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EDITORIAL

As Albert Einstein said, without a personal philosophy and a religious bent of mind, it is impossible to live. Only insecure and shallow person question this. The uncertainties of the world, the way things happen and the way nature works, demand a certain "synergy". We, at I.T.S; are proud to publish the Vol. 14 No: 02, edition of SYNERGY- I.T.S Journal of I.T & Management. This research journal is endeavored to promote and disseminate the knowledge to the large numbers of academicians, researchers, students and practitioners across the world in the complex multi-disciplinary management field.

The opening article of this journal explores the impact of merger and acquisitions on profitability and operating performance of Indian public sector bank by taking into consideration the case of merger of Nedungadi Bank Limited (NBL) with Punjab national bank (PNB). This article is authored by Sarbapriya Ray, Gopal Chandra Mondal and Mihir Kumar Pal. The second article, authored by Sarvendu Tiwari and Ajai Pal Sharma emphasized the impact of Balance Funds on Indian capital market. The third article, authored by Anubhav Srivastava and Purwa Srivastava, describes the performance of a selected portfolio and its measurement of value at risk (VaR). Article four, authored by Namita Mishra tries to explore the statuses of the financial inclusion in India. Fifth article is authored by Babita. This article is an effort to assess the export, investment and employment generation by special economic zones in India. Sixth article is a descriptive analysis to measure the passenger's satisfaction in Delhi metro. The last article of this volume is authored by Sumninder Kaur Bawa and NehaVerma. This study analyses the domestic and international business performance of the Indian reinsurer with special reference to General Insurance Corporation of India.

We would like to congratulate our contributing researchers and thought leaders for showcasing their research appetite by contributing research articles to our journal. We are grateful to all the authors and the reviewers and members of editorial team for their contribution in the strengthening of this journal. We invite submission of articles for our next issue from the researchers, academicians, and stalwarts from business and industry in different functional area of management so as to strengthen the intellectual capital and resource of this journal.

Dr. Abhinav Priyadarshi Tripathi
Editor – Synergy

Influence of Merger on Profitability and Operating Performance of Indian Public Sector Bank: A Case Study

Dr Sarbapriya Ray*
Gopal Chandra Mondal**
Dr Mihir Kumar Pal**

Abstract :

The study explores the impact of mergers and acquisitions on profitability and operating performance of Indian public sector bank in the Indian banking sector taking into consideration the case of merger of Nedungadi Bank Limited (NBL) with Punjab national bank (PNB). Wilcoxon signed rank test for those variables like IDR, IETE, NNPANA where significant departure from normality assumption is noticed, suggests that there is no significant difference between the pre and the post-merger performance on the basis of IDR, IETE, and NNPANA of the said bank. On the other hand, paired samples t test for other 14 variables where normality assumption is not violated, suggests that significant differences between pre and post M&A (DPEpre & DPEpost),(STApre & STApost) and (OPAWFpre & OPAWFpost) are found out. On the other hand, the means of other the pre and post merger ratio values are not different significantly. On the basis of the results of granger causality test, we can conclude that there exist unidirectional causality between return on asset (ROA) and operating expenses to total expenses ratio (OOETE), return on asset (ROA) and net non-performing assets to net total assets ratio (NNPANA), return on asset (ROA) and non interest income total income (NIITI) respectively but not vice versa.

Keywords: Merger, India, Nedungadi bank, Punjab National Bank.

Introduction:

Mergers and acquisitions are planned decisions to increase the value to the share holders as well as the firm. As an inorganic growth strategy, M&A are pathways to achieve efficiency and to create value. It is most extensively used strategy by firms to strengthen and maintain their position in the market place. M&As are considered as a relatively fast and efficient way to expand into new markets and incorporate new technologies. Mergers and Acquisitions have been used to expand revenues and cut costs. Consolidation via merger and acquisition affords Indian banks the 'size advantage' that most foreign banks have. Very recently, the Indian banking industry has recognized that size matters a lot when it confronts competition with other banks. Size would bring economies of scale by bringing down the transaction costs. The larger size will enable Indian banks to face competition arising from foreign banks and would also strengthen them to expand

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business in overseas markets. The fundamental principle of any kind of mergers and acquisitions can be questioned if the performances of the merged/acquiring firms do not confirm any improvement in the long run. There are numerous evidences where we can find that the success of merger is by no means assured.

In this backdrop, capital inadequacy and a high level of non-performing Assets (NPA) were the key factors that led the century-old private sector, Nedungadi Bank Limited, into a severe financial crisis forcing the centre to put the bank under moratorium. Moreover, productivity per employee of Nedungadi Bank Limited (NBL) was low. Above all, RBI merged sick bank with healthy bank to protect depositor's interests.

Analysts opined that the merger of Nedungadi Bank Limited (NBL) with Punjab National Bank (PNB) will be beneficial to both the banks. PNB's network is mostly concentrated in northern India. With the merger of NBL, it will be able to reach out to the southern region. On the other hand, NBL, which is technically owned by a stock broker-led group, will be set free of broker-led influences and vested interests after its merger. Nedungadi Bank, which has 175 branches and 1,619 employees, reported a net loss of Rs.678 million in the year ended March 31, 2001. NBL has taken over by PNB in 2003. At the time of the merger with PNB, Nedungadi Bank's shares had zero value, with the result that its shareholders received no payment for their shares. It was a forced merger under the direction of Reserve Bank of India (RBI) and Government of India (GOI).

Therefore, the objective of this study is to explore the impact of mergers and acquisitions on profitability and operating performance of Indian public sector bank in the Indian banking sector taking into consideration the case of merger of Nedungadi Bank Limited (NBL) with Punjab national bank (PNB). We aim to examine whether M&A in this sector have led to the improvement in performance of the merging banks or has the performance deteriorated after the merged entity was formed.

Methodology:

The secondary data which has been collected was subjected to descriptive and inferential analysis. This study has attempted to test the hypotheses relating to the impact of M&A on the various performance parameters and thus derive a conclusion about whether the event of M&A has made a positive impact on the performance of these banks-Punjab National Bank and Nedungadi bank. The software SPSS 20.0, E.Views and MS Excel were used to compute and analyze the data.

The ratios for each of the performance parameters were estimated for the above mentioned merger individually. This was followed by the Shapiro-Wilk normality test. On the basis of the normality results, paired t test at 95% confidence level was carried out for parameters following

normal distribution and Wilcoxon Paired Sign-Rank test was conducted for factors not following normal distribution. We have also conducted Kolmogorov-Smirnov test to justify whether there is violation in normality assumption.

Thereafter, we compared means of the performance parameter over time i.e. before the merger vs after the merger. T-test and Wilcoxon test were chosen because those are popularly used for computing pre-post analysis of a phenomenon. The Shapiro–Wilk test is also conducted to test of normality. The different parameters chosen for study were ROA, CDR, IDR, PSA, DPE, APE, IITI, NIITI, IETE, EETE, OOETE, STA, IIAWF, NIIAWF, OPAWF, NNPANA and CAR.

Kolmogorov-Smirnov test

This test assesses whether there is significant departure from normality in the population distribution for each of the banks. The null hypothesis states that the normality assumption is not violated.

Shapiro–Wilk test

The Shapiro–Wilk test is a test of normality in frequentist statistics. The null-hypothesis of this test is that the population is normally distributed.

Paired Sample T Test

It checks whether there is any significant change in normal return before and after the announcement of the M&A event. The hypotheses for the test is stated below (Bhaumik and Selarka, 2008).

H_O: There is no significant difference in normal return due to the occurrence of the event.

H_1: There is a significant difference in normal return due to the occurrence of the event.

The hypotheses can be expressed in two different ways that express the same above idea and are mathematically equivalent:

H_0: $\mu_1 = \mu_2$ ("the paired population means are equal")

H_1: $\mu_1 \neq \mu_2$ ("the paired population means are not equal") or

H_0: $\mu_1 - \mu_2 = 0$ ("the difference between the paired population means is equal to 0")

H_1: $\mu_1 - \mu_2 \neq 0$ ("the difference between the paired population means is not 0")

Where μ_1 is the population mean of variable 1, and μ_2 is the population mean of variable 2.

Wilcoxon Signed-Ranks Test:

The Wilcoxon Signed-Rank test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ (i.e. it is a paired difference test). It can be used as an alternative to the paired Student's t-test, *t*-test for matched pairs, or the *t*-test for dependent samples when the population cannot be assumed to be distributed. Therefore, it is the non-parametric version of a paired samples t-test. It is used when the difference between the two variables is abnormally distributed. It analyses the difference between the paired observations, taking

into account the magnitude of the differences.

Stationarity Test (Unit Root Test)

When dealing with time series data, a number of econometric issues can influence the estimation of parameters using Ordinary Least Squares (OLS). Regressing a time series variable on another time series variable using OLS estimation can obtain a very high R^2, although there is no meaningful relationship between the variables. This situation reflects the problem of spurious regression between totally unrelated variables generated by a non-stationary process. The first step for an appropriate analysis is to determine if the data series are stationary or not. Time series data (especially most macro-economic data) generally tend to be non-stationary, i.e. they tend to exhibit a deterministic and/or stochastic trend and thus they suffer from unit roots. Due to the non-stationary, regressions with time series data are very likely to result in spurious results. The problems stemming from spurious regression have been described by Granger and Newbold (1974). In order to ensure the condition of stationarity, a series ought to be integrated to the order of 0 [I (0)]. In this study, tests of stationarity, commonly known as unit root tests, were adopted from Dickey and Fuller (1979, 1981) Therefore, econometric methodology needs to examine the stationarity; for each individual time series, are non stationary, Therefore, it is recommended that a stationarity (unit root) test be carried out to test for the order of integration. A series is said to be stationary if the mean and variance are time-invariant. A non-stationary time series will have a time dependent mean or make sure that the variables are stationary, because if they are not, the standard assumptions for asymptotic analysis in the Granger test will not be valid. Therefore, a stochastic process that is said to be stationary simply implies that the mean [(E (Y_t)] and the variance [Var (Y_t)] of Y remain constant over time for all t, and the covariance [covar (Y_t, Ys)] and hence the correlation between any two values of Y taken from different time periods depends on the difference apart in time between the two values for all $t \neq s$. Since standard regression analysis requires that data series be stationary, it is obviously important that we first test for this requirement to determine whether the series used in the regression process is a difference stationary or a trend stationary. The Augmented Dickey-Fuller (ADF) test is used. To test the stationary of variables, we use the Augmented Dickey Fuller (ADF) test which is mostly used to test for unit root. Following equation checks the stationarity of time series data used in the study:

$$\Delta y_t = \beta_1 + \beta_1 t + \alpha y_{t-1} + \gamma \Sigma \Delta y_{t-1} + \varepsilon_t \quad \text{---(4)}$$

Where ε_t is white nose error term in the model of unit root test, with a null hypothesis that variable has unit root. The ADF regression test for the existence of unit root of y_t that represents all variables (in the natural logarithmic form) at time t.

The test for a unit root is conducted on the coefficient of y_{t-1} in the regression. If the coefficient is significantly different from zero (less than zero) then the hypothesis that y contains a unit root is rejected. The null and alternative hypothesis for the existence of unit root in variable y_t is H_0; $\alpha = 0$ versus H_1: $\alpha < 0$. Rejection of the null hypothesis denotes stationary in the series.

If the ADF test-statistic (t-statistic) is less (in the absolute value) than the Mackinnon critical t-values, the null hypothesis of a unit root can not be rejected for the time series and hence, one can conclude that the series is non-stationary at their levels. The unit root test tests for the existence of a unit root in two cases: with intercept only and with intercept and trend to take into the account the impact of the trend on the series.

Key Variables under consideration of our study:

We have taken following six independent variables Capital adequacy ratio (CAR), Credit deposit ratio (CDR), spread as a percentage of assets(STA), operating expense ratio (OOETE), net non-performing asset ratio(NNPANA), non-interest income (NIITI), into our analysis because these variables are free from multicollinearity and also one dependent variable indicating profitability (ROA) is considered.

Profitability of the banks can be examined with the help of number of parameters. One of such parameter is ROA. Return on assets is an indicator of how profitable a company is relative to its total assets. It gives an idea of the efficiency of the management in using its assets to generate earnings. Dependent variable for the purpose of study is Return on Assets of banks. Bank profitability can be measured through various factors; return on assets (ROA) is one of the important measures (Paul Kupiec and Yan Lee, 2012). This ratio is connected with bank profit and the total assets. Return on assets is an indicator of how profitable a company is relative to its total assets. It gives an idea of the efficiency of the management in using its assets to generate earnings. The higher ratio indicates that the management is efficiently utilizing its assets. This ratio is calculated by profit before tax to total assets of the bank and it is expressed as a percentage. The Return on Assets is defined by the following formula. Return on Assets Ratio=Profit before Tax/ Total Assets X 100. This ratio indicates how many rupees of earnings the bank derive from each rupee of assets they control.

1. Spread Ratio (STA) (Spread/Total Assets): Spread is the difference between interest earned and interest paid. The ratio is calculated as a percentage spread to total assets. The higher the ratio, the more will be the profitability.

2. Credit-Deposit (CDR) Ratio (Total advances/Total deposits). Higher the CD ratio, higher is the utilization of depositor's money which helps banks to earn higher return on their assets. A high LDR indicates two things, firstly the bank is issuing out more of its deposits in the form of interest bearing loans; secondly the

bank generates more income. Here the problem is failure in repayment of loan, in such a case the banks liable to repay the deposit money to their customers, so the ratio is too high puts the bank at high risk. Alternatively a very low ratio means bank is at low risk, on the same time it is not using assets to generate income.

3. Capital Adequacy Ratio (CAR) (Capital/Risk weighted assets): In the adoption of risk management strategies by a bank, the ratio determines the cushion available to a bank against the credit risk, operational risk and market risk.

4. Operating Expense (OETE) Ratio (Operating Expenses/Total expenses): The ratio has a negative relationship with profitability, and a high OE ratio highlights operational inefficiency of a bank.

5. Non-Interest Income (NIITI): (Non interest income /total assets) Non interest income refers to the Income of a bank from its allied and non-banking activities. Banks should aim to increase their non interest income to enhance their return on assets.

6. Net Non-Performing Asset (NNPANA) ratio (NNPA/Net Total assets): The ratio bears a negative relationship with profitability as it indicates the credit risk of a bank.

Table 1: Summary of Variables, description and measurement

Variable	Explanation	Measurement
Dependent Variable/Regresse d		
ROA	Return on Bank's total assets	Net Profit divided by average total asset
Independent Variables/Regressor		
STA	Spread Ratio (Spread is the difference between interest earned and interest paid)	Calculated as a percentage spread to total assets.
CDR	Credit-Deposit Ratio	Total advances divided by Total deposits
CAR	Capital adequacy as a measure of solvency level forced by Capital depletion	(Tier 1 capital+Tier 2 capital) divided by Risk weighted assets
OETE	Operating expenses to total expenses ratio highlighting operational efficiency of a bank.	Operating Expenses divided by Total expenses
NIITI	Non interest income to total assets ratio. Non interest income refers to the Income of a bank from its allied and non -banking activities.	Non Int erest Income divided by Total Assets
NNPANA	Net Non Performing Assets to Net Total Assets	Net Non Performing Assets divided by Net Total Assets

Source: *Author's own estimate*

Granger Causality test:

Causality is a kind of statistical feedback concept which is widely used in the building of forecasting models. Historically, Granger (1969) were the ones who formalized the application of causality in economics and Sim (1972) Granger causality test is a technique for determining whether one time series is significant in forecasting another (Granger, 1969). The standard Granger causality test (Granger, 1988) seeks to determine whether past values of a variable helps to predict changes in another variable. The definition states that in the conditional distribution, lagged values of Y_t add no information to explanation of movements of X_t beyond that provided by lagged values of X_t itself (Green, 2003). We should take note of the fact that the Granger causality technique measures the information given by one variable in explaining the latest value of another variable. In addition, it also says that variable Y is Granger caused by variable X if variable X assists in predicting the value of variable Y. If this is the case, it means that the lagged values of variable X are statistically significant in explaining variable Y. The null hypothesis (H_0) that we test in this case is that the X variable does not Granger cause variable Y and variable Y does not Granger cause variable X. In summary, one variable (X_t) is said to granger cause another variable (Y_t) if the lagged values of X_t can predict Y_t and vice-versa.

Autocorrelation test:

In Ordinary Least Squares (OLS) regression, time series residuals are often found to be serially correlated with their own lagged values. Serial correlation means (a) OLS is no longer an efficient linear estimator, (b) standard errors are incorrect and generally overstated, and (c) OLS estimates are biased and inconsistent .This test is an alternative to the Q-Statistic for testing for serial correlation. It is available for residuals from OLS, and the original regression may include autoregressive (AR) terms.

(i)Durbin Watson Statistic

'Durbin Watson Statistic' is a number that tests for autocorrelation in the residuals from a statistical regression analysis. Durbin-Watson statistic is always between 0 and 4. A value of 2 means that there is no autocorrelation in the sample. Value approaching 0 indicate positive autocorrelation and values towards 4 indicate negative autocorrelation.

(ii)Breusch-Godfrey test:

Unlike the Durbin-Watson Test, the Breusch-Godfrey test may be used to test for serial correlation beyond the first order, and is valid in the presence of lagged dependent variables. The null hypothesis of the Breusch-Godfrey test is that there is no serial correlation up to the specified number of lags. The Breusch-Godfrey test regresses the residuals on the original regressors and lagged residuals up to the specified lag order. The number of

observations multiplied by R^2 is the Breusch-Godfrey test statistic.

Analysis of results:

The Kolmogorov-Smirnov test assesses whether there is significant departure from normality in the population distribution for the bank mentioned above. The null hypothesis states that the normality assumption is not violated. The result of the normality shows that the significant value of IDR, IETE and NNPANA of the PNB bank during entire sample period 2000-01 to 2014-15(both pre-merger and post-merger) is less than 0.05, meaning that normality assumption has been violated. Since the significant values of each of the remaining variables (in table) is greater than 0.05, we do not reject the null hypothesis and conclude that these data do not violate the normality assumption.

Table 2: Kolmogorov-Smirnov test and Shapiro-Wilk test of normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ROA	.169	15	.200*	.956	15	.618
CDR	.200	15	.109	.848	15	.016
IDR	.293	15	.001	.777	15	.002
PSA	.122	15	.200*	.948	15	.498
DPE	.139	15	.200*	.928	15	.259
APE	.170	15	.200*	.897	15	.087
IITI	.151	15	.200*	.933	15	.307
NIITI	.151	15	.200*	.933	15	.307
IETE	.239	15	.021	.901	15	.039
EETE	.154	15	.200*	.921	15	.201
OOETE	.163	15	.200*	.893	15	.073
STA	.164	15	.200*	.922	15	.208
IIAWF	.114	15	.200*	.986	15	.996
NIIAWF	.181	15	.198	.915	15	.164
OPAWF	.159	15	.200*	.953	15	.574
NNPANA	.235	15	.025	.848	15	.016
CAR	.135	15	.200*	.967	15	.811
a. Lilliefors Significance Correction						
*. This is a lower bound of the true significance.						

Source: *Author's own estimate*

The Shapiro–Wilk test is a test of normality in frequentist statistics. The null-hypothesis of this test is that the population is normally distributed. Thus if the p-value is less than the chosen alpha level(0.05), then the null hypothesis is rejected and there is evidence that the data tested are not from a normally distributed population. In other words, the data are not normal. On the contrary, if the *p*-value is greater than the chosen alpha level (0.05), then the null hypothesis that the data came from a normally distributed population cannot be rejected. The same result is also confirmed by the Shapiro-Wilk test.

Table 3: Wilcoxon Signed Ranks Test

Ranks				
		N	Mean Rank	Sum of Ranks
IDRpost - IDRpre	Negative Ranks	0[a]	.00	.00
	Positive Ranks	2[b]	1.50	3.00
	Ties	0[c]		
	Total	2		
IETEpost - IETEpre	Negative Ranks	2[d]	1.50	3.00
	Positive Ranks	0[e]	.00	.00
	Ties	0[f]		
	Total	2		
NNPANApost - NNPANApre	Negative Ranks	2[g]	1.50	3.00
	Positive Ranks	0[h]	.00	.00
	Ties	0[i]		
	Total	2		
a. IDRpost < IDRpre				
b. IDRpost > IDRpre				
c. IDRpost = IDRpre				
d. IETEpost < IETEpre				
e. IETEpost > IETEpre				
f. IETEpost = IETEpre				
g. NNPANApost < NNPANApre				
h. NNPANApost > NNPANApre				
i. NNPANApost = NNPANApre				

Source: *Author's own estimate*

Table 3 shows that the negative mean rank is less than the positive mean rank. This suggests that the Investment –Deposit Ratio measure (IDR) in post merger period is likely higher than that in the pre merger period. So we can infer that the phenomenon of merger has accentuated this performance parameter.

Table 3 shows that the negative mean rank is higher than the positive mean rank in case of Net NPA as % to net advances (NNPANA). This suggests that the Net NPA as % to net advances (NNPANA) position in post merger period is likely lesser than that in the pre merger period. So we can infer that the phenomenon of merger has turned down the Net NPA as % to net advances (NNPANA) position of the companies.

Similarly, the negative mean rank is higher than the positive mean rank in case of Interest expenses as a % of total expenses (IETE). This suggests that the Interest expenses as a % of total expenses (IETE) position in post merger period is likely lesser than that in the pre merger period. So we can infer that the phenomenon of merger has turned down the Interest expenses as a % of total expenses (IETE) position of the companies.

Table 4: Wilcoxon Test Ranks

Test Statistics[c]			
	IDRpost - IDRpre	IETEpost - IETEpre	NNPANApost - NNPANApre
Z	-1.342[a]	-1.342[b]	-1.342[b]
Asymp. Sig. (2-tailed)	.180	.180	.180
a. Based on negative ranks.			
b. Based on positive ranks.			
c. Wilcoxon Signed Ranks Test			

Source: *Author's own estimate*

By applying the Wilcoxon signed rank test, we can see that for all the 3 ratios, the significance level is more than 0.05 (0.18), therefore, the null hypothesis is accepted which indicates that there is no significant difference between the pre and the post-merger performance on the basis of IDR, IETE, NNPANA of the Punjab National bank. But, if we compare the individual ratio, we have found that the post-merger IDR performance for all the two years has been better than the pre-merger period and reverse has happened in case of IETE, NNPANA ratio.

Table 5: Paired Samples Statistics

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CDRpre	51.77944	2	2.57296	1.81936
	CDRpost	53.38871	2	.46211	.32676
Pair 2	PSApre	38.91132	2	.27849	.19692
	PSApost	41.88141	2	2.86327	2.02463
Pair 3	DPEpre	404.57488	2	30.59842	21.63635
	DPEpost	138.97871	2	14.76419	10.43986
Pair 4	APEpre	209.88027	2	26.25326	18.56386
	APEpost	74.23306	2	8.52466	6.02784
Pair 5	IITIpre	87.72929	2	.77903	.55086
	IITIpost	83.16702	2	3.56340	2.51970
Pair 6	NIITIpre	12.27070	2	.77903	.55086
	NIITIpost	16.83302	2	3.56347	2.51975
Pair 7	EETEpre	21.12633	2	3.52142	2.49002
	EETEpost	19.03701	2	.47542	.33617
Pair 8	OOETEpre	6.75708	2	.11239	.07947
	OOETEpost	7.87514	2	.73360	.51874
Pair 9	STApre	3.05133	2	.03893	.02753
	STApost	3.58249	2	.05712	.040390
Pair 10	IIAWFpre	9.5978	2	.34249	.24218
	IIAWFpost	8.74268	2	.69395	.49070
Pair 11	OPAWFpre	1.97299	2	.54696	.38676
	OPAWFpost	3.54508	2	.377700	.26707
Pair 12	ROApre	.7607	2	.04346	.03073
	ROApost	1.10745	2	.096923	.06853
Pair 13	CARpre	10.4700	2	.32527	.23000
	CARpost	12.5600	2	.76368	.54000
Pair 14	NIIAWFpre	1.40154	2	.13464	.09520
	NIIAWFpost	1.88662	2	.34336	.24279

Source: *Authors' own estimate*

Table-6: Paired Samples t Test

Pair	Variables (Pre-Post)	Paired Differences					t	df	Sig. (2 tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
1	CDRpre - CDRpost	-1.609	2.1108451	1.4925	-20.5744	17.3559	-1.078	1	.476
2	PSApre - PSApost	-2.970	2.5847737	1.8277	-26.1933	20.2531	-1.625	1	.351
3	DPEpre - DPEpost	265.5	15.834220	11.196	123.3313	407.860	23.721	1	.027
4	APEpre - APEpost	135.6	17.728597	12.536	-23.6379	294.932	10.821	1	.059
5	IITIpre - IITIpost	4.562	2.7843637	1.9688	-20.4542	29.5787	2.317	1	.259
6	NIITIpre - NIITIpost	-4.562	2.7844370	1.9688	-29.5795	20.4548	-2.317	1	.259
7	EETEpre - EETEpost	2.089	3.9968474	2.8261	-33.8209	37.9995	.739	1	.595
8	OOETEpre - OOETEpost	-1.118	.62121264	.43926	-6.69943	4.46331	-2.545	1	.238
9	STApre - STApost	-.5311	.01818290	.01285	-.694533	-.36779	-41.31	1	.015
10	IIAWFpre - IIAWFpost	.8551	.35146183	.24852	-2.30262	4.01289	3.441	1	.180
11	OPAWFpre - OPAWFpost	-1.572	.16926331	.11968	-3.09286	-.05131	-13.13	1	.048
12	ROApre - ROApost	-.3467	.05346569	.03780	-.827099	.133640	-9.171	1	.069
13	CARpre - CARpost	-2.09	.43841	.31000	-6.02892	1.84892	-6.742	1	.094
14	NIIAWFpre - NIIAWFpost	-.4850	.20872216	.14758	-2.36037	1.39021	-3.287	1	.188

Source: *Author's own estimate*

In case of pre and post merger cash deposit ratio,(CDR pre & CDR post),since the calculated value of t (1.078) for N=2 (as in Table 6) is lower than the table value (12.7062 at $t_{0.025}$,df =1), we accept the null hypothesis. The results are not significant at 0.05 level of significance (p=.476). Therefore, the results of the above table show insignificant difference between pre and post M&A cash deposit ratio, because the p-value is greater than 0.05. Therefore, after merger and acquisition taken place, there is no significant difference in the performance of the said PNB bank in India as H_0 is accepted. This indicates that the means of the pre and post merger cash

deposit ratio values are not different significantly.

Even some ratios individually depicts that there is slight increase or decrease in the financial performance of banks, but paired Samples t Test shows in this study that there is no significant impact. From Table 6, we observe that in pair 1, the post merger cash deposit ratio mean is greater than that of the pre merger period. We, therefore, conclude that it is more likely to have been due to some systematic and deliberate cause. If all other confounds are eliminated, this systematic cause must have been the event of merger.

In case of pre and post merger Priority Sector Advance ratio (PSApre & PSApost), since the calculated value of t =1.625) for N=2 (as in pair 2 in table-6) is lower than the table value (12.7062 at $t_{0.025}$,df =1), we accept the null hypothesis. The results are not significant at 0.05 level of significance (p=0.351). Therefore, the results of the above table show insignificant difference between pre and post M&A priority sector advance ratio , because the p-value is greater than 0.05. Therefore, after the merger and acquisition, there is no significant difference in the performance of the said PNB bank in India in terms of priority sector advance ratio as H_0 is accepted. This indicates that the means of the pre and post merger priority sector advance ratio values are not different significantly.

Following the pattern of priority sector advance ratio ,present study shows similar trend in case of pre and post merger advance per employee(APEpre & APEpost), pre and post interest income as a % of total income(IITIpre& IITIpost), pre and post merger non interest income as a % of total income(NIITIpre& NIITIpost), pre and post merger establishment expenses as a % of total expenses(EETEpre & EETEpost), pre and post merger other operating expenses as a % of total expenses(OOETEpre & OOETEpost), pre and post merger interest income as a % of average working fund(IIAWFpre& IIAWFpost), pre and post merger return on total asset(ROApre& ROApost), pre and post merger capital adequacy ratio(CARpre & CARpost), pre and post merger non interest income as a % of average working fund(NIIAWFpre & NIIAWFpost).

On the contrary, in case of pre and post merger (DPEpre & DPEpost) ,(STApre & STApost) and (OPAWFpre & OPAWFpost), since the calculated value of t (=23.721, 41.31and 13.13 respectively) for N=2 (as in pair 3,9 and 11 in table-6) is greater than the table value 12.7062 at $t_{0.025}$,df =1), we reject the null hypothesis. The results are significant at 0.05 level of significance (p=0.027,0.015,0.048). Therefore, the results of the above table show significant difference between Pre and Post M&A (DPEpre & DPEpost), (STApre & STApost) and (OPAWFpre & OPAWFpost).This indicates that the

means of the pre and post (DPEpre & DPEpost), (STApre & STApost) and (OPAWFpre & OPAWFpost), ratio values are different significantly.

The diagnostic tests are performed to the equation regarding problems such as autocorrelation and heteroskedasticity. Diagnostics are necessary to establish the power of the results in respect to robustness, biasness and efficiency of the estimates. We have conducted different diagnostic tests in order to see whether our results are free from problem of serial autocorrelation.

Table 7: Residual Test

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	1.140470	Probability	0.366631
Obs*R-squared	3.325032	Probability	0.189661

Source: *Author's own estimate*

The top part of the output presents the test statistics and associated probability values. The Obs*R-squared statistic is the Breusch-Godfrey LM test statistic for the null hypothesis of no serial correlation. Since the calculated Breusch-Godfrey LM test statistic of 3.325032 does not exceed the critical χ^2 (1) value (i.e 3.84), we can not reject the hypothesis of no serial correlation up to lag order 1 at the 95% confidence level. The (effectively) high probability value (.>0.05) corresponding to 'Obs*R-squared' strongly indicates the absence of serial correlation in the residuals. Therefore, the result from diagnostic checking shows that model does not suffer form autocorrelation.

We have taken following six independent variables CAR, CDR, STA , OOETE , NNPANA, NIITI into our analysis because these variables are free from multicollinearity and also one dependent variable indicating profitability (ROA) is considered. From our analysis to test whether there exist multicolinearity, it is found that correlations among independent variables are moderate which do not exceed the general rule of thumb. Moreover tolerance for these variables are moderately high which also are beyond the specified minimum ceiling (0.10) and VIFs do not exceed the specified rule of thumb of10. This indicates that multicolinearity is not an issue of concern in this study (Result not shown).

The decision on whether we analyze a time series in levels or differences is an important aspect of forecasting. Visual methods have been around for a long time. Relatively recently, statistical tests for the null hypothesis that the series is nonstationary, meaning that differencing is required, have been developed. Therefore, we should start test for stationery from intercept, intercept trend in level (i.e. no differences) and if the result is non-stationery, data need to be differenced at intercept, intercept and

Table: 8: Unit Root Test: The Results of the Augmented Dickey Fuller (ADF) Test

Variables	Level/First difference	Calculated ADF	ADF critical value (at 5%)	Included in test equation	Inference
ROA	Level	-0.55	-3.87	Intercept & Trend	Non-stationery
	First difference	-3.76	-3.12	Intercept	Stationery
CAR	Level	-2.65	-3.87	Intercept & Trend	Non-stationery
	First difference	-3.61	-3.12	Intercept	Stationery
CDR	Level	-0.54	-3.87	Intercept & Trend	Non-stationery
	First difference	-4.132050	-3.92	Intercept & Trend	Stationery
STA	Level	-1.64	-3.87	Intercept & Trend	Non-stationery
	First difference	-3.75	-3.12	Intercept	Stationery
OOETE	Level	3.24	-3.87	Intercept & Trend	Non-stationery
	First difference	-3.37	-3.18	Intercept	Stationery
NNPANA	Level	-3.70	-3.87	Intercept & Trend	Non-stationery
	First difference	-3.44	-3.18	Intercept	Stationery
NIITI	Level	-2.80	-3.87	Intercept & Trend	Non-stationery
	First difference	-3.26	-3.12	Intercept	Stationery

Ho: series has unit root; H_1: series is trend stationary

Source: *Author's own estimate*

trend respectively in first differences to attain stationery of time series. Table 8 presents the results of the unit root test. The results show that variable of our interest- namely return on assets (ROA) attained stationary at first differences [I (1)] using augmented Dickey Fuller Test. The results indicate that the null hypothesis of a unit root can be rejected for the given variable and, hence, one can conclude that the variable - return on assets (ROA) -is stationary at first

differences [I (1)]. Thus the ADF tests also prove that the namely return on assets (ROA) series is stationary. Other variables like capital adequacy ratio (CAR), credit deposit ratio (CDR), spread on total assets (STA), other operating expenses to total expenses(OOETE), net non performing asset to net asset(NNPANA), non interest income to total assets(NIITI) have also attained stationary after first differencing I(1) signifying that they are integrated of order one, I (1). The results show consistency with different lag structures and to the presence of the intercept or intercept and trend.

Table: 9: Granger Causality test

Pairwise Granger Causality Tests				
Lags: 2				
Null Hypothesis:	Obs.	F-Statistic	Probability	
STA does not Granger Cause ROA	13	0.41313	0.67492	Accept
ROA does not Granger Cause STA		0.85661	0.46016	Accept
CDR does not Granger Cause ROA	13	0.70680	0.52160	Accept
ROA does not Granger Cause CDR		3.46493	0.08244	Accept
CAR does not Granger Cause ROA	13	0.59763	0.57293	Accept
ROA does not Granger Cause CAR		1.76382	0.23195	Accept
OOETE does not Granger Cause ROA	13	2.59196	0.13558	Accept
ROA does not Granger Cause OOETE		4.64432	0.04585	Reject
NNPANA does not Granger Cause ROA	13	0.48286	0.63390	Accept
ROA does not Granger Cause NNPANA		4.81981	0.04094	Reject
NIITI does not Granger Cause ROA	13	0.00192	0.99808	Accept
ROA does not Granger Cause NIITI		5.66051	0.02939	Reject

H_0: X does not granger cause Y

H_1: X granger causes Y

Source: *Author's own estimate*

The results of pair wise granger causality between return on asset (ROA) and different financial parameters of selected bank are contained in Table 9. We have found that there exist unidirectional causality between return on asset (ROA) and operating expenses to total expenses ratio(OOETE), return on asset (ROA) and net non-performing assets to net total assets ratio(NNPANA), return on asset (ROA) and non interest income total income(NIITI) respectively but not vice versa. Here, unidirectional causality runs from return on asset (ROA) to operating expenses, return on asset (ROA) to total expenses ratio(OOETE), return on asset (ROA) to operating expenses to total expenses ratio(OOETE), return on asset

(ROA) to non interest income total income(NIITI) respectively. No causality exist between return on asset (ROA) and spread to total asset ratio (STA), return on asset (ROA) and credit deposit ratio(CDR), return on asset (ROA) and capital adequacy ratio(CAR).

Conclusion:

The empirical findings suggest that out of the 17 ratios taken initially as operating performance indicators of merger case, 3 ratios namely IDR, IETE, NNPANA of the PNB bank during entire sample period 2000-01 to 2014-15(both pre-merger and post-merger) has violated normality assumption and other 14 ratios under our study satisfy normality assumption.

Wilcoxon signed rank test for those variables like IDR, IETE, NNPANA where significant departure from normality assumption is noticed, suggests that there is no significant difference between the pre and the post-merger performance on the basis of IDR, IETE, and NNPANA of the said bank. But, by looking at individual ratio, we have found that the post-merger IDR performance for all the years has been better than the pre-merger period and reverse has happened in case of IETE, NNPANA ratio.

On the other hand, paired samples t test for other 14 variables where normality assumption is not violated, suggests that significant differences between pre and post M&A (DPEpre & DPEpost),(STApre & STApost) and (OPAWFpre & OPAWFpost) are found out. On the otherhand, the means of the pre and post merger cash deposit ratio, priority sector advance ratio values are not different significantly. Even some ratios showed individually that there is slightly increase or decrease in the financial performance of banks, but paired samples t test suggests that there is no significant impact. Similar thing has happened in case of pre and post merger advance per employee(APEpre& APEpost), pre and post interest income as a % of total income(IITIpre& IITIpost), pre and post merger non interest income as a % of total income(NIITIpre& NIITIpost), pre and post merger establishment expenses as a % of total expenses(EETEpre & EETEpost), pre and post merger other operating expenses as a % of total expenses(OOETEpre & OOETEpost), pre and post merger interest income as a % of average working fund(IIAWFpre& IIAWFpost), pre and post merger return on total asset(ROApre& ROApost), pre and post merger capital adequacy ratio(CARpre & CARpost), pre and post merger non interest income as a % of average working fund(NIIAWFpre & NIIAWFpost).

On the basis of the results of granger causality test, we can conclude that there exist unidirectional causality between return on asset (ROA) and operating expenses to total expenses ratio (OOETE), return on asset (ROA) and net non-performing assets to net total assets ratio (NNPANA), return on asset (ROA) and non interest income total income (NIITI) respectively but not vice versa.

Most of the merger in Indian banking segment has so far taken place to restructure financially fragile banks with

strong banks. But, this may have unfavorable influence upon the asset quality of the stronger banks. It is, therefore, recommended that the strong banks should be merged with stronger banks to compete with foreign banks as well as to penetrate in the global financial market. Therefore, government and policy makers should be more vigilant in advocating merger as a way to garner economies of scale and scope.

References:

1. Aharon David Y, Gavious Ilanit & Yosefa Rami (2010), "Stock Market Bubble Effects on Mergers and Acquisitions", The Quarterly Review Of Economics and Finance, vol.50, 456–470.
2. Anand Manoj & Singh Jagandeep (2008), Impact of merger announcement on shareholders wealth:Evidence from Indian Private sector banks, Vikalpa: Journal for Decision maker,vol.33(1), pp.35-54.
3. Bakker, HJC and Helmink,JWA(2004),*Successfully Integrating Two Businesses*,Gowar Publishing, Humpshire.
4. Bruner,R.F(2004),Applied mergers and acquisitions,John Wiley and Sons Inc,New Jersey.
5. Bhaumik, Sumon & Ekta Selarka (2008), Impact of M&A on firm performance in India: Implications for concentration of ownership and insider entrenchment, William Davidson Institute at the University of Michigan, Working Paper Number 907.
6. Panwar, S. (2011), Mergers & Acquisitions in Banking Industry – The Need of Hour,*International Journal of Contemporary Practices,* vol.1(2), p. 75-82.
7. Paul Kupiec and Yan Lee., 2012, What Factors Explain Differences in Return on Assets Among Community Banks? Federal Deposit Insurance Corporation, Proceedings of the Third International Conference on Global Business, Economics, Finance and Social Sciences (GB14Mumbai Conference) Mumbai, India. 19-21 December 2014 ISBN: 978-1-941505-21-2 Paper-ID:MF49812,www.globalbizresearch.org.
8. Shanmugam, B. & Nair, M. (2004), Mergers & Acquisitions of Banks in Malaysia, *Managerial Finance,*vol. *(4)* p. 1-18.
9. DeLong, G.L. (2003). Does Long Term Performance of Mergers Match Market Expectations? Evidence from the US Banking Industry, *Financial Management,* p. 5-25.
10. DePamphilis,D.M(2005),*Mergers, Acquisitions and other restructuring activities*, 4th Edition, Elsevier.Inc. London.
11. Devos, E., Kadapakkam, P.R., & Krishnamurthy, S. (2008), How Do Mergers Create Value? A Comparison of Taxes, Market Power, and Efficiency Improvements and Explanations for Synergies. *The Review of Financial Studies*,vol. 22(3), March 27, 2008.
12. Dickey, D.A and W.A.Fuller (1979), Distribution of estimators of Autoregressive Time series with a Unit Root, *Journal of the American Statistical Association*, vol.74,pp.427-31. (1981),Likelihood Ratio Test for Autoregressive Time Series with a Unit Root, *Econometrica*,vol.49,pp.1057-72.
13. Granger C.W.J. (1969), Investigating

causal relations by econometric models and cross spectral methods, Econometrica ,vol.37.

14. Kuriakose Sony ,M.S Senam Raju, N.V.Narasimham (2009), Voluntary Amalgamations in Indian Granger, C.W.J. and P. New bold(1974), Spurious regressions in econometrics, Journal of Econometrics ,vol.2,pp. 111-120.
15. Granger, C. W. J. (1988) 'Some Recent Developments in the Concepts of Causality', *Journal of Econometrics*, 39:199-211
16. Banking Sector: Valuation Practices and Adequacy of Swap ratios, Electronic copy available at: http// issn.com/ abastract=1653698.
17. Mantravadi Pramod & Reddy, A Vidyadhar (2007),Mergers and operating performance: Indian experience,The ICFAI Journal of mergers and Acquisitions,vol.4,no.4,pp52-66.
18. Mehta Jay & Kakani Ram Kumar(2006), "Motives for Mergers and Acquisitions in the Indian Banking Sector – A Note on Opportunities & Imperatives", SPJCM Working Paper: 06- 13, Retrieved From Http://Papers.Ssrn.Com/Sol3/Papers.Cfm?Abstract_Id=1008717.
19. Murthy,G.K(2007), Some cases of Bank merger in India : A study .In Bose,J(Ed), Bank Mergers: The Indian Scenario,(244-259), Hyderabad: The ICFAI University Press.
20. Müslümov Alövsat. (2002), "The Financial Analysis of Post merger Performance of Surviving Firms", Yapi Kredi Economic Review, Vol. 13(1), Retrieved from Http://Papers.Ssrn.Com /Sol3/Papers.Cfm?Abstract_Id=890063.
21. Sinha Pankaj & Gupta Sushant (2011),Mergers and Acquisitions: A pre and post analysis for the Indian financial services sector, MPRA Paper 31253, Online at: http://mpra.ub.uni-muenchen.de/31253.
22. Suresh Kumar(2013), Impact of Bank Mergers on the Efficiency of Banks: A study of merger of Bharat Overseas Bank with Indian Overseas Bank, International Journal of Academic Research in Business and Social Sciences December 2013, Vol. 3, No. 12 ISSN: 2222-6990.
23. Paul.J (2003), Bank of Madura merger with ICICI Bank: An analysis,IIMB Management Review, vol.15(3),p40.
24. Paul Kupiec and Yan Lee(2012), What Factors Explain Differences in Return on Assets Among Community Banks? Federal Deposit Insurance Corporation, Proceedings of the Third International Conference on Global Business, Economics, Finance and Social Sciences (GB14Mumbai Conference) Mumbai, India. 19-21 December 2014 ISBN: 978-1-941505-21-2 Paper ID: MF498 12 www.globalbizresearch.org http://www.amcm.gov.mo/publication/quarterly/July2009/macaoprof_en.pdf
25. V.Radha Naga Sai and Dr.Syed Tabassum Sultan (2013) "Financial performance analysis in Banking sector- A Pre & Post Merger perspective" ABHINAN Vol,2,April 2013,ISSN 2320-0073 (pp56-66).
26. Sims, C. A. (1972): Money, Income and Causality, American Economic Review, vol. 4, pp. 540–542.
27. Saraswathi,K.V(2007),Crucial HR Management issues in Bank Consolidation: Some cases, .In Bose,J(Ed), Bank Mergers: The Indian Scenario,(226-243), Hyderabad

Study of Balance Funds and Its Impact on Indian Capital Market

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Abstract

Mutual fund is the most suitable investment for the common man as it offers an opportunity to invest in diversified portfolio, good research team, professionally managed Indian stock as well as the foreign market, the main aim of the fund manager is to taking the scrip that have under value and future will rising, then fund manager sell out the stock. Fund manager concentration on risk – return trade off, where minimize the risk and maximize the return through diversification of the portfolio. The most common features of the mutual fund unit are low cost.

This study will highlight the impact of Balance Funds on Indian capital market. Regression analysis used to show the impact of balance funds NAV (independent variable) on capital market index BSE- SENSEX and NSE-NIFTY (dependent variable).Balance funds NAV (independent variable) data collected from specific Mutual fund website on daily basis from 1January 2010 to 31 January 2016 and again converted on monthly basis, and then monthly NAV of each Balance scheme converted in Funds return by using the formula: $Rp= ((NAVt-NANt-1)/NANt-1) \times 100$.

Capital market index BSE- SENSEX and NSE-NIFTY (dependent variable)data collected from respective website on monthly basis from January 2010 to January 2016 and selected closing index of each month of both market separately and then converted in market return separately by using the formula: $Rm=((Index_t-Indext-1)/Indext-1)\times 100$.

Keywords: Mutual Funds, NAV, BSE, NSE.

Introduction:Introduction:

The study is based on the analyses of balance funds and but primary objective of these schemes has to generate regular incomes so as to make monthly and quarterly distributions to investors. Further the scheme features is to growth in capital. The work of the Fund Manager is the allocation based on equity related securities 65% to 75% and remaining investment on debt & money market instruments. Researcher selects eight schemes under study.

This study will highlight the impact of Balance Funds on Indian capital market. Regression analysis used to show the impact of balance funds NAV (independent variable) on capital market index BSE- SENSEX and NSE-NIFTY

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Analysis of the data to know the impact of balance funds on capital market done by regression analysis, variance analysis by ANOVA, relation and strength in variables calculated by Part(sr) correlation analysis and test of significance of impact calculated by T-Test with the help of SPSS.

Literature Review:

Treynor(1965) used 'characteristic line' for relating expected rate of return of a fund to the rate of return of a suitable market average. He coined a fund performance measure taking investment risk into account. Further, to deal with a portfolio, 'portfolio-possibility line' was used to relate expected return to the portfolio owner's risk preference.

Sharpe, William F (1966)developed a composite measure of return and risk. He evaluated 34 open-end mutual funds for the period 1944-63. Reward to variability ratio for each scheme was significantly less than DJIA and ranged from 0.43 to 0.78. Expense ratio was inversely related with the fund performance, as correlation coefficient was 0.0505. The results depicted that good performance was associated with low expense ratio and not with the size. Sample schemes showed consistency in risk measure.

Jensen(1968) developed a composite portfolio evaluation technique concerning risk-adjusted returns. He evaluated the ability of 115 fund managers in selecting securities during the period 1945-66. Analysis of net returns indicated that, 39 funds had above average returns, while 76 funds yielded abnormally poor returns. Using gross returns, 48 funds showed above average results and 67 funds below average results. Jensen concluded that, there was very little evidence that funds were able to perform significantly better than expected as fund managers were not able to forecast securities price movements.

Fama(1972) developed methods to distinguish observed return due to the ability to pick up the best securities at a given level of risk from that of predictions of price movements in the market. He introduced a multi-period model allowing evaluation on a period-by-period and on a cumulative basis.

Gupta (1974) evaluated the performance of mutual fund industry for the period 1962-71 using Sharpe, Treynor, and Jensen models. All the funds covered under the study outperformed the market irrespective of the choice of market index. The results indicated that all the three models provided identical results.

Gupta Ramesh(1989) evaluated fund performance in India comparing the returns earned by schemes of similar risk and similar constraints. An explicit risk-return relationship was developed to make comparison across funds with different risk levels. His study decomposed total return into return from investors risk, return from managers' risk and target risk. Mutual fund return due to selectivity was decomposed into return due to selection of securities and timing of investment in a particular class of securities.

VidhyashankarS(1990) identified a shift from bank or company deposits to mutual funds due to its superiority by way of ensuring a healthy and orderly development of capital market with adequate investor protection through SEBI interference. The study identified that mutual funds in the Indian capital market have a bright future as one of thepredominant instruments of savings by the end of the century.

Jayadev (1996) in his study they evaluated the performance of two growth oriented mutual funds (Mastergain and Magnum Express) on the basis of monthly returns compared to benchmark returns. For this purpose, risk adjusted performance measures suggested by Jenson, Treynor and Sharpe are employed. It is found that, Mastergain has performed better according to Jenson and Treynor measures and on the basis of Sharpe ratio it's performance is not upto the benchmark.

Sahadevan S and Thiripalraju M(1997) stated that, mutual funds provided opportunity for the middle and lower income groups to acquire shares. The savings of household sector constituted more than 75 percent of the GDS along with a shift in the preference from physical assets to financial assets and also identified that, savings pattern of households shifted from bank deposits to shares, debentures, and mutual funds.

Statman, Meir(2000) emphasizes that, socially responsible investing has to be taken as a tool by the corporations. He further identified that, socially responsible stocks outperformed while socially responsible mutual funds under performed the S & P 500 Index during 1990-98.

Narasimhan M S and Vijayalakshmi S(2001)analyzed the top holding of 76 mutual fund schemes from January 1998 to March 1999. The study showed that, 62 stocks were held in portfolio of several schemes, of which only 26 companies provided positive gains. The top holdings represented more than 90 percent of the total corpus in the case of 11 funds. The top holdings showed higher risk levels compared to the return. The correlation

between portfolio stocks and diversification benefits was significant at one percent level for 30 pairs and at five percent level for 53 pairs.

Miller Edward M., Prather Larry J.,&Mazumder M. Imtiaz, (2008) The study try to examine asset class cross-autocorrelations at the macro level by exploring the return associations among mutual fund asset classes .The Granger causality tests and correlation results are employed to ascertain whether significant relationships exist among asset classes. Using a time series of 2,739 daily returns for 641 mutual funds comprising 20 asset classes, trading strategies are developed using the initial sample and evaluated out-of-sample on a risk-adjusted basis. Both the cross-autocorrelations and Granger causality tests suggest that most of the domestic equity asset class returns can predict future global and international equity returns. Further, the trading-rule portfolios provide a greater return per unit of risk (Sharpe and Treynor ratios) thus dominating all buy-and-hold portfolios.

Duguleană L, DumitracheI,GrimmA, & Fischer S.(2009) The paper attempt to presents the performance of a mutual fund by taking a look at the timing and selectionabilities of a portfolio manager. Separating the timing and selection abilitiesof the fund manager is taken into consideration by two major models. Thedata about the mutual fund chosen for study is the German blue chip fund"DWS Deutsche AktienTyp O", which includes most of the DAX 30companies. The data consists of 117 monthly observations of the fund returnsfrom January 1999 to September 2008. We used EViews to analyse the data.

Agrawal & Patidar (2009) studied the empirically testing on the basis of fund manager performance and analyzingdata at the fund-manager and fund-investor levels. The study revealed that the performance is affectedby the saving and investment habits of the people and at the second side the confidence and loyalty of the fund Manager and rewards- affects the performance of the MF industry in India.

Rodríguez Javier (2010)the study examine the performance of a sample of sociallyresponsible mutual funds (SRMFs) and a matched sample of conventional funds during the 1997-2005 time period. Risk-adjusted performance is examined using several methodologies, including a measure that compares the performance of a fund with that of an efficient and volatility-match benchmark portfolio. On the basis of the raw returns, socially responsible funds performed better than some market indexes but this evidence of outperformance disappears once risk is incorporated into the analysis.

Trainor William J. (2010)the study analyze the risk-adjusted performance of individual mutual funds thatinvestors use to invest in this asset class. Individually, funds do exhibit performance persistence and top ranked funds in one period outperform bottom ranked funds over the

proceeding period by an average of 2.7 percent annually.

Sharma Nishi(2012) the study found that all the benefits which emerge out from the investment in mutual fund may be grouped into three categories. The first category relates to the scheme/ fund related attributes. This includes safety of money invested in mutual funds, favorable credit rating of fund/ scheme by reputed credit agencies, full disclosure of all relevant information and regular updates on every trading day. The second category is related with the monetary benefits provided by fund/schemes in form of capital appreciation, liquidity, ROI (return on investment), early bird incentives, fringe benefits and relaxation in charges (expense ratio, entry load and exit load). The last category relates with the sponsor related attributes.

Research Methodology:

This study will highlight the impact of Balance Funds on Indian capital market. Regression analysis used to show the impact of balance funds NAV (independent variable) on capital market index BSE- SENSEX and NSE-NIFTY (dependent variable).Balance funds NAV (independent variable). Data collected from specific Mutual fund website on daily basis from 1January 2010 to 31 January 2016 and again converted on monthly basis, and then monthly NAV of each Balance scheme converted in Funds return by using the formula: Rp= ((NAVt-NANt-1)/NANt-1) ×100.

Capital market index BSE- SENSEX and NSE-NIFTY(dependent variable)data collected from respective website on monthly basis from January 2010 to January 2016 and selected closing index of each month of both market separately and then converted in market return separately by using the formula: Rm=((Indext -Indext-1)/Indext-1)×100.

Analysis of the data to know the impact of balance funds on capital market done by regression analysis, variance analysis by ANOVA, relation and strength in variables calculated by Part(sr) correlation analysis and test of significance of impact calculated by T-Test with the help of SPSS.

Objectives of Study:

To study the impact of Balance Funds on NSE.

To find out the impact of Balance Funds on BSE.

Hypothesis:

The hypotheses for the study are as under.

H_{01}: There is no significant impact of Balance Funds on NSE.

H_{02}: There is no significant impact of Balance Funds on BSE.

Data:

The study based on primary and secondary data. The secondary data requirement related with NAV, SENSEX, NIFTY, T-Bill Rates and Bond Index, collected from specific mutual funds websites, BSE, NSE, RBI and CCIL websites. Also other

sources specially from the journal — Mutual Funds – Insight — based on Value Research Magazines , and others journals, articles, books and the published and unpublished documents of the mutual funds have been considered in the research.

Universe:

The universe of the study consists of the all the assets management companies (AMC), included selected consistent performers mutual funds and Mutual funds investors under the different objective of the study.

Sampling Unit:

The sample unit included Equity Schemes growth Funds, Balanced Schemes funds, Debt Schemes funds and Mutual funds individual investors. All the schemes are constant performer funds ranked by CRISIL

Sources List:

Sample should collect on primary and secondary sources. Secondary sources included the mutual fund companies, AMFI, RBI, BSE, NSE CCIL, and magazine the —Mutual Fund Insight journals, articles, books and the published and unpublished documents of the mutual funds have been considered in the research.

Sample Period:

Sample of study take from period January 2010 to January 2016.

Sample Size:

Sample size of the secondary data is given below:

Balance Mutual Funds:

Funds	CRISIL RANKS
Tata Balanced Fund	1
HDFC Balanced Fund	2
Franklin India Balanced Fund	3
HDFC Prudence Fund	3
SBI Magnum Balanced Fund	3
Birla Sun Life Balanced 95 Fund	4
DSP Black Rock Balanced Fund	4
UTI Balanced Fund	5

Statistical Tools for Analysis:

Here the researcher has used following techniques to study the impact and performance of Mutual Funds which are as under:

NAV:-NAV means the market value of the assets minus the liabilities on the day of valuation. In

other words, it is the amount which the shareholder will collectively get if the fund is dissolved or liquidated.

NAV: (Assets + Accrued Income – Liabilities – Accrued Liabilities)/Number of Share or Units outstanding.

Average:-Average means numbers or names, arrays or references that contained numbers. In other words average means number representations of numbers.

Standard Deviation:-The Standard Deviation is a measure of how widely values are dispersed from the average value (the mean). Standard Deviation assumes that its arguments are a sample of the population.

Beta: -A relative measure of the sensitivity return on security is to change in the broad market index return. Beta measure the systematic risk, it shows how prices of securities respond to the market forces. Beta is calculated by relating the return on a security with return for the market. Market will have 1.0, if the beta is greater than 1 than the stock is said to be very riskier than market risk, beta less than 1 than the stock is said to be not that much riskier as compare to the market risk. Beta involved market risk, and market risk involved political risk, inflation risk, and interest rate risk.

R – Square: -R – Square measures the funds correlations to the market and R – Square are rang between the 0 and1.

Anova Test:

The F- test was developed by R.A. Fisher. The object of the test is to find out whether the two independent estimates of population variance differ significantly or whether the two samples be regards as drawn from the normal populations. F-Test is based on ratio of variance. That variance represents rows and columns and degree of freedom, it's also represents how rows affect and column affect. The ANOVA single factor imply ratio of variance, the average variation with the average of the average.

Empirical Result of Balance Funds with NSE:

The result of an SPSS regression analysis to see the impact on NIFTY from all Eight predictor variables are shown in Figure 5.1.1.This table provide fairly complete information including correlation among the all predictor and outcome variable; mean and standard deviation for each variable involved in analysis ;information about overall fit of the regression model (multiple R and R – Square and associated F test);the b coefficient for the raw score regression equation and a squared part correlation (sr^2) for each predictor that represent the proportion of variance in the Y outcome variable.

Descriptive Statistics

	Mean	Std. Deviation	N
NSE NIFTY	.7217	4.78079	72
DSPBR Balanced Fund	.9006	3.71554	72
UTI Balance Fund	.8094	3.51148	72
Franklin India Balance Fund	1.0503	3.29096	72
HDFC Balanced Fund	1.2214	3.46518	72
HDFC Prudence Fund	1.0826	4.34475	72
SBI Magnum Balanced Fund	1.0322	3.49423	72
BIRLA Balance Fund	1.0797	3.36249	72
Tata Balanced Fund	1.1917	3.45767	72

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[a]	.936	.928	1.28363

a. Predictors: (Constant), Tata Balanced Fund, HDFC Prudence Fund, SBI Magnum Balanced Fund, DSPBR Balanced Fund, Franklin India Balance Fund, HDFC Balanced Fund, UTI Balance Fund, Birla Balance Fund

b. Dependent Variable: NSE NIFTY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1518.966	8	189.871	115.233	.000[a]
	Residual	103.806	63	1.648		
	Total	1622.772	71			

a. Predictors: (Constant), Tata Balanced Fund, HDFC Prudence Fund, SBI Magnum Balanced Fund, DSPBR Balanced Fund, Franklin India Balance Fund, HDFC Balanced Fund, UTI Balance Fund, Birla Balance Fund

b. Dependent Variable: NSE -NIFTY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-.424	.184		-2.306	.024			
	DSPBR Balanced Fund	-.241	.183	-.187	-1.319	.192	.905	-.164	-.042
	UTI Balance Fund	1.347	.202	.989	6.665	.000	.952	.643	.212
	Franklin India Balance Fund	.856	.201	.589	4.268	.000	.938	.474	.136
	HDFC Balanced Fund	-.084	.196	-.061	-.427	.671	.873	-.054	-.014
	HDFC Prudence Fund	-.240	.146	-.218	-1.652	.103	.862	-.204	-.053
	SBI Magnum Balanced Fund	-.095	.149	-.069	-.636	.527	.910	-.080	-.020
	Birla Balance Fund	.175	.220	.123	.798	.428	.918	.100	.025
	Tata Balanced Fund	-.299	.199	-.216	-1.501	.138	.914	-.186	-.048

a. Dependent Variable: NSE- NIFTY

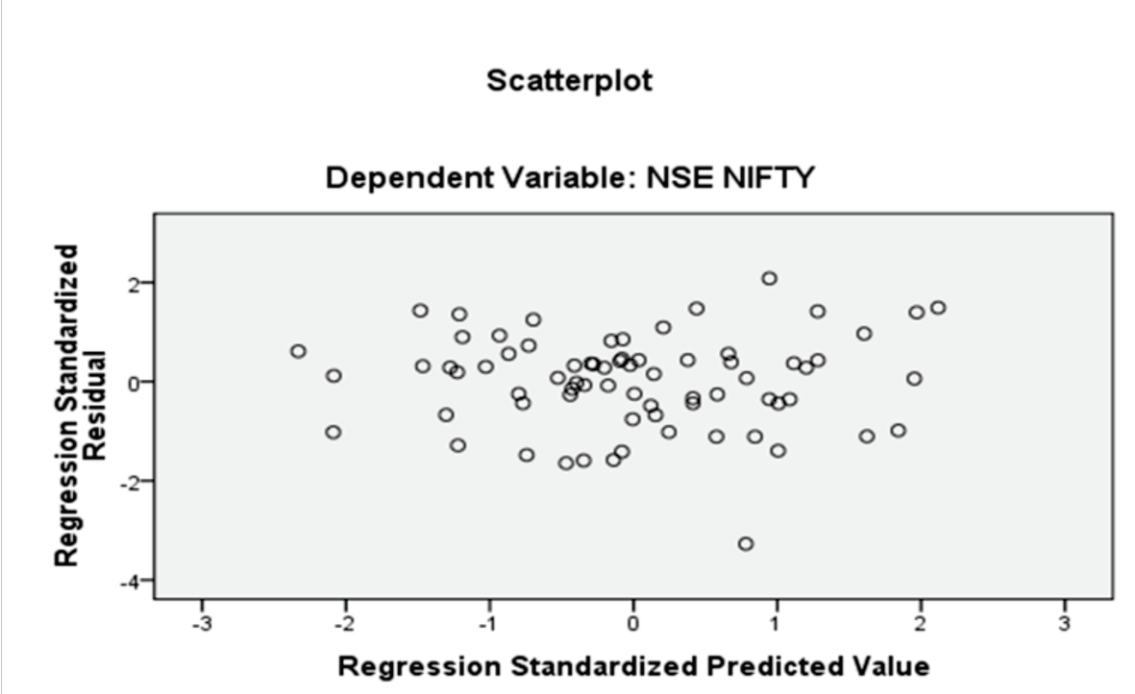

Figure 5.1.1: Output from SPSS Linear Regression to Predict NIFTY from predictor variables.

An SPSS Regression analysis for a sample of N=72 participant show overall multiple regression of impact on NIFTY from all eight predictor variable in figure 5.1.1,R=.967 show a very high correlation between all Balance funds with NIFTY and positive high correlation show return from all Balance funds and return from NSE move in same direction it indicate increasing in Balance funds return and increase in NSE return, R2= 94 94 represent 95% variance in Nifty could be predicted, Adjusted R2 =93 also statistically significant, ANOVA panel show F Ratio: F(8,63)=115.233,p<.001 show aver all multiple regression model is statistically significant it means Balance funds have impact on capital market.

First panel of analysis is descriptive Statistics which show Mean return of all eight Balance Funds the mean return of all balance funds are high in relation of NIFTY mean return =.72. HDFC Balanced Fund with highest return=1.22,Tata Balanced Fund with second highest mean return=1.19and UTI Balance FUND with lowest mean return=.81.It shows the investment in balance funds are better which yield high average return in compare to NIFTY average return .Risk associated with Balance funds and NIFTY explain by Std. Deviation, descriptive statistic panel show all balance funds Std. Deviation are low with Nifty Std. Deviation=4.78 that explain investment in Balance Fund are less riskier and more consistent than NIFTY return. Within all Balance funds analysis Franklin India Balance fund has less risk with Std. Deviation=3.29 and HDFC Prudence Fund show high risk with Std. Deviation=4.34.

The last panel in figure 5.1.1 shows coefficients for both raw score and the standard score version of regression equation. The raw labeled constant provide the estimated value of b0,the intercept(b0= -.424)and a T test to evaluate whether this differed significantly from 0.The intercept b0is significant different from 0;t (72)=-2.306;p=.024.Only two Balance funds out of eight Balance Funds are statistically significant one is UTI Balance Fund with b value=1.347;t(72)=6.665,p<.001 representing 135% increase in return in Nifty for a 100% increase in UTI Balance Fund return and its sr=.212(sr2 = 0449) about 4.5% of variance in NIFTY uniquely predicated from UTI Balance Fund and Second Franklin India Balance fund with b value=.856;t(72)=4.286,p<.001 representing 85.6% increase in return in Nifty for 100% increase in Franklin India Balance fund return and its sr=.136(sr2 = .0184) about 2% of variance in Nifty uniquely predicated from Franklin India Balance fund. The other six predictor variables are not significantly related to NIFTY.

The predictive equation is as follows:

NIFTY=-.424+ (-.241) × DSPBR Balanced Fund+ 1.347× UTI Balance Fund+.856× Franklin India Balance Fund

+ (-.084) × HDFC Balanced Fund + (-.240) × HDFC Prudence Fund + (-.095) × SBI Magnum Balanced Fund +.175× Birla Balance Fund + (-.299) × Tata Balanced Fund.

The standardized residual requested as part of the regression analysis appears in figure 5.1.1. When the assumption of regression are satisfied by the data, the point in thus plot should appear with in a fairly uniform bond from left to right and most standardized residuals should be between -3 to +3.The graph shows that the assumption for regression appear to be reasonably well satisfied.

Empirical Result of Balance Funds With BSE:

The result of an SPSS regression analysis to see the impact on SENSEX from all Eight predictor variables are shown in Figure 5.1.2.This table provide fairly complete information including correlation among the all predictor and outcome variable; mean and standard deviation for each variable involved in analysis ;information about overall fit of the regression model (multiple R and R – Square and associated F test); the b coefficient for the raw score regression equation and a squared part correlation (sr^2) for each predictor that represent the proportion of variance in the Y outcome variable.

Descriptive Statistics

	Mean	Std. Deviation	N
BSE SENSEX	.7541	4.58609	72
DSPBR Balanced Fund	.9006	3.71554	72
UTI Balance Fund	.8094	3.51148	72
Franklin India Balance Fund	1.0503	3.29096	72
HDFC Balanced Fund	1.2214	3.46518	72
HDFC Prudence Fund	1.0826	4.34475	72
SBI Magnum Balanced Fund	1.0322	3.49423	72
Birla Balance Fund	1.0797	3.36249	72
Tata Balanced Fund	1.1917	3.45767	72

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.900	.887	1.54087

a. Predictors: (Constant), Tata Balanced Fund, HDFC Prudence Fund, SBI Magnum Balanced Fund, DSPBR Balanced Fund, Franklin India Balance Fund, HDFC Balanced Fund, UTI Balance Fund, Birla Balance Fund

b. Dependent Variable: BSE SENSEX

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1343.705	8	167.963	70.742	.000[a]
	Residual	149.580	63	2.374		
	Total	1493.285	71			

a. Predictors: (Constant), Tata Balanced Fund, HDFC Prudence Fund, SBI Magnum Balanced Fund, DSPBR Balanced Fund, Franklin India Balance Fund, HDFC Balanced Fund, UTI Balance FUND, Birla Balance Fund

b. Dependent Variable: BSE SENSEX

Coefficients[a]

Model		Unstandardized Coefficients		**Standardized Coefficients**			Correlations		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	-.344	.221		-1.557	.124			
	DSPBR Balanced Fund	-.274	.220	-.222	-1.248	.217	.875	-.155	-.050
	UTI Balance FUND	1.368	.243	1.048	5.642	.000	.925	.579	.225
	Franklin India BALANCE FUND	.882	.241	.633	3.661	.001	.913	.419	.146
	HDFC Balanced FUND	.011	.235	.008	.047	.963	.840	.006	.002
	HDFC Prudence Fund	-.426	.175	-.404	-2.441	.017	.821	-.294	-.097
	SBI Magnum Balanced Fund	-.082	.179	-.063	-.461	.646	.889	-.058	-.018
	BIRLA BALANCE FUND	.305	.264	.223	1.155	.252	.891	.144	.046
	Tata Balanced FUND	-.407	.239	-.307	-1.703	.094	.885	-.210	-.068

a. Dependent Variable: BSE SENSEX

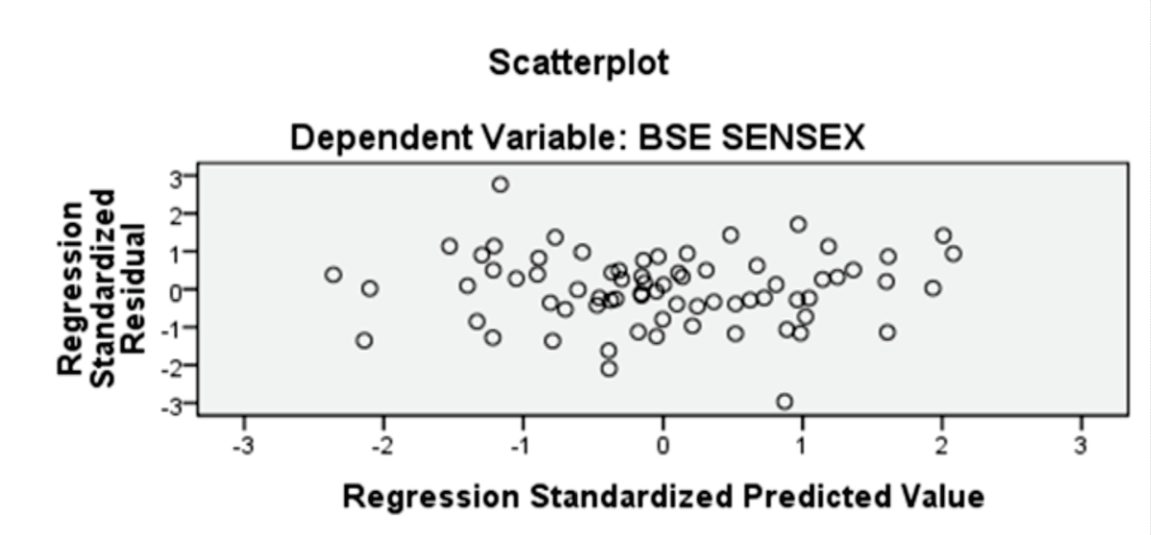

Figure 5.1.2:Output from SPSS Linear Regression to Predict SENSEX from predictor variables

An SPSS Regression analysis for a sample of N=72 participant show overall multiple regression of impact on SENSEX from all eight predictor variable in figure 5.1.2,R=.949 show a very high correlation between all Balance funds with SENSEX and positive high correlation show return from all Balance funds and return from BSE move in same direction it indicate increasing in Balance funds return and increase in BSE return, R^2 = .90 represent 90% variance in SENSEX could be predicted, Adjusted R^2 = .887 also statistically significant, ANOVA panel show F Ratio: F(8,63)=70.742,p<.001 show aver all multiple regression model is statistically significant it means Balance funds have impact on capital market.

First panel of analysis is descriptive Statistics which show Mean return of all eight Balance Funds the mean return of all balance funds are high in relation of SENSEX mean return =.75.HDFC Balanced Fund with highest mean return=1.22, Tata Balanced Fund with second highest mean return=1.19and UTI Balance Fund with lowest mean return=.81.It shows the investment in balance funds are better which yield high average return in compare to SENSEX average return .Risk associated with Balance funds and SENSEX explain by Std. Deviation, descriptive statistic panel show all balance funds Std. Deviation are low with SENSEX Std. Deviation=4.78 that explain investment in Balance Fund are less risky and more consistent than SENSEX return. Within all Balance funds analysis Franklin India Balance fund has less risk with Std. Deviation=3.29 and HDFC Prudence Fund show high risk with Std. Deviation=4.34.

The last panel in figure 5.1.2 shows coefficients for both raw score and the

standard score version of regression equation. The raw labeled constant provide the estimated value of b0,the intercept b0= (-.344)and a T test to evaluate whether this differed significantly from 0.The intercept b0is significant different from 0;t(72)=-1.557;p=.124. Only two Balance funds out of eight Balance Funds are statistically significant one is UTI Balance Fund with b value=1.368;t(72)=5.642,p<.001 representing 136.8% increase in return in SENSEX for a 100% increase in UTI Balance Fund return and its sr=.225(sr^2= .0449) about 5% of variance in SENSEX uniquely predicated from UTI Balance Fund and Second Franklin India Balance fund with b value=.882;t (72)=3.661,p=.001 representing 88.2% increase in return in SENSEX for 100% increase in Franklin India Balance fund return and its sr=.146(sr^2= .0213) about 2% of variance in SENSEX uniquely predicated from Franklin India Balance fund. The other six predictor variables are not significantly related to SENSEX.

The predictive equation is as follows:

SENSEX=-.344+ (-.274) × DSPBR Balanced Fund+ 1.368× UTI Balance Fund+.882× Franklin India Balance Fund + .011 × HDFC Balanced Fund + (-.426) × HDFC Prudence Fund + (-.082) × SBI Magnum Balanced Fund +.305× Birla Balance Fund + (-.407) × Tata Balanced Fund.

The standardized residual requested as part of the regression analysis appears in figure 5.1.2.When the assumption of regression are satisfied by the data, the point in thus plot should appear with in a fairly uniform bond from left to right and most standardized residuals should be between -3 to +3.The graph shows that the assumption for regression appear to be reasonably well satisfied.

Conclusion:

Analysis of balance funds and NSE show Mean return of all eight Balance Funds that are high in relation of NIFTY mean return =.72. HDFC Balanced Fund with highest return=1.22,Tata Balanced Fund with second highest mean return=1.19and UTI Balance fund with lowest mean return=.81.It shows the investment in balance funds are better which yield high average return in compare to NIFTY average return .Risk associated with Balance funds and NIFTY explain by Std. Deviation, descriptive statistic panel show all balance funds Std. Deviation are low with NIFTY Std. Deviation=4.78 that explain investment in Balance Fund are less riskier and more consistent than NIFTY return. Within all Balance funds analysis Franklin India Balance fund has less risk with Std. Deviation=3.29 and HDFC Prudence Fund show high risk with Std. Deviation=4.34.

Analysis of balance funds and BSE show Mean return of all eight Balance Funds are high in relation to SENSEX mean return

=.75.HDFC Balanced Fund with highest mean return=1.22, Tata Balanced Fund with second highest mean return=1.19and UTI Balance Fund with lowest mean return=.81.It shows the investment in balance funds are better which yield high average return in compare to SENSEX average return .Risk associated with Balance funds and SENSEX explain by Std. Deviation, descriptive statistic panel show all balance funds Std. Deviation are low with SENSEX Std. Deviation=4.78 that explain investment in Balance Fund are less risky and more consistent than SENSEX return. Within all Balance funds analysis Franklin India Balance fund has less risk with Std. Deviation=3.29 and HDFC Prudence Fund show high risk with Std. Deviation=4.34.

References:

1. Treynor, & Jack, L. (1965).How to Rate Management of Investment Funds,Harvard Business Review, 43(1),63-75.
2. Sharpe, William, F. (1966). Mutual Fund Performance, The Journal of Business,39(1),119-138.
3. Treynor, &Mazuy(1966).Can Mutual Funds Outguess The Markets,Harvard Business Review, 44, 131-136.
4. Jensen, Michael C.(1968).The Performance Of Mutual Funds In The Period 1945-1964,Journal of Finance, 23,389-416.
5. Fama (1972).Components of Investment Performance, Journal of Finance,27,551-567.
6. Gupta (1974).The Mutual Fund Industry and Its Comparative Performance, Journal of Financial and Quantitative Analysis, 6,894.
7. Gupta, Ramesh,(1989).Mutual Funds, The Management Accountant, 24(5), 320-322.
8. Vidhyashankar, S., (1990).Mutual Funds: Emerging Trends In India, Chartered Secretary,20(8),639-640.
9. Jayadev M.(1996) Mutual Fund Performance: An Analysis of Monthly Returns, FINANCE INDIA Vol. X No. 1, Pages— 73–84.
10. Sahadevan S and Thiripalraju M, Mutual Funds: Data, Interpretation and Analysis, Prentice Hall of India Private Limited, New Delhi, (1997).
11. Narasimhan M S and Vijayalakshmi S (2001) Performance Analysis of Mutual Funds in India, Finance India,Vol. XV (1), pp.155-174.
12. Miller Edward M., Prather Larry J., Mazumder M. Imtiaz, (2008)Cross-autocorrelations among asset classes: Evidence from the mutual fund industry, Managerial Finance, Vol. 34 Iss. 11, pp. 756 – 771.
13. Duguleană L, DumitracheI ,Grimm A, & Fischer S.(2009) Evaluating the Selection and timing Abilities of A Mutual Fund, Bulletin of the Transilvania University of Brasov , Vol. 2 (51),pp 117-124.

Risk-Return Strategy and Value at Risk (VaR) : A Study of Selected Portfolio of National Stock Exchange (NSE)

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Purwa Srivastava**

Abstract

This paper describes the performance of a selected portfolio and its measurement of value at risk (VaR) suggested by Samanta (2008). A technical problem usually encountered in practice comes from the departure of the observed return distribution from a specific form of distribution, viz., normal distribution. Traditional approaches tackle the problem by identifying a suitable non-normal distribution for returns. However, Samanta (2008) addressed the issue indirectly by transforming the non-normal return distribution to normality. The simulation exercise carried out in this paper shows that the transformation to normality provides a sensible alternative to the measurement of VaR. Further, the empirical assessment of the accuracy of the VaR estimates with respect to selected exchange rates reveals that the transformation-based approach outperforms the method based on the normality assumption for return distribution; moreover, the former produces VaR accuracy that is usually better than that of a more advanced tail-index-based approach

Keywords: asset price behaviour, tail-index, transformation to normality, value at risk, loss-functions.

Introduction

The concept of value at risk (VaR) gained importance in the banking and finance literature over the past two decades. This was originally proposed as a measure of market risk exposure, thereby serving as the basis for calculating related risk capital (Basel Committee, 1996a, 1996b). Over time, VaR has emerged as a unified tool to measure other risk categories, such as, credit and operational risks. Further, the domain of application of this measure has widened from being the basis for determining the risk capital at banks, to the calculation of the margin requirement for traders/investors at stock exchanges, and to the design of the so-called „macro markets" (Majumder and Majumder, 2002). The concept of macro markets involves a new set of markets for non-financial income; it was pioneered by Shiller (1993a, 1993b) and Shiller and Wincoop (1999), among others. The concept of VaR suffers from a major limitation of not being a coherent risk measure (Artzner, et al., 1999). Further, it cannot assess the complete risk profile. For instance, VaR cannot assess the magnitude

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of excess loss. On the other hand, concepts such as excess shortfall (ES) (which is helpful in assessing the average magnitude of losses over VaR), loss severity (Jorian, 2001), and conditional-VaR (Co-VaR), which is useful in assessing the financial stability of an economy (Acharya, et al., 2010; Acharya, et al., 2012; Adrian and Marcus, 2008), all depend on VaR. The growing application of VaR for diverse purposes warrants further improvements to or simplifications of the task of measuring VaR. A particularly well-identified problem in connection with VaR estimation stems from the observed deviation of return distribution from normality. The normality assumption brings in theoretical convenience because a normal distribution is fully characterised by its first two moments, i.e., mean and variance. However, in reality, the observed return distributions are usually far from normal. Conventionally, the issue of non-normality is addressed by directly fitting suitable non-normal distributions, either parametrically or nonparametrically. This task faces two challenges. First, one has to identify a suitable form of return distribution from the set of all relevant non-normal distributions, such as the *t*distribution, mixture of two or more normal distributions (van den Goorbergh and Vlaar, 1999), Laplace distribution (Linden, 2001; Puig and Stephens, 2007), hyperbolic distribution (Bauer, 2000), and Auto-Regressive Conditional Heteroscedasticity (ARCH) or the Generalised-ARCH (GARCH) (Engle, 1982; Bollerslev, 1986; Wong et al., 2003). The search domain is very heterogeneous and wide, and one is always exposed to the risk of choosing a wrong distribution/model as the best one. Second, each class of distributions/models in the search set is unique in its own way, which calls for specific conceptual understanding and computational requirements.

Value-at-Risk: Concept and Estimation Issues

Let Wt denote the total value of the underlying assets in a portfolio at time t. The change in total value from time t to t+k is $\Delta Wt(k) = (Wt+k - Wt) = (1+r)Wt$, where r represents the proportional change from time t to time (t+k). An individual with a long financial position on the asset portfolio will incur a loss if $r < 0$, but a short position will see a loss when $r > 0$. Thus, a rise (fall) in the value of r would indicate a profit to someone holding a long (short) position. However, at time t, r is unknown; it can be thought of as a random variable. Let $f(r, \lambda)$ denote the probability density function of r; λ is the vector of the unknown parameters. At time t, the VaR over time horizon k and given probability $p\,(0 < p < 1)$, i.e., $100 \times (1 - p)\%$ confidence level would be estimated as

Long-position: $\text{Prob}(r < -\text{VaR}) = p$, i.e., $\text{Prob.}(r\,\lambda - \text{VaR}) = 1 - p$ (2.1)

Short-position: Prob(r > VaR) = p, i.e., Prob.(r λ VaR) = 1 – p (2.2)

where Prob(.) denotes the probability measure.

Thus, for a long-position holder, the VaR at 100 × (1 - p)% confidence level would be the pth percentile of the distribution represented by f(r, λ). For the short position, this would be the (1 - p) percentile, i.e., the threshold value of r with right-tail probability p.

Observations

For the simulation study, we considered several alternative skewed and/or heavy-tailed distributions for returns (log-returns). As the returns can take positive as well as negative values, we considered the distributions to have real-line as support. For each chosen distribution/model, the simulation study was carried out in the following steps:

Step 1: Draw n random observations from the given distribution/model. Let these observations be represented by r1, r2, ….. , rn. In our simulation exercise, we chose n = 500.

Step 2: Apply the transformation to normality on these observations. For simplicity, the normality transformation is conducted in two phases irrespective of the data-generating distribution/process.

First, the original observations r1, r2, ….. , rn are passed through the gYJ(.,λ) transformation to reduce/remove possible skewness. Let λ* be the estimated value of the parameter λ.

Second, the observations gYJ(rt, λ *), t=1,2,…,n are passed through the gJD(.,λ) transformation to eliminate/cure possible excess kurtosis. Let λ * be the estimated value of the parameter λ.

Thus, for the original observation rt, the final transformed observation yt, is obtained as yt

= gJD[gYJ(rt, λ *), λ *], t=1,2,….,n. The transformation parameters λ and λ may be estimated by maximizing the likelihood function (maximum-likelihood method).

Further, we estimated the parameter heuristically by minimizing the magnitude of skewness/excess kurtosis, which we call the heuristic approach.

Step 3: Compute the measures of skewness and excess kurtosis based on the transformed observations y1, y2, …. ,yn. At the ith repetition, let Si and Ki represent the measures of skewness and excess kurtosis thus calculated.

If normality is achieved, both these values should be zero (or statistically insignificant). Statistical tests were performed on y1, y2, …. ,yn in each repetition for the null hypotheses of (i) skewness = 0; (ii) excess kurtosis = 0; and (iii) normality (Jarque-Bera test). Each test was performed for two alternative sizes (0.01 and 0.05).

Step 4: Repeat steps 1–3 T times. In our simulation exercise, T was fixed at T = 10,000. Compute the average values of Si and Ki for i=1,2,…,T. If the transformation were successful in inducing normality,

both these averages would be close to zero. Further, compute how frequently (proportion of T repetition) each of the three null hypotheses has been accepted: (i) skewness = 0; (ii) excess kurtosis = 0; and (iii) normality test, i.e., joint test of skewness = 0 and excess kurtosis = 0 (Jarque-Bera test). Compute this proportion separately under 1% and 5% levels of significance. A greater proportion of acceptance of these null hypotheses would indicate better performance of the transformation in achieving normality.

This 4-step simulation strategy was implemented on the random observations drawn from different non-normal distributions (i.e., skewed/leptokurtosis distributions such as the Student-*t* distribution and Laplace distribution) and data-generating processes (such as ARCH/GARCH that model volatility-clustering phenomenon of financial market returns and can capture heavy-tailed return distribution). The process of simulation was repeated 10,000 times for any given distribution/model, and in each repetition, 500 random observations were drawn from the given distribution/model.

Results

The simulation exercise was intended to examine how good the normality transformation was in transforming the random observations from different probability distributions or data-generating models/processes. For a given distribution/model, we first drew 500 observations randomly and applied the normality transformation. The transformation parameters were chosen in two ways:

maximum-likelihood method and heuristic approach. Under each strategy of choosing the transformation parameters, we computed the measure of skewness and excess kurtosis for the transformed observations. If the transformations were good, both these measures would be zero or statistically insignificant. Therefore, we tested the significance of skewness, excess-kurtosis, and joint skewness-excess kurtosis (Jarque-Bera test of normality using skewness and excess kurtosis). The simulation exercise was repeated 10,000 times separately for each class of probability distribution or model. The simulated average values of the measures of skewness and excess kurtosis of the transformed observations based on the 10,000 repetitions are reported in Table 3.1. The proportion of times (out of 10,000) each of the three hypothesis related to the normality (H01, H02, and H03) of the transformed observations were accepted at the 1% and 5% levels of significance are presented in Table 3.2. If the transformation successfully converted a distribution to normality, the corresponding proportion of acceptance of the null hypothesis would be close to 0.95 for the 5%level of significance and 0.99 for the 1% significance level.

The simulated results presented in Table 3.1 show that the transformation strategy was able to transform the observations

drawn from alternative non-normal distributions/models (the Student-t distribution, skewed-Laplace distribution, and ARCH and GARCH models) to normality reasonably well. This is indicated by the relatively low average values of the measures of skewness and excess kurtosis (although for the Laplace distribution, the skewness does not appear to be removed completely). The simulation results presented in Table 3.2 are quite interesting. When the transformation parameters are estimated through the maximum-likelihood method (the grid search method was adopted in this case), the proportion of acceptance of the null hypotheses is consistent with the size of the test. Even in the case of the heuristic approach to parameter estimation, the performance is equally good in all aspects except when testing □□1 = 0 at the 5% level of significance with the data originally drawn from the Laplace distribution (the corresponding proportion of acceptance 0.8290 is quite low as compared to the expected value of 0.95).

Table 3.1: Normality of Transformed Observations

(Measures of Skewness & Excess Kurtosis)

True Model/ Distribution of Original Observations (*which were transformed to Normality*)	**Average Skewness#**	**Average Excess Kurtosis#**
(A) Maximum-Likelihood Estimates of Transformation Parameters		
Normal	0.0004	-0.0187
Student-t distribution (ν= 5)	0.0001	0.1701
Laplace (λ_1 = 3, λ_2 = 2)	0.1526	0.1014
ARCH(1)	-0.0002	0.1513
GARCH(1,1)	0.0002	0.0580
(B) Heuristic Approach to Estimate Transformation Parameters		
Normal	0.0001	0.0001
Student-t distribution (ν= 5)	0.0001	0.0000
Laplace (λ_1 = 3, λ_2 = 2)	0.1624	0.0001
ARCH(1)	-0.0003	-0.0001
GARCH(1,1)	-0.0001	-0.0000

Based on 10,000 repetitions, with 500 observations in each repetition

Table 3.2: Proportion of Acceptance of Null Hypotheses Related to

Normality of Transformed Observations

True Distribution/Model of Original Observations (*which were transformed to Normality*)	Null Hypothesis Tested (TestSize = 0.01)			Null Hypothesis Tested (T est Size = 0.05)		
	$\beta_1 = 0$	$\beta_2 = 0$	$(\beta_1, \beta_2) = (0,0)$	$\beta_1 = 0$	$\beta_2 = 0$	$(\beta_1, \beta_2) = (0,0)$
(A) Maximum-Likelihood Estimates of Transformation Parameters						
Normal	1.0000	0.9991	0.9994	1.0000	0.9965	0.9988
Student-t distribution (ν=5)	0.9998	0.9930	0.9969	0.9983	0.9637	0.9843
Laplace ($\lambda_1 = 3$, $\lambda_2 = 2$)	0.9991	0.9992	0.9985	0.9558	0.9931	0.9765
ARCH(1)	1.0000	0.9810	0.9908	1.0000	0.9422	0.9743
GARCH(1,1)	1.0000	0.9946	0.9975	1.0000	0.9820	0.9927
s						
(B) Heuristic Approach to Estimate Transformation Parameters						
Normal	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Student-t distribution (ν=5)	0.9997	1.0000	0.9999	0.9954	1.0000	0.9995
Laplace ($\lambda_1 = 3$, $\lambda_2 = 2$)	0.9731	1.0000	0.9959	0.8290	1.0000	0.9599
ARCH(1)	1.0000	1.0000	1.0000	0.9998	1.0000	1.0000
GARCH(1,1)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Based on 10,000 repetitions, with 500 observations in each repetition.

Empirical Analysis

The simulation exercise points out that the transformation considered above performs reasonably well in terms of converting the chosen non-normal distributions to (approximate) normality. Given that the chosen class of distributions cover the typically observed return distributions, the estimation of VaR through the transformation-based method appears to be quite sensible. Indeed, the simulated results provide an explanation for the empirical results reported by Samanta (2008) in support of the transformation-based VaR measurement. However, it is imperative to examine the robustness of such empirical findings over time, particularly in the years following the global financial crisis. In this section, we report the results of the empirical analysis.

Data

The performance of a VaR measurement technique may be examined with respect to

certain real-life portfolios, i.e., the portfolios held by banks or investors. However, such portfolios are held privately, and hardly any information about their composition and other details are made public. This situation resulted in scarce reporting of empirical results based on real-life portfolios. Most of the prior empirical studies relied on publicly available historical data, such as asset prices or indices. Similarly, we employ daily data on the exchange rate of the Indian Rupee (INR) with respect to four major international currencies in India, viz., US Dollar, British Pound Sterling, Euro, and Japanese Yen; these currencies were covered in Samanta (2008) as well. The choice of four common exchange rates allows for the comparison and robustness check of the empirical results over time.

The daily exchange rates covering the period from January 1, 2009 to March 31, 2014 were collected from the database on the Indian economy available on the RBI Website (http://www.rbi.org.in). For this period, we obtained 1268 daily observations for each of the four exchange rates considered. For our analysis, "return" refers to "log-return". For any given exchange rate, the return (i.e., log-return) on a particular day, say the tth day, is computed as follows:

$$Rt = 100 * [\log(Pt) - \log(Pt-1)] \quad (4.1)$$

where Pt and Rt denote the values of the given exchange rate and the daily return on tth day, respectively.

We assess the performance of the transformation-based VaR model using widely used techniques: the normal (variance-covariance) method and the extreme value approach using tail-index. In the latter approach, the tail-index is estimated via two alternative techniques, viz., Hill"s estimator (Hill, 1975) and the ordinary least squares (OLS) estimator discussed in van den Goorbergh (1999). Thus, we evaluate the performance of four competing VaR models:

(i) Normal method: VaR was estimated under the assumption of the normality of logreturn.

(ii) Extreme value theory : tail-index was estimated via Hill"s estimator

(iii) Extreme value theory: tail-index was estimated via OLS regression

(iv) Transformation-based approach

The description of the direct VaR estimation techniques considered here are available in the standard literature. Appendix A provides a summary for ready reference. Samanta (2008) assessed the performance of the transformation-based approach along with two competing VaR methods: the normal/covariance method (which assumes normality of return); and an approach based on tail-index estimated using Hill"s estimator. Thus, we undertake our empirical assessment against a broader set of competing techniques (the approach measuring tail-index through regression analysis is an additional alternative in this study). Competing methods are applied for

univariate series of daily portfolio/asset returns. The observed phenomenon of volatility clustering could be modelled through the classes of conditional heteroscedastic models. Alternatively, since we know that conditional heterescedasticity induces heavy-tails in unconditional distribution, we could put efforts into modelling the fat-tailed unconditional distribution of returns.

We consider 1-day VaR, expressed in percentage form at 99% confidence level. This means that for a good estimate of VaR, the theoretical probability of the realized daily return exceeding VaR equals 0.01; i.e., VaR exception/violation may occur in one out of 100 days. For underestimated (overestimated) VaR, the observed frequency of VaR exception would be significantly higher (lower) than 1%. On any given date (say the tth day), we estimate VaR for the (t+1)th day or future dates by adopting two alternative databases: full-sample estimates, obtained using historical returns from the starting time point of the database till the estimation date; and rolling-sample estimates, which are computed based on a fixed number of most recent returns (i.e., the 18 returns on the date of computation as well as a pre-specified number of immediate preceding days). The number of latest returns considered for the rolling-sample estimate is called the rolling-sample/window size; in this study, the rolling sample included returns for the last 500 days.

Testing for Normality of Returns

The presence of volatility clustering in the market indicates that asset returns would seldom follow normal distribution unconditionally. Therefore, our empirical study begins by testing for the normality of returns (i.e., log-returns). The empirical results related to the normality hypotheses are given in Table 4.1. Table 4.1 shows that the Jarque-Bera test could not accept the normality hypothesis at any conventional level of significance (the *p*-values of the test statistics corresponding to the null hypotheses were much lower than 0.01). Further, significant excess kurtosis appears to be the main source of deviation from normality for all the return series except for US Dollar, where skewness is also statistically significant.

Table 4.1: Testing Normality of Returns on Exchange Rate

Asset/ Portfolio	Measure of Skewness	χ for Skewness (Testing H_{02})	Excess Kurtosis (Testing H_{03})	χ for Excess Kurtosis	Jarque-Bera Statistics (Testing H_{01})
US Dollar	0.2342**	11.5781** (0.0000)	3.2987**	574.4640** (0.0000)	586.0420** (0.0000)
Pound Sterling	-0.0819	1.4170 (0.2339)	2.3183**	283.7227** (0.0000)	283.7227** (0.0000)
Euro	0.0575	0.6978 (0.4035)	3.0266**	483.5957** (0.0000)	484.2935** (0.0000)
Japanese Yen	-0.0101	0.0214 (0.8838)	1.5208**	122.0979** (0.0000)	122.1192** (0.0000)

Figures in parentheses indicate significance level (i.e., *p*-value).
* and ** indicate significance at 5% and 1% levels, respectively.

Empirical Results: Transformations of log-returns to normality

The transformation parameters (l,d) are estimated using two alternative approaches:

maximum likelihood and heuristic. For each of the alternatives, the optimization is done (in two stages, as discussed above) through a grid search, i.e., by looking for optimal values of l and d from a set of potential alternatives. Based on the empirical assessment, the set of potential values for is l2.000, -1.999, ……, 1.999, 2.000} and that for d is {0.000, 0.001, ……, 1.999, 2.000}. In simulation exercises, the estimation of these parameters using either the maximum-likelihood approach or the heuristic approach produces rather similar results; therefore, we adopted the maximum-likelihood approach in empirical analysis.

Table 4.2 presents the maximum likelihood estimates of (l,d) for transforming each log-return to (near) normality.

Table 4.2 also presents the results of the normality tests for all the transformed returns. The normality transformation could cure the skewness/kurtosis problem with respect to almost all the log-return series except that of Euro, where some bit of kurtosis persists. The interesting point here is that the degree of excess kurtosis for the transformed returns on Euro is a lot milder, while H03 for the transformed series is accepted at the 1% level of significance (though not at 1% level) as evident from the corresponding *p*-value of 0.0382; the same hypothesis for original returns on Euro could not be accepted at any of these conventional levels.

Table 4.2: Testing Normality of Transformation of Returns

Asset/ Portfolio	Transformtion Parameters	Measure of Skewness	χ for Skewness (Testing H_{02})	Excess Kurtosis (Testing H_{03})	χ for Excess Kurtosis	Jarque-Bera Statistics (Testing H_{01})
US Dollar	$\hat{\lambda}$=0.917 δ=0.124 δ	-0.0201	0.0853 (0.7702)	0.1234	0.8033 (0.3701)	0.8886 (0.6413)
Pound Sterling	λ=1.036 δ=0.265	-0.0289	0.1766 (0.6743)	0.1241	0.8132 (0.3672)	0.9898 (0.6096)
Euro	λ=0.993 δ=0.305	-0.0436	0.4006 (0.5268)	0.2853*	4.2958* (0.0382)	4.6964 (0.0955)
Japanese Yen	λ=0.999 δ= 0.475	0.0041	0.0035 (0.9525)	0.0769	0.3125 (0.5761)	0.3161 (0.8538)

Figures in parentheses indicate significance level (i.e. p-value). The symbol ^ indicates estimates.
* and ** indicate significance at 5% and 1% levels, respectively.

Empirical Evaluation of VaR Estimates/Models

The VaR numbers estimated through a particular technique may be evaluated using different criteria based on the frequency of VaR-exception, the magnitude of VaR-exception (i.e., the excess loss over VaR at the instance of a VaR-exception), or both. The frequency based evaluation of a VaR model can be done through a suitable test of the proportion of VaR-exception, such as statistical backtesting (suggested by regulators or the Basel Accord, more standard statistical tests (such as those suggested by Kupiec, 1995), or further sophisticated tests (such as that proposed by Christoffersen, 1998; Christoffersen et al., 2001). The severity of loss depends on the magnitude of excess loss, which is incorporated in the frequency-based evaluation criteria. Several assessment criteria incorporating the frequency as well as the magnitude of excess-losses were proposed by Lopez (1998) and Sarma et al. (2003). In our empirical evaluation, the backtesting period covers the last 500 days in the database. On every back testing day, the 1-day VaR at 99% confidence level was estimated based on all competing models/techniques using the rolling-sample (with size 500 days) and

the full-sample strategies. Further, VaR was estimated separately for the left-tail and the right-tail of the return distributions (i.e., for long and short financial positions, respectively, on the asset). The alternative assessment/evaluation criteria involved two frequency-based assessments as well as two loss functions.

Table 4.3: Percentage of VaR Violations by Competing Models

Asset/ Portfolio	Left-Tail (Long Financial Position)				Right -Tail (Short Financial position)			
	Normal Method	Tail-Index		Trans based Method	Normal Method	Tail-Index		Trans based Method
		Hill's	OLS			Hill's	OLS	
(A) Full-Sample Results								
US Dollar	2.4	2.0	2.0	1.6	2.6	2.0	1.8	1.8
Pound Sterling	1.0	0.4	0.4	0.4	1.4	1.2	1.2	1.2
Euro	1.2	0.6	0.6	0.6	1.2	1.2	1.2	1.2
Japanese Yen	1.4	0.6	0.6	0.8	1.8	1.6	1.6	1.4
(B) Rolling-Sample Results								
US Dollar	2.2	2.2	1.8	1.8	2.2	1.8	1.8	1.6
Pound Sterling	1.8	1.8	1.6	1.6	2.0	2.0	1.6	1.2
Euro	1.4	0.6	0.8	0.6	1.2	1.2	1.2	1.2
Japanese Yen	2.0	1.0	1.0	1.2	2.0	1.6	1.6	1.4

Concluding Remarks

The concept of Value-at-Risk (VaR) has become a key tool not only for measuring various categories of financial risk (such as market risk, credit risk, and operational risk) and for computing the capital that needs to be maintained by banks for holding such risk exposures but also for other purposes such as determining the margin requirement at stock exchanges. The VaR suffers from the limitation of not being a coherent risk measure. Over 26 time, it has gained importance in the context of risk management. It has been argued that excess shortfall (ES), defined as the average of the losses over VaR, would capture the severity of losses better. However, the accuracy of ES measures depends on the quality of the VaR numbers. Further, the VaR has been the basis for other new/related concepts, such as conditional-VaR (Co-VaR), which gained importance in assessing the stability of financial systems. The growing applicability of VaR for dealing with wider types of financial risks and for other purposes through related concepts such as ES and Co-VaR make a renewed case for improving the accuracy of the VaR measurement. We consider a case involving the estimation of VaR when the historical returns on a portfolio become available. Traditional literature suggests modelling the distribution of returns or log-returns based on the historical values. If the returns were normally distributed, the VaR could be estimated simply by using the first two moments of the distribution and the tabulated values of the standard normal distribution. Thus, the normal method or the covariance approach of VaR estimation in homoscedastic situations as well as heteroscedastic cases has been overwhelmingly popular among practitioners. However, the extant empirical literature shows that the task is potentially difficult because the financial market returns seldom follow normal distribution. There is empirical evidence that the distributions of returns have thicker tails than normal and are skewed at times. In order to handle the observed non-normality of returns, a number of techniques have been proposed in the literature. Most of the available techniques (parametric or nonparametric) aim to directly identify the best fitted return distribution (which is possibly not normal). An indirect approach would be to transform the possible non-normal returns to near (approximate) normal variables and use the properties of normal distribution to estimate the threshold tail-value. Samanta (2008) experimented with an indirect approach by transforming the observed returns (which possibly do not follow normal distribution) to approximate/near normality. The empirical results presented in this prior study are quite encouraging and show that the transformation-based approach is a sensible alternative for measuring VaR. In this paper, we re-assess the performance of the indirect approach on two counts. First,

we undertake a simulation exercise to examine how good the transformation is in transforming random observations drawn from potential classes of non-normal distributions (the student-t distribution, skewed Laplace distribution, ARCH/GARCH models) to normal variables. Our simulated results show that the transformation is quite useful in inducing normality to observations drawn from several heterogeneous classes of non-normal distributions. Interestingly, the transformation preserves normality in the sense that it does not distort the skewness and excess kurtosis to be different from zero when the original observations truly come from a normal distribution. Second, we examine the robustness of the empirical results reported in Samanta (2008) based on real data pertaining to the years before the recent global financial crisis. To do so, we used the daily exchange rate data from the post-crisis period and compared the accuracy of the VaR estimates obtained through the indirect approach and a few other competing techniques (normal method and two forms of tail-index methods). Our empirical results are quite interesting. The indirect approach, despite being intuitively appealing and requiring. simple practical computation, outperforms the normal method; it also produces VaR estimates that are no worse than those produced by more sophisticated and complex approaches (such as those based on tail-index). The simulated and empirical results presented in this paper indicate that the simple transformation-based indirect approach of VaR estimation is a sensible one. The ease of understanding and simplicity of implementation of this approach are particularly useful to practitioners who are grappling with the demanding nature of decision-making under dynamic settings. Future extensions of this research could look for theoretical justifications as to why and when such transformations of returns would induce normality. Further, researchers could examine the robustness of the empirical results over time across markets and countries.

Financial Inclusion: A Roadmap to Eradicate Poverty

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Abstract:

Financial inclusion plays a major role in inclusive growth of the country. This paper examine the statuses of the financial inclusion in India to find out the initiatives taken by the Government and RBI for promoting financial Inclusion and to find out the impact of Microfinance models on Financial Inclusion. Still after a long period of independence ,it is estimated that 2-.5 billion people are excluded from access to financial services globally .Due to lack of financial literacy or resistant poverty condition the demand and supply side of the banking services act as barriers in financial inclusion. The current approach financial inclusion traced its root back to the United Nations initiatives, which described as the main goals of inclusive finance are access to a range of financial services, promoting savings, creating credit, providing insurance, other payment services to all 'bankable' households and business at a reasonable cost and with a limited time gap. In India, financial inclusion first introduced in 2005,. Accessing of basic banking facilities in rural areas is highly desired and is extremely important for the growth of the economy as well as to eradicate poverty as saving is facility only can free the poor from clutches of the sahukar. Still after 61 years of independence large number of population depending upon informal banking to fund the growth of their livelihoods. The growth of the economy is dependent up on the inclusive growth and it is only possible when everyone in the county live with financial independency.

Key words; Financial Inclusion, Inclusive growth, banking services, financial literacy.

Introduction

After 60 years of independence a large part of geographical areas still remain Unbanked, which leads financial instability and pauperism among the rural masses who are living under financial deprivation. Even they don't have access to financial product and services. Over the years, financial inclusion has risen as a global priority with an objective to extend, effective, affordable and client based financial services to low-income populations and small businesses houses that Creates countless opportunities for food , better health care, start a business venture, or save for old age. For Government its lays the foundation for stability and inclusive economic growth and for the global community, it helps accelerate economic growth and to reduce

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extreme poverty. However in the 12TH Five year Plan government and RBI had taken inactiveness and worked for financial inclusion. Financial inclusion is the delivery of financial services at a minimum to minimum cost to a large section of the society and to the low income groups such as No frill accounts. Financial inclusion is working with three important motives. Firstly it acts as a platform for increasing the saving habits. Secondly it provides a formal credit facility and lastly it bridge the gap between unbanked and banked areas and helpful to create a link for availing subsidies and welfare programmes. Thus the essence of financial inclusion not only limited to the financial services, but also it ranges its services for making awareness among the people about how to access it and providing intermediation services. Apart from these services it includes other services like no frill account, money transfer facilities, small loans and overdraft facilities, insurance etc. Financial inclusion decreases gaps between demand and supply of the banking services. Demand side suffers due to lack of awareness, low income of the people, poverty and financial illiteracy on the other side supply side mismatched due to unavailability of branch, branch timings, huge documentation and difficult procedures followed, unsuitable products, language barrier etc. Financial inclusion addresses all the related issued which make a line of matching between demand and supply which result in increasing standards of living, facilitate for easy money transfer facility, decreases unethical and irregular practices .As a whole financial inclusion not only mean to opening of saving bank account but concentrate on creation of awareness about the financial products, education and advice on money management, offering debt counselling etc. financial inclusion design to improve in stands of living by providing banking services to the poor's for socially upliftment. Major part of the revenue is contributed by the rural areas like agricultural products and raw materials for industrial goods. For nations development transferability in rural financial structure is necessary for maintaining a sound rural financial movement microcredit plays a vital role which is major cause of concern for rural up-liftment.

Financial inclusion is a paradigm shift from credit assistance toward financial services, particularly promoting for opening bank accounts and offering basic financial products such as insurance. This shift has been partly based by the need to achieve sustainable goals .Association of Government of India and RBI can never be denied as catalyst of financial changes and growth .Government of India moreover concentrate on product subsidies with cash transfers, which requires beneficiaries to have bank accounts for expediting the transfers. RBI is working on policy making, regulations and its

banking operation for the reforms in economy. During eleventh five year plan opening of bank accounts and proving accounts access facility to all was the major cause of concern for opening bank accounts for all however growing macroeconomic imbalances is still prevailing , such as a fall in the rate of financial savings during this period shows lack of adequate penetration of bank branches. This effect is act as a alarming driver and new approach adopted for necessitates a change in the financial architecture of India's economy. Since bank account opening is an important part of the agenda, so banks must be directly involved, and provided a mandate for its banking services such as deposit taking and for facilitating other services.

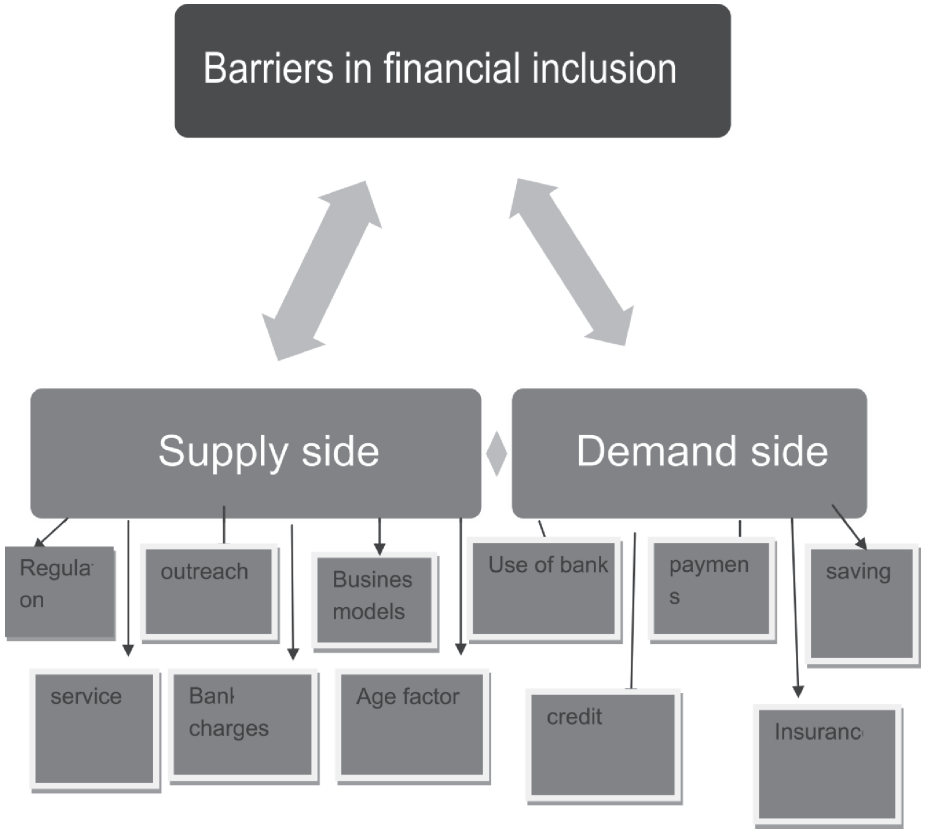
Due to mandate in deposit acceptance to credit creation an effort also made to supplement this services by the intermediaries as change agents for the economic growth, such as business correspondents in PMJDY scheme of the Government of India Moreover, to robust payment mechanism warrants the entry of specialist payment banks in the Indian Banking Structure in 12th financial plan the new inclusion drive involves multiple entities, and further involves other financial institutions.

Banking operations without regulation is not possible similarly control on financial terrorism is necessary in the financial inclusion process or in inclusive growth of the country. So yet there is a need for balance multi risks, like solvency, stability, anti-money laundering, , must be addressed and regulated without hindrance in financial inclusion. In 2008, Committee on Financial Inclusion defined financial inclusion as "the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost" (Rangarajan 2008) This definition was later edited by the Reserve Bank of India (RBI): "financial inclusion is the process of ensuring access to appropriate financial products and services needed by vulnerable groups such as weaker sections and low income groups at an affordable cost in a fair and transparent manner by mainstream institutional players" (RBI 2014a). In India like a developing nation due to lack of awareness and understanding of financial product and services ,irregular income ,instability in life ,cultural influence for frequent micro transactions lack of banking education ,lack of trust in formal banking institutions, gender inequalities due to cultural influence, are ,obstacles in financial inclusion .If each and every obstacles analysed it is found theses are also basic reason of poverty in the country. So financial inclusion of the country will automatically eradicate the poverty and contribute for the inclusive growth process for the community.

It is analysed with the help of financial Inclusion Index (CRISIL's INCLUSIX)

that financial services by the banking industry is very poor .CRISIL Inclusix is a comprehensive index like other global indices for measuring the progress of financial inclusion in the country .Methodology used for the index as much similar to the global indices. It measures the inclusion down from the district level. The objective of this Index is to analyse and measure financial inclusion, it is reviled from the index that financial services of the country is in the Bottom of the pyramid. This index measures financial inclusion on the three critical factors of the basic banking services such as branch penetration, deposit penetration, and credit penetration and the factor use that focus only on the 'number of people' who are getting financial services benefits through banking operations or through different financial services offered by the government of India rather than on the 'amounts' deposited or loaned. So in 11th five year planning period a conceptual frame work is prepared to bridge the gap between the demand and supply of the banking services.

PurnimaKanther, SurekhaNagabhushan "Workshop on Measuring Financial Inclusion from Demand Side: a Background Paper" June 8, 2012. In this paper author tried to made an effort to find different indicators of financial inclusion from both sides the supply side as well as the demand side of financial inclusion are known as supply providers and demand poolers .this is demonstrated through a chart. These are called as barriers in financial inclusion.



OBJECTIVES OF THE STUDY

- To review the status of the financial inclusion in India.
- To find out the initiatives taken by the Government of India and RBI for promoting financial Inclusion.
- To find out the impact of Microfinance models on Financial Inclusion.

Methodology: The study is exploratory in nature. Secondary data source is used for the study. Different articles are published in journals, newspapers, various committee reports submitted to Government of India on Financial Inclusion are reviewed and observed and analysis is made as per this.

A roadmap to financial inclusion

Policy maker efforts to push banking habits in rural areas which are unbanked date back to the sixtes.At the beginning of 1960 banking in India concentrated on cities and in urban areas but after that it moves towards villages .in 1965thr RBI liberalised branch –licensing norms focus on rural areas . After 1969 RBI and GOI towards took some measures for Financial Inclusion collectively. Measures by RBI and GOI towards Financial Inclusion: 1 The Reserve Bank of India (RBI) and the Government of India (GOI) have been making efforts to increase banking penetration in the country. Some of these measures are: Growth of Cooperative Bank's Setting up of State Bank of India Nationalization of banks Lead Bank Scheme RRBs Service Area Approach Self Help Groups Based on the recommendations of the Interim Report of the Committee on Financial Inclusion, headed by Dr. C. Rangarajan, Government of India has taken following initiatives: i. 2 | www.iimpcijbr.com Chanakya International Journal of Business Research 39 interventions of financial inclusion and Financial Inclusion Technology Fund (FITF) to meet the cost of technology adoption. Each Fund consists of an overall corpus of Rs.500 crore, to be contributed by the GOI, RBI and NABARD in the ratio of 40:40:20 in a phased manner over five years, depending upon utilisation of funds. Financial inclusion fund was set for meeting the cost of development and promotional interventions ii. Aadhar card – The government initiative of providing Unique Identification Number through Aadhar card will go long way to support financial institutions for meeting KYC norms and smoothen the business processes. iii. Swabhiman is path-breaking initiative by Gov. of India and banks in state to cover the economic distance between rural and urban India. It promises to bring basic banking services to all unbanked villages in the country with population above 2000. The Swabhiman movement facilitate opening of bank accounts, provide need based credit, remittance facilities and help to promote financial literacy in rural India using various models and technologies including branchless banking models.

Steps taken by RBI and GOI to support financial inclusion

Growth of Cooperative Banks, Setting up of State Bank of India, Nationalization of banks , Lead Bank Scheme, RRBs are initiatives made by Apex bank of India for the financial inclusion. Moreover RBI set

up khan commission in the year 2004 to promote the growth of financial inclusion and the committee were incorporated into the midterm review of the policy in the year 2005-2006, the committee also recommend the banks to review the policy of financial inclusion and to provide basic banking no frill account. No-frills accounts provides deposits and withdrawal facilities and makes banking services affordable by cutting down the extra frills which are no use for the poor households these accounts are opened with KYC norms. In this type of accounts bank stops receiving deposits from the customers when, deposits reaches to 50 000. Introduction of business correspondence as facilitator in banking services in the unbanked areas. Bank introduced business correspondence mechanism to avoid cost of establishing mortar branches. Business correspondence provides easy accessibility to the doorsteps of the rural households as friend, philosopher and guide for the customers. Business correspondence provides door to door service, create awareness and communicate different information to the potential customers and to the actual accounts holders. RBI set p a High Level and on the basis of the committee Lead Bank Scheme incorporated ant RBI directed lead banks to draw a road map by March 2010 to provide banking services through a banking outlet in each and every village having a population of more than 2000, by March 2012 and further stated that such banking services may not necessarily be through a brick and mortar branch but can be provided through any of the various forms of ICT-based models with the help of hand held machines, smart card & Business Correspondents. EBT: Electric Benefits transfer is a procedure of transforming payments directly to accounts of beneficiaries with a motive to provide better benefits.

Aadhar card – The government initiative of providing Unique Identification Number through Aadhar card is long way a support for the financial institutions for meeting KYC norms and smoothen the business transactions. ii. Swabhiman is path-breaking initiative taken by the Gov. of India and banks in state to cover the economic distance between rural and urban India Swabhiman. Promises to bring banking services to all unbanked villages in the country were population above 2000 exist. The movement not only facilitate opening of bank accounts but also it provide different services such as credit, remittance facilities and help to promote financial literacy in rural India using various models and technologies including branchless banking models through Business correspondents. Government of India has constituted two funds viz., Financial Inclusion Fund (FIF) for meeting the cost of developmental and promotional

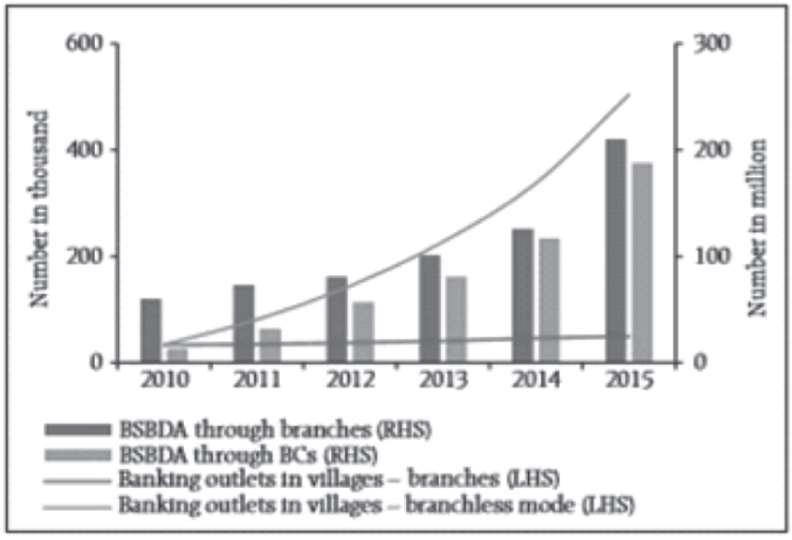
Financial inclusion initiatives and its effectiveness:

The Reserve Bank of India continued its efforts towards financial inclusion. Pradhan Mantri Jan Dhan Yojana (PMJDY) scheme is a boost in the Indian economy. Through this programme considerable banking penetration has

occurred in rural areas. However, significant numbers of banking outlets operated through business correspondents (BCs). It is revealed from Chart given below shows Dominance of BCs in the rural areas .it is observed that almost 91 per cent of the banking outlets were operating in branchless mode .as on March 31, 2015195.2 million accounts have been opened and as on December 9, 2015, 166.7 million RuPay debit cards have been issued under PMJDY. The scheme was launched on 28th August, 2014 for financial literacy with the objectives of providing universal access to banking facilities to the unbanked areas, providing basic banking accounts with overdraft facility and RuPay Debit card to all customers, micro-insurance and unorganised sector pension schemes. In its planning phase it is expected to be achieved the objectives in two phases over a period of four years i.e. up to August 2018 objectives of financial inclusion speared by The RBI and by PMJDY and are related to each other. To strengthen the financial inclusion efforts are made to increase insurance and pension coverage in the country. Under this Government of India has launched some social security and insurance schemes, i.e., Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana and Atal Pension Yojana in May 2015) .

Due to financial Inclusion in between 10 March 2010 to March 2013 Banking outlets in villages increases up to 67,694 2,68,454 BCs increased 34,174 2,21,341 BSBD Accounts Opened 73.45 million 182.06 million Small Overdraft in BSBD 0.18 million accounts acquired 0.10 billion OD facility 3.95 million accounts acquired 1.55 billion OD facility Number of Kissan Credit card issued 24.31 million 33.79 million Number of General Credit Card 1.4 million 3.6 million Number of ICT based transactions having CBS facility) -through BCs 26.52 million 250.46 million ATMs in rural India .

Chart 2.21: Progress of banking outlets and basic savings bank deposit accounts (BSBDA)



Source: RBI

BSBDA through branches(RHS) BSBDAthrough BCs (RHS) Banking outlets in villages– branches (LHS) Banking outlets in villages – branchless mode (LHS) Mobile wallet PPI cards Paper vouchers. 92.6 million beneficiaries have been enrolled under the Pradhan Mantri Suraksha Bima Yojana and 29.2 million have been enrolled under Pradhan Mantri Jeevan Jyoti Bima Yojana. Further, 1.3 million account holders have been enrolled under Atal Pension Yojana.

Suggestions

1. Society and its Initiatives: Without inactiveness of the society it is too difficult for the government to change the financial scenario of the country .Wilful participation of the society can contribute and act as a change maker in the financial inclusion of the country.
2. Creating awareness and promotion of financial literacy: From school level onwards microfinance needs, development and its operation should be part of the curriculum.
3. Innovative strategies **should inculcate to** reach the people.

Conclusion : Access to different financial services like savings, insurance and other remittances are important for poverty eradication and overall development. For reaching financial inclusion, policymakers and other stakeholders have to work together for financial education programs. In addition to this should emphasise on community participation that allow the community potential of microfinance. Basic financial literacy programs can

References :

1 Chakrabarthy K.C, "Financial Inclusion, RBI Initiatives" at National seminar on launching a National initiative for financial inclusion, DFS GOI, (2009).

2 Financial Inclusion initiatives of NABARD – July 2012 Purvi Shah and Medha Dubhashi Vol 1(1) | March 2015

The Means of Inclusive Growth Submitted to CIJBR, Indira Institute of Management, Pune 44 Vol 1(1) | March 2015 | www.iimpcijbr.com Chanakya International Journal of Business Research.

K. Prahalad. The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits. 2nd ed., Wharton School, 2005.

2. Department of Finance, Gitam Institute of Management, Gitam University. Financial Inclusion in India: Challenges and Strategies. 1st ed., New Delhi: Excel Books, 2013.
3. Lazar Daniel and P. Palanichamy. Micro Finance and Poverty Eradication. Pondicherry, India: Pondicherry University, New Century Publications, Mar. 2008.
4. K.G. Karmakar, G.D. Banerjee and N.P. Mohapatra. Towards Financial Inclusion In India. Sage Publications, 2011
5. Kochhar Sameer. Financial Inclusion. Academic Foundation, 2009
6. S.R. Maheshwari. Rural Development in

India. New Delhi: Sage Publications India Private Ltd, 1995.

7. S. Rajagopalan. Microfinance Challenges and Opportunities. The Icfai University Press, 2005.
8. B. Sujata, Financial Inclusion Concepts and Strategies, The Icfai University Press, 2007.
9. A. Agarwal. "The need for financial inclu-sion with an Indian perspective." Economic Re-search, vol. 3, Mar. 2008.
10. J.M. Mohan. "Corporate Financial Inclusion Plan in India, An inclusive growth approach- An Empirical Study." The Management Account, pp. 897, Oct. 2011.
11. NABARD, Ten Years of SHG-Bank Linkage: 1992-2002., NABARD and Micro Finance 2002 Region Inclusix 2011 Inclusix 2010 Inclusix 2009 India. The Means of Inclusive Growth Submitted to CIJBR, Indira Institute of Management, Pune 48 Vol 1(1) | March 2015 | www.iimpcijbr.com Chanakya International Journal of Business Research.
12. The Institute of Cost and Works Accountants of India. "Financial Inclusion." The Management Accountant, vol. 47(1), Jan. 2012.
13. M. Yunus. "Grameen Bank, Micro Credit and Millennium Development Goals." EPW, vol. 39. pp. 4077-4092, 2004.
14. V. Swamy and Vijayalakshmi. "Role of financial inclusion for inclusive growth in India- issues and challenges". 2010. Available: http://skoch.in/fir/role%20%financial(visited on 04/08/11)
15. K.C. Chakrabarty. "Financial Inclusion - Achievements So Far and Road Ahead" Presentation made at 26th Skoch summit MUMBAI, 2. Jun 2011. Available: rbidocs.rbi.org. in/rdocs/ Content/ ppts /FIS020611S.ppt
16. National Bank for Agriculture and Rural Development. "Financial Inclusion – An overview." Occasional Paper, Mehrotra N & Others, 2009. 17. NSSO. "Survey on "Indebtedness of Farmer Households." 2003. Available: planningcommission. gov. in/.../ Indebtness% 20of%20farmer % 20househol
18. Presentation by Sh. H. R. Khan, Dy. Governor, RBI at BANCON, 2011. Available: www.i-scholar.in/index.php/Ajm/article/view/42511.
19. Speech by Smt. Usha Thorat, Deputy Governor, Reserve Bank of India at the HMT-DFID Financial Inclusion Conference 2007, Whitehall Place, London, UK, Jun. 19, 2007. Available: www.rbi.org.in › Speeches (visited on 08/12/2012) 20. Speech of Dr. K. C. Chakrabarty, Dy. Governor, RBI at St. Xavier's College, Sep. 6, 2011. Available: www.rbi.org.in › Speeches(visited on 20/09/2012)
21. D. Subbarao. "Financial Inclusion: Challenges and Opportunities." RBI monthly Bulletin, Jan. 2010. Available: www.rbi.org.in › Publications)
22. D. Rajaram. "Microfinance in India. Empirical Evidence, Alternative Models, and Policy Imperatives". Economic and Political Weekly, Mar. 2005. pp. 1229. 23. R. Mohan "Agricultural Credit in India: Status. Issues and Future Agenda." Economic and Political Weekly. Mar. 2006. pp. 1013-1023.

24. Government of India, 2008, Report of the Committee on Financial Inclusion, Chairman: C. Rangarajan.
25. Report on Currency and Finance, 2006-2008, Reserve Bank of India.
26. Report on Financial Inclusion, 2008, NABARD.
27. Report on Status of Microfinance Sector in India, 2006-07, NABARD
28. Report on Trend and Progress of Banking in India, 2007- 08, Reserve Bank of India
29. Reserve Bank of India ,2010, Annual Report
30. Reserve Bank of India, 2011, Report of the Subcommittee to Study Issues and Concerns in the MFI Sector, Jan. 2011, Chairman: Y.H.Malegam.
31. The Micro Finance Institutions, 2011, Development And Regulation Bill.
32. V. Benwal. "Integration of sponsors Banks, RRBs to boost Financial Inclusion." Business Standard (Sep. 9, 2011).
33. M. Sabnavis. "Building alternative MFI Model." The Economic Times (Oct. 2011).
34. S. Sarma. 'Microfinance: Still stuck in the Doldrums.' Business Standard (Aug. 18, 2011).
35. A. Bhoir. "Consolidation of Banks Key to Financial Inclusion." The Economic Times (Aug. 19, 2011). 36. Fe Bureau. "Bankers take the digital path to financial Inclusion." Business Standard (Sep. 18, 2011). 37. Business Standard-e-paper dated 29-03-2010, 13-4-2010, 05-5-2010 and 05-7-2010.
36. Purvi Shah and Medha Dubhashi Vol 1(1) | March 2015 | www.iimpcijbr.com Chanakya International Journal of Business Research.

Special Economic Zones in India: A Study on Assessment of Export, Investment and Employment Generation

Babita*

Abstract

Special economic zones are defined as a demarcated industrial area where domestic and foreign firms produce mainly for export. They are the enclaves operating under liberalised trade regime and enjoyed bunch of fiscal and non fiscal incentives. In India, This concept got emerges when government of India established first export processing zone (EPZs) in Kandla in 1965. Subsequently, various zones have also set up in different parts of country. But this zone reported failure consistently towards achievement of underlying objectives due to presence of various loopholes in EPZs policy. Thus, to eliminate these loopholes, in 2000, government of India announces special economic zones (SEZs) policy. The policy intended to make SEZs as engine of growth through their positive contribution in core activities of an economy. This present article gives a bird eye view of historical framework of SEZs policy, SEZs objectives, Act, rules and regulations, incentives available to units and SEZs developer, administration of SEZs. In addition to this, present paper also highlights the current status of SEZs in India and their role in Indian economy. Lastly it can be concluded that for being a role model like China, suitable changes in policy should be required.

Keywords: Exports, Employment, Investment, Special economic zones, SEZs Act
JEL Codes: F01, F10, F13, G18, O1.

Introduction

Geographical delimited area referred to as zones, have prospered all over the world. Zones operate under liberalised trade regime than the outside area. Factors like specific administrative authorities, their powers, availability of attractive set of fiscal & non- fiscal incentives to units working in these zones, presence of world class infrastructure and better facilities makes them differentiate from outside area. Zones are purposely visualized as instrument for restructuring the economy, export promotion, generation of employment, attracting FDI, development of infrastructure facilities just a name few. In developing nations, Zones are well accepted mechanism to import substitution through promotion of exports. Zones not only served as a mean for export promotion but they also have played considerable role in development of an economy through significant contribution in better resource management. Developing countries around the world have built up the zones for the betterment

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of masses besides integrating with the world economy. Developing countries like China, Mauritius, Indonesia, South Korea, Taiwan, Bangladesh, Sri Lanka and India falls under this category.

SEZs in India: Historical framework

Now, turning to Indian case, after seeing the successful implementation of these zones in countries all over the world, India was one the first among the countries in Asia to recognize the effectiveness of the Export Processing Zone (EPZs) model in promoting exports. As a result, India set up the first EPZ of Asia at Kandla in 1965. This zone is set up in backward region of Gujarat. It was followed by the Santacruz export processing zone in Mumbai which came into operation in 1973. These are the zones which are operated by central government. There was however no clarity of objectives that the government wanted to achieve. They have not shown any remarkable performance for which they are created. Objective related to Promotion of exports is still remained unfulfilled. To promote the exports, the central government decided to establish four more zones in 1984. These were at Noida (Uttar Pradesh), Falta (West Bengal) Cochin (Kerala) and Chennai (Tamil Nadu). Thereafter, Visakhapatnam EPZ in Andhra Pradesh was established in 1989, though it could not become operational before 1994. Instead of continuous efforts by government and implementation of recommendation given by various committees, performance of these zones was not up to the mark. Various committees was appointed by the government and they said that growth of EPZs in this phase was hampered by several handicaps, restricted trade regime, bureaucratic controls limited powers of zonal authorities, inward looking trade policy, unattractive package of incentives and facilities, absence of single window clearance system, infrastructural deficiencies, restriction on FDI and subcontracting, quantities restriction on imports conducive environmental conditions etc. In 1991, economic reforms were administered in the Indian economy. In this context, govt was taken diverse range of measure for restructuring the EPZs policy. Following the direction, during EXIM policy, 2000, govt of India announce a new scheme of SEZ on 1 April 2000. This policy totally revitalizes the old structure. As per this policy, all older central governments operated EPZs have been converted in to SEZs. But this conversion was takes place in two phases. During the first phase from November, 2000 the Export Processing Zones at Kandla, Santa Cruz (Mumbai), Cochin and Surat have been converted into SEZs and during the second phase in 2003, other existing EPZs namely, Noida, Falta, Chennai, Vizag were also converted into SEZs. Hence, SEZs operating today are EPZs of the older times.

This policy along with various fundamental changes brings a new concept of public- private partnerships.

SEZs are now permitted to be set up in the public, private, joint sector or by the State Governments. Therefore even a State Government can take initiative on its own and submit a proposal to the Board for setting up of SEZ or State Government can enter into an agreement with another Developer for setting up a SEZ, and make a joint proposal to the Board various state government and private companies were also motivated to set up SEZs. In 2003-04, Jaipur, Jodhpur, Indore, Moradabad, Manikanchan SEZs were notified by their respective state government to take the benefits as announced by the central government in SEZs policy 2000. In 2004, three private SEZs of Mahindra industrial park ltd were notified by the Tamil Nadu government. As per new policy several attractive fiscal and non fiscal provided by the government, a large number of big industrial houses such as Reliance industries, DLF limited, Mahindra ltd, Wipro, Nokia, Tech –Mahindra, Infosys and many others have set up their SEZs projects. Incentives have been provide to units working under these zones which the old policy lacks. These are more authorities to zonal authorities, presence of single window clearance system, exemption from various taxes, facility of subcontracting, repatriation of profits, liberalisation of bureaucratic control etc.

Benefits and Incentives available to SEZs units and developers

Incentives available to developers

- Exemption from customs/excise duties for development of SEZs for authorized operations approved by the BOA.
- Income Tax exemption on income derived from the business of development of the SEZ in a block of 10 years in 15 years under Section 80-IAB of the Income Tax Act.
- Exemption from minimum alternate tax under Section 115 JB of the Income Tax Act.
- Exemption from dividend distribution tax under Section 115O of the Income Tax Act.
- Exemption from Central Sales Tax (CST).
- Exemption from Service Tax (Section 7, 26 and Second Schedule of the SEZ Act).

Benefits to SEZ Units

- Duty free import/domestic procurement of goods for development, operation and maintenance of SEZ units
- 100 percent Income Tax exemption on export income for SEZ units under Section 10AA of the Income Tax Act for first 5 years, 50 percent for next 5 years thereafter and 50 percent of the ploughed back export profit for next 5 years.
- Exemption from minimum alternate tax under section 115JB of the Income Tax Act.

- External commercial borrowing by SEZ unit's up to US $ 500 million in a year without any maturity restriction through recognized banking channels.
- Exemption from Central Sales Tax.
- Exemption from Service Tax.
- Single window clearance for Central and State level approvals.
- Exemption from State sales tax and other levies as extended by the respective State Governments.

The Legal framework

Special laws and legislation have been formulated in various countries to provide the necessary regulatory foundation for SEZs. Government enacted laws and act for the administration of these zones. However, at the time introduction of SEZs policy, no such act and law was came in to effect. The policy relating to SEZs are contained in the Foreign Trade Policy and various incentives and benefits are administered through this policy. Hence, the legal framework for the current SEZ structure was instituted in 2005, through the passing of SEZs Act, 2005. This Act provides the necessary legal and regulatory foundation for SEZs. This Act for the first time in the history of the SEZ policy defined the objective of the scheme A list of fundamental objectives are presented below:-

The main objectives of the SEZ Act are:

(a) Generation of additional economic activity.

(b) Promotion of exports of goods and services.

(c) Promotion of investment from domestic and foreign sources.

(d) Creation of employment opportunities

(e) Development of infrastructure facilities

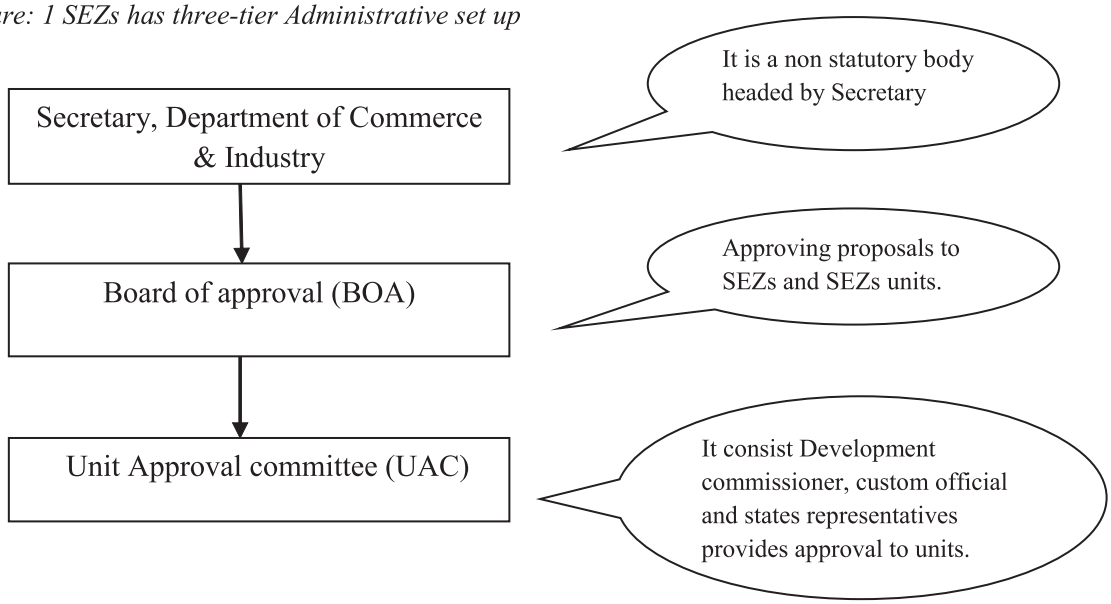
It is expected that this Act will trigger a large flow of foreign and domestic investment in SEZs, infrastructure and productive capacity, leading to generation of additional economic activity and creation of employment opportunities. Later on, after extensive consultations, the draft of SEZ Rules came into effect on 10th February, 2006, providing for drastic simplification of procedures and for single window clearance on matters relating to central as well as state governments.

Administrative set up of Indian SEZs

Effective and well-organized administration of zone is a vital factor contributed towards the success of zones. Administrative set up is found different in different countries. In many countries it can be seen that a zone administration authority is set up in zone which is responsible for the administration, maintenance and development of the zone. It attends day-today administration, enforces various statutory provisions and monitors the performance of SEZs. In India, A SEZ authority is set up for the maintenance of the zone. Along with this authority an administrative officer,

namely, development commissioner is appointed by the central government for each of 7 central govt zones. The government has notified the jurisdiction to DCs of the 7 central zones. These DCs exercise the control over the other state & private zones. For Instance, All state and private zones in north India falls under the jurisdiction of Noida SEZ development commissioner. DC is also works as a head of the unit approval committee and grant approval to units.

Figure: 1 SEZs has three-tier Administrative set up



Approval Mechanism There are separate procedures for approval of SEZs and units in SEZs. In case of proposal regarding the establishment of SEZs, the developer submits the proposal for establishment of SEZ to the concerned State Government. The State Government has to forward the proposal with its recommendation within 45 days from the date of receipt of such proposal to the Board of Approval. The applicant also has the option to submit the proposal directly to the Board of Approval.

The Board of Approval has been constituted by the Central Government in exercise of the powers conferred under the SEZ Act and has 19 members including the state representatives. All the decisions are taken in the Board of Approval by consensus. Once the proposal is accepted central government grants the letter of approval (LOA) in the form- B. This LOA is valid for one year and can be extended for further two years. After that, developer furnishes the application for notification of area as a SEZ and authorisation of operation. As mentioned above different approval mechanism for setting up units in a zone exists. A proposal in the form of Form-B is forwarded to UAC which is headed by the development commissioner.

Development commissioner scrutinise the proposal and provide the decision regarding acceptance and rejection within 15 days. Approval to setting up of unit is subject to fulfilment of certain criteria. Once the proposal is accepted, a development commissioner grants a letter of approval (LOA) in the form of Form-G.

Minimum Area Requirement for SEZs

The SEZ Rules 2006 provide for different minimum land requirement for different class of SEZs. Every SEZ is divided into a processing area where alone the SEZ units would come up and the non-processing area where the supporting infrastructure is to be created. Table1 shows the different area requirements for different SEZs.

(Insert table 1 here)

Current status of SEZs in India

The face sheet about SEZs is depicted in table 2. As per the table, total 491 zones are approved by the government in different parts of country out of which 352 are notified and 196 are in operational stage**.** As on Dec 2014, total 3864 number of units is working under these operational zones.

(Insert table 2 here)

Region wise distribution of SEZs in India

Table 3 shows an imbalance regional distribution of SEZs. Southern and northern region attain 68 percent of SEZs approval whereas western and eastern region experience less number (around 32 percent) of total approvals. This geographical spread of these zones indicates denser clustering in few states. In south Maharashtra, Andhra Pradesh Karnataka, Kerala, Telangana and Tamilnadu account 58 percent of total approvals due to advantage of being coastal states. Locating zones in coastal areas will reduce transportation cost for both imported inputs and final output. Secondly, land acquisition policy is simpler in south then other region. In north region, Haryana, UP are the top states in number of SEZs approvals. Most of the zones are coming up in Gurgaon (Haryana) and Noida (UP), as these cities is located near national capital region (NCR). The NCR is a most attractive location for foreign investment (Palit 2009). Eastern region has less number of approved SEZs as eastern region face stiffest land acquisition challenges. Hence, current distribution of SEZs creates regional imbalances rather than fostering regional development.

(Insert table 3 here)

Sector wise distribution of SEZs in India (As on Dec 2014)

The sector wise distribution of these zones is shown in table 4. The dominance of IT/ITES and engineering enabled is clearly noticeable. Available evidence clearly points out that current jumble of SEZs has IT orientation. As seen in the table presented below, Majority of operational SEZs are IT/ITES specific.

SEZs specialising in these activities account for 348 out of 491 approved SEZs or around 70 percent of total approvals. There are many reasons behind this, first, it zones require less area than other types of SEZs. Secondly, small area is easy to acquire, hence these zones can be developed fast than the others. Thirdly, relocation of existing IT units to SEZs takes place for reaping the exemption available to SEZs units (Palit 2009). These 'sector- specific' zone is followed by multi-product SEZs accounting around 5 percent of the total approvals. Engineering (4 percent), pharmaceuticals (4.5 percent), textiles (2.8 percent) and food processing (2.6 percent) follow thereafter.

(Insert table 4 here)

Role of SEZs in Indian Economy

These zones have been set up many countries all over the world with similar and different objectives. Some countries established them as a tool for economic and trade liberalisation, while import substitution and generating of employment is the major influencing factor for Asian countries. They have to fulfil diverse range of role for the development of economy. For developing countries, SEZs are considered as 'second best option/alternative' for partial trade liberalisation rather than economy- wide liberalisation. They could be used as the first stage of economic restructuring and productive modernization in a developing country (Hamada, 1974; Rodriguez, 1976; Hamilton and Svenson, 1982; Wong and Chu 1984; Johansson and Nilsson. 1997; Mukhopadhyay, 2001; Lakshmanan, 2009; Palit, 2010; Seshardi, 2011). SEZs lead to import substitution, earning ample foreign exchange earnings to accommodate import needs, trade liberalisation through promoting the exports (Lakshmanan, 2009; Agarwal, 2010; Palit, 2010; Kumar *et al*, 2011; Tantri, 2011; Dave, 2012; Vinit, 2012; Elangoven, 2013; Khurud, 2013; Leong, 2013; Nideesh 2013). Authors like Madani, 1999; Agarwal, 2007; Palit and Bhaatacharjee, 2008; Lakshmanan, 2009; Kumar *et al*, 2011; Vinit, 2012; Nideesh, 2013) observed that zones have favourable impact on employment and helps countries to alleviate unemployment through generate employment for both skilled and unskilled labour. ILO (1998) concludes that SEZs do play an important role in employment generation in developing countries. Zones have proven to be beneficial to women by offering employment, better working condition, fair wages and improving their position in households and reduction in female poor ratio. Female employee constitutes the large portion of total employment (Dunn, 1994; Summerfield, 1995). Romero (1995) observed comprehensive appraisal of the employment impact of SEZs should consider both direct and indirect employment created by zones. Indirect effects of zones reflected ancillary employment opportunities created by the zones in various sectors of the economy.

These sectors include transportation, banking, insurance, civil, aviation, hospitality, tourism, automobile, shipping, packaging, communication and warehousing. Empirical evidence indicates that indirect employment effects of zones could be more prominent than direct effects.

Mobilisation of investment is one of the main objectives of setting up SEZs in any developing countries. It is a one of the objective stated under SEZ Act 2005. (Levien, 2011) observed that both foreign and domestic investment are attracted by these zones but major portion of investment are come from mainly from domestic sources. Zones, In South Asia, Bangladesh Zones generated substantial amount of investment and followed by the Sri Lankan Zones and Indian Zone is in the last position (Agarwal, 2006). EPZs in Korea and China attracted substantial amount of investment and then spread across the country. (Milberg, 2007). Biyagama and Katunayake Zone in Sri Lanka, Dhaka and Chittagong Zone in Bangladesh and Noida and Santacruz Zones in India have reported success in generating substantial amount of investment in the respective countries (Agarwal 2006). The Zones can generate the domestic as well as foreign investments and the earlier studies state that EPZs are the instrument to promote foreign direct investment in many developing countries (Subramanian and Roy, 2001; Ferrerosa, 2003; Lakshmanan, 2009). Bangladesh and Sri Lankan Zones have been more successful in attracting FDI (Agarwal 2006). Hence, the mobilisation of foreign investment was expected to play an important role in zone for the economic development (Jayanthakumaran and Weiss, 1997).

Hence, SEZs play a major role in promotion of exports, creation of employment opportunities and investment. The studies conducted all over the world in this context have proved this conception through their surveys, experiences and analysis based on data. Therefore, in present article we have, made an attempt to study the role of SEZ in Indian economy through studying their exports, employment and investment performance. The study is based on secondary data collected from various publications of Reserve bank of India, Ministry of Commerce and Industry, Centre for monitoring Indian economy, Directorate general of foreign trade, website of SEZs and many published articles and research papers etc

Performance of SEZs

Performance of SEZs can be evaluated by their contribution towards export, investment and employment generation, which are clearly defined objectives of SEZs act 2005.

Export Performance

Table 5 reveals that there has been a continuous improvement in export performance of SEZs. The exports from

SEZs are picking up slowly. An increasing trend can be reported in export values whereas a fluctuating trend is trend is can be seen within share in total exports of India.

(Insert table 5 and figure 2 here)

From the table is shown that exports from SEZ and its share in India's export have been growing steadily. The value of exports from SEZs was estimates at Rs. 8552 crore in 2000-01, Rs. 22,840 in 2005-06 and Rs. 4, 94,077 in 2013-2014. Data shows around 3 fold rises in value of exports from 2000-01 to 2005-06 and as much as nearly 22 folds from 2005-06 to 2013-14. As far as growth in exports and its share in total exports of India are concerned, a considerable fluctuation trend was reported. Basically, the major increase in value of exports from SEZ was noticed ever since SEZ Act came into being in 2005. This is evident from the fact that value of exports from SEZs follow continuously increasing trend after the Act.

Status of employment and investment in SEZs

Creation of employment and investment is one of the basic objectives of SEZs Act, 2005. Their role towards these basic objectives can be analysed from the table no-6. From the table it can be seen that zones employed the total of around 13.5 lakhs people and generated an Investment of Rs. around 4 lakhs crores.

(Insert table 6 and figure 3 here)

Conclusion

Developing nations like India needs to empowerment in the area of exports, employment and investment. These are the pillars of any developed nations. The concept of SEZs was implemented all over the world to streamlining their economy. Following the path of others countries, India implemented this scheme a step towards moving from developing nation o developed one. India's early EPZs have had limited success in generation of exports, employment and investment. Compare to earlier ones, new zones shows remarkable performance due to availability of various fiscal and non-fiscal incentives, supportive policy environments, liberalise rules and regulations. An increasing trend was reported in case of exports. The physical exports in 2000-01 was Rs. 8552 Cr which becomes 22,840 Cr. in 2005-06 and 4,94,077 Cr in 2013-14 respectively. A significant percentage towards the share of total India's exports is noticeable. Even though their contribution in exports is visible, they have contributing significantly to employment and investment generation. They eradicate the problem of unemployment by absorbing skilled, semi-skilled and unskilled labour. Findings show that they employed around 13.5 lakhs people in total and mobilise the investment of Rs, around 4 lakhs crores. Thus, this new policy has paved the way to industrialisation and in reality industrialisation is achieved. But this

industrialisation is creates regional imbalances. A current approval of SEZs is also contributing in this regional imbalance through approving around 66 percent of SEZs in southern and 20 percent region. Clustering of these zones can be seen in highly developed and income state, and the state which having coastal area and ports. As far as fulfilment of another objective relating to promotion of multi-product SEZs is concerned, unfortunately, current SEZs policy reported failure. Presently approved SEZs have IT/ITES orientation followed by others. This is happen due to variety of reasons like easy land acquisition and relocation of existing units in to SEZs to grab the incentives. This situation is more severe in eastern and northern region because of land market imperfections. Till these imperfections are exists, achieving the objective of overall balance development will not be possible and becoming a role model like china will always remains a dream.

References:

1. Agarwal, A. (2004). Export processing zones in India: Analysis of the export performance, Working Paper No.148. ICRIER, New Delhi.
2. Agarwal, A. (2010). Economic impacts of SEZs: Theoretical approaches and analysis of newly notified SEZs in India, MPRA Paper No. 20902.
3. Ananthanarayanan, S. (2008). New Mechanisms of Imperialism in India: The Special Economic Zones. Journal of Socialism and Democracy, 22(1), 35-60.
4. Avaburth, M.S. (2009). Projected impacts and land acquisition issues in Mangalore SEZ. Centre for Civil Society, 1-23.
5. Balasubramaniam, C.S. (2007). Special Economic Zones (SEZ): Progress, Policy and Problems in Indian Economy, Abhinav Journal of Research in Commerce and Management, 2(9), 1-13.
6. Chanderchud, S., & Gajalakshmi, N. (2013). The current status of SEZs in India, IOSR Journal of Business and Management, 9(5), 18-27.
7. Chatterjee, S. (2013). The economics of special economic zones in India: Ground Realities and key considerations, The Maharaja Sayajirao University, Baroda. Retrieved from http://ssrn.com/abstract=1082709.
8. Cheesman, A. (2012). Special economic zones and development: Geography and linkages in the Indian EOU scheme, DPU Working Paper No. 145, 1-42.
9. Creskoff, S. & walkenhorst, P. (2009). Implications of WTO disciplines for special economic zones in developing countries, Policy Research Working Paper No.4892, 1-44.
10. Dave, R. (2012). Growth and contribution of special economic zones in India's export. International Journal of Business Economics & Management Research, 2(6), 61-70.
11. Elangoven, A. & Palanisamy, S.K.P. (2013). Performance evaluation of special economic zones, Indian Journal of Applied Research, 3(10), 1-5.

Appendix

List of table:-

Table -1 Area Requirement for different types of SEZs

Sr. No.	Nature of SEZ	Minimum Area required	Minimum processing area required
1	Multi-Product	500 Ha	50 percent
2	Sector- specific	50 Ha	25 Ha
3	SEZs in Port or Airport	10 Ha	50 percent
4	SEZs for free trade zone &Warehousing	10 Ha	50 percent
5	Gems, Jewellery, Biotech	10 Ha	40000 Sq mtr
6	Electronic hardware, software & IT/ ITES	10 Ha	Based on different category of cities (A= 1 lac Sq mt, B= 50000, C=25000

Source: www.sez.nic.in

Table- 2 Current status of approved SEZs (as on Dec 2014)

Details	No. of SEZs
Formally approved	491
Notified	352
Operational	196
Total units approved	3864
Total area for SEZs	51,055.73 Hectares

Source: www.sez.nic.in

Table- 3 Region wise distribution of SEZs in India (As on Sep 2014)

Sr. No.	States	Approved	Notified	Operational
1	Southern Region	325	243	143
2	Northern Region	99	60	22
3	Western Region	44	36	22
4	Eastern region	23	12	9

Source: www.sez.nic.in

Table- 4 Sector wise distribution of SEZs in India (As on Sep 2014)

Sr. No.	Category of SEZs	Approved	Notified	Operational
1	IT/ITES/Electronic/ Hardware	348	238	102
2	Engineering	17	13	11

Table- 5 Exports performance of SEZs in India over a period

Years	Exports (Rs. In crores)	Growth over previous year	Share in India's Exports
2000-2001	8552.00	-	4.2
2001-2002	9200.00	7	4.4
2002-2003	10065.65	9	3.9
2003-2004	13,854	39	4.7
2004-2005	18,314	32	4.8
2005-2006	22,840	25	5
2006-2007	34,615	52	6
2007-2008	66,638	93	10
2008-2009	99,689	50	11.8
2009-2010	2,20,711	121	26.1
2010-2011	3,15,868	43.11	27.6
2011-2012	3,64,478	15.39	24.9
2012-2013	4,76,159	31	29.1
2013-2014	4,94,077	4	26.1

Source: www.sez.nic.in

Table – 6 Employment and Investment in SEZs of India (As on 30 Sep 2014)

Particluars	
(a) Employment (in Persons)	
(i) In the Central government SEZs	2,11,348
(ii) 12 State and Pvt SEZ notified before the Act	75,677
(iii) SEZs notified under the SEZs Act, 2005	10,063,046
Total	**13,50,071**
(b) Investment (In Rs. Crores)	
(i) In the Central government SEZs	12,282
(ii) 12 State and Pvt SEZ notified before the Act	10,694
(iii) SEZs notified under the SEZs Act, 2005	3,57,308
Total	**3,80,284**

Source: www.sez.nic.in

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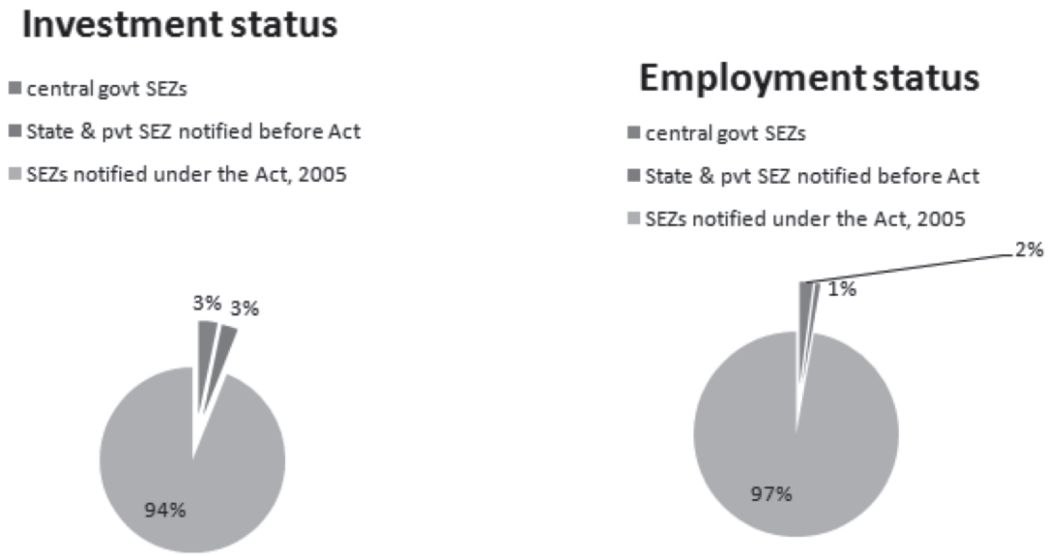
Figure: 2 Export performance of SEZs in India over a period

Source: Author's Computation

Figure: 3 Graphical representations of employment and investment level



Source: Author's computation

Measuring Passenger's Satisfaction in Delhi Metro: A Descriptive Analysis

Govind Nath Srivastava*

Abstract- Security services have become crucial issue across the globe due to increasing threat of global terrorism. Terrorist activities are emerging in a new form and character and this is increasing sensitivity of the customers for the security services.

Delhi Metro is biggest intervention in urban public transportation system, as twenty eight lakh commuters are travelling through Delhi Metro. Keeping in mind high customer traffic and large scale of operation, it has become imperative for Metro railway to review and relook the preparedness of security services associated with several security issues.

The present paper investigates concern of the travelers for security services and analyse their perception for different kinds of security services. In this study total 1015 respondents were taken and data was analysed by using spss-20 statistical software. The responses of respondents were measured on five point likert scale and data were processed through statistical tools such as Correlation, Chi square test etc. This study is an attempt to analyze strength and direction of relationship between security services satisfaction and independent variables. The present paper also investigates relationship between demographic variables and several independent variables causing security services satisfaction of commuters. This study reveals that security services are most sensitive element among all the services provided by Metro railway and efforts must be made to make defect free security system through coordinated approach in order to face any kinds of unforeseen critical incident.

Keywords : Critical incident, safety and security, SERVQUAL, passenger satisfaction.

Introduction- Public transport industry across the globe is going through sea changes. Earlier public transport industry was highly regulated and owned and controlled by public undertakings. Changes in the market forces and market dynamics forced the public transport organization to adopt customer centric approach to deliver prompt and defect free services. The usage of public transport has been declining over the last decade in India despite the fact that travel demand increased in geometric proportion (Ranganathan N, 2003). The reason behind decline in the usage of public transport is poor infrastructure, poor quality of services and inferior image associated with public transport organization related to safety and security. *There can be no greater testimony for* this than the fact that 70 to 75 per cent of accidents have been attributed to railway staff failure direct or indirect**.**

In order to change this perception among

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the public, public transport organization should use restructuring strategy and focus must be given on security services as it is related with safety of precious lives of thousands of the passengers. Security on the Delhi metro is handled by Central Industrial Security Force. Closed circuit cameras are used to monitor trains and stations. Over 3500 CISF personnel have been deployed to deal with law and order issues in the system. In addition to metal detectors, X-ray baggage inspection system and dog squads are used to secure the system. Intercoms are provided at each train car for emergency communication between driver and passengers. Due to increasing threat of terrorism in India, safe and reliable journey has become very crucial issue for both organization and passengers.

Security services play a very important role in determining overall satisfaction of the customers so management must develop trust and confidence in the mind of the customers related with full proof security of passengers. From behavioural perspectives, assurance is very important dimension of service quality so it should be focal point in the execution of all the operation.

1.2- Objectives of the study- The objectives of the study are derived from existing literature, depth interview and focus group interview. The opinion of expert is also taken into the consideration while framing the objectives of the study. Following are the key objectives of the study.

1- To identify the factors influencing security services satisfaction of the commuters.

2- To analyze the magnitude and direction of relationship between security services satisfaction and variables causing passenger satisfaction with Security Services.

3- To find out relationship between demographic variables and several other variables causing satisfaction of passengers with Security Services.

1.3-Hypothesis Development- Hypothesis is the statement which is yet to be proven. In the present study non directional hypothesis is used and hypothesis is tested at 5% level of significance. Following null hypotheses are framed keeping in mind objectives of the study..

H_{01}-There is insignificant relationship between Security services satisfaction and variables causing satisfaction of passengers with Security services.

H_{02}-There is insignificant relationship between the variables causing satisfaction of passengers for Security services.

H_{03}-There is insignificant relationship between gender of passengers and their preference for CCTV camera surveillance.

H_{04}-There is insignificant difference in the perception of passengers with respect to gender for alertness of security forces.

1.4- Review of Literature- Safety and

security is important and sensitive area for commuters and Metro rail around the world are using modern and innovative technolgy to protect the precious lives of commuters. Safety of the passengers has become political and social issues due to threat of terorism around the globe. Varous researchers explored critical areas of security and proposed solution to ensure safe and defect free delivery of services.

C.M. Khosla in his intresting research work assessed the safety situation associated with Indian Railway. He pointed out that safety is primary concern for every one but unfortunately management take this into the consideration when there is major disaster. The author reviewed the report of various committees such as - Kunzru Committee 1962, Wanchoo Committee 1968 and Sikri Committee 1978 in order to understand important issues associated with safety and security.He stated that that there can be no greater testimony for this than the fact that 70 to 75 per cent of accidents have been attributed to railway staff failure direct or indirect..

Another intresting study was carried out by Christian M. Ringle, Marko Sarstedt et al.They analysed the satisfaction of airline passengers. Several researchers attempted to investigate safety and security issues associated with Railway. Some of these study were conducted by Scalea(2005), Rao, Tsai (2007), Sasaki (2005).

Bridget M. Hutter discussed cases of railway accident in Britain. He undertaken four years research project associated with railway accidents, investigations and public inquiries. This article examines the nature, purpose, procedure of public inquiries.

1.5- Research Methdology- Research methdology is blue print of the research as it provides information that, how research would be carried out. It provides information about sampling plan, pilot study, data collection method and statistical tools used in the study.

In this study, total 1015 sample were collected from all the 160 metro stations and maximum responses aere collected from busiest metro stations such as Rajiv Chowk, Mandi House, Kasmiri Gate and Botanical Garden. Non probability sampling, convenience sampling was used for selecting the sample from the population keeping in mind time and financial constraint. Pretesting of the questionnaire was administered with limited no of 20 carefully selected respondents . Based on the feedback obtained from the respondents , minor alteration was made in the questionnaire. During the initial stage of the study, pilot study was administered with 50 respondents and On the basis of feed back from the respondents , questionnaire was revised several times. Questionnaire was also sent to the experts and their views were incorporated in the study for refinement of the questionnaire.

The data were collected through non disguised structured questionnnare and

respondents were asked to indicate their degree of agreement or disagreement on 1 to 5 point likert scale. In the questionnaire , total eight questions were asked from the respondents regarding lost and found services, fire and safety services,accident handling capabilities of metro railway, adequacy of no of CCTV installed at metro station, and preparedness of securirty services to counter any critical incidents. Questions were also asked regarding women safety and safety of luggage.

In order to test the reliability of the data, Cronbach alpha test was administered.Data was analysed by descriptive statistics ,internal consistency reliability test, Correlation and Chi square test.

1.6-Analysis of the data- In this section of the study, data were analysed by descriptive statistics, Correlation and Chi square test. Total eight independent variables and one dependent variable, Security services were identified for the study. Descriptive analysis brought important insight about the study and it presented the data in terms of measure of central tendency and measure of variability.

1.6.1-Reliability Analysis of the data- In order to test the reliability of the data, internal consistency reliability test was administered. In this test cronbach alpha is used .cronbach alpha is different from correlation coefficient and it varies from zero to one. Cronbach alpha is estimate of reliability and higher value of cronbach alpha is indicator of reliability of the data.

Table-1.1

SN	No of items	Cronbach Alpha
1	8	.910

The table No-1.1 shows that data is reliable by 91% which indicates that data is highly reliable. This also shows that there is very less percentage of error variance in the data.

1.6.2-Descriptive Analysis of the Data- In the present section of the study, descriptive statistics of eight independent variables and one dependent variable was presented. Data was presented in the form of mean and standard deviation. The result of descriptive statistics shows that the value of mean and standard deviation is in the close range of variation which is positive indication of the study.

(Descriptive Statistics of Secueity Services) Table-1.2

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
No of cctv	1015	1.00	5.00	3.1232	1.06662
Metal detector	1015	1.00	5.00	3.2099	1.03694
Security forces	1015	1.00	5.00	3.0305	1.22597
accident handling	1015	1.00	5.00	3.0729	1.01789
women safety	1015	1.00	5.00	3.1744	1.06871
Pickpocket incident	1015	1.00	5.00	3.2217	.99363
Safety of _luggage	1015	1.00	5.00	3.2394	.98651
Overall security services	1015	1.00	5.00	3.28	1.040

Inter Correlation Matrix of Security Services (Table-1.3)

	S1	S2	S3	S4	S5	S6	S7	SS
S1	1	.584**	.585**	.470**	.533**	.548**	.454**	.580**
S2	.584**	1	.632**	.626**	.533**	.543**	.402**	.636**
S3	.585**	.632**	1	.615**	.565**	.522**	.398**	.888**
S4	.470**	.626**	.615**	1	.601**	.676**	.416**	.618**
S5	.533**	.533**	.565**	.601**	1	.659**	.485**	.557**
S6	.548**	.543**	.522**	.676**	.659**	1	.562**	.523**
S7	.454**	.402**	.398**	.416**	.485**	.562**	1	.404**
SS	.580**	.636**	.888**	.618**	.557**	.523**	.404**	1

The above table describes that, majority of the respondents gave more than average rating to all the variables. Intrestingily security services satisfaction of commuters was found highest as compared to the variables causing security services satisfaction of the commuters.

1.6.3-Inter correlation Matrix of Security Services-The sensitivity of customers for security services has been significantly increased due to increasing threat of terrorism. In the present study,

correlation between the variables associated with security services of Delhi Metro is investigated. Total 8 variables are identified for the study and correlation among them is shown by correlation matrix. The quality of security services is influenced by various factors such as number of CCTV, metal detector, women safety, safety of the luggage, accident handling capability and preparedness of security forces to handle any unforeseen situation.

Correlation describes the relationship between two and more than two variables. It is used to analyze strength and direction of relationship between two and more than two variables. SPSS gives correlation matrix which describes each pair of the variable. The diagonal element of correlation matrix is equal to one because variable correlates perfectly with itself.

Here S1 to S7 is used to describe independent variables associated with security services .SS presents dependent variable, Security services satisfaction. Here S1 = number of cctv camera, S2=metal detector, S3=alertness of security forces, S4=accident handling, S5=women safety,S6=pickpocket incidents, S7=safety of the luggage.

It is evident from the above table that statistically significant relationship exists between security services satisfaction and all the independent variables accountable for satisfaction of passengers with special reference to security services. This shows that null hypothesis is rejected and alternate is accepted. This indicates that statistically significant relationship exists between Security services Satisfaction and variables causing satisfaction of commuters for Security Services (Independent variables).Secondly it is also seen from the table that there is significant association between the variables accountable for satisfaction of commuters for Security services. This ascertains that second null hypothesis is rejected and alternate hypothesis is accepted. It is also apparent from the above table that all the variables are statistically significant at 5% level of significance.

1.6.4-CHI SQUARE TEST (χ2):

Chi square test is used for qualitative data. The qualitative data may be nominal data, ordinal data or combination of both nominal and ordinal data. In the present section of the study, Chi square test is administered to examine relationship between demographic variables and variables causing Security services satisfaction of commuters.

It is used for single population variance. Two way χ**2** test is used for two groups (Male and Female). For conducting Chi square test, sample should be drawn randomly from the population and values of the variable should be mutually exclusive. It also analyses that whether observed frequency is matching with expected frequency or not. The value of χ**2** would be equal to zero if actual count is equal to expected count. Chi square test is

run to analyses the relationship between two variables, but it does not give an idea about strength of relationship. Phi (Φ) coefficient also known as contingency coefficient is used to find out the strength of relationship between two variables.

H_{03}-There is insignificant relationship between gender of passengers and their preference for CCTV camera surveillance.

Table-1.4

Crosstab			No of cctv camera					Total
			strongly disagree	disagree	Neutral	agree	strongly agree	
Gender	male	Count	17	149	168	138	99	571
		Expected Count	20.3	157.5	200.3	117.6	75.4	571.0
	female	Count	19	131	188	71	35	444
		Expected Count	15.7	122.5	155.7	91.4	58.6	444.0
Total		Count	36	280	356	209	134	1015
		Expected Count	36.0	280.0	356.0	209.0	134.0	1015.0

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.160[a]	4	.000
Likelihood Ratio	40.174	4	.000
Linear-by-Linear Association	24.056	1	.000

The above table shows that the value of Chi square test is significant at 5% significance level. This shows that there is significant difference in the perception of passengers with respect to gender regarding adequacy of number of CCTV camera.

H_{04}-There is insignificant difference in the perception of passengers with respect to gender for alertness of security forces.

Table-1.5								
Crosstab			Alertness of Security forces					Total
			strongly disagree	disagree	Neutral	Agree	strongly agree	
Gender	Male	Count	48	131	130	154	108	571
		Expected Count	69.2	133.9	157.0	132.2	78.8	571.0
	Female	Count	75	107	149	81	32	444
		Expected Count	53.8	104.1	122.0	102.8	61.2	444.0
Total		Count	123	238	279	235	140	1015
		Expected Count	123.0	238.0	279.0	235.0	140.0	1015.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	58.601[a]	4	.000
Likelihood Ratio	60.387	4	.000
Linear-by-Linear Association	41.994	1	.000

The result of above table reveals that null hypothesis is rejected. This shows that there is significant difference in the perception of passengers with respect to gender regarding alertness of security forces.

1.7-Conclusion- Security services are most sensitive element among all the services offered by Delhi Metro. This study reveals that majority of the customers gave more than average rating to the variables causing Security services Satisfaction of passengers. It was also found from the study that, there is significant relationship between Security services Satisfaction of passengers and variables accountable for satisfaction of passengers for security services. The result of Chi square test ascertained that, significant association exists between demographic variables and independent variables causing satisfaction of passengers for Security services.

Looking at increasing customer traffic at metro station and scale of operation of Metro railway, Delhi metro need to relook

various security related issues in the light of increasing threat of global terrorism. Management must develop trust and confidence in the mind of the customers regarding its ability to provide full proof security against any critical incidents.

References :

1. Kotler, Philip(2009), "Kotler on marketing", The Free Press,pp-130.
2. Khosla, C. M (2000), "Safety on Indian Railways: Prolonged Neglect and Warped Priorities", Economic and Political Weekly, Vol. 35, No. 8/9 pp. 614-620.
3. Koutsoyiannis,A (1977) " Theory of Econimetrics" Second edition,Palgrave (Macmillan Ltd- UK, printed in Singapore) , pp.49-68.
4. Leppard, John W, "Marketing by Matrix", NTC Publication, pp- 94-95.
5. Levin,Richard I.and Rubin,David S., " Statistics for Management" Pearson, pp-531-543.
6. Leslie De, Chernatony, "Creating Powerful Brand", Butterworth pp- 345-347.
7. Lindquist Sirgy, Berkman(2009), "consumer behavior", Publication group, pp-129-130.
8. Mack Hanon, "Consultative Selling" , AMA Publication, pp 200.
9. M. Ringle, Christian and Sarstedt, Marko(1998), "Customer Satisfaction with commercial Airlines: The Role of Perceived Safety and purpose of travel", Journal of Marketing Theory and Practice ,Vol.19 No-4,pp-459-472.
10. Peter J,Paul , " creating value for customer", Mc Graw Hill ,pp-35.
11. Pelton,E, " Marketing Channel", Irwin ,pp-91.

Analysis of Domestic and International Business Performance of The Indian Reinsurer with Special Reference to GIC Re.

Sumninder Kaur Bawa*

NehaVerma*

Abstract

General Insurance Corporation of India (GIC Re) is the byword for Indian reinsurance. It enjoys a distinguished reputation in the Indian insurance industry. A Reinsurance company plays an indispensable role for insurance companies. It aids insurance companies not only financially but also provides them informational and intellectual knowhow that helps them in taking major decisions. Inherently, reinsurance companies are of global nature and hence very active in the international market. GIC Re's performance is influenced by its business in the international and the domestic market. Never before any attempt is made to compare and appraise the performance of the company in the domestic and the international market. The paper comprehends the performance of the company in the Indian and International market with key variables and ratiosfor twelve years from 2004-05 to 2015-16 using Arithmetic Mean, Standard Deviation , Coefficient of Variation,Compound Annual Growth Rate and Independent samples t-test. Overall business of GIC Re and the role of different segments is encompassed in this study. The study would help to ascertain the position of business of the company in the Indian and the overseas market and formulate effective strategies for future.

JEL Classification: G22

Keywords: Reinsurance, Indian Reinsurance , GIC Re, Inward Reinsurance

Introduction

General Insurance Corporation of India popularly known as GIC Re has been the only domestic reinsurance company of India until private players were allowed entry in the Indian reinsurance market recently by the end of 2016.

A reinsurance company insures insurance companies and hence is a blessing for them. In the present scenario reinsurance companies cannot afford to have a tunnel vision of increasing the business in the indigenous market only but should make efforts to defy the limits posed by geographical boundaries. Their diversification in the international market is important in the current scenario. The activity of insurance companies in the international market is increasing much post deregulation and liberalisation.

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Geographical expansion gives insurers the chance to explore new market, utilize their skills and knowhow and carve a niche for themselves in the overseas market. Going by the scenario, GIC Re is also not only doing business in India only but is active in the international market too i.e. to say that it reinsures the insurance companies abroad as well. GIC Re has been very eager to tap international markets and has not left any stone unturned for the same. GIC has made its presence felt in SAARC countries, South East Asia, Middle East and Africa. In order to improve its accessibility and service, GIC Re has a representative office in Moscow and branch offices in London, Dubai and Malaysia. Also the company has its presence in Bhutan with 26% stake as a joint venture in Bhutan Re and in Singapore with a 100% owned subsidiary.Besides this recently the company has even begun its operations in South Africaacquiring Saxum Re, a South African firm, and made inroads into Latin America by entering as a reinsurer in Brazil. It has even become a corporate member of Lloyd's of London and made a foray into the world's largest insurance market that is U.S.

In the beginning of GIC Re's incorporation as an Indian reinsurer, its business was primarily fetched from the domestic market. But with the passing years this scenario began to change and GIC Re started procuring business from the international market as well.

Geographical diversification of business in the overseas market can certainly bring advantages to GIC Re as it gives it a chance to put eggs in the different baskets. But at the same time exposes it to the dangers that the international markets are vulnerable to. Hence the decision to underwrite risks from the international market should not be such that it hampers the profitability of the Company. 'No' must be an important part of the reinsurers' vocabulary when it is required.

Chairman and M.D, Mr. A.K. Roy (2016) said that GIC Re will be tapping international market more aggressively as post increase in the limit of FDI from 26% to 49% it is expected that about 10-15 reinsurers will enter Indian market and compete directly with GIC Re.Mr. Lohiya (2009) remarked that exposure to the international markets has helped the company to bag huge profits. He added that the profits made by the company in 2009 were more than three times the net profits made by the whole Indian general insurance industry. This is the reason why the company dreams to have a 50-50 split up in its business.

Considering this scenario it becomes imperative to examine the business split of GIC Re in the international and domestic market to get better insight into the progress of the business in both the markets and to formulate effective strategies in future.

Literature Review

This section includes review directly or

indirectly related with the research.

Boda (2004) in a conceptual article titled "One world of Reinsurance" talked about the converging world of reinsurance in India. The article talked about the keenness of global reinsurers to enter into the Indian reinsurance market. Also the reinsurance major of India-GIC Re, was spreading its wings across the domestic boundaries. This was cited as one of the best ways to spread and share the risks beyond the borders of the country. Chaudhry (2004) in his article "Reinsurance in shining India" opinionated that reinsurance was basically a business of global nature and international reinsurance diversification could bring ultimate benefits to the insurers of the domestic markets as it helps the reinsurers to serve the direct insurers in cost effective ways. Naik (2004) in the article titled "What we must do" held that post liberalization GIC was declared as the sole reinsurer of India and it had given priority to be an international reinsurer of repute. GIC Re had the mission to be a prior reinsurer for the Indian, Afro Asian and Global markets and build long term relationships with them. Kasturi (2006), made a theoretical attempt to throw light on the performance management in Insurance Corporation. He related success of an insurance enterprise with the careful selection of markets, meticulous evaluation of the risks undertaken, entering and exploring the markets and rendering adequate control over the investment and operating costs. Rao (2012) in his article titled "Reinsurance Scene & India –need for a relook?" opined that inward reinsurance business should be entertained only if it could be handled by the capital held by the company. If this is not followed, the reinsurance company is bound to suffer losses. Countries like China prohibit inward reinsurance due to such issues. He also highlighted the fact that losses made due to inward reinsurance could have a ripple effect on the domestic insurance sector. The losses would made reinsurance prices to shoot up and hence make reinsurance more costly for the domestic insurance industry. Therefore a company should go for inward reinsurance only if it is financially healthy. The first aim should always be to be operationally profitable.

Need of The Study

It is an era of globalization and companies are not only active in their home countries but in other markets as well. But this decision should not be taken blindly at the cost of profitability of the company. Reinsurance companies are primarily of international nature. They cater both the domestic and the global market and hence business done in both the markets can impact their performance. There has been hardly any comprehensive study where GIC Re's performance in the domestic and international market has been examined before. Keeping this in view, along with the unparalleled standing that the sole reinsurer holds in the Indian insurance

market the study is being conducted.

We need to find what share of business it has obtained from the domestic and the overseas market in the period of study. The role of different segments of GIC Re and in enhancing its business in the overseas market also needs to be analyzed separately to make better strategic decisions.

It has been observed that the company has been undergoing underwriting losses. So we need to check whether the decision to undertake risks from the international market has been a right decision for the company or not. Whether this has contributed positively to the revenue of the company or has just increased the claims of the company.

Objectives of the Study

- To see the progress of business of GIC Re in the domestic and international market.
- To separately assess the contribution of different segments of GIC Re in both the markets.

Research Methodology

Annual Reports of GIC Re have been used to collect secondary data for the study. A period of 12 years that is from 2004-05 to 2015-2016 is covered under the study. Key Variables have been analyzed usingMean, Standard Deviation (S.D), Coefficient of Variation (C.V) and Compound Annual Growth Rate.

- Arithmetic Mean ($\overline{X}$) = Σ X / N.
- Co-efficient of Variation (C.V) (in percent) = S.D/ $\overline{X}$*100

Where, ($\overline{X}$) stands for Mean and S.D stands for Standard Deviation.

In order to check the trend and growth the semi log trend equation

Log Y = a + bt..... (3.3) is used

Where

Y denotes value of the variable

t denotes time variable

and a and b are the parameters to be estimated.

The method of least squares has been applied to estimate the semi-log trend equations.

CAGR is calculated using the formula

CAGR (percent) = (Antilog b-1) X 100.

Also,Independent Samples t-test is applied using SPSS to check the differences in the domestic and international business of the company statistically.With the help of this test one can find whether the differences detected are significant or not. Hypotheses are framed.

H0 denotes the null hypotheses and H1 denotes the alternate hypotheses.

H 0: There is no significant difference between the domestic and the international business of GIC Re for the period of the study.

H 1: There is a significant difference between the domestic and the international business of GIC Re for the period of the study.

P-value has been observed to reject or

accept the hypotheses. P-value of less than 0.05 accounts for rejection of the null hypotheses. It signifies significant difference in the domestic and international business of the company.

Relevant Tables and Diagrams have been used for a clear analysis wherever necessary.

RESULTS AND DISCUSSIONS

An attempt is made under this section to analyze the domestic and international business of the company. Business of each class of reinsurance also forms the part of the study.

First of all the business generated from the international market and domestic market for the period under study is observed using gross premium. Gross Premium is the major source of revenue for the company. It denotes the income that GIC Re generated through the business procured by it.

Table No. I shows the Gross Premium earned by GIC Re from the domestic and international market from 2004-05 to 2015-16.

Year	Domestic	International
2004-05	3738.8	1382.8
2005-06	3758.2	1122.6
2006-07	5738.3	1665.9
2007-08	6800.4	2515.2
2008-09	4997.9	3063.2
2009-10	4850.3	3926.5
2010-11	6272.9	4239.7
2011-12	7693.5	5924.5
2012-13	9075	6011
2013-14	7792	6889
2014-15	8661	6523
2015-16	10195	8241
t-value	**2.541**	
P-value	**0.019****	

(Compiled from the Annual Reports of GIC Re, 2004-05 to 2015-16)(denotes significance at 5percent level)**

It can be observed from Table No.1 that the business from domestic market increased from Rs.3738.8 crore in 2004-05 to Rs.10195 crore in 2015-16.However post detarrification in 2007 a decline in the domestic business was seen in 2008-09 .The situation slowly got improved in the following years.

The business generated by GIC Re from the foreign market was Rs.1382.8 crore in

2004-05 which rose to Rs.8241 crore in 2015-16. It was only in the year 2005-06 and 2014-15 where adecline was observedin the business procured from the international market.

Now, Independent Samples t-test is applied to check the differences between the domestic and the international business of the company statistically.

H0 denotes the null hypotheses and H1 denotes the alternate hypotheses.

H 0: There is no significant difference between the domestic and the international business of GIC Re for the period of the study.

H 1: There is a significant difference between the domestic and the international business of GIC Re for the period of the study.

On applying t-test we observe P-value of 0.019 which is less than 0.05 ,therefore we reject the null hypotheses and hence conclude that there is a significant difference between the business generated in the domestic and the international market. Domestic business has been noticeably more in the period of the study but the quickly raising business of the company in the international market is certainly worth appreciation.

Table 2 shows the Average, Standard Deviation, Coefficient of Variation, Compound Annual Growth Rate and t-value and p-value of the Gross Premium of GIC Re from domestic and international market from 2004-05 to 2015-16.

	Domestic	**International**
Mean	6631.1	4292
Standard Deviation	2103.73	2395.92
Coefficient of Variation	31.73	55.82
Compound Annual Growth Rate	8.6*	19.8**

(Source: Computed Data) (*significance at 5 percent, ** significance at 1 percent)

From Table No.2 we can clearly observe that the average gross premium bagged from the indigenous market is far more than the gross premium obtained from the international market. However coefficient of variation of the gross premium obtained from the international market comes out to be 55.82 percentwhich is much more than the coefficient of variation of 29.4 percent in case of domestic market.Such variation in case of international market is a result of phenomenal increase in the business obtained from international market by GIC Re from 2004-05 to 2015-16. We can see that the Compound Annual Growth Rate of gross premium obtained from international market comes out to be 19.8 percent which is worth appreciation whereas in case of domestic market gross premium it comes out to be 8.6 percent.

Now an effort is made to examine the role of all the segments of GIC Re i.e. Fire Reinsurance, Miscellaneous Reinsurance, Marine Reinsurance and Life Reinsurance separately calculating claims ratio for all segments separately.

Claim Ratio is calculated using the formula Claims Incurred / Earned Premiums.This ratio indicates the claims paid out of the premiums earned. Incurred Claims:Incurred Claims include the outstandingliabilities for a specific policy over a particular valuation period. It comprises of not only all paidclaims but also fair estimate of liabilities standing unpaid. Earned Premium is the portion of premium which is actually earned by the insurance company. It is determined considering the original value of premium, and calculating the time period for how long the policy has been there sans claim. And the percentage of time for which there was no claim to the total time period of the policy is the amount of premium earned by the company. The claims ratio exceeding 100 per cent shows that the claims incurred are exceeding the premiums earned and such situation is not desirable. Data regarding some sub classes of miscellaneous is not separately available for domestic and international markets therefore those sub segments have not been used for the purpose of analysis.

Table 3 shows the Claims Ratio of different segments of GIC Re in the domestic market from 2005-2016.

Year	Fire	Motor	Engineering	Aviation	Other Miscellaneous	Marine	Life
2005	47.8	N.A.	50	78	N.A.	113.8	358.8
2006	61.8	141	65	89	108	99.4	36.6
2007	80	60	73	106	59	162.7	52.6
2008	111.9	71	66	109	86	142.7	18.6
2009	94	64	49	87	80	83.8	67.3
2010	123.7	116	50	62	110	61.8	43.6
2011	83.7	141	45	178	88	70.6	77.1
2012	86.5	124	73	75	78	106.1	66.4
2013	68.8	75	55	35	94	44.7	83.6
2014	47.6	70	155	20	84	23.4	126.5
2015	72.77	105.35	74.2	34	94.2	132	107
2016	142.29	95.55	-9.4	150	98.9	68	59

(Source: Compiled from the Annual Reports of GIC Re from 2005-06 to 2015-16)

Table 4 shows the Claims ratio of different segments of GIC Re in the international market from 2005-2016.

Year	Fire	Motor	Engineering	Aviation	Other Miscellaneous	Marine	Life
2005	77	N.A.	49	64	N.A.	79.5	N.A.
2006	85.5	106	81	80	77	88.3	N.A.
2007	63.6	52	42	78	78	70.8	0
2008	78	75	59	74	76	121.6	0
2009	83.7	88	53	151	56	132.1	2.2
2010	49.4	69	55	60	64	66.3	59.5
2011	79.1	82	53	64	79	70.9	71.5
2012	203.5	95	75	97	173	167	31.9
2013	95.1	90	82	128	78	55	116.2
2014	122.2	97	170	69	102	79	59
2015	64.77	110.3	46.95	98	89.84	97	-27
2016	53.79	89.16	72	59	107.3	67	67

(Source: Compiled from the Annual Reports of GIC Re from 2005-06 to 2015-16)

Table 5 shows the Average Claims Ratio of GIC Re in the domestic and the international market separately for each segment for the period of the study along with the t-value and p-value.

Average Claims Ratio	Domestic	Foreign	t-value	P-value
Fire	85.11	90.54	-0.227	0.822^{ns}
Motor	93	93.42	0.945	0.359^{ns}
Engineering	62.95	75.95	-0.528	0.603^{ns}
Aviation	84.66	86.03	0.009	0.993^{ns}
Other Miscellaneous	89.4	99	0.000	1^{ns}
Marine	85	88	0.076	0.940^{ns}
Life	81.27	59.4	2.094	0.048*
Overall	85.74	97.89	-0.596	0.562^{ns}

(Source: Computed Data) (*,stands for significance at 5 percent and ^{ns} stands for not significant)

As per Table 5, the average claims ratio of fire reinsurance segment in the foreign market comes out to be 90.54 which is more than the average claims ratio from the domestic market which comes out to be 85.11. So GIC Re must be more careful in underwriting such risks from the foreign market. However with a P-value of 0.822 which is more than 0.05 for claims ratio we accept the null hypotheses and hence conclude that there is no significant difference between the claims ratio of fire reinsurance segment of GIC Re in the domestic and the international market. Though the ratio is not showing significant difference but still due to higher average of the claims reported by the company in the international market, the company needs to be cautions while accepting business from the foreign market. Average claims ratio for motor reinsurance segment has remained almost the same for both the markets in the period of study for GIC Re. However with a P-value of 0.359 which is more than 0.05 for claims ratio we accept the null hypotheses and hence conclude that there is no significant difference between the claims ratio of the motor reinsurance segment of GIC Re in the domestic and international market. The average claims ratio for life comes out to be 81.27 and 59.4 from the domestic and the international market respectively. This shows that it would be a wise option for the company to diversify and obtain business from the overseas market for this segment of the company. With a P-value of 0.048, difference between claims ratio comes out to be significant at 5 percent .This shows that procuring business for this particular segment from the international market could be profitable for the company. We can draw similar conclusions for other segments as well.

Even though the differences are found to be statistically insignificant , we can observe that Average claims ratio for engineering, other miscellaneous and even overall for all segments comes out to be noticeably high in case of foreign market. Ratio is almost the same for domestic and international market for motor segment, marine segment, fire and aviation segment.And for life reinsurance segment the ratio is found to be lower in case of foreign market and is found to be significant as well.

Conclusion and Suggestions

From the above analysis we can conclude that the business of GIC Re has achieved great heights in the international market. This is certainly an applaudable achievement. GIC Re has a strong presence in India's insurance market as the national reinsurer, and continues to expand its business overseas especially in Asia, Europe and Africa. The long cherished dream to penetrate the overseas market is being materialized and the day is not far when the company would see 50-50 split in its international and domestic business.

The company has successfully established

itself as an international reinsurer of esteemed repute. It is specially recognized as a leading reinsurer in the global aviation market. This even had a very positive impact on the rating of the company. While it stood nowhere in the top 40 global reinsurance groups in 2004 it rose to the position of 14th reinsurer in the list of top 40 global reinsurers ranked according to the unaffiliated gross premium by A.M. Best in 2016 , which is a topmost international rating agency with a special focus on insurance companies.Increase in the international business of the company over the period of time indicates that the company has been able to restore confidence among its international clients and handle the claims professionally.

Need not to say that GIC Re's foray into the international market has increased its business manifolds and established it as an international reinsurer in the global market. But GIC Re should entertain business from international market only as long as it brings some benefits for the company.

It has been observed that the segments namely engineering and other miscellaneous had to pay heavy claims abroad on account of business underwritten in the overseas market. Even overall results of claims ratio of all the segments showed that the average claims ratio was higher in case of the foreign market.There is no point in aiding others if our own companies have to suffer. Huge claims paid in the international market can bring losses to the company thereby making reinsurance costlier for the domestic insurance players. Hence international business should not be underwritten blindly. GIC Re must ensure that the domestic insurance companies are given adequate chance of getting reinsured before providing its services to the foreign entities.

Life reinsurance was found to be the only segment where the average claims ratio was less in case of foreign market. Therefore, GIC Re must increase its life reinsurance business in the foreign markets considering the huge claims that it had to pay for this segment in the domestic market. This would help the company to avail diversification advantages.

Better marketing, communication strategies and effective relationship building are a must for inward reinsurance and GIC Re must keep doing all this for increasing its international business in future. Endeavor must be made to enter markets that offer wide scope and are financially and politically stable.

The effort made in the article will help the reinsurance companies to make an analysis of their business in the global markets and make better strategic decisions.

References

1. Boda, B.J (2004). “One world of reinsurance”.*IRDA*.Vol.2 No.4, pp. 22.
2. The Economic Times(2009),“GIC Re ensures growth, profit soars?”15th

August

3. Golden, J. (2016) "Star of India" *Insider Quarterly*, 12th Jan.
4. *The Economic Times (2014)*"GIC Re's net falls 4% as underwriting losses, fall in reinsurance premium hurts" 20th June
5. Chaudhry, S. (2004)."Reinsurance in 'Shining India".*IRDA.*Vol.2 No.4, pp.20-21.
6. Darzi, T.A. (2011). Financial performance of insurance industry in post liberalization era in India. Doctoral dissertation, University of Kashmir, Srinagar, retrieved from http://shodhganga.inflibnet.ac.in/.
7. Ikonic, D., Arsic, N. and Milosevic, S (2011)."Growth potential and profitability analysis of insurance companies in the Republic of Serbia".*Chinese Business Review*Vol.10 No.11, 998-1008.
8. Kasturi, R (2006), "Performance Management in Insurance Corporation" *Spring,* Vol. 5 No. 1. pp1-16.
9. Naik, K.L.(2004), "What we must do?".*IRDA.*Vol.2 No.4 pp.23-24.
10. Rao, G.V. (2012). "Reinsurance scene & India- need for a relook?"Vol.10 No.8 pp. 29.
11. Simpson, S. N. Y.Damoah, O. B. O. (2009), "An evaluation of financial health of non-life insurance companies from developing countries:the case of Ghana" *Journal of Risk and Insurance,* Vol.*6* No.1pp 30-49.
12. Sinha, S. (2012) "Berkshire Hathaway finally forays into India's Reinsurance Business 2012" *The Economic Times,* 4th April.
13. Sinha, S. (2012) "There's scope to boost underwriting show: AK Roy, CMD, General Insurance Corporation" *The Economic Times*, 30th April.
14. Sinha, S. (2012) "General Insurance Corporation slips into red, posts Rs.2469-cr loss in 2011-12".*TheEconomic Times* .6th June.
15. Syed, M. (2015) "GIC targets to increase foreign business by 50 %" *Financial Chronicle-mydigitalfc.com.* 1st June.

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