0.06	8.27
Sum squared residual	19739.54	0.12	2670.02
Log likelihood	-196.77	67.58	-152.76
F-statistic	0.38	0.79	2.08
Prob (F-statistic)	0.82	0.54	0.10
Mean dependent var	17.37	0.04	6.35
S.D. dependent var	21.84	0.05	8.68
Akaike info criterion	9.17	-2.84	7.17
Schwarz criterion	9.37	-2.64	7.37

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Hannan-Quinn criterion	9.25	-2.77	7.25
Durbin-Watson stat	2.03	1.92	1.84

** p value < 0.05 significance level*

Table 10 : Estimate Results for Corporate Performance Model using STDTA

	PE	ROA	ROE
Constant	-2.21	0.03	-6.40
STDTA	7.96	0.06	-12.11
t-Statistics	0.29	0.94	-1.21
Prob.	0.77	0.35	0.23
GROWTH	4.49	0.01	4.09
t-Statistics	0.52	0.38	1.29
Prob.	0.61	0.71	0.20
SIZE	3.62	0.00	3.46
t-Statistics	0.68	0.09	1.80
Prob.	0.50	0.93	0.08
DI	5.74	-0.02	-2.00
t-Statistics	0.32	-0.47	-0.30
Prob.	0.75	0.64	0.76
No. Observations	44	44	44
R-squared	0.04	0.04	0.1956
Adjusted R-squared	-0.06	-0.0539	0.1131
S.E. of regression	22.48	0.06	8.17
Sum squared residual	19700.77	0.12	2604.69
Log likelihood	-196.73	66.86	-152.21
F-statistic	0.40	0.45	2.37
Prob (F-statistic)	0.81	0.77	0.07
Mean dependent var	17.37	0.04	6.35
S.D. dependent var	21.84	0.05	8.68
Akaike info criterion	9.17	-2.81	7.15
Schwarz criterion	9.37	-2.61	7.35
Hannan-Quinn criterion	9.24	-2.74	7.22
Durbin-Watson stat	2.00	1.83	1.78

** p value < 0.05 significance level*

From regression results in Table–7 to 10, the coefficient of TDTE was insignificantly and negatively related to PE, ROA and ROE while coefficient of TDTA, were insignificantly and positively related to ROA, ROE; coefficient of LTDTA were insignificantly and positively related to PE; and coefficient of STDTA positively and insignificantly related to PE and ROA. The R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA to test the relationship between capital structure and PE were 4.86%, 3.71%, 3.72%, 3.90%, respectively and the Adjusted R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA were -4.89%, -6.16%, -6.15%, -5.94%, respectively.

The low R-squared and adjusted R-squared value showed that PE variable was not suitable to measure the relationship between capital structure and firm market performance. Hence, it's obvious and excluded the regression model using PE from the analysis. The reason for the insignificance of PE could be that the share price did not reflect the actual situation for the firm. There might be other factors affecting a firm market performance other than the variable used in the study. Another reason could be that most investors still depended on the accounting measure of performance rather than the PE measure due to the investor favored payment of dividends or the inactivity of the stock market. Furthermore, including some firms in our sample that had negative PE affects the validity of the PE as a measure of performance.

The results of the estimation of the corporate performance model made the ROA and ROE the most powerful measures of performance in International firm case, because the R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA to test the relationship between capital structure and ROA were 3.26%, 2.32%, 7.50%, 4.11%, respectively and the Adjusted R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA were -6.66%, -7.69%, -1.97%, -5.39%, respectively. Similarly, The R-squared value of the corporate performance model using TDTA, TDTE, LTDTA, STDTA to test the relationship between capital structure and ROE were 16.55%, 17.54%, 17.54%, 19.56%, respectively and the Adjusted R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA were 7.99%, 9.09%, 9.09%, 11.31%, respectively.

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Hypothesis–7: There is no significant difference in diversification index which is expected to have a strong effect on corporate performance.

This hypothesis predicted that diversification index which has strong effect on corporate performance. From the combined results in Table–7 to 10, as expected that coefficient of TDTA; TDTE; LTDTA; STDTA were significantly and negatively related to corporate performance measures like PE; PE, ROE; ROA, ROE and PE, ROE respectively. This result showed that diversification index has positive relation of corporate performance due to integrated opportunities for import intensive business groups with upcoming growth policies. Internationally, it is also largely observed in the empirical literatures, that corporate with larger base of international exposure have better performance than the ones with lesser exposure. It is often pointed out that these markets suffer from a scarcity of well-trained manpower. However, fact remains constant in India that country has one of the largest pools of the skilled and unemployed manpower. Hence, it is clear that it is better to look at the performance of the corporate as a whole rather than look at affiliate-level performance for small business groups, which might reveal distorted results. Therefore, Hypothesis–7 is accepted: diversification index which has strong effect on corporate performance.

Hypothesis–8: There is no significant difference in capital structure which effect corporate performance.

Hypothesis 8 predicted that a corporate capital structure which effect corporate performance. From the regression results in Table– 7 to 10, as expected the coefficient of TDTA; TDTE; LTDTA; STDTA were significantly and negatively related to the performance measures like PE; PE, ROA and ROE; ROA and ROE; ROE respectively. For example, the LDTA was significantly and negatively related to ROA and ROE. This result showed that higher long-term debt lead to lower ROA and ROE.

Moreover, it might present support for the proposition that due to outfit divergence, companies over-leveraged themselves, thus affecting their performance negatively. Here, present study results were consistent with the findings of other previous studies conducted by Moyer and Krishnan (1997), Zeitun and Tian (2007). The negative and significant coefficient of LTDTA did not support Ravids's and Brick (1985) disagreement that long-term debt increased a corporate value, which could be due to the low ratio of long-term debt in the capital structure of International companies. According to the results, Hypothesis 8 is accepted wherein a corporate capital structure; which effect its corporate performance.

To summarize, the corporate capital structure was a significant determinant of corporate performance. A corporate leverage had positive and significant effect on corporate value PE, ROA and ROE. The significance of the corporate performance measure PE, ROA and ROE indicated that the International equity market was efficient, so the best corporate performance measure was all. Corporate growth opportunities had a positive and significant impact on the corporate value PE. Furthermore, firm size had also a positive impact on corporate value. This finding was further support the argument that bankruptcy costs increased with size, as well as economies of scale in transactions costs associated with short-term debt that were available to smaller corporate.

VI. Conclusion

The paper investigates and measures the effect of product diversification strategy on capital structure and corporate performance, in Indian context. The study considers non-financial companies listed in National and Bombay Stock Exchange (NSE and BSE) for determining the relationship between significant variables like corporate growth, size, asset tangibility and profitability. Using multiple linear regressions as a tool for analysis, it can be concluded that diversification strategy have a statistically strong and positive relationship with corporate leverage. Similarly corporate performance and increase in asset tangibility reflects a strong and positive relationship with corporate capital structure. Growth opportunities on the other hand have a weak relationship with leverage and it is found that it tends to decreases firm leverage. Hence, it can be found out from the discussion that companies opting for product diversification strategies proved to be more profitable and hence also increase their tangible assets. Systematic risk and diversification strategy also have a positive relationship but again share a statistically weak or negligible relationship with corporate growth. Although diversification reduces the corporate operating risk, the systematic risk is basically unchanged because the corporate increases its financial leverage to take advantage of larger tax deductions of interest expense. Since there is minimal effect of systematic risk due to diversification, the corporate cost of capital remains indifferent.

Diversification strategy as well as leverage is found to have a positive relationship with corporate performance and that corporate capital structures have a significant impact on corporate value creation. . If the diversification can help reducing the systematic risk it would be helpful to all the Indian companies to manage their systematic risk as well as the cost of capital, thus increasing their profitability.

VII. Suggestions for Future Research

Even though researchers have acknowledged some useful results, there are some important dimen-

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sions into which this study could be further extended. Future research could also obtain corporate descriptions in larger way. Use of important ratios reflecting the financial corporate performance like Tobin's Q, Entropy Index (EI), Uttons Index (UI) etc to measure diversification index could be used to draw more meaningful and comprehensive results. Due to elusive nature of research, there is difficulty in pursuing such lines of research specifically in its implementation. Most of the studies discussing the effect of diversification strategy on performance and other variables have concluded on confirmatory analysis. Very few studies have dealt with the implementation perspective. On this issue, this research area has received criticism globally. Therefore the researchers suggest that if this weakness is addressed aptly, this research could be a breakthrough for Indian companies for achieving sustainable growth.

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Significance of Exponential uses of Mobile Financial Services (MFS) in Bangladesh

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Abstract- The financial services delivered via mobile networks that performed through mobile phone or personal digital assistance allows customers to conduct a number of financial transactions without the access to traditional banks. The study explores the trend of the uses of Mobile Financial Services as a new service offered by the commercial banks in Bangladesh with its competitive market position through the utilizations of the both method of qualitative and quantitative techniques. MFS has started its work gradually from 2011 in Bangladesh. The research found that though MFS is a first-hand but has upwards trends in demand especially to the students with the limited age groups and incomes. Most of the transactions are made from the big cities like capital and metropolitan cities. It was observed that the MFS contributes in profits of the banks. The research also found that though the customers are satisfied about getting money through MFS but insecurity also can arises due to the networking problems, telecommunic-ations services and unconsciousness of the agents.

Keywords: e banking, mobile financial service (MFS), customers demand, mobile banking, bkash, technology.

GJMBR-C Classification : JEL Code: G00

SIGNIFICANCEOFEXPONENTIALUSESOFMOBILEFINANCIALSERVICESMFSINBANGLADESH

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Significance of Exponential uses of Mobile Financial Services (MFS) in Bangladesh

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Abstract- The financial services delivered via mobile networks that performed through mobile phone or personal digital assistance allows customers to conduct a number of financial transactions without the access to traditional banks. The study explores the trend of the uses of Mobile Financial Services as a new service offered by the commercial banks in Bangladesh with its competitive market position through the utilizations of the both method of qualitative and quantitative techniques. MFS has started its work gradually from 2011 in Bangladesh. The research found that though MFS is a first-hand but has upwards trends in demand especially to the students with the limited age groups and incomes. Most of the transactions are made from the big cities like capital and metropolitan cities. It was observed that the MFS contributes in profits of the banks. The research also found that though the customers are satisfied about getting money through MFS but insecurity also can arises due to the networking problems, telecommunications services and unconsciousness of the agents. At the same time the research suggests that as MFS has great potentiality and demand in all respects whatever it is in money transactions or employment scope in Bangladesh, so with the joint collaboration of the MFS providers banks and telecommunications company if they implement the strategies to overcome the users limitations in the common groups of people and can provide the transactions in more secured way then MFS will play a significance role to generate profit for commercial banks in Bangladesh.

Keywords: e banking, mobile financial service (MFS), customers demand, mobile banking, bkash, technology.

I. Introduction and Historical Evaluation of MFS

E-business has been continuously growing as a new industry during the last decade (Van Hoeck, 2001). The banking industry has been leading this trend in recent years, and now all banking transactions completing through internet applications is sometimes called e-banking (Boss et al., 2000; Smith, 2006; Hwang et al., 2007; Shin, 2008). E-banking relies heavily on information and communication technologies (ICT) to achieve its promise of 24 hours availability, low error rates, and quicker delivery of financial services. When considering e-banking, bank websites usually come to mind first, but e-banking requires much more than just a good website. It needs back end applications such as account systems, support applications such as Customer Relationship Management (CRM systems), communication technologies to link e-banking to the payment systems such as LINK, and middleware to integrate all these often different type of systems.(Shah & Clarke,2009). Consumers are attracted to these technologies because of convenience, increasing ease of use, and in some instances cost savings (Anguelov et al., 2004). E-banking has been viewed as an upgrading from previous electronic delivery systems to open new business opportunities for the banking industry (Ebling, 2001).

In modern age Mobile Banking or M- Payment is the appreciable technological services of the commercial banks through which customers can get different banking services like checking account balances, fund transferring, receiving alert, pay bills, deposits and withdraw money and so on with the support of telecommunication devices and personal digital assistance. The Cellular telephone (commonly "mobile phone" or "cell phone" or "hand phone") is a long-range, portable electronic device used for mobile communication. (www.wikipedia.com).The telecommunications industry worldwide has scrambled to bring what is available to networked computers to mobile devices (Schofield & Kubin 2002).

In broad sense different types of hand held devices and movable objects that provide mobile banking services can be considered as mobile financial services. In this respect Automated Taller Machine (ATM), Online Banking, Debit or Credit card can also be considered as mobile banking services. But mobile banking services generally refers to the financial services delivered via Mobile networks and performed on a mobile phone or personal digital assistance that allows customers of a financial institutions to conduct a number of financial transactions.

The introduction of mobile banking (m-banking) services in both high and low-income countries has revolutionized traditional notions of 'banking' in low-income countries in particular m-banking is regarded as an opportunity to bring financial services to the unbanked poor who are not a profitable target for commercial banks. The promise of m-banking lies in the fact that access to these services requires no more than access to a widely available and inexpensive technology such as mobile telephony, even for poor uneducated individuals who are typically marginalized by traditional banking providers. This promise has been materialized most successfully in Kenya, where Safaricom's M-PESA started in March 2007 and, by September of 2009, over

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8.5 million Kenyans had registered to use the service and US$3.7 billion (10 percent of Kenya's GDP) had been transferred over the system. This policy brief describes the current international experience regulating the provision of m-banking services. (www.theigc.org)

The spread of mobile phones across the developing world is one of the most remarkable technology stories of the past decade. Buoyed by prepaid cards and inexpensive handsets, hundreds of millions of first-time telephone owners have made voice calls and text messages part of their daily lives. However, many of these same new mobile users live in informal and/or cash economies, without access to financial services that others take for granted. Indeed, across the developing world, there are probably more people with mobile handsets than with bank accounts (Porteous, 2006). Various initiatives use mobile phones to provide financial services to "the unbanked." These services take a variety of forms—including long-distance remittances, micropayments, and informal airtime bartering schemes—and go by various names, including mobile banking, mobile transfers, and mobile payments. Taken together, they are no longer merely pilots; in the Philippines, South Africa, Kenya, and elsewhere, these services are broadly available and increasingly popular.

Across the developing countries, millions of people rely on informal economic activity and local level networks to earn their living. Most of these populations are from bottom of pyramid and they don't have access to basic financial services/banks as access to them is costly and very limited. However, the outstanding growth of mobile sector worldwide has created a unique opportunity to provide social and financial services over the mobile network. With over 4 billion mobile cellular subscriptions worldwide, mobile network has the ability to immediately offer mobile banking to 61% of the world population (Sultana, 2009).

It is now a burning issue in banking services. It is a systematic set of process that enable bank customers to have bank services through mobile phone starting from a simple mobile handset to personal digital assistance. Now a day mobile banking services has increasingly becomes necessary components of doing business and implementing business strategy for economic development.

Some banks are making significant investments in mobile systems to deliver a range of types of business value, from increased efficiency and cost reduction, to improved operational effectiveness and customer service to provide a competitive advantage. A factor that has contributed to this development has been the extended availability and capacity of mobile communications infrastructure around the world. The number of types of mobile devices has been increasing rapidly and the functionality available has also improved. The shrinking costs of data transmission and, due to the intense competition from suppliers, the reduced costs of devices have catalyzed the distribution of mobile technologies and amplified the growth of the worldwide mobile market. In those countries where traditional telecommunication infrastructure is not well developed, mobile technologies is transforming accessibility to the Internet based services. Mobile banking may be described as the newest channel in electronic banking to provide a convenient way of performing banking transaction using mobile phones or other mobile devices. The potential for mobile banking may be far greater than typical desk-top access, as there are several times more mobile phone users than online PC users. Increasingly "mobile life styles" may also fuel the growth of anywhere, anytime applications. (Shah & Clarke, 2009)

Low fees, less time consumption, privacy, freedom from time and place and easy communication are the variables that determinants tend of the using technology. Mobile phone has faced some greater influence of inhibitors in using mobile for banking purpose, perceived credibility and security issues (Luarn and Lin, 2005). Mobile banking isn't as fully functional as online banking. We offer things you can do every day, such as looking at account activity and paying bills. (Thomas Trebilcock, vice president of e-business and payments at PNC Bank.) Mobile wallet usage has struggled in the mainstream primarily due to concerns around security, technologies and confusion over what is a mobile wallet exactly. The key to mobile wallet growth will be adding value to both consumers and merchants while addressing concerns around fraud and security. Convenience features such as making it easier to organize consumer loyalty programs, location based offers, the ability to skip long checkout lines and rewards for using mobile will begin to spur user adoption. (Bob Graham, 2014)

Mobile banking is gaining ground among the people in Bangladesh within a short span of time for facilitating its easy transaction services. Some 3.0 million people make now the use of different services under mobile banking. There are about 70,000 outlets of mobile banking service-providers, making the services available to the users. The government, in tandem with the country's central bank, is giving a greater focus now than ever before on supportive efforts to bring a large number of people under the banking channel by using mobile banking service as only a quarter of the country's population has now access to the formal banking sector. (http://www.thefinancialexpress-bd.com/old/index)

Santus et.al (2011) in their study "The Dimensions Affecting the Adoption of Mobile Banking in Bangladesh" have shown that some factors make the adoption of mobile banking service easy for the customers and those are convenience, cost, security, confidentiality, handset operability, procedure and knowledge, network.

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The central bank issued guidelines on "Mobile Financial Services for Banks" in September 2011 clearly stating a choice to make the market bank-led. It has provided 10 licenses to banks to offer the full range of mobile financial services. (http://www.cgap.org/blog/growth-mobile-financial-services-bangladesers.) The guidelines on mobile financial services for the banks were amended by the Bangladesh Bank with the directive issued in December, 2011 to all banks to follow the same. (http://www.thefinancialexpress-bd.com/old/index) Bangladesh Bank has fixed the transaction limit for the account holders of mobile financial services at maximum Tk. 10,000 daily and a total of Tk. 25,000 on monthly basis vide DCMPS Circular No. - 10/2011 December 14, 2011. (http://www.bb.org.bd) .The limit is applicable for any number of transactions The Bangladesh Telecommunication Regulatory Commission (BTRC) has set the charge at 2.0 per cent for each transaction for 'cash-in' and 'cash-out' purposes and Tk 5.0 for the lowest amount of transactions for mobile banking. Among the mobile banking service-providers, 'bKash' has set its charge at 1.85 per cent for remitting money, Dutch-Bangla Bank, at 2.0 per cent and Islami Bank, at 1.5 per cent, under mobile banking services. The transaction limit is Tk 25,000 per day by one person.

The Brac Bank-initiated mobile banking service, 'bKash', is at present the country's leading service-provider in mobile banking. Dutch-Bangla Bank and Islami Bank Cash are next in line, after 'bKash', as the service-providers in mobile banking, in terms of volume of transactions, clientele coverage and number of personnel, directly or indirectly, involved in the process of making such services available to the people. (http://www.thefinancialexpress-bd.com/old/index)

The mobile financial services market is at an early stage of development as providers are working to stabilize their technology build agent networks and acquire new customers. This involves finding and training agents, marketing, helping customers transact and acquiring customers by using know-your-customer (KYC) and account opening processes. A survey conducted by Bangladesh's central bank found that the new services are reaching multiple parts of Bangladesh and that most clients and agents express cautious optimism about mobile financial services being valuable to them. These developments offer promising signs that mobile financial services could develop in time. Bangladesh has a large population in a small geography. It is also home to one of the most deeply penetrated microfinance markets. Indeed, Bangladesh's overall access to accounts for adults of nearly 40% is higher than South Asia's average of 33% and the global low-income country average of 27% (source). Nevertheless, most banks, mobile operators and microfinance institutions agree that mobile financial services are likely to focus initially on domestic person-to-person transfers that are very scarce among formal provide. Bangladesh Bank's aim is to ensure that the market develops with several providers, and diverse technologies are tested and used, different kinds of agent networks deployed, and a range of products available so that the consumer is empowered with a full range of choices. It is an exciting time in Bangladesh for mobile financial services and much will be learned in the coming months. (http://www.cgap.org/blog/growth-mobile-financial-services-bangladesers

II. Objectives of the Study

The basic objective of this study is to specifically focus on the exponential trend for the uses of Mobile Financial Services (MFS) in Bangladesh and also to evaluate the competitive market position of Mobile banking services provider commercial banks with the customer demand. Finally the objectives include findings out some scopes for further research in this field.

III. Methodology

This research includes both qualitative and quantitative techniques and collected data were classified in primary and secondary sources. Primary data were collected through field level study and a questionnaire with pertinent questions to analyze the upward trend of the uses of mobile banking at different regions in Bangladesh as a newly established service of some commercial banks and to assume its potentiality.

The sample size is 300. By using suitable sampling method, 300 respondents who are mobile financial services customers and the agents are interviewed with direct conversations and for analysis purpose those data were segmented on the basis of various dimensions like- income groups, professions, age limit, relevant products, safety, demanding groups, etc. Data have been collected from the five different regions across the country. Among the banks that provide mobile financial services, 5 banks have been taken as sample of the research. Of those 5 banks, 2 pioneer bank's information regarding mobile financial services is used to show the competitive growth. And for secondary data firstly, the maximum exploratory part of the article obtained through secondary sources like- different search engine, books and related journals, different publications, Bangladesh Bank guideline, etc. Secondly, survey questionnaire was overseen to empirically evaluate the level of acceptance and customer demand of m-banking in Bangladesh.

IV. Findings and Analysis

a) Nature of the Customer

The study shows that among 300 respondents, the highest portion (97%) was regular customer of MFS while only 3% are irregular customers. (Figure-01)

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Nature of the Customers	No. of Respondents	Percentage
Yes	97	97%
No	3	3%

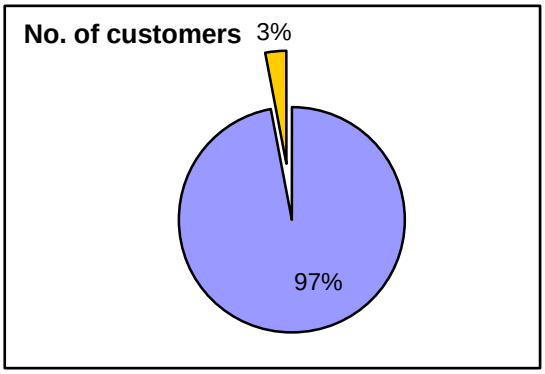

Figure 1: Nature of the customers

b) Different Age Groups of Mobile banking users

It is evident that among 300 respondents 61% (the highest portion) of the respondents belongs to the age group of 18-25 and the second highest were 23% respondents belong to the age group of 25-30. But the research shows that the other age groups were very petite in numbers and did not belong in a student's segments. The lowest portion 2% belongs to the age group of 45-50. (Figure-02)

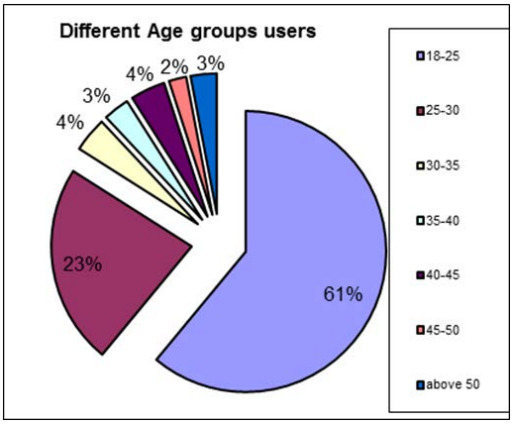

Figure 2 : Age of the respondents

Age	No.of Respondents	Percentage
18-25	61	61%
25-30	23	23%
30-35	4	4%
35-40	3	3%
40-45	4	4%
45-50	2	2%
Above 50	3	3%

c) Different Income Groups of Mobile banking users

From the survey it was observed that among 300 respondents 28% that was the highest portion and 22% the second largest portion are belonging in the income level of 10000-15000 and 5000-10000 respectively. But the income levels of 45000-50000 and above are belonging in the lowest portion with 2 % .That means the higher income groups are detached from the MFS at present. (Figure-03)

Income groups	No. of Respondents	Percentage
Below 3000	14	14%
3000-5000	17	17%
10000-15000	22	22%
15000-20000	28	28%
20000-25000	0	0%
25000-30000	0	0%
30000-35000	0	0%
35000-40000	3	3%
40000-45000	0	0%
45000-50000	2	2%
Above 50000	2	2%

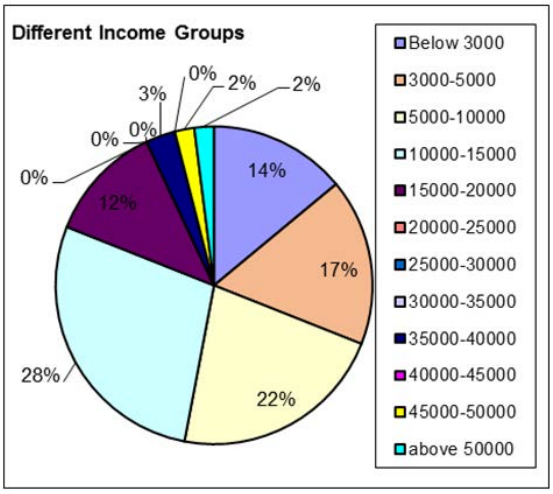

Figure 3 : Respondents of income groups

d) Mobile banking users from different Professions

After analysis of 300 respondents collected randomly, we found that the majority portion of MFS users were students i.e. 50% and earlier it showed that the age group of 18-25 were the highest users of MFS might be the students in profession. And the second largest portion belongs to the businessmen which is 31%. But the other professionals were in so negligent stage by their uses of MFS. (Figure-04)

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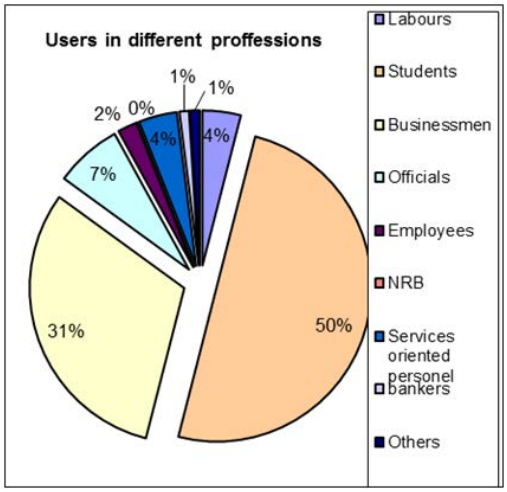

Figure 4 : Respondents of income groups

Professions	No. of Respondents	Percentage
Labors	4	4%
Students	50	50%
Businessmen	31	31%
Officials	7	7%
Employees	2	2%
NRB	0	0%
Services oriented personnel	4	4%
Bankers	1	1%
others	1	1%

e) Customers of mobile banking users from different regions

From the survey of 300 respondents, 62% in the highest portions are from Capital city Dhaka from different income groups and professionals. But others are more or less in similar percentage belongings from different regions all over the country. (Figure-05)

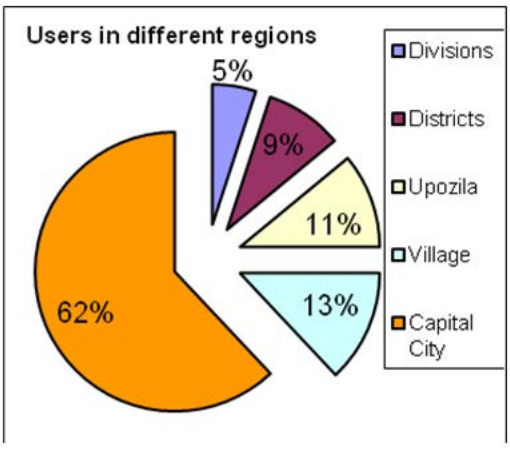

Figure 5 : Respondents of income groups

Regions	No. of Respondents	Percentage
Divisions	5	5%
Districts	9	9%
Upozilas	11	11%
Villages	13	13%
Capital City	62	62%

f) Educational qualifications of the customers

From the survey it was observed that among 300 respondents 36% that was the highest portion and 31% the second largest portion are belonging in the education level of HSC and Graduate respectively. But the highest education level that is Phd is in the lowest portion with 0%.(Figure-06)

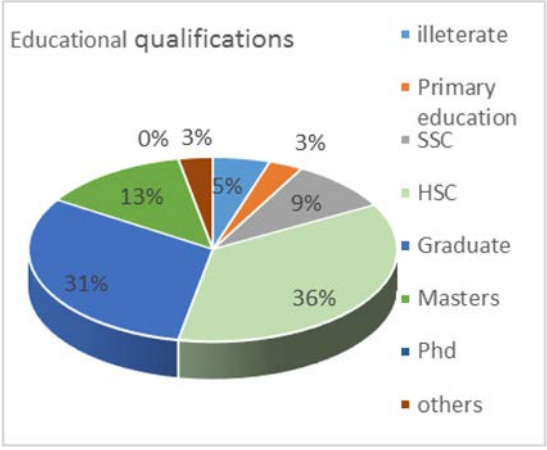

Figure 6 : Respondents of income groups

Education	No. of Respondents	Percentage
Illiterate	5	5%
Primary education	3	3%
SSC	9	9%
HSC	36	36%
Graduate	31	31%
Masters	13	13%
Phd	0	0%
Others	3	3%

g) E-banking system uses best by the customers

After collected of 300 respondents randomly, we found that of different E-Banking services, 78% of the respondents use mobile financial services for their money transactions. Beside these ATM stands in second choice with 12%. (Figure-07).

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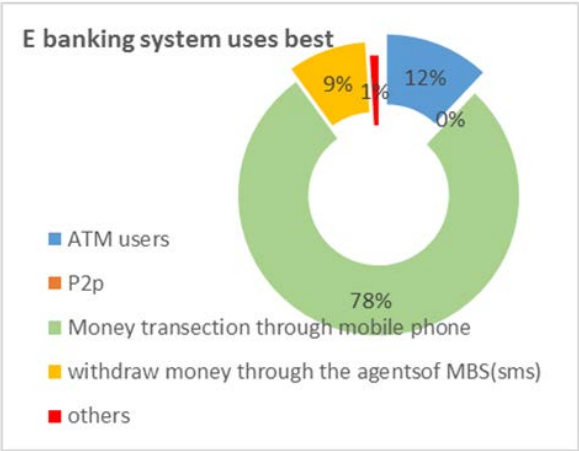

Figure 7 : Respondents of income groups

Natures of users	No. of Respondents	Percentage
Strongly Agree	58	58%
Agree	29	29%
Neutral	2	2%
Disagree	11	11%
Strongly Disagree	0	0%

h) Safety of transaction through mobile banking

It is observed that among the same 300 respondents, near about 50% were strongly agreed that transaction is very much safe through mobile phone. The second highest portion i.e. 21% was also agreed with the statement stated above. Where as among the respondents the portion of disagree and strongly disagree were 12% and 17% respectively. (Figure-08)

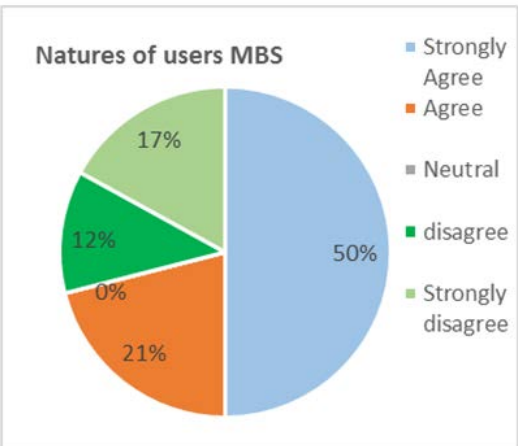

Figure 8 : Respondents of income groups

Natures of users	No. of Respondents	Percentage
Strongly Agree	50	50%
Agree	21	21%
Neutral	0	0%
Disagree	12	12%
Strongly Disagree	17	17%

i) Available Agent and branch for M-Banking

Among 300 respondents it was measured that, the highest 58% respondents strongly agreed and 29% agreed that there are available agents and branches of DBBL mobile banking, Bkash, mCash and so on. On the other hand, in the following figure it is shown that about 11% respondents disagreed with the available agent and branches of DBBL mobile banking, Bkash, mCash. (Figure-9)

E-banking system uses best	No. of respondent	Percentage
ATM users	12	12%
P2P	0	0%
Money transections through Mobile Phone	78	78%
Withdraw money through Agents of MBS (SMS)	9	9%
others	1	1%

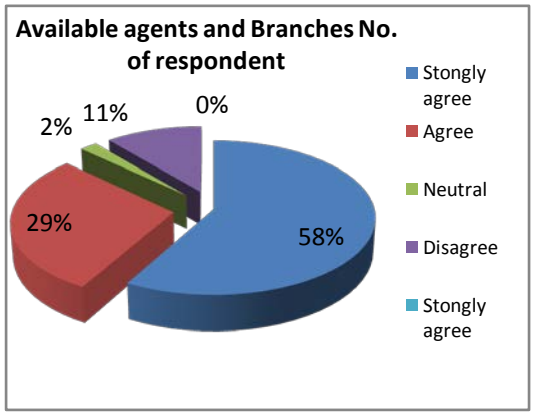

Figure 9 : Respondents of income groups

j) Competitive growth of the two pioneer Mobile Financial Services (MFS) provider banks in Bangladesh, DBBL mobile banking and Brac Bank bKash

The history of Mobile Financial Services (MFS) in Bangladesh is comparatively short which only 3 years is. It is almost a new approach by the different commercial banks that has established its demand within in a very petite time (around 3 years). Seventeen banks have been granted permission to introduce MFS by Bangladesh Bank. Ten banks have launched MFS and among them Dutch Bangla Bank (DBBL) and Brac bank have started their MFS operation from 2011 and within the 3 years the two banks have gained the highly competitive position among others and become the pioneer in MFS provider in Bangladesh. At fast DBBL launched mobile banking facility in Bangladesh but by the time bKash has captured the equal demand for MFS in Bangladesh. Due to introduced the newly advanced MFS of mobile banking (DBBL) and bkash (Brac Bank) and to create demand the both banks broadcast attractive and helpful advertisements and by the time to

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spread the business expended number of agents and MFS stools in every corner of the residential arias, village urban, cities, markets. In 2011 DBBL earned Tk 100831137 including some other sources of income whereas Brac Bank earned TK 56111589. In the years of 2012 and 2013 DBBL earnings were in an upwards trend with Tk. 105512548 and Tk. 167816664 (including the other incomes) respectively, whereas Brac Bank's income from bKash slightly went to downwards in 2012 with Tk. 44272022. But after that again in 2013 the earnings from bKash jumped to Tk. 132246591 that was almost 199% more than the previous income. DBBL and Brac Bank introduced their business for MFS in Bangladesh with a very short distance of time with each other. From the very beginning bKash has earned the highest position in transactions and customer demand. In the Policy guideline of Bangladesh Bank it has stated that in March, 2012 Total 207.08 corer taka was transacted through MFS in Bangladesh by the 11 commercial banks, among them Brac Bank bKash transected 118.51 corer taka and DBBL mobile banking transected 88.29 corer taka. Number of agents of bKash was 41% higher then mobile banking (Policy Paper of Bangladesh Bank, 2012).Till bKash has high popularity in MFS in Bangladesh.

[Note: Stated data has been collected from the annual reports of DBBL and Brac Bank. But the specific earnings of mobile banking has not mentioned in DBBL annual reports like specific information of bKash in the annual reports of Brac Bank. That's why the DBBL's mobile banking amounts have taken from the consolidated other operating incomes and it can be assumed that the earnings from mobile banking are included here.]

Years	DBBL mobile banking (Tk)	Brac Bank bKash (Tk)
2011	100831137	56111589
2012	105512548	44272022
2013	167816664	132246591

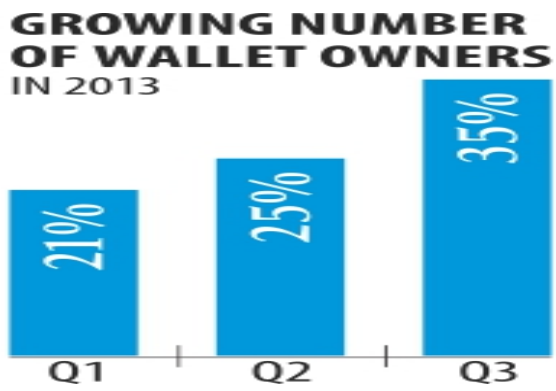
Source: Annual Reports of DBBL (2011-2013) and Annual Report Brac Bank (2011-2013)

V. Mobile Financial Services

Beside those two pioneers banks some of other commercial banks in Bangladesh getting interested in MFS and have launched services all over the country with the enrolment of new advancement of technology. mCash from IBBL, uCash from UCBL, EasyCash from Prime Bank Ltd and so on have already focused their figures in the MFS market in Bangladesh. Islami Bank Bangladesh Limited was inaugurated their Mobile Banking Service of on December 27, 2012 on the name of mCash with the aim of to bring all the people under its services. IBBL Mobile Banking mCash is highly secured as it uses USSD or SMS+IVR as its communication channel. In case of USSD, both the instructions and PIN are communicated using USSD while in case of SMS+IVR, instructions are sent via SMS and PIN via IVR (voice channel), both the USSD and IVR are secured for transmission of PIN. Customer's money is safe as none can withdraw his/her money without taking possession of Mobile set, PIN and Check digit together. None will be able to deposit unwanted money into a Mobile Account without knowing the check digit (although the mobile number is publicly known).account is fully registered; you will get an SMS notification. (http://bdloan.net) United Commercial Bank launched their Mobile Financial Services "UCash" on 23rd Nov'2013. UCB has more then 100 00 agents all over the country to make available their service "UCash". Mobile Account holders (savings) of "UCash" will get daily Interest on the deposit in mobile wallet from the very first day. Initially the service of UCash will be available through 'Robi' and 'Airtel' Network. It will be accessible through all the mobile network operators very soon. (http://semicon bd.com) Prime Bank Limited launched its Mobile Banking Service "Easy Cash" on March 28 2012. (http://bankinfobd.com) Easy Cash, Prime Bank Mobile Banking Service is a secured mobile financial service to access cash easily and conveniently using mobile phone technology. Easy Cash can be accessed from anywhere at anytime including remote rural areas of the country. The Easy Cash Account model of Prime Bank works on the fundamental principle of giving everyone an access to a bank account and adding value to lifestyle of customers irrespective of social strata in Bangladesh. (www.primebank.com.bd)

All six mobile phone operators are involved with MFS providers in some capacity while by now 28 banks have MFS permission and 19 are in active operation, according to the central bank. Key players in MFS are: bKash, DBBL Mobile Money and M-Cash of IBBL with 1.32 crore registered customers with about two lakh agents nationwide, generating more than 10 lakh transactions amounting more than Tk 221 crore a day.

The central bank's number one goal was to widen financial inclusion, so the bank released the mobile financial service in a bank-led pattern, (Atiur Rahman, governor of Bangladesh Bank) (http://www.the dailystar.net)



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VI. Recommendations and Conclusion

The results of this study showed that there is a positive acceptability of MFS in Bangladesh. How-ever as a new product the permitted banks should enhance several strategies those can overcome the limitations of MFS, to be an easy accessible financial services near future. The MFS providers must introduce effective and attractive strategies so that the number of customers should not be in the limit of the age group of 18-25 who are basically stand in the education level of HSC and Graduate belonging in the highest level of the respondent in the age and education group respect-tively. The banks should specifically clear the idea and systems about the MFS through the buzz marketing process in order to spread the Mobile Financial Services in different age groups, income holders and professions who are not that much familiar with the money transaction system of MFS. MFS providers should increase the transaction limit in order to motivate the corporate clients in MFS and this the formal way for the banks to get higher earnings through MFS. Due to facilitate huge employment the Banks should increase the commissions of the agents. The banks and telecommunication companies should develop secured and easy understandable software with highly confidential PIN code and system so that the agents or the customers cannot send the money in other numbers by mistake or intentionally and if happen so, can recover the money back. At the same time telecommunication companies and cellular service providers should be more conscious about their network coverage in order to facilitate the transaction and communication of m-banking more faster. Finally the government should provide appropriate law and conditional financial support to cellular service providers and the banks to extend the MFS more regular to the people of Bangladesh.

At present the modern financial transactional facilities through mobile phone are much more attractive than those of traditional banking system. Mobile Financial Services provides customers available access to their banks. For low income people MFS is a newest approach may make possible to use such kind of banking where banking facilities cannot reach till now. The cost of using MFS is comparatively low. So the M-payment will be very much effective for the customers of rural area in Bangladesh who are relatively attached with the different family and business activities with the different corner of Bangladesh. M-payment is almost new approach in Bangladesh with high response from the MFS agents and customers, but Bangladesh Bank permitted 17 commercial banks to do such kind of mobile banking business in Bangladesh.

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Appendix

Research Questionnaire

Sub: Significance of Mobile services and its usage.
Scenario: Bangladesh

[In the context of Bangladesh significance of Mobile banking services in banking sector. For personal research the necessary information searching. According to you the most appropriate correct answer / please mark Tick (√) for most appropriate answer.]

1) Are you the Mobile Banking Service receiver?
   a) Yes
   b) No

2) What is Mobile Banking?
   a) Providing various banking services by using mobile
   b) Only for transferring money by using mobile
   c) Making transaction by mobile phone
   d) Deposit money to bank by cheque

3) How does customer handle mobile banking?
   a) Only by ATM
   b) By ATM, Mobile Phone, P2P
   c) By conversation with banks officer
   d) Making transaction by opening Mobile Account

4) Why do you use M- Banking services?
   a) TO make transaction fast and safely
   b) As a result of locality transaction fast and safely banks provides various services and money transaction
   c) Feel comfortable to make transaction via card/ mobile
   d) Latest Services

5) How do you come to know about M-Banking?
   a) Advertisement
   b) By Newspaper
   c) By telecom businessman
   d) By reading story books
   e) By Banks marketing officers
   f) By neighbor, friends, relatives.
   g) By Non Resident Bangladeshi (NRB)

6) Which types of banking services do you get preferred?
   a) Who provide M-Banking services?
   b) Who do not provide M-Banking service?

7) Age group of M-Banking services beneficiary
   a) 18- 25
   b) 31-35
   c) 41- 45
   d) 50 above
   e) 25- 30
   f) 36- 40
   g) 46- 50

8) Why M-Banking is important?
   a) Provide fast and safely banking services.
   b) Expensive
   c) For secure security
   d) For business purpose

9) How many banks provide M-Banking services?
   a) DBBL
   b) EBL
   c) Agrani Bank
   d) Janata Babk
   e) lami Bank
   f) Southeast Bank
   g) Bank Asia
   h) Sonali Bank
   i) MTBL
   j) Brac BankIs
   k)Jamuna Bank

10) Income limit of M-Banking users?
   a) Below 3000 TK
   b) 5000- 10000 Tk
   c) 15000- 20000 Tk
   d) 25000- 30000 Tk
   e) 40000- 50000 Tk
   f) 3000- 5000 Tk
   g) 10000- 15000 Tk
   h) 20000- 25000 Tk
   i) 30000- 40000 Tk
   j) Above 50000 Tk

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11) Place of Resident?

a) Divisional Cities
b) Sub district Cities
c) Capital
d) District Cities
e) Village

12) Profession?

a) Labor class
b) Businessman
c) Non Bangladeshi Resident (NRB)
d) Bankers
e) Student
f) Office staffs
g) charitable professional
h) Others

13) Educational Qualification?

a) Less Educated
b) SSC
c) Graduate
d) PhD
e) Primary Educated
f) HSC
g) Masters

14) How would you use maximum services of Mobile Banking?

a) Deposited money via ATM Card
b) Via ATM Card to check balance
c) P2P
d) Via ATM Withdraw of money
e) Transaction of money via mobile phone
f) Investigation of information via sms

15) "It is safe to transaction through MFS." -------What is your opinion?

a) Strongly agree
b) Neutral
c) Strongly disagree
d) Agree
e) Disagree

16) There are available agents and branches for MFS in Bangladesh.

a) Strongly agree
b) Neutral
c) Strongly disagree
d) Agree
e) Disagree

17. Perception of the agents of MFS

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Signature

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The Relationship between Regulatory Inconsistencies and Nigerian Banking Industry

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Abstract- Traditionally, the role of banks in any economy consists of financial intermediation, provision of an efficient payment system and serving as a conduct for the implem-entation of monetary policies. It is has been postulated that if these functions are efficient, the economy would be able to mobilize meaningful level off savings and channel such frauds to deficit unit, which will increase the gross domestic product (GDP) and create employment in long-run. This objective of this study is to investigate the implications of regulatory inconsistencies on the Nigerian banking industry. Regulation generally points to some kind of intervention in any business which ranges from explicit legal control to informal peer group control by government or some other such authoritative bodies. The methodology used in carrying out this work is descriptive desk research. The findings shows that regulatory in consistencies of Central Bank of Nigeria (CBN), Nigeria Deposit Insurance NDIC, Financial regulatory coordinating committee (FRSCC) have not guaranteed effective & efficient banking practices in Nigeria.

Keywords: regulatory inconsistencies, central bank of nigeria (CBN), nigeria deposit insurance corporation (NDIC), banking industry.

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The Relationship between Regulatory Inconsistencies and Nigerian Banking Industry

Chude, Nkiru Patricia [α] & Chude Daniel Izuchukwu [σ]

Abstract- Traditionally, the role of banks in any economy consists of financial intermediation, provision of an efficient payment system and serving as a conduct for the implementation of monetary policies. It is has been postulated that if these functions are efficient, the economy would be able to mobilize meaningful level off savings and channel such frauds to deficit unit, which will increase the gross domestic product (GDP) and create employment in long-run. This objective of this study is to investigate the implications of regulatory inconsistencies on the Nigerian banking industry. Regulation generally points to some kind of intervention in any business which ranges from explicit legal control to informal peer group control by government or some other such authoritative bodies. The methodology used in carrying out this work is descriptive desk research. The findings shows that regulatory in consistencies of Central Bank of Nigeria (CBN), Nigeria Deposit Insurance NDIC, Financial regulatory coordinating committee (FRSCC) have not guaranteed effective & efficient banking practices in Nigeria. Also each administrative regime propound new banking regulation that is abounded by the next regime thereby contributing to bank distress & failure. We recommend that regulatory agencies should be more proactive and be consistent regulatory policies; critical analysis should be carried out before implementation and the use of professionals and academia is necessary for the achievement of regulatory & supervisory policies in Nigerian banking system.

Keywords: regulatory inconsistencies, central bank of nigeria (CBN), nigeria deposit insurance corporation (NDIC), banking industry.

I. Section One

a) Introduction

In recent years, there has been great concern on the management of banks' assets and liabilities because of large scale financial distress. The experience of many countries indicates that regulation and supervision are essential for stable and healthy financial system and that the need becomes greater as the number and variety of financial institutions increase. The banking sector has been singled out for the special protection because of the vital role banks play in preventing bank failures and ensuring that they carry out their activities in accordance with wider economic and social objectives of the country. Bank supervision entails not only the enforcement of rules and regulations, but also judgments concerning the soundness of bank assets, its capital adequacy and management (Volcker, 1992). Regulation is effective supervision leads to healthy banking industry. To maintain confidence in the banking system, the monetary authorities have to ensure banks play by the rule. The deposit insurance scheme and prudential guidelines were adopted to improve the assets quality of banks, reduce bad and doubtful debt, ensure capital adequacy and stability of the system, and protect depositors funds (Oladipo, 1993, Oguleye, 2005).

Uche (2001:67) opined that "regulation generally suggest some form of intervention in any activity and ranges from explicitly legal control to informal peer group control by government or some such authoritative body. Sometimes it stems from market failure which usually occurs when market transactions give rise to spillover effects (or externalities) on third parties, or when there is information inefficiency in the market".

The banking system in any economy plays the important role of promoting economic growth and development through the process of financial intermediation. Development economists argue that the existence and evolution of financial institutions and markets constitute an important element in the process of economic growth.

In Nigeria, the rising cases of bank distress have also become a major source of concern to policy makers. It is not surprising to find banks to have nonperforming loans and advances that exceed 50 per cent of the bank's total loan portfolio. For instance, the Nigeria Deposit Insurance Corporation (NDIC) in its 1996 annual report put the number of distressed banks at 50 with N65.13 billion assets trapped. These banks had offered N50.55 billion loans, N40 billion or 79 per cent of which were classified as nonperforming credits. The recent liquidation of 26 banks put N16 billion or 32 per cent at risk since only N5 billion is insured by NDIC. More so that the N20 billion or 40 per cent worth of loans disbursed by these banks were hardly recoverable. Between 1994 and 2002, a total of 33 banks were closed (NDIC, 2004).

Regulation of banks has been defined by Llwellyn (1999) as a body of specific rules or agreed behaviour either imposed by government or other external, agency or self imposed by explicit or implicit

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agreement within the industry that limits the activities and business operations of banks. But what is peculiar about the Nigerian banking environment is that these control are main direct and administration and as we all know, such regulations result in less efficiency in the management and allocation of resources (Olisambu, 1991, Adedipe, 2010).

In view of the importance of the banking sector in economic development and the imperfection of the market mechanism to mobilize and allocate financial resources to socially desirable economic activities of any nation, governments all over the world financial sector is regulated more than any other sector in the economy. The reason for regulation is to prevent bank failure which may have contagion effect and to ensure that they carry out their activities in accordance with economic and social objectives of the country (Uche, 2001).

Banking regulation was first introduced in Nigeria in the early 1950s in response to the failure of local banks. The 1952 Banking Ordinance imposed minimum requirements for paid up capital and the establishment of reserve funds. This was followed by the enactment of the 1958 Central Bank Act and the Banking Ordinance of 1959. The banking legislation was further strengthened with the enactment of the Banking Decree of 1969. This consolidated previous banking legislation; raised minimum paid up capital requirements and empowered the CBN to specify a minimum capital/deposit ratio (Nwankwo, 1980, Ekundayo, 1994, Uzoagu, 1981, Uchendu 1991 and Nwankwo 2011). It also empowered the CBN to impose liquidity ratios and placed restrictions on loan exposure and insider lending (Oloyede, 1994 and Adekange 2004). The legislation contained in the 1969 22 Money at call from other banks accounted for 17.2 per cent and loans and advances from other banks (excluding the CBN) for 8.6 per cent of merchant banks' total liabilities at the end of 1991: these fell to 11.8 per cent and 4.8 per cent respectively at the end of 1992 (NDIC, 1992). The figures given in NDIC Reports for later years are not directly comparable but it is evident that Inter-bank funding from loans and call deposits fell to less than 6 per cent of merchant banks' liabilities in 1993 and 1994 (NDIC 1994). As a share of merchant banks' total local currency deposits, Inter-bank funds fell from 44 per cent in 1990/91 to 11 per cent in 1994/95 (Agusto, 1995).

The vulnerability of the merchant banks to the liquidity squeeze was exacerbated by the impact of CBN regulations which stipulated that minimum shares of their loan portfolios had to be allocated to long term loans, leading to a mismatch in the maturity structure of their assets and liabilities (Umoh, 2002). Their ability to mobilise deposits was also impeded because regulations prevented them from accepting deposits below a specified minimum amount.

The CBN Decree of 1991 established the regulatory framework for the prudential control of banking for the next 22 years until it was superseded by the 1991 Banking and Other Financial Institutions Decree (BOFID). The prudential system was ineffective in preventing mismanagement and fraud from becoming widespread in the banking system for a number of reasons. First, although the CBN was responsible for supervising banks, it lacked independence from the Federal Ministry of Finance (FMF), especially with regard to the licensing of banks (the authority for the granting of banking licenses lay with the FMF until this was transferred to the CBN under the 1991 BOFID), and the enforcement of sanctions when infractions of legislation were discovered. Political considerations, and a lack of technical expertise in the FMOF, impeded proper bank regulation and supervision in particular because many of the public sector banks were expected to follow developmental objectives (Ologun 1994).

Second, the primary regulatory concern of the CBN was with ensuring compliance with the allocative controls, such as the sectoral lending guidelines, rather than the prudential controls. The allocative controls weakened loan portfolio quality by diverting loans towards non viable borrowers (Jimoh 1994).

In 1988 the NDIC was set up to insure the deposits (up to a maximum of N50,000per account which have been reviewed upward to N500,000 per account in 2010) of all deposit money banks, funded by a premium of 15/16 of 1% of total deposit liabilities of each as at 31st of the previous year (NDIC, 2010). NDIC in conjunction with CBN supervise financial institution using on-shore and off-shore surveillance and acts as a liquidation of failed banks.

Thirdly, between the mid 1980s and 1991 the licensing procedures were too lax, allowing politically connected people to obtain licenses and operate banks despite having no obvious qualifications or relevant experience. The CBN suspended granting new licenses in 1991, but between 1986 and 1991, 84 new banks were established. This was asserted by Oliambu (1991) that between1989and 1990, 21 new banks centered the industry bringing the numberto102. The rapid growth in the number of banks overwhelmed the examining capacities of the CBN/NDIC. On-site inspections were infrequent and were confined mainly to checking compliance with allocative requirements.

This, combined with political constraints allowed banks to flout the banking laws. In 1989, twenty seven banks failed to meet the minimum capital requirements (Alawode 1992). It is also clear that the restrictions on unsecured insider lending were flouted. The de facto liberalising of licensing policy before prudential regulations and supervisory capacities were strengthened allowed under-capitalised and poorly managed banks to be set up in large numbers, and was therefore a

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significant contributory factor to the financial fragility which subsequently afflicted the banking industry.

However, following the CBN approval-in-principle of the adoption of universal banking (UB) in Nigeria 2001, and the subsequent ratification of the report of the committee on the preparation of guidelines for same, the Governor of CBN in the exercise of the power conferred on him by the Provisions of section 61 of Banks and other Financial Institutions Decree (BOFID) 1991 as amended, has approved the issuance of guidelines for the implementation of universal banking in Nigeria. With effect from January 1 2001, the CBN adopted universal banking in the country. Under the arrangement, banks were no longer categorized as commercial or merchant but were issued a uniform license, with each bank determining the market in which it intends to operate. Accordingly, bank operational scope was broadened with other measures adopted to ensure improved resilience to withstand financial and operational shocks.

The universal banking policy has removed discrimination in the implementation of policies in the industry as uniform policies are now adopted and implemented across the industry. Today, the repeal of universal banking has brought back International, regional and specialized banks under the pillars of the Banking sector reforms (Adedipe, 2010).

b) Objectives of bank regulation

The objectives of bank regulation, and the emphasis, vary between jurisdictions. The most common objectives are:

1. Prudential—to reduce the level of risk bank creditors are exposed to,
2. Systemic risk reduction—to reduce the risk of disruption resulting from adverse trading conditions for banks causing multiple or major bank failures
3. Avoid misuse of banks—to reduce the risk of banks being used for criminal purposes, e.g. laundering the proceeds of crime
4. To protect banking confidentiality
5. Credit allocation—to direct credit to favored sectors
6. Monetary and financial stability;
7. The need to ensure competition and innovativeness by the prevention of oligopoly/monopolistic behaviour;
8. Vulnerability of banking system to collapse;
9. Promotion and development of sound and wide range of financial services;
10. Ensuring efficiency, security and responsiveness of banks to meet the need of customers.
11. Ensuring compliance with laid down rules and regulations;
12. To achieve important developmental and social goals;
13. Protection of depositors and the economy from the vagaries of the financial system, and protection of banks' customers from the monopolistic/oligopolistic tendencies.

The rest of this study will be divided in section 11 Concept of regulation; section 111 Implications of regulatory inconsistence on the Nigerian banking system and section IV Conclusion and Recommendations.

II. Section II

a) Concept of Regulation

The necessity for public intervention in the economy has traditionally been justified by the need to correct market imperfections and unfair distribution of resources. Hence, the main objectives of such intervenetion: pursuit of stability, equity of resource allocation and efficient use of resources. From this perspective, financial regulatory mechanisms and regulation of the banking industry in particular can be considered extremely important. Capital accumulation and allocation of financial resources are crucial to economic development of each country (Adam, 2009).

Regulation and supervision of the business activities, pertaining to the banking industry units will be essential for their effective functioning. Generally, the concept of banking regulation and supervision is defined as control over the creation, operation, and liquidation of banks.

The most general definition of the concept of banking regulation and supervision is control over the creation, operation, and liquidation of banks. Such control is very diverse, carried out by specialized banking supervisory authorities. Supervision over the bank's operational activities aims to protect the interests of depositors and to ensure effective functioning of the banking industry units. This supervision is the most important and essential part of the functions of banking supervisory authorities, which is carried out in the name of a sound banking system (Austin, 2006).

b) Theoretical studies

The arguments on whether or not government should intervene in economic and financial affairs has long been debated by classical economists, notably, Adam Smith, John Stuart Mills, Thomas Malthus and others. The classicals propose free market economy. Today, market failure has been accepted as justification for intervention by government in economic and financial activities. However, economists differ on the level of government interventions in the economy, particularly on regulations imposed on the financial intermediaries. While some believe that many regulations are necessary in order to protect the depositors' funds others believe that the banks are over regulated (Short and O'Driscoll, 1983).

The economic theory of regulation postulates that regulation result from the desire of government to

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eliminate or correct market failures. The public interest theory views that regulations come from pressures brought to bear on the government by multifarious interest groups. Pressure groups in the economy such as business, consumers, workers, environmental groups among others lobby government to pass legislation to protect such group. The economic theory of regulation seems to have gain more acceptance among economists (Llewellyn, 1999).

Specifically, in the case of banks, regulation is necessary to maintain safe and sound banking system that can meet its obligations without difficulty hence a high solvency and liquidity level is expected of individual banks than they would ordinarily maintain. Oloyede (1994) acknowledges that, by its nature, the banking industry is highly prone to volatility and fragility, either arising from exogenous or endogenous shocks, and is therefore amenable to regulations and supervision.

Nwankwo (2000) argues that the historical evolution of banking in any country provides the rationale for the regulation of banks in that country. The regulatory authorities supervise the banks to ensure that they are conducting their business either in accordance with regulation or more generally in prudent manner in the public interest.

Ogunleye (2002) summarized the rationale for bank regulation as: efficiency, diversity of choice, competition, stability of financial system, macroeconomic stability and developmental and social objective. He went further to identify four approaches to bank supervision as: information disclosure, self regulation, bank examination and takeover, and finally, deposit insurance scheme. World Bank (2002) notes that good regulation and supervision will minimize the negative impact of moral hazard and price shocks on the financial system thereby leading to a reduction in bank distress and failure.

Mishkin (2000) provides reasons why the regulatory process may not work as expected. First, the regulators and bank managers may not have sufficient resources or knowledge to do their job properly. Second, the regulators may not do their job properly because of the moral hazard problem or the principal agent problem. The principal agent problem stems from asymmetric information because the principal does not have sufficient information about what the agent is doing to make sure that the agent is operating in the principal's interest. Mishkin (2000) concludes that forging a strong bank regulation system will be one way out of financial crisis.

Llewellyn (1999) defines prudential regulation as a body of specific rules or agreed behaviour, either imposed by the government or external agency or self imposed by explicit or implied agreement within the industry that constrains the activities in the industry to achieve a defined goal and/or act prudently. In a nutshell, it is the codification of public policy towards banks (Ogunleye, 2002). The prudential guidelines draw theoretical backing from the anticipated income theory, which form the basis of what is referred to as the cash flow approach to bank lending (Llewellyn, 1999). It views that the borrowers' repayment ability should be in line with his/her income generating ability, and not on sales of asset of the borrower liquidation). Banks are expected to generate lending policies that do not emphasis reliance on securities or its realisation. Llewellyn (1999) classifies prudential regulation into three by as preventive, protective and supportive.

Preventive regulations are design to limit the risk incurred, while the protective regulations offer protection in the event of failure. The supportive regulation is in the form of lender of last resort.

Banking supervision, on the other hand, is the process of monitoring banks to ensure that they are carrying out their activities in accordance with laws, rules and in a safe and sound manner. It is a means of ensuring compliance with laid down rules and regulations and to determine their financial condition at any given time (Llewellyn, 1999).

According to the latter, bank regulation and supervision may take the following forms: provision of a safety net for depositors, restrictions on bank asset holdings, capital requirements, chartering and bank examinations, disclosure requirements and prompt corrective action.

Earlier, Fama (1989) states that if the asset portfolio of bank is deemed too risky or its capital inadequate, the relevant supervisory agency will attempt to compel a change in the banks' balance sheet. Regulators however, give more attention to regulating banks' capital than the detail of assets portfolio because capital adequacy is seen as the most important single indicator of banking distress. According to him, the regulators often over rely on Capital Adequacy Asset Quality Management Earnings Liquidity (CAMEL) parameters as a measure of identifying bank distress. However, CAMEL only concerns itself with the internal environment of a bank, the external factor contributing to bank distress are often neglected when using CAMEL indicators.

According to Donli, (2002) deposit insurance system (DIS) is one of several supervisory tools employed by the authorities for effective control of risks associated with failure of deposit taking financial institutions. In this respect, DIS is an insurance system supported by insured banks and administered by a regulatory agency for the purpose of protecting the banking system and offering some financial guarantee to depositors. Banking supervision is an essential element of a DIS as it seeks to reduce the potential risk of failure and ensures that unsafe and unsound banking practices do not go completely unchecked. For a DIS to be effective in achieving its objectives, it must be properly designed, well implemented by the regulatory

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agency and well understood by the public (Ogunleye, 2002).

The presence of adverse selection and moral hazard problems makes the need for deposit insurance indispensable (Mishkin, 2000). He argues that a crucial Impediment to the efficient functioning of the financial system is asymmetric information. This is a situation in which one party to a financial contract has less accurate information than the other party. Asymmetric information leads to those two main problems in the financial system.

There are two types of DIS practiced in the world today, i.e. implicit DIS and explicit DIS. The implicit DIS is a discretionary method use to prop up some failing financial institutions, while an explicit DIS is created by the passage of a deposit insurance statute.

The features of DIS differ from one country to another in terms of membership, coverage, administration, and funding, but there is a common goal, which is that of minimising the risks and reducing the costs of bank failure (Alashi, 2002).

General principles of bank regulation

Banking regulations can vary widely across nations and jurisdictions. This section of the article describes general principles of bank regulation throughout the world.

i. *Minimum requirements*

Requirements are imposed on banks in order to promote the objectives of the regulator. The most important minimum requirement in banking regulation is maintaining minimum capital ratios.

ii. *Supervisory review*

Banks are required to be issued with a bank license by the regulator in order to carry on business as a bank, and the regulator supervises licenced banks for compliance with the requirements and responds to breaches of the requirements through obtaining undertakings, giving directions, imposing penalties or revoking the bank's licence.

iii. *Market discipline*

The regulator requires banks to publicly disclose financial and other information, and depositors and other creditors are able to use this information to assess the level of risk and to make investment decisions. As a result of this, the bank is subject to market discipline and the regulator can also use market pricing information as an indicator of the bank's financial health.

c) Instruments and requirements of bank regulation

i. *Capital requirement*

The capital requirement sets a framework on how banks must handle their capital in relation to their assets. Internationally, the Bank for International Settlements' Basel Committee on Banking Supervision influences each country's capital requirements. In 1988, the Committee decided to introduce a capital measurement system commonly referred to as the Basel Capital Accords. The latest capital adequacy framework is commonly known as Basel III. This updated framework is intended to be more risk sensitive than the original one, but is also a lot more complex.

ii. *Reserve requirement*

The reserve requirement sets the minimum reserves each bank must hold to demand deposits and banknotes. This type of regulation has lost the role it once had, as the emphasis has moved toward capital adequacy, and in many countries there is no minimum reserve ratio. The purpose of minimum reserve ratios is liquidity rather than safety. An example of a country with a contemporary minimum reserve ratio is Hong Kong, where banks are required to maintain 25% of their liabilities that are due on demand or within 1 month as qualifying liquefiable assets.

Reserve requirements have also been used in the past to control the stock of banknotes and/or bank deposits. Required reserves have at times been gold coin, central bank banknotes or deposits, and foreign currency.

iii. *Corporate governance*

Corporate governance requirements are intended to encourage the bank to be well managed, and is an indirect way of achieving other objectives. Requirements may include:

1. To be a body corporate (i.e. not an individual, a partnership, trust or other unincorporated entity)
2. To be incorporated locally, and/or to be incorporated under as a particular type of body corporate, rather than being incorporated in a foreign jurisdiction.
3. To have a minimum number of directors
4. To have an organisational structure that includes various offices and officers, e.g. corporate secretary, treasurer/CFO, auditor, Asset Liability Management Committee, Privacy Officer etc. Also the officers for those offices may need to be approved persons, or from an approved class of persons.
5. To have a constitution or articles of association that is approved,
6. or contains or does not contain particular clauses, e.g. clauses that enable directors to act other than in the best interests of the company (e.g. in the interests of a parent company) may not be allowed.

d) Financial reporting and disclosure requirements

Banks may be required to:

1. Prepare annual financial statements according to a financial reporting standard, have them audited, and to register or publish them
2. Prepare more frequent financial disclosures, e.g. Quarterly Disclosure Statements

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3. Have directors of the bank attest to the accuracy of such financial disclosures
4. Prepare and have registered prospectuses detailing the terms of securities it issues (e.g. deposits), and the relevant facts that will enable investors to better assess the level and type of financial risks in investing in those securities.

i. *Credit rating requirement*

Banks may be required to obtain and maintain a current credit rating from an approved credit rating agency, and to disclose it to investors and prospective investors. Also, banks may be required to maintain a minimum credit rating.

ii. *Large exposures restrictions*

Banks may be restricted from having imprudently large exposures to individual counterparties or groups of connected counterparties. This may be expressed as a proportion of the bank's assets or equity, and different limits may apply depending on the security held and/or the credit rating of the counterparty.

e) Types Of Regulation

Idam (2005) state that, there are two types of regulation in financial institution, they are as follows:

1. External regulation: This is a situation where government establish some bodies to regulate the activities of financial institution to avoid distress. The bodies are as follows: Central Bank of Nigeria (CBN), Nigerian Deposit Insurance commission (NDIC), Security and Exchange Commission (SEC), Nigerian Stock Exchange (NSE), Federal Ministry of Finance (FMF), Chartered Institute of Bankers of Nigeria (CIBN), Bankers Committee, Insurance company and Clearing House Committee.
2. Internal regulation: This is a situation where banks are regulated at the branch level. These can be done as follows: Head office regulation, Means of returns, regular spot check, call over of Vouchers, use of password, regular balancing of account, regular training of bank staff. Etc

III. Section III

a) Implications of regulatory inconsistency on Nigerian banking system.

Let us start with the Repeal of Universal Banking Guidelines.

The Universal Banking Guidelines are hereby repealed from 15th November, 2010 to pave way for new banking model. Notwithstanding the repeal aforesaid, nothing in this Regulation shall affect the legality, validity and/or the enforceability of any right, remedy or liability, which may accrue to any person in respect of any act validly undertaken pursuant to a Universal Banking Licence between the commencement date of the Universal Banking Guidelines and the Effective Date. From the date hereof, all pending applications for any authorisation, approval and/or consent pursuant to the Universal Banking Guidelines, except those relating to core banking activities permitted under this Regulation, shall be deemed withdrawn (Akogun, 2010).

From the Effective Date (14th May, 2012), the only types of banks that will be permitted to carry on banking business in Nigeria shall be limited to the following types as contemplated under BOFIA:

(a) Commercial banks;
(b) Merchant banks; and
(c) Specialised banks, which include non- interest banks, microfinance banks, development banks and mortgage banks. The question is how long will this inconsistency last. Udendeh (2009) asserted that, "barley four years after banking consolidation when Nigerians should be reopen its benefit or otherwise, evaluating the policy points to document and adopt or review for subsequent replications in other sectors, ganging its sore point or leverage to government in terms of cost another era of reform has set in". Should one, therefore agree with Shakespeare that things without an end should be things without regard.

Accordingly, from the effective date, no bank in Nigeria shall be licensed to operate as a bank other than as one of the types specified in Section 4(1). The Money deposit banks referred to in Section 4 (1) (a) may be authorised by the CBN to carry on banking business on a regional, national and international basis in accordance with rules, regulations, and guidelines on licensing, authorisation, operation and conduct of business that the CBN may issue from time to time.

The non- interest banks referred to in Section 4 (1) (c) may be authorised by the CBN to carry on banking business on a regional or national basis in accordance with rules, regulations, and guidelines on licensing, authorisation, operation and conduct of business that the CBN may issue from time to time (CBN, 2010).

b) Positive implication of regulation

Eradication of corruption in Nigerian Banking System: CBN regulation was aimed at sanitizing the Nigerian banking system with the view of exposing the practices of the bank executives who were diverting depositors funds for their personal aims and objectives (Onwuamaeze, 2010).

The rule of law: The arrest of the Bank chief executives justifies the principle of the rule of law. To a large extent all hopes are not lost for this great country. If we can have people like Sanusi in all levels of government across the federation sincerely speaking there will be a change, this is because he did not decide to cover the cases of mismanagement of funds among the board of directors in the affected banks as found in

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the investigation of the banks, but he went ahead to ensure that the wroth of the law caught up with the offenders who flouted the law.

Ensuring confidence in the Co-operate banking system: The banking sector is an important aspect of the Nigerian economy not only due to its viability in terms of employment rate but due to the fact that virtually every citizen deals with banks either as depositors or borrowers. Following to the CBN regulation, there was no transparency and accountability in most banks in the country. Loans were given based on sentiments and connections, common citizens who had good business plans and initiative were denied loans from banks (Ighomwenghian, 2010).

Despite the recapitalization of banks by the former governor of CBN Professor Charles Soludo, Nigerians were still scared of depositing their monies into most banks due to the memories of bank failure in the country. But as the CBN reforms have been implemented, it implies that there is a new beginning in the relationship between banks and customers. The CBN reforms is geared towards protecting the interest of depositors by ensuring that the right leaders are appointed to lead the banks in other to eliminate all forms of corruption which is asymmetrically opposed to the objectives of the depositors or investors (Uwe, 2010).

The Negative impact of CBN reforms

i. *Unemployment*

following the CBN regulation, the banking sector was one of the highest employers of labour in the country. However, with the heart breaking reforms orchestrated by CBN most of the workers of the affected banks are back in the streets begging for daily bread. Most affected banks in this category are Oceanic bank and Intercontinental bank. Oceanic Bank sacked about 1,500 workers while intercontinental bank also sacked close to 3,000 workers.

Nigeria as a third world economy is popularly known for its high rate of unemployment and CBN have contributed his own quota by increasing the numbers of jobless youths in the country. The resultant effect of this is the rapid increase in poverty, increased crime rate and criminal acts among the frustrated youths in this category.

ii. *Cash Squeeze*

Any reasonable economist would support the idea of an effective and easy circulation of money across the various sectors of the economy. Infact this notion is compatible with the liberal capitalist school of thought which advocates for effective participation in economic activities, however as regards to the CBN banking regulation, we wonder how CBN wants to make funds available to the Nigerian business men with his new policy of strict capital control of banks.

According to the manufacturers association of Nigeria (MAN) CBN banking regulations have negatively affected the production rate as well as contributed to the high rate of fuel scarcity, this is because major stake holders within the oil industry need capital from banks in other to properly finance their business. This situation of cash squeeze is detrimental to a developing economy like Nigeria which needs local investments through properly financed SMEs to develop (Akogun, 2010).

iii. *Forced Loans*

The CBN banking regulation have been criticized for breaching the professional banking rules, this is because CBN illegally forced the banks to agree to the loans which were given to them. The 450 billion Naira loan was illicitly forced on the banks. Firstly, although these banks were in financial predicament but ideally these banks did not need this large sum of money. According to financial experts and analysts, what the banks needed was merely 100 billion naira only (Nwokoji, 2011).

However CBN went ahead to force the banks to collect such loans to be paid back in seven years' time and with 11 percent interest. With the financial predicaments which these banks are facing and the high level of uncertainty in the Nigerian business environment how sure is the CBN governor that these banks can pay back these loans with 11 per cent interest? Under an ideal banking system, there must be a mutual agreement between the giver and the collector. Sentiment and Personal Vendetta: It is obvious that Central Bank of Nigeria are not void of sentiments and personal vendetta. The big question that CBN have failed to answer is that why was some banks treated with fairness and others were not. Take for instance Wema Bank was given the opportunity to recapitalize while spring bank was not.

IV. Section IV

a) *Conclusion and Recommendations*

i. *Conclusion*

Conclusively, the challenges posed by inordinate ambition of bank operators, precarious nature of bank operations, deregulation of the financial sector, globalization of operations and technological innovation make it imperative for adoption of supervisory and prudential measures that conform to best practices of international standards regarding banking operations in the country. The findings, to an extent, show that the prudential guidelines and deposit insurance have improved the quality of bank loan assets and loan provisioning. Essentially, the implementation of the two have moderated banks' profit, and also improved the provision for doubtful and bad debts. However, it has resulted to increase in bank distress and failure. Some banks were found to have become distress as a result of the new regulatory control measures a case of 2006

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where 14 banks went under. The industry has returned to profitability after a period of global economic depression. The distress problem is being addressed through the assistance of regulatory agencies who have given financial assistance to some banks in the recent past. Public confidence in the industry is on rise, banks capitalization has improved, thereby increasing their capacity for their primary mandate of financial intermediation and there has been modest investment in information technology by banks. Five brigade regulatory measures results into recovery from the initial shocks and rebounces back and the whole process repeats itself.

ii. *Recommendations*

On the basis of the above analysis, we proffer the following recommendations.

1. The regulatory agencies should be given more powers to strengthen bank regulation and supervision in Nigeria.
2. They should firm up prudential guidelines and encourage market discipline.
3. They should also put up tighter limits on excessive concentration of risk.
4. Tightening provisioning requirements on nonperforming loans is essential to ensuring that banks remain liquid during economic downturns, establishment of Amcon is helping in this regard.
5. Similarly, constant review of minimum amount of capital requirement will reduce moral hazard by putting shareholders at risk. It can also help banks weather economic downturn and make problem banks easier to be liquidates.
6. In addition, well trained onsite inspectors are important to ensuring that banks comply with regulations, thus, strong supervision must ensure that banks conduct careful credit analyses of their borrowers to avoid doubtful debts.
7. The apex bank should maintain stern eyes currently in place on the operations of the deposit money banks.
8. Critical analysis of issues before formulating a policy is essential because banking in wheel on which the economy moves.
9. The role of academia should be felt which is now lacking. The informal advocacy role of academia does shape policies in any system that allows for it.

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E-Delivery Channels and Banking Performance in India: A Pragmatic Approach

By Ms. Navneet Kaur & Prof. (Ms) Ravi Kiran
Thapar University, India

Abstract- Technological innovation not only enable a broader reach for consumer banking and financial services in Indian banking sector, but also enhances its capacity for continued and inclusive growth. E-developments in the arena of ATMs, debit cards, credit cards and mobile banking are changing the way businesses work. While customers get the convenience of 24x7 banking, the bank saves in heavy real estate and manpower costs when compared to establishing a branch. The results are indicative of technology invasion in banks as is obvious from increasing number of ATMs, debit and credit cards. But on the flip side the number of branches of foreign sector banks is still limited in rural and semi-urban areas. ANOVA results highlight that there is a significant difference in the number of branches and private, public and foreign sector banks. ANOVA results for ATMs also highlight that there is a significant difference in the ATMs of private, public and foreign sector banks.

Keywords: *electronic delivery channels, RTGS, NEFT, ECS, inter bank mobile, payment service.*

GJMBR-C Classification : *JEL Code: G29*

EDELIVERYCHANNELSANDBANKINGPERFORMANCEININDIAAPRAGMATICAPPROACH

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I. Introduction

Innovate or evaporate is the success mantra followed by banking sector to exist in the competitive market by focusing on inventions and improvements in electronic delivery channels. The use of technology in expanding banking has been a key focus area of the Reserve Bank. Technological innovation not only enables a broader reach for consumer banking and financial services, but also enhances its capacity for continued and inclusive growth. There are several factors attributed to India's high growth in the recent period- improved productivity, growing entrepreneurial spirit, and higher savings, to name the most important. But one factor usually goes unacknowledged – that is financial intermediation. Improvement in the quantum and quality of financial intermediation ranks along with other factors mentioned above as a key growth driver. And one of the factors that drove the improvement in the quantum and quality of financial intermediation is more wide spread and more efficient use of IT in banking sector. Shastri, (2000), studied the emergence of IT in banking sector. He highlighted some challenges faced by banks regarding IT implementation. Rao (2002) analyzed the impact of new technology on banking sector. The technology is changing the way the business is done and opened new vistas for doing the same work differently in most cost effective manner. Tele-banking and internet banking are making forays such that branch banking may give to home banking. He provided some policies to protect their profitability.

Electronification is a relatively new concept in consumer transactions and these are mostly cash and paper-based. In this segment, less than 3% of the consumer-to-business flow value is electronic. With over US$133 billion payments from bank accounts via ECS and NEFT, electronic fund transfers have emerged as the much-preferred option for transactions, with an increasing orientation toward cashless and even cheque-less payments in India. Presently almost 98 per cent of the branches of public sector banks are fully computerized in India, and within which almost 90 per cent of the branches are on core (Centralized online real time exchange) banking platform. Joint ventures have been set up between telecommunication companies and banking sector that envisages opening bank accounts, cashless transfers, cashless spending and payment facilities, targeting the rural and urban poor etc. The regulators believes that mobile banking is yet to show remarkable growth even after the daily transaction limits have been raised to Rs. 50,000 per day per customer. Apart from major banks such as SBI and ICICI & other banks are still to gain numbers in terms of volume and value of transactions. With an objective to deliver higher value for the savings account customers, banks have designed savings accounts with an auto sweep facility with the help of technology. Some banks have established virtual or self- banking branches where the customer enters the branch, explores services on the touch screen and at any time calls up members of the bank staff by video conferencing.

Traditional banking has always been a brick and mortar building where people go to deposit or withdraw money. However, the banking Internet sector has exploded in the past ten years in India. ICICI was the first bank in India to introduce e-banking services in India. Online banking can be a bit confusing because it has so many names from internet banking to personal computer (PC) banking as well as electronic banking and banking online. Shetty, (2000), technology is dramatically altering the ways in which financial services are delivered to consumers and continue to do so in future too. Electronic banking or the use of computers

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and electronic technology as a substitute for traditional paper based transactions, is here to stay.

With the popularity of the Internet and the power it gives people to take control of their lives, many traditional banks have created banking Internet web pages where customers could transfer money, set up bill payments recurring or otherwise, quickly check items that have cleared, and many other functions that can be accessed 24 hours per day 7 days a week. Internet banking option has been very popular not only for customers who want to have some control over their account without having to go to the bank but for banks as well whose man hours have been freed up from performing simple tasks like balance inquiries, account transfers, and the likes because the customer does it himself with banking Internet.

Internet banking options also include virtual banks. This is the truest form of banking Internet simply because these banks only exist online. Internet banking options have become popular because they save customers time and money, which is a very trendy combination. Banking Internet which only exist online means you will have to transfer your money to the new account or else mail a payment via cheque. Uppal, and Kaur (2007) studied the impact of Information Technology on various parameters of bank performance and concluded that Indian banking industry is quickly moving towards IT. The future of e-channels is very bright.

II. Overview of Electronic Payments Markets Globally and in India

The development of an internet-based electronic payment system permits goods and services to be ordered and paid for irrespective of location, thereby providing opportunities for the creation of completely new business structures and sets of global trading relationships. The internet offers the possibility of 'open systems' for payment and settlement than can operate in parallel to existing, more traditional bank based networks. Consequently, online banking has now become a significant aspect of both wholesale and retail financial services.

With the rapid diffusion of the internet, banking in cyberspace is fast becoming an alternative channel to provide banking services and products. Numerous studies have shown that the internet has become the most popular electronic delivery platform for electronic delivery platform for electronic banking (Karjaluoto et al, 2002).

Major highlights of electronic payments markets globally and in India:

- The total turnover of various payment and settlement systems in India grew by 16% in value terms in 2009-10. The annual turnover in payment systems has been increasing as a ratio of GDP, consistent with the financial deepening of the economy.
- In 2010, India's electronic payments were US$17 trillion (Rs.786trillion). In 2009, McKinsey estimated India's payments industry revenues at US$14 billion. Payment flows (both electronic and paper) are 7.8 times the GDP, comparable to many Western countries and emerging economies such as Brazil (7.3), Italy (7.2) and the US. (7.0).
- There has been significant growth in the electronic payments from below 5% of the total value in 2005 to 88% in FY10, largely due to the Electronification of business-to-business payments.
- Electronification is a relatively new concept in consumer transactions and the transactions are mostly cash and paper-based. In this segment, less than 3% of the consumer-to-business flow value is electronic.exdw

- Subject to variance between banks, payments contributed about 30% of bank revenues; most of this was from transaction banking (including cash management plus trade and supply-chain financing), credit cards and cash and paper transactions. The majority of payment flows occur to and within the business sector.
- With over US$133 billion payments from bank accounts via ECS and NEFT, electronic fund transfers have emerged as the much-preferred option for transactions, with an increasing orientation toward cashless and even cheque-less payments in India.

The payment system in India has gone through significant transition over the past decade. Based in the Payment and Settlement Systems Act 2009, RBI has regulated the charges being imposed by banks to their customers. Some of the examples of these regulations are:

- RBI, effective 8 October 2008, rationalized the charges levied by banks for outstation cheque collections as well as electronic products such as RTGS/NEFT/ECS.
- RBI had set a ceiling on cheque collection charges as Rs.50, Rs.100 and Rs.150 for cheque amounts, respectively, up to Rs.10, 000, Rs.10,001 to Rs.1,00,000 and more than Rs.1,00,000.
- For Inward RTGS/NEFT/ECS transactions, RBI has mandated that no charge is to be levied. For outward transactions, the limits for RTGS of Rs.1,00, 000 to 5,00,000 should not exceed Rs.25 and Rs.5,00,000 and above should not exceed Rs.50 per transaction. Similarly, for NEFT, the limits are Rs.5 for up to 100,000 and Rs.25 for 100,000 and above per transaction.

The payment business in India is currently witnessing a phase of a rapid transition, enabled by the

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growing acceptance of electronic payment systems across various segments. A look at the electronic payments in India over the years reveals the growth in electronic payments in India both in terms of value as well as volume.

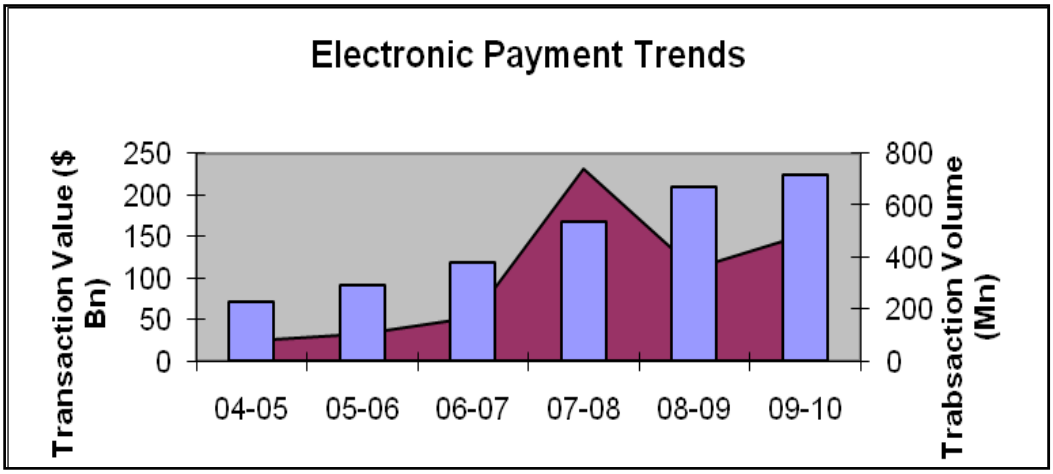

Figure 1 : Electronic Payment Trends

Figure 1 illustrates how paper-based payments have fared vis-à-vis electronic payments in the recent past, in terms of transaction volume and transaction value. While paper based payments, which are essentially payments made through cheques, still command a lion's share in terms of volume, electronic payments overtook cheque payments in terms of value in 2006–07 and command a larger share of the total payments pie today. (Figure 2)The percentage of electronic transactions in terms of volume has also been growing y-o-y since 2006–07. However, the credit for the shift in transaction volumes toward electronic transactions goes to regulators. After RBI made it mandatory for banks to route high-ticket transfers through RTGS, 96% of the value of payments made electronically come through RTGS, while just about 1% of the electronic transactions are done through RTGS.

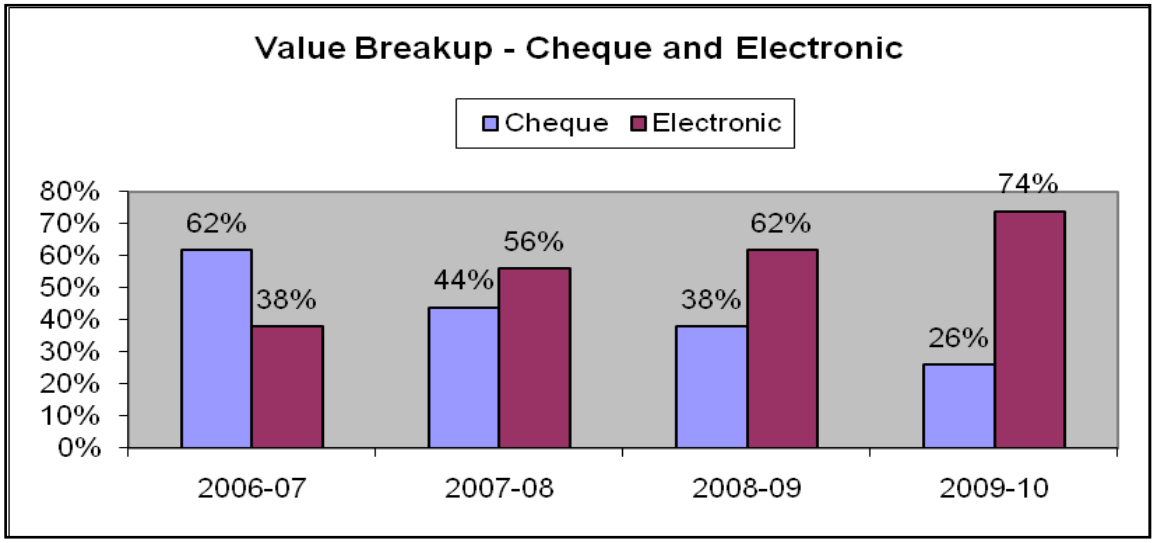

Figure 2 : Value breakup – Cheque and Electronic

If we consider the value for the paper-based transactions and the average daily value of electronic transactions, we can clearly see that the electronic transactions have been doing better that the traditional payment systems. Large banks and private banks are doing really well in the electronic transactions space.

There are 26 public sector banks (State Bank of India and its five associates, 19 nationalised banks and IDBI Bank Ltd.), 7 new private sector banks, 14 old private sector banks and 36 foreign banks operating in India. The number of SCBs increased to 83 in 2010-11 from 81 in 2009-10.

Presently almost 98 per cent of the branches of public sector banks are fully computerised in India, and within which almost 90 per cent of the branches are on core (Centralised online real time exchange) banking platform.

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III. Expansion of Banking Branches

Branch wise Growth status of banks reveals that the rate of growth has been highest for rural banks, followed by semi-urban banks. Thus this throws light on the Govt. policies to provide banking facilities to all citizens in all areas. This is a good sign. Although in absolute numbers there is still quite a lot of difference in bank branches in urban (14248) and metropolitans (13257) compared to 22188 branches in urban areas and 17773 branches in semi-urban areas.

Table 1 : Branch wise Growth status of Public Sector Banks

S. No.	Year	Branches					
		Rural	Semi-urban	Urban	Metro-politan	Total	Growth Rate (Y-O-Y)
1	2005	19068	11371	9269	7580	47288	-
2	2006	18219	11146	9439	9039	47843	1.17
3	2007	18112	11728	10168	9658	49666	3.81
4	2008	18526	12685	11260	10409	52880	6.47
5	2009	18941	13504	11994	10999	55438	4.84
6	2010	19567	14595	12920	11743	58825	6.11
7	2011	20387	15978	13569	12277	62211	5.76
8	2012	22188	17773	14248	13257	67466	8.45
Overall Growth Rate		3.41	2.15	1.67	1.21	1.90	

Year on year growth of banking branches has been highest (8.85) in 2012. Recessionary trends prevalent in the economy had their effect here as shown by lower growth rate in 2009.Recovery started in year 2010 with arise to 6.11 per cent. A slight fall recorded in 2011. Overall trend depicts an increase during the period.

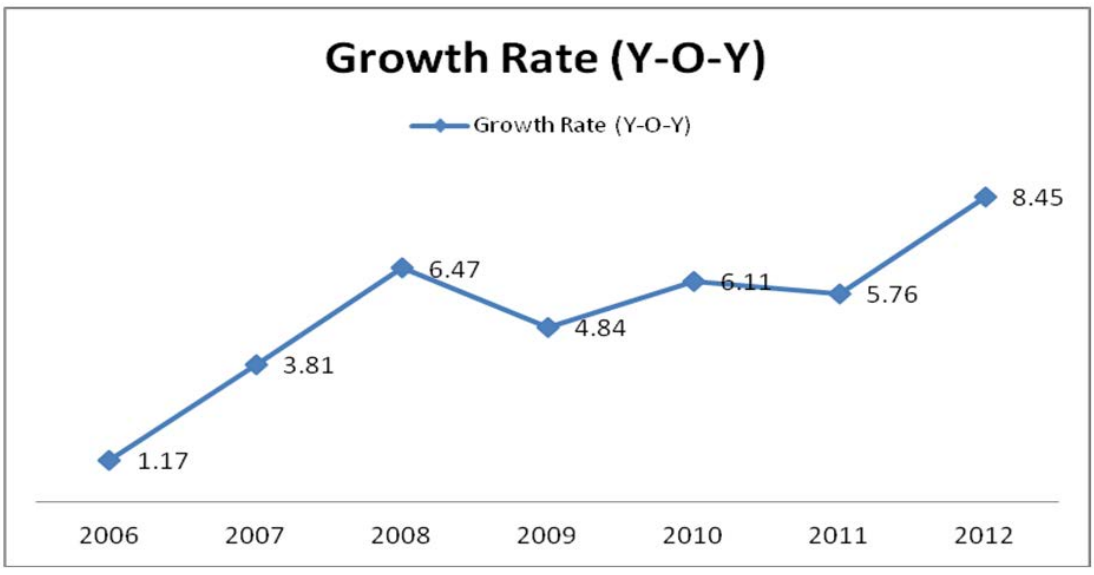

Figure 1 : Year on year growth of banking branches

Branch wise Growth status of private banks as shown in table 2 depicts similar trends to that of public sector banks. The rate of growth is highest for rural sector, viz. 3.23, although this is slightly lower than that of public sector banks. In absolute numbers there is still quite a lot of difference in bank branches in metropolitans (3615) and urban (3569) compared to 4687 branches in semi-urban areas and only 1581 branches in rural areas.

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Table 2 : Branch wise Growth status of Private Sector Banks

S No	Year	Rural	Semi-urban	Urban	Metropolitan	Total	Growth Rate (Y-O-Y)
1	2005	1102	1847	1739	1508	6196	
2	2006	1033	1769	1910	1804	6516	5
3	2007	985	2064	2118	1936	7103	9
4	2008	1031	2368	2417	2159	7975	12
5	2009	1113	2638	2715	2411	8877	11
6	2010	1201	3037	3027	2762	10027	13
7	2011	1311	3814	3315	3162	11602	16
8	2012	1581	4687	3569	3615	13452	16
Overall Growth Rate		3.23	2.22	1.61	1.67	1.94	

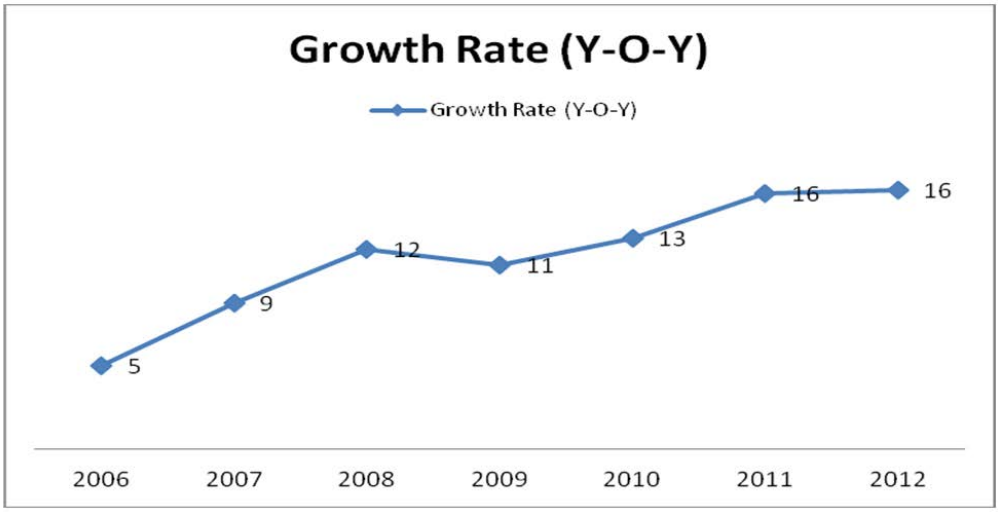

Figure 2 : Year on Year Growth Rates of number of branches in Private sector banks

In terms of Year on Year growth of private sector bank branches, the growth rates depict a rising trend from 5 per cent growth to 16 per cent. Recessionary trends are visible in private sector banking as well.

Table 3 : Branch wise Growth status of Foreign Sector Banks

S No.	Year	Rural	Semi-urban	Urban	Metropolitan	Total	Growth Rate (Y-O-Y)
1	2005	0	0	38	204	242	
2	2006	0	1	37	221	259	7.02
3	2007	0	2	44	227	273	5.41
4	2008	0	2	49	226	277	1.47
5	2009	4	4	52	233	293	5.78
6	2010	5	6	60	237	308	5.12
7	2011	7	8	61	241	317	2.92
8	2012	7	8	61	246	322	1.58
Overall Growth Rate		2.25	1.72	1.68	1.00	1.30	

Branch-wise status of Foreign sector banks is indicating that although foreign banks had their presence in metropolitan and urban areas in 2005. They made their presence in rural areas in 2009 with four banks and now there are seven banks. Foreign banks in semi- urban areas have improved from 1 in 2006 to 8 in 2012.

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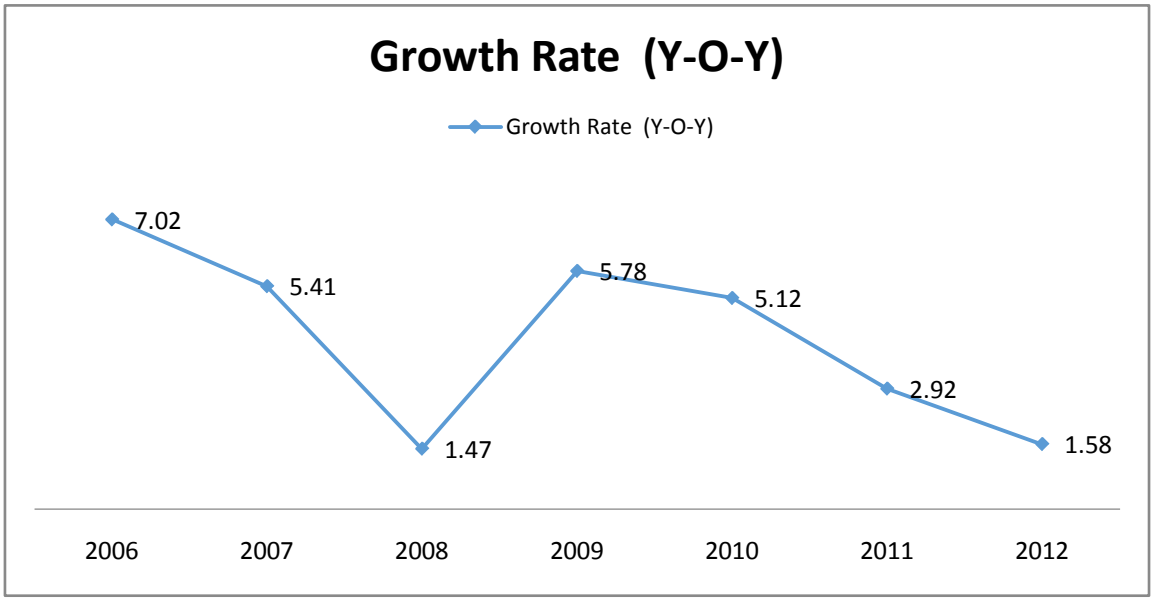

Figure 3 : Year on Year Growth Rates of number of branches in Foreign sector banks

As shown in figure III Year on year growth rates of total Foreign sector banks depict a declining trend. The surprising results are that while public sector banks and private sector banks showed lower growth rates in 2009, foreign sector banks in the same year depicts the highest growth.

Table 4 : Relation between Nature of Banks and Branches of Banks

Groups	Mean (S.D.)	F-Test (p- value)	Post Hoc Test (Levene Test)		
			Groups	p-Value	Remarks
Public Sector Bank Branches	55202.13	355.451 p <.001	Private Sector Bank Branches	.000	There is significant difference
	(7226.329)		Foreign Sector Bank Branches	.000	There is significant difference
Private Sector Bank Branches	8968.50		Public Sector Bank Branches	.000	There is significant difference
	(2572.784)		Foreign Sector Bank Branches	.002	There is significant difference
Foreign Sector Bank Branches	286.38		Public Sector Bank Branches	.000	There is significant difference
	(28.545)		Private Sector Bank Branches	.002	There is significant difference

H_0: There is no difference in the means of Number of branches of Public, Private and Foreign sector banks.

H_1: There is significant difference in the means of Number of branches of Public, Private and Foreign sector banks.

Overall results highlight that there is a significant difference between public sector, private sector and foreign banks regarding Number of ATMS as F-value is 355.451and is significant as $p<0.001$. Post-Hoc test were also conducted and results highlight that that there is significant difference regarding Public Sector Bank branches and Foreign Sector Bank branches as $p<.001$. Regarding Public Sector Bank branches and Private Sector Bank branches, results highlight that that there is no significant difference. All post hoc tests are significant. Thus the alternate hypothesis H_1: There is significant difference in the means of Number of branches of Public, Private and Foreign sector banks has been accepted.

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a) Status of ATMs in Indian Banks

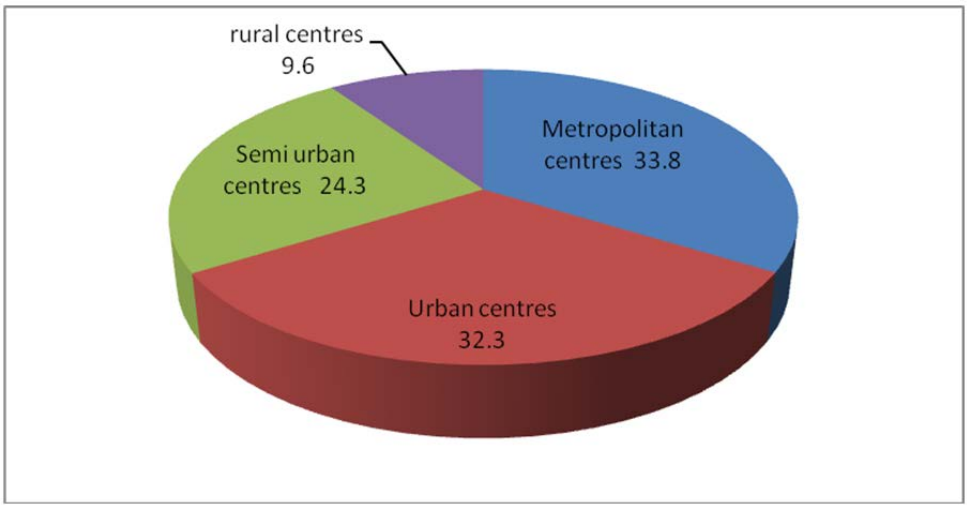

Figure 4 : Area-wise distribution of ATMs.

Area-wise distribution status (Figure IV) of ATMs reveals that metropolis dominate with 33.8%, followed by urban areas with 32.3%. Rural centres have the least percentage of 9.6%.

Table 4 : Comparative Status of ATMS in Different banks

S No	Year	Public Sector Banks	Private Sector Banks	Foreign Sector Banks
1	2005	9992	6853	797
2	2006	12608	7659	880
3	2007	16329	9799	960
4	2008	21788	11967	1034
5	2009	27277	15320	1054
6	2010	40680	18447	1026
7	2011	49487	23651	1367
8	2012	58193	36079	1414
Overall Growth Rate		1.92	2.18	1.80

As shown in table 4 the number of ATMs in banks has seen a rising trend since 2005. A comparative status of ATMS in different types of banks highlights that Private sector banks witnessed the highest growth compared to public sector banks and foreign sector banks in terms of ATMs. In terms of absolute numbers the public sector banks have highest number of ATMs, viz. 58193.

Table 5 : Growth Statistics of ATMs in Public Sector Banks

S No.	Year	Public Sector ATMs					
		On-site	Off-site	Total	Growth Rate (Y-O-Y)	Per cent of Off-site to total ATMs	Per cent of ATMs to Branches
1	2005	4753	5239	9992	-	52.4	21.1
2	2006	6587	6021	12608	26.2	47.8	26.4
3	2007	10289	6040	16329	29.5	37.0	32.9
4	2008	12902	8886	21788	33.4	40.8	41.2
5	2009	17379	9898	27277	25.2	36.3	49.2
6	2010	23797	16883	40680	49.1	41.5	69.2
7	2011	29795	19692	49487	21.6	39.8	79.5
8	2012	34012	24181	58193	17.6	41.6	86.3
Overall Growth Rate		1.78	2.15	1.92			

Off-site ATMs indicate a higher growth than on-site ATMs. Per cent of ATMs to branches have improved from 21.1 percent in 2005 to 86.3 in 2012. The total number of ATMs has increased from 9992 in 2005 to 58193 in 2012.

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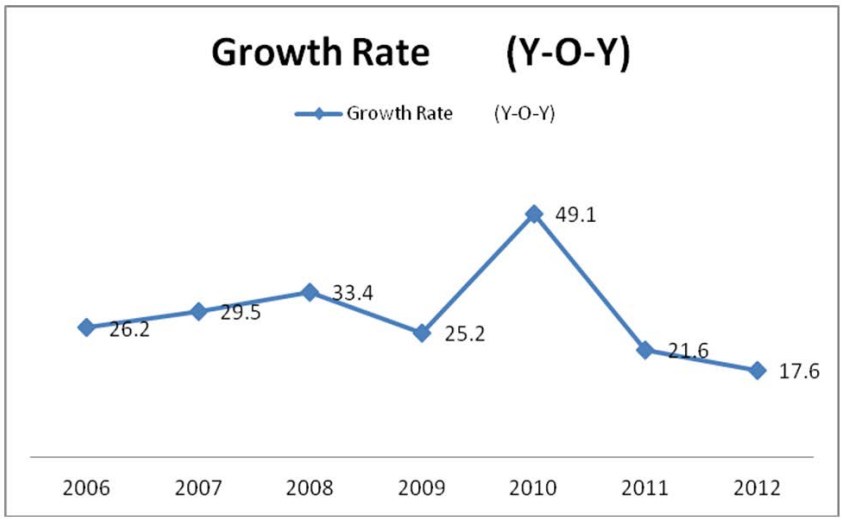

Figure 5 : Year on Year of ATM Growth rates of Public Sector Banks

Year on Year growth rates of public sector ATMs as depicted in Figure V shows the highest growth in 2010. The lower growth is reported in 2009, the time period of recessionary trends in India. In 2011 and 2012 there was again a deceleration in growth rates.

Table 6 : Growth Statistics of ATMs in Private Sector banks

S. No.	Year	On-site	Off-site	Total	Growth rate (Y-O-Y)	Per cent of Off-site to Total ATMs	Per cent of ATMs to Branches
1	2005	2683	4170	6853	-	60.85	110.60
2	2006	3309	4350	7659	11.76	56.80	117.54
3	2007	4258	5541	9799	27.94	56.55	137.96
4	2008	5315	6652	11967	22.12	55.59	150.06
5	2009	6996	8324	15320	28.02	54.33	172.58
6	2010	8603	9844	18447	20.41	53.36	183.97
7	2011	10648	13003	23651	28.21	54.98	203.85
8	2012	13249	22830	36079	52.55	63.28	268.21
Overall Growth Rate		1.86	2.42	2.18			

Per cent of ATMs to Branches has increased from 110.60 per cent to 268.21 per cent. The growth rate of offsite ATMs is higher than that of on- site ATMs. Overall growth statistics highlights an increase at the rate of 2.42 per cent.

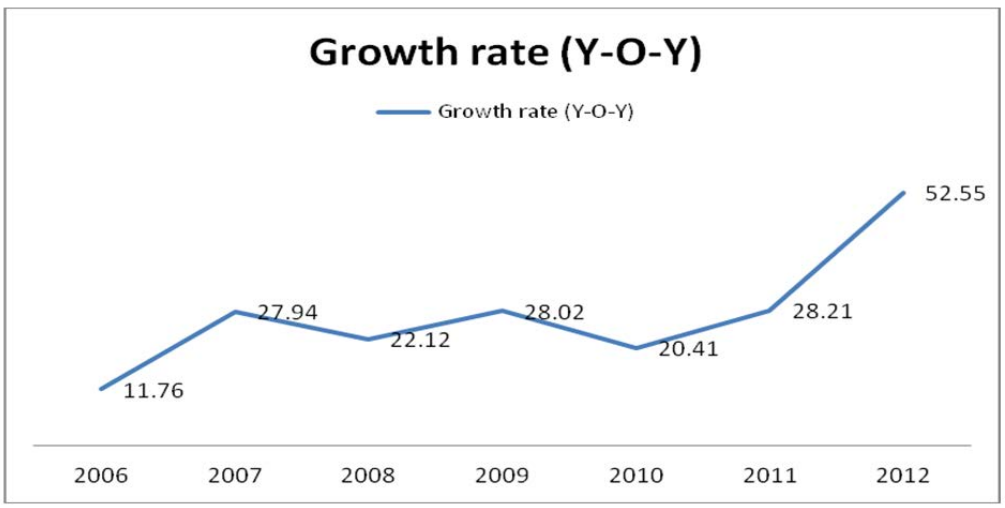

Figure 5 : Year on Year of ATM Growth rates of Private Sector Banks

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Year on year ATM growth of private sector banks depicts an increasing trend. The growth rates improved from 11.76 percent to 52.55 percent.

Table 7 : Growth Statistics of ATMs in Foreign Sector Banks

S No.	Year	On-site	Off-site	Total	Growth Rate (Y-O-Y)	Per cent of Off-site to total ATMs	Per cent of ATMs to Branches
1	2005	218	579	797		72.65	329.34
2	2006	232	648	880	10.41	73.64	339.77
3	2007	249	711	960	9.09	74.06	351.65
4	2008	269	765	1034	7.71	73.98	373.29
5	2009	270	784	1054	1.93	74.38	359.73
6	2010	279	747	1026	-2.66	72.81	333.12
7	2011	286	1081	1367	33.24	79.08	431.23
8	2012	284	1130	1414	3.44	79.92	439.13
Overall Growth Rate		1.16	1.93	1.78			

Growth Statistics of ATMs in Foreign Sector Bank is again indicative of similar trends as observed for public and private sector bank ATMs, i.e. the growth rate is higher for off-site ATMs than for on-site ATMs. Per cent of ATMs to Branches has increased from 329.34 per cent in 2005 to 439.13 per cent in 2012. While on-site ATMs increased from 218 in 2005 to 284 in 2012.

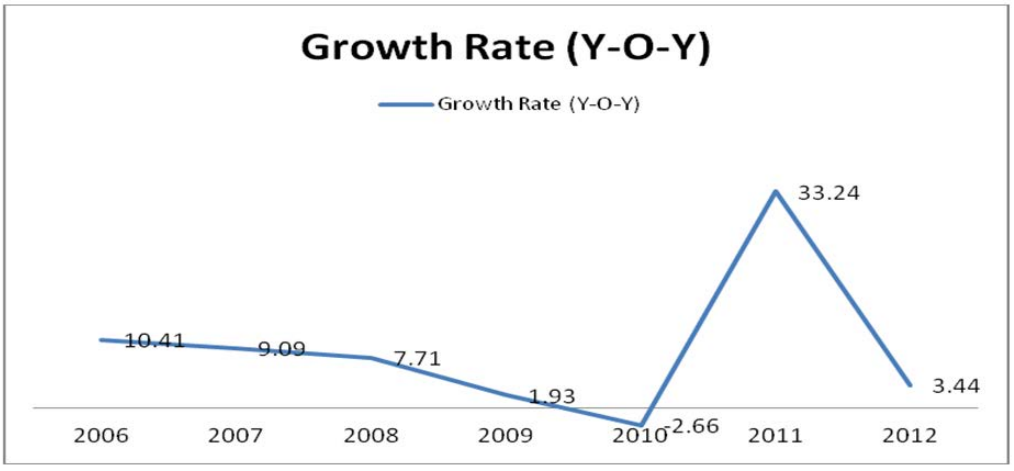

Figure 6 : Year on Year of ATM Growth rates of Private Sector Banks

Year on year ATM growth of private sector banks depicts a mixed trend. The growth rate has been highest in 2011. In the year 2010, there was deceleration in growth.

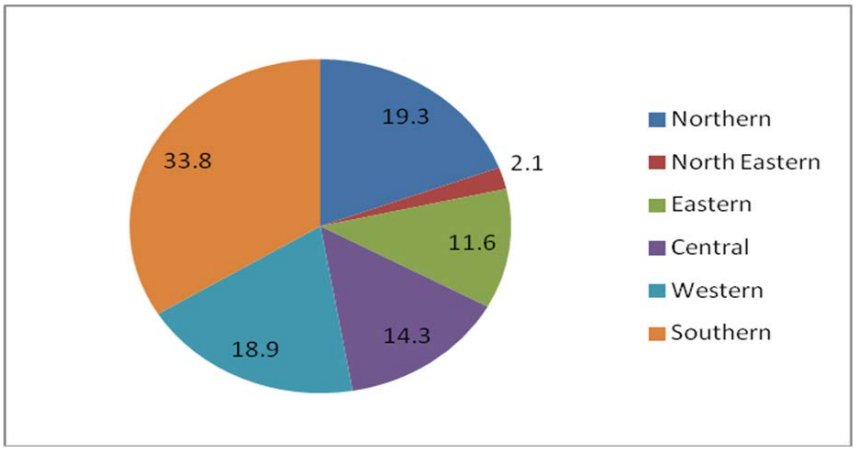

Chart 4 : Share of Regions in Total Net Increase in ATMs 2010-2011

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In case of regional growth, the southern sectors share has been 33.8 and that of Northern region is 19.3. North-eastern region contributed a smallest share of the pie.

b) Relation between Nature of Bank and ATMs

ANOVA Results					
GROUPS	MEAN	F-Test	POST HOC TEST		
	(S.D.)	(p- value)	Groups	p-value	Remarks
ATMs Public Sector Banks	29544.25	11.651 $p<0.001$	ATM Private Sector Banks	.085	There is no significant difference
	(17934.56)		ATM Foreign Sector Banks	.000	There is significant difference
ATMs Private Sector Banks	16221.88		ATM Public Sector Banks	.085	There is no significant difference
	(9825.02)		ATM Foreign Sector Banks	.045	There is significant difference
ATMs Foreign Sector Banks	1066.50		ATM Public Sector Banks	.000	There is significant difference
	(218.00)		ATM Private Sector Banks	.045	There is significant difference

H_0: There is no difference in the means of Number of ATMs of Public, Private and Foreign sector banks.

H_1: There is significant difference in the means of Number of ATMs of Public, Private and Foreign sector banks.

Overall results highlight that there is a significant difference between public sector, private sector and foreign banks regarding Number of ATMS as F-value is 11.651and is significant as $p<0.001$. Post-Hoc test were also conducted and results highlight that that there is significant difference regarding ATM Public Sector Banks and ATM Foreign Sector Banks as $p<.001$. Regarding ATM Public Sector Banks and ATM Private Sector Banks results highlight that there is no significant difference in the mean score. Post hoc tests for ATMs Private Sector Banks and ATM Public Sector Banks are indicative of the fact that there is no significant difference as already highlighted, but in case of ATM Private Sector Banks and ATMs foreign sector banks there is a significant difference. Post hoc tests for foreign sector banks reveals that in case of both ATMs foreign sector Banks and ATM Public Sector Banks as well as ATMs foreign sector Banks and ATM Public Sector Banks there is a significant difference as p values for both are significant. Thus the hypothesis H_1: There is significant difference in the means of Number of ATMs of Public, Private and Foreign sector banks has been accepted.

After analyzing a detailed analysis of growth of branches and ATMs the next step was to find the scenario of debit cards.

IV. Debit Card & Credit Card Performance in India

a) Debit Card Market in India

During 2010-11, the number of debit cards grew at the rate of 25 per cent over the previous year.

- In sync with the trend observed in case of ATMs, nearly three fourths of the total debit cards were issued by PSBs as at end March 2011.
- The share of PSBs in outstanding debit cards witnessed an increase during the recent years, while that of new private sector banks and foreign banks witnessed a decline over the same period.
- However, in absolute terms, the number of outstanding debit cards witnessed an increase for new private sector banks during the recent years years, while that of new private sector banks and foreign banks witnessed a decline over the same period.

Table 2 : Debit Carrds Issued by Scheduled Commercial Banks

S No.	Bank Group	Outstanding Number of Debit cards (in millions)			
Year--→		2007-08	2008-09	2009-10	2010-2011
I	Public sector banks	64.33	91.70	129.69	170.34
a)	Nationalised banks	28.29	40.71	58.82	80.27
b)	SBI group	36.04	50.99	70.87	90.07
II	Private sector banks	34.10	41.34	47.85	53.58
a)	Old private sector banks	5.34	7.09	9.81	12.44
b)	New private sector banks	28.76	34.25	38.04	41.14
III	Foreign banks	4.02	4.39	4.43	3.92

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On the operational side, despite the convenience offered by ATMs in providing banking services, the debit card penetration continued to be low with only 30 per cent of deposit account holders having a debit card. The status of credit card penetration was worse with only less than two per cent of the population having a credit card. Further, the number of outstanding credit cards witnessed a declining trend during the recent years. As these technological advancements improve the pace and quality of banking services, there is a need to make efforts to improve card penetration in the country.

b) Credit Card Market in India

The issuance of credit cards facilitates transactions without having to carry paper money. Despite the decline in the number of outstanding number of credit cards, the volume and value of transactions with credit card recorded a growth of 13 per cent and 22 per cent, respectively in 2010-11. New private sector banks and foreign banks accounted for more than 80 per cent of the total outstanding credit cards as at end March 2011. The electronic payment systems such as Electronic Clearing Service (ECS) credit and debit, National Electronic Fund Transfer (NEFT) for retail transactions and Real Time Gross Settlement (RTGS) for large value, improved the speed of financial transactions, across the country.

Table 3 : Credit Cards Issued by Scheduled Commercial Banks (as at end March 2011)

Sr.No.	Bank Group	Outstanding Number of Debit cards (in millions)			
Year--→		2007-08	2008-09	2009-10	2010-2011
I	Public sector banks	3.93	3.44	3.26	3.08
a)	Nationalised banks	0.72	0.72	0.73	0.78
b)	SBI group	3.21	2.72	2.53	2.30
II	Private sector banks	13.29	12.18	9.50	9.32
a)	Old private sector banks	0.04	0.06	0.06	0.04
b)	New private sector banks	13.25	12.12	9.44	9.28
III	Foreign banks	10.33	9.08	5.57	5.64

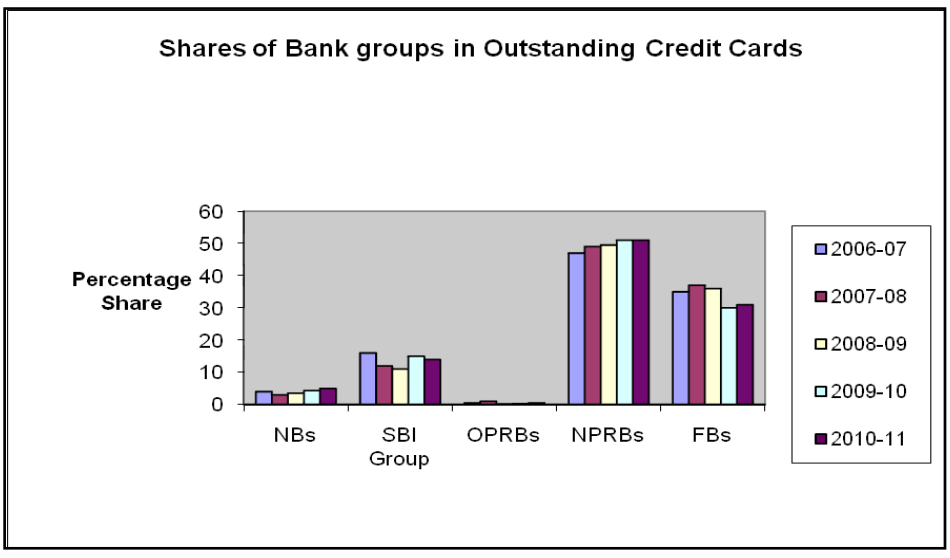

Chart 5 : Shares of Bank Groups in outstanding Credit Cards

V. Mobile Banking

India has 700 million (approx) mobile subscribers, but only 240 million individuals with bank accounts, 20 million credit cards, 88,000 bank branches and 70,000 ATMs. Of the households without a bank account, 42% have at least one mobile phone. This is just a snapshot into the penetration that mobile has achieved in a relatively small period of time.

Mobile banking could be a revolution in banking. It has been in the news for quite a while and, very recently, the transaction limit for mobile wallet cards was increased to Rs.50K. Mobile banking in India is set to generate a fee-based income of Rs.202.5 billion (approx. US$4.5 billion) over the next five years, mainly driven by lower transaction costs, favorable regulatory environment and the UID project.

By 2015, US$350 billion in payment and banking transactions could flow through mobile phones, compared with about US$235 billion of total credit-and debit-card transactions today. This forecast depends on

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the willingness of banks, telecom operators, regulators and consumers collectively to embrace this form of payment.

The RBI introduced operative guidelines for banks for mobile banking transactions in India in October 2008 under the umbrella of the Payments & Settlements Act 2007 with a few revisions and clarifications outlined in subsequent releases. The key highlights of the act are:

- Only rupee based domestic services are permissible, clearly prohibiting the use of cross-border inward and outward transfers.
- Banks are allowed to use the services of business correspondents top extend this facility to customers.
- Only banks with core banking solutions would be permitted to provide mobile banking services on their platform.
- The customer registration for mobile banking is mandatory.
- The mobile banking service offered by banks should be network operator-agnostic and should work across the entire mobile spectrum of operators.
- To ensure inter-operability between banks, message formats such as ISO 8583 were to be adopted for transactions.

There are essentially two mobile banking meta-markets in India: rural and urban. Over the next five years, unbanked rural markets could begin to rival the urban market in size. In urban areas, many consumers have bank accounts, but still rely on cash for 90% to 95% of small-ticket transactions.

Mobile payments would not only seek to change the cash-based nature of transactions, but also would be a tremendous convenience for these consumers. The mobile banking industry in India is ready to take off, especially with the ecosystem players, i.e., operators, banks and mobile manufacturers coming together and launching pilot services.

The Inter Bank Mobile Payment Service (IMPS) facility was launched with much fanfare in November 2010, under the aegis of the National Payment Corporation of India (NPCI). It promised an instant interbank electronic fund transfer service that customers could conveniently access using their mobile phones. However, although the facility is being offered by more than 20 banks across the country, the adoption rate has been low. Industry analysts have attributed this to the fact that the service in its current format is custom-made for Smartphone users who can download an application from their respective banks and use it to make a fund transfer. Users with basic phones have the option of transferring funds via an SMS, which limits the transaction value. With more than 600 million connections and over 15 million being added each month, currently just 5% of mobile phone subscribers are registered for the service. Even among the registered users, only a small fraction uses it regularly. Approximately 680,000 transactions worth Rs.610 million (US$13.55 million) are conducted every month.

a) Developments in the Mobile Banking Arena

RBI has been insisting repeatedly that mobile payments in India have to be driven by a bank– led model. This has prompted several stakeholders such as handset manufacturers, network providers and telecom operators to enter into strategic tie ups with banks to develop a scalable model. Several offerings have emerged or are around the corner over the past year.

- RBI came up with the regulation of an additional factor across IVR and mobile channels. This affected mobile service aggregators such as ngpay, Mchek and Paymate.
- Several new banks have come up with their mobile banking offering through java-based applications. Newer channels such as USSD and SMS have also gained in prominence after RBI increased the limit for unencrypted transactions over mobile channel to Rs.5,000 per day.
- Banks such as SBI offer certain value-added services such as prepaid mobile recharge, which has been a hugely successful functionality. SBI boasts of more than 1 million customers in its mobile banking platform freedom by virtue of balanced service offerings as well as effective customer communication.
- Apparently, the regulator believes that mobile banking is yet to show remarkable growth even after the daily transaction limits have been raised to Rs. 50,000 per day per customer. Apart from major banks such as SBI and ICICI, other banks are still to gain numbers in terms of volume and value of transactions.
- Nokia Money launched its services with Yes Bank and Union Bank of India to provide financial services to customers. Nokia plans to use its distribution network coupled with the financial prowess of the banks to provide a service of its kind.
- Airtel received approval to issue prepaid instruments from regulators and launch it in the name of Airtel Money. Other mobile operators too are defining models wherein payment and/or transfer enabling instruments would be launched either on their own or with banks, leveraging the principles of business correspondents.
- In the area of proximity payments, Citibank, in conjunction with Vodafone and Nokia conducted an NFC (near field communication)-based mobile payments trial in Bangalore, which saw considerable success. However, the scalability would depend on the proliferation and adoption of

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NFC-enabled handsets and acceptance capabilities at merchant outlets. There are several players in the space of financial inclusion such as FINO, ATOM, Eko and ALW who offer a bouquet of services such as deposits, cash withdrawals and payment & transfer transactions via the mobile channel.

b) Telecommunication Operator Bank Tie-ups

Following three of India's largest mobile operators have tied up with India's largest banks to offer a bouquet of mobile-based banking and financial services to their customers:

1. Airtel and State Bank of India: A joint venture company has been set up that envisages opening bank accounts, cashless transfers, cashless spending and payment facilities, targeting the rural and urban poor. Customers would be offered a no-frills banking account from SBI, across Airtel's 1.5 million+ retailer network. Both partners have envisaged investing more than Rs.1 billion in this enterprise. The JV plans to acquire more than 2 million accounts annually.
2. Vodafone and the ICICI Bank: Similar arrangement being entered offering financial products ranging from savings accounts, prepaid instruments and credit products through a mobile phone platform.
3. Idea and Axis Bank: They have entered into an association to offer financial services to customers under the Idea Mycash brand. These players have partnered a pilot launch in the Dharavi-Allahabad corridor and have plans to shortly launch the service at a pan-India scale.

VI. Trends in Innovation in Products and Services Offered by Banking Sector

a) Savings Accounts with Auto Sweep Facility

With an objective to deliver higher value for the savings account customers, banks have designed savings accounts with an auto sweep facility with the help of technology. The product feature works in a way that when the balance exceeds a given threshold value, the same is converted into a fixed deposit. If the balance falls, the fixed deposit is automatically broken and the balance is automatically credited back to the savings account of the customer. This facility provides a greater yield for customers on ideal funds and help banks retain low-cost deposits.

b) Smart Cards

The processor type smart cards with built-in integrated circuits (ICs) or microchips offer a wide range of transactional opportunities even from remote areas. Smart cards are extensively used for transactions such as cash withdrawals from ATMs, payment of bills and online purchases.

c) Virtual Banks

Multimedia technology has been quite effective in bringing banking services to the doorstep of its customers. The customer-activated terminal (CAT) or self-banking kiosks are an interactive multimedia display unit, housed in a small enclosure, which typically consists of a computer workstation, monitor, video disk player and a card reader. It enables customers to browse through the information and use the available banking services at their own speed. Some banks have established virtual or self- banking branches where the customer enters the branch, explores services on the touch screen and at any time calls up members of the bank staff by video conferencing. While customers get the convenience of 24X7 banking, the bank saves in heavy real estate and manpower costs when compared to establishing a branch.

d) Electronic Funds Transfers

Real time gross settlements (RTGS) and national electronic funds transfer (NEFT) have transformed the way funds transfers are done. Moving from three to four days for clearing and funds transferred, banks have moved to real-time transfers using online channels and mobile phones.

VII. Conclusion

Major developments in banking sector due to technology are taking place. In the face of the new competitive pressures, inherent rigidities in public sector banks to enhance serious challenges. The gap between partially using IT in banks and fully using IT in banks has widened. Financial sector reforms experienced that as compared to new private sector banks and foreign banks, in public sector banks very less IT has taken place. This IT in new private sector and foreign banks is becoming threat and also motivation for Indian public sector banks. Thus in this competition those banks will survive in the future which will manage technology infrastructure and innovations in the products and services offered by them.

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3. Submission of Manuscripts,

4. Manuscript's Category,

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26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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